1. Introduction

Fuss and O’Neill performed a screening-level assessment of potential green infrastructure (GI) retrofit sites throughout the Wood-Pawcatuck watershed. The goal of this assessment is to identify opportunities and develop concepts for site-specific green infrastructure retrofits that achieve dual objectives – increase flood resiliency by reducing runoff volumes and peak flows and improve or protect water quality by reducing pollutant loads to receiving waters.

Green infrastructure refers to systems and practices that reduce surface water runoff through the use of vegetation, soils, and natural processes to manage water and create healthier urban and suburban environments (EPA, 2014). Green infrastructure includes a variety of stormwater management practices, such as bioretention, engineered wetland systems, permeable pavement, green roofs, green streets, infiltration planters, tree boxes, and rainwater harvesting. These practices capture, manage, and/or reuse rainfall close to where it falls, thereby reducing stormwater runoff and keeping it out of drainage systems and receiving waters.

Sites were selected and analyzed using Geographic Information System (GIS) mapping and associated geospatial data. GIS allows for rapid evaluation of specific land-based attributes that are important for assessing the feasibility of green infrastructure practices. In addition to selection and analysis of specific sites, streets within developed areas were also reviewed for their potential to support the use of green infrastructure within the public right-of-way, an approach which is referred to as “green streets.” Green streets retrofits can range from simple roadside water quality or bioswales to more comprehensive streetscape retrofits including enhanced landscape design, bicycle and pedestrian access, and traffic-calming measures.

In addition to reducing polluted runoff and improving water quality, green infrastructure can improve flow conditions in streams and rivers by infiltrating water into the ground, thereby reducing peak flows...
during wet weather and sustaining or increasing stream base flow during dry periods, which can be important for aquatic habitat and fisheries. When applied throughout a watershed, green infrastructure can help mitigate flood risk and increase flood resiliency. At a smaller scale, green infrastructure can also reduce erosive velocities and streambank erosion.

Finally, green infrastructure has been shown to provide other social and economic benefits relative to reduced energy consumption, improved air quality, carbon reduction and sequestration, improved property values, recreational opportunities, overall economic vitality, and adaptation to climate change. For these reasons, many communities are exploring the use of and are adopting green infrastructure within their municipal infrastructure programs.

2. Assessment Methods and Findings

The overall green infrastructure assessment consists of three major tasks:

1. **Screening-level assessment** to quickly identify areas of the watershed with the greatest feasibility for and potential benefits from green infrastructure retrofits,
2. **Field inventories** of the most promising green infrastructure retrofit opportunities in the watershed identified from the screening step,
3. **Green infrastructure concept designs** for selected retrofit sites.

The technical memorandum documents the methods and findings of the screening-level assessment, as well as field inventories and green infrastructure concept designs for selected retrofit sites.

**Site Screening Evaluation**

A screening evaluation was conducted using publicly-available GIS data for Rhode Island and Connecticut to quickly identify specific sites within the watershed where green infrastructure retrofits can be implemented that would provide water quantity (i.e., runoff reduction) and water quality (i.e., pollutant reduction) benefits. The types of site or parcel-based green infrastructure retrofits with potential applicability in the watershed include:

- Permeable pavement
- Bioretention/ bioswales
- Infiltration/ filtration systems
- Wet vegetated treatment systems
- Tree boxes and tree planting
- Water harvesting and reuse.

The assessment used the following site evaluation criteria\(^1\) and data sources. Slight variations in the evaluation criteria were required for sites in Rhode Island and Connecticut due to differences in information available from both states.

\(^1\) Other site-specific factors such as land area, impervious area, drainage area, subsurface utilities, subsurface contamination, and storm drainage system capacity are also important considerations for green infrastructure retrofits.
1. **Land Ownership** - Publicly-owned (e.g., municipal) sites are most favorable because they avoid the cost of land acquisition and provide direct control over green infrastructure construction, maintenance, and monitoring by the municipality. Other publicly-owned sites such as schools, universities, state facilities, and federal facilities are also potential green infrastructure candidates. Certain types of private parcels (e.g., private schools and churches) may be suitable and were also included in the analysis.

Publicly-owned properties in the watershed were identified and mapped using the 2011 Land Use/ Land Cover (LULC) dataset from RIGIS and the State/ Municipal Parks and Open Space layer available from UCONN MAGIC. The following RIGIS land use categories were included in the selection process: institutional, developed recreation, cemeteries, and airports. The following facility point data was also included in the analysis: colleges and universities (University of Rhode Island), fire stations, schools (public and private), hospitals, libraries, and State Comprehensive Outdoor Recreation Plan (SCORP) sites.

2. **Development** - Sites within developed areas typically have greater potential for green infrastructure retrofits. Developed areas are more at-risk for flood damages and typically generate greater runoff volumes than undeveloped or lightly-developed areas. The site screening criteria included the following categories from the 2011 Land Use/ Land Cover data: low density development, medium density development, and high density development.

3. **Subsurface Conditions** - Subsurface conditions are key considerations for infiltration-based green infrastructure retrofits. Soil infiltration capacity, depth to groundwater, depth to restrictive layers (bedrock, dense till), soil bulk density, and inundation of soils due to flooding are important soil-based characteristics that can affect the feasibility of infiltration-based green infrastructure retrofits. For the purposes of this screening evaluation, Natural Resources Conservation Services (NRCS) soil classifications and the Soil Survey Geographic (SSURGO) database were used to assess the feasibility of infiltration practices at a given site. The following describes the soils criteria used in the evaluation:

   - **Hydrologic Soil Group** - Hydrologic Soil Groups (HSGs) mapped by the NRCS provide an initial estimate of infiltration rate and storage capacity of soils on a site. Group A soils have the lowest runoff potential (highest infiltration rates) and Group D soils have the highest runoff potential (lowest infiltration rates) when thoroughly wet. Soils with higher infiltration capacities are generally better suited for green infrastructure. HSG mapping provides an initial estimate of infiltration potential; field investigations are necessary to verify soil conditions for final feasibility determinations and design purposes.

   - **Seasonal High Water Table** - Depth to the groundwater table is an important consideration for green infrastructure practices that rely on infiltration or water storage, such as constructed wetlands and stormwater basins. Infiltration practices typically require at least 3 feet of separation between the bottom of the infiltration system and...
seasonal high groundwater. A deep groundwater table also allows for water storage capacity in the upper part of the soils horizon and can indicate areas where stormwater basin construction is feasible.

4. **Impaired Waters** - In order to locate green infrastructure where it will have the greatest benefit to water quality, sites were selected that are in close proximity to impaired waters, which are surface waters that do not meet current water quality standards for specific uses such as recreation and aquatic life. For this screening-level analysis, sites within 1/2 mile of mapped water quality impairment were assumed to discharge to the impaired water body.

5. **Impervious Cover** - Water quality impacts are known to occur in surface waters within drainage basins that have a high degree of impervious cover due to changes in watershed hydrology and pollutant sources that result from development of the landscape with hard surfaces. Sites with higher amounts of impervious cover generate more runoff and have greater potential for runoff reduction through the use of green infrastructure retrofits. Areas with a high degree of development and impervious surfaces are generally considered high priority for green infrastructure implementation. Selection criteria included site impervious coverage of over 30% or at least 1 acre of total impervious cover on a given site.

**Application of Site Screening Criteria**

A tablent 1 depicts an example of the screening methodology applied to the portion of the watershed within the Town of Westerly, Rhode Island. The example is provided to demonstrate the screening methodology and results at a smaller, more readable scale since the methodology and results cannot be easily visualized (in a report format) at the scale of the overall Wood-Pawcatuck watershed. A watershed-wide map at a larger scale was prepared for field investigations.

The site screening process described above was performed by applying each of the screening criteria in succession, thereby reducing the number of selected sites with each successive screening criterion. The results of the site screening process are summarized below and in the example maps in Attachment 1 for the Westerly portion of the watershed.

1. **Site Screening Criterion: Publicly-owned sites within the watershed**
   - Connecticut: GIS State-Municipal Parks and Open Space; or
   - Rhode Island facility point data including colleges and universities, fire stations, schools, hospitals, libraries and State Comprehensive Outdoor Recreation Plan

   Number of sites: 253

2. **Site Screening Criterion: Sites with A or B soils and within developed areas**
   - Hydrologic Soil Group (HSG) A or B Soils; and
   - Developed Areas
Number of sites: 175/253

3. **Site Screening Criterion: Sites with a depth to seasonal high groundwater of at least 6 feet**
   - Soils with a seasonal high water at a depth greater than six feet.

   Number of sites: 163/175

4. **Site Screening Criterion: Sites within ½ mile of an impaired surface water body**
   - Sites within 1/2 mile of an impaired surface water body

   Number of sites: 129/163

5. **Site Screening Criterion: Sites with at least 30% impervious, or 1 acre impervious cover.**

   Number of sites: 104/129

   (The final example map lists 106 sites. Two sites were combined with nearby sites because they were part of the same complex, under the same ownership.)

**Site Screening Results**

A total of 104 sites were identified based on the GIS-based screening evaluation. Subsequent to the GIS-based screening, ownership information and aerial photographs were reviewed to verify the suitability of each site for green infrastructure retrofits. Some of the sites were eliminated from further consideration, including sites under private ownership, like golf courses, and sites with relatively small areas of impervious cover that are surrounded by large upland areas, which typically do not generate significant off-site runoff. This final review reduced the number of sites for field level investigation to 82. A few of the sites within the selection are located in the same area. For instance, the University of Rhode Island ("URI") has two separate sites, located at different parts of the campus.

The field investigation included an assessment of the feasibility of green infrastructure retrofits for each site, including specific types of green infrastructure practices, their potential location(s) on the site, expected runoff and pollutant reduction benefits, and other design considerations. Thirty sites were selected from the total of 82 for development of green infrastructure retrofit concepts.

**Table 1** lists the geographic distribution of the selected 84 sites within the watershed, which are also shown on the watershed map in **Attachment 4**.
Table 1. Geographic distribution of potential green infrastructure retrofit sites.

<table>
<thead>
<tr>
<th>Town</th>
<th>Number of Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charlestown, Rhode Island</td>
<td>6</td>
</tr>
<tr>
<td>Exeter, Rhode Island</td>
<td>9</td>
</tr>
<tr>
<td>Hopkinton, Rhode Island</td>
<td>18</td>
</tr>
<tr>
<td>North Stonington</td>
<td>2</td>
</tr>
<tr>
<td>Richmond, Rhode Island</td>
<td>6</td>
</tr>
<tr>
<td>South Kingstown, Rhode Island</td>
<td>11</td>
</tr>
<tr>
<td>Stonington, Connecticut</td>
<td>3</td>
</tr>
<tr>
<td>West Greenwich, Rhode Island</td>
<td>1</td>
</tr>
<tr>
<td>Westerly, Rhode Island</td>
<td>26</td>
</tr>
</tbody>
</table>

Sites are generally located in more developed areas of the watershed. Other sites may be considered for field review based on input from the Project Steering Committee, including other publicly-owned sites that are known to contribute to local flooding, sites that are known to contribute to local water quality issues, or sites that may provide significant public education benefit as green infrastructure demonstration sites.

Table 2 is an abbreviated list of all 82 sites from the Excel spreadsheet found in Attachment 2. The spreadsheet includes additional information including acreage, parcel identification numbers, and latitude and longitude locations. Aerial photographs of each site are provided in Attachment 3. Regulatory flood zones are shown on the aerial photographs to avoid siting green infrastructure retrofits within the floodplain.

Table 2. Potential green infrastructure retrofit sites selected for field investigation.

<table>
<thead>
<tr>
<th>Site Name/Description</th>
<th>Address</th>
<th>Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vin Gormley Trailhead Parking</td>
<td>24 Sanctuary Road</td>
<td>Charlestown</td>
</tr>
<tr>
<td>Burlingame Management Area</td>
<td>Burlingame State Park Rd</td>
<td>Charlestown</td>
</tr>
<tr>
<td>Shannock Baptist Church</td>
<td>1632 Shannock Road</td>
<td>Charlestown</td>
</tr>
<tr>
<td>St. Mary's Catholic Church</td>
<td>451-455 Carolina Back Road</td>
<td>Charlestown</td>
</tr>
<tr>
<td>Burlingame Management Area</td>
<td>Burlingame State Park Rd</td>
<td>Charlestown</td>
</tr>
<tr>
<td>Charlestown Elementary School</td>
<td>363 Carolina Back Road</td>
<td>Charlestown</td>
</tr>
<tr>
<td>St. Kateria Tekakwitha Catholic Church</td>
<td>Exeter Rd</td>
<td>Exeter</td>
</tr>
<tr>
<td>Exeter Town Animal Shelter</td>
<td>165 S. County Trail</td>
<td>Exeter</td>
</tr>
<tr>
<td>Unidentified Building near Animal Shelter</td>
<td>175 S. County Trail</td>
<td>Exeter</td>
</tr>
<tr>
<td>Building with Parking Lot</td>
<td>742 Ten Rod Road</td>
<td>Exeter</td>
</tr>
<tr>
<td>Exeter Town Hall</td>
<td>675 Ten Rod Road</td>
<td>Exeter</td>
</tr>
<tr>
<td>Parking Lot Near Lake</td>
<td>406 Arcadia Road</td>
<td>Exeter</td>
</tr>
<tr>
<td>Exeter Job Corps Center</td>
<td>162 Main Street</td>
<td>Exeter</td>
</tr>
<tr>
<td>Phoenix House</td>
<td>Gaspee Road and Main Street</td>
<td>Exeter</td>
</tr>
<tr>
<td>Exeter Public Library</td>
<td>762 Ten Rod Road</td>
<td>Exeter</td>
</tr>
</tbody>
</table>
### Table 2. Potential green infrastructure retrofit sites selected for field investigation.

<table>
<thead>
<tr>
<th>Site Name/ Description</th>
<th>Address</th>
<th>Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood River Health Services</td>
<td>823 Main Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Hopkinton Recreation Department</td>
<td>188 Main Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Pavillion Steak House</td>
<td>35 Frontier Road</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Chariho Little League</td>
<td>1118 Main Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Wyoming Dam Fishing Access</td>
<td>Bridge Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Babcock Presbyterian Church</td>
<td>25 Maxson Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>U.S. Post Office (Ashaway, RI)</td>
<td>131 Main Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Seventh Day Baptist Church</td>
<td>8 Church Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Ashaway Volunteer Fire Association</td>
<td>213 Main St</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Unidentified Building with Parking Lot</td>
<td>72 High Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Trinity Lutheran Church</td>
<td>Rte 216 and Wellstown Rd</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Hope Valley - Wyoming Fire District</td>
<td>996 Main St</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Langworthy Public Library</td>
<td>24 Spring Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Abandoned Parking Lot</td>
<td>North of 894 Main Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Ashaway Elementary School</td>
<td>12A Hillside Avenue</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Wood River Preschool and Elementary School</td>
<td>1059 Main Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Possible DPW facility</td>
<td>51 Bank Street</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Unknown (close to WPWA headquarters)</td>
<td>260 Arcadia Road</td>
<td>Hopkinton</td>
</tr>
<tr>
<td>Wheeler High/ Middle School</td>
<td>298 Norwich-Westerly Road</td>
<td>N. Stonington</td>
</tr>
<tr>
<td>N. Stonington Superintendent and School</td>
<td>313-317 Norwich-Westerly Rd.</td>
<td>N. Stonington</td>
</tr>
<tr>
<td>West Vine Street School</td>
<td>25 West Vine Street</td>
<td>Stonington/Pawcatuck</td>
</tr>
<tr>
<td>Richmond Carolina Fire District</td>
<td>203 Richmond Town House Rd.</td>
<td>Richmond</td>
</tr>
<tr>
<td>Richmond Police Department</td>
<td>1168 Main Street</td>
<td>Richmond</td>
</tr>
<tr>
<td>Rhode Island State Police</td>
<td>54 Nooseneck Hill Road</td>
<td>Richmond</td>
</tr>
<tr>
<td>Chariho Regional H.S/ M.S and Career Center</td>
<td>453 Switch Road</td>
<td>Richmond</td>
</tr>
<tr>
<td>Richmond Town Hall</td>
<td>5 Richmond Townhouse</td>
<td>Richmond</td>
</tr>
<tr>
<td>Richmond Elementary School</td>
<td>190 Kingston Road</td>
<td>Richmond</td>
</tr>
<tr>
<td>URI, Boss Arena</td>
<td>1 Keaney Road,</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>URI, Tennis Courts</td>
<td>Kingston Road</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>Great Swamp Management Area</td>
<td>160-170 Great Neck Road</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>West Kingston Fire Department</td>
<td>390 Fairgrounds Road</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>West Kingston Baptist Church</td>
<td>263 Waites Corner Road</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>Tuckertown Park</td>
<td>101 Tuckertown Park Drive</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>Ryan Center/ Meade Stadium</td>
<td>West Alumni Avenue</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>West Kingston Services/ Center for the Arts</td>
<td>3481 Kingston Road</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>South Kingston Nursing and Rehab</td>
<td>2115 South County Trail</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>West Kingston Elementary School</td>
<td>3119 Ministerial Road</td>
<td>South Kingstown</td>
</tr>
<tr>
<td>Unknown</td>
<td>210 Flagg Road</td>
<td>South Kingstown</td>
</tr>
</tbody>
</table>
Table 2. Potential green infrastructure retrofit sites selected for field investigation.

<table>
<thead>
<tr>
<th>Site Name/ Description</th>
<th>Address</th>
<th>Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Broad Street School</td>
<td>W. Broad Street</td>
<td>Stonington</td>
</tr>
<tr>
<td>West Vine Street School</td>
<td>25 West Vine Street</td>
<td>Stonington</td>
</tr>
<tr>
<td>Parking Lot</td>
<td>350 Liberty Street</td>
<td>Stonington</td>
</tr>
<tr>
<td>Small Building with Parking Lot</td>
<td>302 Victory Highway</td>
<td>West Greenwich</td>
</tr>
<tr>
<td>Watch Hill Fire Department</td>
<td>222 Watch Hill Rd</td>
<td>Westerly</td>
</tr>
<tr>
<td>U.S. Post Office</td>
<td>110 Tom Harvey Road</td>
<td>Westerly</td>
</tr>
<tr>
<td>Westerly Fire Department</td>
<td>180 Beach Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Unknown Church</td>
<td>45 Elm Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Pilgrim Baptist Church- Central Nursery School</td>
<td>16 Elm Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Grace United Methodist Church</td>
<td>10 Park Ave</td>
<td>Westerly</td>
</tr>
<tr>
<td>Immaculate Conception Catholic Church</td>
<td>111 High Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Westerly Town Water Department</td>
<td>68 White Rock Road</td>
<td>Westerly</td>
</tr>
<tr>
<td>Bradford School</td>
<td>15 Church Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Westerly Packing</td>
<td>15 Springbrook Road</td>
<td>Westerly</td>
</tr>
<tr>
<td>Springbrook Elementary School</td>
<td>39 Springbrook Road</td>
<td>Westerly</td>
</tr>
<tr>
<td>Bradford Social Club</td>
<td>2 Bowling Lane</td>
<td>Westerly</td>
</tr>
<tr>
<td>Westerly State Airport</td>
<td>62 Airport Road</td>
<td>Westerly</td>
</tr>
<tr>
<td>Rotary Park</td>
<td>near 90 Airport Road</td>
<td>Westerly</td>
</tr>
<tr>
<td>Public Sports Complex</td>
<td>99 Wilson Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Ocean Community YMCA</td>
<td>77-85 High Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Craig Field Recreation Complex</td>
<td>Mountain Avenue</td>
<td>Westerly</td>
</tr>
<tr>
<td>Parking Lot for Football Field</td>
<td>60 Old Hopkinton Road</td>
<td>Westerly</td>
</tr>
<tr>
<td>The Westerly Hospital</td>
<td>25 Wells Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Westerly Senior Citizens Center and School</td>
<td>35 State Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>St. Pius X School</td>
<td>32 Elm Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Westerly High School</td>
<td>23 Ward Avenue</td>
<td>Westerly</td>
</tr>
<tr>
<td>Westerly Town Hall</td>
<td>45 Broad Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>93 Tower Street</td>
<td>93 Tower Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Westerly Health Center</td>
<td>280 High Street</td>
<td>Westerly</td>
</tr>
<tr>
<td>Bus Depot</td>
<td>8 Springbrook Road</td>
<td>Westerly</td>
</tr>
</tbody>
</table>
Streets Screening Evaluation

A GIS-based screening evaluation was also conducted to identify public streets in the watershed that are potential candidates for green infrastructure retrofits, either along the side of the roadway or below the road surface. This approach is also referred to as “green streets.” The feasibility of implementing green infrastructure within the public right-of-way depends on several factors including road type, local topography, soils, and depth to groundwater. The types of green streets or right-of-way green infrastructure retrofits with potential applicability in the watershed include:

- Roadside bioswales/ linear bioretention
- Water quality swales
- Belowground infiltration systems including infiltrating catch basins (with appropriate pretreatment)
- Permeable pavement (sidewalks, on-street parking spaces, and low-traffic areas)
- Tree boxes and tree planting (primarily streetscape applications).

The assessment used the following evaluation criteria and data sources. Similar to the sites criteria, slight variations in the evaluation criteria were required for streets in Rhode Island and Connecticut due to differences in information available from both states.

1. **Road Type** - High traffic volumes and high speed limits are not favorable road conditions for siting right-of-way green infrastructure. Therefore, the evaluation only considered roads classified by the Rhode Island Department of Transportation as “minor roads,” “arterials,” and “collectors” and roads classified as “primary and secondary roads” in Connecticut.

2. **Surrounding Development** - Streets within developed areas typically have greater potential for green infrastructure retrofits since developed areas are more at-risk for flood damages and typically generate greater runoff volumes than undeveloped or lightly-developed areas. The screening criteria included streets within areas of developed land use based on the 2011 Land Use/ Land Cover dataset.

3. **Subsurface Conditions** - Similar to the site screening criteria, streets were selected in areas with Hydrologic Soil Group A and B soils and with groundwater at a depth of at least 6 feet based on soil classification. Streets that are located in areas with these subsurface conditions and meet the above criteria are classified as “low priority” retrofit candidates for street or right-of-way green infrastructure retrofits.

4. **Proximity to Surface Water Bodies** - Streets within areas having the above characteristics and within ½ mile of a main stem river are identified as “medium priority” retrofit candidates. Main-stem rivers are the primary trunks or downstream segments of a river. Right-of-way retrofits and green streets initiatives typically require “buy-in” from the local community. It is often helpful to garner public support for such projects by focusing on areas located close to familiar and recognized water resources, allowing the public to connect the benefits of the project to well-known local resources.
5. Proximity to Impaired Waters – Streets within areas having the above characteristics and within ½ mile of an impaired water body are identified as “high priority” retrofit candidates. Managing and treating stormwater in close proximity to impaired waters will benefit surface waters most in need of improvement.

Streets Screening Results

The maps in Attachment 5 show prioritized street locations in each subwatershed for right-of-way green infrastructure retrofits. Streets in several high priority areas were evaluated based on review of aerial photographs and limited on-site investigation. Several right-of-way green infrastructure concepts were developed as examples of the type of opportunities that exist in the watershed, including roads located in developed and rural settings.

3. Field Inventories, Site Selection, and Conceptual Designs

Field Inventories

Site visits were conducted at the 82 selected priority sites in June and early July, 2016. The sites and adjacent street areas were walked and visually inspected for potential green infrastructure retrofit opportunities (i.e., impervious surfaces connected to the on-site drainage system, available green space to accommodate new green infrastructure practices, site configuration, drainage features that could be enhanced or improved) and physical site characteristics such as site configuration, drainage patterns, current use, slope, landscaping, subsurface utilities, design complexity, and maintenance access considerations. Field notes on potential green infrastructure retrofit sites were recorded using inventory forms developed by the Center for Watershed Protection and photographs were taken at each location (Attachments 6 and 7).

Sites Selected for Concept Designs

Based on the findings of the field inventories, green infrastructure retrofit opportunities were identified at most of the sites visited. Table 3 identifies the 30 sites selected for development of concept designs. These sites were selected because they: (1) have the greatest feasibility for green infrastructure retrofits, (2) provide the best opportunities to infiltrate (i.e., reduce) runoff, and (3) are distributed geographically throughout the Wood-Pawcatuck watershed. Many of the sites are also in highly visible, public locations and therefore provide good demonstration value.

Table 3. List of sites selected for conceptual designs

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Site Drainage Area No.</th>
<th>Site Name</th>
<th>Green Infrastructure BMP Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>21a</td>
<td>Vin Gormley Trailhead Parking</td>
<td>Underground Infiltration</td>
</tr>
<tr>
<td>21</td>
<td>21b</td>
<td>Vin Gormley Trailhead Parking</td>
<td>Bioretention</td>
</tr>
<tr>
<td>41</td>
<td>41</td>
<td>URI Tennis Courts</td>
<td>Rain Gardens</td>
</tr>
<tr>
<td>50</td>
<td>50a</td>
<td>Wyoming Dam Fishing Access</td>
<td>Pervious Pavers</td>
</tr>
<tr>
<td>50</td>
<td>50b</td>
<td>Wyoming Dam Fishing Access</td>
<td>Articulated Concrete Mat</td>
</tr>
<tr>
<td>50</td>
<td>50c</td>
<td>Wyoming Dam Fishing Access</td>
<td>Bioretention</td>
</tr>
<tr>
<td>Site No.</td>
<td>Site Drainage Area No.</td>
<td>SITE NAME</td>
<td>Green Infrastructure BMP Type</td>
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<td>------------------------</td>
<td>----------</td>
<td>-------------------------------</td>
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<tr>
<td>73</td>
<td>73</td>
<td>Exeter Town Animal Shelter</td>
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<td>93</td>
<td>93a</td>
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<td>93</td>
<td>93b</td>
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<td>Bioretention</td>
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<tr>
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<td>93d</td>
<td>US Post Office in Westerly</td>
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<td>102</td>
<td>102</td>
<td>United Methodist Church</td>
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<td>108</td>
<td>108a</td>
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<td>Green Roof</td>
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<tr>
<td>108</td>
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<td>114a</td>
<td>US Post Office in Ashaway/Hopkinton</td>
<td>Underground Infiltration</td>
</tr>
<tr>
<td>114</td>
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<td>125a</td>
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<tr>
<td>125</td>
<td>125c</td>
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<td>Rain Gardens</td>
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<tr>
<td>125</td>
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<td>125e</td>
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<td>139b</td>
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<td>173a</td>
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<td>185</td>
<td>185a</td>
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</tr>
<tr>
<td>185</td>
<td>185b</td>
<td>Wheeler High/ Middle School (combined with drainage area 194d)</td>
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<tr>
<td>185</td>
<td>185c</td>
<td>Wheeler High/ Middle School</td>
<td>Bioretention</td>
</tr>
<tr>
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<td>185d</td>
<td>Wheeler High/ Middle School</td>
<td>Bioretention</td>
</tr>
<tr>
<td>185A</td>
<td>185e</td>
<td>Wheeler High/ Middle School</td>
<td>Bioretention</td>
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<td>194a</td>
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<td>194</td>
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<td>Bioretention</td>
</tr>
<tr>
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<td>194c</td>
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<td>Bioretention</td>
</tr>
<tr>
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<td>194d</td>
<td>North Stonington Elementary and Administration Buildings</td>
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<tr>
<td>194</td>
<td>194e</td>
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</tr>
<tr>
<td>194</td>
<td>194f</td>
<td>North Stonington Elementary and Administration Buildings</td>
<td>Bioretention</td>
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</table>
Table 3. List of sites selected for conceptual designs

<table>
<thead>
<tr>
<th>Site No.</th>
<th>Site Drainage Area No.</th>
<th>Site Name</th>
<th>Green Infrastructure BMP Type</th>
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<td>206</td>
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<tr>
<td>206</td>
<td>206d</td>
<td>Browning Mill Pond Parking Access</td>
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<td>227</td>
<td>227</td>
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<td>Bioretention</td>
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<tr>
<td>229</td>
<td>229</td>
<td>Tuckertown Park</td>
<td>Bioretention</td>
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<td>252</td>
<td>252a</td>
<td>Charho Little League</td>
<td>Bioretention</td>
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<tr>
<td>252</td>
<td>252b</td>
<td>Charho Little League</td>
<td>Bioretention</td>
</tr>
<tr>
<td>252</td>
<td>252c</td>
<td>Charho Little League</td>
<td>Bioretention</td>
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<td>272a</td>
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<td>272</td>
<td>272b</td>
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<tr>
<td>272</td>
<td>272c</td>
<td>State Street School</td>
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<td>274</td>
<td>274</td>
<td>Westerly High School</td>
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<td>275</td>
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<td>276</td>
<td>Tower Street School and Community Center</td>
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</tr>
<tr>
<td>280</td>
<td>280a</td>
<td>Ashaway Elementary School</td>
<td>Underground Infiltration</td>
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<tr>
<td>280</td>
<td>280b</td>
<td>Ashaway Elementary School</td>
<td>Bioretention</td>
</tr>
<tr>
<td>283</td>
<td>283a</td>
<td>West Kingstown Elementary</td>
<td>Underground Infiltration</td>
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<tr>
<td>283</td>
<td>283b</td>
<td>West Kingstown Elementary</td>
<td>Bioretention</td>
</tr>
<tr>
<td>284</td>
<td>284</td>
<td>URI Lot at Boss Arena</td>
<td>Underground Infiltration</td>
</tr>
<tr>
<td>286</td>
<td>286a</td>
<td>Richmond Elementary School</td>
<td>Bioretention</td>
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<tr>
<td>286</td>
<td>286b</td>
<td>Richmond Elementary School</td>
<td>Bioretention</td>
</tr>
</tbody>
</table>

Concept Designs

Conceptual green infrastructure retrofit designs were prepared for the selected sites. The design concepts reflect opportunities for infiltration and/or water quality treatment at each site. BMPs were sited to capture and infiltrate/treat the 1-inch Water Quality Volume (WQv), where possible. Opportunities were also evaluated to manage additional runoff from on-site and off-site drainage areas.

Preliminary, planning-level costs were estimated for the site-specific concepts based upon unit costs derived from published sources, engineering experience, and the proposed design concepts. Capital (construction, design, permitting, and contingency) and operation and maintenance costs are included in the estimates, and total annualized costs are presented based on the anticipated design life of each green infrastructure practice. A more detailed breakdown of estimated costs is included in Attachment 9.
Pollutant loads were estimated based upon the land uses associated with each drainage area, using published land use pollutant loading factors for Total Phosphorus, Total Nitrogen, Total Suspended Solids and Fecal Coliform Bacteria. Pollutant load reductions were estimated for each individual drainage area based on published pollutant removal efficiencies for various types of BMPS and the sizing of each individual BMP. Pollutant load reduction calculations are provided in **Attachment 10**.

The retrofit design concepts, including planning-level costs and estimated pollutant removals, are presented on the concept sheets in **Attachment 8**. Each concept sheet includes a general site description, the proposed retrofit concept, field images with renderings of retrofit opportunities (where available), typical details of recommended BMPs, and estimates of pollutant removal, runoff reduction, and cost.

The green infrastructure retrofit concepts presented in this technical memorandum provide potential on-the-ground projects for future implementation. They also serve as examples of the types of projects that could be implemented at similar sites throughout the watershed. It is important to emphasize that these design concepts are not detailed designs. Individual project proponents (e.g., municipalities, private property owners, developers) are responsible for evaluating the ultimate feasibility of, as well as design and permitting for, these and similar site-specific concepts.

**Attachments:**
- Attachment 1: Example Site Screening Selection – Westerly, Rhode Island
- Attachment 2: Spreadsheet of Potential Green Infrastructure Retrofit Sites
- Attachment 3: Aerial Photographs of Selected Retrofit Sites
- Attachment 4: Watershed Map of Potential Green Infrastructure Retrofit Sites
- Attachment 5: Subwatershed Maps with Potential Green Infrastructure Retrofits
- Attachment 6: Field Sheets
- Attachment 7: Field Photos
- Attachment 8: Retrofit Conceptual Designs
- Attachment 9: Planning Level Cost Estimates
- Attachment 10: Pollutant Loading and Reduction Calculations
Attachment 1

Example Site Screening Selection – Westerly, Rhode Island
Example of Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed

Legend

Selection Criteria:
- Publicly Owned Land (283)
- Pawcatuck Watershed
- Subwatershed Boundary

Publicly owned property includes Institutional, Developed Recreation, Cemeteries and Airports in RI; and State/Municipal Parks and Open Space in CT.

(RI Facilities Layers were also considered: Colleges/Universities, fire stations, schools, hospitals, libraries, SCORP sites, state facilities, town and city halls.)
Example of Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB soils and Development.

Blue-shaded parcels have AB soils and development. Percent Impervious is used later in the selection process to identify potential sites with a high percentage of development.
Example of Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with a SHWT > 6 Feet.

Legend

Selection Criteria: SHWT > 6 feet

- **No** (12)
- **Yes** (163)

Blue-shaded parcels have AB soils, development, and SHWT depth > 6 feet.
Example of Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed within 1/2 mile of Impaired Surface Waters

Blue-shaded parcels have AB soils, development, SHWT depth > 6 feet, and 1/2 mile to Water Quality Impairment.

Legend

Selection Criteria: Half Mile to WQ Impairment

Yes (129)

Distance to Impaired Surface Water

1/4 Mile

1/2 Mile

Pawcatuck Watershed

Subwatershed Boundary

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Attachment 2

Spreadsheet of Potential Green Infrastructure Retrofit Sites
<table>
<thead>
<tr>
<th>Site ID#</th>
<th>Site Name</th>
<th>ADDRESS</th>
<th>Town</th>
<th>Lat</th>
<th>Long</th>
<th>ACRES</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Vin Gormley Trailhead Parking</td>
<td>24 Sanctuary Road</td>
<td>Charlestown</td>
<td>41.3802</td>
<td>-71.677</td>
<td>4.0</td>
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<td>99</td>
<td>Burlingame Management Area</td>
<td>Burlingame State Park Rd</td>
<td>Charlestown</td>
<td>41.373</td>
<td>-71.693</td>
<td>4.9</td>
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<td>128</td>
<td>Shannock Baptist Church</td>
<td>1632 Shannock Road</td>
<td>Charlestown</td>
<td>41.446</td>
<td>-71.635</td>
<td>0.7</td>
</tr>
<tr>
<td>129</td>
<td>St. Mary's Catholic Church</td>
<td>451-455 Carolina Back Road</td>
<td>Charlestown</td>
<td>41.453</td>
<td>-71.66</td>
<td>2.1</td>
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<td>217</td>
<td>Burlingame Management Area</td>
<td>Burlingame State Park Rd</td>
<td>Charlestown</td>
<td>41.371</td>
<td>-71.692</td>
<td>14.5</td>
</tr>
<tr>
<td>281</td>
<td>Charlestown Elementary School</td>
<td>363 Carolina Back Road</td>
<td>Charlestown</td>
<td>41.447</td>
<td>71.655</td>
<td>6.9</td>
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<tr>
<td>6</td>
<td>The Saint Katera Tekakwitha Catholic Church</td>
<td>Exeter Rd</td>
<td>Exeter</td>
<td>41.545</td>
<td>-71.527</td>
<td>3.7</td>
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<tr>
<td>73</td>
<td>Exeter Town Animal Shelter</td>
<td>165 S. County Trail</td>
<td>Exeter</td>
<td>41.55</td>
<td>71.529</td>
<td>3.1</td>
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<td>Adjacent to Animal Shelter</td>
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<td>Exeter</td>
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<td>-71.531</td>
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<td>Unidentified building with parking lot</td>
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<td>41.579</td>
<td>-71.584</td>
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<td>173</td>
<td>Exeter Town Hall</td>
<td>675 Ten Rod Road</td>
<td>Exeter</td>
<td>41.585</td>
<td>-71.578</td>
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<tr>
<td>206</td>
<td>Parking Lot Near Lake</td>
<td>406 Arcadia Road</td>
<td>Exeter</td>
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<td>41.513</td>
<td>-71.706</td>
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<td>Wyoming Dam Fishing Access</td>
<td>Bridge Street</td>
<td>Hopkinton</td>
<td>41.515</td>
<td>-71.703</td>
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<td>North Stonington</td>
<td>41.439</td>
<td>-71.886</td>
<td>10.3</td>
</tr>
<tr>
<td>194</td>
<td>North Stonington Superintendent Elementary School</td>
<td>313-317 Norwich-Westerly Road</td>
<td>North Stonington</td>
<td>41.439</td>
<td>-71.887</td>
<td>45.3</td>
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<tr>
<td>191</td>
<td>West Vine Street School</td>
<td>25 West Vine Street</td>
<td>Pawcatuck</td>
<td>41.386</td>
<td>-71.842</td>
<td>39.53</td>
</tr>
<tr>
<td>136</td>
<td>Richmond Carolina Fire District</td>
<td>203 Richmond Town House Road</td>
<td>Richmond</td>
<td>41.472</td>
<td>-71.664</td>
<td>1.2</td>
</tr>
<tr>
<td>282</td>
<td>Charho Regional H.S/M.S and Career Center</td>
<td>453 Switch Road</td>
<td>Richmond</td>
<td>41.449</td>
<td>-71.696</td>
<td>39.2</td>
</tr>
<tr>
<td>157</td>
<td>Richmond Police Department</td>
<td>1168 Main Street</td>
<td>Richmond</td>
<td>41.515</td>
<td>-71.699</td>
<td>1.8</td>
</tr>
<tr>
<td>159</td>
<td>Rhode Island State Police</td>
<td>54 Nooseneck Hill Road</td>
<td>Richmond</td>
<td>41.52</td>
<td>-71.694</td>
<td>1.1</td>
</tr>
<tr>
<td>286</td>
<td>Richmond Town Hall and Elementary School</td>
<td>5 Richmond Townhouse</td>
<td>Richmond</td>
<td>41.499</td>
<td>-71.661</td>
<td>9.13</td>
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<tr>
<td>284</td>
<td>Boss Arena</td>
<td>1 Keeney Road</td>
<td>South Kingstown</td>
<td>41.484</td>
<td>-71.538</td>
<td>24.2</td>
</tr>
<tr>
<td>137</td>
<td>Great Swamp Management Area</td>
<td>160-170 Great Neck Road</td>
<td>South Kingstown</td>
<td>41.474</td>
<td>-71.575</td>
<td>3.7</td>
</tr>
<tr>
<td>142</td>
<td>West Kingston Fire Department</td>
<td>390 Fairgrounds Road</td>
<td>South Kingstown</td>
<td>41.487</td>
<td>-71.559</td>
<td>2.4</td>
</tr>
<tr>
<td>143</td>
<td>West Kingstown Baptist Church</td>
<td>263 Wailes Corner Road</td>
<td>South Kingstown</td>
<td>41.49</td>
<td>-71.557</td>
<td>2.0</td>
</tr>
<tr>
<td>Site ID#</td>
<td>Site Name</td>
<td>Address</td>
<td>Town</td>
<td>Lat</td>
<td>Long</td>
<td>Acres</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------</td>
<td>--------------------------------</td>
<td>-----------------</td>
<td>--------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>229</td>
<td>Tuckertown Park</td>
<td>101 Tuckertown Park Drive</td>
<td>South Kingstown</td>
<td>41.426</td>
<td>-73.555</td>
<td>24.4</td>
</tr>
<tr>
<td>239</td>
<td>Ryan Center–Meade Stadium</td>
<td>West Alumni Avenue</td>
<td>South Kingstown</td>
<td>41.488</td>
<td>-71.536</td>
<td>96.2</td>
</tr>
<tr>
<td>139</td>
<td>J &amp; D's West Kingston Services/ Courthouse Center for the Arts</td>
<td>3481 Kingstown Road</td>
<td>South Kingstown</td>
<td>41.484</td>
<td>-71.555</td>
<td>3.1</td>
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<tr>
<td>152</td>
<td>South Kingstown Nursing and Rehab</td>
<td>2115 South County Trail</td>
<td>South Kingstown</td>
<td>41.503</td>
<td>-71.563</td>
<td>4.3</td>
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<tr>
<td>283</td>
<td>West Kingston Elementary School</td>
<td>3119 Ministerial Road</td>
<td>South Kingstown</td>
<td>41.479</td>
<td>-71.551</td>
<td>7.7</td>
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<td>285</td>
<td>U.R.I.</td>
<td>210 Flagg Road</td>
<td>South Kingstown</td>
<td>41.492</td>
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<td>273.8</td>
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<tr>
<td>183</td>
<td>West Broad Street School</td>
<td>W. Broad Street</td>
<td>Stonington</td>
<td>41.377</td>
<td>-71.838</td>
<td>2.8</td>
</tr>
<tr>
<td>201</td>
<td>Unidentified parking Lot</td>
<td>350 Liberty Street</td>
<td>Stonington</td>
<td>41.398</td>
<td>-71.846</td>
<td>5.7</td>
</tr>
<tr>
<td>179</td>
<td>Unidentified building and parking lot</td>
<td>302 Victory Highway</td>
<td>West Greenwich</td>
<td>41.639</td>
<td>-71.697</td>
<td>0.6</td>
</tr>
<tr>
<td>92</td>
<td>Watch Hill Fire Department</td>
<td>222 Watch Hill Rd</td>
<td>Westerly</td>
<td>41.317</td>
<td>-71.848</td>
<td>0.9</td>
</tr>
<tr>
<td>93</td>
<td>U.S. Post Office</td>
<td>110 Tom Harvey Road</td>
<td>Westerly</td>
<td>41.342</td>
<td>-71.816</td>
<td>3.5</td>
</tr>
<tr>
<td>95</td>
<td>Westerly Fire Department</td>
<td>180 Beach Street</td>
<td>Westerly</td>
<td>41.353</td>
<td>-71.826</td>
<td>1.0</td>
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<tr>
<td>98</td>
<td>Unidentified Church</td>
<td>45 Elm Street</td>
<td>Westerly</td>
<td>41.372</td>
<td>-71.829</td>
<td>3.7</td>
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<tr>
<td>101</td>
<td>Pilgrim Baptist Church- Central Nursery School</td>
<td>16 Elm Street</td>
<td>Westerly</td>
<td>41.375</td>
<td>-71.827</td>
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<tr>
<td>102</td>
<td>Grace United Methodist Church</td>
<td>10 Park Ave</td>
<td>Westerly</td>
<td>41.379</td>
<td>-71.824</td>
<td>1.0</td>
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<tr>
<td>103</td>
<td>Immaculate Conception Catholic Church</td>
<td>111 High Street</td>
<td>Westerly</td>
<td>41.381</td>
<td>-71.825</td>
<td>2.5</td>
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<tr>
<td>107</td>
<td>Westerly Town Water Department</td>
<td>68 White Rock Road</td>
<td>Westerly</td>
<td>41.398</td>
<td>-71.843</td>
<td>4.3</td>
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<tr>
<td>108</td>
<td>Bradford School</td>
<td>15 Church Street</td>
<td>Westerly</td>
<td>41.398</td>
<td>-71.895</td>
<td>4.5</td>
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<tr>
<td>109</td>
<td>Westerly Packing</td>
<td>15 Springfield Road</td>
<td>Westerly</td>
<td>41.997</td>
<td>-71.836</td>
<td>2.0</td>
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<tr>
<td>110</td>
<td>Springfield Elementary School</td>
<td>39 Springfield Road</td>
<td>Westerly</td>
<td>41.401</td>
<td>-71.829</td>
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<tr>
<td>111</td>
<td>Bradford Social Club</td>
<td>2 Bowling Lane</td>
<td>Westerly</td>
<td>41.404</td>
<td>-71.749</td>
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<td>199</td>
<td>Westerly State Airport</td>
<td>62 Airport Road</td>
<td>Westerly</td>
<td>41.357</td>
<td>-71.811</td>
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<td>211</td>
<td>Rotary Park</td>
<td>near 90 Airport Road</td>
<td>Westerly</td>
<td>41.346</td>
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<tr>
<td>216</td>
<td>Public Complex</td>
<td>99 Wilson Street</td>
<td>Westerly</td>
<td>41.367</td>
<td>-71.815</td>
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<td>221</td>
<td>Area adjacent to Ocean Community YMCA</td>
<td>77-85 High Street</td>
<td>Westerly</td>
<td>41.379</td>
<td>-71.828</td>
<td>13.7</td>
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<tr>
<td>223</td>
<td>Craig Field Recreation Complex</td>
<td>Mountain Avenue</td>
<td>Westerly</td>
<td>41.386</td>
<td>-71.822</td>
<td>6.6</td>
</tr>
<tr>
<td>224</td>
<td>Large Parking Lot for Football Field</td>
<td>60 Old Hopkinson Road</td>
<td>Westerly</td>
<td>41.387</td>
<td>-71.807</td>
<td>5.3</td>
</tr>
<tr>
<td>271</td>
<td>The Westerly Hospital</td>
<td>25 Wells Street</td>
<td>Westerly</td>
<td>41.362</td>
<td>-71.825</td>
<td>15.1</td>
</tr>
<tr>
<td>272</td>
<td>Westerly Senior Citizens Center and State Street School</td>
<td>35 State Street</td>
<td>Westerly</td>
<td>41.365</td>
<td>-71.824</td>
<td>8.8</td>
</tr>
<tr>
<td>273</td>
<td>St. Pius X School</td>
<td>32 Elm Street</td>
<td>Westerly</td>
<td>41.373</td>
<td>-71.828</td>
<td>6.7</td>
</tr>
<tr>
<td>274</td>
<td>Westerly High School</td>
<td>23 Ward Avenue</td>
<td>Westerly</td>
<td>41.375</td>
<td>-71.818</td>
<td>20.5</td>
</tr>
<tr>
<td>275</td>
<td>Westerly Town Hall</td>
<td>45 Broad Street</td>
<td>Westerly</td>
<td>41.376</td>
<td>-71.829</td>
<td>6.0</td>
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<tr>
<td>276</td>
<td>93 Tower Street</td>
<td>93 Tower Street</td>
<td>Westerly</td>
<td>41.379</td>
<td>-71.814</td>
<td>5.9</td>
</tr>
<tr>
<td>277</td>
<td>Westerly Health Center</td>
<td>280 High Street</td>
<td>Westerly</td>
<td>41.396</td>
<td>-71.822</td>
<td>5.1</td>
</tr>
<tr>
<td>278</td>
<td>Possible Bus Depot</td>
<td>8 Springfield Road</td>
<td>Westerly</td>
<td>41.401</td>
<td>-71.838</td>
<td>5.4</td>
</tr>
</tbody>
</table>
Attachment 3

Aerial Photographs of Selected Retrofit Sites
The Saint Kateria Tekakwitha Catholic Church  
Exeter Road  
Exeter, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
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Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Immaculate Conception Catholic Church
111 High Street
Westerly, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Springbrook Elementary School
39 Springbrook Road
Westerly, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
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Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Trinity Lutheran Church
Corner of Rte 116 and Wellstown Road
Hopkinton, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Shannock Baptist Church
1632 Shannock Road
Charlestown, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
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Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Wood River Health Services
823 Main Street
Hopkinton, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Hope Valley- Wyoming Fire District
996 Main Street
Hopkinton, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
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Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Exeter Town Hall
675 Ten Rod Road
Exeter, RI

Legend
- Railroad
- Green Infrastructure Sites
- 100 YEAR FLOOD ZONE
- 500 YEAR FLOOD ZONE

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Small Building with Parking Lot
302 Victory Highway
West Greenwich, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
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Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Parking lot near lake
406 Arcadia Road
Exeter, RI

Legend
- Railroad
- Green Infrastructure Sites
- Flood Zone
  - 100 YEAR FLOOD ZONE
  - 500 YEAR FLOOD ZONE

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Baseball Fields/ parking lot at Public Complex
99 Wilson Street
Westerly, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Burlingame Management Area
Burlingame State Park Road/ Legiontown Road
Charlestown, RI

Legend

- Railroad
- Green Infrastructure Sites
- 100 YEAR FLOOD ZONE
- 500 YEAR FLOOD ZONE

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
跳线河娱乐部门
188 主街
霍普金顿，RI

潜在的绿色基础设施地点在伍德-波卡特克溪流域与AB土壤，
发展，SHWT > 6英尺，距离WQ影响1/2英里
和>= 30％不透水
OR IC >= 1英亩
Tuckertown Park
1010 Tuckertown Park Drive
South Kingstown, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

Legend
- Railroad
- Green Infrastructure Sites
- Flood Zone
  - 100 YEAR FLOOD ZONE
  - 500 YEAR FLOOD ZONE

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Abandoned parking lot
894 Main Street (Rte 3/ Nooseneck Hill Road)
Hopkinton, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
The Westerly Hospital
25 Wells Street
Westerly, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
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Charlestown Elementary School
363 Carolina Back Road
Charlestown, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
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West Kingston Elementary School
3119 Ministerial Road
South Kingstown, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Cnes DS, USDA, USGS, AEX, Airgeo, MapmyIndia, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Railroad
- Green Infrastructure Sites
- Flood Zone
  - 100 YEAR FLOOD ZONE
  - 500 YEAR FLOOD ZONE

Document Path: J:\GIS\P2011\170B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Wood River Preschool/ Hope Valley Elementary School
1059 Main Street
Hopkinton, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
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Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Attachment 4

Watershed Map of Potential Green Infrastructure Retrofit Sites
Distribution of Potential Green Infrastructure Sites within the Wood-Pawcatuck Watershed.

Legend
- Green Infrastructure Sites
- Town Boundary
- Wood-Pawcatuck Watershed
- Subwatershed Boundary
Attachment 5

Example Streets Screening Selection – Westerly, Rhode Island
Ashaway River-
Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed
Beaver River-
Prioritization of Potential Street/Right-of-Way Green Infrastructure
Retrofits in the Wood-Pawcatuck Watershed

Legend
Potential Street/Right-of-Way Green Infrastructure Retrofits
- Low Priority
- Medium Priority
- High Priority

Legend
- Municipal Roads
- Railroad
- State Route
- US Route
- Interstate

- Streams/Rivers
- Lake/Pond Reservoir
- Town Boundary
- Wood-Pawcatuck Watershed Boundary
- Subwatershed Boundary

Source: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,
USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Chickasheen River - Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend

Potential Street/Right-of-Way Green Infrastructure Retrofits
- Municipal Roads
- Railroad
- State Route
- US Route
- Interstate
- Streams/Rivers
- Lake Pond/Reservoir
- Town Boundary
- Wood-Pawcatuck Watershed Boundary
- Subwatershed Boundary

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Chipuxet River—Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend

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<th>Priority Level</th>
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Autogratis, IGN, GIR, Wildlife, and the GIS User Community
Lower Pawcatuck River—Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend

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<th>Interstate</th>
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Lower Wood River-
Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend
Potential Street/Right-of-Way Green Infrastructure Retrofits
Green: Low Priority
Yellow: Medium Priority
Red: High Priority

Legend
Municipal Roads
Railroad
State Route
US Route
Interstate
Streams/Rivers
Lake Pond Reservoir
Town Boundary
Wood-Pawcatuck Watershed Boundary
Subwatershed Boundary

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Middle Pawcatuck River-
Prioritization of Potential Street/Right-of-Way Green Infrastructure
Retrofits in the Wood-Pawcatuck Watershed

Legend
Potential Street/Right-of-Way Green Infrastructure
Retrofits
- Municipal Roads
- Railroad
- State Route
- US Route
- Interstate
- Streams/Rivers
- Lake/Pond Reservoir
- Town Boundary
- Wood-Pawcatuck Watershed Boundary
- Subwatershed Boundary

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Queen Usquepaug River-
Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend
Potential Street/Right-of-
Way Green Infrastructure Retrofits
- Municipal Roads
- Railroad
- State Route
- US Route
- Interstate
- Streams/Rivers
- Lake/Pond Reservoir
- Town Boundary
- Wood-Pawcatuck Watershed Boundary
- Subwatershed Boundary
Shunock River-
Prioritization of Potential Street/Right-of-Way Green Infrastructure
Retrofits in the Wood-Pawcatuck Watershed

Legend

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<td>Wood-Pawcatuck Watershed Boundary</td>
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<td>Red</td>
<td>Red</td>
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<td>Lake/Pond Reservoir</td>
<td>Grey</td>
<td>Wood-Pawcatuck Watershed Boundary</td>
<td>Subwatershed Boundary</td>
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, GeoEye-IGN, IGP, Swisstopo, and the GIS User Community
Upper Pawcatuck River-Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

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<td>US Route</td>
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<tr>
<td>Low Priority</td>
<td>High Priority</td>
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Upper Wood River - Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend
- Municipal Roads
- State Route
- US Route
- Interstate
- Streams/Rivers
- Lake/Pond Reservoir
- Town Boundary
- Wood-Pawcatuck Watershed Boundary
- Subwatershed Boundary

Potential Street/Right-of-Way Green Infrastructure Retrofits
- Low Priority
- Medium Priority
- High Priority

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Attachment 6

Field Sheets
## Retrofit Reconnaissance Investigation

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6</td>
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</tbody>
</table>

### Date: 7/5/16  
**ASSESSED BY:** QW/WS  
**CAMERA ID:** C  
**PICTURES:**

### GPS ID: LMK ID: 
**LAT:**  
**LNG:**

### Site Description
- **Name:** Saint Katharina Tekakunta Catholic Church  
- **Address:**  
  - Ownership:  
    - [ ] Public  
    - [ ] Private  
    - [ ] Unknown  
    - [ ] Local  
    - [ ] State  
    - [ ] DOT  
    - [ ] Other  
- **Corresponding USSR/USA Field Sheet?**  
  - [ ] Yes  
  - [ ] No  
  - If yes, Unique Site ID:

### Proposed Retrofit Location:
- **Storage**
  - [ ] Existing Pond  
  - [ ] Below Outfall  
  - [ ] In Road ROW  
  - [ ] Other:

- **On-Site**
  - [ ] Hotspot Operation  
  - [ ] Small Parking Lot  
  - [ ] Individual Street  
  - [ ] Underground  
  - [ ] Individual Rooftop  
  - [ ] Small Impervious Area  
  - [ ] Landscape / Hardscape  
  - [ ] Other:

### Drainage Area to Proposed Retrofit
- **Drainage Area ≈**
- **Imperviousness ≈**
- **Impervious Area ≈**
- **Notes:**

### Existing Stormwater Management
- **Existing Stormwater Practice:**  
  - [ ] Yes  
  - [X] No  
  - [ ] Possible

- **Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**
  - All runoff drains w/ no erosion

- **Existing Head Available and Points Where Measured:**
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Other: ____________________________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other: ____________________________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

### SITE CONSTRAINTS

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other: ____________________________

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

**Access:**
- [ ] No Constraints
- [ ] Constrained due to
- [ ] Slope
- [ ] Utilities
- [ ] Tree Impacts
- [ ] Structures
- [ ] Property Ownership
- [ ] Other: ____________________________

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes

**Possible:**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other: ____________________________

**Potential Permitting Factors:**
- [ ] Dam Safety Permits Necessary
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Wetlands
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to a Stream
- [ ] Probable
- [ ] Not Probable
- [ ] Floodplain Fill
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Forests
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Specimen Trees
- [ ] Probable
- [ ] Not Probable
- [ ] How many?
- [ ] Approx. DBH: __________________

**Other factors:**

**Soils:**
- [ ] Soil auger test holes: ________
- [ ] Evidence of poor infiltration (clays, fines): ________
- [ ] Evidence of shallow bedrock: ________
- [ ] Evidence of high water table (geleying, saturation): ________

- [ ] Yes
- [ ] No
### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

- Other: ___

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

- Site candidate for further investigation: ☐ YES ☐ NO ☐ MAYBE
- Is site candidate for early action project(s): ☐ YES ☐ NO ☐ MAYBE
- If no, site candidate for other restoration project(s): ☐ YES ☐ NO ☐ MAYBE

If yes, type(s): ___

Unique Site ID: 6
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre
**SITE DESCRIPTION**

Name: Vin Gormley Trailhead Parking
Address: 24 Conchry Road, Charlestown, RI
Ownership: □ Public □ Private □ Unknown
If Public, Government Jurisdiction: □ Local □ State □ DOT □ Other: __________________________

Corresponding USSR/USA Field Sheet?  □ Yes □ No  If yes, Unique Site ID: __________________________

**PROPOSED RETROFIT LOCATION**

**Storage**
- □ Existing Pond
- □ Below Outfall
- □ In Road ROW
- Other: __________________________
- □ Above Roadway Culvert
- □ In Conveyance System
- □ Near Large Parking Lot

**On-Site**
- □ Hotspot Operation
- □ Small Parking Lot
- Individual Street
- □ Underground
- □ Individual Rooftop
- □ Small Impervious Area
- □ Landscape / Hardscape
- Other: __________________________

**DRAINAGE AREA TO PROPOSED RETROFIT**

Drainage Area ≈ __________________________
Imperviousness ≈ __________________________ %
Impervious Area ≈ __________________________

**NOTES**
- ___ extent of uphill drainage boundary

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice: □ Yes □ No □ Possible
If Yes, Describe:

- Drainage toward pond routed thru pipe to woods, but pipe is half-filled with go 2-3 catch basins in parking lot

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Severe erosion downslope of parking lot thru picnic area catch basins capture some water from parking lot + discharge where? Upper edge of parking lot bordered by sediment basin
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- Water Quality
- Recharge
- Channel Protection
- Flood Control
- Demonstration / Education
- Repair
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Infiltration under parking lot
- Conversion of existing swales to bioswales

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
  - Other:

**Conflicts with Existing Utilities:**
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Probable
- Not Probable
- Impacts to Wetlands
- Probable
- Not Probable
- Impacts to a Stream
- Probable
- Not Probable
- Floodplain Fill
- Probable
- Not Probable
- Impacts to Forests
- Probable
- Not Probable
- Impacts to Specimen Trees
- Probable
- Not Probable
- How many?________________
- Approx. DBH

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

**Unique Site ID:** 31
Parking lot normally 50-75% full during summer months

High priority site

<table>
<thead>
<tr>
<th>FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT</th>
</tr>
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<tbody>
<tr>
<td>☑ Confirm property ownership</td>
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</tr>
<tr>
<td>☑ Obtain utility mapping</td>
</tr>
<tr>
<td>☑ Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>☑ Confirm soil types</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need to know soil infiltrate type beneath parking lot</td>
</tr>
</tbody>
</table>

| SITE CANDIDATE FOR FURTHER INVESTIGATION:       |
| ☑ YES  ☐ NO  ☐ MAYBE                           |
| IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): |
| ☑ YES  ☐ NO  ☐ MAYBE                           |
| IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): |
| ☑ YES  ☐ NO  ☐ MAYBE                           |
| IF YES, TYPE(S):                               |
Vin Gormley Trailhead Parking
24 Sanctuary Road
Charlestown, RI

Legend
- Railroad
- Flood Zone
  - 100 YEAR FLOOD ZONE
  - 500 YEAR FLOOD ZONE

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

Part of Burline State Park
Retrofit Reconnaissance Investigation

**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 284-41-239

**DATE:** 6/3/16  **ASSESSED BY:** RW/WS  **CAMERA ID:** C  **PICTURES:** 9:19-9:45

**GPS ID:**  **LMK ID:**  **LAT:**  **LONG:**

**SITE DESCRIPTION**

Name: Bass Area  **Address:** 1 Keene Road, South Kingston, RI

Ownership: Public  **State:**  Private  **Other:**

**If Public, Government Jurisdiction:**

Corresponding USSR:

**PROPOSED RETROFIT LOCATION:**

Storage:
- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Other:

On-Site:
- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Landscape / Hardscape
- [ ] Other:

**DRAINAGE AREA TO PROPOSED RETROFIT:**

- **Drainage Area:**
  - Imperviousness: __________ %
  - Impervious Area: ________

**Drainage Area Land Use:**

- [ ] Residential
- [ ] SFH (< 1 ac lots)
- [ ] SFH (> 1 ac lots)
- [ ] Townhouses
- [ ] Multi-Family
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**EXISTING STORMWATER MANAGEMENT:**

Existing Stormwater Practice: [ ] Yes  [ ] No  [ ] Possible

If Yes, Describe:

\[\text{CBS, scattered, pavement damaged}\]

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Large parking lots w/ grey infrastructure only. CBS widely scattered!

Bumps & parking lot corners badly eroded

Building downsports go into ground

CBSs, scattered, surrounding pavement damaged

**Existing Head Available and Points Where Measured:**

No access to 239 due to Special Olympics
### Retrofit Reconnaissance Investigation

#### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Repair
- Channel Protection
- Other: [blank]
- Flood Control

**Retrofit Volume Computations - Target Storage:** [signature]

**Retrofit Volume Computations - Available Storage:** [signature]

#### Proposed Treatment Option:
- Extended Detention
- Wet Pond
- Infiltration
- Created Wetland
- Bioretention
- Other: permeable pavement

#### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:
- Convert grass medians/edges to bioretention
- Convert parking to permeable
- Underground Infiltration
- curb cuts for sheet flow
- Route downsputs to rain gardens along tennis courts

### Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Other: [signature]

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Tree Impacts
  - Utilities
  - Structures
  - Property Ownership
  - Other: use

#### Conflicts with Existing Utilities:

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Sewer</td>
<td>☒</td>
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<tr>
<td>Water</td>
<td>☒</td>
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<tr>
<td>Gas</td>
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<td>Cable</td>
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<td>Electric</td>
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<tr>
<td>Electric to Streetlights</td>
<td>☒</td>
</tr>
<tr>
<td>Overhead Wires</td>
<td>☒</td>
</tr>
<tr>
<td>Other:</td>
<td>☒</td>
</tr>
</tbody>
</table>

#### Potential Permitting Factors:

- Dam Safety Permits Necessary: Probable
- Impacts to Wetlands: Probable
- Impacts to a Stream: Probable
- Floodplain Fill: Probable
- Impacts to Forests: Probable
- Impacts to Specimen Trees: Probable

**Other factors:**
- Depth to groundwater [signature]

#### Soils:
- Soil auger test holes: Yes
- Evidence of poor infiltration (clays, fines): Yes
- Evidence of shallow bedrock: Yes
- Evidence of high water table (gleying, saturation): Yes

**Unique Site ID:** [blank]
Converting grass strips to bioretention
would require small loss of driving/parking space;
would help w/maintenance of pavement around
catch basins

URI already has clear interest in stormwater management

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

☐ Confirm property ownership
☐ Confirm drainage area
☐ Confirm drainage area impervious cover
☐ Confirm volume computations
☐ Complete concept sketch
☐ Obtain existing stormwater practice as-buils
☐ Obtain site as-buils
☐ Obtain detailed topography
☐ Obtain utility mapping
☐ Confirm storm drain invert elevations
☐ Confirm soil types

INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

SITE CANDIDATE FOR FURTHER INVESTIGATION: ☑ YES ☐ No ☐ Maybe
IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): ☐ Yes ☑ No ☐ Maybe
If No, site candidate for other restoration project(s): ☐ Yes ☑ No ☐ Maybe
If Yes, type(s):
IN PARKING LOT - CONVERT ISLANDS WITH NO TREES TO BIORETENTION; KEEP ISLANDS/STRIPS WITH TREES; POSSIBLE SITE FOR UNDERGROUND INFILTRATION

PROPOSED BIOSWALEs BETWEEN BUILDING AND TENNIS COURTS

PROPOSED BIORETENTION

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% impervious OR IC >= 1 Acre
**Retrofit Reconnaissance Investigation (RRI)**

**WATERSHED:**

<table>
<thead>
<tr>
<th>Watershed:</th>
<th>Subwatershed:</th>
<th>Unique Site ID:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>50</td>
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</tbody>
</table>

**DATE:** 06/16/16  
**ASSESSED BY:** Ruling  
**CAMERA ID:** C  
**PICTURES:** 250-1315

**GPS ID:**  
**LMK ID:**  
**LAT:**  
**LONG:**

**SITE DESCRIPTION**

**Name:** Wyoming Dam Fishing Access  
**Address:** Bridge St, Hayskinner

**Ownership:**  
- [ ] Public  
- [X] Private  
- [X] State  
- [ ] DOT  
- [ ] Other:

**If Public, Government Jurisdiction:**  
- [X] Federal  
- [ ] State  
- [ ] DOT  
- [ ] Other:

**Corresponding USSR/USA Field Sheet:**  
- [X] Yes  
- [ ] No  
- [ ] If yes, Unique Site ID:

**Proposed Retrofit Location:**

**Storage:**  
- [ ] Existing Pond  
- [X] Above Roadway Culvert  
- [X] In Conveyance System  
- [ ] In Road ROW  
- [ ] Near Large Parking Lot  
- [ ] Other:

**On-Site:**  
- [ ] Hotspot Operations  
- [X] Small Parking Lot  
- [ ] Individual Street  
- [ ] Underground  
- [ ] Other: Boat Launch

**Drainage Area to Proposed Retrofit**

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Imperviousness</th>
<th>Impervious Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>≈</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Drainage Area Land Use:**  
- [ ] Institutional  
- [ ] Residential  
- [ ] Commercial  
- [ ] Industrial  
- [ ] Transport-Related  
- [ ] Park  
- [ ] Undeveloped  
- [ ] Other:

**Existing Stormwater Management**

**Existing Stormwater Practice:**  
- [X] No  
- [ ] Possible

**If Yes, Describe:**

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Water from adjacent inn and road parking lot drains to site.
- Mills & erosion in on-site unimproved parking lot.
- Deep catch basins on adjacent road not connected.

**Existing Head Available and Points Where Measured:**
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- [x] Water Quality
- [ ] Recharge
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: _______________________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Infiltration
- [ ] Created Wetland
- [ ] Swale
- [x] Bioretention
- [ ] Other: _______________________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

"Pave boat launch w/ ACER (open cell) to stabilize (gravel-filled)
bioretention @ upper end of lot + around flow area curbs to capture road runoff + additional runoff from irrigation to run overflow to storm system"

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- [x] Commercial
- [ ] Residential
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other: _______________________

**Possible Conflicts Due to Adjacent Land Use?**
- [x] Yes
- [ ] No

**Conflicts with Existing Utilities:**
- [x] Yes
- [ ] Unknown
- [ ] Possible

- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Overhead Wires
- [ ] Underground Wires
- [ ] Other: _______________________

**Potential Permitting Factors:**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Probable</th>
<th>Not Probable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dam Safety Permits Necessary</td>
<td>[ ]</td>
<td>[x]</td>
</tr>
<tr>
<td>Impacts to Wetlands</td>
<td>[x]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Impacts to a Stream</td>
<td>[x]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Floodplain Fill</td>
<td>[x]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Impacts to Forests</td>
<td>[x]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
<td>[x]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

- How many? __________
- Approx. DBH __________

**Other factors:**

**Soils:**
- Soil auger test holes: [ ] Yes [ ] No
- Evidence of poor infiltration (clays, fines): [ ] Yes [ ] No
- Evidence of shallow bedrock: [ ] Yes [ ] No
- Evidence of high water table (gleysing, saturation): [ ] Yes [ ] No

**Unique Site ID:** __________
### DESIGN OR DELIVERY NOTES

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT:**

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-buils
- [ ] Obtain site as-buils
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

- [ ] Other:

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

**SITE CANDIDATE FOR FURTHER INVESTIGATION:**

- [ ] YES
- [ ] NO
- [ ] MAYBE

**IF SITE CANDIDATE FOR EARLY ACTION PROJECT(S):**

- [ ] YES
- [ ] NO
- [ ] MAYBE

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):**

- [ ] YES
- [ ] NO
- [ ] MAYBE

**IF YES, TYPE(S):**

- [ ]

---

Unique Site ID: _____
Stabilize ramp and parking area with open cell infiltrating pavers to reduce erosion.

Existing catch basin

Bioretention area could pull runoff from road surface and also adjacent parking lot. Overflow to existing catchbasin on Bridge St.
WATERSHED: |
---|---|---|---|---|
SUBWATERSHED: | UNIQUE SITE ID: |
---|---|
DATE: 6/16/16 | 73 |
ASSESSED BY: RW/WG | |
CAMERA ID: C | |
PICTURES: 8:00-8:10 | |
GPS ID: | LMK ID: |
---|---|
SITE DESCRIPTION |
---|
Name: Exeter Animal Shelter |
Address: 165 South County Trail, Exeter |
Ownership: Public |
If Public, Government Jurisdiction: Local |
Corresponding USSR/USA Field Sheet: Yes |
If yes, Unique Site ID: |
Proposed Retrofit Location: |
---|---|---|
Storage | On-Site | Other: |
Existing Pond | Hotspot Operation | DOT |
Below Outfall | Small Parking Lot | Other: |
In Road ROW | Individual Street | |
Near Large Parking Lot | Landscape / Hardscape | |
Other: | Other: | |
DRAINAGE AREA TO PROPOSED RETROFIT |
---|---|
Drainage Area ≈ |
Imperviousness ≈ % |
Impervious Area ≈ |
Drainage Area Land Use: |
---|---|---|---|---|---|---|---|
Residential | Institutional | Yes | |
SFH (< 1 ac lots) | Industrial | No | |
SFH (> 1 ac lots) | Transport-Related | |
Townhouses | Park | |
Multi-Family | Undeveloped | |
Commercial | Other: | |
Notes: |
EXISTING STORMWATER MANAGEMENT |
---|
Existing Stormwater Practice: Yes |
If Yes, Describe: |
Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance: |
Parking lot + basketball court + roofs drain to grass; grassy area is mowed and puddled due to recent rain. No formal infrastructure or outfalls to nearby ditches. Basement downsputs empty onto ground |
Existing Head Available and Points Where Measured: |
Row drains large portion of highway immediately before steep drop |
Unique Site ID: 73
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Repair
- Recharge
- Channel Protection
- Flood Control
- Other:  

**Retrofit Volume Computations - Target Storage:**

- [ ]  

**Retrofit Volume Computations - Available Storage:**

- [ ]  

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Other:  

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Swales in ROW; bioretention area of parking lot  
- High potential for recharge  

---

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:  

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

- Hard to see these trees  

**Access:**
- [ ] No Constraints
- Constrained due to:
  - [ ] Slope
  - [ ] Utilities
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Space
  - [ ] Tree Impacts
  - [ ] Other:  

**Conflicts with Existing Utilities:**

- [ ] None
- [ ] Unknown

**Yes** Possible

- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:  

**Potential Permitting Factors:**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Probable</th>
<th>Not Probable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dam Safety Permits Necessary</td>
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<td></td>
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<tr>
<td>Impacts to Wetlands</td>
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<tr>
<td>Floodplain Fill</td>
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<td></td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many? Approx. DBH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other factors:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Soils:**

- Soil auger test holes:  
- Evidence of poor infiltration (clays, fines):  
- Evidence of shallow bedrock:  
- Evidence of high water table (gleying, saturation):  

- Yes
- No

---

**Unique Site ID:**
Building had solar panels + evidence of other commodity involvement; want would be good along project site

Possibility of RPD scales as mitigation project?

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

☐ Confirm property ownership
☐ Confirm drainage area
☐ Confirm drainage area impervious cover
☐ Confirm volume computations
☐ Complete concept sketch
☐ Obtain existing stormwater practice as-builts
☐ Obtain site as-builts
☐ Obtain detailed topography
☐ Obtain utility mapping
☐ Confirm storm drain invert elevations
☐ Confirm soil types
☐ Other: __________

INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

SITE CANDIDATE FOR FURTHER INVESTIGATION:
☐ YES ☐ NO ☐ MAYBE

IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):
☐ YES ☐ NO ☐ MAYBE

IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):
☐ YES ☐ NO ☐ MAYBE

IF YES, TYPE(S):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
### Retrofit Reconnaissance Investigation

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID: 92</th>
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</thead>
<tbody>
<tr>
<td>DATE: 6/9/16</td>
<td>ASSESSED BY: Ru/09</td>
<td>CAMER: ID: C</td>
</tr>
<tr>
<td>GPS ID:</td>
<td>LMK ID:</td>
<td>PICTURES: 850-900</td>
</tr>
<tr>
<td>LAT:</td>
<td>LONG:</td>
<td></td>
</tr>
</tbody>
</table>

#### SITE DESCRIPTION

- **Name:** Watch Hill Fire Department
- **Address:** 288 Watch Hill Road, Westerly

Ownership:
- [X] Public
- [ ] Private
- [ ] Unknown
- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other:

Corresponding USSR/USA Field Sheet:
- [ ] Yes
- [ ] No
  - If yes, Unique Site ID:

#### Proposed Retrofit Location:

**Storage**
- [X] Existing Pond
- [ ] Above Roadway Culvert
- [ ] Below Outfall
- [X] In Road ROW
- [ ] Near Large Parking Lot
- [ ] Other:

**On-Site**
- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
- [ ] Individual Rooftop
- [ ] Small Impervious Area
- [ ] Landscape/Hardscape
- [ ] Other:

#### DRAINAGE AREA TO PROPOSED RETROFIT

- **Drainage Area** ≈ __________
- **Imperviousness** ≈ __________
- **Impervious Area** ≈ __________

#### EXISTING STORMWATER MANAGEMENT

**Existing Stormwater Practice:**
- [X] Yes
- [ ] No
- [ ] Possible

- **Ponds (state + homeowner- owned, detention; off-site)**
- **Detention Basin w/ Pretreatment**
- **Collector roof + some PL runoff; seems to in**

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- **Row**
  - **Lots of pavement; simple storm drain system flows to small which flows to pond**
  - **Runoff seems well-managed on site**

**Existing Head Available and Points Where Measured:**
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [x] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: __________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

### PROPOSED TREATMENT OPTION

- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Filtering Practice
- [x] Infiltration
- [ ] Created Wetland
- [ ] Swale
- [ ] Bioretention
- [ ] Other: __________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

"Row Infiltration @ double CD to help handle water volume"

### SITE CONSTRAINTS

**Adjacent Land Use:**
- [x] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown

- [x] Sewer
- [x] Water
- [ ] Gas
- [x] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other: __________

**Potential Permitting Factors:**
- [x] Dam Safety Permits Necessary
- [ ] Probable
- [ ] Not Probable
- [x] Impacts to Wetlands
- [ ] Probable
- [ ] Not Probable
- [x] Impacts to a Stream
- [ ] Probable
- [ ] Not Probable
- [ ] Floodplain Fill
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Forests
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Specimen Trees
  - How many? __________
  - Approx. DBH __________
- [ ] Other factors: __________

**Soils:**
- [ ] Yes
- [ ] No

**Evidence of soil auger test holes:**
- [ ] Yes
- [ ] No

**Evidence of poor infiltration (clays, fines):**
- [ ] Yes
- [ ] No

**Evidence of shallow bedrock:**
- [ ] Yes
- [ ] No

**Evidence of high water table (bleeding, saturation):**
- [ ] Yes
- [ ] No

Unique Site ID: __________
### DESIGN OR DELIVERY NOTES

<table>
<thead>
<tr>
<th>Confirm property ownership</th>
<th>Obtain existing stormwater practice as-builds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirm drainage area</td>
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<td>Confirm storm drain invert elevations</td>
</tr>
<tr>
<td></td>
<td>Confirm soil types</td>
</tr>
</tbody>
</table>

- **Other:**

### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

### SITE CANDIDATE FOR FURTHER INVESTIGATION:

- **Yes**
- **No**
- **Maybe**

### IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):

- **Yes**
- **No**
- **Maybe**

### IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):

- **Yes**
- **No**
- **Maybe**

- **If yes, type:**__

---

Page 4 of 4

Unique Site ID: 92
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and => 30 % Impervious OR IC => 1 Acre
### Retrofit Reconnaissance Investigation

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<th>SUBWATERSHED:</th>
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<tbody>
<tr>
<td></td>
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<td>93</td>
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<td>RW/WG</td>
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</thead>
<tbody>
<tr>
<td>C</td>
<td>900-930</td>
</tr>
</tbody>
</table>

### SITE DESCRIPTION

**Name:**

**Address:**

**Ownership:**

- Public
- Private
- Unknown

**If Public, Government Jurisdiction:**

- Local
- State
- DOT
- Other: Federal

**Corresponding USSR/USA Field Sheet:**

- Yes
- No

If yes, Unique Site ID:

**Proposed Retrofit Location:**

**Storage:**

- Existing Pond
- Below Outfall
- In Road ROW
- Other:

**On-Site:**

- Hotspot Operation
- In Conveyance System
- Near Large Parking Lot
- Other:

**DRAINAGE AREA TO PROPOSED RETROFIT**

**Drainage Area ≈**

**Imperviousness ≈** %

**Impervious Area ≈**

**Notes:** Large area uphill/offset drain to drainage system

**Drainage Area Land Use:**

- Residential
- Other:

**EXISTING STORMWATER MANAGEMENT**

**Existing Stormwater Practice:**

- Yes
- No
- Possible

**If Yes, Describe:**

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Large conveyance system through PL w/ many DMTs + CSS (w/ deep sand through parking lot). Conveyances to ABS vary large in places; evidence of large amount of runoff.

**Existing Flow Available and Points Where Measured:**

<table>
<thead>
<tr>
<th>Unique Site ID:</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
</tr>
</tbody>
</table>
## Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Channel Protection
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Filtering Practice
- Wet Pond
- Created Wetland
- Infiltration
- Swale
- Bioretention
- Other:

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

- Convert sidewalks to bioswales
- Underground infilt. to handle large volume of runoff
- Bioretention

## Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
  - Other:

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Possible
  - Sewer
  - Water
  - Gas
  - Cable
  - Electric
  - Electric to Streetlights
  - Overhead Wires
  - Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Probable
- Not Probable
- Impacts to Wetlands
- Probable
- Not Probable
- Impacts to a Stream
- Probable
- Not Probable
- Floodplain Fill
- Probable
- Not Probable
- Impacts to Forests
- Probable
- Not Probable
- Impacts to Specimen Trees
  - How many?
  - Approx. DBH:
  - Other factors:

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):
## Design or Delivery Notes

<table>
<thead>
<tr>
<th>Follow-up Needed to Complete Field Concept</th>
<th>Initial Feasibility and Construction Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Confirm property ownership</td>
<td>[ ] Obtain existing stormwater practice as-builts</td>
</tr>
<tr>
<td>[ ] Confirm drainage area</td>
<td>[ ] Obtain site as-builts</td>
</tr>
<tr>
<td>[ ] Confirm drainage area impervious cover</td>
<td>[ ] Obtain detailed topography</td>
</tr>
<tr>
<td>[ ] Confirm volume computations</td>
<td>[ ] Obtain utility mapping</td>
</tr>
<tr>
<td>[ ] Complete concept sketch</td>
<td>[ ] Confirm storm drain invert elevations</td>
</tr>
<tr>
<td></td>
<td>[ ] Confirm soil types</td>
</tr>
</tbody>
</table>

Other: [ ] Other: need to email Postmaster to get plans

### Site Candidate for Further Investigation:
- Is Site Candidate for Early Action Project(s): [ ] Yes [ ] No [ ] Maybe
- If No, Site Candidate for Other Restoration Project(s): [ ] Yes [ ] No [ ] Maybe

Unique Site ID: [93]
U.S. Post Office
110 Town Harvey Road
Westerly, RI

Legend
- Railroad
- Flood Zone
- 10S Sites
- 100 Year Flood Zone
- 500 Year Flood Zone

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
<table>
<thead>
<tr>
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<td>LAT:</td>
<td>LONG:</td>
</tr>
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</table>

**SITE DESCRIPTION**

Name: Westbury Fire Department
Address: 180 Beach Street, Westbury, RI
Ownership: Public
If Public, Government Jurisdiction: Local
Corresponding USSR/USA Field Sheet? Yes

**Proposed Retrofit Location:**
- Storage
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Other:
- Above Roadway Culvert
- In Conveyance System
- Near Large Parking Lot
- Other:

**On-Site**
- Hospital Operation
- Individual Rooftop
- Small Parking Lot
- Individual Street
- Underground
- Landscape/Hardscape
- Other:

**DRAINAGE AREA TO PROPOSED RETROFIT**

Drainage Area =
Imperviousness =
Impervious Area =

**Drainage Area Land Use:**
- Residential
- SFH (< 1 ac lots)
- SFH (> 1 ac lots)
- Townhouses
- Multi-Family
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice: Yes
If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Entirely within 100 ft 500 yr floodplain.

Existing Head Available and Points Where Measured:
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: __________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Bioretention
- [ ] Other: __________

**Describe Elements of Proposed Retrofit, including Surface Area, Maximum Depth of Treatment, and Conveyance:**

*None - site within floodplain*

### SITE CONSTRAINTS

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

*Floodplain*

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes
- [ ] Possible

<table>
<thead>
<tr>
<th>Utilities</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Sewer</td>
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<td>Water</td>
<td></td>
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<td>Gas</td>
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<tr>
<td>Cable</td>
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<tr>
<td>Electric</td>
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<tr>
<td>Electric to Streetlights</td>
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<td></td>
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<tr>
<td>Overhead Wires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees

*How many?__________
Approx. DBH__________

**Other factors:**

**Soils:**
- Soil auger test holes:
  - [ ] Yes
  - [ ] No
- Evidence of poor infiltration (clays, fines):
  - [ ] Yes
  - [ ] No
- Evidence of shallow bedrock:
  - [ ] Yes
  - [ ] No
- Evidence of high water table (gleying, saturation):
  - [ ] Yes
  - [ ] No

*Unique Site ID: 98*
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Retrofit Reconnaissance Investigation

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<tr>
<td>GPS ID:</td>
<td>LMK ID:</td>
<td>LAT:</td>
<td>LONG:</td>
</tr>
</tbody>
</table>

### SITE DESCRIPTION

**Name:** Burlington Management Area  
**Address:** Burlington State Park Rd/Regentown Road  
**Ownership:** [ ] Public [ ] Private [ ] Unknown  
If Public, Government Jurisdiction: [ ] Local [ ] State [ ] DOT [ ] Other:  
Corresponding USSR/USA Field Sheet? [ ] Yes [ ] No  
If yes, Unique Site ID:  

### Proposed Retrofit Location:

- **Storage:**  
  [ ] Existing Pond  
  [ ] Below Outfall  
  [ ] In Road ROW  
  [ ] Other:  

- **On-Site:**  
  [ ] Hotspot Operation  
  [ ] Small Parking Lot  
  [ ] Individual Street  
  [ ] Underground  
  [X] Individual Rooftop  

### DRAINAGE AREA TO PROPOSED RETROFIT

- **Drainage Area:**  
  [ ] Imperviousness = _______ %  

- **Impervious Area:**  
  [ ] _______  

**Notes:**

### EXISTING STORMWATER MANAGEMENT

- **Existing Stormwater Practice:**  
  [ ] Yes [X] No [ ] Possible  
  If Yes, Describe:  
  one co in parking lot & maintenance area drains to distant swale downslope

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- some minor erosion along roads in campsite but no major problem areas

### Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Recharge
- Channel Protection
- Flood Control
- Demonstration / Education
- Repair
- Other: __________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Biotreatment
- Filtering Practice
- Infiltration
- Swale
- Other: __________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

### Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Other: __________

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
  - Other: __________

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Conflicts with Existing Utilities:**
- None
- Unknown

- Yes: __________
- Possible: __________
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other: __________

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many? __________
- Approx. DBH: __________

**Other factors:**

**Soils:**
- Soil auger test holes: __________
- Evidence of poor infiltration (clays, fines): __________
- Evidence of shallow bedrock: __________
- Evidence of high water table (gleying, saturation): __________

Unique Site ID: 99
<table>
<thead>
<tr>
<th>FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT</th>
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<tr>
<td>☐ Confirm property ownership</td>
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<td>☐ Confirm drainage area</td>
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<td>☐ Confirm volume computations</td>
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<td>☐ Complete concept sketch</td>
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<td>☐ Other:</td>
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<tr>
<th>INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS</th>
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<tr>
<th>SITE CANDIDATE FOR FURTHER INVESTIGATION:</th>
<th>☐ YES ☐ NO ☐ MAYBE</th>
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<tbody>
<tr>
<td>IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):</td>
<td>☐ YES ☐ NO ☐ MAYBE</td>
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<tr>
<td>IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):</td>
<td>☐ YES ☐ NO ☐ MAYBE</td>
</tr>
<tr>
<td>IF YES, TYPE(S):</td>
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</tbody>
</table>

Unique Site ID: 99
Burlingame Management Area
Burlingame State Park Rd/ Legiontown Road
Charlestown, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
<table>
<thead>
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<td>Assessed By: RGG WG</td>
<td>Camera ID: A</td>
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</table>

**Site Description**
Name: Central Baptist Pilgrim Baptist Church - Central Nursery School
Address: 10 Elm Street, Westerly, RI
Ownership: Private
If Public, Government Jurisdiction: Other
Corresponding USSR/USA Field Sheet?: No
If yes, Unique Site ID:

**Proposed Retrofit Location:**
- Storage: [ ] Existing Pond, [ ] Below Outfall, [ ] In Road ROW, [ ] Other: Above Roadway Culvert, In Conveyance System, Near Large Parking Lot
- On-Site: [ ] Hotspot Operation, Small Parking Lot, Individual Street, Underground, Small Impervious Area, Landscape / Hardscape, Other:

**Drainage Area to Proposed Retrofit:**
- Drainage Area: [ ]
- Imperviousness: [ ]
- Impervious Area: [ ]

**Existing Stormwater Management:**
Existing Stormwater Practice: [ ] Yes, [ ] No, [ ] Possible
If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Existing Head Available and Points Where Measured:

*Need approval for access week of June 6?*
# Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Other: 

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other: 

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

---

# Site Constraints

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

If Yes, Describe:

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown

**Yes**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

**Possible**

**Potential Permitting Factors:**
- [ ] Dam Safety Permits Necessary
- [ ] Impacts to Wetlands
- [ ] Impacts to a Stream
- [ ] Floodplain Fill
- [ ] Impacts to Forests
- [ ] Impacts to Specimen Trees

*How many?*

Approx. DBH 

**Other factors:**

**Soils:**
- [ ] Soil auger test holes
- [ ] Evidence of poor infiltration (clays, fines)
- [ ] Evidence of shallow bedrock
- [ ] Evidence of high water table (gleying, saturation):

**Access:**
- [ ] No Constraints
- [ ] Constrained due to
  - [ ] Slope
  - [ ] Space
  - [ ] Utilities
  - [ ] Tree Impacts
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Other:

---

Page 2 of 4

Unique Site ID: 101
### Design or Delivery Notes

### Follow-up Needed to Complete Field Concept

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-buils
- Obtain site as-buils
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

### Initial Feasibility and Construction Considerations

### Site Candidate for Further Investigation:

- [ ] Yes
- [ ] No
- [ ] Maybe

### Is Site Candidate for Early Action Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

### If No, Site Candidate for Other Restoration Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

### If Yes, Type(s):

Unique Site ID: [Redacted]
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**Retrofit Reconnaissance Investigation**

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<td>LMK ID:</td>
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<td>SITE DESCRIPTION</td>
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<tr>
<td>Name: Grace United Methodist Church</td>
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<tr>
<td>Address: 10 Park Avenue, Westerly, RI</td>
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<td>If Public, Government Jurisdiction: State</td>
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<td>Storage</td>
<td>On-Site</td>
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<tr>
<td>□ Existing Pond</td>
<td>□ Hotspot Operation</td>
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<tr>
<td>□ Below Outfall</td>
<td>□ Small Parking Lot</td>
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<tr>
<td>□ In Road ROW</td>
<td>□ Individual Street</td>
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<tr>
<td>□ Near Large Parking Lot</td>
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<td>□ Other:</td>
<td>□ Other:</td>
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<tr>
<td>DRAINAGE AREA TO PROPOSED RETROFIT</td>
<td></td>
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</tr>
<tr>
<td>Drainage Area =</td>
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<td></td>
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<tr>
<td>Imperviousness = %</td>
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<td>Impervious Area =</td>
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<td>EXISTING STORMWATER MANAGEMENT</td>
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<tr>
<td>Existing Stormwater Practice:</td>
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<td></td>
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<tr>
<td>If Yes, Describe:</td>
<td></td>
<td></td>
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<tr>
<td>Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roof runoff directed to P-L, P-L drains to residential backyards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of puddling (+ sed deposition) is low corner</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>No CRB, drains</td>
<td></td>
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<tr>
<td>Existing Head Available and Points Where Measured:</td>
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**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- [X] Water Quality
- [X] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

---

**Proposed Treatment Option:**
- [X] Bioretention
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Infiltration
- [X] Created Wetland
- [X] Swale
- [ ] Other:

---

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

Bioretention in mussy grass strip along parking lot (appears unkempt)
Regrade parking lot to direct to basin, so top
Possible raw swale!

---

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- [X] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

---

**Conflicts with Existing Utilities:**
- [ ] Yes
- [ ] No

**Possible**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

---

**Access:**
- [ ] No Constraints
- [ ] Constrained due to:
  - [ ] Slope
  - [ ] Utilities
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Other:

---

**Potential Permitting Factors:**
- Dam Safety Permits Necessary: [Yes] [No]
- Impacts to Wetlands: [Probable] [Not Probable]
- Impacts to a Stream: [Probable] [Not Probable]
- Floodplain Fill: [Probable] [Not Probable]
- Impacts to Forests: [Probable] [Not Probable]
- Impacts to Specimen Trees: [Probable] [Not Probable]
- How many?
  - Approx. DBH:

**Other factors:**

---

**Soils:**
- Soil auger test holes: [Yes] [No]
- Evidence of poor infiltration (clays, fines): [Yes] [No]
- Evidence of shallow bedrock: [Yes] [No]
- Evidence of high water table (gleying, saturation): [Yes] [No]
### DESIGN OR DELIVERY NOTES

<table>
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**Initial Feasibility and Construction Considerations**

**Site Candidate for Further Investigation:** YES □ NO □ MAYBE

**Is Site Candidate for Early Action Project(s):** YES □ NO □ MAYBE

**If No, Site Candidate for Other Restoration Project(s):** YES □ NO □ MAYBE

If yes, type(s): [Blank]

Unique Site ID: 102
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Retrofit Reconnaissance Investigation

WATERSHED:  | SUBWATERSHED: | UNIQUE SITE ID: #103
---|---|---
DATE: 6/2/16 | ASSESSED BY: RW | CAMERA ID: A
GPS ID: | LMK ID: | PICTURES: 115 - 1139
LAT: | LONG:

SITE DESCRIPTION
Name: Church of the Immaculate Conception
Address: 311 High Street, Westerly, RI
Ownership: Private
If Public, Government Jurisdiction: Local
Corresponding USSR/USA Field Sheet: No

Proposed Retrofit Location:
- Storage
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Other: Near Large Parking Lot
- On-Site
  - Hotspot Operation
  - Small Parking Lot
  - Individual Street
  - Underground

DRAINAGE AREA TO PROPOSED RETROFIT
- Drainage Area ≈ %
- Impervious Area ≈ %
- Notes: Bottom of "row", need to map drainage area

EXISTING STORMWATER MANAGEMENT
Existing Stormwater Practice: Yes
If Yes, Describe: Grey infrastructure only

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:
- Parking lot contains - CBs + one long drain in driveway
- Steep slopes generally surround, more CBs contributing from top of slope?
- 2nd dry access road/valley contains CB + is adjacent to open lawn, feet
- Dewatering straight into ground

Existing Head Available and Points Where Measured:
## Proposed Retrofit

**Purpose of Retrofit:**
- [X] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [X] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Offline practice along alley, curb cuts, bioretention grooves.
- Infiltration under lower end of parking lot.

## Site Constraints

**Adjacent Land Use:**
- [X] Residential
- [X] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes
- [ ] Possible
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary: [ ] Probable [ ] Not Probable
- Impacts to Wetlands: [ ] Probable [ ] Not Probable
- Impacts to a Stream: [ ] Probable [ ] Not Probable
- Floodplain Fill: [ ] Probable [ ] Not Probable
- Impacts to Forests: [ ] Probable [ ] Not Probable
- Impacts to Specimen Trees: [ ] Probable [ ] Not Probable
- How many? Approx. DBH
- Other factors:

**Soils:**
- Soil auger test holes: [X] Yes [ ] No
- Evidence of poor infiltration (clays, fines): [X] Yes [ ] No
- Evidence of shallow bedrock: [X] Yes [ ] No
- Evidence of high water table (gleying, saturation): [X] Yes [ ] No

**Access:**
- [X] No Constraints
- Constrained due to:
  - [ ] Slope
  - [ ] Space
  - [ ] Utilities
  - [ ] Tree Impacts
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Other:
### Design or Delivery Notes

### Follow-up Needed to Complete Field Concept

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [X] Obtain existing stormwater practice as-builts
- [X] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types
- [ ] Other:

### Initial Feasibility and Construction Considerations

### Site Candidate for Further Investigation:

- [ ] Yes
- [ ] No
- [ ] Maybe

### Is Site Candidate for Early Action Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

### If No, Site Candidate for Other Restoration Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

If yes, type(s):
**Watershed:**

**Subwatershed:**

**Unique Site ID:** 107

**Date:** 6/2/15  
**Assessed By:** RW/CG  
**Camera ID:** A  
**Pictures:** 850 - 900

**GPS ID:**  
**LMK ID:**  
**LAT:**  
**LONG:**

### Site Description

**Name:** Westerly Town Water Department  
**Address:** 620 Lime Rock Rd, Westerly, RI 02891

**Ownership:**  
Public  
Private  
Unknown  
Local  
State  
DOT  
Other

**Corresponding USSR/USA Field Sheet:** Yes  
**No**  
If yes, **Unique Site ID:**

### Proposed Retrofit Location

**Storage:**  
- Existing Pond  
- Below Outfall  
- In Road ROW  
- Other:

**On-Site:**  
- Hotspot Operation  
- Small Parking Lot  
- Individual Street  
- Other:

**Individual Roofers:**  
- Small Impervious Area  
- Landscape / Hardscape  
- Other:

### Drainage Area to Proposed Retrofit

**Drainage Area =**  
**Imperviousness =** %

**Impervious Area =**

**Notes:** parking area, building, large lawn  
possible opportunity to take storm drainage offline?

### Existing Stormwater Management

**Existing Stormwater Practice:**  
Yes  
No  
Possible

If Yes, Describe:

Swale captures road runoff & off-site drainage. Pretreatment c.

Consists of gravel strip. Swale continues up road to 1st residence on

Riverside of road. G.

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

4" water lines of sand in pretreatment. Swale heavily vegetated. Far
side of street equipped w/ catch basins. Road relatively new.

Gravel provides own conveyance & keeps water from swale?

Existing Head Available and Points Where Measured:

*Handwritten Notes:*

- "wells on property.
- DWP would not let us assess."
### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Recharge
- Channel Protection
- Flood Control
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

Update Row swale if needed

### Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Conflicts with Existing Utilities:**
- None
- Unknown
- sewers
- water (wells)
- gas
- cable
- electric
- electric to streetlights
- overhead wires
- Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many?
  - Approx. DBH

**Other factors:**

- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

---

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
  - Other: Manager Attributes

Unique Site ID: 107
Retrofit Reconnaissance Investigation

**Design or Delivery Notes**

- Spoke to Paul C. (call obtained)
  - DPW superintendent
- Paul said he feels uncomfortable w/ BMPs due to presence of drinking water wells
  - has plans of drainage (all stormwater drains to Pawcatuck R via drains)
- Signs regarding wellhead protection area, cleanup of pet waste, + RIDEM permit for recent storm drain install all attached to face. [app #13-011]

**Follow-up Needed to Complete Field Concept**

<table>
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**Initial Feasibility and Construction Considerations**

Unlikely site due to presence of wells; would require carving.
Other Westerly officials not on site.

**Site Candidate for Further Investigation:** No

**Is Site Candidate for Early Action Project(s):** No

**If No, Site Candidate for Other Restoration Project(s):** No

**If Yes, Type(s):**

Unique Site ID: 107
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Retrofit Reconnaissance Investigation

**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 188

**DATE:** 6/9/16

**ASSESSED BY:** RWWW

**CAMERA ID:** C

**PICTURES:** 1136-1234

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

**SITE DESCRIPTION**

**Name:** Bradford School (St. Vincent's Catholic Church)

**Address:** 15 Church St. (St. Vincent Church St. Upsterly), RI

**Ownership:**

If Public, Government Jurisdiction: [ ] Public [ ] Private [ ] Unknown [ ] Local [ ] State [ ] DOT [ ] Other:

**Corresponding USSR/USA Field Sheet:** [ ] Yes [ ] No [ ] If yes, Unique Site ID:

**PROPOSED RETROFIT LOCATION**

**On-Site**

- [ ] Hospot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Landscape / Hardscape
- [ ] Underground
- [ ] Other:

**Existing Storage**

- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Conveyance System
- [ ] Near Large Parking Lot
- [ ] Other:

**DRAINAGE AREA TO PROPOSED RETROFIT**

**Drainage Area ≈**

**Imperviousness ≈**

**Impervious Area ≈**

**Drainage Area Land Use:**

- [ ] Residential
- [ ] SFH (< 1 ac lots)
- [ ] SFH (> 1 ac lots)
- [ ] Townhouses
- [ ] Multi-Family
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**EXISTING STORMWATER MANAGEMENT**

**Existing Stormwater Practice:** [ ] Yes [ ] No [ ] Possible

If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Roof drains prob to storm system; roof sometimes floods in heavy rain
2 CBSs in small lot
Parking lots drain to CBSs that run to (road?)
No formal drainage, paved areas on ret steep slope, overflow to CBSs in road

Existing System Available and Points Where Measured:

---

Page 1 of 4
## Proposed Retrofit

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th></th>
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<td>Repair</td>
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### Retrofit Volume Computations - Target Storage:

### Retrofit Volume Computations - Available Storage:

### Proposed Treatment Option:

- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Other: Green Roof (School)

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

Build green roof (i.e., solar) on flat portion of roof; design to reduce water loading to roof drains (e.g., direct toward roof edge). Students might have access to roof via stairwell, underground infiltration in one or more lots? (Note: nature of upcoming expansion and if more BMPs could be added.)

### Site Constraints

#### Adjacent Land Use:

- Residential
- Commercial
- Industrial
- Transport-Related
- Undeveloped
- Other:

#### Possible Conflicts Due to Adjacent Land Use?

Yes [x] No [ ]

#### Conflicts with Existing Utilities:

- None [ ]
- Unknown [ ]
- Yes [x] Possible [ ]
- Sewer [ ]
- Water [ ]
- Gas [ ]
- Cable [ ]
- Electric [ ]
- Electric to Streetlights [ ]
- Overhead Wires [ ]
- Other [ ]

#### Potential Permitting Factors:

- Dam Safety Permits Necessary [ ]
- Impacts to Wetlands [ ]
- Impacts to a Stream [ ]
- Floodplain Fill [ ]
- Impacts to Forests [ ]
- Impacts to Specimen Trees [ ]
- How many? Approx. DBH [ ]
- Other factors:

#### Soils:

- Soil auger test holes: [ ] Yes [x] No
- Evidence of poor infiltration (clays, fines): [ ] Yes [x] No
- Evidence of shallow bedrock: [ ] Yes [x] No
- Evidence of high water table (gleying, saturation): [ ] Yes [x] No

Unique Site ID: 108
**DESIGN OR DELIVERY NOTES**

- Ball field heavily used by students

---

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

- [ ] Confirm property ownership
- [X] Confirm drainage area
- [X] Confirm drainage area impervious cover
- [X] Confirm volume computations
- [X] Complete concept sketch
- [ ] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

Other: Obtain plans for upcoming construction at school

---

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

---

**SITE CANDIDATE FOR FURTHER INVESTIGATION:** [ ] Yes [ ] No [ ] Maybe

**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):** [X] Yes [ ] No [ ] Maybe

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):** [ ] Yes [ ] No [ ] Maybe

**IF YES, TYPE(S):**
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30 % Impervious OR IC >= 1 Acre
**Watershed:**

**Subwatershed:**

**Unique Site ID:** 109

**Date:** 6/2/16

**Assessed By:** RW, WG

**Camera ID:** A

**Pictures:** 900-920

**GPS ID:**

**LMK ID:**

**Lat:**

**Long:**

**Site Description**

**Name:** Western Park Co

**Address:** 15 Springbuck Rd, Western

**Ownership:**

- Public
- Private
- Unknown

**If Public, Government Jurisdiction:**

- Local
- State
- DOT
- Other

**Corresponding USSR/USA Field Sheet:**

- Yes
- No

**If Yes, Unique Site ID:**

**Proposed Retrofit Location:**

**Storage**

- Existing Pond
- Below Outfall
- In Road ROW
- No

**On-Site**

- Hotspot Operation
- Small Parking Lot
- Individual Street
- Underground

**Other:**

- Individual Rooftop
- Small Impervious Area
- Landscape/Hardscape
- Other: Soil Stockpile (as, disturbed area)

**Drainage Area to Proposed Retrofit**

**Drainage Area ≈**

**Imperviousness ≈**

**Impervious Area ≈**

**Notes:** area marked on GIS map drains west to adjacent site

**Existing Stormwater Management**

**Existing Stormwater Practice:**

- Yes
- No
- Possible

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Site recently under construction, still appears disturbed. Flooded parking lot surfaced w/ well-graded gravel. Area below parking lot (west of site) potentially owned by same owner receives runoff from upper lot via access road/slope. Some runoff from back of site enters woods + wetlands on private property to south.

**Existing Head Available and Points Where Measured:**
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- Water Quality [X]
- Recharge [X]
- Channel Protection [ ]
- Flood Control [ ]
- Demonstration / Education [ ]
- Repair [ ]
- Other: [ ]

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention [ ]
- Wet Pond [X]
- Created Wetland [ ]
- Bioretention [X]
- Filtering Practice [ ]
- Infiltration [ ]
- Swale [ ]
- Other: [ ]

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

Possible location in stockpile/undeveloped area downhill (west) of site, but unsure of ownership of that area.

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residential [X]
- Commercial [ ]
- Institutional [ ]
- Industrial [ ]
- Transport-Related [ ]
- Park [ ]
- Undeveloped [ ]
- Other: [ ]

**Possible Conflicts Due to Adjacent Land Use?**
- Yes [ ]
- No [X]

**If Yes, Describe:**

**Access:**
- No Constraints [ ]
- Constrained due to:
  - Slope [ ]
  - Utilities [ ]
  - Structures [ ]
  - Property Ownership [ ]

**Potential Permitting Factors:**
- Dam Safety Permits Necessary: [ ]
- Probable [X]
- Not Probable [ ]
- Impacts to Wetlands: [ ]
- Probable [X]
- Not Probable [ ]
- Impacts to a Stream: [ ]
- Probable [X]
- Not Probable [ ]
- Floodplain Fill: [ ]
- Probable [X]
- Not Probable [ ]
- Impacts to Forests: [ ]
- Probable [X]
- Not Probable [ ]
- Impacts to Specimen Trees: [ ]
  - How many?
  - Approx. DBH

**Other factors:**

**Conflicts with Existing Utilities:**
- None [ ]
- Unknown [X]
- Yes [ ]
- Possible [ ]
- Sewer [ ]
- Water [ ]
- Gas [ ]
- Cable [ ]
- Electric [ ]
- Electric to Streetlights [ ]
- Overhead Wires [ ]
- Other: [ ]

**Soils:**
- Soil auger test holes: [ ]
- Evidence of poor infiltration (clays, fines): [ ]
  - Yes [ ]
  - No [x]
  - Evidence of shallow bedrock: [ ]
  - Yes [ ]
  - No [x]
- Evidence of high water table (gleying, saturation): [ ]
  - Yes [ ]
  - No [x]

**Unique Site ID:** 109
## DESIGN OR DELIVERY NOTES

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other:

## FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Property ownership? Planned land use? Planned additional development of site
- Possible parking for site 278?

## INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

<table>
<thead>
<tr>
<th>SITE CANDIDATE FOR FURTHER INVESTIGATION:</th>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
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Unique Site ID: 109
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
### Watershed Information

- **Date:** 6/24/16
- **Assessed By:** RW/SG
- **Camera ID:** A
- **Pictures:** 10

### Site Description

- **Name:** Elementary School
- **Address:** 39 Springbrook Rd, Westerly, RI
- **Ownership:** Public
- **IF Public, Government Jurisdiction:** Local
- **Corresponding USSR/USA Field Sheet:** Yes

### Proposed Retrofit Location

#### Storage
- Existing Pond
- Below Outfall
- In Road ROW
- Other: Near Large Parking Lot

#### On-Site
- Hotspot Operation
- Small Parking Lot
- Individual Street
- Other: Individual Rooftop

### Drainage Area to Proposed Retrofit

- **Drainage Area:**
- **Imperviousness:** 
- **Impervious Area:**

### Drainage Area Land Use

- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

### Existing Stormwater Management

- **Existing Stormwater Practice:** Yes
- **If Yes, Describe:**
  - Grey water drainage (catch basins visible)

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- "Swamp area on site"
- Grades K-4

---

**Limited Assessment:**

Need clearance thru superintendent's office

**Unique Site ID:** 110
### Retrofit Reconnaissance Investigation

#### Proposed Retrofit

<table>
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<th>Channel Protection</th>
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</table>

#### Retrofit Volume Computations - Target Storage: [Diagram]

#### Retrofit Volume Computations - Available Storage: [Diagram]

#### Proposed Treatment Option:

- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Infiltration
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Other:

#### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

- Bioretention or swale w/ native planting plan, visible to demonstration purposes; utilize existing catch basin(s) as overflow structure(s)
- curb cuts or or take portion of traditional storm sewer site
- drainage offline

#### Site Constraints

<table>
<thead>
<tr>
<th>Adjacent Land Use:</th>
<th>Access:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Residential</td>
<td>[ ] No Constraints</td>
</tr>
<tr>
<td>[ ] Commercial</td>
<td>Constrained due to:</td>
</tr>
<tr>
<td>[x] Institutional</td>
<td>- Slope</td>
</tr>
<tr>
<td>[ ] Industrial</td>
<td>- Utilities</td>
</tr>
<tr>
<td>[ ] Transport-Related</td>
<td>- Structures</td>
</tr>
<tr>
<td>[ ] Undeveloped</td>
<td>- Property Ownership</td>
</tr>
<tr>
<td>[ ] Other:</td>
<td>- Other:</td>
</tr>
</tbody>
</table>

| Possible Conflicts Due to Adjacent Land Use? | [ ] Yes | [x] No |
| If Yes, Describe:                           |         |

#### Conflicts with Existing Utilities:

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>Sewer</td>
</tr>
<tr>
<td>[ ]</td>
<td>Water</td>
</tr>
<tr>
<td>[ ]</td>
<td>Gas</td>
</tr>
<tr>
<td>[ ]</td>
<td>Cable</td>
</tr>
<tr>
<td>[ ]</td>
<td>Electric</td>
</tr>
<tr>
<td>[ ]</td>
<td>Electric to Streetlights</td>
</tr>
<tr>
<td>[ ]</td>
<td>Overhead Wires</td>
</tr>
<tr>
<td>[ ]</td>
<td>Other:</td>
</tr>
</tbody>
</table>

#### Potential Permitting Factors:

| Dam Safety Permits Necessary | [ ] Probable | [x] Not Probable |
| Impacts to Wetlands | [ ] Probable | [x] Not Probable |
| Impacts to a Stream | [ ] Probable | [x] Not Probable |
| Floodplain Fill | [ ] Probable | [x] Not Probable |
| Impacts to Forests | [ ] Probable | [x] Not Probable |
| Impacts to Specimen Trees | [ ] Probable | [x] Not Probable |

- How many? [ ]
  - Approx. DBH [ ]

#### Other factors:

- [ ] [ ] [ ]

#### Soils:

- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

- [ ] [ ] [ ]
- [ ] [ ] [ ]
- [ ] [ ] [ ]
- [ ] [ ] [ ]

[Unable to determine]
**DESIGN OR DELIVERY NOTES**

Grounds nicely landscaped; need to match aesthetic

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

- [x] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [x] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types
- [ ] Other: Permission to access school sites

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

**SITE CANDIDATE FOR FURTHER INVESTIGATION:**

- [X] Yes
- [ ] No
- [ ] Maybe

**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S)?**

- [X] Yes
- [ ] No
- [ ] Maybe

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):**

- [X] Yes
- [ ] No
- [ ] Maybe

If yes, type(s):
### Retrofit Reconnaissance Investigation

**WATERSHED:**

<table>
<thead>
<tr>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE: 6/9/16</td>
<td>110</td>
</tr>
</tbody>
</table>

**ASSESSED BY:** RW/MG

**CAMERA ID:** a

**PICTURES:** 15-2:00

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

### SITE DESCRIPTION

- **Name:** Springbrook Elementary School
- **Address:** 385 Springbrook Road, North Smithfield, RI

- **Ownership:**
  - Public [x]
  - Private [ ]
  - Unknown [ ]
  - DOT [ ]
  - Other [ ]

- **If Public, Government Jurisdiction:** Local [x], State [ ], DOT [ ], Other [ ]

- **Corresponding USSR/USA Field Sheet:**
  - Yes [ ]
  - No [ ]
  - If Yes, Unique Site ID: __________

### Proposed Retrofit Location:

- **Storage**:
  - [x] Above Roadway Culvert
  - [ ] Below Outfall
  - [ ] In Road ROW
  - [ ] Near Large Parking Lot
  - [ ] Other:

- **On-Site**:
  - [ ] Hotspot Operation
  - [ ] Small Parking Lot
  - [ ] Individual Street
  - [ ] Underground
  - [ ] Individual Rooftop
  - [ ] Small Impervious Area
  - [ ] Landscape/Hardscape
  - [ ] Other:

### DRAINAGE AREA TO PROPOSED RETROFIT

- **Drainage Area =**
- **Imperviousness =**
- **Impervious Area =** __________%

### EXISTING STORMWATER MANAGEMENT

- **Existing Stormwater Practice:**
  - [x] Yes
  - [ ] No
  - [ ] Possible

  - Infiltration/dry wells?
  - Biofiltration or detention basin on S. side of school poorly maintained

- **Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**
  - Water drains outward from building (no significant off-site runoff, if any)
  - Flow runs largely to CIBs. That may be or may lead to infiltration chambers before over-flowing to nearby stream

**Existing Head Available and Points Where Measured:**

---

Page 1 of 4

Unique Site ID: 110
**PROPOSED RETROFIT**

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality</td>
<td>☐</td>
<td>Recharge</td>
<td>☐</td>
<td>Channel Protection</td>
</tr>
<tr>
<td>Demonstration / Education</td>
<td>☑</td>
<td>Repair</td>
<td>☐</td>
<td>Flood Control</td>
</tr>
</tbody>
</table>

Retrofit Volume Computations - Target Storage:  

Retrofit Volume Computations - Available Storage:  

**Proposed Treatment Option:**

- ☐ Extended Detention  
- ☐ Wet Pond  
- ☐ Created Wetland  
- ☑ Bioretention  
- ☐ Swale  
- ☐ Other:  

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Install additional infiltration if needed/not present  
- Build dune bioretention basin along parking lot for educational purposes

**SITE CONSTRAINTS**

<table>
<thead>
<tr>
<th>Adjacent Land Use:</th>
<th>Access:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Residential</td>
<td>☐ No Constraints</td>
</tr>
<tr>
<td>☐ Commercial</td>
<td>☐ Constrained due to:</td>
</tr>
<tr>
<td>☐ Institutional</td>
<td>Slope</td>
</tr>
<tr>
<td>☐ Industrial</td>
<td>Space</td>
</tr>
<tr>
<td>☐ Transport-Related</td>
<td>Utilities</td>
</tr>
<tr>
<td>☐ Park</td>
<td>Tree Impacts</td>
</tr>
<tr>
<td>☐ Undeveloped</td>
<td>Structures</td>
</tr>
<tr>
<td>☐ Other:</td>
<td>Property Ownership</td>
</tr>
</tbody>
</table>

Possible Conflicts Due to Adjacent Land Use?  

- ☑ Yes  
- ☐ No

If Yes, Describe:

**Conflicts with Existing Utilities:**

- ☐ None  
- ☐ Unknown  

Yes Possible  

- ☐ Sewer  
- ☐ Water  
- ☐ Gas  
- ☐ Cable  
- ☐ Electric  
- ☐ Electric to Streetlights  
- ☐ Overhead Wires  
- ☐ Other:

**Potential Permitting Factors:**

- Dam Safety Permits Necessary  
- Probable  
- Not Probable

- Impacts to Wetlands  
- Probable  
- Not Probable

- Impacts to a Stream  
- Probable  
- Not Probable

- Floodplain Fill  
- Probable  
- Not Probable

- Impacts to Forests  
- Probable  
- Not Probable

- Impacts to Specimen Trees  
- Probable  
- Not Probable

- How many?  
- Approx. DBH

- Other factors:

**Soils:**

- Soil auger test holes:  
- ☐ Yes  
- ☐ No

- Evidence of poor infiltration (clays, fines):  
- ☐ Yes  
- ☐ No

- Evidence of shallow bedrock:  
- ☑ Yes  
- ☐ No

- Evidence of high water table (gleying, saturation):  
- ☐ Yes  
- ☑ No

Unique Site ID: 112
### Design or Delivery Notes


### Follow-up Needed to Complete Field Concept

- [X] Obtain existing stormwater practice as-builds
- [ ] Obtain site as-builds
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch

- [ ] Other:

### Initial Feasibility and Construction Considerations


### Site Candidate for Further Investigation:

- [ ] Yes
- [ ] No
- [X] Maybe

### Is Site Candidate for Early Action Project(s):

- [X] Yes
- [ ] No
- [ ] Maybe

### If No, Site Candidate for Other Restoration Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

If Yes, Type(s):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils. Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**Watershed:**

**Subwatershed:**

**Unique Site ID:** III

**Date:** 6/9/16

**Assessed By:** [Handwritten]

**Camera ID:** C

**Pictures:** 

**GPS ID:**

**LMK ID:**

**Lat:**

**Long:**

### Site Description

- **Name:** [Handwritten]
- **Address:** 2 Bowing Lane, Westerly, RI

- **Ownership:** [Handwritten]
- **If Public, Government Jurisdiction:**
  - [Handwritten]

- **Corresponding USSR/USA Field Sheet:**
  - Yes
  - No

### Proposed Retrofit Location:

- **Storage**
  - [Handwritten]
  - [Handwritten]
  - [Handwritten]

- **On-Site**
  - [Handwritten]
  - [Handwritten]

### Drainage Area to Proposed Retrofit

- **Drainage Area:** [Handwritten]
- **Imperviousness:** [Handwritten] %
- **Impervious Area:** [Handwritten]

### Existing Stormwater Management

- **Existing Stormwater Practice:** Yes

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- [Handwritten]

### Existing Head Available and Points Where Measured:

- [Handwritten]
### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Recharge
- Channel Protection
- Flood Control
- Repair
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtered Practice
- Infiltration
- Swale
- Other: **permeable pavement**

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

*Infiltration under parking lot*

### Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Possible

<table>
<thead>
<tr>
<th>Utility</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
</tr>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Probable
- Not Probable
- Impacts to Wetlands
- Probable
- Not Probable
- Impacts to a Stream
- Probable
- Not Probable
- Floodplain Fill
- Probable
- Not Probable
- Impacts to Forests
- Probable
- Not Probable
- Impacts to Specimen Trees
- How many?
- Approx. DBH

**Other factors:**

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

<table>
<thead>
<tr>
<th>Factor</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil auger test holes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of poor infiltration (clays, fines)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Evidence of shallow bedrock</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Evidence of high water table (gleying, saturation)</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
### DESIGN OR DELIVERY NOTES

<table>
<thead>
<tr>
<th>Confirm property ownership</th>
<th>Obtain existing stormwater practice as-builts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirm drainage area</td>
<td>Obtain site as-builts</td>
</tr>
<tr>
<td>Confirm drainage area impervious cover</td>
<td>Obtain detailed topography</td>
</tr>
<tr>
<td>Confirm volume computations</td>
<td>Obtain utility mapping</td>
</tr>
<tr>
<td>Complete concept sketch</td>
<td>Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>Other:</td>
<td>Confirm soil types</td>
</tr>
</tbody>
</table>

### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

### SITE CANDIDATE FOR FURTHER INVESTIGATION:
- [ ] Yes
- [x] No
- [ ] Maybe

### IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):
- [ ] Yes
- [x] No
- [ ] Maybe

### IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):
- [ ] Yes
- [ ] No
- [ ] Maybe

If yes, type(s): [ ]

Unique Site ID: [ ]
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30 % Impervious OR IC >= 1 Acre
**Watershed:**

**Date:** 11/19/16

**Assessed By:** rw/wq

**Camera ID:** C

**Pictures:** 215-230

**GPS ID:** LMK ID:

**Site Description**

**Name:** Bunker Presbyterian Church

**Address:** 25 Mason Street, Hopkinton, RI

**Ownership:** Private

**If Public, Government Jurisdiction:** State

Corresponding USSR/USA Field Sheet?: No

**Proposed Retrofit Location:**

- Storage
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Other:
  - Above Roadway Culvert
  - In Conveyance System
  - Near Large Parking Lot

- On-Site
  - Hotspot Operation
  - Small Parking Lot
  - Individual Street
  - Underground
  - Other:

**Drainage Area to Proposed Retrofit**

- Drainage Area
  - Imperviousness
  - Percent: %
  - Impervious Area

**Notes:**

- 

**Existing Stormwater Management**

**Existing Stormwater Practice:** Yes

**If Yes, Describe:**

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

*No cess, drains to street down steep driveways*

**Existing Head Available and Points Where Measured:**
### Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- Other: ____________________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Infiltration
- [ ] Swale
- Other: ____________________

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:
- Permeable wet or infiltration
  - steep slopes limit breadth
  - take curbs out to disperse some runoff into grass?

### Site Constraints

**Adjacent Land Use:**
- Residential [X]
- Commercial [ ]
- Institutional [ ]
- Industrial [ ]
- Transport-Related [ ]
- Park [ ]
- Tavel [ ]
- Undeveloped [ ]
- Other: ____________________

**Possible Conflicts Due to Adjacent Land Use:**
- Yes [ ]
- No [ ]

**If Yes, Describe:** ____________________

**Conflicts with Existing Utilities:**
- None [ ]
- Unknown [ ]
- Yes [ ]

<table>
<thead>
<tr>
<th>Possible Utilities</th>
<th>S = Sewer</th>
<th>W = Water</th>
<th>G = Gas</th>
<th>C = Cable</th>
<th>E = Electric</th>
<th>E = Electric to Streetlights</th>
<th>O = Overhead Wires</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
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<td>No</td>
<td>[x]</td>
<td>[x]</td>
<td>[x]</td>
<td>[x]</td>
<td>[x]</td>
<td>[x]</td>
<td>[x]</td>
<td>[x]</td>
</tr>
</tbody>
</table>

**Potential Permitting Factors:**
- Dam Safety Permits Necessary [ ]
- Probable [ ] Not Probable [ ]
- Impacts to Wetlands [ ]
- Probable [ ] Not Probable [ ]
- Impacts to a Stream [ ]
- Probable [ ] Not Probable [ ]
- Floodplain Fill [ ]
- Probable [ ] Not Probable [ ]
- Impacts to Forests [ ]
- Probable [ ] Not Probable [ ]
- Impacts to Specimen Trees [ ]
- Probable [ ] Not Probable [ ]

**How many?**
- Approx. DBH: ____________________

**Other factors:** ____________________

**Soils:**
- Soil auger test holes: [ ] Yes [ ] No
- Evidence of poor infiltration (clays, fines): [ ] Yes [ ] No
- Evidence of shallow bedrock: [ ] Yes [ ] No
- Evidence of high water table (gleying, saturation): [ ] Yes [ ] No
### DESIGN OR DELIVERY NOTES

<table>
<thead>
<tr>
<th>Follow-up Needed to Complete Field Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Confirm property ownership</td>
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### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

<table>
<thead>
<tr>
<th>Site Candidate for Further Investigation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Yes</td>
</tr>
<tr>
<td>- No</td>
</tr>
<tr>
<td>- Maybe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is Site Candidate for Early Action Project(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Yes</td>
</tr>
<tr>
<td>- No</td>
</tr>
<tr>
<td>- Maybe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If No, Site Candidate for Other Restoration Project(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Yes</td>
</tr>
<tr>
<td>- No</td>
</tr>
<tr>
<td>- Maybe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If Yes, Type(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre
**Watershed:**

**Subwatershed:**

**Unique Site ID:**

**Date:** 6/3/16

**Assessed By:** R/W

**Camera ID:** C

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:** 1236-1245

**Site Description**

**Name:** J.S. Post Office

**Address:** 131 Main Street, Hopkinton, RI

**Ownership:** Public

**If Public, Government Jurisdiction:** Other: Federal

**Corresponding USSR/USA Field Sheet?:** No

**If yes, Unique Site ID:**

**Proposed Retrofit Location:**

**Storage**

- [] Existing Pond
- [] Above Roadway Culvert
- [] Below Outfall
- [x] In Road ROW
- [] Near Large Parking Lot
- [x] Other:

**On-Site**

- [] Hotspot Operation
- [] Small Parking Lot
- [] Individual Street
- [] Underground
- [x] Individual Rooftop
- [x] Small Impervious Area
- [x] Landscape / Hardscape
- [] Other:

**Drainage Area to Proposed Retrofit**

**Drainage Area**

- [x] Imperviousness =

- [x] Impervious Area =

**Notes:** adjacent residential areas

**Existing Stormwater Management**

**Existing Stormwater Practice:**

- [ ] Yes
- [x] No
- [ ] Possible

- [x] CBS, mostly plugged

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Post office, adjacent streets & residential areas drain to CBS
- Heavy sediment load & packed CBS
- CBS still flowing despite being filled w/ sand

**Existing Head Available and Points Where Measured:**
**Proposed Retrofit**

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th>Channel Protection</th>
<th>Recharge</th>
<th>Other:</th>
<th>Water Quality</th>
<th>Repair</th>
</tr>
</thead>
</table>

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**

- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Linear infiltration along either road (across the road from site)
- Add newCb(s) where needed

**SITE CONSTRAINTS**

**Adjacent Land Use:**

- Residential
- Commercial
- Industrial
- Transport-Related
- Institutional
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**

- Yes
- No

**Access:**

- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Structures
  - Tree Impacts
  - Property Ownership
  - Other:

**Conflicts with Existing Utilities:**

- None
- Unknown
- Yes
- Possible

- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

**Potential Permitting Factors:**

- Dam Safety Permits Necessary
- Probable
- Not Probable
- Impacts to Wetlands
- Probable
- Not Probable
- Impacts to a Stream
- Probable
- Not Probable
- Floodplain Fill
- Probable
- Not Probable
- Impacts to Forests
- Probable
- Not Probable
- Impacts to Specimen Trees
- Probable
- Not Probable
- How many?
- Approx. DBH

**Soils:**

- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

- Yes
- No
<table>
<thead>
<tr>
<th>DESIGN OR DELIVERY NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Confirm property ownership</td>
</tr>
<tr>
<td>☑ Confirm drainage area</td>
</tr>
<tr>
<td>☑ Confirm drainage area impervious cover</td>
</tr>
<tr>
<td>☑ Confirm volume computations</td>
</tr>
<tr>
<td>☑ Complete concept sketch</td>
</tr>
<tr>
<td>☑ Obtain existing stormwater practice as-builts</td>
</tr>
<tr>
<td>☑ Obtain site as-builts</td>
</tr>
<tr>
<td>☑ Obtain detailed topography</td>
</tr>
<tr>
<td>☑ Obtain utility mapping</td>
</tr>
<tr>
<td>☑ Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>☑ Confirm soil types</td>
</tr>
<tr>
<td>☑ Other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy sediment load to any practice unless nearby driveways are stabilized</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SITE CANDIDATE FOR FURTHER INVESTIGATION:</th>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
<tr>
<td>IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
<tr>
<td>IF YES, TYPE(S):</td>
<td></td>
<td></td>
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</table>
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre

Legend
- Railroad
- Flood Zone
  - 100 Year Flood Zone
  - 500 Year Flood Zone

Additional Notes:
- underground infiltration
- above ground infiltration swale or underground infiltration
- add CB + one
<table>
<thead>
<tr>
<th><strong>Watershed:</strong></th>
<th><strong>Subwatershed:</strong></th>
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<td>C</td>
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</thead>
<tbody>
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</tr>
</tbody>
</table>

**Site Description**

Name: **Seventh Day Baptist Church**  
Address: 8 Church St, North, RI

Ownership:  
- [ ] Public  
- [X] Private  
- [ ] Unknown  

If Public, Government Jurisdiction:  
- [ ] Local  
- [ ] State  
- [ ] DOT  
- [ ] Other:

Corresponding USSR/USA Field Sheet?:  
- [ ] Yes  
- [ ] No  

If yes, Unique Site ID:

**Proposed Retrofit Location:**

Storage  
- [ ] Existing Pond  
- [ ] Below Outfall  
- [ ] In Road ROW?  
- [ ] Near Large Parking Lot  
- [ ] Other:

On-Site  
- [ ] Hotspot Operation  
- [ ] Small Parking Lot  
- [ ] Individual Street  
- [ ] Landscape / Hardscape  
- [ ] Underground  
- [ ] Other:

**Drainage Area to Proposed Retrofit**

Drainage Area: _______  
Imperviousness: _______ %  
Impervious Area: _______  

Notes: May extend past trees to the north

**Existing Stormwater Management**

Existing Stormwater Practice:  
- [X] Yes  
- [ ] No  
- [ ] Possible

If Yes, Describe:

Plants in parking lot might be bioretention (no surrounding curb) but may handle little runoff

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Runoff drains to church st.; large portion of area recently repaved with expanded pavement

Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Repair
- Channel Protection
- Other: __________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Swale
- Bioretention
- Other: __________

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

"Place bioretention on side of church or remove pavement along road to place bioretention along street. Also, underground infiltration in road row?"

### Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other: __________

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Trees
  - Structures
  - Property Ownership
  - Other: __________

**Conflicts with Existing Utilities:**

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sewer</td>
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<tr>
<td></td>
<td>Water</td>
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<tr>
<td></td>
<td>Gas</td>
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<tr>
<td></td>
<td>Cable</td>
</tr>
<tr>
<td></td>
<td>Electric</td>
</tr>
<tr>
<td></td>
<td>Electric to Streetlights</td>
</tr>
<tr>
<td></td>
<td>Overhead Wires</td>
</tr>
</tbody>
</table>

**Potential Permitting Factors:**

- Dam Safety Permit Necessary
- Floodplain Fill
- Wildfires
- Impacts to Wetlands
- Impacts to Streams
- Impacts to Forests
- Impacts to Specimen Trees
- How many? __________
  - Approx. DBH __________

**Other factors:**

**Soils:**
- Soil auger test holes: Yes / No
- Evidence of poor infiltration (clays, ferricrete): Yes / No
- Evidence of shallow bedrock: Yes / No
- Evidence of high water table (gleying, saturation): Yes / No
### DESIGN OR DELIVERY NOTES

<table>
<thead>
<tr>
<th>Yes</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
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<tbody>
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</tbody>
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### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-buils
- Obtain site as-buils
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other:

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

<table>
<thead>
<tr>
<th>Yes</th>
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<tbody>
<tr>
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<td></td>
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</tbody>
</table>

### SITE CANDIDATE FOR FURTHER INVESTIGATION:

- Yes
- No
- Maybe

### IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):

- Yes
- No
- Maybe

### IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):

- Yes
- No
- Maybe

If yes, type(s):
Seventh Day Baptist Church
8 Church Street
Hopkinton, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

entire parking lot JUST repaved & expanded
### Retrofit Reconnaissance Investigation (RRI)

<table>
<thead>
<tr>
<th>Watershed:</th>
<th>Subwatershed:</th>
<th>Unique Site ID:</th>
</tr>
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<tbody>
<tr>
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<td></td>
<td>119</td>
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</tbody>
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#### Date: 6/3/16  PICTURES: 1245 - 13:00

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<td></td>
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</tbody>
</table>

#### Site Description

<table>
<thead>
<tr>
<th>Name:</th>
<th>Ashaway Fire Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>213 Main Street, Newport RI</td>
</tr>
</tbody>
</table>

Ownership:
- [ ] Public
- [x] Local
- [ ] State
- [ ] DOT
- [ ] Other

Corresponding USSR/USA Field Sheet:
- [ ] Yes
- [ ] No

If Yes, Unique Site ID: [ ]

#### Proposed Retrofit Location:

<table>
<thead>
<tr>
<th>Storage</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Existing Pond</td>
<td>[ ] Hotspot Operation</td>
</tr>
<tr>
<td>[ ] Below Outfall</td>
<td>[ ] Small Parking Lot</td>
</tr>
<tr>
<td>[ ] In Road ROW</td>
<td>[ ] Individual Street</td>
</tr>
<tr>
<td>[ ] Near Large Parking Lot</td>
<td>[ ] Underground</td>
</tr>
<tr>
<td>[ ] Other</td>
<td>[ ] Individual Rooftop</td>
</tr>
<tr>
<td>[ ] Other</td>
<td>[ ] Small Impervious Area</td>
</tr>
<tr>
<td>[ ] Other</td>
<td>[ ] Landscape / Hardscape</td>
</tr>
<tr>
<td>[ ] Other</td>
<td>[ ] Other</td>
</tr>
</tbody>
</table>

#### Drainage Area to Proposed Retrofit

<table>
<thead>
<tr>
<th>Drainage Area ≈</th>
<th>Imperviousness ≈ %</th>
<th>Impervious Area ≈</th>
</tr>
</thead>
</table>

Notes: mostly on site

#### Existing Stormwater Management

<table>
<thead>
<tr>
<th>Existing Stormwater Practice:</th>
<th>Yes</th>
<th>No</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>If Yes, Describe:</td>
<td>Street CBS only (main ST)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Paved parking lot & building roof drain back toward cemetery
- Sediment pooled in back of lot
downsputs mostly drain into ground

Existing Head Available and Points Where Measured:
### PROPOSED RETROFIT

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality</td>
<td>[ ] Recharge</td>
<td>[ ] Channel Protection</td>
</tr>
<tr>
<td>Demonstration / Education</td>
<td>[ ] Repair</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Retrofit Volume Computations - Target Storage:</th>
<th>Retrofit Volume Computations - Available Storage:</th>
</tr>
</thead>
</table>

### Proposed Treatment Option:

<table>
<thead>
<tr>
<th>Extended Detention</th>
<th>Wet Pond</th>
<th>Created Wetland</th>
<th>Bioretention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filtering Practice</td>
<td>Infiltration</td>
<td>Swale</td>
<td>Other</td>
</tr>
</tbody>
</table>

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

- *bioretention?*
- *surface infiltration or underground infiltration under parking lot*

### SITE CONSTRAINTS:

#### Adjacent Land Use:

- Residential: [ ]
- Commercial: [ ]
- Institutional: [ ]
- Industrial: [ ]
- Transport-Related: [ ]
- Undeveloped: [ ]
- Other: *Cemetery*

#### Possible Conflicts Due to Adjacent Land Use?:

- Yes: [ ]
- No: [ ]

### Conflicts with Existing Utilities:

- None: [ ]
- Unknown: [ ]
- Yes: [ ]
- Possible:
  - Sewer: [ ]
  - Water: [ ]
  - Gas: [ ]
  - Cable: [ ]
  - Electric: [ ]
  - Electric to Streetlights: [ ]
  - Overhead Wires: [ ]
  - Other: [ ]

#### Potential Permitting Factors:

- Dam Safety Permits Necessary: [ ] Probable [ ] Not Probable
- Impacts to Wetlands: [ ] Probable [ ] Not Probable
- Impacts to a Stream: [ ] Probable [ ] Not Probable
- Floodplain Fill: [ ] Probable [ ] Not Probable
- Impacts to Forests: [ ] Probable [ ] Not Probable
- Impacts to Specimen Trees: [ ] Probable [ ] Not Probable

### Soils:

- Soil auger test holes: [ ] Yes [ ] No
- Evidence of poor infiltration (clays, fines): [ ] Yes [ ] No
- Evidence of shallow bedrock: [ ] Yes [ ] No
- Evidence of high water table (gleying, saturation): [ ] Yes [ ] No

### Access:

- No Constraints: [ ]
- Constrained due to:
  - Slope: [ ]
  - Utilities: [ ]
  - Structures: [ ]
  - Tree Impacts: [ ]
  - Property Ownership: [ ]
  - Other: [ ]

### Other factors:

- How many? ___________
- Approx. DBH ___________
**Design or Delivery Notes**

**Follow-up Needed to Complete Field Concept**

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch

- [ ] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

- [ ] Other:

**Initial Feasibility and Construction Considerations**

- [ ] Site candidate for further investigation:
  - [ ] Yes
  - [ ] No
  - [ ] Maybe

- [ ] Is site candidate for early action project(s):
  - [ ] Yes
  - [ ] No
  - [ ] Maybe

- [ ] If no, site candidate for other restoration project(s):
  - [ ] Yes
  - [ ] No
  - [ ] Maybe

  **If yes, type(s):**

*Unique Site ID: *19
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre.
**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 125

**DATE:** 6/9/16

**ASSESSED BY:** RRI

**CAMERA ID:** C

**PICTURES:** 235-245

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

---

**SITE DESCRIPTION**

**Name:** Trinity Lutheran Church

**Address:** County of Rte 116 + Welsztown Rd; Hopkinton Rd

**Ownership:**

- [ ] Public
- [x] Private
- [ ] Unknown

**If Public, Government Jurisdiction:**

- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other

**Corresponding USSR/USA Field Sheet:**

- [ ] Yes
- [ ] No
- [ ] If yes, Unique Site ID:

---

**Proposed Retrofit Location:**

**Storage**

- [ ] Existing Pond
- [x] Below Outfall
- [x] In Road ROW
- [ ] Other:

**On-Site**

- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [x] Individual Street
- [ ] Landscape / Hardscape
- [ ] Other:

---

**DRAINAGE AREA TO PROPOSED RETROFIT**

**Drainage Area ≈

**Imperviousness ≈

**Impervious Area ≈

---

**EXISTING STORMWATER MANAGEMENT**

**Existing Stormwater Practice:**

- [ ] Yes
- [x] No
- [ ] Possible

**If Yes, Describe:**

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- minor swale along road edge; no formal infrastructure

---

**Existing Head Available and Points Where Measured:**
## Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality [X]
- Recharge [X]
- Channel Protection [ ]
- Flood Control [ ]
- Demonstration / Education [ ]
- Repair [ ]
- Other: [ ]

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention [ ]
- Wet Pond [ ]
- Created Wetland [ ]
- Bioretention [X]
- Filtering Practice [ ]
- Infiltration [ ]
- Swale [X]
- Other: [ ]

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

Swales along row along Wellstown Rd and/or bioretention in greenspace on high st. side of Paugus street.

## Site Constraints

**Adjacent Land Use:**
- Residential [ ]
- Commercial [ ]
- Institutional [X]
- Industrial [ ]
- Transport-Related [ ]
- Park [ ]
- Undeveloped [ ]
- Other: [ ]

**Possible Conflicts Due to Adjacent Land Use?**
- Yes [ ]
- No [ ]

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- None [ ]
- Unknown [X]

**Yes**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary [ ]
- Probable [ ] Not Probable [ ]
- Impacts to Wetlands [ ]
- Probable [ ] Not Probable [ ]
- Impacts to a Stream [ ]
- Probable [ ] Not Probable [ ]
- Floodplain Fill [ ]
- Probable [ ] Not Probable [ ]
- Impacts to Forests [ ]
- Probable [ ] Not Probable [ ]
- Impacts to Specimen Trees [ ]
- Probable [ ] Not Probable [ ]

How many? ____________

Approx. DBH ____________

**Soils:**
- Soil auger test holes: [ ] Yes [ ] No
- Evidence of poor infiltration (clays, fines): [ ] Yes [ ] No
- Evidence of shallow bedrock: [ ] Yes [ ] No
- Evidence of high water table (gleying, saturation): [ ] Yes [ ] No

**Access:**
- No Constraints [X]
- Constrained due to:
  - [ ] Slope
  - [ ] Space
  - [ ] Utilities
  - [ ] Tree Impacts
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Other:

**Other factors:**

---

Unique Site ID: 128
### Design or Delivery Notes

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### Follow-up Needed to Complete Field Concept

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types
- [ ] Other:

### Initial Feasibility and Construction Considerations

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### Site Candidate for Further Investigation:
- [ ] YES
- [ ] NO
- [ ] MAYBE

### Is Site Candidate for Early Action Project(s):
- [ ] YES
- [ ] NO
- [ ] MAYBE

### If No, Site Candidate for Other Restoration Project(s):
- [ ] YES
- [ ] NO
- [ ] MAYBE

If YES, Type(s):

---

Unique Site ID: 175
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre
# Retrofit Reconnaissance Investigation (RRI)

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<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

## Site Description

**Name:** Shannock Baptist Church

**Address:** 1632 Shannock Rd. Charleston RI

**Ownership:**
- [ ] Public
- [ ] Private
- [ ] Unknown
- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other

**If Public, Government Jurisdiction:**
- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other

**Corresponding USSR/USA Field Sheet:**
- [ ] Yes
- [ ] No

**If yes, Unique Site ID:**

## Proposed Retrofit Location:

**Storage**
- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Other:

**On-Site**
- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
- [ ] Other:

## Drainage Area to Proposed Retrofit

**Drainage Area:**
- [ ] %

**Imperviousness:**
- [ ] %

**Impervious Area:**
- [ ] %

**Drainage Area Land Use:**
- [ ] Institutional
- [ ] Residential
- [ ] SFH (< 1 ac lots)
- [ ] SFH (> 1 ac lots)
- [ ] Commercial
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Multi-Family
- [ ] Undeveloped
- [ ] Other:

## Existing Stormwater Management

**Existing Stormwater Practice:**
- [ ] Yes
- [ ] No
- [ ] Possible

**If Yes, Describe:**

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Steep driveway + parking
- No erosion problem

**Existing Head Available and Points Where Measured:**

---

Page 1 of 4

Unique Site ID: 128
## Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Other: __________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other: __________

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

**NA**

## Site Constraints

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

If Yes, Describe:

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes
- [ ] Possible

- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

**Potential Permitting Factors:**
- [ ] Probable
- [ ] Not Probable

- [ ] Dam Safety Permits Necessary
- [ ] Impacts to Wetlands
- [ ] Impacts to a Stream
- [ ] Floodplain Fill
- [ ] Impacts to Forests
- [ ] Impacts to Specimen Trees

**How many?**

- [ ] Approx. DBH __________

**Other factors:**

**Soils:**
- [ ] Yes
- [ ] No

- [ ] Soil auger test holes: __________
- [ ] Evidence of poor infiltration (clays, fines): __________
- [ ] Evidence of shallow bedrock: __________
- [ ] Evidence of high water table (gleying, saturation): __________
**DESIGN OR DELIVERY NOTES**

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

**OTHER:**

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

**SITE CANDIDATE FOR FURTHER INVESTIGATION:**

- [ ] YES
- [ ] NO
- [ ] MAYBE

**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):**

- [ ] YES
- [ ] NO
- [ ] MAYBE

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):**

- [ ] YES
- [ ] NO
- [ ] MAYBE

**IF YES, TYPE(S):**
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
WATERSHED: | SUBWATERSHED: | UNIQUE SITE ID: 129
---|---|---
DATE: 7/5/16 | ASSESSED BY: RWLWG | CAMER A ID: C | PICTURES: 819-838
GPS ID: | LMK ID: | LAT: | LONG:

SITE DESCRIPTION

Name: St. Mary's Catholic Church
Address: 451-485 Carmina Back Rd, Charlestown RI

Ownership: Private | Unknown | DOT | Other:
If Public, Government Jurisdiction: | Local | State | DOT | Other:

Corresponding USSR/USA Field Sheet? Yes | No | If yes, Unique Site ID:

Proposed Retrofit Location:
- Existing Pond
- Below Outfall
- In Road ROW
- Storage Above Roadway Culvert
- In Conveyance System
- Near Large Parking Lot
- On-Site Hotspot Operation
- Small Parking Lot
- Individual Street
- Underground
- Individual Rooftop
- Small Impervious Area
- Landscape / Hardscape
- Other:

DRAINAGE AREA TO PROPOSED RETROFIT

Drainage Area = 
Imperviousness = %
Impervious Area =

Drainage Area Land Use:
- Institutional
- Residential
- Industrial
- SFH (< 1 ac lots)
- Transport-Related
- SFH (> 1 ac lots)
- Park
- Townhouses
- Undeveloped
- Multi-Family
- Other:

EXISTING STORMWATER MANAGEMENT

Existing Stormwater Practice: Yes | No | Possible

If Yes, Describe: dat. if roof gutters go to dry well

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:
must runoff appears to drain to road & contains a lot of sand
No erosion problems on site but are created along highway

Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Infiltration - under parking lots
- Bioretention - in triangle area across street from church
  - natural low point; one pipe currently installed, receives road runoff
  - possible public property (park)

### Site Constraints

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes
- [ ] Possible

- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

**Potential Permitting Factors:**

- [ ] Dam Safety Permits Necessary: Probable
- [ ] Impacts to Wetlands: Probable
- [ ] Impacts to a Stream: Probable
- [ ] Floodplain Fill: Probable
- [ ] Impacts to Forests: Probable
- [ ] Impacts to Specimen Trees: Probable

**How many?**

**Approx. DBH**

**Other factors:**

- [ ] Yes
- [ ] No

**Soils:**

- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

**Pending water could be due to road runoff of fines**
**DESIGN OR DELIVERY NOTES**

WEWA should determine paving plans for church parking lots to pass st.

- Repaving = opportunity for underground infiltration + permeable paving

Bioretention is better option

---

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builds
- Obtain site as-builds
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

Other: ____________________________________________

---

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

---

**SITE CANDIDATE FOR FURTHER INVESTIGATION:**

- YES [ ]
- NO [ ]

**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):**

- YES [ ]
- NO [ ]
- MAYBE [ ]

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):**

- YES [ ]
- NO [ ]
- MAYBE [ ]

If YES, TYPE(S): ____________________________________________

---

Unique Site ID: 129
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre
**WATERSHED:***

**SUBWatershed:***

**UNIQUE SITE ID:** 136

**DATE:** 6/16/16

**ASSESSSED BY:** Ruling

**CAMERA ID:** C

**PICTURES:** 13:30-14:00

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

**SITE DESCRIPTION**

**Name:** Richmond Carolina Fire District

**Address:** 200 Richmond Town House Rd

**Ownership:** [Public]

**IF Public, Government Jurisdiction:** [Local]

**Corresponding USSR/USA Field Sheet:** [Yes]

**Proposed Retrofit Location:**

**Storage**
- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Other:

**On-Site**
- [ ] Hotspot Operation
- [ ] Individual Rooftop

**DRAINAGE AREA TO PROPOSED RETROFIT**

**Drainage Area ≈**

**Imperviousness ≈**

**Impervious Area ≈**

**Notes:**

**EXISTING STORMWATER MANAGEMENT**

**Existing Stormwater Practice:** [ ] Yes  [ ] No  [ ] Possible

**If Yes, Describe:**

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

*Minor drainage problems (erosion, deposition); no impacts visible off "Nothing bad enough to throw money at"*

**Existing Head Available and Points Where Measured:**
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: **No Need**

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other: **NONE**

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

### SITE CONSTRAINTS

**Adjacent Land Use:**
- [X] Undeveloped
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

If Yes, Describe:

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [X] Yes

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many? **Approx. DBH**

**Soils:**
- Soil auger test holes: **Yes**
- Evidence of poor infiltration (clays, fines): **Yes**
- Evidence of shallow bedrock: **Yes**
- Evidence of high water table (gleying, saturation): **Yes**
**Design or Delivery Notes**

<table>
<thead>
<tr>
<th>Design or Delivery Notes</th>
</tr>
</thead>
</table>

**Follow-up Needed to Complete Field Concept**

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types
- [ ] Other: *None*

**Initial Feasibility and Construction Considerations**

**Site Candidate for Further Investigation:**

- [ ] Yes
- [ ] No
- [ ] Maybe

**Is Site Candidate for Early Action Project(s):**

- [ ] Yes
- [ ] No
- [ ] Maybe

**If No, Site Candidate for Other Restoration Project(s):**

- [ ] Yes
- [ ] No
- [ ] Maybe

**If Yes, Type(s):**

---

Unique Site ID: 136
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
## Retrofit Reconnaissance Investigation

### Watershed: [Great Swamp Management Area](#)

### Subwatershed: [160-170 Great Neck Rd, South Kingston, RI](#)

### Unique Site ID: [137](#)

### Date: [6/3/16](#)

### Assessed By: [RJ/LLG](#)

### Camera ID: [C](#)

### Pictures: [137](#)

### GPS ID: [LMK ID](#)

### LAT: [LONG: 11/15 - 11/23](#)

### Site Description:

Name: [Great Swamp Management Area](#)

Address: [160-170 Great Neck Rd, South Kingston, RI](#)

Ownership: [Public](#)

If Public, Government Jurisdiction: [Local](#)

Corresponding USSR/USA Field Sheet? [Yes](#)

If yes, Unique Site ID: [ ]

### Proposed Retrofit Location:

**Storage:**
- [ ] Existing Pond
- [ ] Above Roadway Culvert
- [ ] Below Outfall
- [ ] In Conveyance System
- [ ] In Road ROW
- [ ] Near Large Parking Lot
- [ ] Other:

**On-Site:**
- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
- [ ] Individual Rooftop
- [ ] Small Impervious Area
- [ ] Landscape / Hardscape
- [ ] Other:

### Drainage Area to Proposed Retrofit:

**Drainage Area:**

**Imperviousness:**

% [ ]

**Impervious Area:**

% [ ]

Notes: Maintenance area - poss spills, high sed loads from unimproved roads.

### Existing Stormwater Management:

Existing Stormwater Practice: [Yes](#)

If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

No pavement; all impervious surfaces are gravel.

Existing ponds on site; woods surround site.

Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: 

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Biotreatment
- [ ] Infiltration
- [ ] Swale
- [ ] Filtering Practice
- [ ] Other: 

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

Conversion of RQ to SW filter practice to reduce use catch basin as overflow. None feasible.

### Site Constraints

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use:**
- [ ] Yes
- [ ] No

If Yes, Describe:

### Conflicts with Existing Utilities:

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
</tr>
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<tbody>
<tr>
<td>Sewer</td>
<td>No</td>
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<tr>
<td>Water</td>
<td>Yes</td>
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<tr>
<td>Gas</td>
<td>Yes</td>
</tr>
<tr>
<td>Cable</td>
<td>Yes</td>
</tr>
<tr>
<td>Electric</td>
<td>No</td>
</tr>
<tr>
<td>Electric to Streetlights</td>
<td>No</td>
</tr>
<tr>
<td>Overhead Wires</td>
<td>No</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Permitting Factors:**

- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many?
  - Approx. DBH  

**Other factors:**

**Soils:**
- Soil auger test holes: [ ] Yes
- Evidence of poor infiltration (clays, fines): [ ] Yes
- Evidence of shallow bedrock: [ ] Yes
- Evidence of high water table (gleying, saturation): [ ] Yes

**Unique Site ID:** 137
### Design or Delivery Notes

<table>
<thead>
<tr>
<th>Follow-up Needed to Complete Field Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Confirm property ownership</td>
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<tr>
<td>☐ Confirm drainage area</td>
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</tr>
<tr>
<td>☐ Confirm soil types</td>
</tr>
<tr>
<td>☐ Other:</td>
</tr>
</tbody>
</table>

### Initial Feasibility and Construction Considerations

<table>
<thead>
<tr>
<th>Site Candidate for Further Investigation:</th>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
<tr>
<td>IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
</tbody>
</table>
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% impervious OR IC >= 1 Acre
Retrofit Reconnaissance Investigation

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
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<tbody>
<tr>
<td></td>
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<table>
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<tr>
<th>DATE:</th>
<th>ASSESSED BY</th>
<th>CAMERA ID</th>
<th>PICTURES:</th>
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<tbody>
<tr>
<td>6/3/16</td>
<td>Ru/1A</td>
<td>C</td>
<td>1030-11</td>
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<table>
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<th>GPS ID:</th>
<th>LMK ID:</th>
<th>LAT:</th>
<th>LONG:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SITE DESCRIPTION**

Name: J&D West Kingston Services/Courthouse Center for the arts
Address: 3041 Kingston Road, South Kingston, RI
Ownership: 
If Public, Government Jurisdiction: 
Corresponding USSR/USA Field Sheet: 
If yes, Unique Site ID:

**PROPOSED RETROFIT LOCATION:**

<table>
<thead>
<tr>
<th>Storage</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Pond</td>
<td>□ Highspot Operation</td>
</tr>
<tr>
<td>Below Outfall</td>
<td>□ Small Parking Lot</td>
</tr>
<tr>
<td>In Road ROW</td>
<td>□ Individual Street</td>
</tr>
<tr>
<td>Other:</td>
<td>□ Landscape / Hardscape</td>
</tr>
</tbody>
</table>

**DRAINAGE AREA TO PROPOSED RETROFIT**

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Imperviousness =</th>
<th>Impervious Area =</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Raw soil would drain road + site

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice: □ Yes  X No  □ Possible
If Yes, Describe:

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Small drainage area; no obvious erosion or contamination problems
Only formal drainage at street (sworfe downsprouts go into ground)

Existing Head, Available and Points Where Measured:

Unique Site ID: 139
### Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [x] Demonstration / Education
- [x] Repair
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Infiltration
- [ ] Developed Wetland
- [x] Swale
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

Parking togs or bioretention?
(replace tree islands)

Retrofit swale in Raw?

### Site Constraints

**Adjacent Land Use:**
- [x] Residential
- [x] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

If Yes, Describe:

**Conflicts with Existing Utilities:**

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ] Sewer</td>
</tr>
<tr>
<td>[ ]</td>
<td>[ ] Water</td>
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<td>[x]</td>
<td>[ ] Wells</td>
</tr>
<tr>
<td>[ ]</td>
<td>[ ] Gas</td>
</tr>
<tr>
<td>[ ]</td>
<td>[ ] Cable</td>
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<td>[ ]</td>
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<td>[ ]</td>
<td>[ ] Other:</td>
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</tbody>
</table>

**Potential Permitting Factors:**

<table>
<thead>
<tr>
<th>Dam Safety Permits Necessary</th>
<th>Probable</th>
<th>Not Probable</th>
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<tbody>
<tr>
<td>Impacts to Wetlands</td>
<td>Probable</td>
<td>Not Probable</td>
</tr>
<tr>
<td>Impacts to a Stream</td>
<td>Probable</td>
<td>Not Probable</td>
</tr>
<tr>
<td>Floodplain Fill</td>
<td>Probable</td>
<td>Not Probable</td>
</tr>
<tr>
<td>Impacts to Forests</td>
<td>Probable</td>
<td>Not Probable</td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
<td>Probable</td>
<td>Not Probable</td>
</tr>
</tbody>
</table>

How many?

Approx. DBH

**Other factors:**

<table>
<thead>
<tr>
<th>Soil auger test holes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[x] Yes</td>
</tr>
</tbody>
</table>

| Evidence of poor infiltration (clays, fines): |
| [ ] Yes | [x] No |
| Evidence of shallow bedrock: |
| [ ] Yes | [x] No |
| Evidence of high water table (gleying, saturation): |
| [ ] Yes | [x] No |
allow for incorporation of art

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other:

INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

No apparent need for treatment / source of contamination

SITE CANDIDATE FOR FURTHER INVESTIGATION:
- YES [ ] NO [ ] MAYBE [ ]

IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):
- YES [ ] NO [ ] MAYBE [ ]

IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):
- YES [ ] NO [ ] MAYBE [ ]

IF YES, TYPE(S):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre
<table>
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<th><strong>Watershed</strong></th>
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<th><strong>Camera ID:</strong></th>
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<td>R. W.</td>
<td>C</td>
<td>-</td>
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<th><strong>LONG:</strong></th>
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<table>
<thead>
<tr>
<th><strong>Site Description</strong></th>
</tr>
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<tbody>
<tr>
<td>Name: West Kingston Baptist Church, New Harbor Church</td>
</tr>
<tr>
<td>Address: 283 Waites Corner Road, South Kingsborough, RI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ownership: Public ☐</th>
<th>Private ☐</th>
<th>Unknown ☐</th>
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<tbody>
<tr>
<td>If Public, Government Jurisdiction: Local ☐</td>
<td>State ☐</td>
<td>DOT ☐</td>
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</table>

<table>
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<tr>
<th>Corresponding USSR/USA Field Sheet? Yes ☐</th>
<th>No ☐</th>
<th>If yes, Unique Site ID:</th>
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<table>
<thead>
<tr>
<th><strong>Proposed Retrofit Location:</strong></th>
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<tbody>
<tr>
<td>Storage: Existing Pond ☐</td>
</tr>
<tr>
<td>swampess</td>
</tr>
<tr>
<td>On-Site: Hotspot Operation ☐</td>
</tr>
<tr>
<td>Individual Rooftop ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Drainage Area to Proposed Retrofit</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Area =</td>
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<table>
<thead>
<tr>
<th><strong>Existing Stormwater Management</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Stormwater Practice: Yes ☐</td>
</tr>
<tr>
<td>If Yes, Describe:</td>
</tr>
</tbody>
</table>

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Road drains into site

Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Other: ____________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

### Proposed Treatment Option:
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other: ____________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Bioretention out front to capture site runoff
- Some disconnect for lot or puddled corner (e.g., perm spots or underground infiltration)

### Site Constraints

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other: ____________

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

**Access:**
- [ ] No Constraints
- [ ] Constrained due to:
  - Slope
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
- [ ] Other: ____________

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown

**Yes**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other: ____________

**Potential Permitting Factors:**
- [ ] Dam Safety Permits Necessary
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Wetlands
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to a Stream
- [ ] Probable
- [ ] Not Probable
- [ ] Floodplain Fill
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Forests
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Specimen Trees
  - How many?
    - Approx. DBH: ____________
- [ ] Other factors:
  - ____________

**Soils:**
- Soil auger test holes:
  - [ ] Yes
  - [ ] No
- Evidence of poor infiltration (clays, fines):
  - [ ] Yes
  - [ ] No
- Evidence of shallow bedrock:
  - [ ] Yes
  - [ ] No
- Evidence of high water table (gleving, saturation):
  - [ ] Yes
  - [ ] No
## Follow-up Needed to Complete Field Concept

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-buils
- [ ] Obtain site as-buils
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

## Initial Feasibility and Construction Considerations

<table>
<thead>
<tr>
<th>Site Candidate for Further Investigation:</th>
<th>Yes</th>
<th>No</th>
<th>Maybe</th>
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</thead>
<tbody>
<tr>
<td>Is Site Candidate for Early Action Project(s):</td>
<td>Yes</td>
<td>No</td>
<td>Maybe</td>
</tr>
<tr>
<td>If No, Site Candidate for Other Restoration Project(s):</td>
<td>Yes</td>
<td>No</td>
<td>Maybe</td>
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</tbody>
</table>

If yes, type(s):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
<table>
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<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
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<th>PICTURES:</th>
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</tbody>
</table>

**SITE DESCRIPTION**

Name: Farm shed w/ Greenhouses

Address:  

Ownership:  

Public  
Private  
Unknown

If Public, Government Jurisdiction:  

Local  
State  
DOT  
Other:

Corresponding USSR/USA Field Sheet:  

Yes  
No  
If yes, Unique Site ID:

**Proposed Retrofit Location:**

- Storage:
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Near Large Parking Lot
  - Other:

- On-Site:
  - Above Roadway Culvert
  - In Conveyance System

**DRAINAGE AREA TO PROPOSED RETROFIT**

Drainage Area ≈  

Imperviousness ≈  

Impervious Area ≈  

Drainage Area Land Use:

- Residential
  - SFH (< 1 ac lots)
  - SFH (> 1 ac lots)
  - Townhouses
  - Multi-Family
  - Commercial

- Institutional
  - Industrial
  - Transport-Related
  - Park
  - Undeveloped
  - Other:

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice:  

- Yes  
- No  
- Possible

If Yes, Describe:  

Swale, grass acts as filter strips

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Other: 

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other: 

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

### Site Constraints

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

If Yes, Describe:

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown

**Yes**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires

**Possible**
- [ ] Yes
- [ ] No

**Potential Permitting Factors:**
- [ ] Dam Safety Permits Necessary
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Wetlands
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to a Stream
- [ ] Probable
- [ ] Not Probable
- [ ] Floodplain Fill
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Forests
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Specimen Trees
- [ ] Probable
- [ ] Not Probable
- [ ] How many?________
- [ ] Approx. DBH________

**Other factors:**

**Soils:**
- [ ] Soil auger test holes:
- [ ] Yes
- [ ] No
- [ ] Evidence of poor infiltration (clays, fines):
- [ ] Yes
- [ ] No
- [ ] Evidence of shallow bedrock:
- [ ] Yes
- [ ] No
- [ ] Evidence of high water table (gleying, saturation):
- [ ] Yes
- [ ] No
### DESIGN OR DELIVERY NOTES

#### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-buils
- Obtain site as-buils
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other:

#### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

- Site candidate for further investigation: YES
- Site candidate for early action project(s): NO
- If no, site candidate for other restoration project(s): NO
  - If yes, type(s):
Farm Shed with Greenhouses
370 Plains Road
South Kingstown, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Retrofit Reconnaissance Investigation

Watershed: Subwatershed: Unique Site ID: 145
Date: 6/3/16 Assessed By: KWG Camera ID: C Pictures: 1305 - 1330
GPS ID: LMK ID: LAT: LONG:

Site Description:
Name: Wood River Health Services
Address: 823 Main Street, Hopkinton, RI
Ownership: Private
If Public, Government Jurisdiction: DOT
Corresponding USSR/USA Field Sheet: No

Proposed Retrofit Location:
Storage:
- Existing Pond
- Below Outfall
- In Road ROW
- Other:
- Above Roadway Culvert
- In Conveyance System

On-Site:
- Hotspot Operation
- Small Parking Lot
- Individual Street
- Underground
- Individual Rooftop
- Small Impervious Area
- Landscape/Hardscape
- Other:

Drainage Area to Proposed Retrofit:
Drainage Area: ~
Imperviousness: ~ %
Impervious Area: ~

Drainage Area Land Use:
- Residential
- SFH (< 1 ac lots)
- SFH (> 1 ac lots)
- Townhouses
- Multi-Family
- Commercial
- Other:

Existing Stormwater Management:
Existing Stormwater Practice: Yes
If Yes, Describe: Paved swales drain roof + parking lot to Main Street

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Existing Head Available and Points Where Measured:
Lots of seep in Rte 3 swale at bottom of hill
## PROPOSED RETROFIT

**Purpose of Retrofit:**
- X Water Quality
- Recharge
- Channel Protection
- Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- X Bioretention
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**
- [Handwritten] check dams
- [Handwritten] capture water from parking lot - roof w/out losing parking spaces
- [Handwritten] route to swale along roadway bioretention @ light pole in parking lot

## SITE CONSTRAINTS

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Conflicts with Existing Utilities:**
- None
- Unknown

**Yes**
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Probable
- Not Probable
- Impacts to Wetlands:
- Probable
- Not Probable
- Impacts to a Stream:
- Probable
- Not Probable
- Floodplain Fill:
- Probable
- Not Probable
- Impacts to Forests:
- Probable
- Not Probable
- Impacts to Specimen Trees:
- How many?
- Approx. DBH
- Probable
- Not Probable

**Other factors:**

**Soils:**
- Soil auger test holes:
- Yes
- No
- Evidence of poor infiltration (clays, fines):
- Yes
- No
- Evidence of shallow bedrock:
- Yes
- No
- Evidence of high water table (gleying, saturation):
- Yes
- No
**Design or Delivery Notes**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other:

**Follow-Up Needed to Complete Field Concept**

- Private property w/ steep slopes + limited space
  → unlikely project

**Initial Feasibility and Construction Considerations**

- Site candidate for further investigation:
  - YES ✗ NO ☐ MAYBE ☐
- Is site candidate for early action project(s):
  - YES ✗ NO ☐ MAYBE ☐
- If no, site candidate for other restoration project(s):
  - YES ✗ NO ☐ MAYBE ☐
- If yes, type(s):

Unique Site ID: 145
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**Retrofit Reconnaissance Investigation**

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<tbody>
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</tbody>
</table>

**SITE DESCRIPTION**

- **Name:**
- **Address:**
- **Ownership:**
- **Public**
- **Local**
- **State**
- **DOT**
- **Other:**
- **Corresponding USSR/USA Field Sheet:**
  - **Yes**
  - **No**
  - **If yes, Unique Site ID:**

**Proposed Retrofit Location:**

- **Storage:**
  - **Existing Pond**
  - **Below Outfall**
  - **In Road ROW**
  - **Other:**
- **On-Site:**
  - **Hotspot Operation**
  - **Small Parking Lot**
  - **Individual Street**
  - **Underground**
  - **Individual Rooftop**
  - **Small Impervious Area**
  - **Landscape / Hardscape**
  - **Other:**

**DRAINAGE AREA TO PROPOSED RETROFIT**

- **Drainage Area ≈**
- **Imperviousness ≈**
- **Impervious Area ≈**

<table>
<thead>
<tr>
<th>Drainage Area Land Use:</th>
<th>Institutional</th>
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<tbody>
<tr>
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<td>□ Industrial</td>
</tr>
<tr>
<td>□ SFH (&lt; 1 ac lots)</td>
<td>□ Transport-Related</td>
</tr>
<tr>
<td>□ SFH (&gt; 1 ac lots)</td>
<td>□ Park</td>
</tr>
<tr>
<td>□ Townhouses</td>
<td>□ Undeveloped</td>
</tr>
<tr>
<td>□ Multi-Family</td>
<td>□ Other</td>
</tr>
<tr>
<td>□ Commercial</td>
<td></td>
</tr>
</tbody>
</table>

**EXISTING STORMWATER MANAGEMENT:**

- **Existing Stormwater Practice:**
  - **Yes**
  - **No**
  - **Possible**

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- **Dawnsputs empty to ground**
- **No formal treatment visible**

**Existing Head Available and Points Where Measured:**
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [x] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

### Proposed Treatment Option:
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [x] Swale
- [ ] Bioretention
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Possible Raw swale conversion on neighbor's lawn
- Rooftop disconnection to bioretention in back

### SITE CONSTRAINTS

**Adjacent Land Use:**
- [x] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [x] No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes
- [ ] Possible

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<tr>
<th>Utility</th>
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<td>Sewer</td>
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<tr>
<td>Electric to Streetlights</td>
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<tr>
<td>Overhead Wires</td>
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<td>Other</td>
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**Potential Permitting Factors:**

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<tr>
<th>Factor</th>
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<tbody>
<tr>
<td>Dam Safety Permits Necessary</td>
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<tr>
<td>Impacts to Wetlands</td>
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<tr>
<td>Floodplain Fill</td>
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<td>How many? Approx. DBH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other factors:</td>
<td></td>
<td></td>
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</table>

**Soils:**

- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

- [ ] Yes
- [ ] No
No aerial available
**Retrofit Reconnaissance Investigation**

**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 152

**DATE:** 7/5/16

**ASSESSED BY:** LUW09

**CAMERA ID:** C

**PICTURES:** 11:35-11:40

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

**SITE DESCRIPTION**

**Name:** South Kingstown Nursing + Rehab

**Address:** 2165 South County Trail, South Kingstown, RI

**Ownership:**
- Public
- Private
- Unknown
- DOT
- Other:

**Corresponding USSR/USA Field Sheet?**
- Yes
- No
  - If yes, Unique Site ID:

**Proposed Retrofit Location:**

**Storage**
- Existing Pond
- Below Outfall
- In Road ROW
- Other:

**On-Site**
- Above Roadway Culvert
- In Conveyance System
- Near Large Parking Lot

**DRAINAGE AREA TO PROPOSED RETROFIT**

**Drainage Area ≈**

**Imperviousness ≈** %

**Impervious Area ≈**

**Notes:**

**EXISTING STORMWATER MANAGEMENT**

**Existing Stormwater Practice:**
- Yes
- No
- Possible

**If Yes, Describe:**

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

*Formal CBS in parking lot*

**Existing Head Available and Points Where Measured:**
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- Water Quality
- Demonstration/Education
- Recharge
- Repair
- Channel Protection
- Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Infiltration
- Created Wetland
- Swale
- Bioretention
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Bioretention in front lawns

---

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Possible
  - Sewer
  - Water
  - Gas
  - Cable
  - Electric
  - Electric to Streetlights
  - Overhead Wires
  - Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
  - How many?
  - Approx. DBH

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

**Access:**
- No Constraints
- Constrained due to:
  - Space
  - Utilities
  - Structures
  - Property Ownership
  - Other:

---

*Unique Site ID: 152*
### DESIGN OR DELIVERY NOTES

<table>
<thead>
<tr>
<th>Follow-up Needed to Complete Field Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Confirm property ownership</td>
</tr>
<tr>
<td>☐ Confirm drainage area</td>
</tr>
<tr>
<td>☐ Confirm drainage area impervious cover</td>
</tr>
<tr>
<td>☐ Confirm volume computations</td>
</tr>
<tr>
<td>☐ Complete concept sketch</td>
</tr>
<tr>
<td>☐ Other</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Obtain existing stormwater practice as-builts</td>
</tr>
<tr>
<td>Obtain site as-builts</td>
</tr>
<tr>
<td>Obtain detailed topography</td>
</tr>
<tr>
<td>Obtain utility mapping</td>
</tr>
<tr>
<td>Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>Confirm soil types</td>
</tr>
</tbody>
</table>

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

Site Candidate for Further Investigation:
- [ ] YES
- [x] NO
- [ ] MAYBE

Is Site Candidate for Early Action Project(s):
- [ ] YES
- [x] NO
- [ ] MAYBE

If NO, Site Candidate for Other Restoration Project(s):
- [ ] YES
- [x] NO
- [ ] MAYBE

If YES, Type(s):
South Kingstown Nursing and Rehab
2115 South County Trail
South Kingstown, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**Retrofit Reconnaissance Investigation (RRI)**

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>154</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATE:</th>
<th>ASSESSED BY:</th>
<th>CAMERA ID:</th>
<th>PICTURES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/6/16</td>
<td>RW/FG</td>
<td></td>
<td></td>
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<table>
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<tr>
<th>GPS ID:</th>
<th>LMK ID:</th>
<th>LAT:</th>
<th>LONG:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SITE DESCRIPTION**

Name: **Hope Valley Wyoming Fire District**

Address: 

Ownership: □ Public □ Private □ Unknown □ Local □ State □ DOT □ Other: 

If Public, Government Jurisdiction: □ Local □ State □ Other: 

Corresponding USSR/USA Field Sheet? □ Yes □ No If yes, Unique Site ID: 

**Proposed Retrofit Location:**

- Storage: 
  - □ Existing Pond
  - □ Below Outfall
  - □ In Road ROW
  - □ Other: 

- On-Site: 
  - □ Hotspot Operation
  - □ Small Parking Lot
  - □ Individual Street
  - □ Landscape / Hardscape
  - □ Underground

**DRAINAGE AREA TO PROPOSED RETROFIT**

- Drainage Area: 
  - □ Imperviousness ≈ %
  - □ Impervious Area ≈ 

- Drainage Area Land Use: □ Institutional
  - □ Residential
  - □ SFH (< 1 ac lots)
  - □ SFH (> 1 ac lots)
  - □ Townhouses
  - □ Multi-Family
  - □ Commercial
  - □ Undeveloped

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice: □ Yes □ No □ Possible

If Yes, Describe: 

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

All impervious, drains to CBS that go straight to river...

**Existing Head Available and Points Where Measured:**
### Retrofit Reconnaissance Investigation

#### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education

- [ ] Recharge
- [ ] Repair

- [ ] Channel Protection
- [ ] Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

#### Proposed Treatment Option:
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Infiltration
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Swale
- [ ] Other:

#### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

---

#### SITE CONSTRAINTS

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

**Access:**
- [ ] No Constraints
- [ ] Constrained due to:
  - [ ] Slope
  - [ ] Utilities
  - [ ] Structures
  - [ ] Tree Impacts
  - [ ] Property Ownership
  - [ ] Other:

**Conflicts with Existing Utilities:**

- [ ] None
- [ ] Unknown

**Yes**
- [ ] Yes
- [ ] No

**Possible**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

**Potential Permitting Factors:**
- [ ] Dam Safety Permits Necessary
- [ ] Impacts to Wetlands
- [ ] Impacts to a Stream
- [ ] Floodplain Fill
- [ ] Impacts to Forests
- [ ] Impacts to Specimen Trees

**How many?**
- [ ] Approx. DBH

**Other factors:**

---

**Soils:**
- [ ] Soil auger test holes
- [ ] Evidence of poor infiltration (clays, fines)
- [ ] Evidence of shallow bedrock
- [ ] Evidence of high water table (gleying, saturation):

- [ ] Yes
- [ ] No

**Unique Site ID:**
### DESIGN OR DELIVERY NOTES

### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other:

### INITIAL: FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

<table>
<thead>
<tr>
<th>Site Candidate for Further Investigation:</th>
<th>Yes</th>
<th>No</th>
<th>Maybe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is Site Candidate for Early Action Project(s):</td>
<td>Yes</td>
<td>No</td>
<td>Maybe</td>
</tr>
<tr>
<td>If No, Site Candidate for Other Restoration Project(s):</td>
<td>Yes</td>
<td>No</td>
<td>Maybe</td>
</tr>
</tbody>
</table>

If Yes, Type(s):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**Date:** 6/6/16  
**Assessed By:** RWLWG  
**Camera ID:** C  
**Pictures:** 11:55 - 12:00

**Site Description**

<table>
<thead>
<tr>
<th>Name: Longwood Public Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address: 240 Spring Street, Longwood, FL</td>
</tr>
</tbody>
</table>

Ownership:  
- [ ] Public  
- [x] Local  
- [ ] State  
- [ ] DOT  
- [ ] Other:

Corresponding USSR/USA Field Sheet:  
- [ ] Yes  
- [ ] No  
- [ ] If yes, Unique Site ID: __________

**Proposed Retrofit Location**

<table>
<thead>
<tr>
<th>Storage</th>
</tr>
</thead>
</table>
| [ ] Existing Pond  
| [ ] Below Outfall  
| [ ] In Road ROW  
| [ ] Other: |

<table>
<thead>
<tr>
<th>On-Site</th>
</tr>
</thead>
</table>
| [x] Small Parking Lot  
| [ ] Individual Street  
| [ ] Underground  
| [ ] Other: |

**Drainage Area to Proposed Retrofit**

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Imperviousness %</th>
</tr>
</thead>
<tbody>
<tr>
<td>~</td>
<td>~</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impervious Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>~</td>
</tr>
</tbody>
</table>

Notes: limited to on-site (road is disturbed)

**Existing Stormwater Management**

<table>
<thead>
<tr>
<th>Existing Stormwater Practice:</th>
</tr>
</thead>
</table>
| [ ] Yes  
| [ ] No  
| [ ] Possible |

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Gravel currently plowed; gravel pushed into windrows at bottom of lot; some soil going over bank into reservoir.
- Roof drains to gutters into the gravel; outfall location unknown, but likely over edge of embankment.

Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Repair
- Channel Protection
- Flood Control
- Other: _______

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Other: _______

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**
- Pervious pavers in lot
- Disconnect gutters to flow over pervious lot
- Include practices to disperse flow

### Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Industrial
- Transport-Related
- Park
- Undeveloped

**Possible Conflicts Due to Adjacent Land Use?**
- No

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
  - Other: _______

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees

**How many?**
- Approx. DBH: _______

**Other factors:**

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

**Unique Site ID:** _______
### Design or Delivery Notes

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch

### Follow-up Needed to Complete Field Concept

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch

- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

### Initial Feasibility and Construction Considerations

- Site candidate for further investigation: **Yes**
- Is site candidate for early action project(s): **No**
- If no, site candidate for other restoration project(s): **No**

- If yes, type(s): **NA**
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 5 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
<table>
<thead>
<tr>
<th>Date: 6/6/16</th>
<th>Assessed By:</th>
<th>Camera ID:</th>
<th>Pictures: B:15 - 13:30</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS ID:</td>
<td>LMK ID:</td>
<td>LAT:</td>
<td>LONG:</td>
</tr>
</tbody>
</table>

### Site Description

- **Name:** Richmond Police Dept
- **Address:** 168 Main St, Richmond RI
- **Ownership:** Public
- **If Public, Government Jurisdiction:** Local
- **Corresponding USSR/USA Field Sheet:** No

#### Proposed Retrofit Location

- **Storage:**
  - [X] Existing Pond
  - [ ] Below Outfall
  - [ ] In Road ROW
  - Other:

- **On-Site:**
  - [X] Individual Street Underground
  - [ ] Hotspot Operation
  - [ ] Small Parking Lot
  - [ ] Individual Rooftop Small Impervious Area
  - [ ] Landscape / Hardscape
  - [ ] Other:

#### Drainage Area to Proposed Retrofit

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Imperviousness</th>
<th>Impervious Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>≈</td>
<td>%</td>
<td>≈</td>
</tr>
</tbody>
</table>

**Notes:** on-site only

#### Existing Stormwater Management

- **Existing Stormwater Practice:** No
- **Describe:**

#### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Parking lot full of sand; roof drains to parking lot

#### Existing Head Available and Points Where Measured:

- Many large CBRs (~10' deep, are replaced or some pt)
## PROPOSED RETROFIT

**Purpose of Retrofit:**
- [X] Water Quality
- [X] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

## Proposed Treatment Option:
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

## Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

To move planters/basins from building, more sideward toward building permeable parking spaces or underground.

## SITE CONSTRAINTS:

### Adjacent Land Use:
- [ ] Residential
- [X] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

### Possible Conflicts Due to Adjacent Land Use?
- [ ] Yes
- [ ] No

If Yes, Describe:

### Conflicts with Existing Utilities:
- [ ] None
- [ ] Unknown
- [X] Possible

- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

### Potential Permitting Factors:
- [ ] Dam Safety Permits Necessary
- [ ] Impacts to Wetlands
- [ ] Impacts to a Stream
- [ ] Floodplain Fill
- [ ] Impacts to Forests
- [ ] Impacts to Specimen Trees
- [ ] How many? Approx. DBH

### Other factors:

### Access:
- [ ] No Constraints
- [X] Constrained due to
  - [ ] Slope
  - [ ] Utilities
  - [ ] Space
  - [ ] Tree Impacts
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Other:

### Soils:
- [ ] Soil auger test holes:
- [ ] Evidence of poor infiltration (clays, fines):
- [ ] Evidence of shallow bedrock:
- [ ] Evidence of high water table (gleysing, saturation):
**Design or Delivery Notes**

- Good potential!
- Dry if dry wells on site
- Clear flooding + seep problem (large berms of deposited material at back of lot; parking lot coated in sand)

**Follow-Up Needed to Complete Field Concept**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-built
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

**Initial Feasibility and Construction Considerations**

Are there already dry wells on site?

**Site Candidate for Further Investigation:**

- YES [x] NO [ ] MAYBE [ ]

**Is Site Candidate for Early Action Project(s):**

- YES [x] NO [ ] MAYBE [ ]

**If No, Site Candidate for Other Restoration Project(s):**

- YES [ ] NO [ ] MAYBE [ ]

**If Yes, Type(s):**

- [ ]
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils,
Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR
IC >= 1 Acre

Legend
- Railroad
- Flood Zone
  - 104 Sites
  - 100 YEAR FLOOD ZONE
  - 500 YEAR FLOOD ZONE

1. infiltration chamber beneath parking area
2. move walkway closer to building to accommodate infiltration basin or bioretention planters for all roof leaders
**Watershed:**
**Subwatershed:**
**Unique Site ID:** 159

**Date:** 7/15/06  
**Assessed By:**  
**Camera ID:** C  
**Pictures:** 11/11/15

**GPS ID:**  
**LMK ID:**  
**Lat:**  
**Long:**

**Site Description**

Name: Rhode Island State Police  
Address: 49 Mooseneck Hill Road Richmond, RI

Ownership:  
- Public  
- Private  
- Unknown  
- Local  
- State  
- DOT  
- Other:  

If Public, Government Jurisdiction:  
- Local  
- State  
- DOT  
- Other:  

Corresponding USSR/USA Field Sheet:  
- Yes  
- No  
If yes, Unique Site ID:  

**Proposed Retrofit Location:**

- Existing Pond  
- Below Outfall  
- In Road ROW  
- Near Large Parking Lot  
- Above Roadway Culvert  
- In Conveyance System  
- Other:  

**On-Site**

- Hotspot Operation  
- Individual Rooftop  
- Small Parking Lot  
- Individual Street  
- Underground  
- Small Impervious Area  
- Landscape/Hardscape  
- Other:  

**Drainage Area to Proposed Retrofit**

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Imperviousness</th>
<th>Impervious Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Image" /></td>
<td></td>
<td><img src="image" alt="Image" /></td>
</tr>
</tbody>
</table>

**Notes:**

**Existing Stormwater Management**

- Existing Stormwater Practice:  
- Yes  
- No  
- Possible

**Drainage Area Land Use:**

- Institutional  
- Residential  
- SFH (<1 ac lots)  
- SFH (>1 ac lots)  
- Townhouses  
- Multi-Family  
- Commercial  
- Industrial  
- Transport-Related  
- Park  
- Undeveloped  
- Other:  

**Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Road drains to highway, no formal infrastructure; water curving drains down highway directly into creek/wetland & bridge.

* Is damaging bridge

**Existing Head Available and Points Where Measured:**

- Close to impounded water!
**Proposed Retrofit**

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Channel Protection
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Infiltration
- Created Wetland
- Swale
- Bioretention
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

Regrade parking lot toward lawn; disconnect downsputs; construct bioretention basin(s) in front lawn to capture overflow? - difficult - need eXtended system

**Site Constraints**

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
  - Other:

**Conflicts with Existing Utilities:**

- None
- Unknown
- Yes
- Possible
  - Sewer
  - Water
  - Gas
  - Cable
  - Electric
  - Electric to Streetlights
  - Overhead Wires
  - Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
  - How many?
  - Approx. DBH

**Other factors:**

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

**Unique Site ID:** 159
### Follow-up Needed to Complete Field Concept

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch

- [ ] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

- [ ] Other:

### Initial Feasibility and Construction Considerations

### Site Candidate for Further Investigation:

- [ ] Yes
- [ ] No
- [ ] Maybe

### Is Site Candidate for Early Action Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

### If No, Site Candidate for Other Restoration Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

**If Yes, Type(s):** 

*Weeds/wildflowers/butterflies in adjacent lawn*
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Watershed:   Subwatershed:   Unique Site ID: 163

Date: 6/6/16   Assessed By: RW/WG   Camera ID: A   Pictures: 7:30-8

GPS ID:   LMK ID:   LAT:   LONG:

Site Description:
Name: Exeter Public Works "Adjacent to Animal Shelter"
Address: 175 South County Trail, Exeter, NH

Ownership:   ☒ Public   ☐ Private   ☐ Unknown
If Public, Government Jurisdiction:   ☒ Local   ☐ State   ☐ DOT   ☐ Other:

Corresponding USSR/USA Field Sheet?   ☐ Yes   ☐ No   If yes, Unique Site ID:

Proposed Retrofit Location:
Storage:   ☒ Existing Pond   ☐ Below Outfall   ☐ In Road ROW   ☐ Other:

DWARAGE AREA TO PROPOSED RETROFIT

Drainage Area =   Imperviousness =   Impervious Area =

Drainage Area Land Use:
☐ Residential   ☒ Institutional   ☐ Industrial   ☐ Transport-Related
☐ SFH (< 1 ac lots)   ☐ SFH (> 1 ac lots)   ☐ Townhouses   ☐ Park
☐ Multi-Family   ☐ Commercial   ☐ Undeveloped   ☐ Other:

Notes:
Little contributing area

EXISTING STORMWATER MANAGEMENT
Existing Stormwater Practice:   ☒ Yes   ☐ No   ☐ Possible
If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Existing Head Available and Points Where Measured:
**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Repair
- Channel Protection
- Other: Flood Control

**Retrofit Volume Computations - Target Storage:**
[Graph]

**Retrofit Volume Computations - Available Storage:**
[Graph]

**Proposed Treatment Option:**
- Extended Detention
- Filtering Practice
- Wet Pond
- Infiltration
- Created Wetland
- Swale
- Bioretention
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

*None needed; public works maintains detention basin on site due to high rainfall loads*

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Conflicts with Existing Utilities:**
- None
- Unknown

**Yes**
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires

**Yes**
- Other:

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Utilities
  - Structures
  - Property Ownership

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
  - How many? __________
  - Approx. DBH __________

**Other factors:**

*Unique Site ID: 163*
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre

sand does not seem to be getting
**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 172

**DATE:** 08/16/19

**ASSESSED BY:** R.W.G

**CAMERA ID:** C

**PICTURES:** 8:45-9:00

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

### SITE DESCRIPTION

**Name:**

**Address:** 742 Old Ten Rod Road, Exeter, RI

**Ownership:**

- [ ] Public
- [X] Private
- [ ] Unknown

**If Public, Government Jurisdiction:**

- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other:

**Corresponding USSR/USA Field Sheet?**

- [ ] Yes
- [ ] No

**If yes, Unique Site ID:**

### PROPOSED RETROFIT LOCATION

**Storage**

- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Other:
  - [ ] Above Roadway Culvert
  - [ ] In Conveyance System
  - [ ] Near Large Parking Lot

**On-Site**

- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
  - [ ] Individual Rooftop
  - [ ] Small Impervious Area
  - [ ] Landscape / Hardscape
  - [ ] Other:

### DRAINAGE AREA TO PROPOSED RETROFIT

**Drainage Area ≈**

**Imperviousness ≈** %

**Impervious Area ≈**

### EXISTING STORMWATER MANAGEMENT

**Existing Stormwater Practice:**

- [ ] Yes
- [ ] No
- [ ] Possible

**If Yes, Describe:**

*Most runoff runs to rock channel & forest before entering creek.*

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Runoff to road and flows through rock wall at concentrated pt; swale along road carries water under driveway & along road
- Swale is v. steep; all slopes around lot v. steep

**No soil buildup on lot; appears unsanded**

**Existing Head Available and Points Where Measured:**
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [x] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Infiltration
- [ ] Filtering Practice
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Small basin/bioswale in road (R) side of driveway)
  - on side of driveway too steep?

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- [x] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use:**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes
- [ ] Possible

- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many?
- Approx. DBH

**Other factors:**

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

- [ ] Yes
- [ ] No
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
### Retrofit Reconnaissance Investigation

**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 172

**DATE:** 6/18/16  
**ASSESSED BY:** RW/G  
**CAMERA ID:** C  
**PICTURES:** 8:45-9:00

**GPS ID:**  
**LMK ID:**  
**LAT:**  
**LONG:**

### SITE DESCRIPTION

**Name:**

**Address:** 742 Old Ten Rod Road, Exeter, RI

**Ownership:**
- [ ] Public
- [ ] Private
- [X] Unknown

**If Public, Government Jurisdiction:**
- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other:

**Corresponding USSR/USA Field Sheet?**
- [ ] Yes
- [ ] No

**If yes, Unique Site ID:**

### Proposed Retrofit Location:

**Storage**
- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Other:

**Above Roadway Culvert**
- [ ] In Conveyance System

**Near Large Parking Lot**
- [ ] Other:

### DRAINAGE AREA TO PROPOSED RETROFIT

**Drainage Area**

- [ ] Imperviousness ≈ [%]

- [ ] Impervious Area ≈

**Drainage Area Land Use:**
- [ ] Institutional
- [ ] Residential
- [ ] SFH (< 1 ac lots)
- [ ] SFH (> 1 ac lots)
- [ ] Townhouses
- [ ] Multi-Family
- [ ] Commercial
- [ ] Other:

### EXISTING STORMWATER MANAGEMENT

**Existing Stormwater Practice:**
- [ ] Yes
- [ ] No
- [ ] Possible

**If yes, Describe:**

- Most runoff runs to rock channel + forest before entering creek.

### Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Runoff to wind road flows through rock wall @ concentrated pt; swale along road carries water under driveway + along road

- Swale is v. steep; all slopes around lot v. steep

- No seal buildup on lot; appears unsanded

**Existing Head Available and Points Where Measured:**
**Proposed Retrofit**

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th>[ ] Water Quality</th>
<th>[x] Recharge</th>
<th>[ ] Channel Protection</th>
<th>[ ] Flood Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Demonstration / Education</td>
<td>[ ] Repair</td>
<td>[ ] Other:</td>
<td>[ ] Channel Protection</td>
<td>[ ] Flood Control</td>
</tr>
</tbody>
</table>

**Retrofit Volume Computations - Target Storage:**

<table>
<thead>
<tr>
<th>Retrofit Volume Computations - Target Storage:</th>
<th>Retrofit Volume Computations - Available Storage:</th>
</tr>
</thead>
</table>

**Proposed Treatment Option:**

| [ ] Extended Detention | [ ] Wet Pond | [ ] Created Wetland | [ ] Bioretention |
| [ ] Filtering Practice | [x] Infiltration | [ ] Swale | [ ] Other: |

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

*Small basin/bioswale in road road (BH side of driveway) UN side of driveway too steep?*

**Site Constraints**

<table>
<thead>
<tr>
<th>Adjacent Land Use:</th>
<th>[x] Residential</th>
<th>[ ] Commercial</th>
<th>[ ] Institutional</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Industrial</td>
<td>[ ] Transport-Related</td>
<td>[ ] Park</td>
<td>[ ] Undeveloped</td>
</tr>
<tr>
<td>[ ] Other:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Possible Conflicts Due to Adjacent Land Use?**

| [ ] Yes | [ ] No |

**If Yes, Describe:**

**Conflicts with Existing Utilities:**

<table>
<thead>
<tr>
<th>[ ] None</th>
<th>[ ] Unknown</th>
<th>Yes</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Sewer</td>
<td>[ ] Water</td>
<td>[ ] Gas</td>
<td></td>
</tr>
<tr>
<td>[ ] Gas</td>
<td>[ ] Cable</td>
<td>[ ] Electric</td>
<td></td>
</tr>
<tr>
<td>[ ] Electric</td>
<td>[ ] Electric to Streetlights</td>
<td>[ ] Overhead Wires</td>
<td></td>
</tr>
<tr>
<td>[ ] Overhead Wires</td>
<td>[ ] Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Potential Permitting Factors:**

<table>
<thead>
<tr>
<th>[ ] Probable</th>
<th>[ ] Not Probable</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Dam Safety Permits Necessary</td>
<td>[ ] Impacts to Wetlands</td>
</tr>
<tr>
<td>[ ] Impacts to a Stream</td>
<td>[ ] Floodplain Fill</td>
</tr>
<tr>
<td>[ ] Impacts to Forests</td>
<td>[ ] Impacts to Specimen Trees</td>
</tr>
</tbody>
</table>

*How many?*

Approx. DBH: __________

**Soils:**

<table>
<thead>
<tr>
<th>[ ] Yes</th>
<th>[ ] No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil auger test holes:</td>
<td>Evidence of poor infiltration (clays, fines):</td>
</tr>
<tr>
<td>Evidence of shallow bedrock:</td>
<td>Evidence of high water table (gleying, saturation):</td>
</tr>
</tbody>
</table>

**Other factors:**

---

Unique Site ID: _______
Building with parking lot
742 Ten Rod Road
Exeter, RI

Legend
- Railroad
- Flood Zone
  - 100 Year Flood Zone
  - 500 Year Flood Zone

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils,
Development, SHWT > 6 Ft, within 1/2 mile of
WQ Impairment, and >= 30% Impervious OR
IC >= 1 Acre

Fuss & O'Neill
<table>
<thead>
<tr>
<th><strong>WATERSHED:</strong></th>
<th><strong>SUBWATERSHED:</strong></th>
<th><strong>UNIQUE SITE ID:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>173</td>
</tr>
<tr>
<td><strong>DATE:</strong></td>
<td><strong>ASSESSED BY:</strong></td>
<td><strong>CAMERA ID:</strong></td>
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<tr>
<td>6/6/96</td>
<td>RW/SG</td>
<td>C</td>
</tr>
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<td><strong>GPS ID:</strong></td>
<td><strong>LMK ID:</strong></td>
<td><strong>PICTURES:</strong></td>
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<tr>
<td></td>
<td></td>
<td>820-845</td>
</tr>
<tr>
<td><strong>LAT:</strong></td>
<td><strong>LONG:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SITE DESCRIPTION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong> Exeter Town Hall Fire Dept</td>
</tr>
<tr>
<td><strong>Address:</strong> 475 4th Av, Exeter</td>
</tr>
<tr>
<td><strong>Ownership:</strong> Public</td>
</tr>
<tr>
<td><strong>Corresponding USSR/USA Field Sheet?</strong> No</td>
</tr>
<tr>
<td><strong>If yes, Unique Site ID:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Proposed Retrofit Location:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage:</strong></td>
</tr>
<tr>
<td>Existing Pond</td>
</tr>
<tr>
<td>Below Outfall</td>
</tr>
<tr>
<td>In Road ROW</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>On-Site:</strong></td>
</tr>
<tr>
<td>Hotspot Operation</td>
</tr>
<tr>
<td>Small Parking Lot</td>
</tr>
<tr>
<td>Individual Street</td>
</tr>
<tr>
<td>Underground</td>
</tr>
<tr>
<td><strong>Drainage Area to Proposed Retrofit:</strong></td>
</tr>
<tr>
<td><strong>Drainage Area Imperviousness:</strong></td>
</tr>
<tr>
<td>%</td>
</tr>
<tr>
<td><strong>Impervious Area:</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Notes:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>EXISTING STORMWATER MANAGEMENT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Stormwater Practice:</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Possible</td>
</tr>
<tr>
<td><strong>If Yes, Describe:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>No catch basins or swales on main site</td>
</tr>
<tr>
<td>Road shows evidence of high seal load - erosion/deposition along pavement edge.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Existing Head Available and Points Where Measured:</strong></th>
</tr>
</thead>
</table>

Unique Site ID: 189
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [x] Water Quality
- [ ] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

### PROPOSED TREATMENT OPTION:

- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [x] Bio/retention
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

### DESCRIBE ELEMENTS OF PROPOSED RETROFIT, INCLUDING SURFACE AREA, MAXIMUM DEPTH OF TREATMENT, AND CONVEYANCE:

Bio/retention in locations that avoid bedrock & util. + are highly visible.  One site would require removal of massive tree stump.  Overtop over berm or level spreader back into road.  Possibly excavator/o or armor roadside swale to prevent erosion + road damage.

### SITE CONSTRAINTS:

**Adjacent Land Use:**
- [x] Residential
- [x] Commercial
- [x] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

### CONFLICTS WITH EXISTING UTILITIES:

**Yes**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

### POTENTIAL PERMITTING FACTORS:

- **Dam Safety Permits Necessary**
- **Impacts to Wetlands**
- **Impacts to a Stream**
- **Floodplain Fill**
- **Impacts to Forests**
- **Impacts to Specimen Trees**

### ACCESS:

- [x] No Constraints
- Constrained due to:
- [x] Space
- [ ] Slope
- [ ] Utilities
- [ ] Tree Impacts
- [ ] Structures
- [x] Property Ownership
- [ ] Other:

### POTENTIAL PERMITTING FACTORS:

- **Approx. DBH**

### OTHER FACTORS:

- [ ] Yes
- [x] No

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

---

**Unique Site ID:** 173
Parking lots at both subsites are very new
- unlikely for infiltration or permeable paving
sites are currently well maintained

### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

<table>
<thead>
<tr>
<th>Confirm property ownership</th>
<th>Obtain existing improvements provided as-builts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirm drainage area</td>
<td>Obtain site as-builts</td>
</tr>
<tr>
<td>Confirm drainage area impervious cover</td>
<td>Obtain detailed topography</td>
</tr>
<tr>
<td>Confirm volume computations</td>
<td>Obtain utility mapping</td>
</tr>
<tr>
<td>Complete concept sketch</td>
<td>Confirm storm drain invert elevations</td>
</tr>
<tr>
<td></td>
<td>Confirm soil types</td>
</tr>
</tbody>
</table>

| Other:                     |

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

SITE CANDIDATE FOR FURTHER INVESTIGATION: YES  □ No  □ Maybe
IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES  □ No  □ Maybe
IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): □ YES  □ No  □ Maybe

IF YES, TYPE(S):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre

Infiltration basin and forebay

Runoff + sed = serious need
<table>
<thead>
<tr>
<th><strong>WATERSHED:</strong></th>
<th><strong>SUBWATERSHED:</strong></th>
<th><strong>UNIQUE SITE ID:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>179</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>DATE:</strong></th>
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<th><strong>CAMERA ID:</strong></th>
<th><strong>PICTURES:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>7/15/16</td>
<td>R/WG</td>
<td>C</td>
<td>140 - 145</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GPS ID:</strong></th>
<th><strong>LMK ID:</strong></th>
<th><strong>LAT:</strong></th>
<th><strong>LONG:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SITE DESCRIPTION**

Name: Small Building w/ Parking Lot, Town Hall Annex
Address: 302 Victory Highway, West Greenwich, RI
Ownership: [ ] Public [ ] Private [ ] Unknown [ ] DOT [ ] Other
If Public, Government Jurisdiction: [ ] Local [ ] State [ ] DOT [ ] Other
Corresponding USSR/USA Field Sheet? [ ] Yes [ ] No If yes, Unique Site ID:

**Proposed Retrofit Location:**

- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Above Roadway Culvert
- [ ] In Conveyance System
- [ ] Near Large Parking Lot
- Other:

- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
- Individual Rooftop
- Small Impervious Area
- Landscape / Hardscape
- Other: Adjacent Site

**DRAINAGE AREA TO PROPOSED RETROFIT**

- Drainage Area ≈ ___________
- Imperviousness ≈ ____________%
- Impervious Area ≈ ____________

**EXISTING STORMWATER MANAGEMENT**

- Existing Stormwater Practice: [ ] Yes [ ] No [ ] Possible
- If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Recharge
- Channel Protection
- Flood Control
- Other: [Blank]

**Retrofit Volume Computations - Target Storage:** [Blank]

**Retrofit Volume Computations - Available Storage:** [Blank]

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Other: [Blank]

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- On adjacent lot...
- Bioswale in Road Law

### Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other: [Blank]

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**If Yes, Describe:** [Blank]

**Conflicts with Existing Utilities:**

- None
- Unknown
- Yes
- Possible

<table>
<thead>
<tr>
<th>Utility</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
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<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric to Streetlights</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overhead Wires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Potential Permitting Factors:**

- Dam Safety Permits Necessary: [Not Probable]
- Impacts to Wetlands: [Probable]
- Impacts to a Stream: [Probable]
- Floodplain Fill: [Probable]
- Impacts to Forests: [Probable]
- Impacts to Specimen Trees: [Not Probable]

- How many?: [Blank]
- Approx. DBH: [Blank]

**Other factors:** [Blank]

**Soils:**

- Soil auger test holes: [Yes]
- Evidence of poor infiltration (clays, fines): [Yes]
- Evidence of shallow bedrock: [Yes]
- Evidence of high water table (gleying, saturation): [Yes]

**Access:**

- No Constraints
- Constrained due to:
  - Slope: [Not Probable]
  - Space: [Not Probable]
  - Utilities: [Not Probable]
  - Tree Impacts: [Not Probable]
  - Structures: [Not Probable]
  - Property Ownership: [Not Probable]
  - Other: [Blank]
### Design or Delivery Notes

**Follow-up Needed to Complete Field Concept**

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-built
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types
- [ ] Other: ____________________________

**Initial Feasibility and Construction Considerations**

---

**Site Candidate for Further Investigation:**

- [ ] Yes
- [ ] No
- [ ] Maybe

**Is Site Candidate for Early Action Project(s):**

- [ ] Yes
- [ ] No
- [ ] Maybe

**If No, Site Candidate for Other Restoration Project(s):**

- [ ] Yes
- [ ] No
- [ ] Maybe

**If Yes, Type(s):**

---

Unique Site ID: 179
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 183

**DATE:** 7/16

**ASSESSED BY:** RW/MG

**CAMERA ID:** B_phone

**PICTURES:** 10:07 - 10:16

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

### SITE DESCRIPTION

**Name:** West Broad St School

**Address:** 1 Broad St, Stonington, CT

**Ownership:** Public

**If Public, Government Jurisdiction:** Local

**Corresponding USSR/USA Field Sheet:** No

**If yes, Unique Site ID:**

#### Proposed Retrofit Location:

**Storage**
- [ ] Existing Pond
- [ ] Above Roadway Culvert
- [ ] Below Outfall
- [ ] In Conveyance System
- [ ] Near Large Parking Lot
- [ ] Other:

**On-Site**
- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Landscape / Hardscape
- [ ] Underground
- [ ] Other: Front of Building

#### DRAINAGE AREA TO PROPOSED RETROFIT

**Drainage Area **

**Imperviousness **

%

**Impervious Area **

% Notes:

#### EXISTING STORMWATER MANAGEMENT

**Existing Stormwater Practice:**
- [ ] Yes
- [ ] No
- [ ] Possible

**If Yes, Describe:**

#### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Heavily paved, steep, no curbs at all water drains straight off site

#### Existing Head Available and Points Where Measured:
### Proposed Retrofit

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Water Quality</td>
</tr>
<tr>
<td>☐ Recharge</td>
</tr>
<tr>
<td>☐ Channel Protection</td>
</tr>
<tr>
<td>☐ Flood Control</td>
</tr>
<tr>
<td>☐ Demonstration / Education</td>
</tr>
<tr>
<td>☐ Repair</td>
</tr>
<tr>
<td>☐ Other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Retrofit Volume Computations - Target Storage:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Retrofit Volume Computations - Available Storage:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Proposed Treatment Option:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Bioretention</td>
</tr>
<tr>
<td>☐ Extended Detention</td>
</tr>
<tr>
<td>☐ Wet Pond</td>
</tr>
<tr>
<td>☐ Created Wetland</td>
</tr>
<tr>
<td>☐ Infiltration</td>
</tr>
<tr>
<td>☐ Swale</td>
</tr>
<tr>
<td>☐ Other:</td>
</tr>
</tbody>
</table>

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

*small basin in front of school*

### Site Constrains

<table>
<thead>
<tr>
<th>Adjacent Land Use:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Residential</td>
</tr>
<tr>
<td>☐ Commercial</td>
</tr>
<tr>
<td>☐ Institutional</td>
</tr>
<tr>
<td>☐ Industrial</td>
</tr>
<tr>
<td>☐ Transport-Related</td>
</tr>
<tr>
<td>☐ Park</td>
</tr>
<tr>
<td>☐ Undeveloped</td>
</tr>
<tr>
<td>☐ Other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Possible Conflicts Due to Adjacent Land Use?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes</td>
</tr>
</tbody>
</table>

**If Yes, Describe:**

### Conflicts with Existing Utilities:

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

### Potential Permitting Factors:

<table>
<thead>
<tr>
<th>Dam Safety Permits Necessary</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Probable</td>
</tr>
<tr>
<td>Impacts to Wetlands</td>
</tr>
<tr>
<td>☐ Probable</td>
</tr>
<tr>
<td>Impacts to a Stream</td>
</tr>
<tr>
<td>☐ Probable</td>
</tr>
<tr>
<td>Floodplain Fill</td>
</tr>
<tr>
<td>☐ Probable</td>
</tr>
<tr>
<td>Impacts to Forests</td>
</tr>
<tr>
<td>☐ Probable</td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
</tr>
<tr>
<td>☐ Probable</td>
</tr>
</tbody>
</table>

**How many?**

Approx. DBH: [Blank]

**Other factors:**

### Soils:

- Soil auger test holes: ☐ Yes | ☐ No
- Evidence of poor infiltration (clays, fines): ☐ Yes | ☐ No
- Evidence of shallow bedrock: ☐ Yes | ☐ No
- Evidence of high water table (gleying, saturation): ☐ Yes | ☐ No
**Design or Delivery Notes**

- All parking space currently used for parking lots and sewer manholes on site.

**Follow-up Needed to Complete Field Concept**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other:

**Initial Feasibility and Construction Considerations**

- Site candidate for further investigation: [ ] Yes [ ] No [ ] Maybe
- Is site candidate for early action project(s): [ ] Yes [ ] No [ ] Maybe
- If no, site candidate for other restoration project(s): [ ] Yes [ ] No [ ] Maybe
- If yes, type(s):
West Broad Street School
W. Broad Street
Stonington, RI

Legend

- Railroad
- Flood Zone
- 100 Year Flood Zone
- 500 Year Flood Zone

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
### Retrofit Reconnaissance Investigation

**Watershed:**

**Subwatershed:**

**Unique Site ID:** 185

**Date:** 7/1/16

**Assessed By:** RWJ

**Camera ID:** B. Phane

**Pictures:** 9-930

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

### Site Description

**Name:** N. Stonington Middle School

**Address:**

**Ownership:**

- [ ] Public
- [ ] Private
- [ ] Unknown

**If Public, Government Jurisdiction:**

- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other:

**Corresponding USSR/USA Field Sheet?**

- [ ] Yes
- [ ] No

*If yes, Unique Site ID:*

### Proposed Retrofit Location:

**Storage**

- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Other:

**On-Site**

- [ ] Hosspot Operation
- [ ] Individual Rooftop
- [ ] Small Parking Lot
- [ ] Small Impervious Area
- [ ] Individual Street
- [ ] Landscape/Hardscape
- [ ] Underground
- [ ] Other:

### Drainage Area to Proposed Retrofit

**Drainage Area ~**

**Imperviousness ~** %

**Impervious Area ~**

**Notes:**

### Existing Stormwater Management

**Existing Stormwater Practice:**

- [ ] Yes
- [x] No
- [ ] Possible

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Formal drainage at back of school; roof drains probably thru center of building
- Some parking lots - no formal drainage

### Existing Head Available and Points Where Measured:
**PROPOSED RETROFIT**

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th>Recharge</th>
<th>Channel Protection</th>
<th>Flood Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstration / Education</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Retrofit Volume Computations - Target Storage:**

[Handwritten note: ...]

**Retrofit Volume Computations - Available Storage:**

[Handwritten note: ...]

**Proposed Treatment Option:**

- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [X] Bioretention
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Demo bioretention & dry swales
- Exfiltration w/ overflow just in case
- Multi-chamber treatment - work around trees + signage
- Dry swale in back of school w/ check dams near library to control erosion
- Bioretention for driveway

**SITE CONSTRAINTS**

**Adjacent Land Use:**

- [X] Residential
- [X] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**

- [ ] Yes
- [X] No

**If Yes, Describe:**

[Handwritten note: ...]

**Conflicts with Existing Utilities:**

- [X] Yes
- [ ] Unknown

- Sewer
- [X] Water
- [ ] Gas
- [X] Cable
- Electric
- [ ] Electric to Streetlights
- Overhead Wires
- [ ] Other:

**Potential Permitting Factors:**

- [X] Dam Safety Permits Necessary
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Wetlands
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to a Stream
- [ ] Probable
- [ ] Not Probable
- [ ] Floodplain Fill
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Forests
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Specimen Trees
- [ ] Probable
- [ ] Not Probable
- [ ] How many?
- [ ] Approx. DBH

**Other factors:***

[Handwritten note: ...]

**Soils:**

- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (sleeting, saturation):

- [X] Yes
- [ ] No

[Handwritten note: ...]
Evidence of farm, stormwater, green thinking.
Site had bonfires, chickens, greenhouse, compost on site.

<table>
<thead>
<tr>
<th>FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Confirm property ownership</td>
</tr>
<tr>
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</tr>
<tr>
<td>□ Confirm volume computations</td>
</tr>
<tr>
<td>□ Complete concept sketch</td>
</tr>
<tr>
<td>□ Other:</td>
</tr>
</tbody>
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<tr>
<th>INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Candidate for Further Investigation:</td>
</tr>
<tr>
<td>□ YES □ NO □ MAYBE</td>
</tr>
<tr>
<td>Is Site Candidate for Early Action Project(s):</td>
</tr>
<tr>
<td>□ YES □ NO □ MAYBE</td>
</tr>
<tr>
<td>If No, Site Candidate for Other Restoration Project(s):</td>
</tr>
<tr>
<td>□ YES □ NO □ MAYBE</td>
</tr>
<tr>
<td>If YES, Type(s):</td>
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</tbody>
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Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% impervious OR IC >= 1 Acre
### Retrofit Reconnaissance Investigation (RRI)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WATERSHED:</strong></td>
<td><strong>SUBWATERSHED:</strong></td>
<td><strong>UNIQUE SITE ID:</strong></td>
<td>191</td>
</tr>
<tr>
<td><strong>DATE:</strong> EN/16</td>
<td><strong>ASSESSED BY:</strong> R/MWC</td>
<td><strong>CAMERA ID:</strong></td>
<td>P/Phone</td>
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<tr>
<td><strong>GPS ID:</strong></td>
<td><strong>LMK ID:</strong></td>
<td><strong>LAT:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LONG:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SITE DESCRIPTION

- **Name:** West Vine School
- **Address:** 25 W. Vine St, Storinago
- **Ownership:** Public
- **Government Jurisdiction:** Local
- **Corresponding USSR/USA Field Sheet?** No
- **Proposed Retrofit Location:**
  - **Storage:** Above Roadway Calvert
  - **On-Site:** Hotspot Operation
- **Drainage Area** to Proposed Retrofit:
  - **Drainage Area** = 
  - **Imperviousness** = 0%
  - **Impervious Area** =
- **Notes:**

### EXISTING STORMWATER MANAGEMENT

- **Existing Stormwater Practice:** Possible
- **Existing Site Conditions, Including Existing Site Drainage and Conveyance:**
  - Deep CBs along road
  - Destination of roof drainage unknown
  - Some erosion problems assoc. w/ roof runoff

**Existing Head Available and Points Where Measured:**
Retrofit Reconnaissance Investigation

PROPOSED RETROFIT

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th>Recharge</th>
<th>Channel Protection</th>
<th>Flood Control</th>
</tr>
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</tr>
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<td>Demonstration / Education</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Repair</td>
<td></td>
<td></td>
<td></td>
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<th>Retrofit Volume Computations - Target Storage:</th>
<th>Retrofit Volume Computations - Available Storage:</th>
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<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Treatment Option:</th>
<th></th>
<th>Multiple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extended Detention</td>
<td>Wet Pond</td>
<td></td>
</tr>
<tr>
<td>Filtering Practice</td>
<td>Infiltration</td>
<td></td>
</tr>
<tr>
<td>Created Wetland</td>
<td>Swale</td>
<td></td>
</tr>
<tr>
<td>Bioretention</td>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

Front door: drain thru pavement to demo bioretention in front of school along walkway (bioretention, multichamber)

Front lot: bioretention along btwn 1st + street w/seed forebay

Field corner: fenced off bioretention w/existing CB as overflow

Lot across 8th: bioretention - demo, w/seed forebay; take parking space

SITE CONSTRAINTS

<table>
<thead>
<tr>
<th>Adjacent Land Use:</th>
<th>Commercial</th>
<th>Institutional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>Transport-Related</td>
<td>Park</td>
</tr>
<tr>
<td>Undeveloped</td>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Possible Conflicts Due to Adjacent Land Use?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF Yes, Describe:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conflicts with Existing Utilities:

- None
- Unknown

- Yes Possible
  - Sewer
  - Water
  - Gas
  - Cable
  - Electric
  - Electric to Streetlights
  - Overhead Wires

Conflict due to CB in corner of field

Soils:

- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

Potential Permitting Factors:

- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
  - How many?
  - Approx. DBH

Other factors:

Unique Site ID: 191
**Design or Delivery Notes**

- Old school - potentially scheduled for upgrades based on age.
- Lots of community gardens on site.
- Parking lot appears in need of upgrades across the street.

**Follow-up Needed to Complete Field Concept**

- [ ] Confirm property ownership
- [x] Confirm drainage area
- [x] Confirm drainage area impervious cover
- [x] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-buils
- [ ] Obtain site as-buils
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

**Initial Feasibility and Construction Considerations**

**Site Candidate for Further Investigation:** [x] YES  [ ] NO  [ ] MAYBE

**Is Site Candidate for Early Action Project(S):** [x] YES  [ ] NO  [ ] MAYBE

**If No, Site Candidate for Other Restoration Project(S):** [ ] YES  [ ] NO  [ ] MAYBE

If YES, Type(S):
<table>
<thead>
<tr>
<th><strong>WATERSHED:</strong></th>
<th><strong>SUBWATERSHED:</strong></th>
<th><strong>UNIQUE SITE ID:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>194</strong></td>
</tr>
</tbody>
</table>

**DATE:** 7/1  
**ASSESSED BY:** Ru/Lw  
**CAMERA ID:** P  
**PICTURES:** 8-9

**GPS ID:**  
**LMK ID:**  
**LAT:**  
**LONG:**

**SITE DESCRIPTION**

**Name:** Stonington Elementary School  
**Address:**

**Ownership:**  
Public  ☑  Private  ☐  Unknown  ☐  Unknown  ☐  Other:

**If Public, Government Jurisdiction:**  
Local  ☑  State  ☐  DOT  ☐  Other:

**Corresponding USSR/USA Field Sheet:**  
Yes  ☐  No  ☑  If yes, Unique Site ID:

**Proposed Retrofit Location:**
- Storage:  
  - Existing Pond  ☐  Above Roadway Culvert  ☐  Below Outfall  ☐  In Conveyance System  ☐  In Road ROW  ☑  Near Large Parking Lot  ☐  Other:
- On-Site:  
  - Hotspot Operation  ☐  Individual Roof Top  ☐  Small Parking Lot  ☐  Individual Street  ☑  Underground  ☐  Landscape / Hardscape  ☐  Other:

**DRAINAGE AREA TO PROPOSED RETROFIT**

**Drainage Area ≈**  
Imperviousness ≈  
Impervious Area ≈

**Notes:**

**EXISTING STORMWATER MANAGEMENT**

**Existing Stormwater Practice:**  
Yes  ☐  No  ☑  Possible  ☑  
**If Yes, Describe:** "May have infiltration practices"

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Steep parking, lots of water  
- Lots of deep catch basins

**Existing Head Available and Points Where Measured:**
## PROPOSED RETROFIT

### Purpose of Retrofit:
- [x] Water Quality
- [ ] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [x] Water reuse

### Retrofit Volume Computations - Target Storage:
- [ ]

### Retrofit Volume Computations - Available Storage:
- [ ]

### Proposed Treatment Option:
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [x] Swale
- [ ] Other: Cisterns for water capture

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:
- Cisterns 2 locations where stormwater can be stored and then be used for irrigation by gravity or CDS to capture water for use in irrigation
- Bioretention demo cells along admin building parking lot + in parking lot islands

## SITE CONSTRAINTS

### Adjacent Land Use:
- [x] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other: 

<table>
<thead>
<tr>
<th>Possible Conflicts Due to Adjacent Land Use?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>If Yes, Describe:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Access:
- [ ] No Constraints
- [x] Constrained due to:
  - [ ] Slope
  - [ ] Space
  - [ ] Utilities
  - [ ] Tree Impacts
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Field usage

### Conflicts with Existing Utilities:
- [ ] None
- [ ] Unknown
- [x] Yes
- [ ] Possible
  - [ ] Sewer
  - [ ] Water
  - [ ] Gas
  - [ ] Cable
  - [ ] Electric
  - [ ] Electric to Streetlights
  - [ ] Overhead Wires
  - [ ] Other:

### Potential Permitting Factors:
- Dam Safety Permits Necessary: [ ] Probable [x] Not Probable
- Impacts to Wetlands: [ ] Probable [ ] Not Probable
- Impacts to a Stream: [ ] Probable [ ] Not Probable
- Floodplain Fill: [ ] Probable [ ] Not Probable
- Impacts to Forests: [ ] Probable [ ] Not Probable
- Impacts to Specimen Trees: [ ] Probable [ ] Not Probable
  - How many? [ ]
  - Approx. DBH [ ]

### Other factors:
- [ ]

### Soils:
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

### Unique Site ID: 194

Page 2 of 4
are fields fertilized
evidence of large irrigation system
drawn from well?

Note existing stormwater outlets in swale along main road

Dumpster relocation from S. to north end of parking lot 2 admin building

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT:

☐ Confirm property ownership
☐ Confirm drainage area
☒ Confirm drainage area impervious cover
☑ Confirm volume computations
☐ Complete concept sketch

☐ Other:

Obtain existing stormwater practice as-buills
☐ Obtain site as-buills
☐ Obtain detailed topography
☐ Obtain utility mapping
☐ Confirm storm drain invert elevations
☐ Confirm soil types

INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS:

SITE CANDIDATE FOR FURTHER INVESTIGATION:
☒ YES ☐ NO ☐ MAYBE

IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):
☐ YES ☒ NO ☐ MAYBE

IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):
☐ YES ☒ NO ☐ MAYBE

IF YES, TYPE(S):
Elementary School
Municipal school open to public without fee
North Stonington, CT

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre

Legend
- Railroad
- Flood Zone
  - 106 Sites
  - 100 Year Flood Zone
  - 500 Year Flood Zone

Source: Fuss & O'Neill, Geomatics, Earthspace, Geospatial Analysis, Water Resources, and Land Use Consultants

Underground system under outfield
<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
</tr>
</thead>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
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<tr>
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<th>ASSESSED BY:</th>
<th>CAMER A ID:</th>
<th>PICTURES:</th>
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<tbody>
<tr>
<td>7/5/16</td>
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<th>LAT:</th>
<th>LONG:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**SITE DESCRIPTION**

Name: Westory Airport
Address: 62 Airport Road, Westory, RI

Ownership: [ ] Public [ ] Private [ ] Unknown
If Public, Government Jurisdiction: [ ] Local [ ] State [ ] DOT [ ] Other:

Corresponding USSR/USA Field Sheet? [ ] Yes [ ] No [ ] If yes, Unique Site ID:

**Proposed Retrofit Location:**

- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Other:

- [x] Above Roadway Culvert

On-Site

- [x] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
- [ ] Individual Rooftop
- [ ] Small Impervious Area
- [ ] Landscape / Hardscape
- [ ] Other:

**DRAINAGE AREA TO PROPOSED RETROFIT**

Drainage Area =
Imperviousness =
Impervious Area =

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice: [ ] Yes [ ] No [ ] Possible

**Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Investigated Parking areas only.
Lot at front entrance tightly packed; island in middle planted w/ flowers & shrubs; C81 in lot unknown
Adjacent lot is unimproved

Existing Head Available and Points Where Measured:

* Visit was short due to low potential * 2 site 5
**PROPOSED RETROFIT**

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Water Quality</td>
<td>[ ] Recharge</td>
<td>[ ] Channel Protection</td>
<td>[ ] Flood Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[X] Demonstration / Education</td>
<td>[ ] Repair</td>
<td>[ ] Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Retrofit Volume Computations - Target Storage:</th>
<th>Retrofit Volume Computations - Available Storage:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Proposed Treatment Option:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Extended Detention</td>
<td>[ ] Wet Pond</td>
</tr>
<tr>
<td>Filtering Practice</td>
<td>Infiltration</td>
</tr>
<tr>
<td>[ ] Bioretention</td>
<td>Created Wetland</td>
</tr>
<tr>
<td>[ ] Bioretention</td>
<td>Swale</td>
</tr>
<tr>
<td>[ ] Bioretention</td>
<td>Other</td>
</tr>
</tbody>
</table>

**SITE CONSTRAINTS**

| Adjacent Land Use: | Access: | |
|--------------------|---------|-----------------
| [ ] Residential | [ ] No Constraints | |
| [ ] Commercial | [ ] Constrained due to |
| [ ] Institutional | [ ] Space |
| [ ] Industrial | [ ] Utilities |
| [ ] Transport-Related | [ ] Tree Impacts |
| [ ] Park | [ ] Structures |
| [ ] Undeveloped | [ ] Property Ownership |
| [ ] Other | [ ] Other |

Possible Conflicts Due to Adjacent Land Use? [ ] Yes [ ] No

If Yes, Describe:

- Retrofit island at airport entrance parking lot; regrade
- Let to drain if necessary

**Conflicts with Existing Utilities:**

<table>
<thead>
<tr>
<th>None</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

**Potential Permitting Factors:**

<table>
<thead>
<tr>
<th>Dam Safety Permits Necessary</th>
<th>[ ] Probable [ ] Not Probable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacts to Wetlands</td>
<td>[ ] Probable [ ] Not Probable</td>
</tr>
<tr>
<td>Impacts to a Stream</td>
<td>[ ] Probable [ ] Not Probable</td>
</tr>
<tr>
<td>Floodplain Fill</td>
<td>[ ] Probable [ ] Not Probable</td>
</tr>
<tr>
<td>Impacts to Forests</td>
<td>[ ] Probable [ ] Not Probable</td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
<td>[ ] Probable [ ] Not Probable</td>
</tr>
</tbody>
</table>

How many?

Approx. DBH

<table>
<thead>
<tr>
<th>Other factors:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Soils:**

<table>
<thead>
<tr>
<th>Soil auger test holes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence of poor infiltration (clays, fines):</td>
</tr>
<tr>
<td>Evidence of shallow bedrock:</td>
</tr>
<tr>
<td>Evidence of high water table (gleying, saturation):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>[ ]</td>
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<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
### Design or Delivery Notes

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Other:

### Follow-Up Needed to Complete Field Concept

- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

### Initial Feasibility and Construction Considerations

---

### Site Candidate for Further Investigation:

- Yes
- No
- Maybe

### Is Site Candidate for Early Action Project(s):

- Yes
- No
- Maybe

### If No, Site Candidate for Other Restoration Project(s):

- Yes
- No
- Maybe

---

Unique Site ID: 199
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre

Legend
- Railroad
- Green Infrastructure Sites
- Flood Zone
  - 100 YEAR FLOOD ZONE
  - 500 YEAR FLOOD ZONE

Source: Esri, HERE, Makani, Tomtom, Esri Australia, CNES/Airbus DS, USDA, USGS, AEX, GeoEye, Getmapping, Earthstar Geographics, i-cubzz, and the GIS User Community

No access - evaluate by aerial or obtain permission if assessed further.
<table>
<thead>
<tr>
<th><strong>WATERSHED:</strong></th>
<th><strong>SUBWATERSHED:</strong></th>
<th><strong>UNIQUE SITE ID:</strong></th>
<th>201</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATE:</strong></td>
<td><strong>ASSESSED BY:</strong></td>
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<td><strong>LONG:</strong></td>
</tr>
<tr>
<td>LMK</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SITE DESCRIPTION

- **Name:** Parking Lot - Formerly a theme park/attraction
- **Address:** 350 Liberty Street, Stonington, RI
- **Ownership:** Private
- **Corresponding USSR/USA Field Sheet?** No
- **Proposed Retrofit Location:**
  - **Storage:** In Road ROW
  - **On-Site:** Near Large Parking Lot

### DRAINAGE AREA TO PROPOSED RETROFIT

- **Drainage Area:**
- **Imperviousness:** ~
- **Impervious Area:** ~

### EXISTING STORMWATER MANAGEMENT

- **Existing Stormwater Practice:** No
- **Existing Site Conditions, Including Existing Site Drainage and Conveyance:**
  - Site consists of concrete pavement w/ ghost infrastructure etc.
  - Drains to swale along road & to curb under road
  - No dewatered infrastructure visible

### EXISTING SITE CONDITIONS

- **Existing Head Available and Points Where Measured:**

---

**Page 1 of 4**
### Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

### Proposed Treatment Option:
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other: **Pavement Removal**

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

Remove pavement to reduce impervious surface.

Fisheated site is redeveloped approach developer about stormwater BMPs ("have on the radar")

### Site Constraints

#### Adjacent Land Use:
- [ ] Residential
- [x] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

#### Conflicts with Existing Utilities:
- [ ] None
- [ ] Unknown

**Yes**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

### Potential Permitting Factors:

- [ ] Dam Safety Permits Necessary
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Wetlands
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to a Stream
- [ ] Probable
- [ ] Not Probable
- [ ] Floodplain Fill
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Forests
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Specimen Trees
- [ ] Probable
- [ ] Not Probable

**How many?**

- [ ] Approx. DBH

**Other factors:**

---

#### Soils:
- Soil auger test holes:
- [ ] Yes
- [ ] No
- Evidence of poor infiltration (clays, fines):
- [ ] Yes
- [ ] No
- Evidence of shallow bedrock:
- [ ] Yes
- [ ] No
- Evidence of high water table (gleying, saturation):
- [ ] Yes
- [ ] No

---

**Unique Site ID:** 201
### Design or Delivery Notes

<table>
<thead>
<tr>
<th>Follow-up Needed to Complete Field Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Confirm property ownership</td>
</tr>
<tr>
<td>□ Confirm drainage area</td>
</tr>
<tr>
<td>□ Confirm drainage area impervious cover</td>
</tr>
<tr>
<td>□ Confirm volume computations</td>
</tr>
<tr>
<td>□ Complete concept sketch</td>
</tr>
<tr>
<td>□ Obtain existing stormwater practices as-builts</td>
</tr>
<tr>
<td>□ Obtain site as-builts</td>
</tr>
<tr>
<td>□ Obtain detailed topography</td>
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<tr>
<td>□ Obtain utility mapping</td>
</tr>
<tr>
<td>□ Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>□ Confirm soil types</td>
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<tr>
<td>□ Other: [ ]</td>
</tr>
</tbody>
</table>

### Initial Feasibility and Construction Considerations

<table>
<thead>
<tr>
<th>Site Candidate for Further Investigation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Yes □ No □ Maybe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is Site Candidate for Early Action Project(s):</th>
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<tbody>
<tr>
<td>□ Yes □ No □ Maybe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If No, Site Candidate for Other Restoration Project(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Yes □ No □ Maybe</td>
</tr>
</tbody>
</table>

If Yes, Type(s): [ ]
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30 % impervious OR IC >= 1 Acre
WATERSHED:       SUBWATERSHED:       UNIQUE SITE ID: 206

DATE: 6/6/16      ASSESSED BY: RW/WR      CAMERA ID: C      PICTURES: 14:00-16:17

GPS ID:       LMK ID:       LAT:       LONG:

SITE DESCRIPTION

Name: Parking Lot Next to Lake
Address: 406 Arcadia Rd, Easter, RI

Ownership: ☑ Public ☐ Private ☐ Unknown
If Public, Government Jurisdiction: ☑ State ☐ Local ☐ DOT ☐ Other:

Corresponding USSR/USA Field Sheet? ☑ Yes ☐ No ☐ If yes, Unique Site ID:

Proposed Retrofit Location:
- Storage:
  ☑ Existing Pond ☐ Above Roadway Culvert ☐ In Conveyance System
  ☐ Below Outfall ☐ In Roadway ROW ☐ Near Large Parking Lot
  ☐ Other:
- On-Site:
  ☑ Hotspot Operation ☐ Small Parking Lot ☐ Individual Street
  ☑ Individual Rooftop ☐ Small Impervious Area ☐ Landscape / Hardscape
  ☐ Underground ☐ Other:

DRAINAGE AREA TO PROPOSED RETROFIT

Drainage Area ≈
Imperviousness ≈ %
Impervious Area ≈

Notes: Road (crownless) from bedrock outcrop + parking area

EXISTING STORMWATER MANAGEMENT

Existing Stormwater Practice: ☑ Yes ☐ No ☐ Possible
If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Heavy rutted driveway
Pedestals, rills, + sediment piles throughout lot
Fruits direct to pond deeply eroded + deposit seal to pond

Existing Hemis Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Recharge
- Channel Protection
- Other: [ ]

**Retrofit Volume Computations - Target Storage:**

<table>
<thead>
<tr>
<th>Proposed Treatment Option:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extended Detention</td>
</tr>
<tr>
<td>Filtering Practice</td>
</tr>
<tr>
<td>Infiltration</td>
</tr>
<tr>
<td>BioRetention</td>
</tr>
</tbody>
</table>

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

- Bioretention, to collect driveway runoff and potentially road runoff
- Swale check dams along west side of road and entering bioretention would require moving fence
- Close one or both turning lanes in parking lot and create single

### Site Constraints

#### Adjacent Land Use:
- Residential [ ]
- Commercial [ ]
- Institutional [ ]
- Industrial [ ]
- Transport-Related [ ]
- Park [ ]
- Undeveloped [ ]
- Other: [ ]

Possible Conflicts Due to Adjacent Land Use? [ ] Yes [ ] No
If Yes, Describe:

#### Conflicts with Existing Utilities:
- None [ ]
- Unknown [ ]
- Yes [ ]
- Possible
  - Sewer [ ]
  - Water [ ]
  - Gas [ ]
  - Cable [ ]
  - Electric [ ]
  - Electric to Streetlights [ ]
  - Overhead Wires [ ]
- Other: [ ]

#### Potential Permitting Factors:
- Dam Safety Permits Necessary [ ]
- Impacts to Wetlands [ ]
- Impacts to a Stream [ ]
- Floodplain Fill [ ]
- Impacts to Forests [ ]
- Impacts to Specimen Trees [ ]

- How many?
  - Approx. DBH:

Other factors:

- Soils:
  - Soil auger test holes: [ ] Yes [ ] No
  - Evidence of poor infiltration (clays, fines): [ ] Yes [ ] No
  - Evidence of shallow bedrock: [ ] Yes [ ] No
  - Evidence of high water table (gleying, saturation): [ ] Yes [ ] No

Unique Site ID: 206
### DESIGN OR DELIVERY NOTES

- Need
  - Trail closure/stabilization
  - Portapotties - more
  - delicate parking?
  - Resurface lot w/ gravel

### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

<table>
<thead>
<tr>
<th>Confirmed Property Ownership</th>
<th>Obtain Existing Stormwater Practice As-Built</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirm Drainage Area</td>
<td>Obtain Site As-Built</td>
</tr>
<tr>
<td>Confirm Drainage Area Impervious Cover</td>
<td>Obtain Detailed Topography</td>
</tr>
<tr>
<td>Confirm Volume Computations</td>
<td>Obtain Utility Mapping</td>
</tr>
<tr>
<td>Complete Concept Sketch</td>
<td>Confirm Storm Drain Invert Elevations</td>
</tr>
<tr>
<td>Other:</td>
<td>Confirm Soil Types</td>
</tr>
</tbody>
</table>

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

- Clear need
- Evidence of flooding?

### SITE CANDIDATE FOR FURTHER INVESTIGATION:
- Yes [X] No [ ] Maybe [ ]

### IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):
- Yes [X] No [ ] Maybe [ ]

### IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):
- Yes [ ] No [ ] Maybe [ ]

If YES, TYPE(S):
Potential Green infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
### Site Description

**Name:** Public Complex - Baseball Fields/Parking Lot  
**Address:** 97 Wilson Street, Westerly RI

**Ownership:** Public  
**If Public, Government Jurisdiction:** Local

**Corresponding USSR/USA Field Sheet?** No

#### Proposed Retrofit Location:

**Storage**
- Existing Pond
- Below Outfall
- In Road ROW (Near Large Parking Lot)
- Other:

**On-Site**
- Hotspot Operation
- Small Parking Lot
- Individual Street
- Underground
- Individual Rooftop

**DRAINAGE AREA TO PROPOSED RETROFIT**

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Imperviousness</th>
<th>Impervious Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Possible CA from uphill of playground

#### Existing Stormwater Management

**Existing Stormwater Practice:** No

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Note formal drainage, no CBs in large lot; one CB in back parking lot
- Drainage across parking lot exits thru curb cut
- Field drainage? Does not

Existing Head Available and Points Where Measured:
## Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Channel Protection
- Repair
- Other:

**Retrofit Volume Computations - Target Storage:**

- Graph showing volume computation

**Retrofit Volume Computations - Available Storage:**

- Graph showing volume computation

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Bioretention
- Partial Permeable Parking Lot
- Reduce parking lot size

## Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**If Yes, Describe:**

- Graph showing conflict

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many?
  - Approx. DBH
  - Other factors:

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):
Parking lot usage?
possible to split to main + overflow bins

Site Candidate for Further Investigation: YES
Is Site Candidate for Early Action Project(s): YES
If No, Site Candidate for Other Restoration Project(s): YES
If Yes, Type(s): Matted Reclaimed
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils. Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**WATERSHED:**

**DATE:** 6/21/16

**ASSESSED BY:** RRI

**CAMERA ID:** A

**UNIQUE SITE ID:** 217

**WATERSHED:**

**SUBWATERSHED:**

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

**SITE DESCRIPTION:**

**Name:** Burlington Management Area

**Address:** Burlington State Park Road

**Ownership:**
- [ ] Public
- [X] Private
- [ ] Unknown
- [ ] Local
- [X] State
- [ ] DOT
- [ ] Other:

**Corresponding USSR/USA Field Sheet:**
- [ ] Yes
- [ ] No

If yes, Unique Site ID:

**Proposed Retrofit Location:**

- [ ] Storage
  - [ ] Existing Pond
  - [ ] Above Roadway Culvert
  - [ ] Below Outfall
  - [ ] In Conveyance System
  - [ ] In Road ROW
  - [ ] Near Large Parking Lot
  - [ ] Other:

- [ ] On-Site
  - [ ] Hotspot Operation
  - [ ] Small Parking Lot
  - [ ] Individual Street
  - [ ] Underground
  - [ ] Individual Rooftop
  - [ ] Small Impervious Area
  - [ ] Other:

- [ ] Landscape / Hardscape

**DRAINAGE AREA TO PROPOSED RETROFIT:**

- [ ] Drainage Area =

- [ ] Imperviousness ≈ %

- [ ] Impervious Area =

**Notes:**

**EXISTING STORMWATER MANAGEMENT:**

**Existing Stormwater Practice:**
- [ ] Yes
- [ ] No
- [ ] Possible

If Yes, Describe:

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Gradually sloping; no formal drainage

**Existing Head Available and Points Where Measured:**
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- □ Water Quality
- □ Demonstration / Education
- □ Recharge
- □ Repair
- □ Channel Protection
- □ Flood Control
- □ Other: ______________________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- □ Extended Detention
- □ Wet Pond
- □ Infiltration
- □ Created Wetland
- □ Swale
- □ Bioretention
- □ Other: ______________________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- □ Residential
- □ Commercial
- □ Institutional
- □ Industrial
- □ Transport-Related
- □ Park
- □ Undeveloped
- □ Other: ______________________

**Possible Conflicts Due to Adjacent Land Use?** □ Yes □ No

**If Yes, Describe:**

<table>
<thead>
<tr>
<th>Conflicts with Existing Utilities:</th>
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<td>How many? ____________________</td>
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**Access:**
- □ No Constraints
- □ Constrained due to
  - □ Slope
  - □ Space
  - □ Utilities
  - □ Tree Impacts
  - □ Structures
  - □ Property Ownership
  - □ Other: ______________________

**Unique Site ID:** 217
## Retrofit Reconnaissance Investigation

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### Site Description

- **Name:** Area adjacent to Ocean Community YMCA  
  Address: 27-85 High St, Long Branch, NJ

- **Ownership:** Public  
  Government Jurisdiction: Local

- **Corresponding USSR/USA Field Sheet:** Yes

### Proposed Retrofit Location

- **Storage:**
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Other:

- **On-Site:**
  - Above Roadway Culvert
  - In Conveyance System

- **Drainage Area to Proposed Retrofit**

  - Drainage Area: 
  - Imperviousness: 
  - Impervious Area: 

### Drainage Area Land Use:

- **Residential**
- SFH (< 1 ac lots)
- SFH (> 1 ac lots)
- Townhouses
- Multi-Family
- Commercial

### Existing Stormwater Management

- **Existing Stormwater Practice:** Yes

- **Rain Garden / pre-treatment, unmaintained?**

- **CBs surrounding park**

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- CBs throughout parks w/ deep sumps to catch sediment

### Existing Head Available and Points Where Measured:
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Repair
- Channel Protection
- Flood Control
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Dry swale
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**
- Infiltration under field
- Dry swale under bridge

### SITE CONSTRAINTS

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Undeveloped

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- None
- Unknown

**Yes**
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
  - How many?
    - Approx. DBH

**Other factors:**

**Soils:**
- Soil auger test holes
- Evidence of poor infiltration (clays, fines)
- Evidence of shallow bedrock
- Evidence of high water table (gleying, saturation)

**Access:**
- No Constraints
  - Constrained due to:
    - Slope
    - Space
    - Utilities
    - Tree Impacts
    - Structures
    - Property Ownership
    - Other:

---

Unique Site ID: ____
Pond
- want bubbler
- algae growth a problem
- fountain only clears surface water
- all pots planted water

Road 6
- want to enlarge

Road 7
- want to do a serpentine stream under bridge

Want to pump water to it (least as opposed to dry swale)

pond: geosynthetic clay liner (2006)
catch basins - sump
stream is covered (use to run down middle of field)
All neighborhoods drain here OMI
Current system surcharged; catch basin coats are botted down

suggest rain garden

OCB

OCB

OCB

OCB

OCB

OCB

sidewalk

road catch basins go to "trunk line"
down center of town"
**Design or Delivery Notes**

- Better to treat at source?
- Find places higher in watershed

- Nearby - YMCA parking lot
- Possible additional site for BMPs

---

**Follow-up Needed to Complete Field Concept**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

- Other:

---

**Initial Feasibility and Construction Considerations**

- Field unlikely to be dug up as it is the site of major community events (eg. fairs)
- Park staff and owners very amenable to water quality improvement suggestions

---

**Site Candidate for Further Investigation:**

- Yes [x]  No [ ]  Maybe [ ]

**Is Site Candidate for Early Action Project(S):**

- Yes [x]  No [ ]  Maybe [ ]

**If No, Site Candidate for Other Restoration Project(S):**

- Yes [ ]  No [x]  Maybe [ ]

If Yes, Type(S):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
DESIGN OR DELIVERY NOTES

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

☐ Confirm property ownership
☐ Confirm drainage area
☐ Confirm drainage area impervious cover
☐ Confirm volume computations
☐ Complete concept sketch
☐ Obtain existing stormwater practice as-builts
☐ Obtain site as-builts
☐ Obtain detailed topography
☐ Obtain utility mapping
☐ Confirm storm drain invert elevations
☐ Confirm soil types

☐ Other: parking lot usage

INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

SITE CANDIDATE FOR FURTHER INVESTIGATION: ☒ YES ☐ NO ☐ MAYBE
IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): ☒ YES ☐ NO ☐ MAYBE
IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): ☐ YES ☐ NO ☐ MAYBE
IF YES, TYPE(S):
### Watershed: Retrofit Reconnaissance Investigation

**Watershed:**

**Subwatershed:**

**Unique Site ID:** 223

**Date:** 06/12/16  
**Assessed By:** RWLW  
**Camera ID:** A  
**Pictures:** 1030-1105

**GPS ID:** LMK ID:  
**LAT:** LONG:

### Site Description

**Name:** Craig Field Recreation Complex  
**Address:** Mountain Avenue, Westerly RI

**Ownership:** Public  
**Government Jurisdiction:** Local

**Corresponding USSR/USA Field Sheet:** Yes  
**If yes, Unique Site ID:**

### Proposed Retrofit Location:

**Storage:**
- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Near Large Parking Lot
- [ ] Other:

**On-Site:**
- [ ] Hotspot Operation
- [ ] Small Parking Lot

**Area to Proposed Retrofit:**

**Drainage Area:**
- **Imperviousness:**
- **Impervious Area:**

**Notes:** possible to capture off-site runoff

### Drainage Area Land Use:

**Drainage Area Land Use:**
- [ ] Residential
- [ ] SFH (< 1 ac lots)
- [ ] SFH (> 1 ac lots)
- [ ] Townhouses
- [ ] Multi-Family
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

### Existing Stormwater Management

**Existing Stormwater Practice:** Yes  
**If Yes, Describe:**

- Off-site CBS only

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Drainage channels on site minor, disappear before wooded area, drop sediment, minor erosion only

- Field not drained but not soggy; wet areas immediately south of southern part

**Existing Source Available and Points Where Measured:**
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- Water Quality
- Recharge
- Demonstration / Education
- Repair
- Channel Protection
- Flood Control
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Other: Permeable parking lot
- Swale

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**
- Unimproved
- Bleechers on gravel/pave/permeable pavement
- Gravel/pave or grass/pave overflow parking lot(s)
- Disconnect CB in NE corner (biocell)

### SITE CONSTRAINTS

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Tree Impacts
  - Utilities
  - Structures
  - Property Ownership
  - Other: R:\dnc

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Possible
  - Sewer
  - Water
  - Gas
  - Cable
  - Electric
  - Electric to Streetlights
  - Overhead Wires
  - Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many?
- Approx. DBH

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):
  - Yes
  - No

*Unique Site ID: 223*
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 5 Ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre

Legend
- Railroad
- Flood Zone
- 100 Years Flood Zone
- 500 Years Flood Zone

- Wet at south end of site
- Wetland south of site
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**SITE DESCRIPTION**

Name: Large Parking Lot for Football Field
Address: 160 Old Hopkoro Rd, Westbury, RI
Ownership: Public
If Public, Government Jurisdiction: DOT

**Corresponding USSR/USA Field Sheet?**
- Yes
- No

**Proposed Retrofit Location:**
- Existing Pond
- Below Outfall
- Near Large Parking Lot

**DRAINAGE AREA TO PROPOSED RETROFIT**

- Drainage Area
- Imperviousness

**EXISTING STORMWATER MANAGEMENT**

- Existing Stormwater Practice: Yes
- If Yes, Describe: Swale - NOT green, full of sed

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Parking Lot Damaged by runoff + flooding
2 CBs in road drain to lot; lot & drains to fields
Swale along swale edge of site filled w/ sed from adjacent quarry
+ results in flooding in upper + lower fields as well as lot

**Existing Head Available and Points Where Measured:**

Clear need for drainage improvements + pollutant reduction
CB at bottom of field (so earner) receives swale - other runoff + outlet
unhappy, impacted by quarry said
## Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Repair
- Recharge
- Channel Protection
- Flood Control
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Other:

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

Infiltrators under parking lot may not be practical. May have to be deep due to eroded relationship between lot & fields.

## Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

If Yes, Describe:

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Possible

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**Potential Permitting Factors:**
- Dam Safety Permit Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees

How many?

Approx. DBH

**Other factors:**

**Soils:**
- Soil auger test holes:
  - Yes

**Evidence of poor infiltration (clays, fines):**
- Yes

**Evidence of shallow bedrock:**
- Yes

**Evidence of high water table (gleying, saturation):**
- Yes

**Unique Site ID:** 2241
## DESIGN OR DELIVERY NOTES

## FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch

- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

Other: [As in who is allowed to make improvements]

## INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

Clear need!

## SITE CANDIDATE FOR FURTHER INVESTIGATION:

- X YES
- NO
- MAYBE

## IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):

- X YES
- NO
- MAYBE

## IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):

- NO
- MAYBE
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils. Development, SHWT > 6 ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre.
### Retrofit Reconnaissance Investigation (RRI)

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### Site Description

- **Name:** Hopkinton Recreation Department
- **Address:** 168 Main Street, Hopkinton, MA
- **Ownership:** Public
- **Government Jurisdiction:** Local
- **Corresponding USSR/USA Field Sheet:** No

### Proposed Retrofit Location:

- **Storage:**
  - Above Roadway Culvert
  - In Conveyance System
  - Near Large Parking Lot

- **On-Site:**
  - Hotspot Operation
  - Small Parking Lot
  - Small Impervious Area
  - Individual Street
  - Landscape / Hardscape
  - Underground

### Drainage Area to Proposed Retrofit

- **Drainage Area:**
  - Imperviousness: __%
  - Impervious Area: __

- **Notes:** includes road, some residential neighborhood potentially

### Existing Stormwater Management

- **Existing Stormwater Practice:** Yes
- **If Yes, Describe:**
  - One small dome project, or small outbuilding (rain barrels detached)

### Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Small silted CBR at road's edge
- Former CBR filled in/capped in parking lot?
- Waffle of Rtl paved, half improved/sand from road, unimproved parking lot
- Depressed in parcel parking lot

### Existing Head Available and Points Where Measured:

- Unknown
### Retrofit Reconnaissance Investigation

#### Proposed Retrofit

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Repair
- Recharge
- Channel Protection
- Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Infiltration
- Created Wetland
- Swale
- Bioretention
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Bioretention for roof or road (take storm sewer offline)?

- Focus on Road ROW + CBS
- -offline-

- Maintain Road ROW to manage sed

#### Site Constraints

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Possible

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<td>Other:</td>
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**Potential Permitting Factors:**
- Dam Safety Permits Necessary: Yes
- Impacts to Wetlands: Yes
- Impacts to a Stream: Yes
- Floodplain Fill: Yes
- Impacts to Forests: Yes
- Impacts to Specimen Trees: Yes
- How many? __________
- Approx. DBH __________

**Other factors:**

**Soils:**
- Soil auger test holes: Yes
- Evidence of poor infiltration (clays, fines): Yes
- Evidence of shallow bedrock: Yes
- Evidence of high water table (sapping, saturation): Yes

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
  - Other:

Unique Site ID: _______
### DESIGN OR DELIVERY NOTES

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### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- [x] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-builds
- [x] Obtain site as-builds
- [x] Obtain detailed topography
- [x] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

**Other:** Catch basin locations, inlet, and outlet

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

<table>
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<tr>
<th>INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS</th>
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</table>

### SITE CANDIDATE FOR FURTHER INVESTIGATION:

**YES** [x]  **NO** [ ]  **MAYBE** [ ]

### IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):

**YES** [x]  **NO** [ ]  **MAYBE** [ ]

### IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):

**YES** [ ]  **NO** [x]  **MAYBE** [ ]

**IF YES, TYPE(S):**

**Unique Site ID:** ___
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 229

**DATE:** 6/3/16

**ASSESSED BY:** RW1WG

**CAMERA ID:** C

**PICTURES:** 9:45 - 10:30

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

**SITE DESCRIPTION**

**Name:** Tecketown Park

**Address:** 100 Tecketown Park Drive

**Ownership:**

- [x] Public
- [ ] Private
- [ ] Unknown

**If Public, Government Jurisdiction:**

- [x] Local
- [ ] State
- [ ] DOT
- [ ] Other:

**Corresponding USSR/USA Field Sheet:**

- [ ] Yes
- [x] No

If yes, Unique Site ID:

**Proposed Retrofit Location:**

**Storage**

- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [x] Near Large Parking Lot
- [ ] Other:

**On-Site**

- [ ] Hotspot Operation
- [x] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
- [ ] Small Impervious Area
- [ ] Landscape / Hardscape
- [ ] Other:

**DRAINAGE AREA TO PROPOSED RETROFIT**

**Drainage Area:**

- [ ] N/A

**Imperviousness:**

- [ ] N/A

**Impervious Area:**

- [ ] N/A

**Drainage Area Land Use:**

- [ ] Residential
- [ ] SFFH (< 1 ac lots)
- [ ] SFFH (> 1 ac lots)
- [ ] Townhouses
- [ ] Multi-Family
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**EXISTING STORMWATER MANAGEMENT**

**Existing Stormwater Practice:**

- [ ] Yes
- [ ] No

If Yes, Describe:

- [ ] Possible

2 catch basins; drainage under fields; one conveys but does not capture water

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

No erosion visible; no formal drainage

Sand and seal deposited on pavement; possible standing water at times

Plenty of buffer on site

"Clean up after dog" signs on site

**Existing Head Available and Points Where Measured:**

"Clean up after dog" signs on site
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- Other: 

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Other: Bio Retention
- [ ] Infiltration
- [ ] Swale
- Other: Permeable Parking

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Infiltration or permeable parking in various lots;
- Some sort of infiltration under fields; I remove fertilizer from stormwater;
- Some drainage system of fields

### SITE CONSTRAINTS

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Undeveloped
- [ ] Park
- [ ] Other

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- [ ] None
- [x] Unknown

**Yes**
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

**Potential Permitting Factors:**
- [ ] Probable
- [ ] Not Probable

**Dam Safety Permits Necessary**
- [ ] Probable
- [ ] Not Probable

**Impacts to Wetlands**
- [ ] Probable
- [ ] Not Probable

**Impacts to a Stream**
- [ ] Probable
- [ ] Not Probable

**Floodplain Fill**
- [ ] Probable
- [ ] Not Probable

**Impacts to Forests**
- [ ] Probable
- [ ] Not Probable

**Impacts to Specimen Trees**
- [ ] Probable
- [ ] Not Probable

**How many?**
- [ ] Approx. DBH

**Other factors:**

**Soils:**
- [ ] Yes
- [ ] No

**Soil auger test holes:**
- [ ] Yes
- [ ] No

**Evidence of poor infiltration (clays, fines):**
- [ ] Yes
- [ ] No

**Evidence of shallow bedrock:**
- [ ] Yes
- [ ] No

**Evidence of high water table (gleying, saturation):**
- [ ] Yes
- [ ] No
**DESIGN OR DELIVERY NOTES**

- Little need for treatment perceived?
- But fields in good shape - may be fertilized.
- Treatment would remove nutrients from adjacent swamp.

---

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

- [ ] Confirm property ownership
- [x] Confirm drainage area
- [x] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-buils
- [ ] Obtain site as-buils
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types
- [ ] Other:

---

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

---

**SITE CANDIDATE FOR FURTHER INVESTIGATION:**

- YES [ ] NO [x] MAYBE

**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):**

- YES [x] NO [ ] MAYBE

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):**

- YES [ ] NO [x] MAYBE

**IF YES, TYPE(S):**

---
Tuckertown Park
1010 Tuckertown Park Drive
South Kingstown, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30 % Impervious OR IC >= 1 Acre

Legend

- Railroad
- Flood Zone
  - 100 Year Flood
  - 2CNE
  - 500 Year Flood
  - 2CNE

Catch basins in road
Existing shallow swale retrofitted to accept road runoff and overflow to existing catch basin in field.
**Watershed:**

**Subwatershed:**

**Unique Site ID:** 232

**Date:** 7/5/16

**Assessed By:** RW/WG

**Camera ID:** C

**Pictures:** 1:10 - 1:20

**GPS ID:**

**LMK ID:**

**Lat:**

**Long:**

**Site Description**

**Name:** Pavilion Steak House

**Address:** 35 Frontier Road, Hopkinton, RI

**Ownership:**

- [ ] Public
- [ ] Private
- [ ] Unknown
- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other:

**Corresponding USSR/USA Field Sheet:**

- [ ] Yes
- [ ] No

**If yes, Unique Site ID:**

**Proposed Retrofit Location:**

- **Storage**
  - [ ] Existing Pond
  - [ ] Below Outfall
  - [ ] In Road ROW
  - [ ] Other:
  - [ ] Above Roadway Culvert
  - [ ] In Conveyance System
  - [ ] Near Large Parking Lot

- **On-Site**
  - [ ] Hotspot Operation
  - [ ] Individual Roof Top
  - [ ] Small Parking Lot
  - [ ] Individual Street
  - [ ] Underground
  - [ ] Other:
  - [ ] Small Impervious Area
  - [ ] Landscape / Hardscape

**Drainage Area to Proposed Retrofit**

- **Drainage Area** = ______
- **Imperviousness** = ______%
- **Impervious Area** = ______

**Notes:**

**Existing Stormwater Management**

**Existing Stormwater Practice:**

- [ ] Yes
- [ ] No
- [ ] Possible

**If Yes, Describe:**

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Newly resurfaced & drizzles to CBSs
- Rest of site is vegetated; no storm or need for treatment

**Existing Head Available and Points Where Measured:**
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Repair
- Recharge
- Channel Protection
- Flood Control
- Other: [___]

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- N/A

### SITE CONSTRAINTS

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Access:**
- No Constraints
- Constrained due to:
  - Space
  - Tree Impacts
  - Property Ownership
  - Structures
  - Other:

**Conflicts with Existing Utilities:**
- None
- Unknown

**Yes**
- Possible
  - Sewer
  - Water
  - Gas
  - Cable
  - Electric
  - Electric to Streetlights
  - Overhead Wires
  - Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many?
  - Approx. DBH: [___]
- Other factors: [___]

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):
- Yes
- No

Unique Site ID: 232
### Design or Delivery Notes

<table>
<thead>
<tr>
<th>Follow-up Needed to Complete Field Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Confirm property ownership</td>
</tr>
<tr>
<td>□ Confirm drainage area</td>
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<td>□ Confirm drainage area impervious cover</td>
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<td>□ Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>□ Confirm soil types</td>
</tr>
<tr>
<td>□ Other:</td>
</tr>
</tbody>
</table>

### Initial Feasibility and Construction Considerations

### Site Candidate for Further Investigation:

- [ ] Yes
- [ ] No
- [ ] Maybe

### Is Site Candidate for Early Action Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

### If No, Site Candidate for Other Restoration Project(s):

- [ ] Yes
- [ ] No
- [ ] Maybe

If Yes, Type(s): [Meadow, Forest restoration]
Pavilion Steak House/ Open Space?
35 Frontier Road
Hopkinton, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
### RETROFIT RECONNAISSANCE INVESTIGATION

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
</tr>
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<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>DATE: 6/6/16</th>
<th>ASSESSED BY: RULING</th>
<th>CAMERA ID: C</th>
<th>PICTURES: 12:05</th>
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<tbody>
<tr>
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</table>

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<tr>
<th>GPS ID:</th>
<th>LMK ID:</th>
<th>LAT:</th>
<th>LONG:</th>
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</thead>
<tbody>
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</tbody>
</table>

### SITE DESCRIPTION

**Name:** Abandoned Parking Lot Enchanted Forest of RI

**Address:** 891 (Main Street) (Rte 3/Nooseck Hill Rd)

**Ownership:** Private

**If Public, Government Jurisdiction:** Other

**Corresponding USSR/USA Field Sheet:** Yes

### PROPOSED RETROFIT LOCATION

**Storage:**
- Existing Pond
- Below Outfall
- In Road ROW

**On-Site:**
- Hotspot Operation
- Small Parking Lot
- Individual Street

**Other:**
- Above Roadway Calvert
- In Conveyance System
- Near Large Parking Lot
- Individual Rooftop
- Small Impervious Area
- Landscape / Hardscape

### DRAINAGE AREA TO PROPOSED RETROFIT

**Drainage Area**
- Imperviousness %
- Impervious Area %

**Notes:** also captures Road runoff

### EXISTING STORMWATER MANAGEMENT

**Existing Stormwater Practice:** No

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Paved, overgrown lot; portion of Rte 3 drains to lot

"Ghost" infrastructure (CBS)

### Existing Road Available and Points Where Measured:
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- [ ] Water Quality
- [x] Recharge
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: __________

**Retrofit Volume Computations - Target Storage:**

- __________

**Retrofit Volume Computations - Available Storage:**

- __________

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Swale
- [ ] Bioretention
- [ ] Other: **Remove all paved areas**

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- **Remove all pavement**
- **town purchase in order to perform stormwater BMPs**
- **Encourage stormwater treatment if site ever developed again**

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- [x] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:
- Yes [x] No [ ]

**Possible Conflicts Due to Adjacent Land Use?**

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- None [ ]
- Unknown [x]
- Possible [ ]

<table>
<thead>
<tr>
<th>Potential Permitting Factors</th>
<th>Probable</th>
<th>Not Probable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dam Safety Permits Necessary</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Impacts to Wetlands</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
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<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Floodplain Fill</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
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<td>Impacts to Forests</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
<td>[X] Probable</td>
<td>[ ] Not Probable</td>
</tr>
<tr>
<td>How many?</td>
<td>__________</td>
<td></td>
</tr>
<tr>
<td>Approx. DBH</td>
<td>__________</td>
<td></td>
</tr>
</tbody>
</table>

**Other factors:**

<table>
<thead>
<tr>
<th>Soil auger test holes:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence of poor infiltration (clays, fines):</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Evidence of shallow bedrock:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Evidence of high water table (gleying, saturation):</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Soils:**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>[ ]</td>
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</tr>
<tr>
<td>SKETCH</td>
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<tr>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Historic?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cemetery site?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

<table>
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<th>Confirm property ownership</th>
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<td>Confirm storm drain invert elevations</td>
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<tr>
<td></td>
<td>Confirm soil types</td>
</tr>
</tbody>
</table>

Other: ____________

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

<table>
<thead>
<tr>
<th>SITE CANDIDATE FOR FURTHER INVESTIGATION:</th>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
<tr>
<td>IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
</tbody>
</table>

If YES, TYPE(S): ____________

Unique Site ID: ______
Abandoned parking lot
894 Main Street (Rte 3/ Nooseneck Hill Road)
Hopkinton, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% impervious OR IC >= 1 Acre
<table>
<thead>
<tr>
<th><strong>WATERSHED:</strong></th>
<th><strong>SUBWATERSHED:</strong></th>
<th><strong>UNIQUE SITE ID:</strong></th>
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</thead>
<tbody>
<tr>
<td>DATE:</td>
<td>6/6/16</td>
<td></td>
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<tr>
<td>GPS ID:</td>
<td></td>
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<td>LMK ID:</td>
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<tr>
<td>LAT:</td>
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<tr>
<td>LONG:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SITE DESCRIPTION**
- **Name:** Chorino Little League
- **Address:** 1118 Malo St, Naperville
- **Ownership:** Public
- **If Public, Government Jurisdiction:** Local
- **Corresponding USSR/USA Field Sheet:** Yes
- **If yes, Unique Site ID:**

**Proposed Retrofit Location:**
- **Storage:**
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Near Large Parking Lot
- **On-Site:**
  - Hotspot Operation
  - Small Parking Lot
  - Individual Street
  - Underground

**DRAINAGE AREA TO PROPOSED RETROFIT**
- **Drainage Area**
- **Imperviousness** = %
- **Impervious Area** =

**EXISTING STORMWATER MANAGEMENT**
- **Existing Stormwater Practice:** No
- **If Yes, Describe:**

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:
- No formal stormwater on site, road CSBs seem to hook up to road system.
- Parking lots receive heavy runoff but sed settles out before grounds, no erosion in grass.

**Existing Head Available and Points Where Measured:**

<table>
<thead>
<tr>
<th><strong>PICTURES:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>16:00 - 11:00</td>
</tr>
</tbody>
</table>
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Repair
- Channel Protection
- Flood Control
- Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Filtering Practice
- Infiltration
- Created Wetland
- Swale
- Bioretention
- Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

2-3 ft wide bioretention strips along edges of parking lot/field provide walkways & culverts where necessary

### SITE CONSTRAINTS

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**If Yes, Describe:**

### Conflicts with Existing Utilities:

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewer</td>
<td>Yes</td>
</tr>
<tr>
<td>Water</td>
<td>Yes</td>
</tr>
<tr>
<td>Gas</td>
<td>Yes</td>
</tr>
<tr>
<td>Cable</td>
<td>Yes</td>
</tr>
<tr>
<td>Electric</td>
<td>Yes</td>
</tr>
<tr>
<td>Electric to Streetlights</td>
<td>Yes</td>
</tr>
<tr>
<td>Overhead Wires</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Potential Permitting Factors:**

- Dam Safety Permits Necessary
- Probable
- Not Probable
- Impacts to Wetlands
- Probable
- Not Probable
- Impacts to a Stream
- Probable
- Not Probable
- Floodplain Fill
- Probable
- Not Probable
- Impacts to Forests
- Probable
- Not Probable
- Impacts to Specimen Trees
- Probable
- Not Probable
- How many?
- Approx. DBH

**Other factors:**

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):
**DESIGN OR DELIVERY NOTES**

- site currently well maintained, highly visible
- current parking use is

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

**SITE CANDIDATE FOR FURTHER INVESTIGATION:**

- YES

**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):**

- YES

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):**

- YES

**IF YES, TYPE(S):**

- MAYBE
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
WATERSHED: SUBWATERSHED: UNIQUE SITE ID: 271
DATE: 7/1/16 ASSESSED BY: RDI CAMRA ID: C PICTURES: 910-928
GPS ID: LMK ID: LAT: LONG:

SITE DESCRIPTION
Name: The Wheeler Hospital
Address: 25 Wells Street, Westerly, RI
Ownership: Private
If Public, Government Jurisdiction: DOT

Corresponding USSR/USA Field Sheet? Yes
If yes, Unique Site ID:

Proposed Retrofit Location:
Storage: Existing Pond, Above Roadway Culvert, Below Outfall, In Roadway ROW, Other:
On-Site: Hotspot Operation, In Conveyance System, Near Large Parking Lot, Individual Rooftop, Small Parking Lot, Small Impervious Area, Individual Street, Landscape / Hardscape, Underground, Other:

DRAINAGE AREA TO PROPOSED RETROFIT
Drainage Area ≈ 
Imperviousness ≈ %
Impervious Area ≈ 

Notes:

EXISTING STORMWATER MANAGEMENT
Existing Stormwater Practice: Possible
If Yes, Describe: dry wells? private med. facility

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Existing Head Available and Points Where Measured:
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Repair
- Channel Protection
- Other: ____________
- Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Swale
- Infiltration
- Other: ____________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Small biocells, some as pretreated for infiltration
- Improve existing basin in employee lot
- Large drywells ??

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other: ____________

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Possible
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

**PotentialAction Permits Necessary:**
- Dam Safety Permit Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many? ____________
- Approx. DBH ____________

**Other factors:**

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleysing, saturation): 

**Unique Site ID: 271**

**Page 2 of 4**
- pay attention to future facility upgrades
- little space; parking lots v. full
- many lots recently resurfaced

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other: check ES rules on dry wells

INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

SITE CANDIDATE FOR FURTHER INVESTIGATION: [ ] YES [ ] NO [ ] MAYBE
IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): [ ] YES [ ] NO [ ] MAYBE
IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): [ ] YES [ ] NO [ ] MAYBE
IF YES, TYPE(S):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Watershed: | Subwatershed: | Unique Site ID: 272
--- | --- | ---

**Date:** 7/5/16 | **Assessed By:** RWLWG | **Camera ID:** C | **Pictures:** 927-10:05

**GPS ID:** | **LMK ID:** | **LAT:** | **LONG:**
--- | --- | --- | ---

### Site Description

**Name:** Westerly Senior Citizens Center + State St School

**Address:** 35 State St, Westerly, RI

**Ownership:**
- [ ] Public
- [ ] Private
- [ ] Unknown
- [ ] DOT
- [ ] Other:

**If Public, Government Jurisdiction:**
- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other:

**Corresponding USSR/USA Field Sheet?**
- [ ] Yes
- [ ] No
- [ ] If yes, Unique Site ID:

### Proposed Retrofit Location:

**Storage**
- [ ] Existing Pond
- [ ] Below Outfall
- [ ] On Site ROW
- [ ] Other:

**On-Site**
- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
- [ ] Individual Rooftop
- [ ] Small Impervious Area
- [ ] Landscape / Hardscape
- [ ] Other:

### Drainage Area to Proposed Retrofit

**Drainage Area**: 

**Imperviousness**: 

**Impervious Area**: 

**Notes**: 

### Existing Stormwater Management

**Existing Stormwater Practice**:  
- [ ] Yes
- [ ] No
- [ ] Possible

**If Yes, Describe**: 

Sealed & senior center - undersized + needs maintenance

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Water drains to CBS mostly into ground w/ some aboveground (creeping pavement/soil)

### Existing Head Available and Points Where Measured:
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- Other: ______________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [X] Wet Pond
- [ ] Infiltration
- [X] Created Wetland
- [X] Bioretention
- [X] Swale
- [ ] Other: ______________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

Behind school: Individual cells for roof disconnection

Berm PL + construct infiltration basin(s) adj. to playground (shallow, grassed)

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [X] Institutional
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other: ______________

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

If Yes, Describe:

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes

<table>
<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
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<td>Gas</td>
</tr>
<tr>
<td></td>
<td>Cable</td>
</tr>
<tr>
<td></td>
<td>Electric</td>
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<tr>
<td></td>
<td>Electric to Streetlights</td>
</tr>
<tr>
<td></td>
<td>Overhead Wires</td>
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</table>

**Potential Permitting Factors:**

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<thead>
<tr>
<th></th>
<th>Probable</th>
<th>Not Probable</th>
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<tr>
<td>Dam Safety Permits Necessary</td>
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<td>Impacts to Wetlands</td>
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<tr>
<td>Impacts to a Stream</td>
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<td></td>
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<tr>
<td>Floodplain Fill</td>
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<td></td>
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<tr>
<td>Impacts to Forests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How many?

Approx. DBH ________________

**Soils:**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil auger test holes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of poor infiltration (clays, fines):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of shallow bedrock:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of high water table (gleying, saturation):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other factors:**

---

Unique Site ID: 272
**Design or Delivery Notes**

- Split into two sites.
- Green streets potential in surrounding neighborhoods.

**Follow-up Needed to Complete Field Concept**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

**Initial Feasibility and Construction Considerations**

**Site Candidate for Further Investigation:**

- YES □ NO □ MAYBE □

**Is Site Candidate for Early Action Project(s):**

- YES □ NO □ MAYBE □

**If No, Site Candidate for Other Restoration Project(s):**

- YES □ NO □ MAYBE □

If yes, type(s): meadow, butterfly garden.
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre

Legend
- Railroad
- Flood Zone
  - 100-Year Flood Zone
  - 500-Year Flood Zone

Comments:
- Improve existing swale
- Gutters drain into ground
- Green street (narrow, biofiltration cells)
- Deep catch basins along street
Retrofit Reconnaissance Investigation

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
<th>273</th>
</tr>
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<tbody>
<tr>
<td>DATE:</td>
<td>ASSESSED BY:</td>
<td>CAMER A ID:</td>
<td>A</td>
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<tr>
<td>GPS ID:</td>
<td>LMK ID:</td>
<td>LAT:</td>
<td>LONG:</td>
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<tr>
<td>6/21/16</td>
<td>Rm, O/TG</td>
<td>13:20-</td>
<td></td>
</tr>
</tbody>
</table>

**SITE DESCRIPTION**

Name: Pius X School  
Address:  
Ownership:  
If Public, Government Jurisdiction:  
Corresponding USSR/USA Field Sheet?  
Yes  
No  
If yes, Unique Site ID:  

**Proposed Retrofit Location:**

- Storage:  
  - Existing Pond  
  - Below Outfall  
  - In Road ROW  
  - Other:  
- On-Site:  
  - Hotspot Operation  
  - Small Parking Lot  
  - Individual Street  
  - Underground  
  - Individual Rooftop  
  - Small Impervious Area  
  - Landscape / Hardscape  
  - Other:  

**DRAINAGE AREA TO PROPOSED RETROFIT**

- Drainage Area:  
- Imperviousness:  
- Impervious Area:  

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice:  
Yes  
No  
Possible  

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Site almost entirely used for various uses;  

**Existing Head Available and Points Where Measured:**

- Preliminary Assessment Only due to lack of site access  
unlikely, but staff may contact us about projects in future
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- [X] Water Quality
- [X] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: 

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

---

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [X] Bioretention
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**
- Limited to small, scattered projects

---

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- [X] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

**If Yes, Describe:**

---

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Yes Possible
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

---

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many? 
  - Approx. DBH

**Other factors:**

---

**Soils:**
- [ ] Soil auger test holes:
- [ ] Evidence of poor infiltration (clays, fines):
- [ ] Evidence of shallow bedrock:
- [ ] Evidence of high water table (gleying, saturation):
- [ ] Yes
- [ ] No

---

**Unique Site ID:**

---

**Page 2 of 4**
No space available on site

<table>
<thead>
<tr>
<th>FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Confirm property ownership</td>
</tr>
<tr>
<td>☐ Confirm drainage area</td>
</tr>
<tr>
<td>☐ Confirm drainage area impervious cover</td>
</tr>
<tr>
<td>☐ Confirm volume computations</td>
</tr>
<tr>
<td>☐ Complete concept sketch</td>
</tr>
<tr>
<td>☐ Obtain existing stormwater practice as-buils</td>
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<tr>
<td>☐ Obtain site as-buils</td>
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<td>☐ Obtain detailed topography</td>
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<tr>
<td>☐ Obtain utility mapping</td>
</tr>
<tr>
<td>☐ Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>☐ Confirm soil types</td>
</tr>
<tr>
<td>☐ Other:</td>
</tr>
</tbody>
</table>

| INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS |

| SITE CANDIDATE FOR FURTHER INVESTIGATION: | ☐ YES | ☒ NO | ☐ MAYBE |
| IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): | ☐ YES | ☒ NO | ☐ MAYBE |
| IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): | ☐ YES | ☒ NO | ☐ MAYBE |
| IF YES, TYPE(S): | | | |
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
### WATERSHED: SUBWATERSHED: UNIQUE SITE ID: 274
### DATE: 6/9/16 ASSESSED BY: RW/WG CAMERA ID: C PICTURES: 10:15-11:30
### GPS ID: LMK ID: LAT: LONG:

#### SITE DESCRIPTION

<table>
<thead>
<tr>
<th>Name:</th>
<th>Westerly High School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>23 North Avenue NE, Westerly, RI</td>
</tr>
<tr>
<td>Ownership:</td>
<td>Public</td>
</tr>
<tr>
<td>If Public, Government Jurisdiction:</td>
<td>Local</td>
</tr>
<tr>
<td>Corresponding USSR/USA Field Sheet?:</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Proposed Retrofit Location:

**Storage**
- [ ] Existing Pond
- [ ] Above Roadway Culvert
- [ ] Below Outfall
- [ ] Other: Near Large Parking Lot

**On-Site**
- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground

**DRAINAGE AREA TO PROPOSED RETROFIT**

- Drainage Area ≈
- Imperviousness ≈ %
- Impervious Area ≈

#### EXISTING STORMWATER MANAGEMENT

- Existing Stormwater Practice: [x] Yes
- If Yes, Describe: Infiltration tanks + dry wells

#### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Building gutters into ground, overflow heavily.
Every building has a central storm drain system.

#### Existing Head Available and Points Where Measured:

Babcock CB 34 changes
## Retrofit Reconnaissance Investigation

### Proposed Retrofit

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Water Quality</td>
<td>Recharge</td>
<td>Channel Protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flood Control</td>
</tr>
</tbody>
</table>

### Retrofit Volume Computations - Target Storage:

![Diagram of Retrofit Volume Computations - Target Storage]

### Retrofit Volume Computations - Available Storage:

![Diagram of Retrofit Volume Computations - Available Storage]

### Proposed Treatment Option:

- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Infiltration
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Swale
- [ ] Other:

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

- Large infiltration pits in 1977 parking lot, Parks St parking lots, Bellevue Ave curve parking lot, + football field.

### Site Constraints

#### Adjacent Land Use:
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped

#### Possible Conflicts Due to Adjacent Land Use:
- [ ] Yes
- [ ] No

#### If Yes, Describe:

- 

#### Conflicts with Existing Utilities:

<table>
<thead>
<tr>
<th>Possible</th>
<th>Yes</th>
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<td>Electric to Streetlights</td>
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<tr>
<td>Overhead Wires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Potential Permitting Factors:

- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
  - How many?
  - Approx. DBH

#### Other factors:

- 

#### Soils:

- Soil auger test holes:
  - Yes
  - No
- Evidence of poor infiltration (clays, fines):
  - Yes
  - No
- Evidence of shallow bedrock:
  - Yes
  - No
- Evidence of high water table (gleying, saturation):
  - Yes
  - No

*In some places not all*
### Design or Delivery Notes

Street width is town ordinance.

### Follow-up Needed to Complete Field Concept

- [ ] Confirm property ownership
- [x] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [x] Complete concept sketch
- [ ] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [x] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types
- [ ] Other:

### Initial Feasibility and Construction Considerations

- Town losing ppl; may not have $.
- School laying of teachers.

### Site Candidate for Further Investigation:

- YES [x] NO [ ] MAYBE [ ]

### Is Site Candidate for Early Action Project(s):

- YES [x] NO [ ] MAYBE [ ]

### If No, Site Candidate for Other Restoration Project(s):

- YES [ ] NO [ ] MAYBE [ ]

### If Yes, Type(s):
Westerly High School
23 Ward Avenue
Westerly, RI

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre

Legend:
- Railroad
- Flood Zone
  - 100 Year Flood Zone
  - 500 Year Flood Zone

Fields get swamped
Not currently turf

Every roof has central drain to storm sewer
**Watershed:**

<table>
<thead>
<tr>
<th>Date:</th>
<th>6/2/16</th>
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**Subwatershed:**

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<th>RW/BKG</th>
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**Unique Site ID:**

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**GPS ID:**

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<th>LMK ID:</th>
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**Site Description:**

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**If Public, Government Jurisdiction:**

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<th>Other</th>
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**Corresponding USSR/USA Field Sheet:**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

**If yes, Unique Site ID:**

**Proposed Retrofit Location:**

**Storage:**

<table>
<thead>
<tr>
<th>Existing Pond</th>
<th>Above Roadway Culvert</th>
<th>Below Outfall</th>
<th>In Conveyance System</th>
<th>In Road ROW</th>
<th>Near Large Parking Lot</th>
<th>Other</th>
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**Drainage Area to Proposed Retrofit:**

<table>
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<tr>
<th>Drainage Area</th>
<th>Imperviousness</th>
<th>Impervious Area</th>
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**On-Site:**

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<thead>
<tr>
<th>Hotspot Operation</th>
<th>Small Parking Lot</th>
<th>Individual Roof</th>
<th>Small Impervious Area</th>
<th>Individual Street</th>
<th>Landscape / Hardscape</th>
<th>Other</th>
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</thead>
</table>

**Drainage Area Land Use:**

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<tr>
<th>Residential</th>
<th>Industrial</th>
<th>Transport-Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFH (&lt;1 ac lots)</td>
<td>SFH (&gt;1 ac lots)</td>
<td>Townhouses</td>
</tr>
<tr>
<td>Park</td>
<td>Outdoor</td>
<td>Undeveloped</td>
</tr>
</tbody>
</table>

**Notes:**

Parking lot EBs in Church parking lot

**Existing Stormwater Management:**

<table>
<thead>
<tr>
<th>Existing Stormwater Practice:</th>
<th>Yes</th>
<th>No</th>
<th>Possible</th>
</tr>
</thead>
</table>

If Yes, Describe:

Parking lot EBs in Church parking lot

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Total of small area, high impervious percentage

**Existing Head Available and Points Where Measured:**
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [x] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: 

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [x] Bioretention
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Bioretention basin draining lawn, roof or small parking lot
- Need cut down barn to allow part of parking lot to enter
- Visible to public

---

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- [ ] Residential
- [x] Commercial
- [x] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [x] Yes
- [ ] No

**Access:**
- [ ] No Constraints
- Constrained due to:
  - [ ] Slope
  - [ ] Space
  - [ ] Utilities
  - [ ] Tree Impacts
  - [ ] Structures
  - [x] Property Ownership
  - [ ] Other:

**Conflicts with Existing Utilities:**

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<thead>
<tr>
<th>Yes</th>
<th>Possible</th>
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<tbody>
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<td></td>
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<td>Overhead Wires</td>
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<td>Other</td>
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</tbody>
</table>

**Potential Permitting Factors:**

| Dam Safety Permits Necessary | [ ] Probable | [x] Not Probable |
| Impacts to Wetlands | [ ] Probable | [x] Not Probable |
| Impacts to a Stream | [ ] Probable | [x] Not Probable |
| Floodplain Fill | [ ] Probable | [x] Not Probable |
| Impacts to Forests | [ ] Probable | [x] Not Probable |
| Impacts to Specimen Trees | [ ] Probable | [x] Not Probable |
| How many? | [ ] Probable | [x] Not Probable |
| Approx. DBH | [ ] Probable | [x] Not Probable |

**Other factors:**

**Soils:**

- Soil auger test holes:
- [x] Yes | No |
- Evidence of poor infiltration (clays, fines):
- [ ] Yes | No |
- Evidence of shallow bedrock:
- [ ] Yes | No |
- Evidence of high water table (gleying, saturation):
- [ ] Yes | No |
Design or Delivery Notes:

No space at Westerly Town Hall
Focus on church next door if any

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT:

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-built
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other: Contact Christ Church

Initial Feasibility and Construction Considerations:

Contact Christ Church about bio-retention on their property

Site Candidate for Further Investigation: YES ☑ NO ☐ MAYBE ☐
Is Site Candidate for Early Action Project(s): YES ☑ NO ☐ MAYBE ☐
If No, Site Candidate for Other Restoration Project(s): YES ☑ NO ☐ MAYBE ☐
If Yes, Type(s):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**Proposed Retrofit Location:**
- Storage:
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Other:
- Above Roadway Culvert
- In Conveyance System
- Near Large Parking Lot

**Drainage Area to Proposed Retrofit:**
- Drainage Area
- Imperviousness
- Impervious Area

**Existing Stormwater Management:**
- Existing Stormwater Practice:
  - Yes
  - No
  - Possible

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**
- "in a bowl" 2 feet of water, house & steep
- Slight perch on hill
- Very steep slopes but not much visible erosion
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Channel Protection
- Other: 
- Repair
- Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Other: pavement disconnection
- Infiltration
- Swale
- Filtering Practice

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**
- Recreational improvements + pavement disconnection
- Possible demo bioretention projects w/ site rec/eval/pmt
- Parking lot bio retention (N/S edge of farthest lot)
- Change paving operation

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes
- Possible
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other:

**Soil:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Probable
- Not Probable
- Impacts to Wetlands
- Probable
- Not Probable
- Impacts to a Stream
- Probable
- Not Probable
- Floodplain Fill
- Probable
- Not Probable
- Impacts to Forests
- Probable
- Not Probable
- Impacts to Specimen Trees
- Probable
- Not Probable

**How many?**
- Approx. DBH

**Other factors:**

**Access:**
- No Constraints
- Constrained due to
- Slope
- Space
- Utilities
- Structures
- Tree Impacts
- Property Ownership
- Other:

Unique Site ID: 2766
**Design or Delivery Notes**

Rec. area in need of upgrades

**Follow-up Needed to Complete Field Concept**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builds
- Obtain site as-builds
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

**Initial Feasibility and Construction Considerations**

**Site Candidate for Further Investigation:**  [ ] Yes [ ] No [ ] Maybe

**Is site candidate for Early Action Project(s):**  [ ] Yes [ ] No [ ] Maybe

**If no, site candidate for other Restoration Project(s):**  [ ] Yes [ ] No [ ] Maybe

If yes, type(s):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Retrofit Reconnaissance Investigation

**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 277

**DATE:** 6/2/16

**ASSESSED BY:** RWLWG

**CAMERA ID:** A

**PICTURES:** 10/15-10/30

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

**SITE DESCRIPTION**

Name: Western Health Center
Address: 250 High Street, Westerly, RI

Ownership: ☑ Private

If Public, Government Jurisdiction: Local

Corresponding USSR/USA Field Sheet? No

If yes, Unique Site ID:

**Proposed Retrofit Location:**

Storage
- Existing Pond
- Below Outfall
- In Road Outfall
- In Road ROW
- Other:

On-Site
- Above Roadway Culvert
- In Conveyance System
- Near Large Parking Lot

- Individual Rooftop
- Small Impervious Area
- Landscape / Hardscape

**DRAINAGE AREA TO PROPOSED RETROFIT**

- Drainage Area:
- Imperviousness:
- Impervious Area:

**Drainage Area Land Use:**

- Residential
- SFH (< 1 ac lots)
- SFH (> 1 ac lots)
- Townhouses
- Multi-Family
- Commercial

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice: ☑ Yes

If Yes, Describe:
- Swale (see picture) receives roof drainage from catch basins, does not appear to be green infrastructure

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Steep slopes from main road to parking lot
- Downspouts empty to grass

**Existing Head Available and Points Where Measured:**

Site only partially assessed; ask "Chris" for site access
## Proposed Retrofit

### Purpose of Retrofit:
- Water Quality
- Recharge
- Channel Protection
- Flood Control
- Demonstration/Education
- Repair
- Other:

### Retrofit Volume Computations - Target Storage:
[Diagram]

### Retrofit Volume Computations - Available Storage:
[Diagram]

### Proposed Treatment Option:
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Bioretention
- Swale
- Other:

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:
- Swale at site of existing swale
- Require tree removal
- Accept swale from parking lot (need new curb)
- Replace raised islands w/ bio-retention?

## Site Constraints

### Adjacent Land Use:
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other: Highway?

### Possible Conflicts Due to Adjacent Land Use?
- Yes
- No

### Conflicts with Existing Utilities:
- None
- Unknown
- Yes
- Possible
  - Sewer
  - Water
  - Gas
  - Cable
  - Electric
  - Electric to Streetlights
  - Overhead Wires
  - Other:

### Potential Permitting Factors:
- Dam Safety Permits Necessary
- Impact to Wetlands
- Impact to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many?
  - Approx. DBH

### Other factors:

### Soils:
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):
**Design or Delivery Notes**

**Follow-up Needed to Complete Field Concept**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

**Other:** Obtain site access permission

**Initial Feasibility and Construction Considerations**

[Signature]

**Site Candidate for Further Investigation:**

- [ ] Yes
- [x] No
- [ ] Maybe

**Is Site Candidate for Early Action Project(s):**

- [ ] Yes
- [x] No
- [ ] Maybe

**If No, Site Candidate for Other Restoration Project(s):**

- [ ] Yes
- [ ] No
- [ ] Maybe

If Yes, Type(s):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre
Retrofit Reconnaissance Investigation

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**SITE DESCRIPTION**

- **Name:** Bus Depot "Westerly Municipal Garage Annex"
- **Address:** 8 Springbrook Road, Westerly RI
- **Ownership:** Public
- **Government Jurisdiction:** Local

**Corresponding USSR/USA Field Sheet:** No

**Proposed Retrofit Location:**

- **Storage:**
  - Existing Pond
  - Below Outfall
  - In Road ROW
- **Drainage Area to Proposed Retrofit:**
  - Drainage Area
  - Imperviousness
  - Impervious Area

**Drainage Area Land Use:**

- No Institutional
- No Industrial
- No Transport-Related
- No Park
- No Undeveloped
- No Commercial

- **Notes:** On site drainage only, probably

**EXISTING STORMWATER MANAGEMENT**

- **Existing Stormwater Practice:** Catch basin 4 years old
- **Possible:** No

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Water drains to catch basin in parking lot, no catch basins visible elsewhere.
- Water leaves bus depot SW corner thru small swale, drops considerable sediment at edge of parking lot, clear water issues on site.
- PL CB = 4 years old, probably connects to road drain.

**Existing Head Available and Points Where Measured:**

- Drainage to swale in SW corner near maintenance building stairs.
- Standing water during most storms; deposits sand to fines.
- Overflows & erodes swale during large
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [x] Water Quality
- [ ] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

### Proposed Treatment Option:
- [ ] Extended Detention
- [x] Filtering Practice
- [ ] Wet Pond
- [ ] Infiltration
- [ ] Created Wetland
- [ ] Swale
- [ ] Other:

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:
- Sand filter or other practice to remove contaminants located near existing catch basin using CB as overflow + taking up some parking spaces (n-6)
- Repair + regrade lot to take up some parking spaces
- Might need deep filter to achieve w/s
- Other: different paving practice under buses (pavement filtering surface)

### SITE CONSTRAINTS

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [x] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [x] Yes
- [ ] No

If Yes, Describe:

### Conflicts with Existing Utilities:

- [x] Possible
- [ ] None
- [ ] Unknown
- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

### Potential Permitting Factors:
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
  - How many?
  - Approx. DBH
- Other factors:

### Soils:
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

**Access:**
- [ ] No Constraints
- Constrained due to:
  - [x] Space
  - [ ] Utilities
  - [ ] Tree Impacts
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Other: Drainage patterns, bus access

**Unique Site ID:** 278
**Design or Delivery Notes**

- Existing parking lot in poor shape
- Buses park at top of lot in unpaved area
- Diesel storage tanks 1/4 of lot, uphill of CB

PL: 40 spaces; not efficiently laid out but buses enter/exit through employee parking lot; filled to capacity

**Follow-Up Needed to Complete Field Concept**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

**Other: determine actual sites needed**

**Initial Feasibility and Construction Considerations**

- Biggest issue will be loss of parking spaces
- Consider reconfiguring parking lot & moving entrance east for straight shot for buses
- Determine ownership # site 109

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<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
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<td>Is Site Candidate for Early Action Project(s):</td>
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<td>NO</td>
<td>MAYBE</td>
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<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
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### Retrofit Reconnaissance Investigation

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### SITE DESCRIPTION

- **Name:** Ashaway Elementary School
- **Address:** 12A Hillside Ave, Hopkinton RI
- **Ownership:** Public
- **Government Jurisdiction:** Local
- **Corresponding USSR/USA Field Sheet:** No
- **If yes, Unique Site ID:**

### Proposed Retrofit Location:

- **Storage:**
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Other:
- **On-Site:**
  - Hotspot Operation
  - Small Parking Lot
  - Individual Parking Lot
  - Individual Street
  - Underground
  - Landscape / Hardscape
  - Other:

### DRAINAGE AREA TO PROPOSED RETROFIT

- **Drainage Area ≈**
- **Imperviousness ≈** %
- **Impervious Area ≈**

### Drainage Area Land Use:

- **Residential**
- **SFH (< 1 ac lots)**
- **SFH (> 1 ac lots)**
- **Townhouses**
- **Multi-Family**
- **Commercial**
- **Institutional**
- **Industrial**
- **Transport-Related**
- **Park**
- **Undeveloped**
- **Other:**

### EXISTING STORMWATER MANAGEMENT

- **Existing Stormwater Practice:** No
- **If Yes, Describe:**

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Old building - roof drains to PL; newer building roof drains into ground
- Few CBS on site

### Existing Head Available and Points Where Measured:
### Proposed Retrofit

**Purpose of Retrofit:**
- [x] Water Quality
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [x] Demonstration / Education
- [ ] Repair
- [ ] Other: ____________

### Retrofit Volume Computations - Target Storage: ____________

### Retrofit Volume Computations - Available Storage: ____________

### Proposed Treatment Option:
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [x] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other: ____________

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:
- [ ] Bioretention in front lawn?
- [ ] Bioretention for rooftop disconnection behind + in front of new school.
- [ ] Permeable parking lot in rec area.

### Site Constraints

#### Adjacent Land Use:
- [x] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other: ____________

#### Possible Conflicts Due to Adjacent Land Use?
- [ ] Yes
- [x] No

#### Access:
- [x] No Constraints
- Constrained due to:
  - [ ] Slope
  - [ ] Utilities
  - [ ] Structures
  - [ ] Space
  - [ ] Tree Impacts
  - [ ] Property Ownership
  - [ ] Other: ____________

### Conflicts with Existing Utilities:
- [ ] None
- [ ] Unknown

#### Yes
- [ ] Possible
  - [ ] Sewer
  - [ ] Water
  - [ ] Gas
  - [ ] Cable
  - [ ] Electric
  - [ ] Electric to Streetlights
  - [ ] Overhead Wires
  - [ ] Other: ____________

### Potential Permitting Factors:
- [ ] Dam Safety Permits Necessary
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Wetlands
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to a Stream
- [ ] Probable
- [ ] Not Probable
- [ ] Floodplain Fill
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Forests
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Specimen Trees
  - [ ] How many?
  - [ ] Approx. DBH ____________

### Other factors:

#### Soils:
- [ ] Soil auger test holes:
- [ ] Yes
- [ ] No
- [ ] Evidence of poor infiltration (clays, fines):
- [ ] Yes
- [ ] No
- [ ] Evidence of shallow bedrock:
- [ ] Yes
- [ ] No
- [ ] Evidence of high water table (gleying, saturation):
- [ ] Yes
- [ ] No

---

Unique Site ID: 28
**Design or Delivery Notes**

*Bus route?*

---

**Follow-up Needed to Complete Field Concept**

- [ ] Confirm property ownership
- [x] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-buils
- [ ] Obtain site as-buils
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types
- [ ] Other:

---

**Initial Feasibility and Construction Considerations**

---

**Site Candidate for Further Investigation:**

- [x] Yes
- [ ] No
- [ ] Maybe

**Is Site Candidate for Early Action Project(s):**

- [ ] Yes
- [x] No
- [ ] Maybe

**If No, Site Candidate for Other Restoration Project(s):**

If yes, type(s):
underground linear infiltration. Could be placed toward end of street (west) and connected to catch basin on Laurel St. for overflow.
**Watershed:**

**Site Description:**

- **Name:** Charlestown Elementary School
- **Address:** 363 Carolina Back Rd
- **Ownership:** Public
- **If Public, Government Jurisdiction:** Local
- **If Yes, Unique Site ID:**

**Proposed Retrofit Location:**

- **Storage:**
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Other:

- **On-Site:**
  - Above Roadway Calvert
  - In Conveyance System
  - Near Large Parking Lot
  - Under Ground

**Drainage Area to Proposed Retrofit:**

- **Drainage Area**

- **Imperviousness**

- **Impervious Area**

**Drainage Area Land Use:**

- **Residential**
- **SFH (< 1 ac lots)**
- **SFH (> 1 ac lots)**
- **Townhouses**
- **Multi-Family**
- **Commercial**

**Existing Stormwater Management:**

- **Existing Stormwater Practice:**
  - Yes
  - No
  - Possible

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

- Steep, water drained off site using CBS + conveyances
- Steep roads + parking lots

**Existing Head Available and Points Where Measured:**
**Proposed Retrofit**

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other: __________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Created Wetland
- [ ] Swale
- [ ] Bioretention
- [ ] Other: __________

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

treat road using infiltration under parking lot

**Site Constraints**

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other: __________

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

If Yes, Describe:

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown
- [ ] Possible

- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other: __________

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
  - How many? __________
  - Approx. DBH ________

**Other factors:**

**Soils:**
- Soil auger test holes: __________
- Evidence of poor infiltration (clays, fines):  
  - [ ] Yes
  - [ ] No
- Evidence of shallow bedrock:  
  - [ ] Yes
  - [ ] No
- Evidence of high water table (gleying, saturation):  
  - [ ] Yes
  - [ ] No
### Design or Delivery Notes

### Follow-up Needed to Complete Field Concept

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

- Other: 

### Initial Feasibility and Construction Considerations

### Site Candidate for Further Investigation:
- **Yes**
- **No**
- **Maybe**

**Is Site Candidate for Early Action Project(s):**

- **Yes**
- **No**

**If No, Site Candidate for Other Restoration Project(s):**

- **Yes**
- **No**

**If Yes, Type(s):**
Charlestown Elementary School
363 Carolina Back Road
Charlestown, RI

Legend

- Railroad
- Flood Zone
- 100 Sites
- 100 Year Flood Zone
- 500 Year Flood Zone

Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% Impervious OR IC >= 1 Acre
Watershed: 
Subwatershed: 
Unique Site ID: 282

Date: 7/11/16  
Assessed By:  
Camera ID:  
Pictures: 282 13:30-13:30

GPS ID:  
LMK ID:  
LAT:  
LONG: 

Site Description:

Name: Charlevoix High School/Middle School & Caf

Ownership:
- [X] Public  
- [ ] Private  
- [ ] Unknown

If Public, Government Jurisdiction:
- [X] Local  
- [ ] State  
- [ ] DOT  
- [ ] Other:

Corresponding USSR/USA Field Sheet:
- [ ] Yes  
- [ ] No

If yes, Unique Site ID:

Proposed Retrofit Location:

Storage
- [ ] Existing Pond  
- [ ] Below Outfall  
- [ ] In Road ROW  
- [ ] Other:

- [ ] Above Roadway Culvert  
- [ ] In Conveyance System  
- [ ] Near Large Parking Lot

Drainage Area to Proposed Retrofit:

- [ ] Drainage Area ≈
- [ ] Imperviousness ≈%
- [ ] Impervious Area ≈

- [ ] On-Site:
  - [ ] Hotspot Operation  
  - [ ] Small Parking Lot  
  - [ ] Individual Street  
  - [ ] Underground  
  - [ ] Other:

- [ ] Individual Rooftop  
- [ ] Small Impervious Area  
- [ ] Landscape/Hardscape

Existing Stormwater Management:

Existing Stormwater Practice:
- [X] Yes  
- [ ] No  
- [ ] Possible

If Yes, Describe:

- [X] Infiltration??
- [ ] Large Gravel Wetland

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- [ ] Complicated, large CBS to handle water

Existing Head Available and Points Where Measured:

10,000  
2,800  
16,000  
1,100
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Repair
- Channel Protection
- Flood Control
- Other: __________

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- Extended Detention
- Wet Pond
- Created Wetland
- Bioretention
- Filtering Practice
- Infiltration
- Swale
- Other: __________

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

- Small swale as demo project in existing small swale

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other: Agr-turf farm

**Possible Conflicts Due to Adjacent Land Use?**
- Yes __________ No __________

**If Yes, Describe:**

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes __________ Possible

- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires
- Other: Comm?

**Potential Permitting Factors:**

- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees

- How many? __________
- Approx. DBH __________

**Other factors:**

**Soils:**
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

- Yes __________ No
**DESIGN OR DELIVERY NOTES**

- Multiple fuel tanks on site
- Little opportunity for projects (space, utilities)

---

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

---

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

---

**SITE CANDIDATE FOR FURTHER INVESTIGATION:**

- YES
- NO
- MAYBE

**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):**

- YES
- NO
- MAYBE

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):**

- YES
- NO
- MAYBE

**IF YES, TYPE(S):**

---

Page 4 of 4
Retrofit Reconnaissance Investigation

WATERSHED: 
SUBWATERSHED: 
UNIQUE SITE ID: 283

DATE: 7/1/16
ASSESSED BY: RJJ
CAMERA ID: 6phase
PICTURES: 2-230

GPS ID: LMK ID: 
LAT: LONG:

SITE DESCRIPTION
Name: West Kingston Elementary School
Address: 319 Ministerial Road, South Kingston, RI

Ownership:
Public □ Private □ Unknown
Local □ State □ DOT □ Other:

Corresponding USSR/USA Field Sheet? □ Yes □ No □ Other:
If yes, Unique Site ID:

Proposed Retrofit Location:
Storage
□ Existing Pond □ Below Outfall □ In Road ROW
□ Above Roadway Culvert □ In Conveyance System
□ Near Large Parking Lot
□ Other:

On-Site
□ Hotspot Operation □ Small Parking Lot
□ Individual Street □ Individual Rooftop
□ Underground □ Small Impervious Area
□ Landscape/Hardscape □ Other:

DRAINAGE AREA TO PROPOSED RETROFIT
Drainage Area =
Imperviousness = %
Impervious Area =

Notes:

EXISTING STORMWATER MANAGEMENT
Existing Stormwater Practice: □ Yes □ No □ Possible
If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Existing Head Available and Points Where Measured:

Page 1 of 4

Unique Site ID: 283
**PROPOSED RETROFIT**

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
<th>Recharge</th>
<th>Channel Protection</th>
<th>Flood Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality</td>
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<tr>
<td>Demonstration / Education</td>
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<td>Repair</td>
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<tr>
<th>Retrofit Volume Computations - Target Storage:</th>
<th>Retrofit Volume Computations - Available Storage:</th>
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<tr>
<th>Proposed Treatment Option:</th>
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<tbody>
<tr>
<td>Extended Detention</td>
</tr>
<tr>
<td>Filtering Practice</td>
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<tr>
<td></td>
</tr>
<tr>
<td>✗ Swale</td>
</tr>
<tr>
<td>Other:</td>
</tr>
</tbody>
</table>

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

swale + bioretention along exit driveway?

bioretention at top of entrance driveway

dry wells?

---

**SITE CONSTRAINTS**

<table>
<thead>
<tr>
<th>Adjacent Land Use:</th>
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<tbody>
<tr>
<td>Residential</td>
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<tr>
<td>Commercial</td>
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<tr>
<td>Industrial</td>
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<tr>
<td>Transport-Related</td>
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<tr>
<td>Undeveloped</td>
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</tbody>
</table>

Yes | No

Possible Conflicts Due to Adjacent Land Use? | ☐ Yes ☒ No

If Yes, Describe: ________________________________

<table>
<thead>
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<th>Potential Permitting Factors:</th>
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<tbody>
<tr>
<td>Dam Safety Permits Necessary</td>
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<td>Impacts to Wetlands</td>
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<tr>
<td>Impacts to a Stream</td>
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<tr>
<td>Floodplain Fill</td>
</tr>
<tr>
<td>Impacts to Forests</td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
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</tbody>
</table>

How many? __________________________

Approx. DBH ________________________

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<thead>
<tr>
<th>Other factors:</th>
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<td>Other factors:</td>
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<table>
<thead>
<tr>
<th>Soils:</th>
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<tr>
<td>Soil auger test holes:</td>
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<tr>
<td>Evidence of poor infiltration (clays, fines):</td>
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<tr>
<td>Evidence of shallow bedrock:</td>
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<td>Evidence of high water table (gleying, saturation):</td>
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### DESIGN OR DELIVERY NOTES

<table>
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<tr>
<th>Follow-up Needed to Complete Field Concept</th>
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<tbody>
<tr>
<td>- Confirm property ownership</td>
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<td>- Obtain existing stormwater practice as-buils</td>
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<td>- Obtain site as-buils</td>
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<td>- Confirm soil types</td>
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<tr>
<th>Initial Feasibility and Construction Considerations</th>
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<tr>
<th>Site Candidate for Further Investigation:</th>
<th>Yes</th>
<th>No</th>
<th>Maybe</th>
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<tr>
<td>Is Site Candidate for Early Action Project(s):</td>
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<td>Maybe</td>
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<tr>
<td>If No, Site Candidate for Other Restoration Project(s):</td>
<td>Yes</td>
<td>No</td>
<td>Maybe</td>
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<tr>
<td>If Yes, Type(s):</td>
<td></td>
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</table>
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre
Retrofit Reconnaissance Investigation

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<th>SUBWATERSHED:</th>
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<tr>
<td>GPS ID:</td>
<td>LMK ID:</td>
<td>LAT:</td>
<td>LONG:</td>
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</table>

### SITE DESCRIPTION

- **Name:** Boss Area, West
- **Address:** Keeney Road, South Kingston, RI
- **Ownership:** Public
- **Corresponding USSR/USA Field Sheet:** No

### Proposed Retrofit Location:

- **Storage:**
  - Existing Pond
  - Below Outfall
  - In Road ROW
  - Other:

- **On-Site:**
  - Hotspot Operation
  - Small Parking Lot
  - Individual Row
  - Small Impervious Area
  - Landscape / Hardscapes
  - Underground
  - Other:

### DRAINAGE AREA TO PROPOSED RETROFIT:

- **Drainage Area Imperviousness:** %
- **Drainage Area Impervious Area:**

### Existing Stormwater Management:

- **Existing Stormwater Practice:** No
- **If Yes, Describe:**
  - CBS, scattered, pavement damaged

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Large parking lots w/ grey infrastructure only. CBS widely scattered!
- Bums & parking lot corners badly eroded
- Building downsports go into ground
- CBSs, scattered, surrounding pavement damaged

### Existing Head Available and Points Where Measured:

- No access to 239 due to Special Olympics
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Recharge
- Other:
- Channel Protection
- Repair
- Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

### Proposed Treatment Option:
- Extended Detention
- Filtering Practice
- Wet Pond
- Infiltration
- Created Wetland
- Swale
- Bioretention
- Other: permeable pavement

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:
- Convert grass medians/edges to bioretention
- Convert parking to permeable
- Underground Infiltration
- Curb cuts for sheet flow
- Route downspouts to rain garden along tennis courts

### SITE CONSTRAINTS

**Adjacent Land Use:**
- Residential
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Other:

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

**Access:**
- No Constraints
- Constrained due to:
  - Slope
  - Space
  - Utilities
  - Tree Impacts
  - Structures
  - Property Ownership
  - Other: USE

**Conflicts with Existing Utilities:**
- None
- Unknown
- Yes:
  - Sewer
  - Water
  - Gas
  - Cable
  - Electric
  - Electric to Streetlights
  - Overhead Wires
  - Other:

**Potential Permitting Factors:**
- Dam Safety Permits Necessary
- Impacts to Wetlands
- Impacts to a Stream
- Floodplain Fill
- Impacts to Forests
- Impacts to Specimen Trees
- How many? 1-2 dozen
  - Approx. DBH 4-6" 

**Other factors:** depth to groundwater

### Soils:
- Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

---

Page 2 of 4

Unique Site ID: ________
**Design or Delivery Notes**

Converting grass strips to bio-retention would require small loss of driving/parking space, would help w/ maintenance of pavement around catch basins.

URI already has clear interest in stormwater management.

---

**Follow-up Needed to Complete Field Concept**

- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-built
- [ ] Obtain site as-built
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

- [ ] Other:

---

**Initial Feasibility and Construction Considerations**

---

**Site Candidate for Further Investigation:** ☑️

**Is Site Candidate for Early Action Project(s):** ☑️

If no, site candidate for other Restoration Project(s): ☑️

If yes, type(s):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ impairment, and >= 30% impervious OR IC >= 1 Acre
**Watershed:**

**Subwatershed:**

**Unique Site ID:** 285

**Date:** 6/3/16

**Assessed By:** RW/WS

**Camera ID:** C

**Pictures:** 836-900

**GPS ID:**

**LMK ID:**

**Lat:**

**Long:**

---

### Site Description

**Name:** University of Rhode Island Campus Parking lots along Flagg Road 210 Flagg Road South Kingstown, RI

**Ownership:**
- ☑ Public
- □ Private
- □ Unknown

**If Public, Government Jurisdiction:**
- □ Local
- ☑ State
- □ DOT
- □ Other

**Corresponding USSR/USA Field Sheet:**
- □ Yes
- □ No
- □ If yes, Unique Site ID:

---

### Proposed Retrofit Location:

**Storage**
- □ Existing Pond
- □ Below Outfall
- □ In Road ROW
- □ Other:
  - [ ] Above Roadway Culvert
  - [ ] In Conveyance System
  - ☑ Near Large Parking Lot

---

**DRAINAGE AREA TO PROPOSED RETROFIT**

**Drainage Area =**

**Imperviousness =**

**Impervious Area =**

**Drainage Area Land Use:**
- □ Residential
- □ SFH (< 1 ac lots)
- □ SFH (> 1 ac lots)
- □ Townhouses
- □ Multi-Family
- □ Commercial
- ☑ Institutional
- □ Industrial
- □ Transport-Related
- □ Park
- □ Undeveloped
- □ Other

---

### Existing Stormwater Management

**Existing Stormwater Practice:**
- ☑ Yes
- □ No
- □ Possible

**If Yes, Describe:**

- [ ] Massive stormwater basins at NW end of campus, poss. permeable pavers
- [ ] Plains Rd parking
- [ ] Eastern lots: No treatment

---

**Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:**

Eastern lots consist of Impervious pavement, no islands.

---

**Existing Head Available and Points Where Measured:**
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration/ Education
- [x] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other:  

**Retrofit Volume Computations - Target Storage:**  

**Retrofit Volume Computations - Available Storage:**  

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Infiltration
- [ ] Swale
- [ ] Other: permeable paving

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**
add bioretention, permeable parking spaces in parking lots  
or expand bioretention in lots  
underground infiltration system?

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [x] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:  

Possibility of Conflicts Due to Adjacent Land Use:  
- [ ] Yes  
- [x] No  

If Yes, Describe:  

**Conflicts with Existing Utilities:**
- [ ] None  
- [ ] Unknown  

Yes Possible

- [x] Sewer
- [x] Water
- [x] Gas
- [x] Cable
- [ ] Electric
- [x] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other: steam

**Potential Permitting Factors:**
- [ ] Dam Safety Permits Necessary  
- [ ] Probable  
- [ ] Not Probable  
- [ ] Impacts to Wetlands  
- [ ] Probable  
- [ ] Not Probable  
- [ ] Impacts to a Stream  
- [ ] Probable  
- [ ] Not Probable  
- [ ] Floodplain Fill  
- [ ] Probable  
- [ ] Not Probable  
- [ ] Impacts to Forests  
- [ ] Probable  
- [ ] Not Probable  
- [ ] Impacts to Specimen Trees  
- [ ] Probable  
- [ ] Not Probable  

How many?  
Approx. DBH:  

Other factors:  

**Soils:**
- Soil auger test holes:  
- Evidence of poor infiltration (clays, fines):  
- Evidence of shallow bedrock:  
- Evidence of high water table (gleying, saturation):
- potential parking conflicts (e.g., buses)
- high capacity parking lot may need to retain max. capacity

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Confirm storm drain invert elevations
- Confirm soil types

INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

SITE CANDIDATE FOR FURTHER INVESTIGATION: YES
IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES
IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): NO
IF YES, TYPE(S):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre

Legend
- Railroad
- Flood Zone
- 100 YEAR FLOOD ZONE
- 500 YEAR FLOOD ZONE
Retrofit Reconnaissance Investigation

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
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<tr>
<td>7/11/11</td>
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**SITE DESCRIPTION**

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<tr>
<th>Corresponding USSR/USA Field Sheet?:</th>
<th>Yes</th>
<th>No</th>
<th>If yes, Unique Site ID:</th>
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<thead>
<tr>
<th>Proposed Retrofit Location:</th>
<th>On-Site</th>
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<tbody>
<tr>
<td>Storage</td>
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<td>Existing Pond</td>
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**DRAINAGE AREA TO PROPOSED RETROFIT**

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<th>Drainage Area</th>
<th>Imperviousness</th>
<th>Drainage Area Land Use:</th>
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<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td>□ Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Developed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Other</td>
</tr>
</tbody>
</table>

**EXISTING STORMWATER MANAGEMENT**

<table>
<thead>
<tr>
<th>Existing Stormwater Practice:</th>
<th>Yes</th>
<th>No</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>If Yes, Describe:</td>
<td>@ town hall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

*No formal drainage/obs on properties (only in *5*)*

Existing Head Available and Points Where Measured:
### PROPOSED RETROFIT

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Recharge
- [ ] Other: _Other:_

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

### Proposed Treatment Option:
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Infiltration
- [ ] Swale
- [ ] Other: _Other:_

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

**Retrofit flagpole area?**

**Route CB into RR into front lawn area?**

### SITE CONSTRAINTS

#### Adjacent Land Use:
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [x] Undeveloped
- [ ] Other: _Other:_

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

*If Yes, Describe:*

#### Conflicts with Existing Utilities:
- [ ] None
- [ ] Unknown

- [x] Yes
- [ ] Possible

- [ ] Sewer
- [ ] Water
- [ ] Gas
- [ ] Cable
- [ ] Electric
- [ ] Electric to Streetlights
- [ ] Overhead Wires
- [ ] Other:

#### Potential Permitting Factors:
- Dam Safety Permits Necessary: _Probable_ / _Not Probable_
- Impacts to Wetlands: _Probable_ / _Not Probable_
- Impacts to a Stream: _Probable_ / _Not Probable_
- Floodplain Fill: _Probable_ / _Not Probable_
- Impacts to Forests: _Probable_ / _Not Probable_
- Impacts to Specimen Trees: _Probable_ / _Not Probable_

*How many?*

**Approx. DBH:**

#### Other factors:

- [ ] Yes
- [ ] No

#### Soils:
- Soil auger test holes: _Yes_ / _No_
- Evidence of poor infiltration (clays, fines): _Yes_ / _No_
- Evidence of shallow bedrock: _Yes_ / _No_
- Evidence of high water table (gleying, saturation): _Yes_ / _No_
**DESIGN OR DELIVERY NOTES**

- Greenhouse on site

---

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

<table>
<thead>
<tr>
<th>Confirm property ownership</th>
<th>Obtain existing stormwater practice as-builts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirm drainage area</td>
<td>Obtain site as-builts</td>
</tr>
<tr>
<td>Confirm drainage area impervious cover</td>
<td>Obtain detailed topography</td>
</tr>
<tr>
<td>Confirm volume computations</td>
<td>Obtain utility mapping</td>
</tr>
<tr>
<td>Complete concept sketch</td>
<td>Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>Other: ______________________</td>
<td>Confirm soil types</td>
</tr>
</tbody>
</table>

---

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

---

**SITE CANDIDATE FOR FURTHER INVESTIGATION:**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
</thead>
</table>

**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
</thead>
</table>

**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):**

| YES | NO | MAYBE |

**IF YES, TYPE(S):**

---
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**Retrofit Reconnaissance Investigation**

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>287</strong></td>
</tr>
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<th>ASSESSED BY:</th>
<th>CAMERA ID:</th>
<th>PICTURES:</th>
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<th>LAT:</th>
<th>LONG:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SITE DESCRIPTION**

Name: **Wood River Preschool/Hope Valley Elementary School**

Address: 1059 Main St, Hope Valley RI

Ownership: ☑ Public  ☐ Private  ☐ Unknown
If Public, Government Jurisdiction: ☑ Local  ☐ State  ☐ DOT  ☐ Other:

Corresponding USSR/USA Field Sheet?:  ☐ Yes  ☑ No  If yes, Unique Site ID:

**Proposed Retrofit Location:**

**Drainage Area to Proposed Retrofit**

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Imperviousness</th>
<th>Impervious Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9%</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

**EXISTING STORMWATER MANAGEMENT**

Existing Stormwater Practice: ☑ Yes  ☐ No  ☐ Possible
If Yes, Describe:

Rain garden near playground seems in good shape

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Steep lots drain to CIBs. (front/side)

Existing Head Available and Points Where Measured:
## Proposed Retrofit

### Purpose of Retrofit:
- [x] Water Quality
- [x] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Repair
- [ ] Demonstration / Education
- [ ] Other:

### Retrofit Volume Computations - Target Storage:

### Retrofit Volume Computations - Available Storage:

### Proposed Treatment Option:
- [x] Bioretention
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

- Exposed existing bioretention to capture roof leaders + parking lot
- Louxville Rd
- Install permeable paving parking spaces + reduce infiltration under road

## Site Constraints

### Adjacent Land Use:
- [x] Residential
- [x] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

### Possible Conflicts Due to Adjacent Land Use?
- [ ] Yes
- [x] No

### Conflicts with Existing Utilities:
- [x] None
- [ ] Identified

### Potential Permitting Factors:
- [ ] Probable
- [ ] Not Probable

#### Dam Safety Permits Necessary
#### Impacts to Wetlands
#### Impacts to a Stream
#### Floodplain Fill
#### Impacts to Forests
#### Impacts to Specimen Trees

### Soils:
- [ ] Yes
- [ ] No

#### Soil auger test holes:
- Evidence of poor infiltration (clays, fines):
- Evidence of shallow bedrock:
- Evidence of high water table (gleying, saturation):

### Other factors:

---

Unique Site ID: 287
**Design or Delivery Notes**

**Follow-up Needed to Complete Field Concept**
- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

**Initial Feasibility and Construction Considerations**

**Site Candidate for Further Investigation:**
- Yes
- No
- Maybe

**Is Site Candidate for Early Action Project(s):**
- Yes
- No
- Maybe

**If No, Site Candidate for Other Restoration Project(s):**
- Yes
- No
- Maybe

**If Yes, Type(s):**
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 5 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**Retrofit Reconnaissance Investigation**

<table>
<thead>
<tr>
<th>WATERSHED:</th>
<th>SUBWATERSHED:</th>
<th>UNIQUE SITE ID:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>288</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATE:</th>
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<th>CAMERA ID:</th>
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</thead>
<tbody>
<tr>
<td>6/6/16</td>
<td>RW/WG</td>
<td>e</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GPS ID:</th>
<th>LMK ID:</th>
<th>PICTURES:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>11:20-11:40</td>
</tr>
</tbody>
</table>

### SITE DESCRIPTION

**Name:** DBW Facility? Unknown  
**Address:** 51 Bank St, Hopkinton RI

Ownership:  
- [ ] Public  
- [x] Private  
- [ ] Unknown  
- [ ] DOT  
- [ ] Other:

If Public, Government Jurisdiction:  
- [ ] Local  
- [x] State  
- [ ] DOT  
- [ ] Other:

Corresponding USSR/USA Field Sheet?  
- [ ] Yes  
- [ ] No  
- [ ] If yes, Unique Site ID:

**Proposed Retrofit Location:**

- [ ] Storage  
  - [ ] Existing Pond  
  - [x] Above Roadway Culvert  
  - [ ] Below Outfall  
  - [x] In Conveyance System  
  - [ ] In Road ROW  
  - [ ] Near Large Parking Lot  
  - [ ] Other:

- [ ] On-Site  
  - [x] Hotspot Operation  
  - [ ] Small Parking Lot  
  - [ ] Individual Street  
  - [ ] Underground  
  - [ ] Individual Rooftop  
  - [ ] Small Impervious Area  
  - [ ] Landscape / Hardscape  
  - [ ] Other:

### DRAINAGE AREA TO PROPOSED RETROFIT

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Imperviousness</th>
<th>Impervious Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
</tbody>
</table>

Notes: Large, highly disturbed

### EXISTING STORMWATER MANAGEMENT

**Existing Stormwater Practice:**  
- [x] Yes  
- [ ] No  
- [ ] Possible

If Yes, Describe:

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

Large amounts of sand and salt in runoff, most runs onto road into creek.  
Swale of salt drains, runs straight into wetland.  
Main roof runoff enters CB

### Existing Trend Available and Points Where Measured:

Definite need for tree
### Retroffit Reconnaissance Investigation (RRI)

#### Proposed Retrofit

<table>
<thead>
<tr>
<th>Purpose of Retrofit:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Water Quality</td>
</tr>
<tr>
<td>☐ Demonstration/Education</td>
</tr>
<tr>
<td>☐ Repair</td>
</tr>
<tr>
<td>☐ Channel Protection</td>
</tr>
<tr>
<td>☐ Flood Control</td>
</tr>
</tbody>
</table>

#### Retrofit Volume Computations - Target Storage:

[Signature]

#### Retrofit Volume Computations - Available Storage:

[Signature]

#### Proposed Treatment Option:

- ☐ Extended Detention
- ☒ Wet Pond
- ☐ Created Wetland
- ☐ Bioretention
- ☐ Swale
- ☐ Other:

#### Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

- Road ROW: excavate slope at N/S end of lot + create seed bioswale or sealed basin; remove some parking lot + build retaining wall to support adjacent lot (add more parking)
- Under front lot: infiltration chambers; new CBs or retrofit CBs to direct water; provide cleanouts

#### Site Constraints

<table>
<thead>
<tr>
<th>Adjacent Land Use:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒ Residential</td>
</tr>
<tr>
<td>☐ Commercial</td>
</tr>
<tr>
<td>☐ Institutional</td>
</tr>
<tr>
<td>☐ Industrial</td>
</tr>
<tr>
<td>☐ Transport-Related</td>
</tr>
<tr>
<td>☐ Park</td>
</tr>
<tr>
<td>☐ Undeveloped</td>
</tr>
<tr>
<td>☐ Other:</td>
</tr>
</tbody>
</table>

If Yes, Describe:

#### Conflicts with Existing Utilities:

- ☒ None
- ☐ Unknown

Yes Possible

- ☐ Sewer
- ☐ Water
- ☐ Gas
- ☐ Cable
- ☐ Electric
- ☐ Electric to Streetlights
- ☐ Overhead Wires
- ☐ Other:

#### Potential Permitting Factors:

- Dam Safety Permits Necessary
- ☐ Probable
- ☐ Not Probable
- Impacts to Wetlands
- ☐ Probable
- ☐ Not Probable
- Impacts to a Stream
- ☐ Probable
- ☐ Not Probable
- Floodplain Fill
- ☐ Probable
- ☐ Not Probable
- Impacts to Forests
- ☐ Probable
- ☐ Not Probable
- Impacts to Specimen Trees
- How many?
  - Approx. DBH
- Other factors: *Definitely win wetland buffer*
**DESIGN OR DELIVERY NOTES**

- Writer treatments
  - mostly salt
  - little brine
  - sand used only when icy

**FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT**

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builds
- Obtain site as-builds
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types
- Other: Confirm LUKPL/Hotspot status

**INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS**

- definitely need for treatment; willing partner in management

**SITE CANDIDATE FOR FURTHER INVESTIGATION:** YES
**IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):** YES
**IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):** NO
**IF YES, TYPE(S):**

Unique Site ID: 254
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
<table>
<thead>
<tr>
<th>Site Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: <strong>Unknown</strong></td>
</tr>
<tr>
<td>Address: <strong>260 Arcadia Rd, Richmond</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ownership:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
</tr>
<tr>
<td>☐</td>
</tr>
</tbody>
</table>

| If Public, Government Jurisdiction: |
| Local | State | DOT | Other |
| ☐ | ☑ | ☐ | ☐ |

| Corresponding USSR/USA Field Sheet: |
| ☐ Yes | No | If yes, Unique Site ID: |

<table>
<thead>
<tr>
<th>Proposed Retrofit Location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
</tr>
<tr>
<td>☐ Existing Pond</td>
</tr>
<tr>
<td>☐ Below Outfall</td>
</tr>
<tr>
<td>☐ In Road ROW</td>
</tr>
<tr>
<td>☐ Other:</td>
</tr>
<tr>
<td>☐ Near Large Parking Lot</td>
</tr>
<tr>
<td>☐ Other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drainage Area to Proposed Retrofit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Area ≈</td>
</tr>
<tr>
<td>☐ Imperviousness ≈ %</td>
</tr>
<tr>
<td>☐ Impervious Area ≈</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Existing Stormwater Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Stormwater Practice:</td>
</tr>
<tr>
<td>☐ Yes</td>
</tr>
</tbody>
</table>

| Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance: |
| all surface conditions unimproved |
| No need for improvement over current conditions |

<table>
<thead>
<tr>
<th>Existing Head Available and Points Where Measured:</th>
</tr>
</thead>
</table>
# Proposed Retrofit

**Purpose of Retrofit:**
- [ ] Water Quality
- [ ] Demonstration / Education
- [ ] Recharge
- [ ] Repair
- [ ] Channel Protection
- [ ] Flood Control

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [ ] Created Wetland
- [ ] Bioretention
- [ ] Filtering Practice
- [ ] Infiltration
- [ ] Swale
- [ ] Other:

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

## Site Constraints

**Adjacent Land Use:**
- [ ] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Access:**
- [ ] No Constraints
- [ ] Constrained due to:
  - [ ] Slope
  - [ ] Space
  - [ ] Utilities
  - [ ] Tree Impacts
  - [ ] Structures
  - [ ] Property Ownership
  - [ ] Other:

**Conflicts with Existing Utilities:**
- [ ] None
- [ ] Unknown

**Yes** | **Possible**
--- | ---
Sewer | Water | Gas | Cable | Electric | Electric to Streetlights | Overhead Wires | Other:

**Potential Permitting Factors:**
- [ ] Dam Safety Permits Necessary
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Wetlands
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to a Stream
- [ ] Probable
- [ ] Not Probable
- [ ] Floodplain Fill
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Forests
- [ ] Probable
- [ ] Not Probable
- [ ] Impacts to Specimen Trees
- [ ] Probable
- [ ] Not Probable

**How many?**

**Approx. DBH**

**Other factors:**

**Soils:**
- [ ] Yes
- [ ] No
- [ ] Soil auger test holes:
- [ ] Yes
- [ ] No
- [ ] Evidence of poor infiltration (clays, fines):
- [ ] Yes
- [ ] No
- [ ] Evidence of shallow bedrock:
- [ ] Yes
- [ ] No
- [ ] Evidence of high water table (slewing, saturation):
- [ ] Yes
- [ ] No
### DESIGN OR DELIVERY NOTES

### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT
- [ ] Confirm property ownership
- [ ] Confirm drainage area
- [ ] Confirm drainage area impervious cover
- [ ] Confirm volume computations
- [ ] Complete concept sketch
- [ ] Obtain existing stormwater practice as-builts
- [ ] Obtain site as-builts
- [ ] Obtain detailed topography
- [ ] Obtain utility mapping
- [ ] Confirm storm drain invert elevations
- [ ] Confirm soil types

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

### SITE CANDIDATE FOR FURTHER INVESTIGATION:
- [ ] Yes
- [x] No
- [ ] Maybe

### IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):
- [ ] Yes
- [ ] No
- [ ] Maybe

### IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):
- [x] Yes
- [ ] No
- [ ] Maybe

### IF YES, TYPE(S):

Unique Site ID: 290
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % impervious OR IC >= 1 Acre
<table>
<thead>
<tr>
<th><strong>WATERSHED:</strong></th>
<th><strong>SUBWATERSHED:</strong></th>
<th><strong>UNIQUE SITE ID:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>293</td>
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<table>
<thead>
<tr>
<th><strong>DATE:</strong></th>
<th><strong>ASSESSED BY:</strong></th>
<th><strong>CAMERA ID:</strong></th>
<th><strong>PICTURES:</strong></th>
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<tr>
<td>6/6/16</td>
<td>RW/WG</td>
<td>C</td>
<td>950-95S</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GPS ID:</strong></th>
<th><strong>LMK ID:</strong></th>
<th><strong>LAT:</strong></th>
<th><strong>LONG:</strong></th>
</tr>
</thead>
</table>

### SITE DESCRIPTION

**Name:** Phoenix House

**Address:**

**Ownership:**
- [ ] Public
- [X] Private
- [ ] Unknown
- [ ] Non profit + various

**If Public, Government Jurisdiction:**
- [ ] Local
- [ ] State
- [ ] DOT
- [ ] Other

**Corresponding USSR/USA Field Sheet:**
- [ ] Yes
- [ ] No

**If yes, Unique Site ID:**

### Proposed Retrofit Location:

**Storage**
- [ ] Existing Pond
- [ ] Below Outfall
- [ ] In Road ROW
- [ ] Other:
  - Above Roadway Calvert
  - In Conveyance System
  - Near Large Parking Lot
  - Other:

**On-Site**
- [ ] Hotspot Operation
- [ ] Small Parking Lot
- [ ] Individual Street
- [ ] Underground
- [ ] Individual Rooftop
- [ ] Small Impervious Area
- [ ] Landscape / Hardscape
- [ ] Other:

### DRAINAGE AREA TO PROPOSED RETROFIT

**Drainage Area ≈**

**Imperviousness ≈**

**Impervious Area ≈**

### EXISTING STORMWATER MANAGEMENT

**Existing Stormwater Practice:**
- [ ] Yes
- [ ] No
- [ ] Possible

If Yes, Describe:

Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

**Existing Head Available and Points Where Measured:**

Not assessed in detail due to nature of institution
**PROPOSED RETROFIT**

**Purpose of Retrofit:**
- Water Quality
- Demonstration / Education
- Repair
- Recharge
- Channel Protection
- Flood Control
- Other: 

**Retrofit Volume Computations - Target Storage:**

<table>
<thead>
<tr>
<th>Proposed Treatment Option:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Extended Detention</td>
</tr>
<tr>
<td>[ ] Wet Pond</td>
</tr>
<tr>
<td>[ ] Created Wetland</td>
</tr>
<tr>
<td>[ ] Bioretention</td>
</tr>
<tr>
<td>[ ] Filtering Practice</td>
</tr>
<tr>
<td>[ ] Infiltration</td>
</tr>
<tr>
<td>[ ] Swale</td>
</tr>
<tr>
<td>[ ] Other:</td>
</tr>
</tbody>
</table>

**Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:**

No need; could use bioretention in front lawn to capture some rain/stop minor erosion.

**SITE CONSTRAINTS**

**Adjacent Land Use:**
- Residual
- Commercial
- Institutional
- Industrial
- Transport-Related
- Park
- Undeveloped
- Other: 

**Possible Conflicts Due to Adjacent Land Use?**
- Yes
- No

<table>
<thead>
<tr>
<th>Conflicts with Existing Utilities:</th>
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</thead>
<tbody>
<tr>
<td>None</td>
</tr>
<tr>
<td>Sewer</td>
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</table>

<table>
<thead>
<tr>
<th>Potential Permitting Factors:</th>
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</thead>
<tbody>
<tr>
<td>Dam Safety Permits Necessary</td>
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<tr>
<td>Impacts to Wetlands</td>
</tr>
<tr>
<td>Impacts to a Stream</td>
</tr>
<tr>
<td>Floodplain Fill</td>
</tr>
<tr>
<td>Impacts to Forests</td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
</tr>
<tr>
<td>How many?:</td>
</tr>
</tbody>
</table>

**Other factors:**

**Soils:**

- Soil auger test holes:
- Evidence of poor infiltration (clays, fines): Yes
- Evidence of shallow bedrock: Yes
- Evidence of high water table (gleying, saturation): Yes
## DESIGN OR DELIVERY NOTES

<table>
<thead>
<tr>
<th>FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Confirm property ownership</td>
</tr>
<tr>
<td>- Confirm drainage area</td>
</tr>
<tr>
<td>- Confirm drainage area impervious cover</td>
</tr>
<tr>
<td>- Confirm volume computations</td>
</tr>
<tr>
<td>- Complete concept sketch</td>
</tr>
<tr>
<td>- Obtain existing stormwater practice as-builts</td>
</tr>
<tr>
<td>- Obtain site as-builts</td>
</tr>
<tr>
<td>- Obtain detailed topography</td>
</tr>
<tr>
<td>- Obtain utility mapping</td>
</tr>
<tr>
<td>- Confirm storm drain invert elevations</td>
</tr>
<tr>
<td>- Confirm soil types</td>
</tr>
</tbody>
</table>

Other: **Get permission to visit site**

## INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

<table>
<thead>
<tr>
<th>SITE CANDIDATE FOR FURTHER INVESTIGATION:</th>
<th>YES</th>
<th>NO</th>
<th>MAYBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
<tr>
<td>IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
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<tr>
<td>IF YES, TYPE(S):</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
**WATERSHED:**

**SUBWATERSHED:**

**UNIQUE SITE ID:** 294

**DATE:** 10/06

**ASSESSED BY:** RuLing

**CAMERA ID:** C

**PICTURES:** 900-935

**GPS ID:**

**LMK ID:**

**LAT:**

**LONG:**

### SITE DESCRIPTION

**Name:** Exeter Public Library

**Address:** 747 Ten Road Rd, Exeter

**Ownership:** Public

**If Public, Government Jurisdiction:** Local

**Corresponding USSR/USA Field Sheet:** Yes

**Proposed Retrofit Location:**

- Existing Pond
- Below Outfall
- In Road ROW
- Other: near road CBI that can be taken out

**On-Site:**

- Hotspot Operation
- Small Parking Lot
- Individual Parking Lot
- Individual Street
- Underground
- Other:

**DRAINAGE AREA TO PROPOSED RETROFIT**

- Drainage Area
- Imperviousness ≈ _________ %
- Impervious Area ≈ _________

**Drainage Area Land Use:**

- Residential
- Industrial
- Transport-Related
- Townhouses
- Multi-Family
- Commercial
- Undeveloped
- Other:

### EXISTING STORMWATER MANAGEMENT

**Existing Stormwater Practice:** Yes

**Possible:**

Possible practices under lawn?

### Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance:

- Several large, deep catch basins; one w/ lots of sediment
- Steep slope in road; obvious large amount of sediment in runoff

**Existing Head Available and Points Where Measured:**
## Proposed Retrofit

**Purpose of Retrofit:**
- [x] Water Quality
- [ ] Demonstration/Education
- [ ] Repair
- [ ] Recharge
- [ ] Channel Protection
- [ ] Flood Control
- [ ] Other:

**Retrofit Volume Computations - Target Storage:**

**Retrofit Volume Computations - Available Storage:**

**Proposed Treatment Option:**
- [ ] Extended Detention
- [ ] Wet Pond
- [x] Bioretention
- [ ] Created Wetland
- [ ] Infiltration
- [ ] Swale
- [ ] Filtering Practice
- [ ] Other:

Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance:

"Bioretention at east end of lawn to capture swale from lawns, must roads. Take drains off line if possible."

*also armor roof outfall?

## Site Constraints

### Adjacent Land Use:
- [ ] Residential
- [ ] Commercial
- [x] Institutional
- [ ] Industrial
- [ ] Transport-Related
- [ ] Park
- [ ] Undeveloped
- [ ] Other:

**Possible Conflicts Due to Adjacent Land Use?**
- [ ] Yes
- [ ] No

If Yes, Describe:

### Conflicts with Existing Utilities:
- [ ] None
- [ ] Unknown
- [x] Yes

**Possible:**
- Sewer
- Water
- Gas
- Cable
- Electric
- Electric to Streetlights
- Overhead Wires

### Potential Permitting Factors:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Probable</th>
<th>Not Probable</th>
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</thead>
<tbody>
<tr>
<td>Dam Safety Permits Necessary</td>
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<td>[ ]</td>
</tr>
<tr>
<td>Impacts to Wetlands</td>
<td>[ ]</td>
<td>[ ]</td>
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<td>[ ]</td>
</tr>
<tr>
<td>Impacts to Specimen Trees</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**How many?**

- Approx. DBH

Other factors:

### Soils:

<table>
<thead>
<tr>
<th>Test Holes</th>
<th>Evidence of Poor Infiltration (clays, fines):</th>
<th>Evidence of Shallow Bedrock:</th>
<th>Evidence of High Water Table (gleying, saturation):</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Yes</td>
<td>[ ] Yes</td>
<td>[ ] Yes</td>
<td>[ ] Yes</td>
</tr>
<tr>
<td>[ ] No</td>
<td>[ x] No</td>
<td>[ ] No</td>
<td>[ ] No</td>
</tr>
</tbody>
</table>

Soil auger test holes:

Other: [proposed]

Elsewhere on site, not in project area

Unique Site ID:
### DESIGN OR DELIVERY NOTES

<table>
<thead>
<tr>
<th>Design or Delivery Notes</th>
<th></th>
</tr>
</thead>
</table>

### FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

- Confirm property ownership
- Confirm drainage area
- Confirm drainage area impervious cover
- Confirm volume computations
- Complete concept sketch
- Obtain existing stormwater practice as-builts
- Obtain site as-builts
- Obtain detailed topography
- Obtain utility mapping
- Confirm storm drain invert elevations
- Confirm soil types

### INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS

<table>
<thead>
<tr>
<th>Site Candidate for Further Investigation:</th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>Is Site Candidate for Early Action Project(s):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
<tr>
<td>If No, Site Candidate for Other Restoration Project(s):</td>
<td>YES</td>
<td>NO</td>
<td>MAYBE</td>
</tr>
</tbody>
</table>

If YES, Type(s):
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30% Impervious OR IC >= 1 Acre
Attachment 7

Field Photos
Site 21: Vin Gormley Trailhead Parking, Sanctuary Road, Charlestown, RI
Site 41: URI Tennis Courts at Boss Arena, Kingstown Road, South Kingston, RI
Site 50: Wyoming Dam Fishing Access, Nooseneck Hill Road, Wyoming, RI

Existing catch basin

Proposed bioretention area

Proposed overflow to catchbasin

Proposed pervious pavers
Site 73: Exeter Town Animal Shelter, South County Trail, Exeter, RI
Site 93: US Post Office (Westerly, RI), Tom Harvey Road, Westerly, RI
Site 102: Grace United Methodist Church, Spruce Street, Westerly, RI

Proposed bioretention area
Site 108: Bradford School, Church Street, Westerly, RI
Site 114: US Post Office (Ashaway/Hopkinton, RI), Main Street, Ashaway, RI
Site 125: Trinity Lutheran Church, High Street, Hopkinton, RI
Site 129: St. Mary’s Catholic Church, Carolina Back Road, Charlestown, RI
Site 139: Courthouse Center for the Arts, Kingstown Road, South Kingstown, RI
Site 157: Richmond Police Department, Main Street, Richmond, RI
Site 159: Rhode Island State Police Barracks, Nooseneck Hill Road, Richmond, RI
Site 185: Wheeler High School, North Westerly Road, North Stonington, CT
Site 185A: Wheeler Library, Main Street, North Stonington, CT
Site 194: North Stonington Elementary and Administration Building, North Westerly Road, North Stonington, CT
Site 206: Browning Mill Pond Parking Access, Arcadia Road, Exeter, RI
Site 227: Hopkinton Recreation Department, Nooseneck Hill Road, Hopkinton, RI
Site 229: Tuckertown Park, Tuckertown Road, South Kingstown, RI

Existing Catch Basin

Proposed Bioretention Area

Southern most catch basin. Unknown connectivity. Presumed to be connected to drainage and catch basins along Tuckertown Road and discharge to Alewife Brook.
Site 252: Chariho Little League, Nooseneck Hill Road, Hope Valley, RI
Site 272: State Street School, State Street, Westerly, RI
Site 272A: Westerly Senior Center, State Street, Westerly, RI
Site 274: Westerly High School, Park Avenue, Westerly, RI
Site 275: Westerly Town Hall, Broad Street, Westerly, RI
Site 276: Tower Street School and Community Center, Tower Street, Westerly, RI
Site 283: West Kingstown Elementary School, Ministerial Road, South Kingstown, RI
Site 284: URI Parking Lot at Boss Arena, Keaney Road, Kingstown, RI
Attachment 8

Retrofit Conceptual Designs
Retrofit Site 21 – Vin Gormley Trailhead Parking Bioretention and Underground Infiltration
Sanctuary Road, Charlestown, Rhode Island

Site Description
The proposed retrofit concept is located at the Vin Gormley Trailhead parking area on the eastern shore of Watchaug Pond in Charlestown, RI. The site consists of an asphalt parking area with an access road and a pavilion closer to the pond. Runoff from the site is collected in catch basins located in the center and western end of the parking lot and discharges to Watchaug Pond via an outlet from the western-most catch basin. The current outfall is located at the catch basin at the western end of the lot. Erosion is evident where the piped conveyance has been exposed and dislodged from the catch basin.

Proposed Concept
Install an underground infiltration system beneath the parking area to infiltrate and treat the water quality volume. This will drastically improve infiltration and reduce erosion and scour observed at the outfall leading from the parking lot. A bioretention area could also be installed as a secondary, stand-alone, practice or incorporated into a treatment train if desired. The bioretention area would overflow to the infiltration system.

Retrofit Concept Summary
Total Drainage Area: 11.5 acres
Total Impervious Area: 1.9 acres
Treated Water Quality Volume: 6,847.7 ft³
Recharge Volume: 2,396.69 ft³

Estimated Pollutant Removal
Underground Infiltration
Total Phosphorus = 2.5 lbs/year
Total Nitrogen = 31.5 lbs/year
Total Suspended Solids = 1,074.7 lbs/year
Bacteria (FC) = 505.4 billion colonies/year

Bioretention Area
Total Phosphorus = 0.4 lbs/year
Total Nitrogen = 8.5 lbs/year
Total Suspended Solids = 349.2 lbs/year
Bacteria (FC) = 61.7 billion colonies/year

Estimated Cost
Underground Infiltration: $98,244
Bioretention Area: $24,494

Image 1: Typical installation of underground infiltration system below an existing parking lot. (Image source: stormtech.com)

Image 2: View of current outlet exiting parking area. Note erosion along embankment.

Image 3: View of parking area and location of proposed green infrastructure.

Image 4: Typical detail of a bioretention area.

Image 5: Typical detail of an underground infiltration chamber.
**Site Description**

The proposed retrofit concept is located in the space between the tennis courts and Boss Arena at the University of Rhode Island, South Kingstown, RI. The site consists of an unused grassed area located between the arena and the tennis courts. The site would be a good candidate for a smaller demonstration project type practice such as a rain garden that would treat runoff from at least half of the arena roof and/or the adjacent tennis courts. At present, gutters and roof leaders discharge to an unknown location. Leaders may be currently connected to dry wells or may be connected to stormwater infrastructure in the adjacent parking lots that discharges directly to a tributary of White Horn Brook.

**Proposed Concept**

Install rain gardens in the lawn area between the arena and the tennis courts. Rain gardens could be designed to accept just roof runoff or possibly retrofitted to accept some drainage from nearby parking areas. Rain gardens would make an excellent demonstration project at this location and could incorporate educational signage explaining not only the benefits of this practice but also additional BMPs located throughout the campus.
Stormwater Retrofit Concept
Tennis Courts at URI
Retrofit Site No. 41
South Kingstown, Rhode Island

Disclaimer: This map is not the product of a Professional Land Survey. It was created by Fuss & O'Neill, Inc. for general reference. Informational, planning and guidance use, and is not a legally authoritative source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. Fuss & O'Neill, Inc. makes no warranty, express or implied, related to the spatial accuracy, reliability, completeness, or correctness of this map.

Data Sources: Sketches by Fuss & O'Neill, 2016; Aerial Photography, April 2014 USGS 30 m multispectral ortho images, downloaded from ArcGIS Online; Contour Lines from Northeast LOIAG Project 2013, NGS

Legend
- Existing Catch Basin
- Proposed Catch Basin
- Proposed Overflow Structure
- Proposed Level Spreader
- Proposed Storm Drain
- BMP Drainage Area Boundary
- Bioretention
- Raigarden
- Underground Infiltration
- Green Roof
- Pervious Pavers
- Forested Buffer
- Articulating Concrete Matting

Proposed Raigardens
DA = 1.07 acres

KELANEY RD
WEST INDEPENDENCE WAY
Wood Pawcatuck Watershed
Retrofit Site 50 – Wyoming Dam Fishing Access
Bioretention and Pervious Pavers
Nooseneck Hill Road, Wyoming, Rhode Island

**Site Description**
The proposed retrofit concept is located at the Wyoming Dam fishing access area located along the shore of the Wood River in Wyoming, RI. The site consists of an unimproved parking area and small car-top boat launch that leads to the water. Stormwater currently flows across the unimproved parking area, transporting sediment and pollutants to the river via the sloped boat ramp. Some erosion was observed along the ramp slope leading to the water.

**Proposed Concept**
Install a bioretention area along the southern end of the parking area that wraps around the parking area and overflows or discharges to a catch basin located near the entrance on Bridge St. A curb cut would be needed to accept water from a portion of Nooseneck Hill Road and possibly the adjacent parking area to the east as well. Pervious pavers could also be installed in the parking area to promote infiltration and prevent erosion. Finally, it is recommended that the ramp access be modified with articulating concrete mats to prevent further erosion and sediment transport to the river.

**Image 1**: View of proposed bioretention area. Overflow would be to existing catch basin on Bridge St.

**Image 2**: View of parking area and location of proposed pervious pavers.

**Image 3**: Typical detail of a bioretention area.

**Retrofit Concept Summary**
- **Total Drainage Area**: 0.8 acres
- **Total Impervious Area**: 0.7 acres
- **Total Water Quality Volume**: 2,597.0 ft³
- **Recharge Volume**: 909.0 ft³

**Estimated Pollutant Removal**

<table>
<thead>
<tr>
<th>Bioretention Area</th>
<th>Total Phosphorus</th>
<th>Total Nitrogen</th>
<th>Total Suspended Solids</th>
<th>Bacteria (FC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated</td>
<td>0.2 lbs/year</td>
<td>4.2 lbs/year</td>
<td>180.0 lbs/year</td>
<td>117.8 billion colonies/year</td>
</tr>
</tbody>
</table>

**Pervious Pavers**
- **Total Phosphorus**: 0.3 lbs/year
- **Total Nitrogen**: 6.1 lbs/year
- **Total Suspended Solids**: 109.7 lbs/year
- **Bacteria (FC)**: 95.5 billion colonies/year

**Estimated Cost**
- **Bioretention Area**: $20,001
- **Pervious Pavers**: $111,283
- **Articulated Concrete Matting**: $29,428
Retrofit Site 73 – Exeter Town Animal Shelter
Bioretention
South County Trail, Exeter, Rhode Island

Site Description
The proposed retrofit concept is located along the roadside of South County Trail adjacent to the Exeter Animal Shelter in Exeter, RI. The site consists of a paved asphalt road with no formal drainage that discharges to Queens Fort Brook via an overgrown asphalt channel west of the Exeter DPW entrance.

Proposed Concept
Install a bioretention/infiltration basin system along the northern roadside to collect and infiltrate runoff from South County Trail. The retrofit could potentially treat approximately one quarter mile of roadway. The retrofit could be designed to overflow to Queens Fort Brook.

Image 1: View of proposed bioretention/infiltration area alongside South County Trail in Exeter, RI.

Image 2: Example of a roadside bioretention/infiltration basin. (Image source: www.ermsteed.com)

Image 3: Typical detail of a bioretention area

Retrofit Concept Summary
Total Drainage Area: 4.4 acres
Total Impervious Area: 2.2 acres
Total Water Quality Volume: 7,961.4 ft³
Recharge Volume: 2,786.5 ft³

Estimated Pollutant Removal
Underground Infiltration
Total Phosphorus = 2.7 lbs/year
Total Nitrogen = 33.1 lbs/year
Total Suspended Solids = 2,703.9 lbs/year
Bacteria (FC) = 117.8 billion colonies/year

Estimated Cost
Bioretention Area: $107,084

Image 4: Additional space for bioretention/infiltration basin adjacent to Exeter Animal Shelter.
Retrofit Site 93 – U.S. Post Office (Westerly)
Bioretention
Tom Harvey Road, Westerly, Rhode Island

Site Description
The proposed retrofit concept is located at the United States Post Office located on Tom Harvey Road in Westerly, RI. This location has several catch basins throughout both parking areas and adjacent lawn areas that have unknown connectivity and an unknown discharge location. The site is comprised of several parking lot islands in the main parking area and accepts upgradient drainage from Tom Harvey Road.

Proposed Concept
Install bioretention and infiltration systems in parking lot islands. Install additional bioretention/infiltration adjacent to the post office on the south side of the building to treat runoff from the parking lot and Tom Harvey Road. Multiple practices could be combined to treat the 1” Water Quality Volume. The system of BMPs could be designed to overflow to existing drainage infrastructure.

Image 1: View of proposed bioretention area along the south side of the main post office building.

Retrofit Concept Summary
Total Drainage Area: 5.2 acres
Total Impervious Area: 1.5 acres
Total Quality Volume: 5,321.6 ft³
Recharge Volume: 3,193.0 ft³

Estimated Pollutant Removal
Bioretention Areas
Total Phosphorus = 1.2 lbs/year
Total Nitrogen = 20.6 lbs/year
Total Suspended Solids = 999.7 lbs/year
Bacteria (FC) = 269.8 billion colonies/year

Estimated Cost
Bioretention Areas: $71,578

Image 2: Typical detail of a bioretention area. (Image source: RI Stormwater Manual)

Image 3: View of proposed bioretention area along Tom Harvey Road on the eastern side of the main post office building.
Retrofit Site 102 – Grace United Methodist Church
Bioretention
Spruce Street, Westerly, Rhode Island

Site Description
The proposed retrofit concept is located at the Grace United Methodist Church parking area off of Spruce Street in Westerly, RI. Retrofit opportunities consist primarily of drainage from the church parking lot, although management of runoff from the church roof and portions of the adjacent Spruce Street is possible.

Proposed Concept
Install a bioretention cell in the eastern grassed area adjacent to the main church parking lot. Additional drainage from Spruce Street could be incorporated into the retrofit if desired. A bioretention basin at this location might help alleviate drainage issues observed to be impacting adjacent properties. The bioretention cell could outlet to existing drainage infrastructure along Park Avenue if needed.


Image 2: Typical detail of a bioretention area. (Image source: RI Stormwater Manual)

Image 3: View of proposed bioretention area along eastern edge of church parking lot.

Retrofit Concept Summary
Total Drainage Area: 1.4 acres
Total Impervious Area: 0.7 acres
Total Water Quality Volume: 2,700.7 ft³
Recharge Volume: 945.3 ft³

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus ≈ 1.1 lbs/year
Total Nitrogen ≈ 13.5 lbs/year
Total Suspended Solids ≈ 578.7 lbs/year
Bacteria (FC) ≈ 355.6 billion colonies/year

Estimated Cost
Bioretention Area: $36,326
Site Description
The proposed retrofit concept is located at the Bradford Elementary School in Westerly, RI. At this location stormwater flows across the parking area and bus loop and drains to Church Street where it enters a closed conveyance system. There is one catch basin in the parking lot that has unknown connectivity but is presumed to discharge to the drainage system in the adjacent street. The central portion of the school building has a flat roof. This area also has easy stairwell access. According to facilities personnel, this section of roof often drains poorly causing leaks within the school.

Proposed Concept
Install an underground infiltration system beneath the parking area and bus loop to capture and treat stormwater prior to discharging to the in-street conveyance system. Additionally, install a green roof over a portion of the flat, central portion of the building roof. The green roof could be designed as an outdoor classroom and demonstration project while also improving roof drainage.

Estimated Pollutant Removal
Underground Infiltration
Total Phosphorus = 1.0 lbs/year
Total Nitrogen = 12.8 lbs/year
Total Suspended Solids = 422.8 lbs/year
Bacteria (FC) = 430.2 billion colonies/year

Green Roof
Total Phosphorus = 0.05 lbs/year
Total Nitrogen = 1.8 lbs/year
Total Suspended Solids = 26.8 lbs/year
Bacteria (FC) = 26.8 billion colonies/year

Estimated Cost
Underground Infiltration: $56,299
Green Roof: $162,623

Green roof cost estimated based on conservative cost per ft² from:
http://stormwater.pca.state.mn.us/index.php/Cost-benefit_considerations_for_green_roofs

Image 1: View of proposed underground infiltration location beneath parking area.
Image 2: View of proposed green roof/outdoor classroom space.
Image 4: Typical installation of underground infiltration system below an existing parking lot. (Image source: stormtech.com)
Image 5: Typical detail of an underground infiltration chamber.
Retrofit Site 114 – U.S. Post Office (Ashaway, RI)
Underground Infiltration
Main Street, Ashaway, Rhode Island

Site Description
The proposed retrofit concept is located at the intersection adjacent to the United States Post Office located on Main Street in Ashaway, RI. Stormwater infrastructure consisting of several catch basins was observed on Maxson Street, Oak Street and Main Street. The connectivity of these structures is unknown, although the catch basins are believed to be connected to the drainage system infrastructure in the area and therefore provides a good retrofit candidate. At least one catch basin in the area was observed to be completely full of sediment, indicating a heavy sediment load and need for additional controls or increased maintenance at this location.

Proposed Concept
Install underground infiltration systems beneath sections of Maxson Street, Oak Street and Main Street depending on available space, utility conflicts and pipe connectivity. It is recommended that the underground systems be designed as linear systems in order to take advantage of the existing footprint of drainage infrastructure and limit potential conflicts with other utilities both now and in the future.

Retrofit Concept Summary
Total Drainage Area: 22.6 acres
Total Impervious Area: 5.4 acres
Total Quality Volume: 11,111.4 ft³
Recharge Volume: 1,111 ft³*

Estimated Pollutant Removal
Underground Infiltration
Total Phosphorus ≈ 8.6 lbs/year
Total Nitrogen = 75.3 lbs/year
Total Suspended Solids ≈ 1,659.3 lbs/year
Bacteria (FC) ≈ 1,642.3 billion colonies/year

Estimated Cost
Underground Infiltration: $281,863

*Practice modified to treat 0.5” WQv for larger Drainage Area due to size and cost considerations

Image 1: Typical installation of underground infiltration chambers beneath a roadway. (Image source: http://capecodwatershed.blogspot.com/)

Image 2: View of proposed underground infiltration chamber location on Maxson Street, Ashaway, RI.

Image 3: View of proposed underground infiltration chamber system located along Main Street in Ashaway, RI. System to be designed to overflow to existing drainage network if possible.

Image 4: Typical detail of an underground infiltration chamber.

Image 5: Typical detail of an underground infiltration chamber.
Retrofit Site 125 – Trinity Lutheran Church  
Bioretention and Rain Gardens  
High Street, Hopkinton, Rhode Island

Site Description
The proposed retrofit concept is located at the Trinity Lutheran Church located off of High Street in Hopkinton, RI. The site is characterized by a large asphalt parking lot adjacent to a public road. There are no drainage structures within the parking lot or road right-of-way.

Proposed Concept
Install a series of bioretention areas along the road edge on Wellstown Road. These bioretention areas would capture and treat the 1" Water Quality Volume. Since there are no drainage structures in the road right-of-way, the proposed bioretention areas would be designed to overflow back to the street during large precipitation events. Additionally, rain gardens are proposed along the western perimeter of the church building itself. Rain gardens could be designed to capture and treat runoff from the church roof and possibly portions of the parking area as well depending on sizing requirements, cost, and acceptability by the church.

**Retrofit Concept Summary**
- **Total Drainage Area:** 2.9 acres
- **Total Impervious Area:** 1.2 acres
- **Total Water Quality Volume:** 4,518.7 ft³
- **Recharge Volume:** 2,711.2 ft³

**Estimated Pollutant Removal**

**Bioretention Area(s)**
- Total Phosphorus = 1.1 lbs/year
- Total Nitrogen = 18.8 lbs/year
- Total Suspended Solids = 786.0 lbs/year
- Bacteria (FC) = 233.1 billion colonies/year

**Raingarden(s)**
- Total Phosphorus = 0.1 lbs/year
- Total Nitrogen = 1.7 lbs/year
- Total Suspended Solids = 67.9 lbs/year
- Bacteria (FC) = 233.1 billion colonies/year

**Estimated Cost**
- Bioretention Area(s): $52,252
- Raingarden(s): $8,527
Retrofit Site 129 – St. Mary's Catholic Church
Bioretention
Carolina Back Road, Charlestown, Rhode Island

Site Description
The proposed retrofit concept is located adjacent to St. Mary's Church on Carolina Back Road in Charlestown, RI. The site includes the roadway and intersection of Carolina Back Road and Old Carolina Back Road across the street from the church and rectory buildings. No structural drainage infrastructure was observed in the roadway at the time of inspection. The church parking lot appears to drain to Carolina Back Road, providing an opportunity to capture runoff from the parking lot and the roadway right-of-way.

Proposed Concept
Install a bioretention/infiltration practice in the grassed island at the Carolina Back Road and Old Carolina Back Road intersection. Road runoff drains to this area and has begun to erode the edge of the roadway and portions of the lawn in the island.

Retrofit Concept Summary
Total Drainage Area: 1.6 acres
Total Impervious Area: 0.9 acres
Total Water Quality Volume: 3,216.0 ft³
Recharge Volume: 1,930.0 ft³

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus = 0.8 lbs/year
Total Nitrogen = 12.2 lbs/year
Total Suspended Solids = 608.9 lbs/year
Bacteria (FC) = 210.1 billion colonies/year

Estimated Cost
Bioretention Area: $43,257

Image 1: View of proposed bioretention area and location of outfall partially filled-in with sediment located in a traffic island adjacent to Carolina Back Road, Charlestown, RI.

Image 2: View of proposed location for bioretention area along Carolina Back Road in Charlestown, RI.


Image 4: Typical detail of a bioretention area
Retrofit Site 139 – Courthouse Center for the Arts
Bioretention
Kingstown Road, South Kingstown, Rhode Island

Site Description
The proposed retrofit concept is located at the Courthouse Center for the Arts and adjacent areas along Kingstown Road in South Kingstown, RI. The rear parking lot has no structural drainage or stormwater treatment. Roof leaders appear to be tied into the drainage system, but there is no obvious outlet other than the catch basin in front of the building. The road drainage is primarily gutter flow that discharges to a swale and catch basin in the area directly in front of the Center for the Arts. The catch basin and storm drain network have unknown connectivity in this area.

Proposed Concept
Retrofit the existing swale and catch basin to create a bioretention system, using the existing catch basin or catch basin foot print as an overflow structure. The proposed BMP would be capable of treating 47% of the 1” WQv. Additional treatment may be needed to meet RI stormwater retrofit standards. Additional bioretention or underground infiltration could be combined with the swale retrofit to meet these requirements. The parking lot islands at the rear of the building could be retrofitted to function as bioretention areas, with sufficient space to treat the 1” WQv.

Image 1: View of typical bioretention area with mature plantings.

Image 2: View of proposed bioretention areas located within parking lot islands at the Courthouse Center for the Arts.

Image 3: View of proposed bioretention area to be located on Kingstown Road, in front of the Courthouse Center for the Arts in South Kingstown, RI.

Image 4: Typical detail of a bioretention area.

Retrofit Concept Summary
Total Drainage Area: 4.4 acres
Total Impervious Area: 2.5 acres
*Total Water Quality Volume: 5,390.7 ft³
Runoff Reduction Volume: 2,692 ft³

Estimated Pollutant Removal
Bioretention Areas
Total Phosphorus = 1.6 lbs/year
Total Nitrogen = 22.6 lbs/year
Total Suspended Solids = 922.4 lbs/year
Bacteria (FC) = 602.6 billion colonies/year

Estimated Cost
Bioretention Areas: $121,381

*Pollutant removal calculated for combined bioretention areas. The practice in front of the Courthouse Center for the Arts sized to treat 47% of the 1” WQv.
Retrofit Site 157 – Richmond Police Department
Underground Infiltration
Main Street, Richmond, Rhode Island

Site Description
The proposed retrofit concept is located at the Town of Richmond Police Department headquarters located on Main Street in Richmond, RI. Several catch basins are located throughout the parking lot and paved areas surrounding the main building. Four catch basins are located in front of the building, while there are 5 catch basins located in close proximity to one another at the back corner of the site. The connectivity of these structures is unknown.

Proposed Concept
Install an underground infiltration system beneath the parking area in both the front and rear of the building. Alternatively, install an underground infiltration system along the northwestern section of the parking lot. An underground infiltration system may already exist at the rear of the building, but on-site investigations at the time of the site visit could not confirm this. There is sufficient space to treat the 1” WQv in either recommended location. Additional runoff could be treated on-site depending on connectivity of the catch basins.

Retrofit Concept Summary
Total Drainage Area: 0.8 acres
Total Impervious Area: 0.8 acres
Total Water Quality Volume: 2,857.0 ft³
Recharge Volume: 1,714.2 ft³

Estimated Pollutant Removal
Underground Infiltration
Total Phosphorus = 0.8 lbs/year
Total Nitrogen = 9.4 lbs/year
Total Suspended Solids = 307.8 lbs/year
Bacteria (FC) = 313.2 billion colonies/year

Estimated Cost
Underground Infiltration: $40,990

Image 1: View of proposed underground infiltration area and existing catch basins adjacent to Main Street and the front of the police station.

Image 2: Typical installation of underground infiltration system below an existing parking lot. (Image source: stormtech.com)

Image 4: Typical detail of an underground infiltration chamber.

Image 3: Typical installation of underground infiltration system below an existing parking lot.
Retrofit Site 159 – Rhode Island State Police Barracks

Bioretention

Nooseneck Hill Road, Richmond, Rhode Island

Site Description
The proposed retrofit concept is located at the Rhode Island State Police Barracks on Nooseneck Hill Road in Richmond, RI. Currently there is no structural drainage infrastructure along the road. Sheetflow runoff from the road discharges to a tributary of Wyoming Pond to the northeast. This retrofit opportunity would serve an approximately 1.4-acre drainage that includes portions of Nooseneck Hill Road and some residential properties on the south side of the road.

Proposed Concept
Install a bioretention/infiltration practice southwest of the driveway and barracks. The site has enough available space to treat over 5 times the 1” WQv. The design should include an overflow and discharge outlet to convey higher flows to nearby Wyoming Pond. Construction of new drainage infrastructure could expand the area served by the proposed bioretention/infiltration system to create a larger, regional stormwater practice.

Retrofit Concept Summary

Total Drainage Area: 1.4 acres
Total Impervious Area: 0.8 acres
Total Water Quality Volume: 2,890.1 ft³
Recharge Volume: 1,714.0 ft³

Estimated Pollutant Removal

Bioretention Area

Total Phosphorus = 1.3 lbs/year
Total Nitrogen = 14.8 lbs/year
Total Suspended Solids = 877.9 lbs/year
Bacteria (FC) = 248.8 billion colonies/year

Estimated Cost

Bioretention Area: $38,872

Images 1 & 2: Before and after views of a bioretention area. First image shows installation and planting. Second image shows a functioning practice and overflow structure.

Figure 3: proposed location of bioretention area along Nooseneck Hill Road in Richmond, RI, at the State Police Barracks.

Figure 4: Typical detail of a bioretention area.
Retrofit Site 173 – Exeter Town Hall
Bioretention and Rain Garden
Ten Rod Road, Exeter, Rhode Island

Site Description
The proposed retrofit concept is located at the Exeter Town Hall on Ten Rod Road in Exeter, RI. The site is comprised of two adjacent properties. One is the Town Hall and the other is the fire station located next door. At present, stormwater runs across the recently repaved parking lot of the Town Hall and discharges to Ten Rod Road and flows east in the gutter before ultimately discharging to Fisherville Brook. There is no piped drainage system located in this area, and sediment deposition is prevalent in the gutter area from the site all the way to the discharge point at the brook.

Proposed Concept
Install a rain garden at the Town Hall parking lot to partially treat sheet flow from the parking area, and a bioretention/infiltration system installed along Ten Rod Road in front of both Town Hall and the adjacent fire station. Stormwater retrofits at these sites would make good demonstration projects given the high public visibility of both sites. Due to the condition of the gutter in front of Town Hall it is also recommended that a longer strip of rip rap swale be installed as pretreatment and erosion protection of the roadside.

Retrofit Concept Summary
Total Drainage Area: 4.6 acres
Total Impervious Area: 2.1 acres
*Total Water Quality Volume: 7,416.6 ft³
Recharge Volume: 2,571.7 ft³

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus = 1.4 lbs/year
Total Nitrogen = 21.0 lbs/year
Total Suspended Solids = 1,197.2 lbs/year
Bacteria (FC) = 306.5 billion colonies/year

Rain Garden Area
Total Phosphorus = 0.2 lbs/year
Total Nitrogen = 5.5 lbs/year
Total Suspended Solids = 173.6 lbs/year
Bacteria (FC) = 74.9 billion colonies/year

Estimated Cost
Bioretention Area: $79,589
Rain Garden Area: $23,181

*Rain garden sized to treat 83% of the 1” WQV due to space limitations of the site.
Retrofit Site 185 – Wheeler High School Bioretention
North Westerly Road, North Stonington, Connecticut

Site Description
The proposed retrofit concept is located at Wheeler High School off of North Westerly Road in North Stonington, Ct. The site consists of a main school building with a parking and bus loop in front. The front of the building drains to a drainage network that travels beneath North Westerly Road and connects to drainage infrastructure at the North Stonington School Administration building lot across the street.

Proposed Concept
Install bioretention/infiltration areas in two locations at the front of the building to treat stormwater on site and decrease the amount of stormwater leaving the site. The first bioretention area would be installed along the western parking lot between the parking area and North Westerly Road. This bioretention area would likely need additional catch basins and piping to connect as much impervious surface as possible to the treatment area. The second bioretention/infiltration area would be installed within the open area at the southeastern portion of the property, directly in front of the front doors of the school. At present there is a catch basin and shallow drainage pipe that runs from east to west across the grassed area. There is potential to build the bioretention area and use the ends of the existing piped infrastructure as inflow and overflow structures.

Retrofit Concept Summary
Total Drainage Area: 2.4 acres
Total Impervious Area: 1.7 acres
Total Water Quality Volume: 3,006.9 ft³
Recharge Volume: 2,104.8 ft³

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus = 0.8 lbs/year
Total Nitrogen = 12.2 lbs/year
Total Suspended Solids = 717.9 lbs/year
Bacteria (FC) = 216.7 billions of colonies/year

Estimated Cost
Bioretention Area: $88,887

Image 1: View of proposed western bioretention area between parking lot and North Westerly Road.


Image 3: View of proposed bioretention area to be located in front of school. Image looking east.
Retrofit Site 185A – Wheeler Library
Bioretention
Main Street, North Stonington, Connecticut

Site Description
The proposed retrofit concept is located at the Wheeler Library on Main Street in North Stonington, CT. The site consists of a main building and front driveway loop and another driveway that goes to the rear of the building to access a paved parking area. There were several catch basins observed both on and off of the property. This infrastructure has unknown connectivity but presumably drains east to the Shunnock River.

Proposed Concept
Install two separate bioretention areas at the Wheeler Library. The first would accept stormwater from the parking area at the rear of the building and part of the driveway. This practice could be sized to treat the 1" WQv and could also be outlet to an existing catch basin located at the eastern entrance to the property. The second bioretention area would accept stormwater from the front of the building and driveway and also part of Main Street. This practice would also be sized to treat the 1" WQv. This second practice could also be outlet to an existing catch basin.

Retrofit Concept Summary
Total Drainage Area: 2.5 acres
Total Impervious Area: 1.1 acres
Total Water Quality Volume: 3,971.1 ft³
Recharge Volume: 1,389.9 ft³

Estimated Pollutant Removal
Bioretention Areas
Total Phosphorus = 0.5 lbs/year
Total Nitrogen = 11.7 lbs/year
Total Suspended Solids = 455.2 lbs/year
Bacteria (FC) = 341.3 billions of colonies/year

Estimated Cost
Bioretention Area: $53,412
Stormwater Retrofit Concept
Wheeler Library (185 A)
Retrofit Site No. 185
North Stonington
Connecticut

Legend
- Existing Catch Basin
- Proposed Catch Basin
- Proposed Overflow Structure
- Proposed Level Spreader
- Proposed Storm Drain
- BMP Drainage Area Boundary
- Bioretention
- Raigarden
- Underground Infiltration
- Green Roof
- Pervious Pavers
- Forested Buffer
- Articulating Concrete Matting

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Data Source(s): Drainage Areas by Fuss & O'Neill, 2015; Aerial Photographs: April 2014 USDA 3.3 m multi-spectral ortho images, downloaded from ArcGIS Online; Contour Lines from Northeast UDA Project 2011, NGS

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Retrofit Site 191 – West Vine Street School
Rain Gardens
West Vine Street, Stonington, Connecticut

Site Description
The proposed retrofit concept is located at the West Vine Street Elementary School in Stonington, CT. The site includes a paved bus loop in front of the school and two small parking lots. Runoff from the site drains to West Vine Street where it travels southwest and is discharged to a small ponded area. The ponded area is heavily colonized by cattails with little open water. The small pond ultimately drains to the Pawcatuck River which is less than half mile away.

Proposed Concept
Install multiple rain gardens near the school building and around the bus loop. These rain gardens would be excellent demonstration projects as well as teaching opportunities for the school. There is already a well-maintained garden area located on-site, suggesting that maintenance of one or several rain gardens could be performed by on-site staff and possibly incorporated into the curriculum.

Retrofit Concept Summary
Total Drainage Area: 0.6 acres
Total Impervious Area: 0.5 acres
Total Water Quality Volume: 1,641.5 ft³
Recharge Volume: 574.5 ft³

Estimated Pollutant Removal
Rain garden(s)
Total Phosphorus ≈ 0.2 lbs/year
Total Nitrogen ≈ 4.6 lbs/year
Total Suspended Solids ≈ 178.2 lbs/year
Bacteria (FC) ≈ 133.6 billion colonies/year

Estimated Cost
Rain Gardens: $22,079


Image 2: View of typical raingarden detail. (Image source: http://www.5counties.org/docs/lu_planning/04_rain_garden.pdf)

Image 3: View of area for proposed rain garden at entrance to West Vine Street Elementary School, Stonington, CT.
**Site Description**

The proposed retrofit concept is located at the North Stonington Elementary School and Administration building complex located off of North Westerly Road in North Stonington, CT. The site consists of two main buildings and is connected via parking areas and paved driveways. There are several parking lot islands located in each of the main parking areas. There is stormwater drainage infrastructure located in both lots. The connectivity of this network is not entirely known. There is some transfer of stormwater from the Wheeler High School site located across North Westerly Road. It is presumed that the piped storm drain system ultimately discharges to Assakonk Brook.

**Proposed Concept**

Install multiple bioretention areas within the parking lot islands in each of the two main parking areas. Additionally, install a bioretention area north of the administration (eastern) building that would accept stormwater from both this site and from a portion of the Wheeler High School lot across the street. This bioretention area would be located on the north eastern portion of the site between the parking area and North Westerly Road. The various parking lot islands could be retrofitted to function as bioretention areas and outlet to existing infrastructure on site where appropriate. The north eastern bioretention area that would accept water from both this site and the high school site could be outlet to the existing infrastructure as well.

**Retrofit Concept Summary**

- **Total Drainage Area:** 7.9 acres
- **Total Impervious Area:** 5.0 acres
- **Total Water Quality Volume:** 18,331.5 ft³
- **Recharge Volume:** 5,524.6 ft³

**Estimated Pollutant Removal Bioretention Areas**

- Total Phosphorus ≈ 2.8 lbs/year
- Total Nitrogen = 54.6 lbs/year
- Total Suspended Solids = 2,508.5 lbs/year
- Bacteria (FC) ≈ 1,362.5 billions of colonies/year

**Estimated Cost**

Bioretention Areas: $212,308

*includes portion of drainage area from Wheeler High School parking lot
Site Description
The proposed retrofit concept is located at the Browning Mill Pond Parking area located off of Arcadia Road in Exeter, RI. The site consists of an unimproved parking lot adjacent to Browning Mill Pond. The site receives runoff from the on-site parking lot and from Arcadia Road. The parking area, while unimproved, had several areas of standing water at the time of the site inspection, suggesting reduced infiltration capacity of the gravel parking lot. There was also evidence of erosion around the northern perimeter of the parking area leading to several trailheads and to the pond.

Proposed Concept
Install a bioretention area adjacent to the parking lot entrance that would treat runoff from a portion of Arcadia Road and the paved entrance. This bioretention area could also be sized to treat runoff from the parking area if it were to be regraded. At present the parking area is unimproved but due to compaction is likely functioning as an impervious surface. Regrading the lot, along with tilling would help alleviate some erosional issues as well as improve infiltration. Additionally, the northern portion of the parking lot could be reverted to forested buffer. This northern section of the parking area is within 100' of the pond so reforesting this area would help alleviate erosion and decrease sediment loading to the pond from the parking area.

Retrofit Concept Summary
Total Drainage Area: 1.2 acres
Total Impervious Area: 0.8 acres
Total Water Quality Volume: 2,854.8 ft$^3$
Recharge Volume: 1,712.9 ft$^3$

Estimated Pollutant Removal
**Bioretention Area**
- Total Phosphorus ≈ 0.2 lbs/year
- Total Nitrogen ≈ 3.3 lbs/year
- Total Suspended Solids ≈ 236.1 lbs/year
- Bacteria (FC) ≈ 21.4 billions of colonies/year

**Forest Buffer**
- Total Phosphorus ≈ NA
- Total Nitrogen ≈ 0.3 lbs/year
- Total Suspended Solids ≈ 176.1 lbs/year
- Bacteria (FC) ≈ NA

Estimated Cost
**Bioretention Area**: $12,767
**Forest Buffer**: $18,796

Image 1: View of proposed bioretention/infiltration practice.

Image 2: View of area of proposed forested buffer

Image 3: Typical detail of a bioretention area

Image 4: View of trail leading from parking area to the pond. Note the evidence of erosion along the trail sides.
Retrofit Site 227 – Hopkinton Recreation Department
Bioretention
Nooseneck Hill Road, Hopkinton, Rhode Island

Site Description
The proposed retrofit concept is located at the Town of Hopkinton Recreation Department property on Nooseneck Hill Road in Hopkinton, RI. The site consists of a large grassed area, a recreation department building and a small parking area, half of which is unimproved. A structural drainage system exists along Nooseneck Hill Road and some of the adjacent side streets.

Proposed Concept
Install a linear bioretention/infiltration practice in the existing grass area along Nooseneck Hill Road to capture, treat, and infiltrate road runoff. The catch basin located immediately adjacent to the proposed retrofit was nearly full of sediment at the time of inspection, suggesting a need for stormwater treatment and regular maintenance of the treatment practice at this location. The connectivity of the existing drainage system is unconfirmed, but there is significant available space, which provides flexibility for increasing the retrofit drainage area.

Image 1: View of catch basin located along roadside where proposed BMP would be located. Note the sediment loading and need for maintenance.


Image 3: View looking southwest down Nooseneck Hill Road where a proposed bioretention area could be located along the roadside.

Image 4: Typical detail of a bioretention area.

Retrofit Concept Summary
Total Drainage Area: 4.9 acres
Total Impervious Area: 1.5 acres
Total Water Quality Volume: 5,361.4 ft³
Recharge Volume: 536.1 ft³

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus = 2.3 lbs/year
Total Nitrogen = 32.3 lbs/year
Total Suspended Solids = 1,217.4 lbs/year
Bacteria (FC) = 623.0 billion colonies/year

Estimated Cost
Bioretention Area: $72,113
Retrofit Site 229 – Tuckertown Park
Bioretention
Tuckertown Road, South Kingstown, Rhode Island

Site Description
The proposed retrofit concept is located at the Tuckertown Park Soccer Fields off of Tuckertown Road in South Kingstown, RI. The site consists of an approximately 1,000-foot segment of Tuckertown Road along the adjacent soccer complex. Catch basins are located at the end of Brookwood Road and on Tuckertown Road. The catch basins are believed to connect to a large catch basin on the north side of the fields and then to a catch basin in a grassed area of the park on the south side of the fields south of the driveway. The drainage system then discharges directly to Alewife Brook further to the south.

Proposed Concept
Install multiple conveyances from Tuckertown Road through the narrow wooded area lining the roadway to convey road runoff into a new linear bioretention/infiltration feature on the north side of the fields. This practice would treat runoff from Tuckertown Road and a portion of Brookwood Road where there is currently no treatment, helping to reduce nutrient and sediment loads to Alewife Brook and Tucker Pond.

Retrofit Concept Summary
- Total Drainage Area: 13.7 acres
- Total Impervious Area: 3.4 acres
- Total Water Quality Volume: 5,361.4 ft³
- Recharge Volume: 7,524.2 ft³

Estimated Pollutant Removal
- Bioretention Area
  - Total Phosphorus = 4.8 lbs/year
  - Total Nitrogen = 65.2 lbs/year
  - Total Suspended Solids = 2,761.1 lbs/year
  - Bacteria (FC) = 1,426.8 billion colonies/year

Estimated Cost
Bioretention Area: $168,673

Image 2: View of lone basin near the south of access road and parking in Tuckertown Park.
Image 3: Location of proposed bioretention area located adjacent to soccer fields at Tuckertown Park, South Kingstown, RI.
Retrofit Site 252 – Chariho Little League Rain Gardens
Nooseneck Hill Road, Hope Valley, Rhode Island

Site Description
The proposed retrofit concept is located at the Chariho Little League complex off of Nooseneck Hill Road in Hope Valley, RI. The site consists of several baseball/softball diamonds with three main parking areas. The southern-most parking area is situated within the 100-year and 500-year floodplain, so it was ruled out as a feasible retrofit opportunity given the potential for inundation during significant flooding. The other two parking areas are both unimproved lots.

Proposed Concept
Install rain gardens along the two parking areas that are outside of the 100-year and 500-year floodplains. Rain gardens could be installed at two locations in the eastern parking area. The eastern-most rain garden would run along the far eastern edge of the parking area and could be incorporate walking path cut outs between the bleacher sections. The second rain garden in the eastern lot would run along the fence of the largest baseball field in the complex. The rain garden for the western lot would extend along the edge of the largest ball field on the third base side, leaving room for spectators to line the fence to watch ballgames.

The designs would need to include physical barriers or other methods to separate the rain gardens from spectators and parked vehicles. In addition to the water quality benefits, the proposed retrofits could provide aesthetic enhancements to an already well-maintained recreational complex.

Retrofit Concept Summary
Total Drainage Area: 1.0 acres
Total Impervious Area: 0.8 acres
*Total Water Quality Volume: 2,289.6 ft³
Recharge Volume: 1,373.8 ft³

Estimated Pollutant Removal
Rain gardens
Total Phosphorus ≈ 0.3 lbs/year
Total Nitrogen = 6.4 lbs/year
Total Suspended Solids = 299.6 lbs/year
Bacteria (FC) = 121.2 billion colonies/year

Estimated Cost
Rain gardens: $38,792

*Drainage area to western raingarden sized for 0.5" WQv due to space limitations.

Image 1: View of proposed location of rain garden adjacent to easternmost parking area.
Image 2: View of location of proposed rain garden at western parking area.

Image 2: Cross-sectional view of a typical rain garden detail. (Image source: http://www.5counties.org/docs/lu_planning/04_rain_garden.pdf)

Retrofit Site 272 – State Street School
Bioretention and Rain Gardens
State Street, Westerly, Rhode Island

Site Description
The proposed retrofit concept is located at the State Street School on State Street in Westerly, RI. The site includes a single-story school building with a paved parking lot on the eastern side of the building. A structural storm drainage system exists in the school parking lot and in State Street and Hollis Street. Erosion was observed at the time of the inspection in the area of the playground located on the northern portion of the site where the bioretention practice is proposed. Roof drainage on the northern side of the building is directed to various pervious and impervious areas via gutters and downspouts.

Proposed Concept
Install a bioretention/infiltration system at the northwestern corner of the main parking lot. The connectivity of the parking lot catch basins would need to be confirmed to determine if the catch basins could be rerouted to the new bioretention area. Sufficient space exists for a bioretention basin sized to accommodate areas currently draining to these catch basins. A bioretention cell in this location would also help reduce erosion at this location. Additionally, rain gardens could be constructed in one or more areas on the northern side of the building to capture and infiltrate runoff from the roof. These rain gardens would provide demonstration value and teaching opportunities.

Retrofit Concept Summary
Total Drainage Area: 2.1 acres
Total Impervious Area: 1.7 acres
Total Water Quality Volume: 6,193.3 ft³
Recharge Volume: 619.3 ft³

Estimated Pollutan Removal
Bioretention Area
Total Phosphorus = 0.7 lbs/year
Total Nitrogen = 14.6 lbs/year
Total Suspended Solids = 570.4 lbs/year
Bacteria (FC) = 422.5 billion colonies/year

Raingarden Area
Total Phosphorus = 0.1 lbs/year
Total Nitrogen = 3.1 lbs/year
Total Suspended Solids = 121.5 lbs/year
Bacteria (FC) = 91.1 billion colonies/year

Estimated Cost
Bioretention Area: $68,204
Raingarden Area: $15,099
Retrofit Site 272A – Westerly Senior Center
Bioretention
State Street, Westerly, Rhode Island

Site Description
The proposed retrofit concept is located at the Westerly Senior Center near the intersection of Westminster and State Streets in Westerly, RI. The site consists of an asphalt parking lot divided into multiple parking areas. There is a swale located between two sections of the parking lot, and some runoff is directed to the swale but no overflow or formal BMP exists, nor does the swale capture all of the runoff that could be directed to it.

Proposed Concept
Retrofit the current swale as a bioretention/infiltration practice. The practice would be designed to accept runoff from the surrounding parking lot and additional areas of the site and parking lot. If desired, an overflow structure could be incorporated into the design and connected to current stormwater drainage infrastructure located on Westminster Street.

Retrofit Concept Summary
Total Drainage Area: 1.2 acres
Total Impervious Area: 1.0 acres
Total Water Quality Volume: 3,794.0 ft³
Recharge Volume: 379.4 ft³

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus ≈ 0.5 lbs/year
Total Nitrogen = 10.5 lbs/year
Total Suspended Solids ≈ 410.2 lb/year
Bacteria (FC) = 307.5 billion colonies/year

Estimated Cost
Bioretention Area: $51,032

Image 1: Close-up view of proposed bioretention/infiltration area.

Image 2: Rendering of a typical bioretention area. (Image source: Johnson County Soil and Water District)

Image 3: View of proposed bioretention/infiltration area and some of the parking area that would drain to it.
Stormwater Retrofit Concept
Westerly Senior Center (272 A)

Retrofit Site No. 272
Westerly Rhode Island

Legend:
- Existing Catch Basin
- Proposed Catch Basin
- Proposed Overflow Structure
- Proposed Level Spreader
- Proposed Storm Drain
- BMP Drainage Area Boundary
- Bioretention
- Raigarden
- Underground Infiltration
- Green Roof
- Permeable Pavers
- Forested Buffer
- Articulating Concrete Matting

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Data Source(s):
- Drainage Area by Fuss & O'Neill 2009, Aerial Photography
- Green Roof: Snowball Designs, Project 2013
- LiDAR

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DA = 1.16 acres
DA = 0.36 acres
Retrofit Site 274 – Westerly High School
Underground Infiltration
Park Avenue, Westerly, Rhode Island

Site Description
The proposed retrofit concept is located at the Westerly High School property located on Park Avenue in Westerly, RI. The site consists of a main school buildings and associated grounds with several parking areas and hardscaped areas throughout the campus. The proposed site is one small part of the campus located along Park Avenue. According to the facilities manager, this area receives no stormwater treatment and is likely connected to the original stormwater infrastructure along Park Avenue. There are nearby infiltrating catch basins installed in a parking lot to the east that the facilities manager indicates are extremely effective.

Proposed Concept
Install an underground infiltration system beneath the parking area along the former alignment of Park Avenue. The underground system could be sized to infiltrate runoff from the parking lot only or sized to infiltrate additional runoff from current infrastructure along the up-gradient end of Park Avenue, pending confirmation of the connectivity of the existing drainage system.

Retrofit Concept Summary
Total Drainage Area: 0.8 acres
Total Impervious Area: 0.6 acres
Total Water Quality Volume: 2,047.7 ft³
Recharge Volume: 716.7 ft³

Estimated Pollutant Removal
Underground Infiltration
Total Phosphorus ≈ 0.55 lbs/year
Total Nitrogen ≈ 6.82 lbs/year
Total Suspended Solids ≈ 224.5 lbs/year
Bacteria (FC) ≈ 228.4 billion colonies/year

Estimated Cost
Underground Infiltration: $29,379

Image 1: Typical installation of underground infiltration system below an existing parking lot. (Image source: stormtech.com)

Image 2: View of typical linear infiltration chamber installation beneath a road, Mashpee, MA. (Image source: http://capecodwatershed.blogspot.com/)

Image 3: Typical detail of an underground infiltration chamber.
Retrofit Site 275 – Westerly Town Hall
Bioretention
Broad Street, Westerly, Rhode Island

Site Description
The proposed retrofit concept is located at the Westerly Town Hall on Broad Street in Westerly, RI. The site consists of a parking area and driveway to the rear of the Town Hall located between Christ Episcopal Church and Town Hall. At present stormwater flows across the parking area and enters two catch basins with unknown connectivity. Runoff also leaves the site and discharges to Broad Street via sheet flow.

Proposed Concept
Retrofit the existing catch basins and install a bioretention cell in the lawn area between the Town Hall and Christ Episcopal Church. This practice would have the potential to treat runoff from the parking area and possibly some of the roof areas as well. This site is a highly trafficked location in the center of town making it an excellent demonstration project opportunity.

Image 1: View of proposed bioretention area location in between Christ Episcopal Church and Westerly Town Hall, looking southwest.

Image 2: View of proposed bioretention area between Westerly Town Hall and Christ Episcopal Church looking north, Westerly, RI.


Retrofit Concept Summary
Total Drainage Area: 0.5 acres
Total Impervious Area: 0.4 acres
Total Water Quality Volume: 1337.4 ft$^3$
Recharge Volume: 802.5 ft$^3$

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus = 0.1 lbs/year
Total Nitrogen = 3.5 lbs/year
Total Suspended Solids = 169.4 lbs/year
Bacteria (FC) = 109.6 billion colonies/year

Estimated Cost
Bioretention Area: $17,989
Site Description
The proposed retrofit concept is located at the Tower Street School and Community Center located on Tower Street in Westerly, RI. The site consists of two main parking areas to the east of the main building. Two catch basins and associated drainage infrastructure are located on Narragansett Avenue Extension. These catch basins are upgradient of the proposed retrofit and have unknown connectivity.

Proposed Concept
Install a bioretention/infiltration system along the perimeter of the eastern-most parking area. This practice would accept runoff from the parking areas but could also be designed to accept stormwater flows from the catch basins located on Narragansett Avenue Extension.

Retrofit Concept Summary
Total Drainage Area: 2.2 acres
Total Impervious Area: 0.7 acres
Total Water Quality Volume: 2,459.7 ft$^3$
Recharge Volume: 860.9 ft$^3$

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus = 1.1 lbs/year
Total Nitrogen = 13.1 lbs/year
Total Suspended Solids = 563.2 lbs/year
Bacteria (FC) = 336.9 billion colonies/year

Estimated Cost
Bioretention Area: $33,084

Image 1: Typical detail of a bioretention area.


Image 3: View of proposed bioretention area adjacent to parking lot at Tower Street School and Community Center. Direction of photo is looking northeast.


Image 5: View of proposed bioretention area looking northwest.
Retrofit Site 280 – Ashaway Elementary School
Underground Infiltration and Bioretention
Hillside Avenue, Ashaway, Rhode Island

Site Description
The proposed retrofit concept is located at the Ashaway Elementary School on Hillside Avenue in Ashaway, RI. The site consists of three school buildings with a courtyard area separating the two main buildings. There is scattered parking and a bus loop on the southwestern portion of the property. The bus loop also appears to serve as a recess and play area. Presently, stormwater runoff from the building roof and parking areas flows to Hillside Avenue. Stormwater then flows to a small ponded area between Hillside Avenue and Laurel Street or, during larger storms, likely discharges to Laurel Street and ultimately the Ashaway River.

Proposed Concept
Install an underground infiltration system beneath the road surface along Hillside Avenue. While there is a large paved parking/recess area to the southwest of the school, a site inspection revealed multiple utility conflicts. There were no such conflicts observed along Hillside Avenue. Placing the infiltration system within the road also offers the opportunity to collect stormwater from a larger drainage area and treat runoff from additional impervious surfaces. In addition to the infiltration system, a separate bioretention area could also be constructed to manage roof runoff and some parking lot runoff. This practice would be located in the courtyard area between the two main buildings and serve as an excellent demonstration project and teaching aid.

Figure 1: View of typical linear infiltration chamber installation beneath a road, Mashpee, MA. (Image source: http://capecodwatershed.blogspot.com/)

Retrofit Concept Summary
Total Drainage Area: 11.5 acres
Total Impervious Area: 4.0 acres
*Total Water Quality Volume: 8,797.8 ft³
Recharge Volume: 5278.7 ft³

Estimated Pollutant Removal
Underground Infiltration
Total Phosphorus = 2.7 lbs/year
Total Nitrogen = 31.8 lbs/year
Total Suspended Solids = 962.1 lbs/year
Bacteria (FC) = 874.6 billion colonies/year

Bioretention Area
Total Phosphorus = 0.2 lbs/year
Total Nitrogen = 4.5 lbs/year
Total Suspended Solids = 173.9 lbs/year
Bacteria (FC) = 130.3 billion colonies/year

Estimated Cost
Underground Infiltration: $206,813
Bioretention Area: $21,390

*Underground infiltration conceptually designed to treat 0.5” WQv due to size, space and cost considerations.

Figure 2: Profile view of a typical bioretention practice. (Image source: RI Stormwater Manual, 2010)

Figure 3: Proposed location for bioretention practice located within courtyard at Ashaway Elementary School, Ashaway, RI.

Figure 4: Typical detail of an underground infiltration chamber.
Retrofit Site 283 – West Kingston Elementary School
Underground Infiltration and Bioretention
Ministerial Road, South Kingstown, Rhode Island

Site Description
The proposed retrofit concept is located at the West Kingston Elementary School on Ministerial Road in West Kingston, RI. The site consists of a large parking lot adjacent to an elementary school building. There is a semi-circular traffic pattern on the site. Two separate driveways lead from Ministerial Road to the main parking area. There are two catch basins located in the main parking area, which collect runoff from the parking area. Additional catch basins are located near the entrance/exit driveways. It is presumed that all drainage structures on the site are interconnected and ultimately discharge to the Chipuxet River, west of Ministerial Road.

Proposed Concept
Install an underground infiltration system beneath the parking area to infiltrate and treat the water quality volume. The existing drainage infrastructure could potentially be modified to convey stormwater to the retrofit and serve as an overflow mechanism. Additionally, a bioretention/infiltration swale is recommended along the northern entrance/exit driveway. While this particular location has relatively steep slopes, the design could incorporate check dams or a tiered approach to optimize the efficiency of the proposed practice.

Retrofit Concept Summary
Total Drainage Area: 6.1 acres
Total Impervious Area: 2.4 acres
Total Water Quality Volume: 8,763.5 ft³
Recharge Volume: 3,067.2 ft³

Estimated Pollutant Removal
Underground Infiltration
Total Phosphorus = 1.3 lbs/year
Total Nitrogen = 15.6 lbs/year
Total Suspended Solids = 513.3 lbs/year
Bacteria (FC) = 519.4 billion colonies/year

Bioretention Area
Total Phosphorus = 0.6 lbs/year
Total Nitrogen = 12.8 lbs/year
Total Suspended Solids = 513.3 lbs/year
Bacteria (FC) = 330.5 billion colonies/year

Estimated Cost
Underground Infiltration: $66,988
Bioretention Area: $55,072
Stormwater Retrofit Concept
West Kingston Elementary School
Retrofit Site No. 283
South Kingstown, Rhode Island

Legend
- Existing Catch Basin
- Proposed Catch Basin
- Proposed Overflow Structure
- Proposed Level Spreader
- Proposed Storm Drain
- BMP Drainage Area Boundary
- Bioretention
- Raingarden
- Underground Infiltration
- Green Roof
- Pervious Pavers
- Forested Buffer
- Articulating Concrete Matting

Disclaimer: This map is not the product of a Professional Land Survey. It was created by Fuss & O'Neill, Inc. for general reference. Informational, planning and guidance use, and is not a legally authoritative source as to location of natural or manmade features. Proper interpretation of this map may require the assistance of appropriate professional services. Fuss & O'Neill, Inc. makes no warranty, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.

Data Source(s): 3D Imagery by Fuss & O'Neill, Inc.; Aerial Photographs; April 2014 USGS 30 m multi-spectral ortho images, downloaded from ArcGIS Online; Contour Lines from Northeast USDA Project 2013, NGS

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Providence, RI 02906
401.861.3070 | www.fando.com
**Retrofit Site 284 – Parking Lot at Boss Arena, URI**  
**Underground Infiltration**  
Keaney Road, Kingston, Rhode Island

**Site Description**  
The proposed retrofit concept is located at the parking lot associated with Boss Arena on the University of Rhode Island campus in Kingston, RI. This location consists of a large asphalt parking lot that slopes gradually eastward toward a tributary of White Horn Brook. No catch basins were observed within the main parking lot. Sheet flow from the parking lot meets a grass divider along the eastern side of the lot where there are several stone-lined channels for stormwater to leave the lot and discharge to the eastern end of Keaney Road. Some storm drainage infrastructure exists along this portion of the road. The drainage infrastructure associated with the parking lot and roadway is assumed to discharge to the tributary to the east.

**Proposed Concept**  
Install an underground infiltration system beneath the parking area to infiltrate and treat the water quality volume. At present, there does not appear to be any stormwater treatment at this location. There are many stormwater practices located adjacent to and within some of the other University-owned parking lots to the north, which have been installed as part of the University’s commitment to LID and green infrastructure practices on the URI campus.

**Retrofit Concept Summary**  
- **Drainage Area:** 36.5 acres  
- **Impervious Area:** 10.7 acres  
- **Water Quality Volume:** 38,847.2 ft$^3$  
- **Recharge Volume:** 3,884.7 ft$^3$

**Estimated Pollutant Removal**  
- **Underground Infiltration**  
  - Total Phosphorus ≈ 10.38 lbs/year  
  - Total Nitrogen ≈ 139.6 lbs/year  
  - Total Suspended Solids ≈ 5,001.4 lbs/year  
  - Bacteria (FC) ≈ 3,919.3 billion colonies/year

**Estimated Cost**  
- Underground Infiltration: $557,345

Image 1: Proposed location of underground infiltration system. Note existing catch basin that could be used for overflow.

Image 2: Proposed location of underground infiltration system located within parking area for Boss Arena on the University of Rhode Island campus, South Kingstown, RI.

Image 3: View of typical underground infiltration system beneath a parking lot. (Image source: www.kitchener.ca)

Image 4: Typical detail of an underground infiltration chamber
Retrofit Site 286 – Richmond Elementary School
Bioretention
Kingstown Road, Richmond, Rhode Island

Site Description
The proposed retrofit concept is located at the Richmond Elementary School located on Kingstown Road in Richmond, RI. The site consists of two large drainage areas that run east/west along Kingstown Road, centered at the intersection of Kingstown Road and Richmond Townhouse Road. Catch basins located along the roadside in several locations. The connectivity and outlet location of the drainage infrastructure is currently unknown.

Proposed Concept
Install bioretention/infiltration basins in the lawn area near the school entrance and driveway/bus loop. An additional bioretention/infiltration system could be installed in the triangular traffic island bordered by Richmond Townhouse Road and Kingstown Road. These bioretention areas would be sized to infiltrate the 1” water quality volume and outlet/overflow to existing infrastructure where possible. It should be noted that a large infiltration practice exists across the street at the Richmond Town Hall property. The effectiveness of this practice and treatment area should be evaluated prior to final design of the proposed retrofit at the Richmond Elementary School.

Retrofit Concept Summary
Total Drainage Area: 16.0 acres
Total Impervious Area: 3.9 acres
Total Water Quality Volume: 13,999.4 ft³
Recharge Volume: 5,557.4 ft³

Estimated Pollutant Removal
Bioretention Area
Total Phosphorus = 3.9 lbs/year
Total Nitrogen = 58.8 lbs/year
Total Suspended Solids = 3,629.0 lbs/year
Bacteria (FC) = 504.9 billion colonies/year

Estimated Cost
Bioretention Area: $188,298

Image 1: Location of proposed bioretention basins in front of Richmond Elementary School, Richmond, RI.

Image 2: Typical detail of a bioretention area.

Attachment 9

Planning Level Cost Estimates
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<th>BMP Number</th>
<th>BMP Name</th>
<th>BMP Type</th>
<th>Impervious Area Treated (sf)</th>
<th>Cost per Impervious Acre Treated</th>
<th>Total Cost (Over 20 Years)</th>
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<td>Average Annual Maintenance Cost³</td>
<td>Total Annual Cost</td>
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**NOTES**


Preconstruction Costs- assumed to be 20% of initial construction costs

Cost estimates- obtained from "Costs of Stormwater Management Practices In Maryland Counties" prepared for Maryland Department of the Environment by Dennis King and Patrick Hagan of the University of Maryland, Center for Environmental Science (UMCES), October 10, 2011.

¹Initial initial cost includes pre-construction costs (design, planning, and permitting) and construction costs (capital, labor, material and overhead costs). Construction costs in 2011 dollars were converted to 2016 dollars using RS Means Construction Cost Indexes (equivalent to 1.085% increase).

²Initial BMP costs, including preconstruction and construction costs, are amortized over 20 years at 3% to arrive at annualized initial costs.

³Combined annual operating, implementation, and maintenance costs.

⁴Green roof cost estimated based on conservative cost per ft² from: [http://stormwater.pca.state.mn.us/index.php/Cost-benefit_considerations_for_green_roofs](http://stormwater.pca.state.mn.us/index.php/Cost-benefit_considerations_for_green_roofs)
Attachment 10

Pollutant Loading and Reduction Calculations
## Pollutant Loading and Removal Calculations – Wood-Pawcatuck Watershed

<table>
<thead>
<tr>
<th>Site</th>
<th>Pollutant Load - L (lbs)</th>
<th>Removal Rates - Decimal %</th>
<th>Load Reduction - L (lbs)</th>
<th>Load Reduction FC (Billion Colonies)</th>
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**Total**

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<tr>
<th>Site</th>
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<th>Removal Rates - Decimal %</th>
<th>Load Reduction - L (lbs)</th>
<th>Load Reduction FC (Billion Colonies)</th>
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### Pollutant Loading and Removal Calculations – Wood-Pawcatuck Watershed

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<th>Pollutant Load - L (lbs)</th>
<th>Removal Rates - Decimal %</th>
<th>Load Reduction - L (lbs)</th>
<th>Load Reduction FC (Billion Colonies)</th>
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**Total**

| Site | | | | | | | | | | | | |
| 125a Raingardens | 1.74 | 0.08 | 67.90 | 50.91 |
| 125b Raingardens | 1.06 | 0.09 | 25.15 | 24.24 |
| 125c Raingardens | 1.64 | 0.13 | 39.02 | 37.62 |
| 125d Bioretention | 21.85 | 1.98 | 424.87 | 286.99 |
| 125e Bioretention | 12.33 | 1.64 | 448.50 | 45.98 |
| 129 Bioretention | 22.23 | 2.64 | 676.56 | 300.15 |
| 139a Bioretention | 64.20 | 9.71 | 1625.40 | 1296.54 |
| 139b Bioretention | 10.97 | 0.89 | 260.91 | 251.42 |
| 157 Underground Infiltration | 14.38 | 1.17 | 341.98 | 329.64 |
| 159 Bioretention | 26.85 | 4.45 | 975.47 | 355.38 |
| 173a Bioretention | 38.12 | 4.55 | 1330.18 | 437.87 |
| 173b Bioretention | 12.16 | 0.96 | 232.37 | 128.93 |
| 185a Bioretention | 4.84 | 0.68 | 218.79 | 33.72 |
| 185c Bioretention | 17.39 | 1.87 | 578.89 | 275.83 |
| 185d Bioretention | 13.99 | 1.13 | 332.76 | 320.75 |
| 185e Bioretention | 7.27 | 0.59 | 172.99 | 166.75 |

| Site | | | | | | | | | | | | |
| Total Raingarden | 1.74 | 0.08 | 67.90 | 50.91 |
| Total Bioretention | 18.80 | 1.09 | 786.04 | 233.08 |
### Pollutant Loading and Removal Calculations – Wood-Pawcatuck Watershed

<table>
<thead>
<tr>
<th>Site</th>
<th>Pollutant</th>
<th>Load Reduction FC (Billion Colonies)</th>
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