

TECHNICAL MEMORANDUM

TO:	Project Steering Committee Wood-Pawcatuck Watershed Flood Resiliency Management Plan
FROM:	William Guenther, Scientist David Askew, Senior Project Manager Erik Mas, P.E., Vice President
DATE:	October 12, 2016
RE:	Green Infrastructure Assessment Wood-Pawcatuck Watershed Flood Resiliency Management Plan

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 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

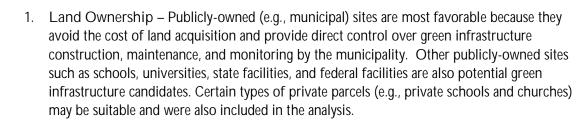
A screening evaluation was conducted using publicly-available GIS data for Rhode Island and Connecticut to quickly identify specific sites within the watershed where green infrastructure retrofits can be implemented that would provide water quantity (i.e., runoff reduction) and water quality (i.e., pollutant 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 criteria¹ 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.





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.

- 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.² 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:
 - <u>Hydrologic Soil Group</u> 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.
 - <u>Seasonal High Water Table</u> 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

Attachment 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
 - Rhode Island GIS data layer 2011 Land Use Land Cover: "Institutional", "Developed Recreation", "Cemeteries", and "Airports"; or
 - 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 GISbased 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.



Town	Number of Sites
Charlestown, Rhode Island	6
Exeter, Rhode Island	9
Hopkinton, Rhode Island	18
North Stonington	2
Richmond, Rhode Island	6
South Kingstown, Rhode Island	11
Stonington, Connecticut	3
West Greenwich, Rhode Island	1
Westerly, Rhode Island	26

Table 1. Geographic distribution of potential green infrastructure retrofit sites.

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.

Site Name/Description	Address	Town
Vin Gormley Trailhead Parking	24 Sanctuary Road	Charlestown
Burlingame Management Area	Burlingame State Park Rd	Charlestown
Shannock Baptist Church	1632 Shannock Road	Charlestown
St. Mary's Catholic Church	451-455 Carolina Back Road	Charlestown
Burlingame Management Area	Burlingame State Park Rd	Charlestown
Charlestown Elementary School	363 Carolina Back Road	Charlestown
St. Kateria Tekakwitha Catholic Church	Exeter Rd	Exeter
Exeter Town Animal Shelter	165 S. County Trail	Exeter
Unidentified Building near Animal Shelter	175 S. County Trail	Exeter
Building with Parking Lot	742 Ten Rod Road	Exeter
Exeter Town Hall	675 Ten Rod Road	Exeter
Parking Lot Near Lake	406 Arcadia Road	Exeter
Exeter Job Corps Center	162 Main Street	Exeter
Phoenix House	Gaspee Road and Main Street	Exeter
Exeter Public Library	762 Ten Rod Road	Exeter

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



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

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



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

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



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.

- 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.
- 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.



 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.

Site No.	Site Drainage Area No.	Site Name	Green Infrastructure BMP Type
21	21a	Vin Gormley Trailhead Parking	Underground Infiltration
21	21b	Vin Gormley Trailhead Parking	Bioretention
41	41	URI Tennis Courts	Rain Gardens
50	50a	Wyoming Dam Fishing Access	Pervious Pavers
50	50b	Wyoming Dam Fishing Access	Articulated Concrete Mat
50	50c	Wyoming Dam Fishing Access	Bioretention

Table 3. List of sites selected for conceptual designs



Site	Site Drainage		Green Infrastructure
No.	Area No.	Site Name	BMP Type
73	73	Exeter Town Animal Shelter	Bioretention
93	93a	US Post Office in Westerly	Bioretention
93	93b	US Post Office in Westerly	Bioretention
93	93c	US Post Office in Westerly	Bioretention
93	93d	US Post Office in Westerly	Bioretention
102	102	United Methodist Church	Bioretention
108	108a	Bradford School	Green Roof
108	108b	Bradford School	Underground Infiltration
114	114a	US Post Office in Ashaway/Hopkinton	Underground Infiltration
114	114b	US Post Office in Ashaway/Hopkinton	Underground Infiltration
125	125a	Trinity Lutheran Church	Rain Gardens
125	125b	Trinity Lutheran Church	Rain Gardens
125	125c	Trinity Lutheran Church	Rain Gardens
125	125d	Trinity Lutheran Church	Bioretention
125	125e	Trinity Lutheran Church	Bioretention
129	129	St Mary's Catholic Church	Bioretention
139	139a	Courthouse Center for the Arts	Bioretention
139	139b	Courthouse Center for the Arts	Bioretention
157	157	Richmond Police Department	Underground Infiltration
159	159	RI State Police	Bioretention
173	173a	Exeter Town Hall	Bioretention
173	173b	Exeter Town Hall	Rain Gardens
185	185a	Wheeler High/Middle School	Bioretention
194	185b	Wheeler High/Middle School (combined with drainage area 194d)	Bioretention
185	185c	Wheeler High/Middle School	Bioretention
185A	185d	Wheeler High/Middle School	Bioretention
185A	185e	Wheeler High/Middle School	Bioretention
191	191a	West Vine Street School	Rain Gardens
191	191b	West Vine Street School	Rain Gardens
194	194a	North Stonington Elementary and Administration Buildings	Bioretention
194	194b	North Stonington Elementary and Administration Buildings	Bioretention
194	194c	North Stonington Elementary and Administration Buildings	Bioretention
194	194d	North Stonington Elementary and Administration Buildings	Bioretention
194	194e	North Stonington Elementary and Administration Buildings	Bioretention
194	194f	North Stonington Elementary and	Bioretention

Table 3. List of sites selected for conceptual designs



Site No.	Site Drainage Area No.	Site Name	Green Infrastructure BMP Type
TNO.	Area No.	Administration Buildings	ымі турс
194	194g	North Stonington Elementary and Administration Buildings	Bioretention
206	206a	Browning Mill Pond Parking Access	Forested Buffer
206	206b	Browning Mill Pond Parking Access	Forested Buffer
206	206d	Browning Mill Pond Parking Access	Bioretention
227	227	Hopkinton Recreation Department	Bioretention
229	229	Tuckertown Park	Bioswales
252	252a	Chariho Little League	Rain Gardens
252	252b	Chariho Little League	Rain Gardens
252	252c	Chariho Little League	Rain Gardens
272A	272a	Westerly Senior Center	Bioretention
272	272b	State Street School	Rain Gardens
272	272c	State Street School	Bioretention
274	274	Westerly High School	Underground Infiltration
275	275	Westerly Town Hall	Bioretention
276	276	Tower Street School and Community Center	Bioretention
280	280a	Ashaway Elementary School	Underground Infiltration
280	280b	Ashaway Elementary School	Bioretention
283	283a	West Kingstown Elementary	Underground Infiltration
283	283b	West Kingstown Elementary	Bioretention
284	284	URI Lot at Boss Arena	Underground Infiltration
286	286a	Richmond Elementary School	Bioretention
286	286b	Richmond Elementary School	Bioretention

Table 3. List of sites selected for conceptual designs

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 onthe-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.

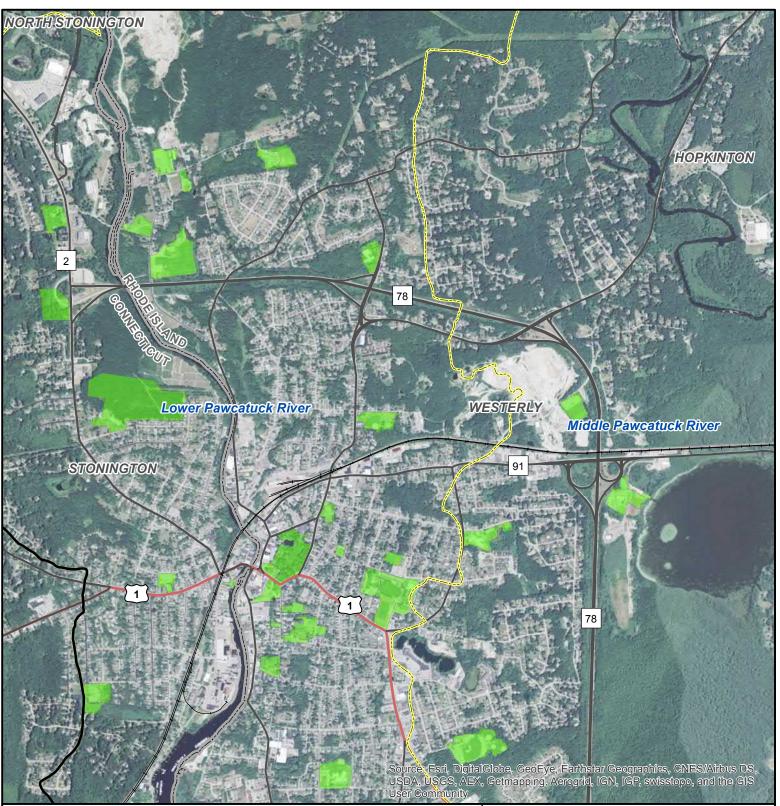
Attachments:	Attachment 1: Example Site Screening Selection – Westerly, Rhode Island
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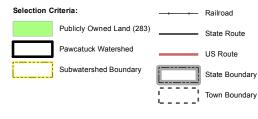
- Attachment 2: Spreadsheet of Potential Green Infrastructure Retrofit Sites
- Attachment 3: Aerial Photographs of Selected Retrofit Sites
- Attachment 4: Watershed Map of Potential Green Infrastructure Retrofit Sites
- Attachment 5: Subwatershed Maps with Potential Green Infrastructure Retrofits
- Attachment 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

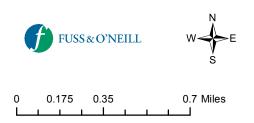


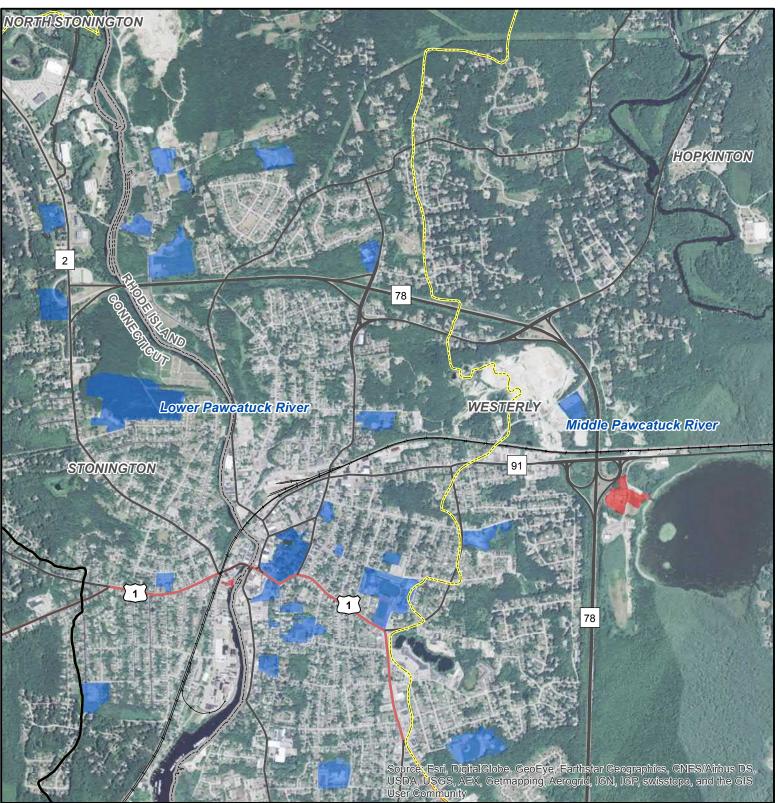


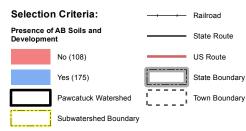
Publicly owned property includes Institutional, Developed Recreation, Cemeteries and Airports in RI; and State/Municipal Parks and Open Space in CT.

(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



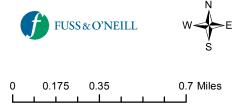


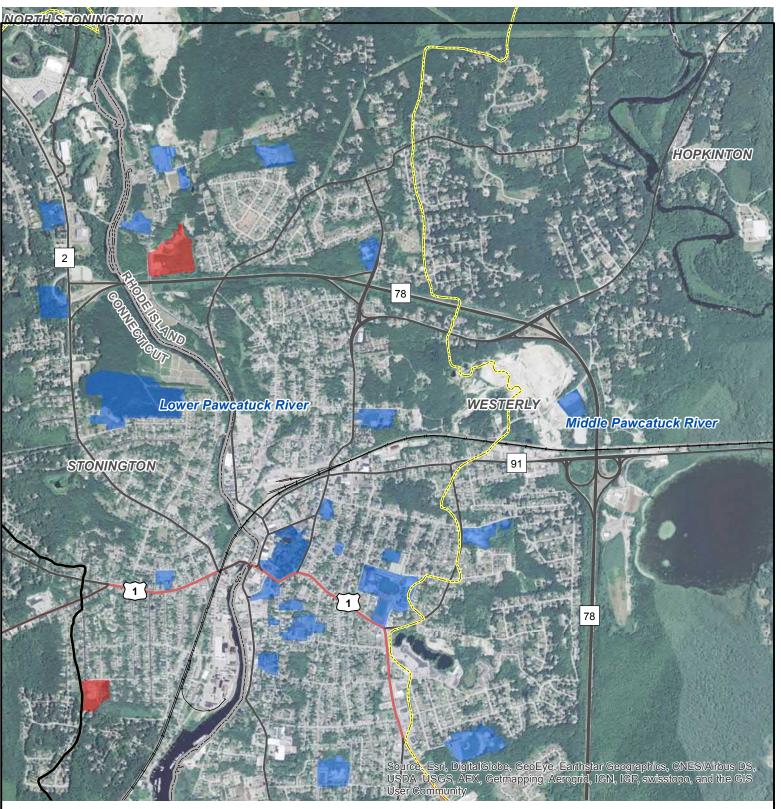


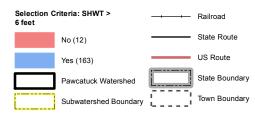
Blue-shaded parcels have AB soils and development.

Percent Impervious is used later in the selection process to identify potentional sites with a high percentage of development.

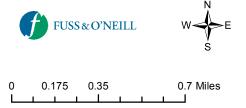
Example of Potential Green Insfrastructure Sites in the Wood-Pawcatuck Watershed with AB soils and Development.

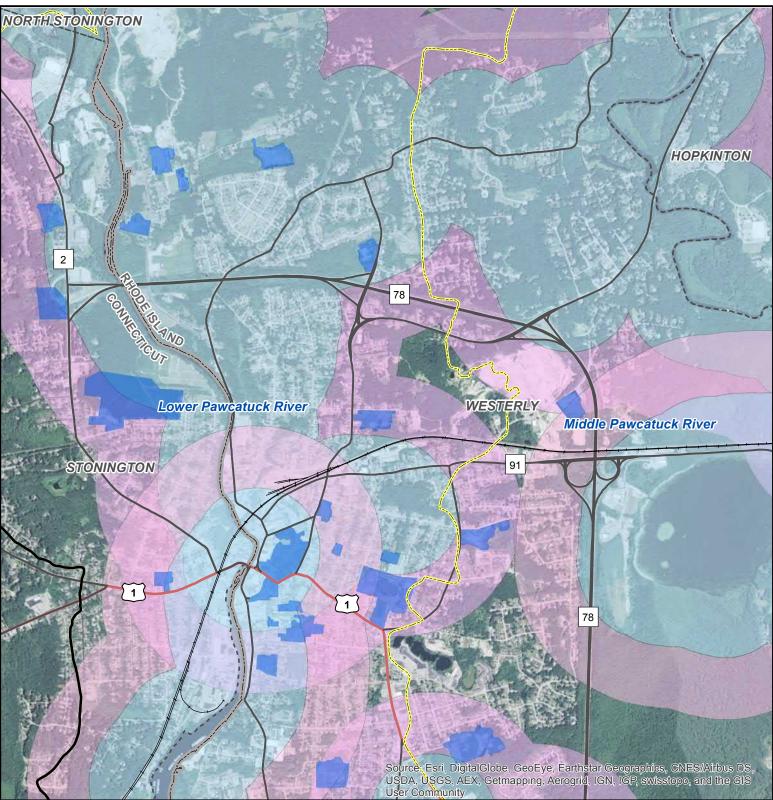


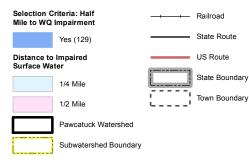




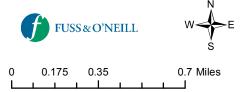
Blue-shaded parcels have AB soils, development, and SHWT depth > 6 feet. Example of Potential Green Insfrastructure Sites in the Wood-Pawcatuck Watershed with a SHWT > 6 Feet.

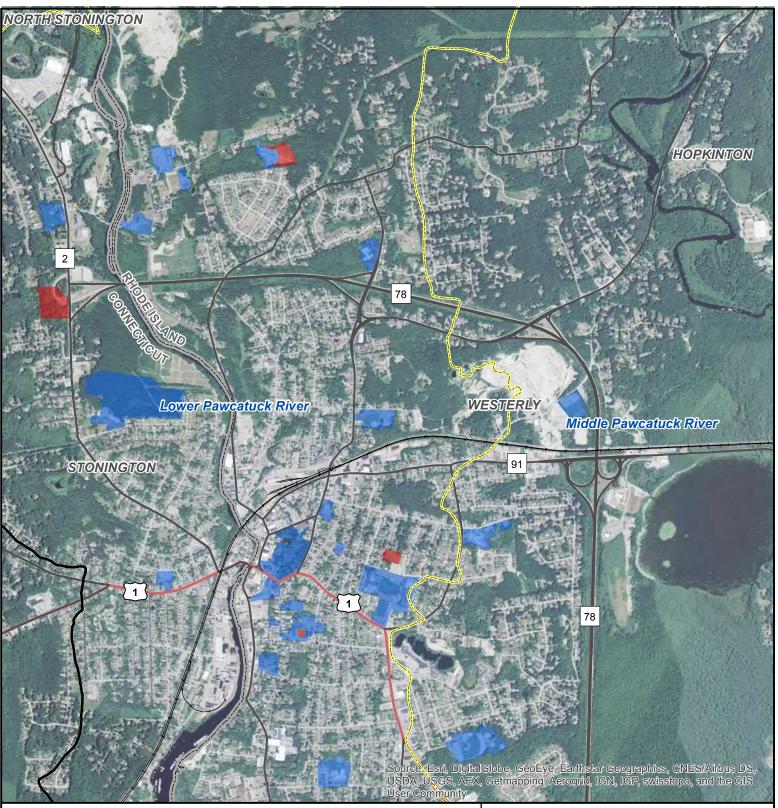


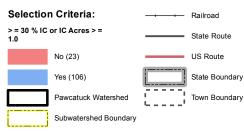




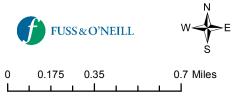
Blue-shaded parcels have AB soils, development, SHWT depth > 6 feet, and 1/2 mile to Water Quality Impairment. Example of Potential Green Insfrastructure Sites in the Wood-Pawcatuck Watershed within 1/2 mile of Impaired Surface Waters







Blue-shaded parcels have AB soils, development, SHWT depth > 6 feet, 1/2 mile to Water Quality Impairment, and Greater than 30 % Impervious Cover (IC) or IC > 1 Acre. Example of Potential Green Insfrastructure Sites in the Wood-Pawcatuck Watershed with Greater than 30 % IC or IC > 1 Acre





Attachment 2

Spreadsheet of Potential Green Infrastructure Retrofit Sites

\\private\dfs\ProjectData\P2011\1470\B10\Green Infrastructure Assessment\Deliverables\DraftMemo\FinalScreeningmemo\Final Memo\FinalScreeningmemo20161012_wbg.docx

Wood-Pawcatuck Potential Green Infrastructure Sites Preliminary Site Selection

Site ID#	Site Name	ADDRESS	Town	Lat I	ong	ACRES
21	Vin Gormley Trailhead Parking	24 Sanctuary Road	Charlestown	41.3802	-71.677	4.0
99	Burlingame Management Area	Burlingame State Park Rd	Charlestown	41.373	-71.693	4.9
.28	Shannock Baptist Church	1632 Shannock Road	Charlestown	41.446	-71.635	
129	St. Mary's Catholic Church	451-455 Carolina Back Road	Charlestown	41.453	-71.66	
217	, Burlingame Management Area	Burlingame State Park Rd	Charlestown	41.371	-71.692	
81	Charlestown Elementary School	363 Carolina Back Road	Charlestown	41.447	71.655	
	The Saint Kateria Tekakwitha Catholic Church	Exeter Rd	Exeter	41.545	-71.527	
3	Exeter Town Animal Shelter	165 S. County Trail	Exeter	41.55	71.529	
63	Adjacent to Animal Shelter	175 S. County Trail	Exeter	41.55	-71.531	
2	Unidentified building with parking lot	742 Ten Rod Road	Exeter	41.579	-71.584	
'3	Exeter Town Hall	675 Ten Rod Road	Exeter	41.585	-71.578	
D6	Parking Lot Near Lake	406 Arcadia Road	Exeter	41.558	-71.685	
91	Exeter Job Corps Center	162 Main Street	Exeter	41.552	-71.544	
93	Phoenix House and Office Buildings	Gaspee Road and Main Street	Exeter	41.552	-71.542	
94	Exeter Public Library	762 Ten Rod Road	Exeter	41.585	-71.586	
27	Hopkinton Recreation Department	188 Main Street	Hopkinton	41.422	-71.788	
32	Unidentified building and parking lot and adjacent vacant land	35 Frontier Road	Hopkinton	41.422	-71.785	
5	Wood River Health Services	823 Main Street	Hopkinton	41.445	-71.737	
2	Chariho Little League	1118 Main Street	Hopkinton	41.489	-71.706	
	Wyoming Dam Fishing Access	Bridge Street	Hopkinton	41.515	-71.703	
2	Babcock Presbyterian Church	25 Maxson Street	Hopkinton	41.313	-71.794	
	U.S. Post Office	131 Main Street		41.415	-71.794	
1 5		8 Church Street	Hopkinton			
	Seventh Day Baptist Church		Hopkinton	41.418	-71.791	
	Ashaway Volunteer Fire Association	213 Main St	Hopkinton	43.198	-71.667	
	Unidentified building with parking lot	72 High Street	Hopkinton	41.431	-71.792	
	Trinity Lutheran Church	Corner of Rte 216 and Wellstown Rd	Hopkinton	41.435	-71.795	
	Hope Valley - Wyoming Fire District	996 Main St	Hopkinton	41.507	-71.716	
5	Langworthy Public Library	24 Spring Street	Hopkinton	41.509	-71.718	
3	Abandoned Parking Lot	N. of Hope Valley Autobody (894 Main S	•	41.499	-71.725	
)	Ashaway Elementary School	12A Hillside Avenue	Hopkinton	41.42	-71.79	
7 o	Wood River Preschool/Hope Valley Elementary	1059 Main Street	Hopkinton	41.51	-71.712	
8	DPW Facility	51 Bank Street	Hopkinton	41.517	-71.707	
0	North of Wood Pawcatuck Watershed Assoication	260 Arcadia Road	Hopkinton	41.546	-71.695	
5	Wheeler High/Middle School	298 Norwich-Westerly Road	North Stonington	41.439	-71.886	
4	North Stonington Superintendent Elementary School	313-317 Norwich-Westerly Road	North Stonington	41.439	-71.887	
1	West Vine Street School	25 West Vine Street	Pawcatuck	41.386	-71.842	
6	Richmond Carolina Fire District	203 Richmond Town House Road	Richmond	41.472	-71.664	
2	Chariho Regional H.S/M.S and Career Center	453 Switch Road	Richmond	41.449	-71.696	
7	Richmond Police Department	1168 Main Street	Richmond	41.515	-71.699	
9	Rhode Island State Police	54 Nooseneck Hill Road	Richmond	41.52	-71.694	
86	Richmond Town Hall and Elementary School	5 Richmond Townhouse	Richmond	41.499	-71.661	
34	Boss Arena	1 Keaney Road	South Kingstown	41.484	-71.538	
37	Great Swamp Management Area	160-170 Great Neck Road	South Kingstown	41.474	-71.575	
12	West Kingston Fire Department	390 Fairgrounds Road	South Kingstown	41.487	-71.559	
43	West Kingstown Baptist Church	263 Waites Corner Road	South Kingstown	41.49	-71.557	2.0

Wood-Pawcatuck Potential Green Infrastructure Sites Preliminary Site Selection

Site ID#	Site Name	Address	Town	Lat	Long	Acres
229	Tuckertown Park	101 Tuckertown Park Drive	South Kingstown	41.426	-73.555	24.4
239	Ryan Center-Meade Stadium	West Alumni Avenue	South Kingstown	41.488	-71.536	96.2
139	J & D's West Kingston Services/ Courthouse Center for the Arts	3481 Kingstown Road	South Kingstown	41.484	-71.555	3.1
152	South Kingstown Nursing and Rehab	2115 South County Trail	South Kingstown	41.503	-71.563	4.3
283	West Kingston Elementary School	3119 Ministerial Road	South Kingstown	41.479	-71.551	7.7
285	U.R.I.	210 Flagg Road	South Kingstown	41.492	-71.535	273.8
183	West Broad Street School	W. Broad Street	Stonington	41.377	-71.838	2.8
201	Unidentified parking Lot	350 Liberty Street	Stonington	41.398	-71.846	5.7
179	Unidentified building and parking lot	302 Victory Highway	West Greenwich	41.639	-71.697	0.6
92	Watch Hill Fire Department	222 Watch Hill Rd	Westerly	41.317	-71.848	0.9
93	U.S. Post Office	110 Tom Harvey Road	Westerly	41.342	-71.816	3.5
95	Westerly Fire Department	180 Beach Street	Westerly	41.353	-71.826	1.0
98	Unidentified Church	45 Elm Street	Westerly	41.372	-71.829	3.7
101	Pilgrim Baptist Church- Central Nursery School	16 Elm Street	Westerly	41.375	71.827	2.0
102	Grace United Methodist Church	10 Park Ave	Westerly	41.379	-71.824	1.0
103	Immaculate Conception Catholic Church	111 High Street	Westerly	41.381	-71.825	2.5
L07	Westerly Town Water Department	68 White Rock Road	Westerly	41.398	-71.843	4.3
108	Bradford School	15 Church Street	Westerly	41.398	-71.895	4.5
109	Westerly Packing	15 Springbrook Road	Westerly	41.997	-71.836	2.0
10	Springbrook Elementary School	39 Springbrook Road	Westerly	41.401	71.829	3.7
.11	Bradford Social Club	2 Bowling Lane	Westerly	41.404	-71.749	0.6
.99	Westerly State Airport	62 Airport Road	Westerly	41.357	-71.811	196.3
211	Rotary Park	near 90 Airport Road	Westerly	41.346	-71.814	5.7
216	Public Complex	99 Wilson Street	Westerly	41.367	-71.815	13.9
221	Area adjacent to Ocean Community YMCA	77-85 High Street	Westerly	41.379	-71.828	13.7
223	Craig Field Recreation Complex	Mountain Avenue	Westerly	41.386	-71.822	6.6
224	Large Parking Lot for Football Field	60 Old Hopkinton Road	Westerly	41.387	-71.807	5.3
271	The Westerly Hospital	25 Wells Street	Westerly	41.362	-71.825	15.1
272	Westerly Senior Citizens Center and State Street School	35 State Street	Westerly	41.365	-71.824	8.8
273	St. Pius X School	32 Elm Street	Westerly	41.373	-71.828	6.7
274	Westerly High School	23 Ward Avenue	Westerly	41.375	-71.818	20.5
275	Westerly Town Hall	45 Broad Street	Westerly	41.376	-71829	6.0
276	93 Tower Street	93 Tower Street	Westerly	41.379	-71.814	5.9
277	Westerly Health Center	280 High Street	Westerly	41.396	-71.822	5.1
278	Possible Bus Depot	8 Springbrook Road	Westerly	41.401	-71.838	5.4

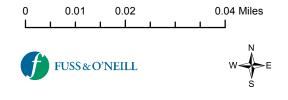


Attachment 3

Aerial Photographs of Selected Retrofit Sites

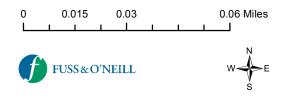
The Saint Kateria Tekakwitha Catholic Church Exeter Road Exeter, RI



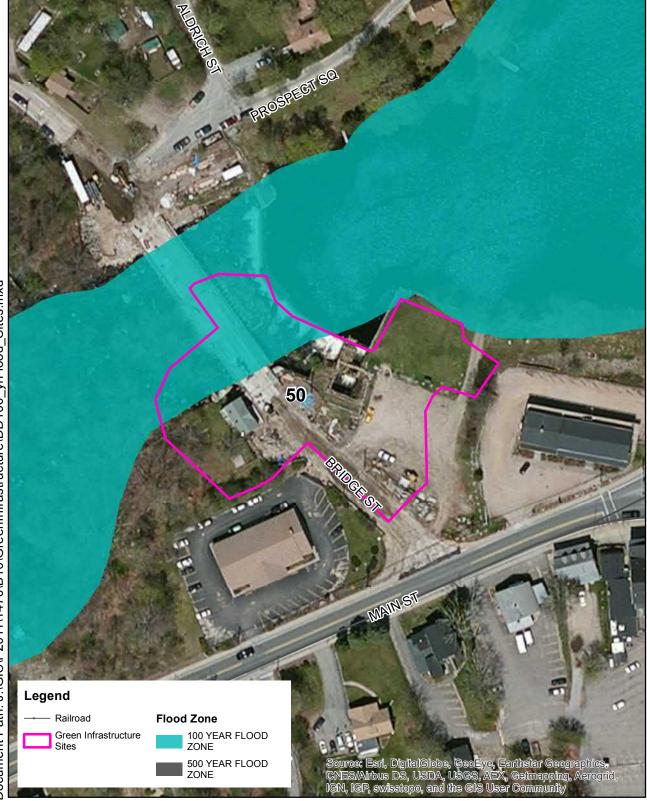


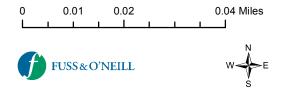
Vin Gormley Trailhead Parking 24 Sanctuary Road Charlestown, RI



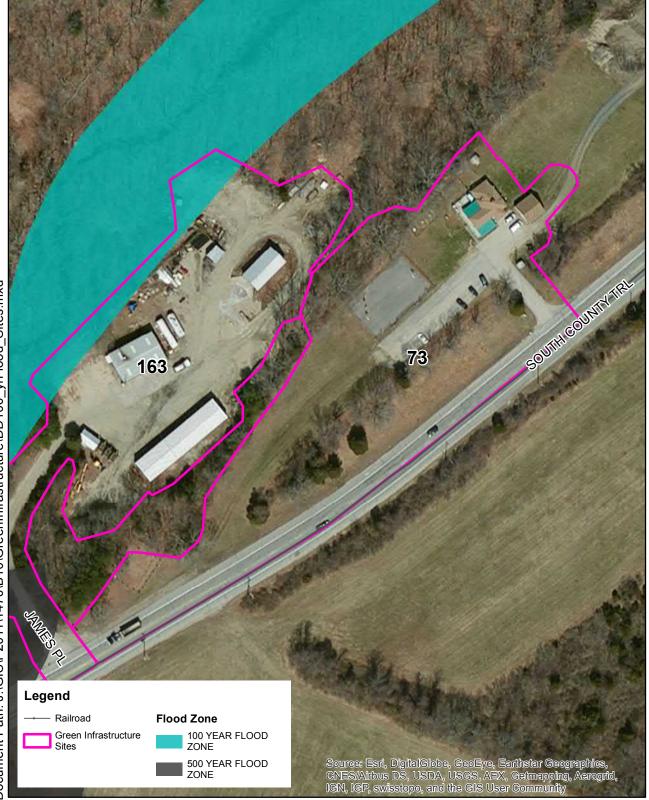


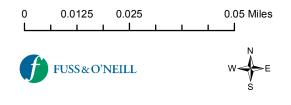
Wyoming Dam Fishing Access Bridge Street Hopkinton, RI





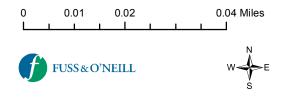
Exeter Town Animal Shelter 165 S. County Trail Exeter, RI



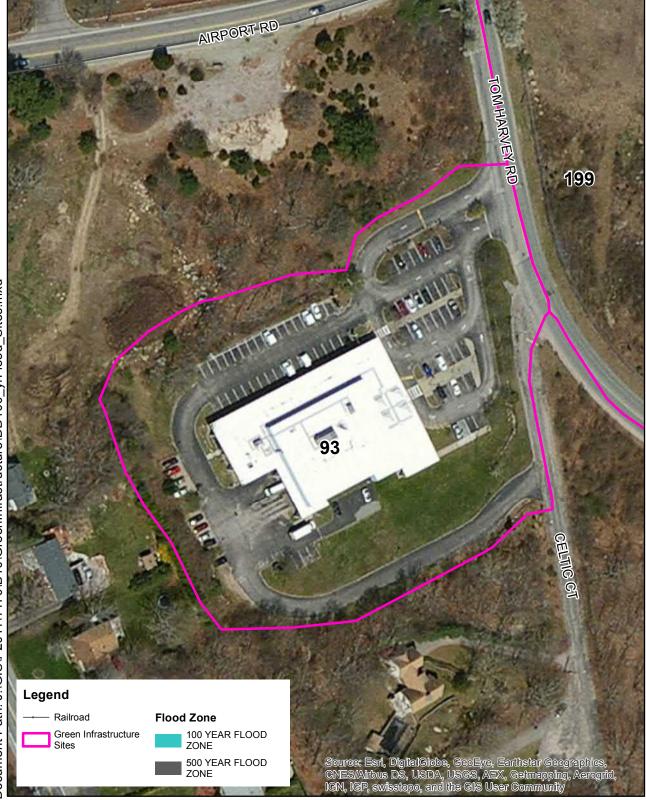


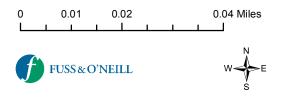
Watch Hill Fire Department 222 Watch Hill Road Westerly, RI





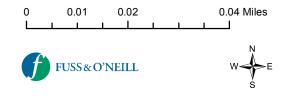
U.S. Post Office 110 Town Harvey Road Westerly, RI



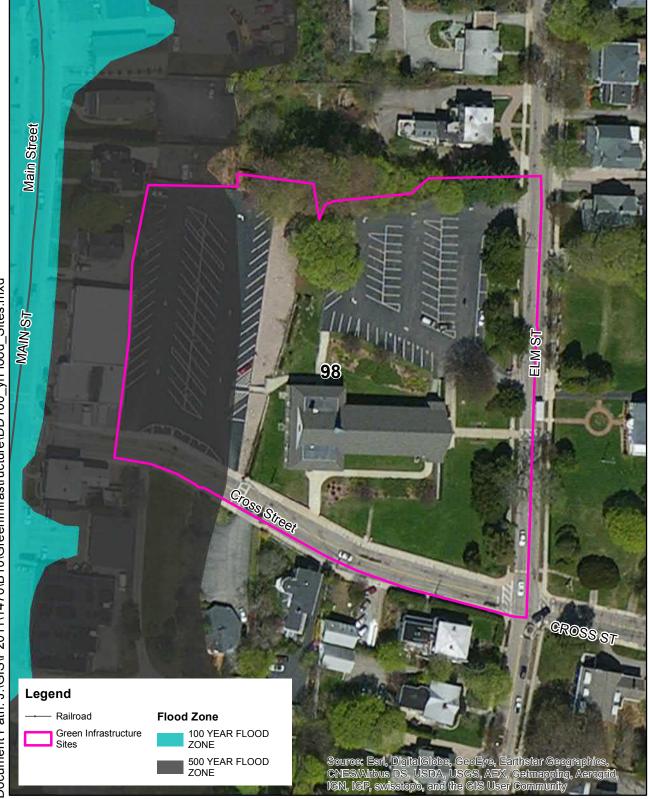


Westerly Fire Department 180 Beach Street Westerly, RI

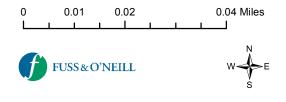




Church 45 Elm Street Westerly, RI

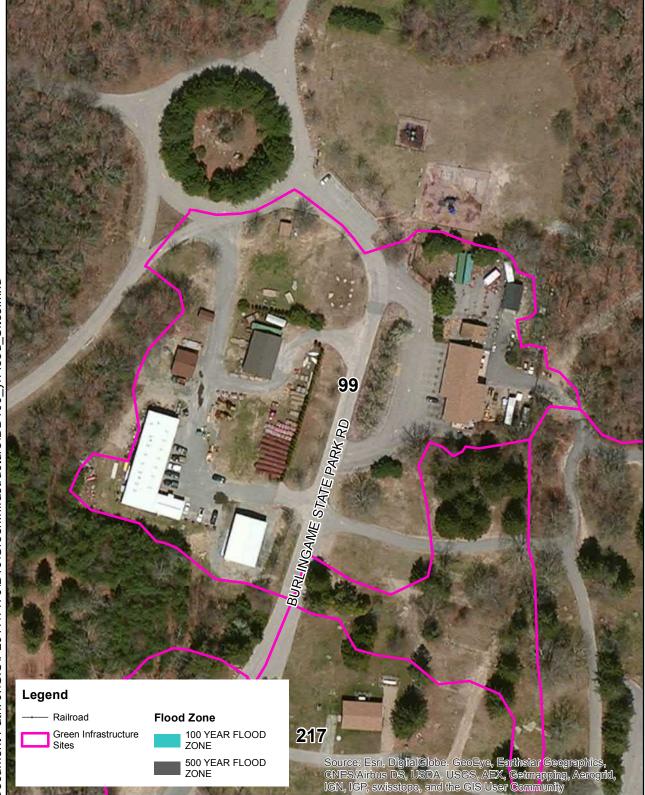


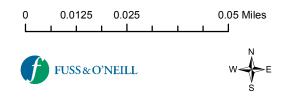
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



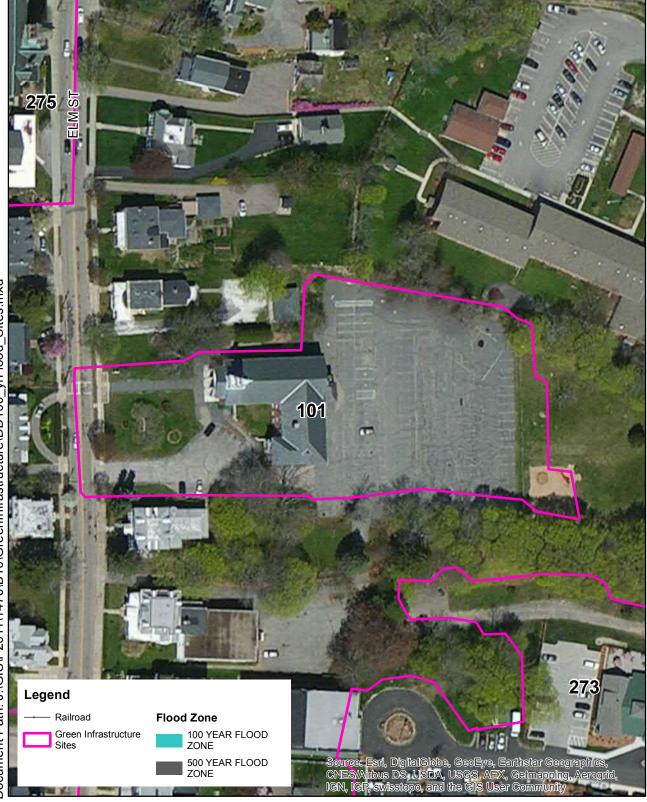
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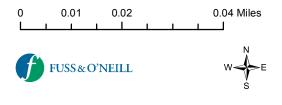
Burlingame Management Area Burlingame State Park Rd/ Legiontown Road Charlestown, RI





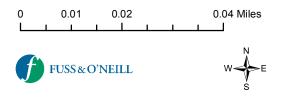
Pilgrim Baptist Church- Central Nursery School 16 Elm Street Westerly, RI



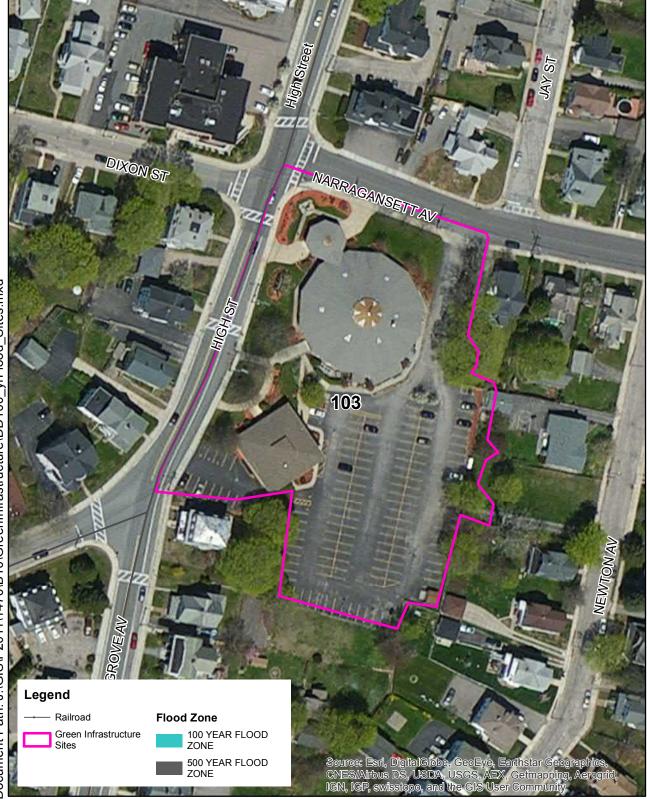


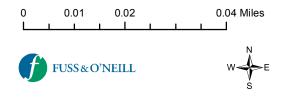
Grace United Methodist Church 10 Park Avenue Westerly, RI





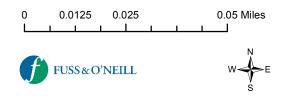
Immaculate Conception Catholic Church 111 High Street Westerly, RI



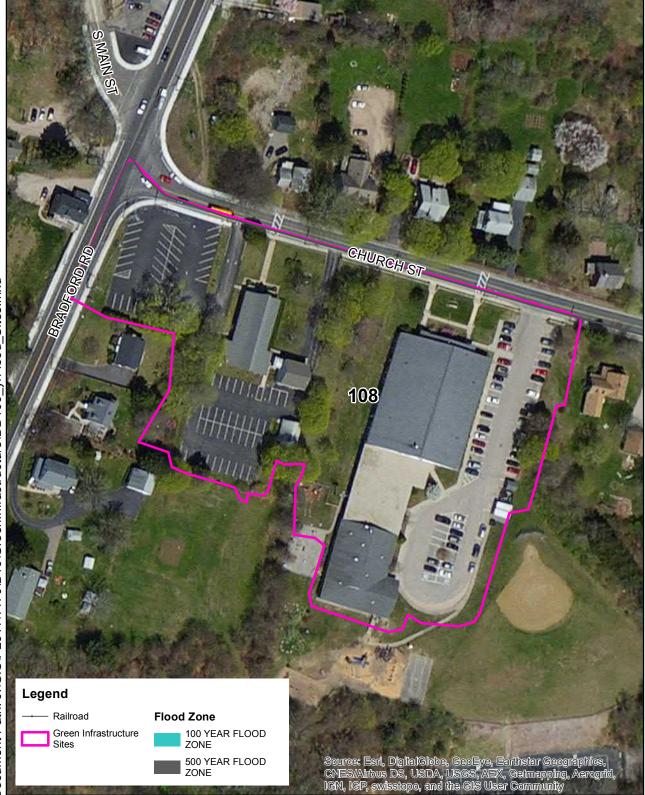


Westerly Town Water Department 68 White Rock Road Westerly, RI





Bradford School 15 Church Street Westerly, RI



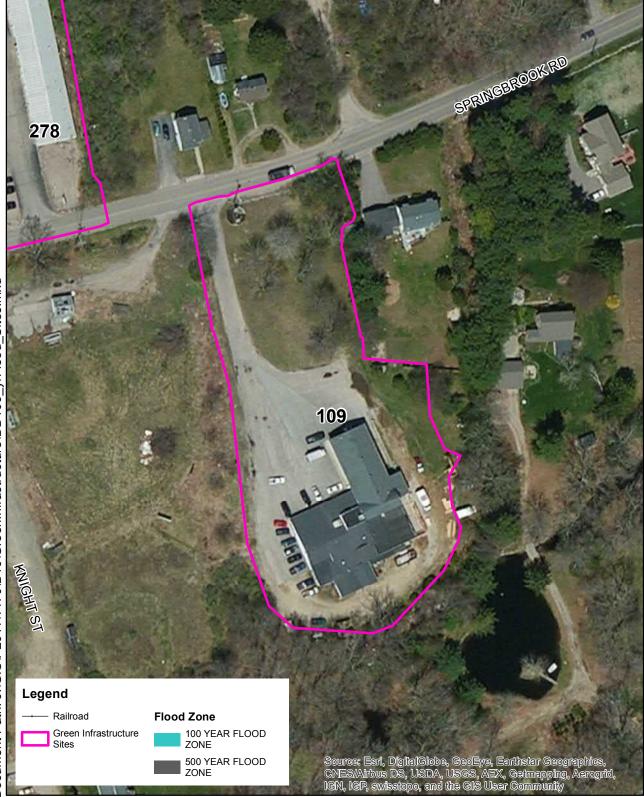
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

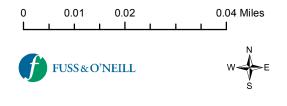
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FUSS&O'NEILL

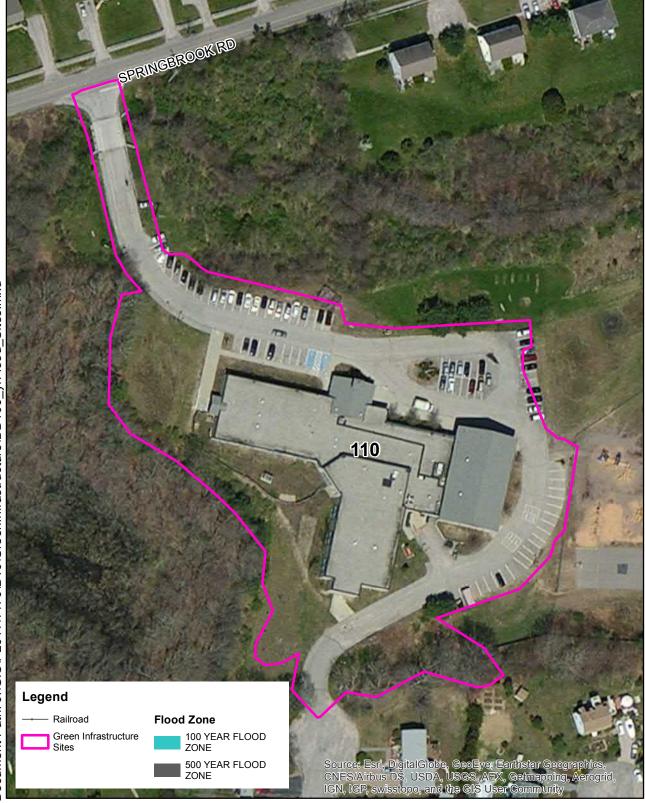


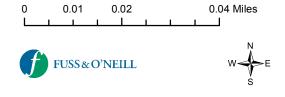
Westerly Packing 15 Springbrook Road Westerly, RI





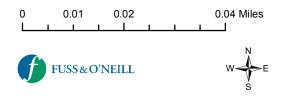
Springbrook Elementary School 39 Springbrook Road Westerly, RI





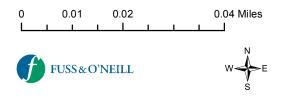
Bradford Social Club 2 Bowling Lane Westerly, RI





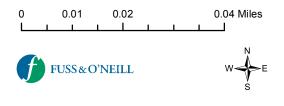
Babcock Presbyterian Church 25 Maxson Street Hopkinton, RI



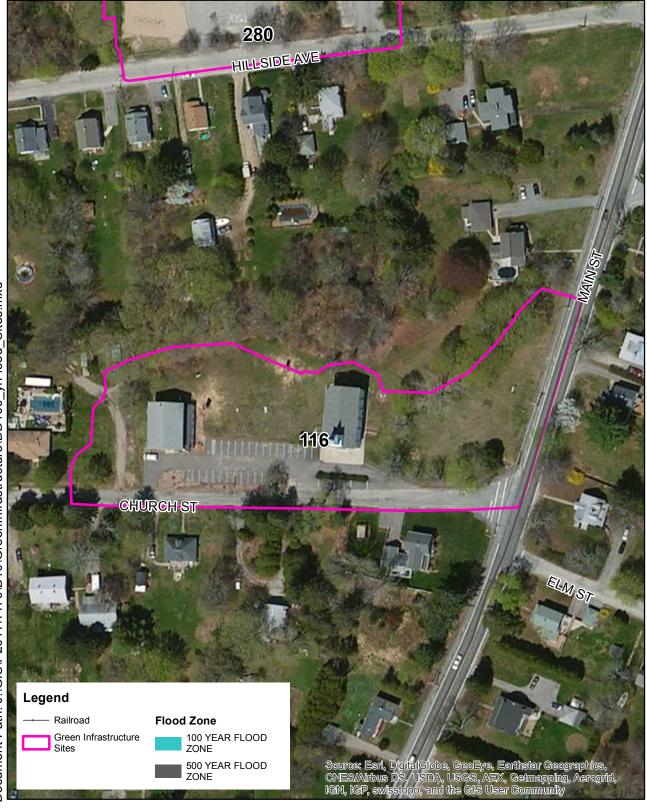


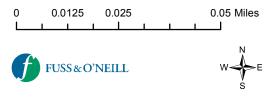
U.S. Post Office 131 Main Street Hopkinton, RI





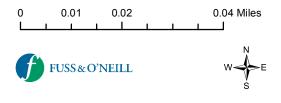
Seventh Day Baptist Church 8 Church Street Hopkinton, RI



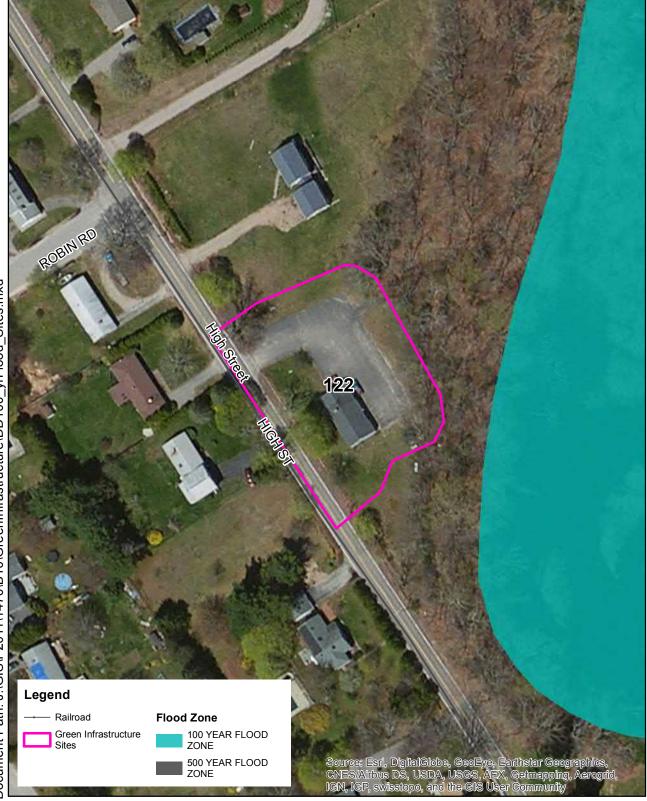


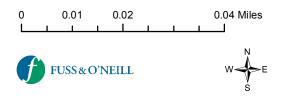
Ashaway Volunteer Fire Association 213 Main Street Hopkinton, RI



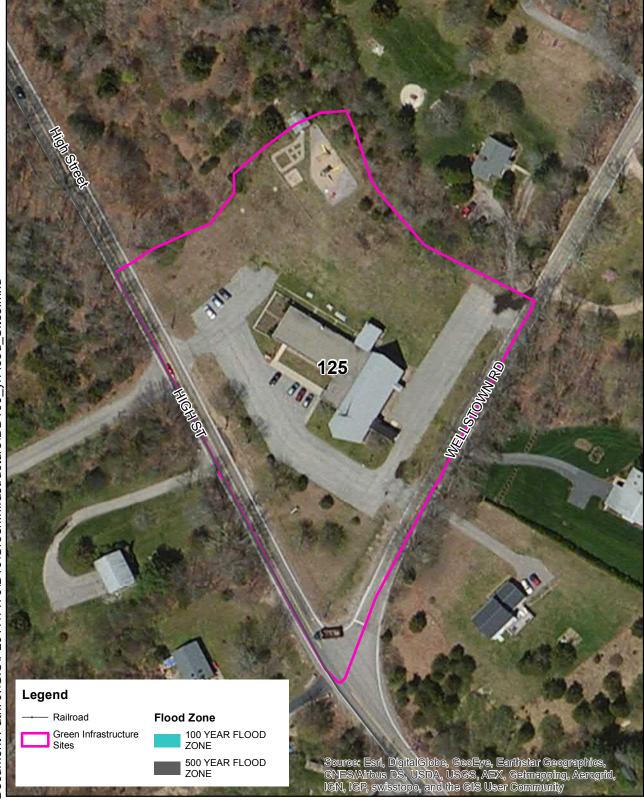


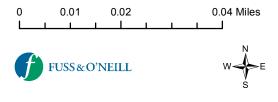
Small Building with parking lot 72 High Street Hopkinton, RI





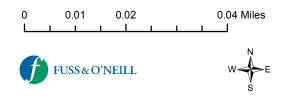
Trinity Lutheran Church Corner of Rte 116 and Wellstown Road Hopkinton, RI



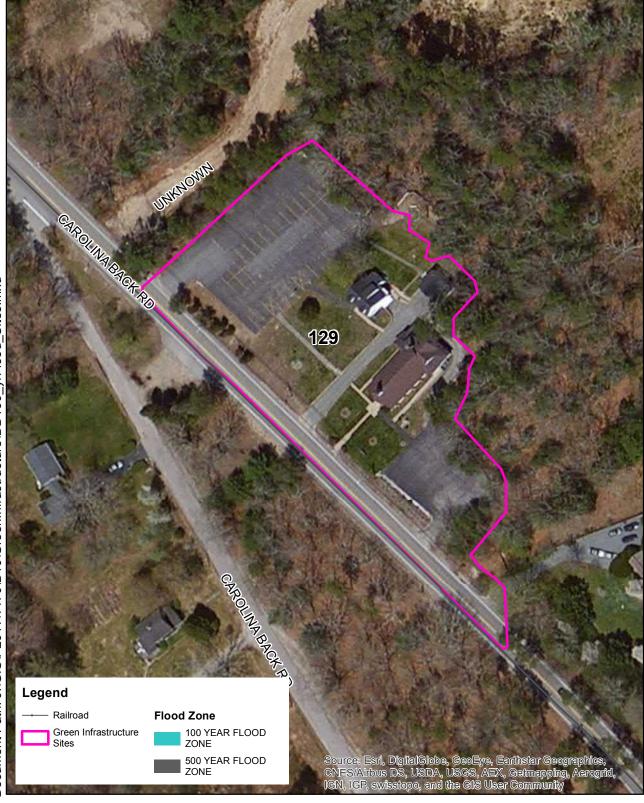


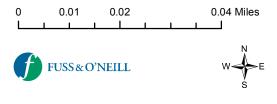
Shannock Baptist Church 1632 Shannock Road Charlestown, RI





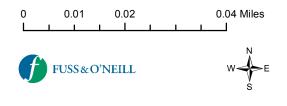
St. Mary's Catholic Church 451-455 Carolina Back Road Charlestown, RI





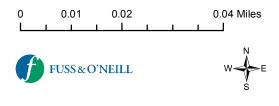
Hopkinton Town Hall 1 Town House Road Hopkinton, RI





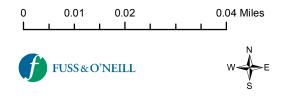
Richmond Carolina Fire District 203 Richmond Town House Road Richmond, RI





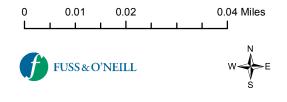
Great Swamp Management Area 160- 170 Great Neck Road South Kingstown, RI





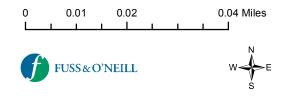
J & D West Kingstown Services/ Courthouse Center for the Arts 3481 Kingstown Road South Kingstown, RI





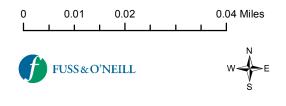
West Kingston Fire Department 390 Fairgrounds Road South Kingstown, RI





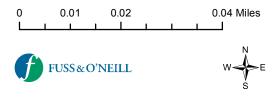
West Kingston Baptist Church 263 Waites Corner Road South Kingstown, RI





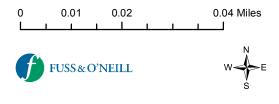
Wood River Health Services 823 Main Street Hopkinton, RI



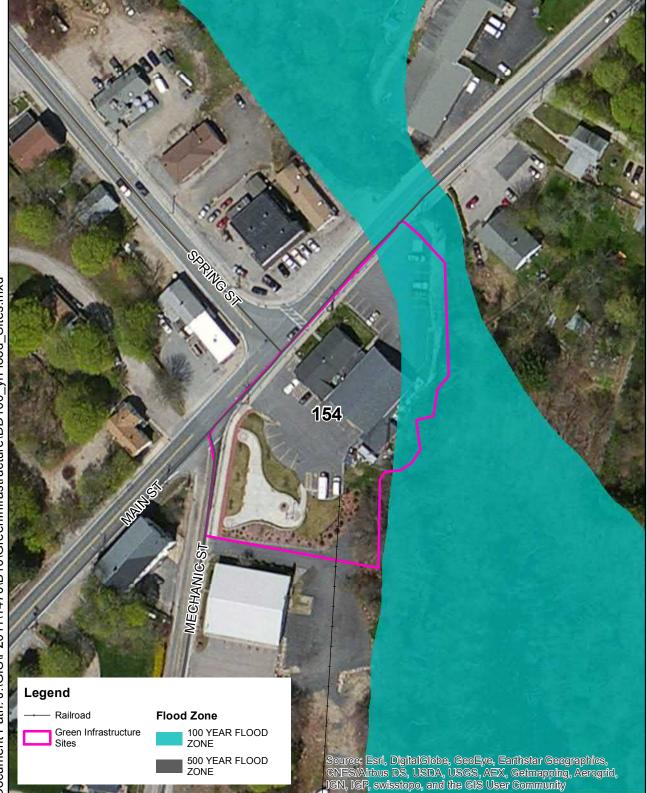


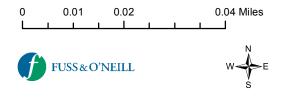
South Kingstown Nursing and Rehab 2115 South County Trail South Kingstown, RI





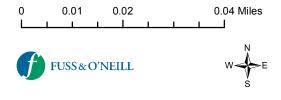
Hope Valley- Wyoming Fire District 996 Main Street Hopkinton, RI





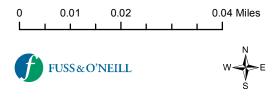
Langworthy Public Library 24 Spring Street Hopkinton, RI



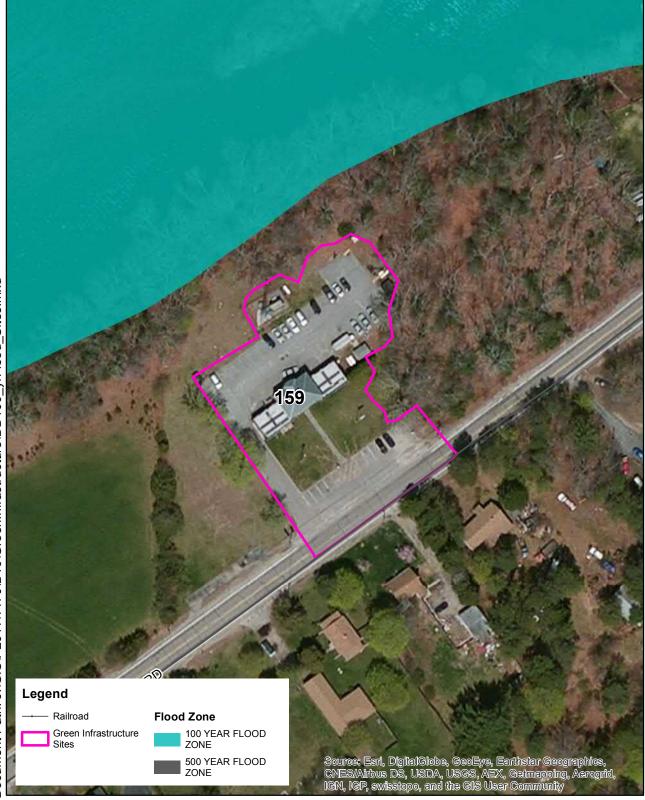


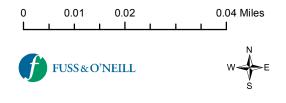
Richmond Police Department 1168 Main Street Richmond, RI

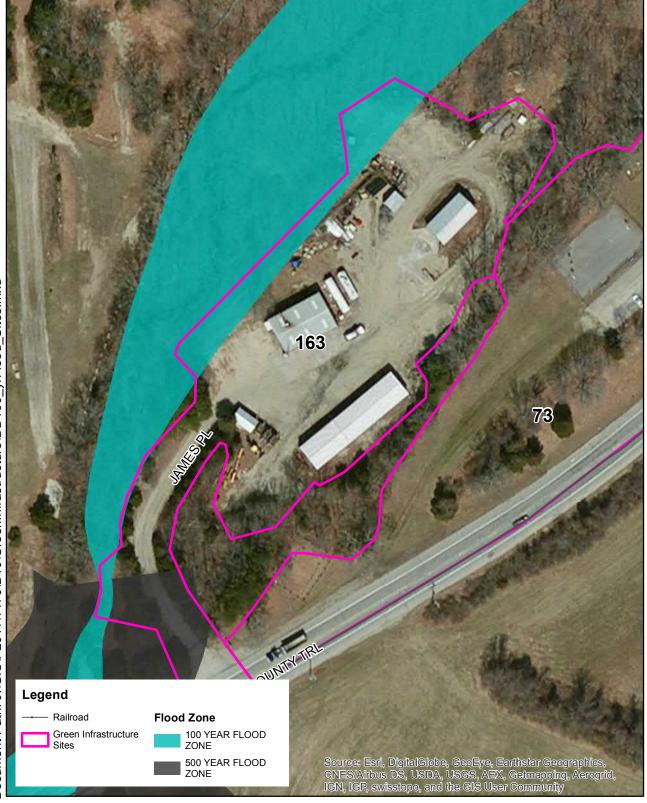


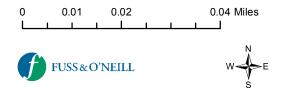


Rhode Island State Police 54 Nooseneck Hill Road Richmond, RI



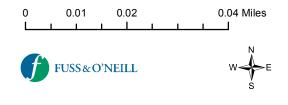






Building with parking Lot 742 Ten Rod Road Exeter, RI

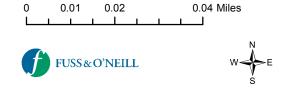




Exeter Town Hall 675 Ten Rod Road Exeter, RI



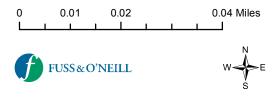
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



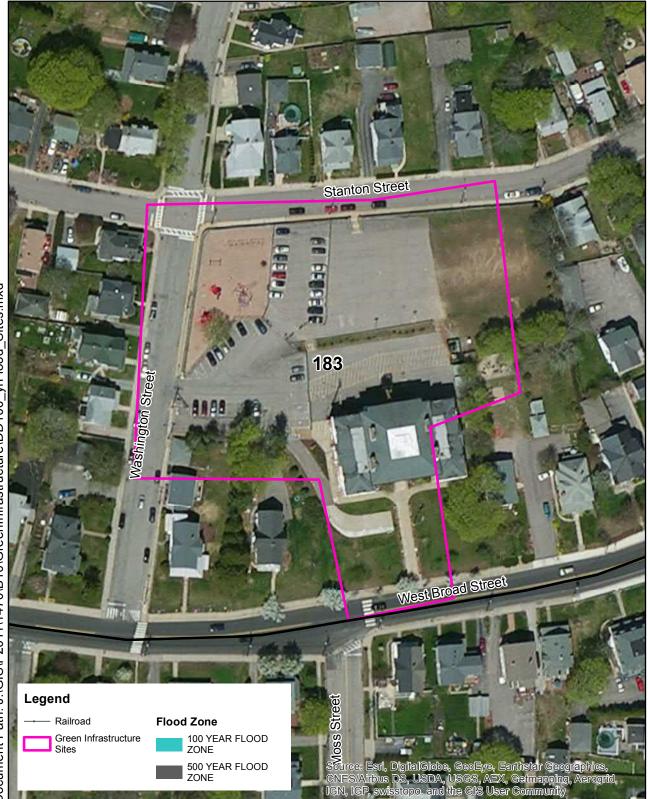
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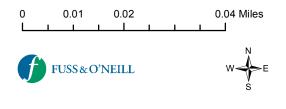
Small Building with Parking Lot 302 Victory Highway West Greenwich, RI





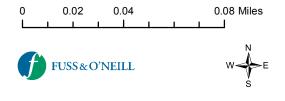
West Broad Street School W. Broad Street Stonington, RI





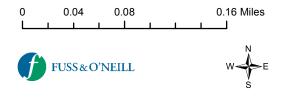
Wheeler High/middle School 298 Norwich-Westerly Road North Stonington, CT



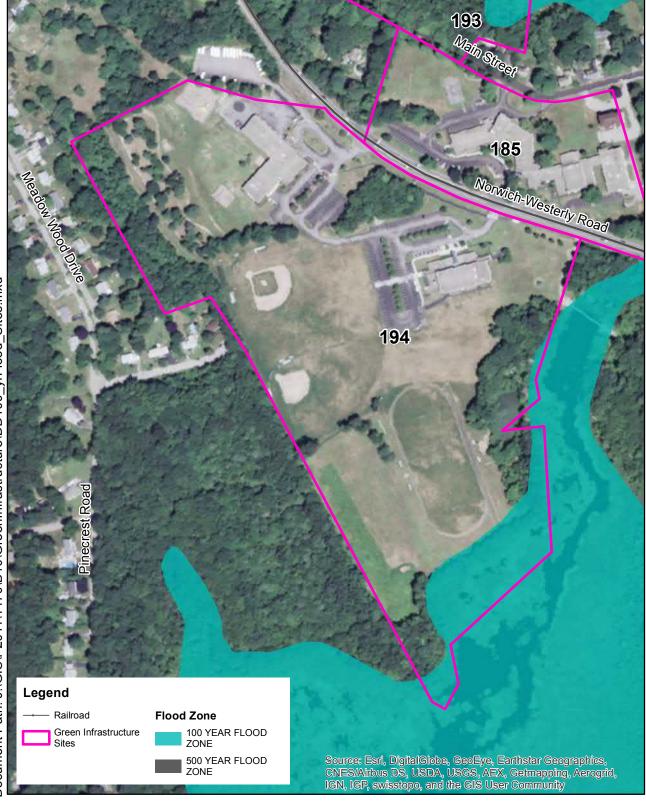


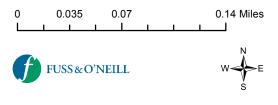
West Vine Street School 25 West Vine Street Stonington, RI



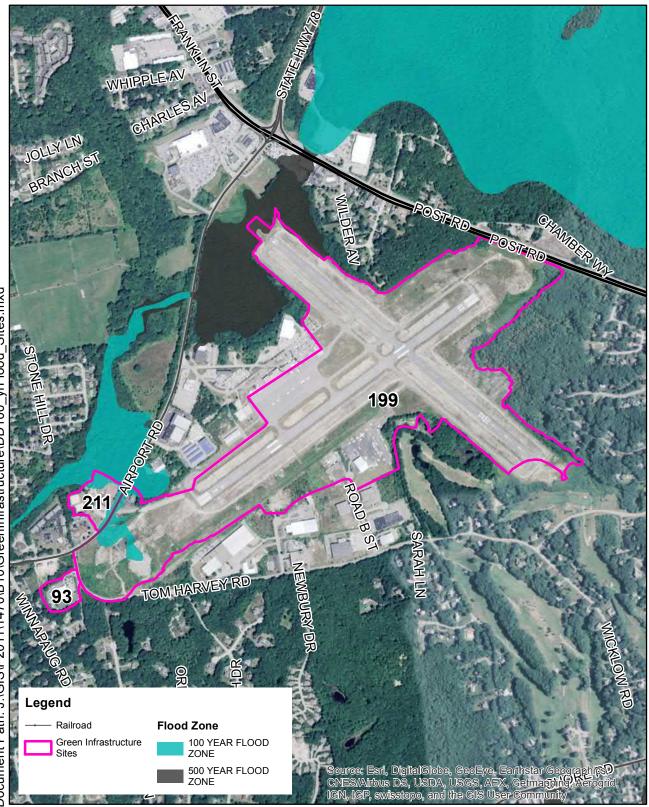


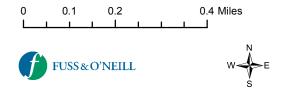
Elementary School 313-317 Norwich-Westerly Road North Stonington, CT





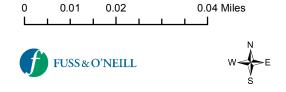
Westerly State Airport 62 Airport Road Westerly, RI



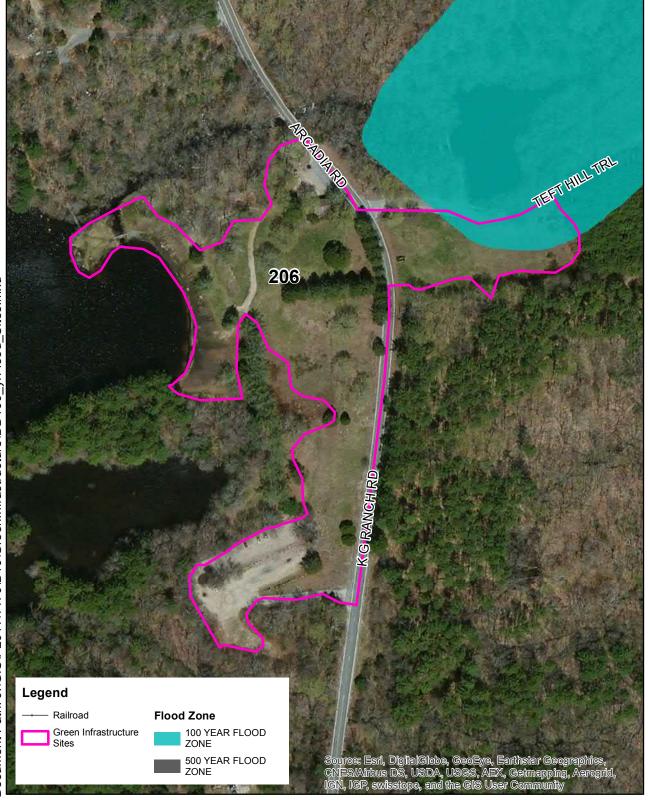


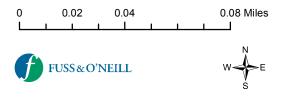
Parking lot 350 Liberty Street Stonington, RI



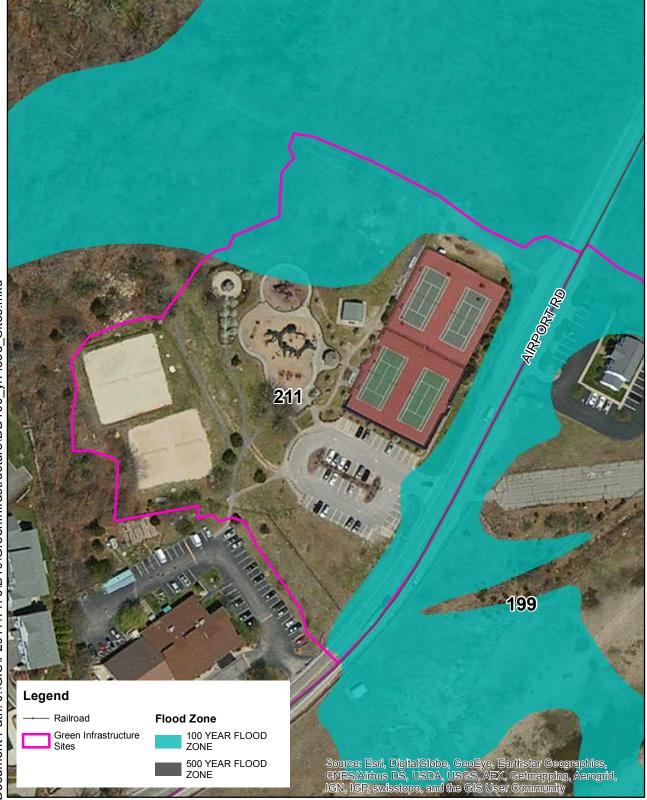


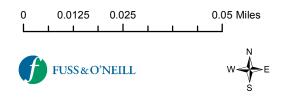
Parking lot near lake 406 Arcadia Road Exeter, RI





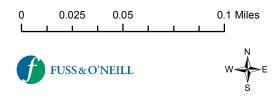
Rotary Park (Tennis Courts, etc.) Near 90 Airport Road Westerly, RI



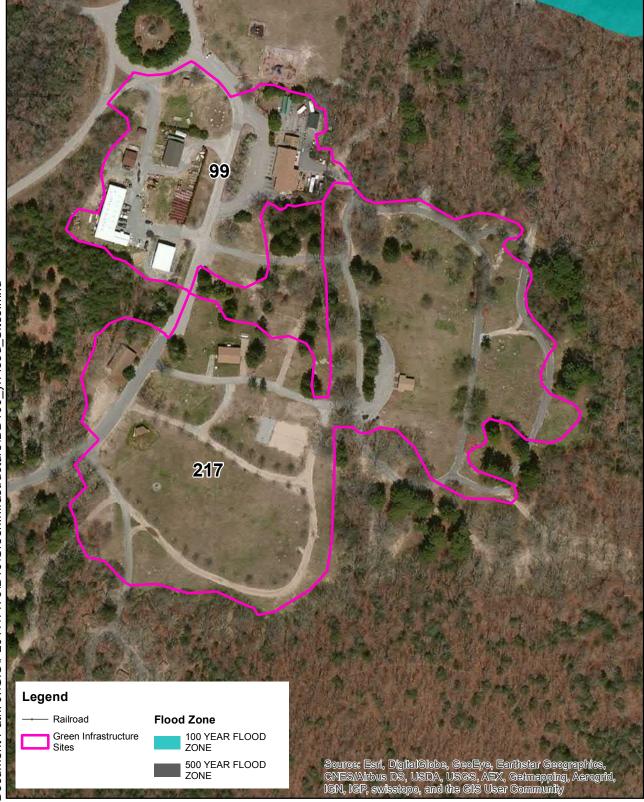


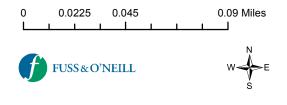
Baseball Fields/ parking lot at Public Complex 99 Wilson Street Westerly, RI



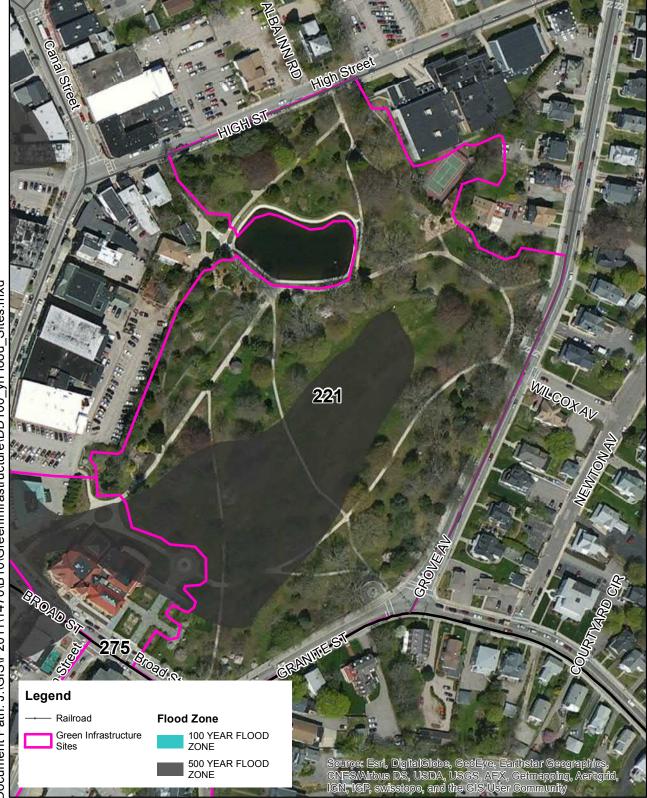


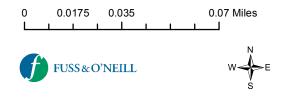
Burlingame Management Area Burlingame State Park Road/ Legiontown Road Charlestown, RI



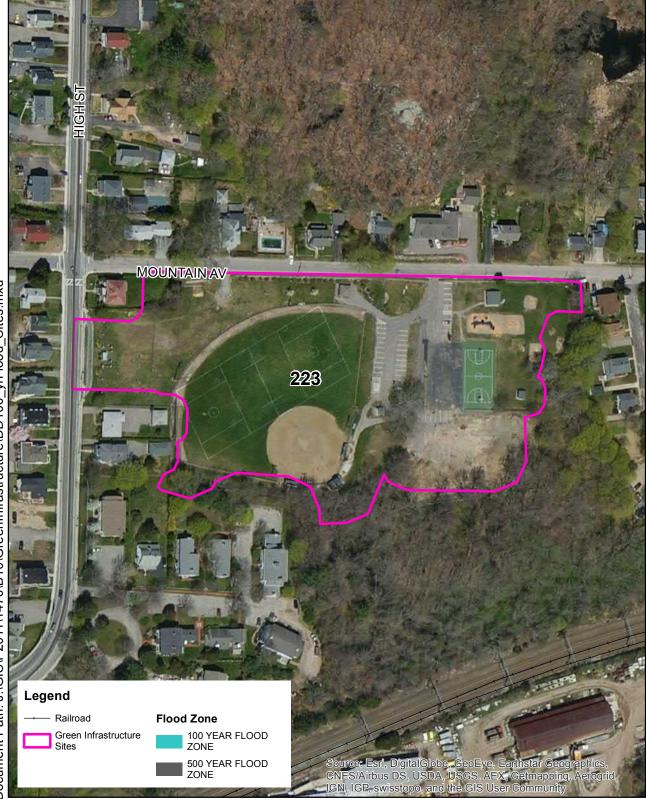


Park Area near Ocean Community YMCA 77-85 High Street Westerly, RI

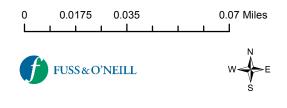




Craig Field Recreation Complex Mountain Avenue Westerly, RI



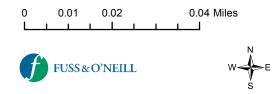
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



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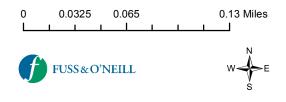
Large Parking Lot for Football Field 60 Old Hopkinton Road Westerly, RI





Hopkinton Recreation Department 188 Main Street Hopkinton, RI

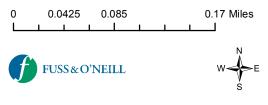




Tuckertown Park 1010 Tuckertown Park Drive South Kingstown, RI



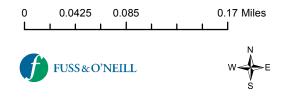
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



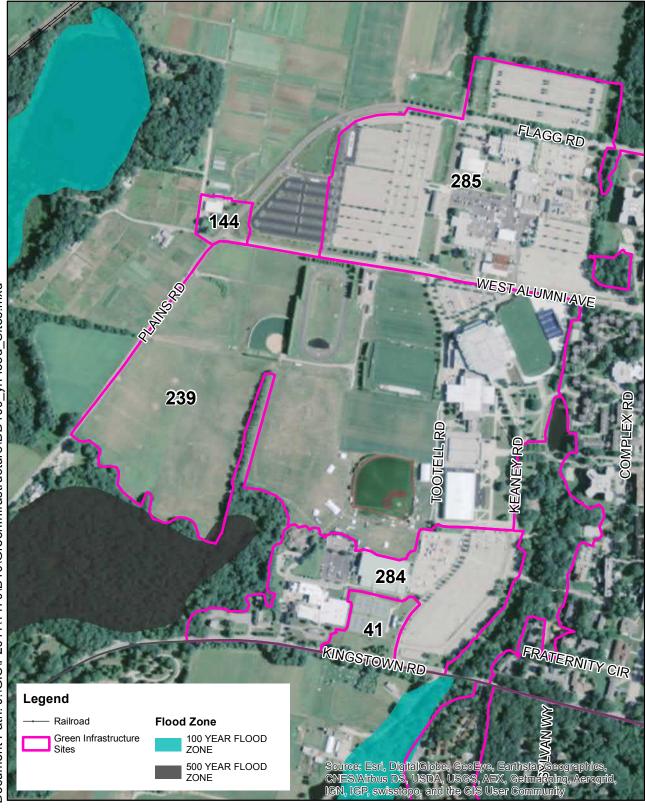
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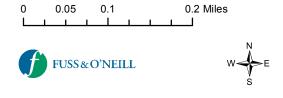
Pavillion Steak House/ Open Space? 35 Frontier Road Hopkinton, RI





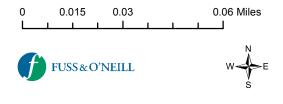
Ryan Center/ Meade Stadium (URI) West Alumni Avenue South Kingstown, RI





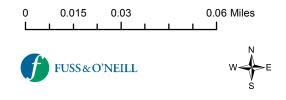
Abandoned parking lot 894 Main Street (Rte 3/ Nooseneck Hill Road) Hopkinton, RI





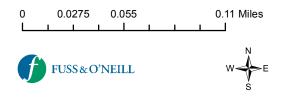
Chariho Little League 1118 Main Street Hopkinton, RI



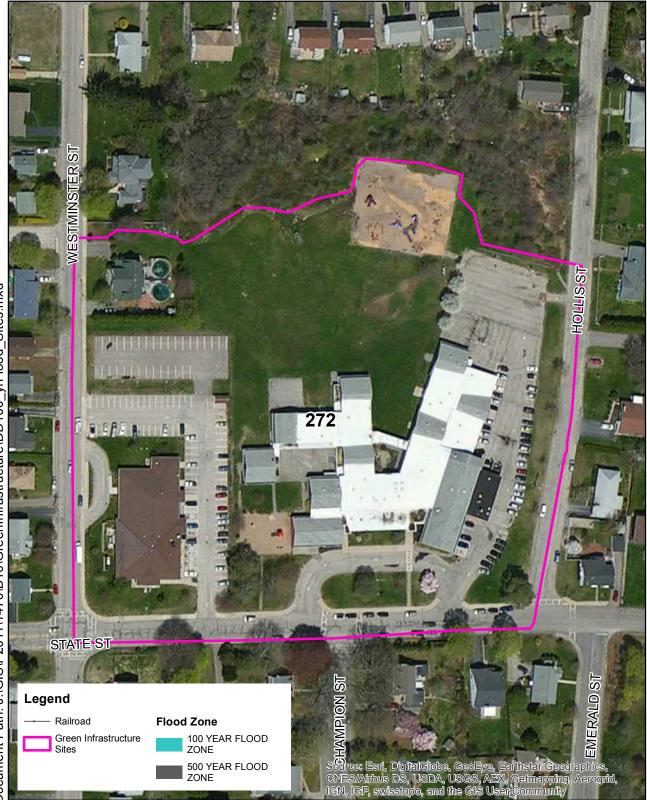


The Westerly Hospital 25 Wells Street Westerly, RI

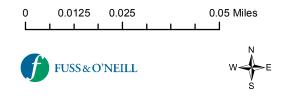




Westerly Senior Citizens Center and State Street School 35 State Street Westerly, RI

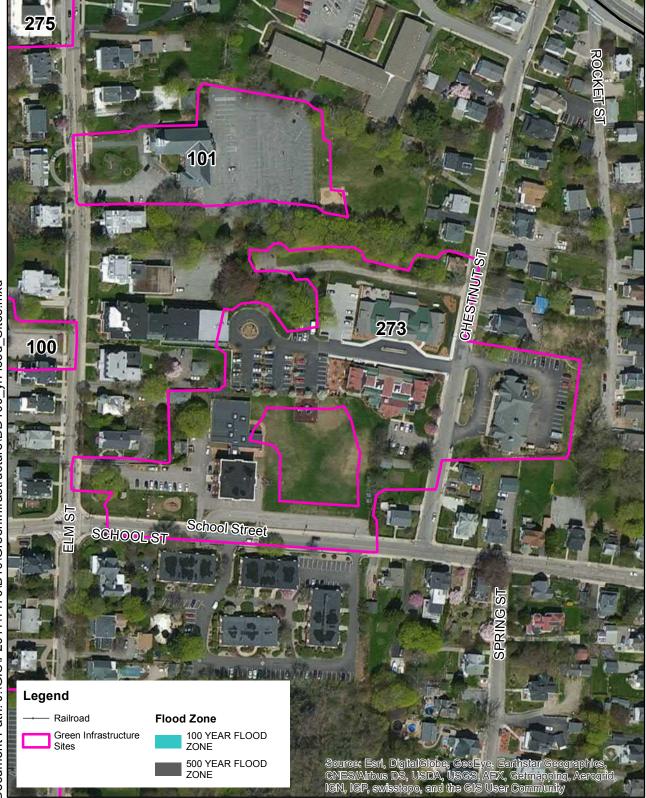


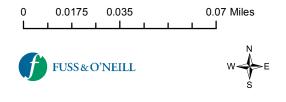
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



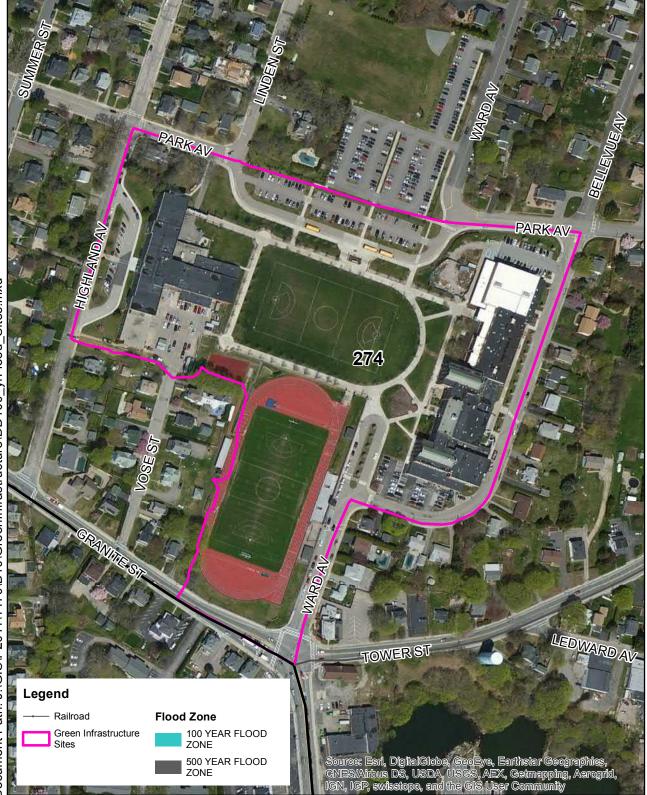
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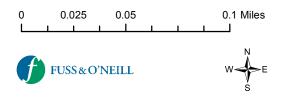
St. Pius X School 32 Elm Street Westerly, RI



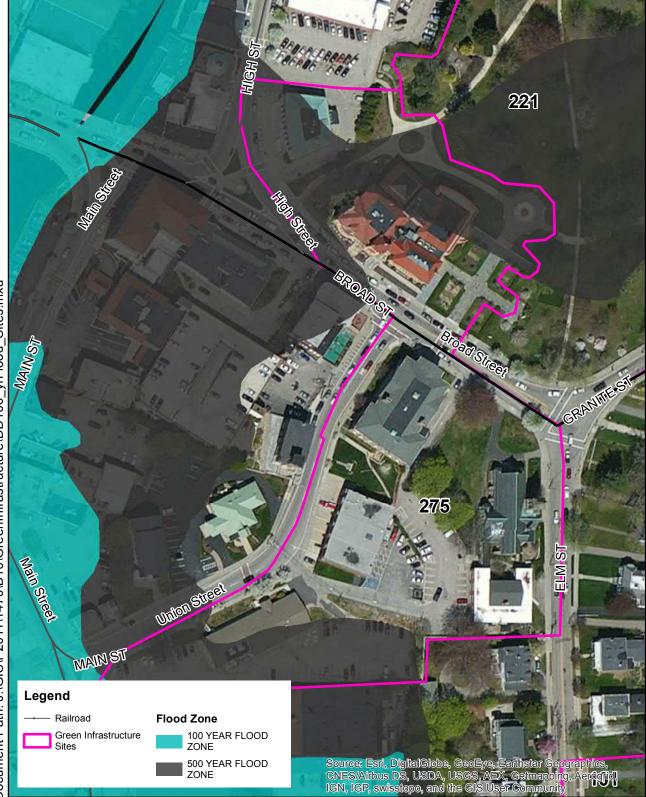


Westerly High School 23 Ward Avenue Westerly, RI

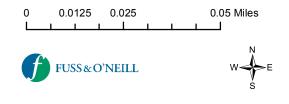




Westerly Town Hall 45 Broad Street Westerly, RI



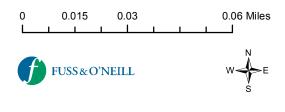
Potential Green Infrastructure Sites in the Wood-Pawcatuck Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



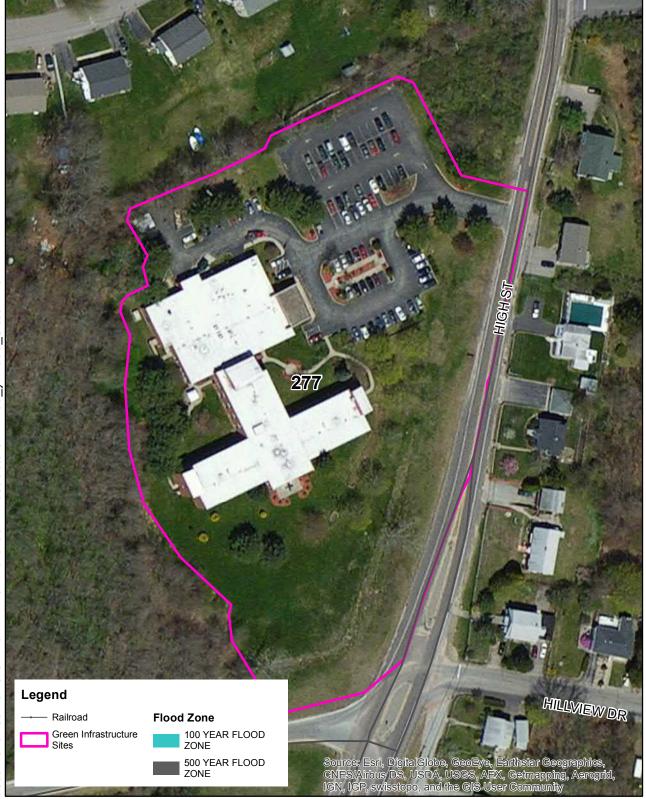
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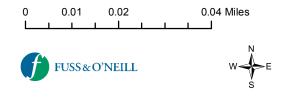
Tower Street School Community Center 93 Tower Street Westerly, RI



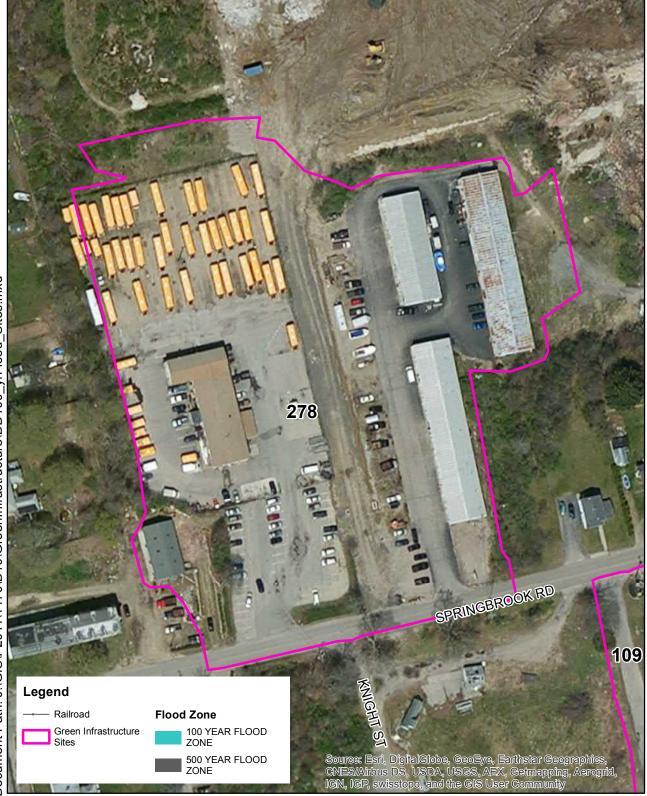


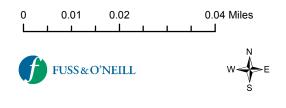
Westerly Health Center 280 High Street Westerly, RI



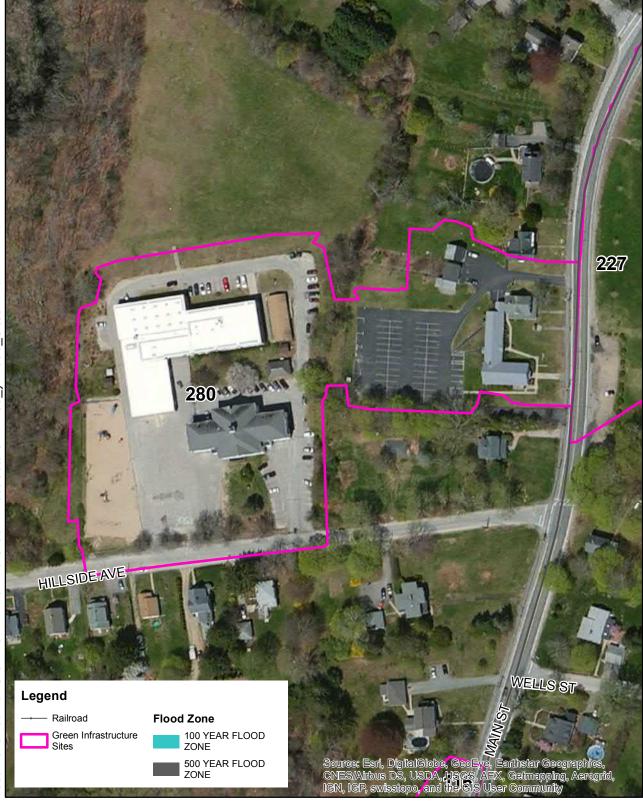


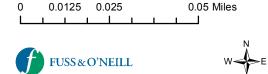
Bus Depot- Unknown 8 Springbrook Road Westerly, RI



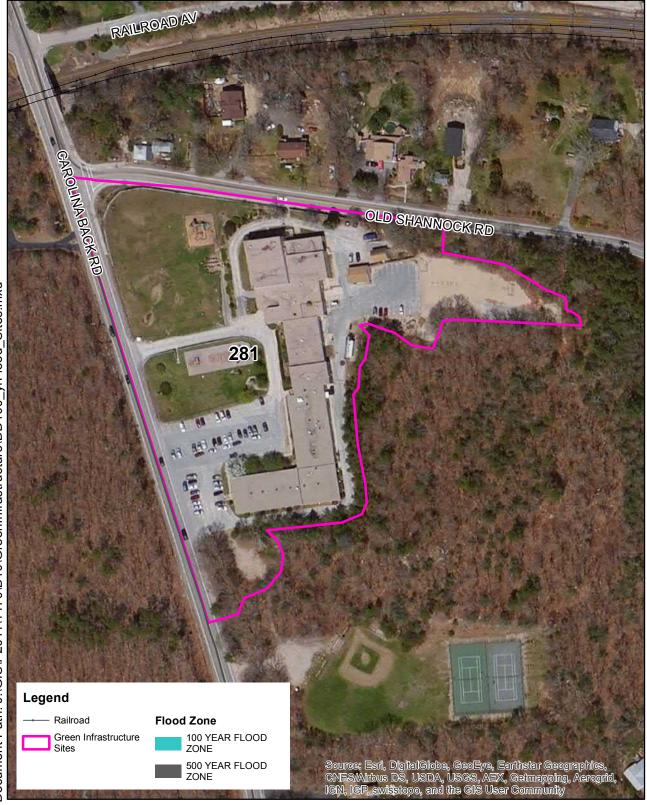


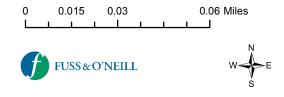
Ashaway Elementary School 12A Hillside Avenue Hopkinton, RI



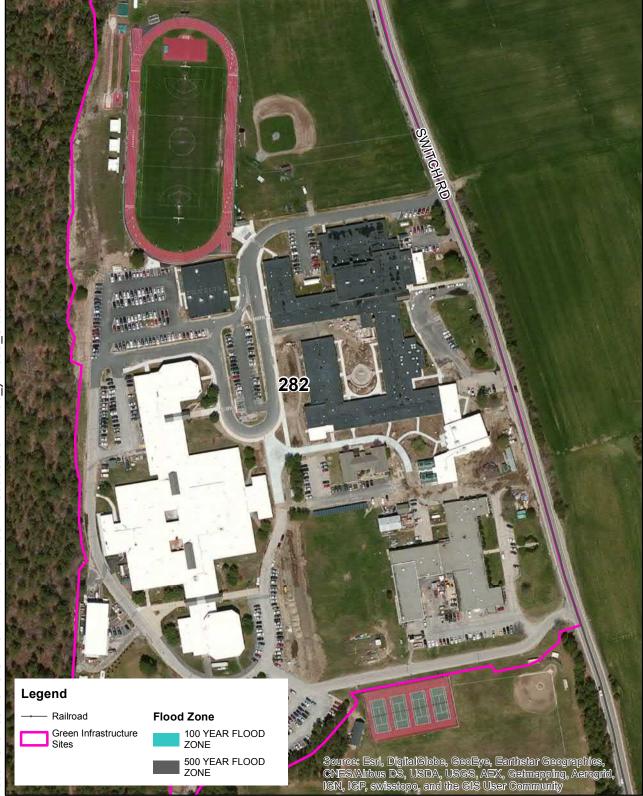


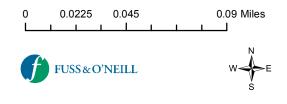
Charlestown Elementary School 363 Carolina Back Road Charlestown, RI





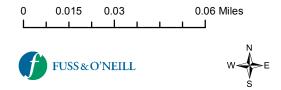
Chariho Regional High School/Middle School/ Tech Center 453 Switch Road Richmond, RI



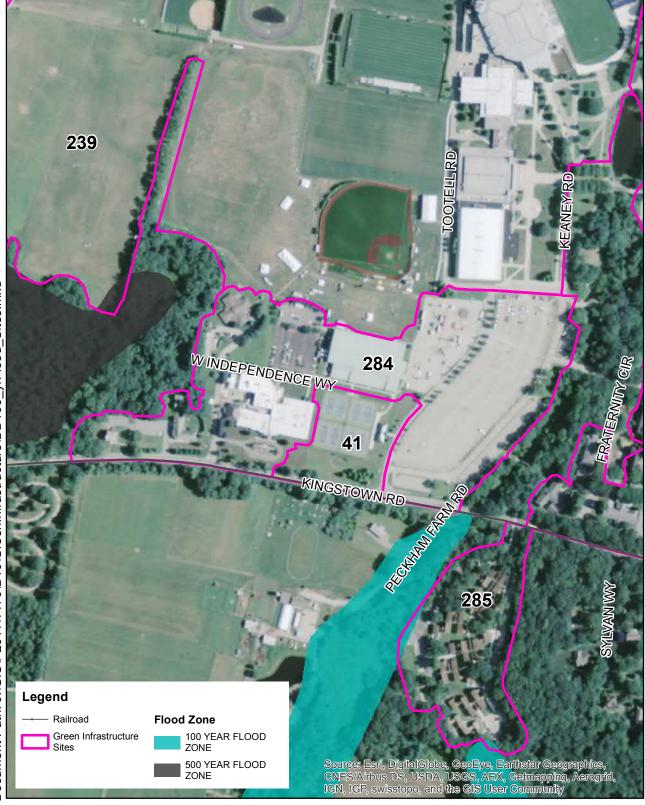


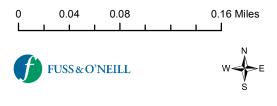
West Kingston Elementary School 3119 Ministerial Road South Kingstown, RI



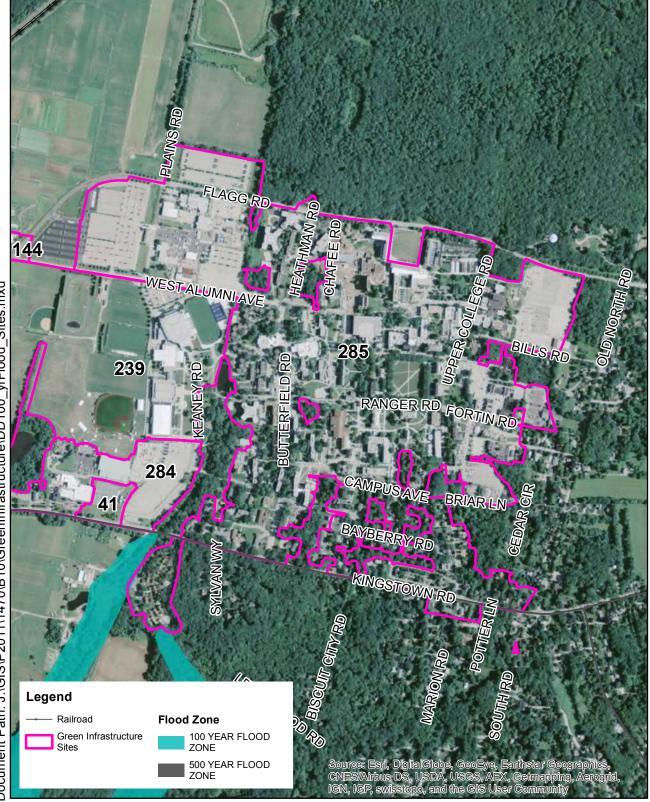


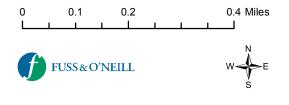
Boss Arena 1 Keaney Road South Kingstown, RI



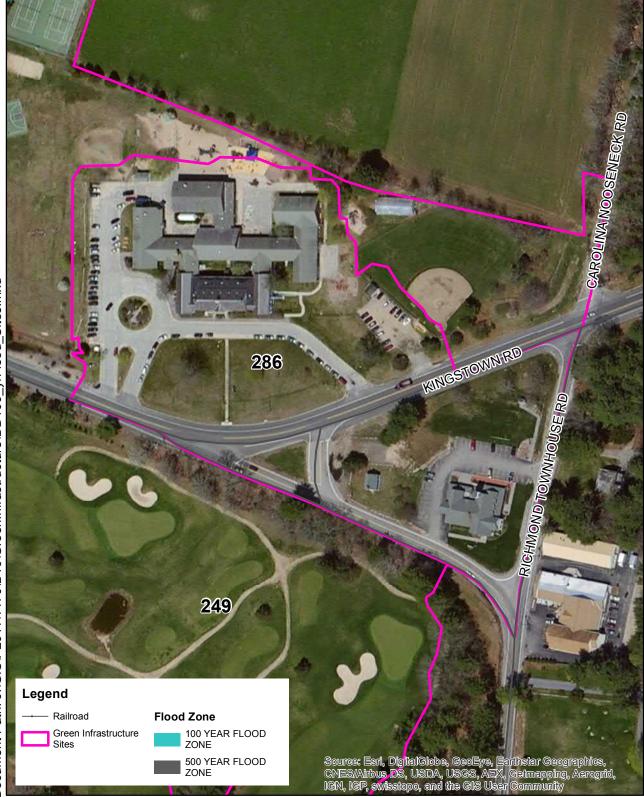


URI Campus and parking lots along Flagg Road 210 Flagg Road South Kingstown, RI

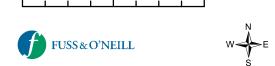




Richmond Town Hall/ Richmond Elementary School 5 Richmond Townhouse Road/ 190 Kingstown Road Richmond, RI



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



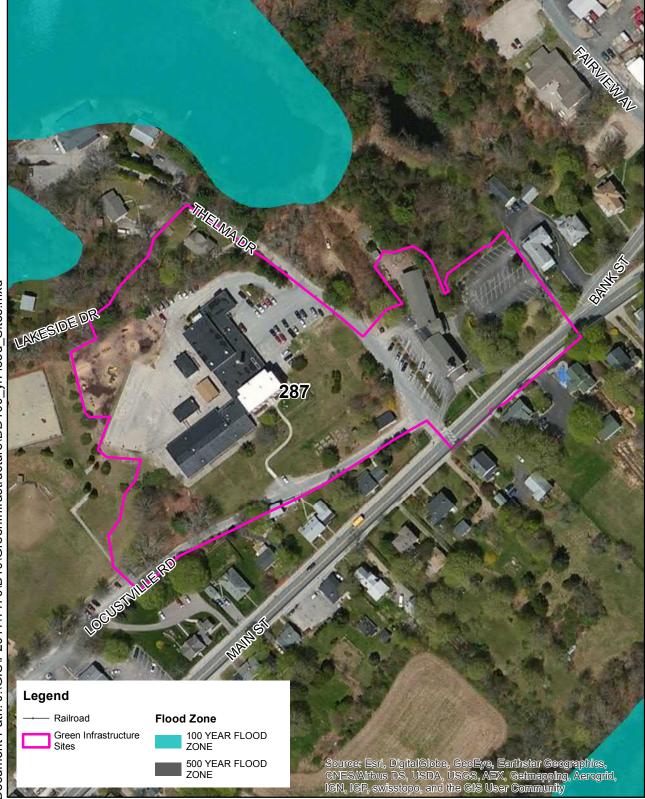
0.06 Miles

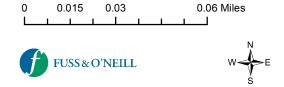
0.03

n

0.015

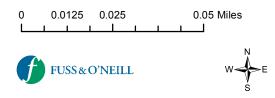
Wood River Preschool/ Hope Valley Elementary School 1059 Main Street Hopkinton, RI



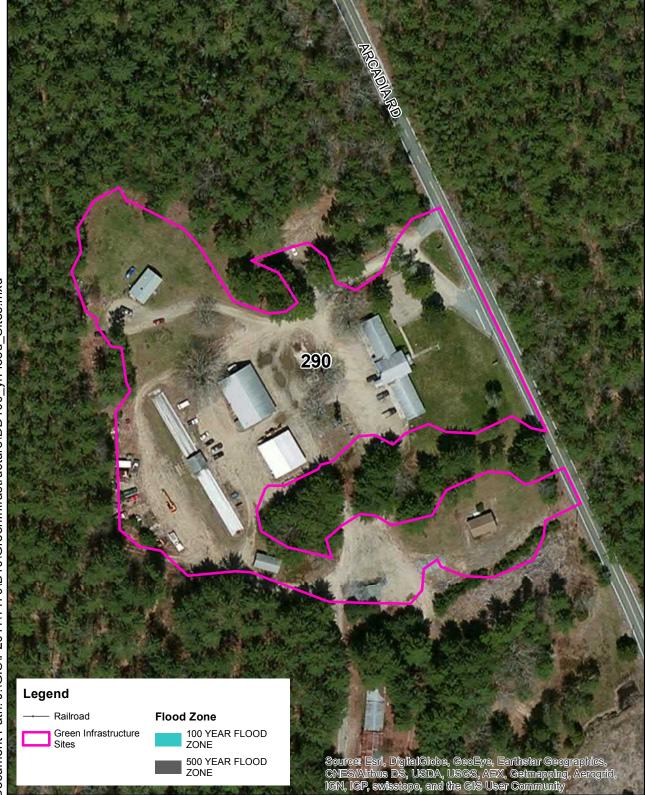


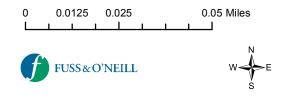
DPW Facility? Unknown 51 Bank Street Hopkinton, RI



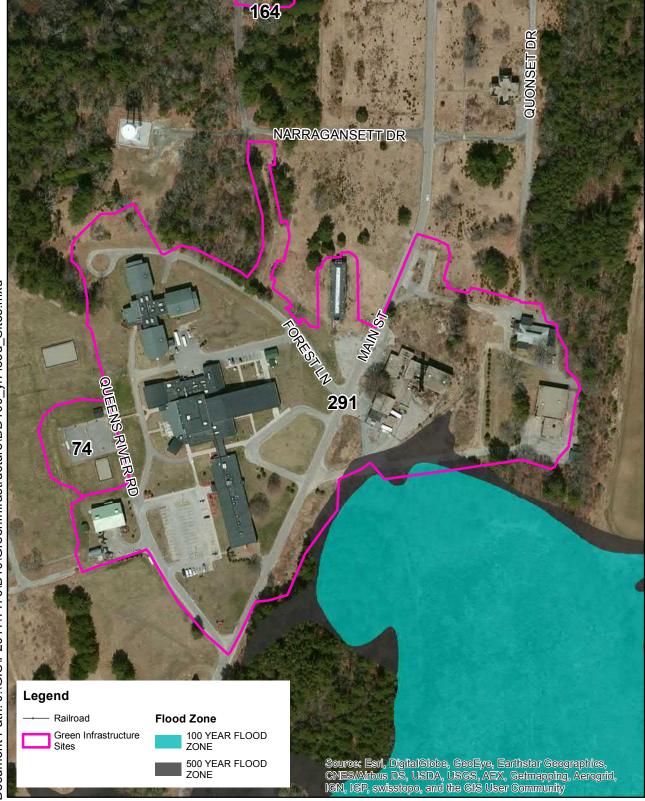


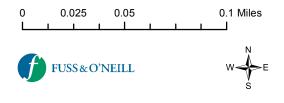
Unknown (1/4 Mile North of Wood-Pawcatuck Watershed Association) 260 Arcadia Road Richmond, RI



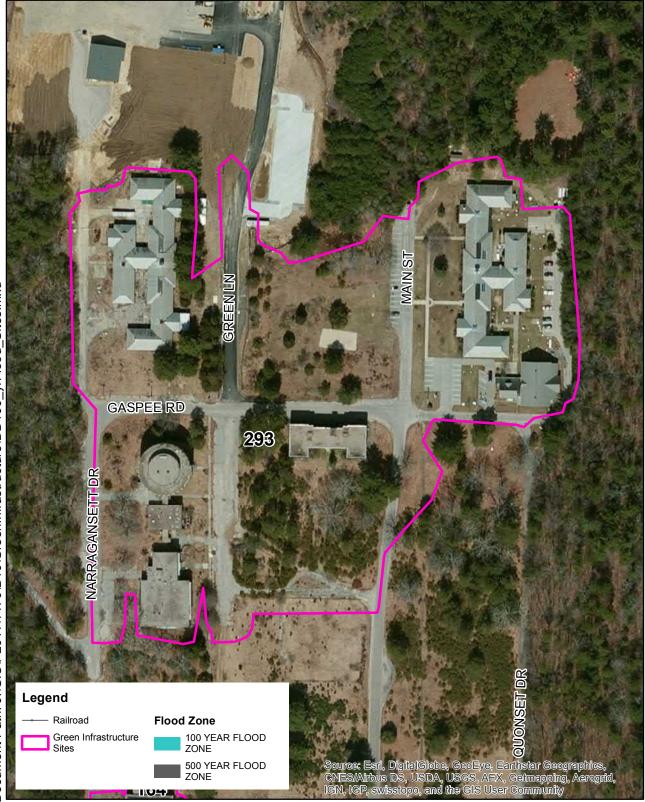


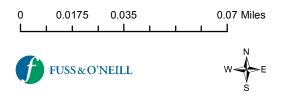
Exeter Job Corps 162 Main Street Exeter, RI





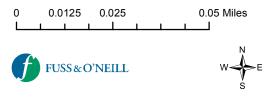
Phoenix House and other Office Buildings? Gaspee Road and Main Street Exeter, RI





Exeter Public Library 762 Ten Rod Road Exeter, RI



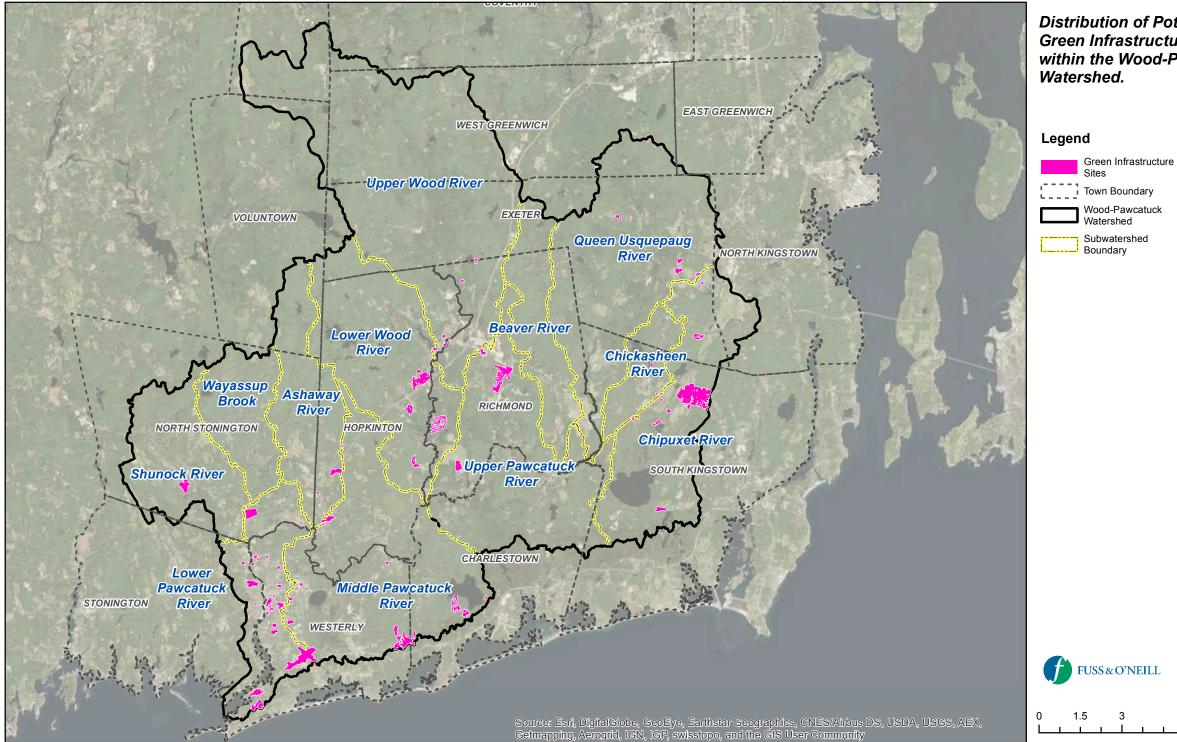




Attachment 4

Watershed Map of Potential Green Infrastructure Retrofit Sites

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

- 3

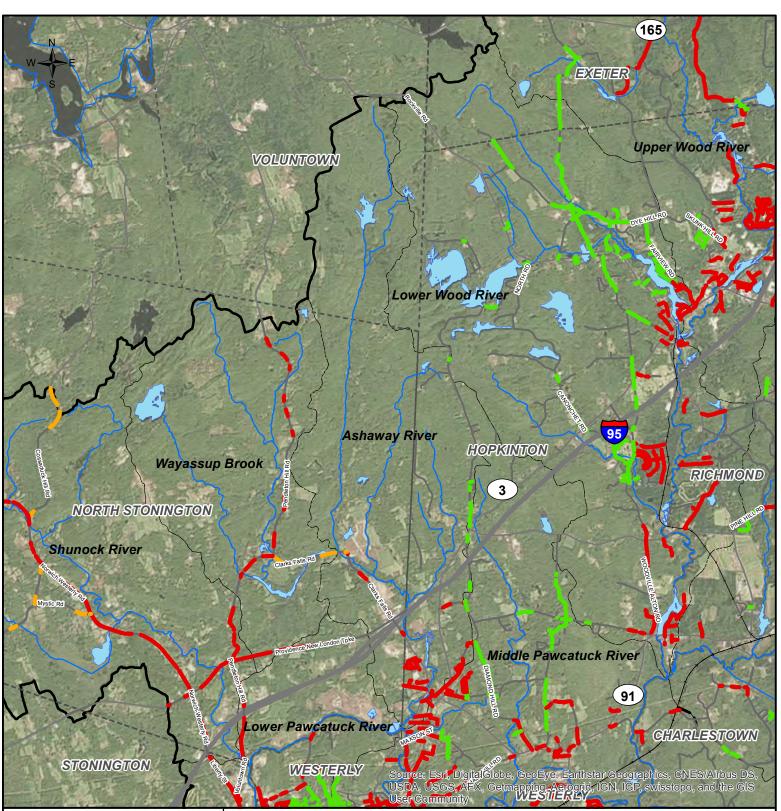
6 Miles



Attachment 5

Example Streets Screening Selection - Westerly, Rhode Island

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Ashaway 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	

nicpal Roads		Streams/Rivers
Iroad		Lake/ Pond/ Reservoir
te Route	1222	Town Boundary
Route		Wood-Pawcatuck Waters
erstate		Boundary
, otato		Subwatershed Boundary

Mu

Rai

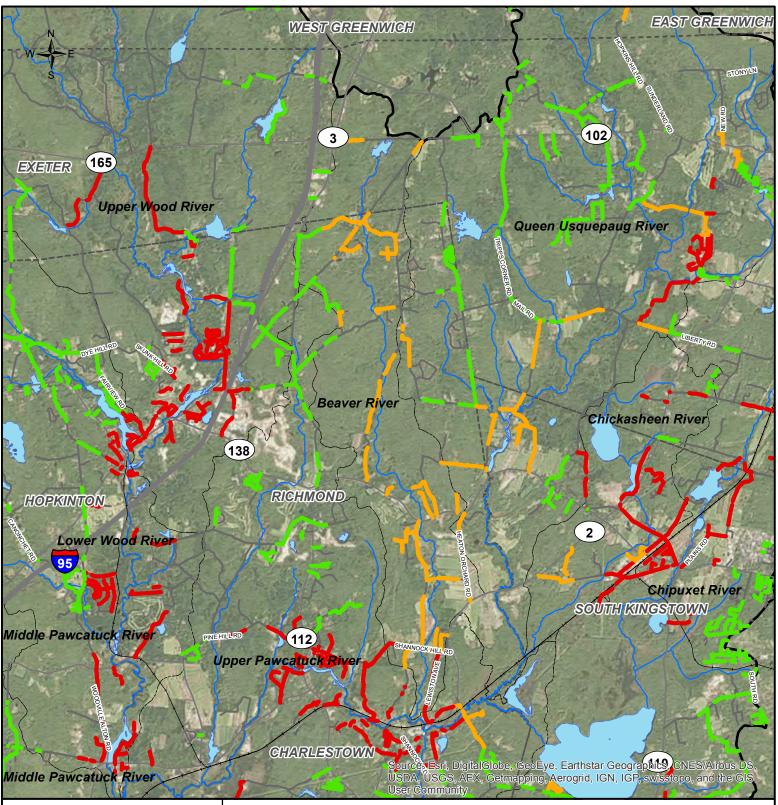
Sta US

Inte

ıs/Rivers Pond/ Reservoir Boundary		fuss&o'ne							ILL	
Pawcatuck Watershed ary	0		0.5		1				2	

2 Miles

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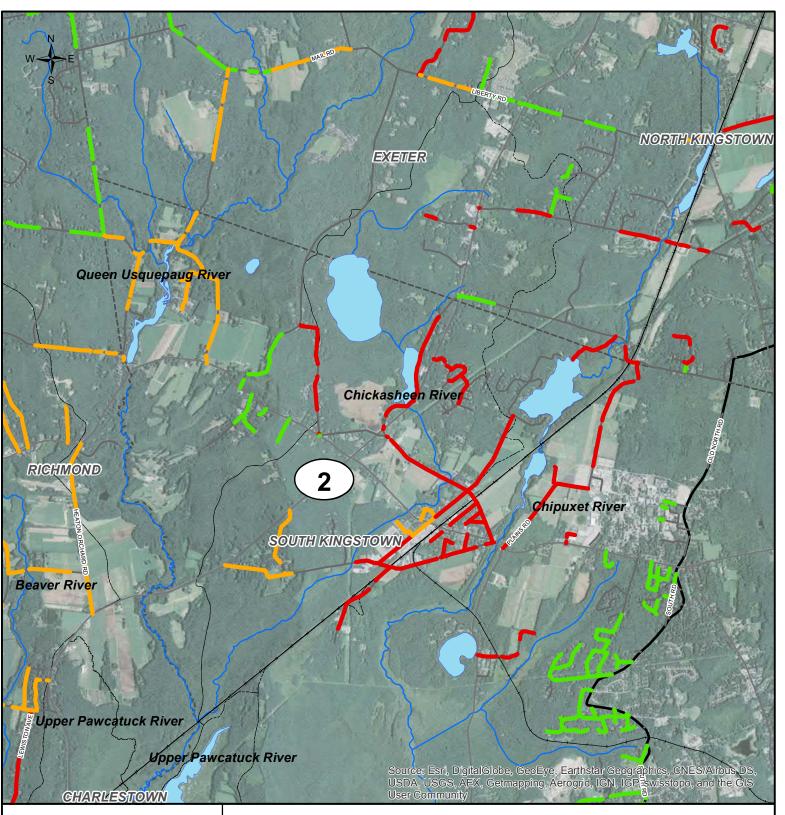


Beaver River-Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend

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







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

Legend

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

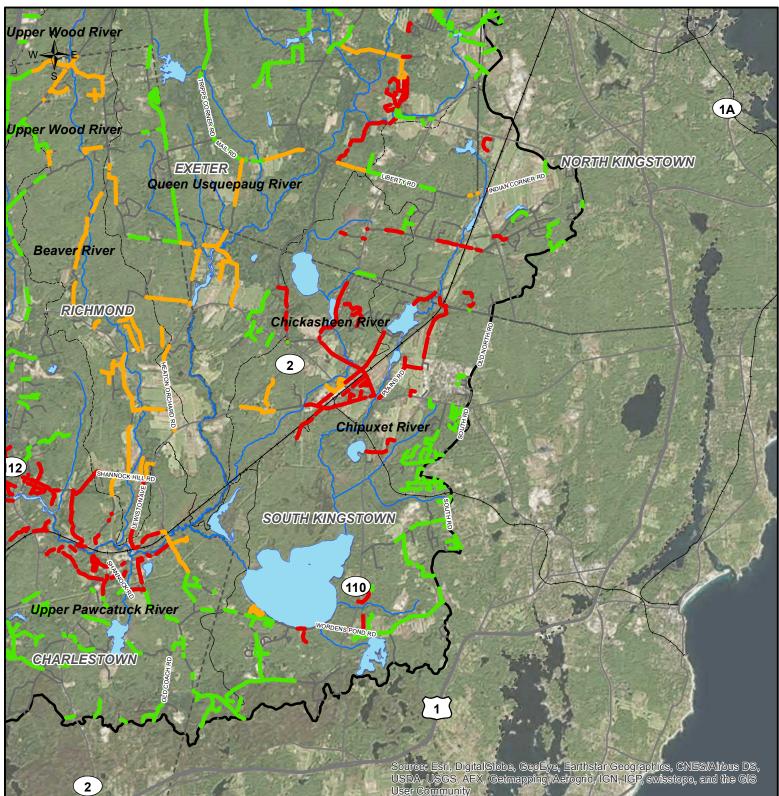


0.55

1.1 Miles

0.275

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

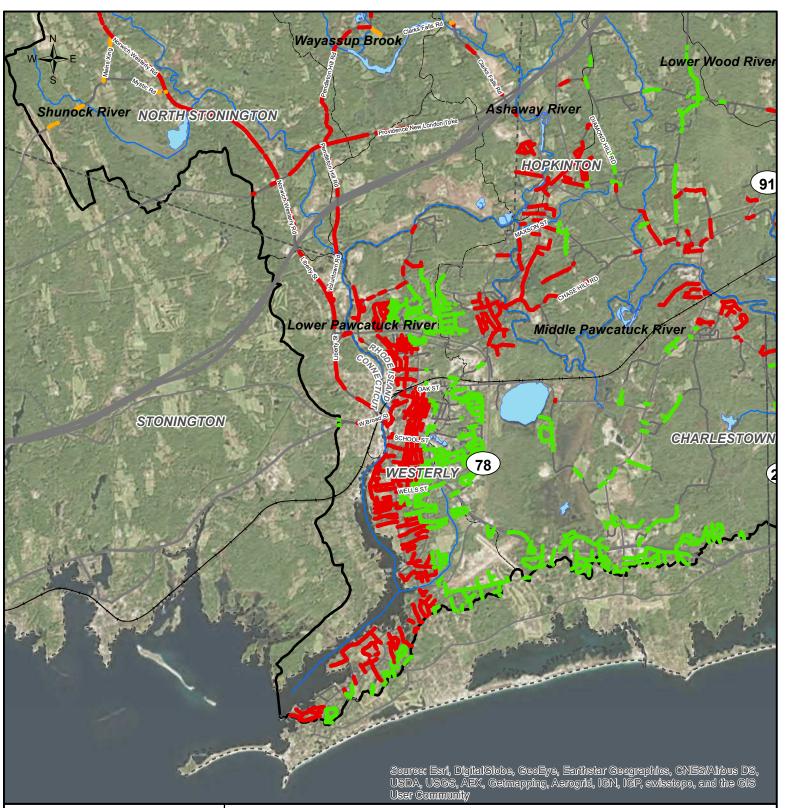
Legend

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

_	Municpal Roads
	Railroad
_	State Route
_	US Route
	Interstate

ads		Streams/Rivers
		Lake/ Pond/ Reservoir
	1222	Town Boundary
		Wood-Pawcatuck Watershe Boundary
		Subwatershed Boundary







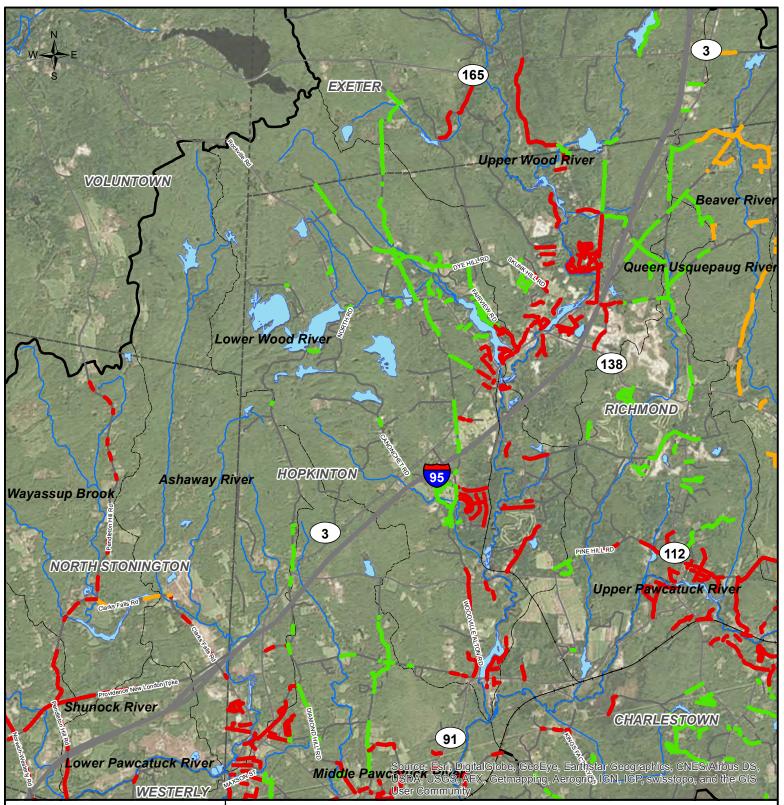
Lower Pawcatuck River-Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend

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



0 0.45 0.9 1.8 Miles





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 Low Priority Medium Priority

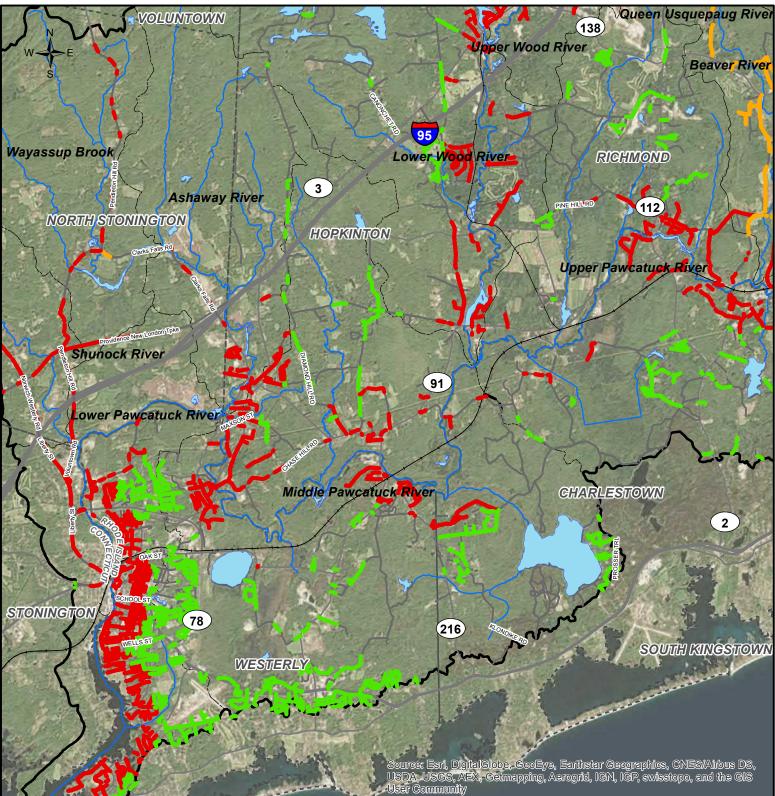
High Priority

_	Municpai Road
	Railroad
	State Route
_	US Route
	Interstate

Munional Dag

ıds		Streams/Rivers
		Lake/ Pond/ Reservoir
	1222	Town Boundary
		Wood-Pawcatuck Watershe Boundary
	[Subwatershed Boundary









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

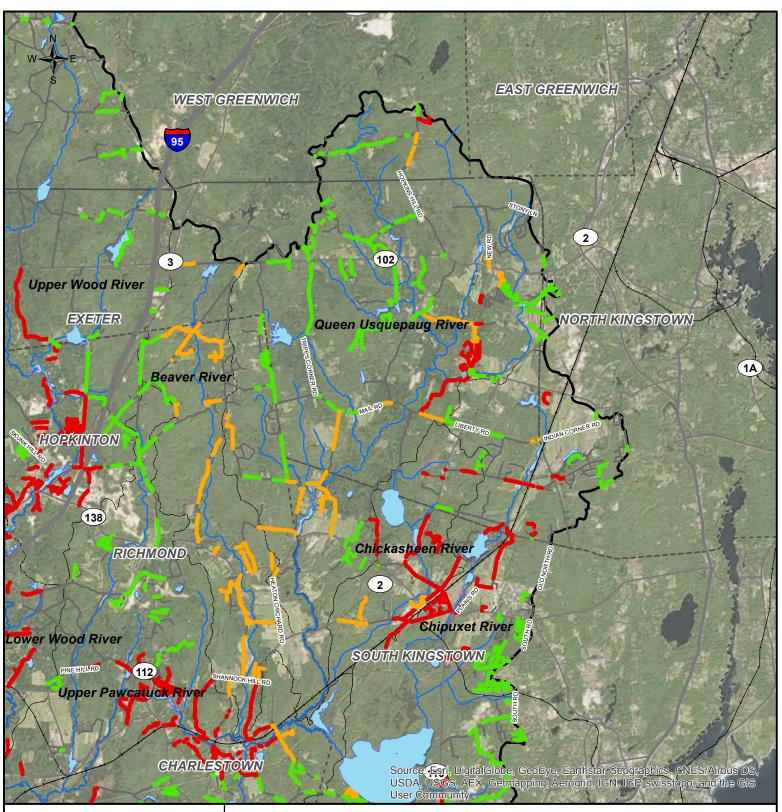
Legend

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



0.5

2 Miles





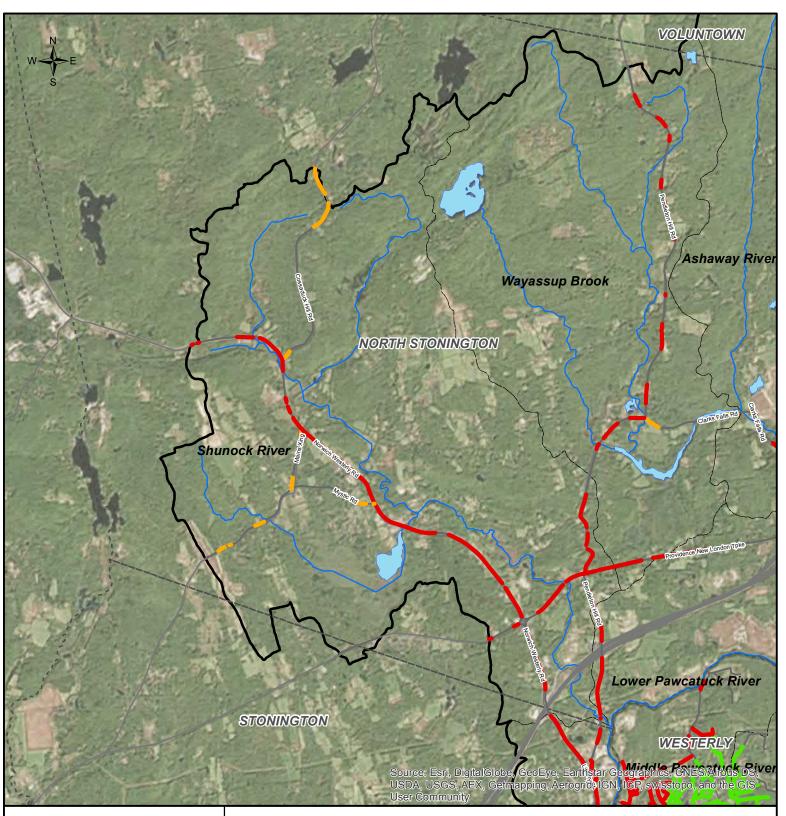
Queen Usquepaug River-Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend

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



0 0.5 1 2 Miles





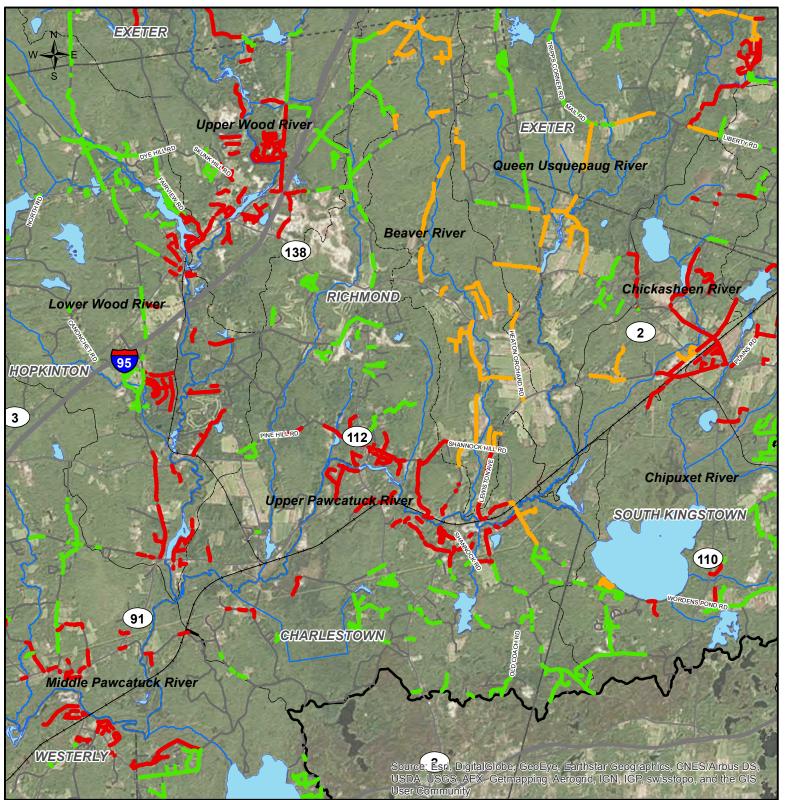
Shunock River-Prioritization of Potential Street/Right-of-Way Green Infrastructure Retrofits in the Wood-Pawcatuck Watershed

Legend

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



0 0.325 0.65 1.3 Miles





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

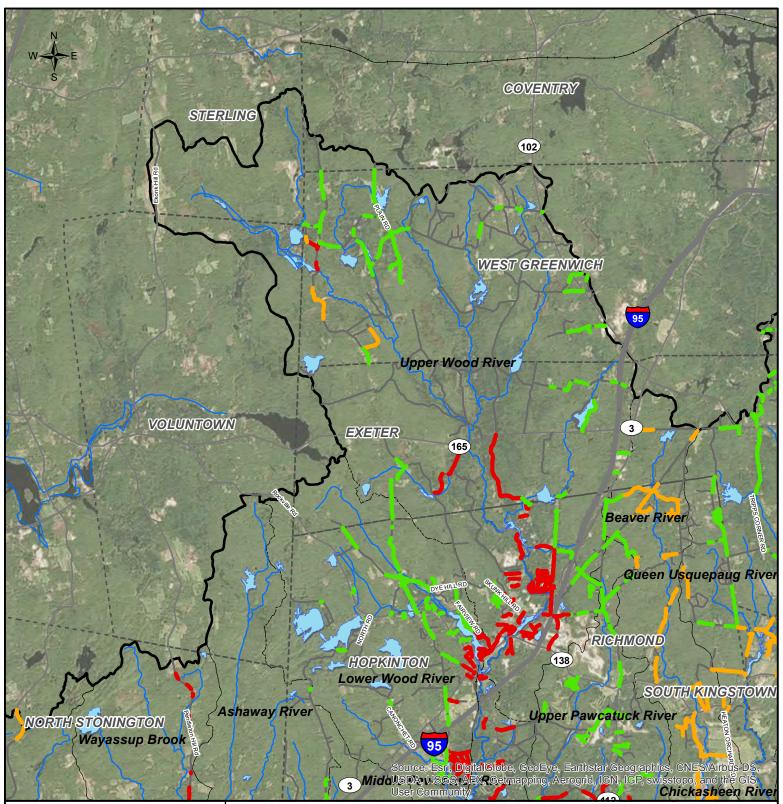
Legend

Potential Street/Right-of-Way Green Infrastructure Retrofits

ow Priority	-
ledium Priority	_
ligh Priority	









Upper 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 La M

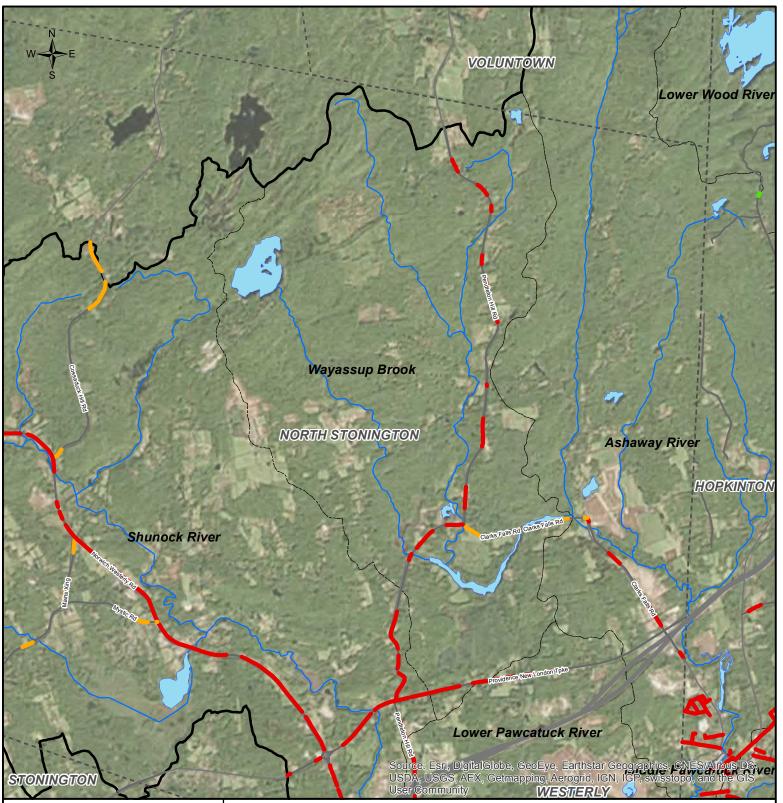
Hi

w Priority	_
edium Priority	_
gh Priority	_

•	Municpal Roads		Streams/Rivers
	Railroad		Lake/ Pond/ Reservoir
	State Route	1223	Town Boundary
	US Route		Wood-Pawcatuck Watershed
	Interstate		Boundary
	Interstate		Subwatershed Boundary



2 Miles 0.5





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

Legend

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





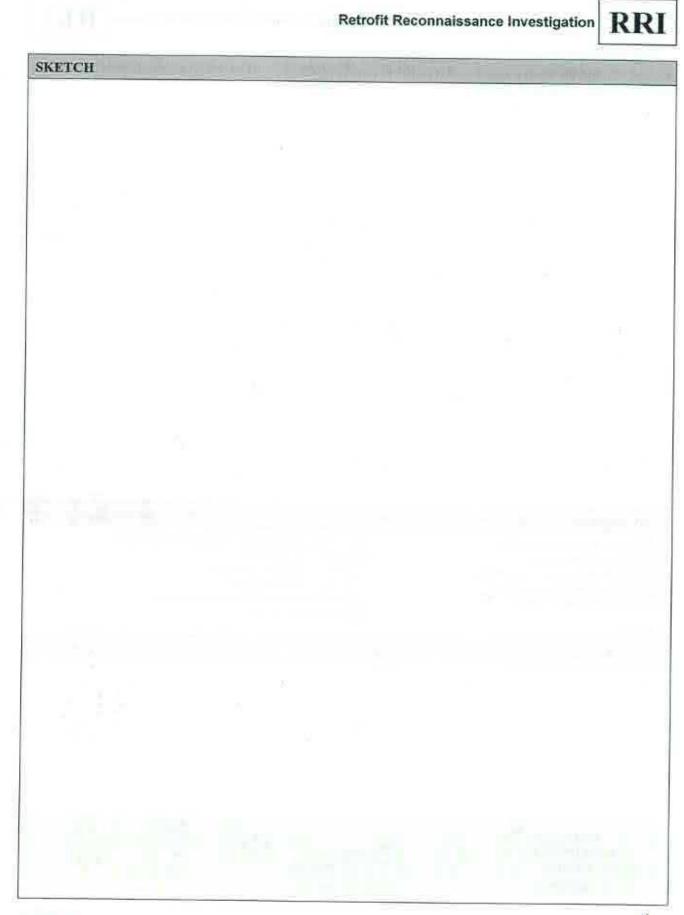
Attachment 6

Field Sheets



DATE: 7/5//16	SUBWATERSHE	D: U	NIQUE SITE ID: 6
1-1/14	ASSESSED BY: Rw/w	G CAMERA ID: C	PICTURES: Brun 11:45
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION		THE TRANSPORT	
Name: Sount Ka Address: Excher Read	turia Tekakunita C	athelic Church	
Ownership: If Public, Government Juris	sdiction:		ther:
Corresponding USSR/USA	Field Sheet? Yes	🗌 No 🛛 If yes, Un	ique Site ID:
Below Outfall	bove Roadway Culvert 1 Conveyance System lear Large Parking Lot	On-Site Hotspot Operation Small Parking Lot Individual Street Underground	 Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PR	OPOSED RETROFT	A LOUIS AND A L	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area Land I Residential SFH (< 1 ac lot	s) Institutional Industrial
Notes:		SFH (> 1 ac lot Townhouses Multi-Family Commercial	s) Transport-Related Park Undeveloped Other:
EXISTING STORMWATER	RMANAGEMENT	Commercial	
I I ES. DESCEIDO!			
lf Yes, Describe:			
	ditions, Including Existing Site	Drainage and Conveyan	ice:
Describe Existing Site Con-		Drainage and Conveyan	ice:
Describe Existing Site Con-		Drainage and Conveyan	ice:
Describe Existing Site Con All molf drains	w/ no erusion	Drainage and Conveyan	ice:
Describe Existing Site Con All moff drains		Drainage and Conveyan	ice:
Describe Existing Site Con All moff drains	w/ no erusion	Drainage and Conveyan	ICE:
Describe Existing Site Con All molf drains	w/ no erusion	Drainage and Conveyan	rce:

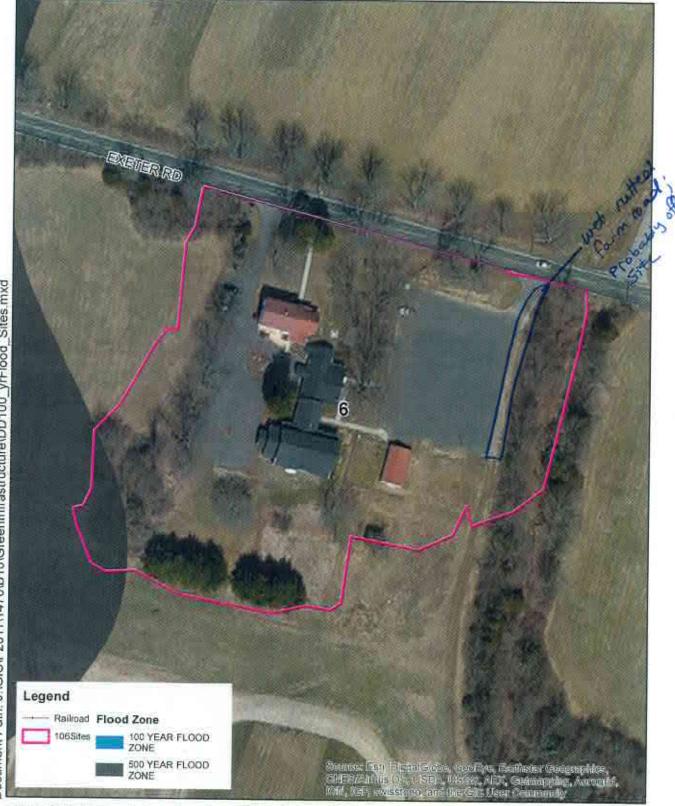
PROPOSED RETROFIT	and the second second	and the set of the set
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Pr	rotection Flood Control
Retrofit Volume Computations - Target Storag	ge: Retrofit V	Volume Computations - Available Storage:
	Created Wetland	Bioretention Other:
SITE CONSTRAINTS		
SITE CONSTRAINTS	C. C. Street of Stations	
Adjacent Land Use: Residential Commercial Instit Industrial Transport-Related Park Undeveloped Other: Ag Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	utional Ves No	Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownershi Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permittin Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH	Necessary Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation	Yes □ No Yes □ No Yes □ No Yes □ No Yes □ No): □ Yes □ No	



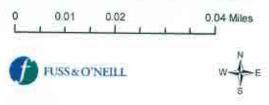
Page 3 of 4

	Retrofit Reconnaissance Investigation RR
DESIGN OR DELIVERY NOTES	and the second
21	
FOLLOW-UP NEEDED TO COMPLETE FIELD C	CONCEPT
Confirm property ownership Confirm drainage area	Obtain existing stormwater practice as-builts Obtain site as-builts
Confirm drainage area impervious cover	 Obtain detailed topography Obtain utility mapping
Confirm volume computations Complete concept sketch	Confirm storm drain invert elevations
] Other:	Confirm soil types
INITIAL FEASIBILITY AND CONSTRUCTION C	ONSIDERATIONS
SITE CANDIDATE FOR FURTHER INVESTIGAT	TION: YES NO MAYBE
IS SITE CANDIDATE FOR EARLY ACTION PRO F NO, SITE CANDIDATE FOR OTHER RESTOR	

The Saint Kateria Tekakwitha Catholic Church Exeter Road Exeter, 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





WATERSHED:	SUBWATERSHED	•	UNIQUE SITE ID: 2	
DATE: 6/2/16	ASSESSED BY: RW/WG	CAMERA ID:	PICTURES: 2)4/45-15	
GPS ID:	LMK ID:	LAT:	LONG:	
SITE DESCRIPTION		in the second		
Name: Vin Gormle Address: 24 Sonch	y Trailhead Parkin Dary Road, Charlest	pyo, RI		
Ownership: If Public, Government Juri	sdiction: Deblic Priv		Other:	
Corresponding USSR/USA	Field Sheet? Yes	□ No If ye	s, Unique Site ID:	
Below Outfall	on: Above Roadway Culvert n Conveyance System Near Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre	Lot Small Impervious Area	
DRAINAGE AREA TO P	ROPOSED RETROFIT	Contrasta a	Carles Alles Martines	
Drainage Area≈ Imperviousness≈ Impervious Area≈	%	Drainage Area L	ac lots)	
Notes: due extent o boundary	f uphill drainage	SFH (> 1 : Townhous Multi-Fan Commercial	es 🛛 🖉 Park	
EXISTING STORMWATH	R MANAGEMENT			
[pipe is	- C. W.	gr gr	e to woods, but	
/ Severe k Catch basi discharge upper edg	ns capture some - where?	of park water fr	ing lot three picnic area	
age 1 of 4	- C		Unique Site ID: 21	



PROPOSED RETROFT		
Purpose of Retrofit: Water Quality Becharg Demonstration / Education Repair	e A Channel P	Protection Flood Control
Retrofit Volume Computations - Target Stor	age: Retrofit	Volume Computations - Available Storage:
Proposed Treatment Option:	Created Wetland Swale	Bioretention
Infiltration under pa Convortion of oilsting swe SITE CONSTRAINTS		
Adjacent Land Use: Residential Commercial Inst Industrial Transport-Related Parl Undeveloped Other: Possible Conflicts Due to Adjacent Land Use If Yes, Describe:		Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Conflicts with Existing Utilities: None Vinknown Yes Possible Sewer Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permittin Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimer How many? Approx. DBH	Necessary Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturatio	n): Yes No	



DESIGN OR DELIVERY N	NOTES				
parking lot i months	normally t	56 - 75 %	full .	during sc	mmer
High priority	5, ¥C				
FOLLOW-UP NEEDED TO	O COMPLETE FIEI	D CONCEPT	the part of a	1. 11 M	100 Jun 10 100
Confirm property owne Confirm drainage area Confirm drainage area Confirm volume compu Complete concept sketc	mpervious cover tations	Obt Obt Obt	ain site as-bui ain detailed to ain utility map	pography pping ain invert elevat	
Other:	ND CONSTRUCTION	N CONSIDERATI	ONS	Internet Sta	2
Need to know	a se e contra t <u>a con</u> tra contra a ta		and a second	parking	107
SITE CANDIDATE FOR F IS SITE CANDIDATE FOI IF NO, SITE CANDIDATE IF YES, TYPE(S):	EARLY ACTION 1	PROJECT(S):	1×	Yes N Yes N Yes N	о 🔲 МАУВЕ

Vin Gormley Trailhead Parking 24 Sanctuary Road Charlestown, RI



IC >= 1 Acre

Part of Builingame

outlet

WATERSHED:	SUBWATERSHED: UNIQUE SITE ID: 284		E SITE ID: 284+41+2	
DATE: 6/3/16			C	PICTURES: 9:19-944
GPS ID:	LMK ID:	LAT:	_	LONG:
SITE DESCRIPTION				
Name: Boss Arena, Address: I Keeney F	west Read, South Kingsto	029, RF	1	
Ownership: If Public, Government Jurisd	Public Priv		Other:_	
Corresponding USSR		□ No If ye	s, Unique S	Site ID:
Below Outfall	: ove Roadway Culvert Conveyance System ir Large Parking Lot	On-Site Hotspot Opera Small Parking	Lot E	Individual Reation Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	POSED RETROFIT			The South of the second
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: May include ru FaulAres	noff from adjacut	Drainage Area L Residential SFH (< 1 SFH (> 1 Townhous Multi-Fan Commercial	ac lots) ac lots) ies	Institutional Industrial Transport-Related Park Undeveloped Other:
EXISTING STORMWATER	MANAGEMENT			
If Yes, Describe:	scattored, pavement	Lanage d	N.	
ourge parking lots Berms + parki building downsport	surrounding par	uctive only eroded	ly. Cl	
	239 due to Speci			

Page 1 of 4



PROPOSED RETROFIT		
Purpose of Retrofit:	Channel Pr	Protection 🗍 Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit V	Volume Computations - Available Storage:
The second	reated Wetland	Dioretention Dother: permeable pavement
Convert grass medians/ed Convert parting to perr Underground Enfiltradi Caub Earts for sheet flo	lges to biore neable ion pru	etent Route downsports to rain garden Octong tennis courts
SITE CONSTRAINTS	IN THE REAL	
Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park Cundeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	utional	Access: No Constraints Constrained due to Slope Utilities Structures Structures Other: Constrained due to Space Difference Property Ownersh
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many?_ <u>P</u> Approx. DBH	s Necessary s Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Not Probable Not Probable Not Probable Not Probable Not Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	Yes No Yes No Yes No Yes No Yes No	

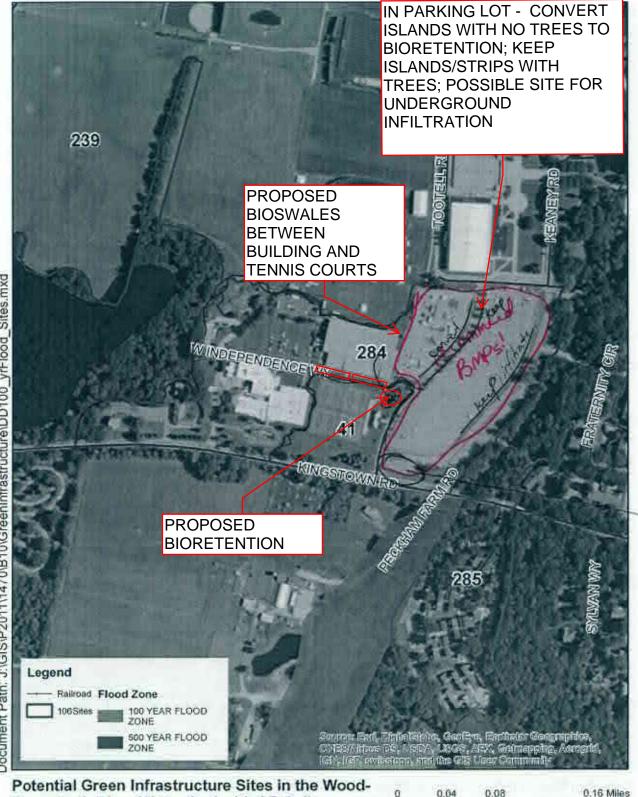
Retrofit Reconnaissance Investig	gation
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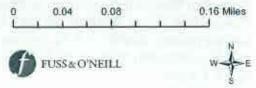
KETCH				
			5	
		2		
		2		
		2		
		2		

	ELIVERY NOTES	
Conver	ting grass strips	to biorctation 11 loss of driving/parking space;
	Julia Sma	11 loss of dring/a king space
would	d require sman	it loss of or nig parting spice,
would	d hulans/maio	teraior of pairment around
00001	- neip w/ 1 s	3
cati	ch basins	
ORI al	ready has clear in	terest in stormwater monagement
Cur	U	
Manager Manager	EEDED TO COMPLETE FIELD	
Confirm drai		Obtain existing stormwater practice as-builts Obtain site as-builts
	nage area impervious cover me computations	Obtain detailed topography Obtain utility mapping
Complete co		Confirm storm drain invert elevations
Other:		Confirm soil types
NITIAL FEASI	BILITY AND CONSTRUCTION C	CONSIDERATIONS
2 2		
	TE FOR FURTHER INVESTIGAT DATE FOR EARLY ACTION PRO	
F NO, SITE CA	NDIDATE FOR OTHER RESTOR	
IF YES, TYP	E(S):	
		1
ge 4 of 4		Unique Site ID:28

Boss Arena 1 Keaney Road South Kingstown, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd

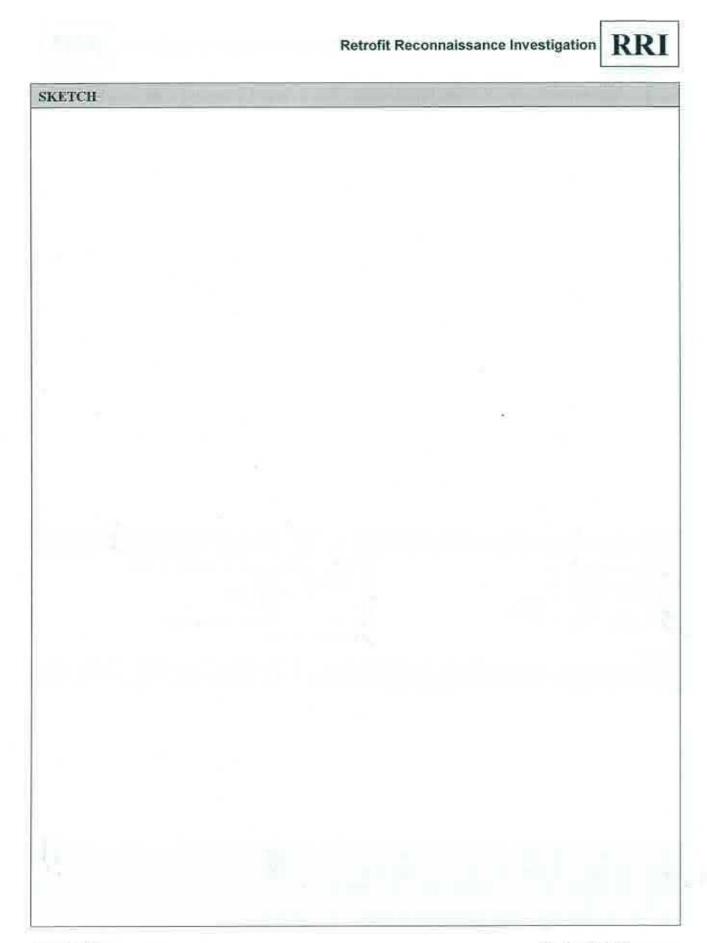


WATERSHED:	SUBWATERSHED		UNIQUE SITE ID: 50
DATE: 6/6/16	ASSESSED BY: Rw/wG	CAMERA ID: C	PICTURES: 1250-1315
GPS ID:	LMK ID:	LAT: LONG:	
SITE DESCRIPTION			
Name: Wyoming 1 Address: Bridge	St, Hapking Accu	es.	
Ownership: If Public, Government Juris	diction:	vate 🗌 Unknown te 🗌 DOT 🗌] Other:
Corresponding USSR/USA	Field Sheet? Types	□ No If yes,	Unique Site ID:
Below Outfall	n: bove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Operation Small Parking Lo Individual Street Underground	ot Small Impervious Area
DRAINAGE AREA TO PR	OPOSED RETROFIT		
Drainage Arca ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area Lan Residential SFH (< 1 ac SFH (> 1 ac Townhouses Multi-Family Commercial	lots) Institutional lots) Industrial lots) Transport-Related
EXISTING STORMWATER	R MANAGEMENT		
Existing Stormwater Prac If Yes, Describe:	tice: 🗌 Yes 🕅 No	Possible	
water from adjo pills + erosion in	ditions, Including Existing Site accut inn + from R n 00-site inimpro ins on adjacent roa	ared parking	lot drains to site.
Existing Head Available a	ad Points Where Measured:		1 a 4

Page 1 of 4



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality	ge Channel Protection Flood Control
Retrofit Volume Computations - Target Stor	rage: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option:	Created Wetland Bioretention Swale Other: ACEM along boat la
curb cuts to capture road	deflot + around those ROW drugf + additional rune of from inn lot storm system
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Inst Industrial Transport-Related Parl Undeveloped Other: Possible Conflicts Due to Adjacent Land Use If Yes, Describe:	Slope Space
Conflicts with Existing Utilities:	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, saturatio	Yes No Yes No Yes No Yes No



Page 3 of 4

Retrofit Reconnaissance Investigation	Retrofit	Reconnaissance	Invest	ligatio
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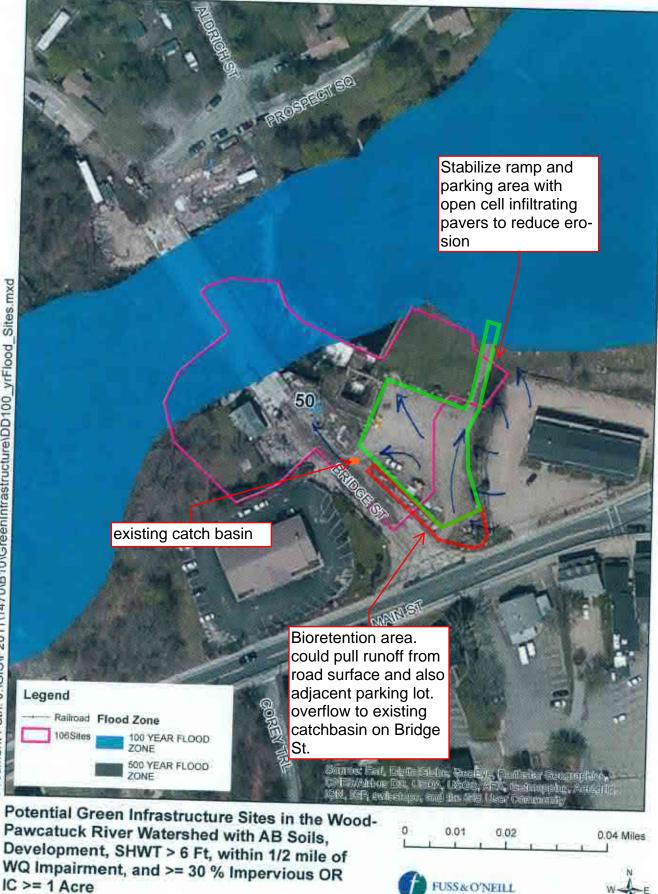


DESIGN OR DE	LIVERY NOTES
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Confirm property ownership Confirm drainage area Confirm drainage area impervious c Confirm volume computations Complete concept sketch	 Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
INITIAL FEASIBILITY AND CONSTR	RUCTION CONSIDERATIONS

Page 4 of 4

Wyoming Dam Fishing Access Bridge Street Hopkinton, RI



UNIQUE SITE ID: 73 A ID: C PICTURES: 8:00-81 LONG:
Unknown DOT Other:
If yes, Unique Site ID:
pot Operation Individual Rooftop I Parking Lot Small Impervious Area idual Street Landscape / Hardscape rground Other:
e Area Land Use: Jential Institutional SFH (< 1 ac lots) Industrial SFH (> 1 ac lots) Transport-Related Fownhouses Park Multi-Family Undeveloped nercial Other;
and Conveyance: switz grass; grassy area . No formal infractivity
No formal infrastructure nouts empty onto go ound rediately be fore steep

Page 1 of 4

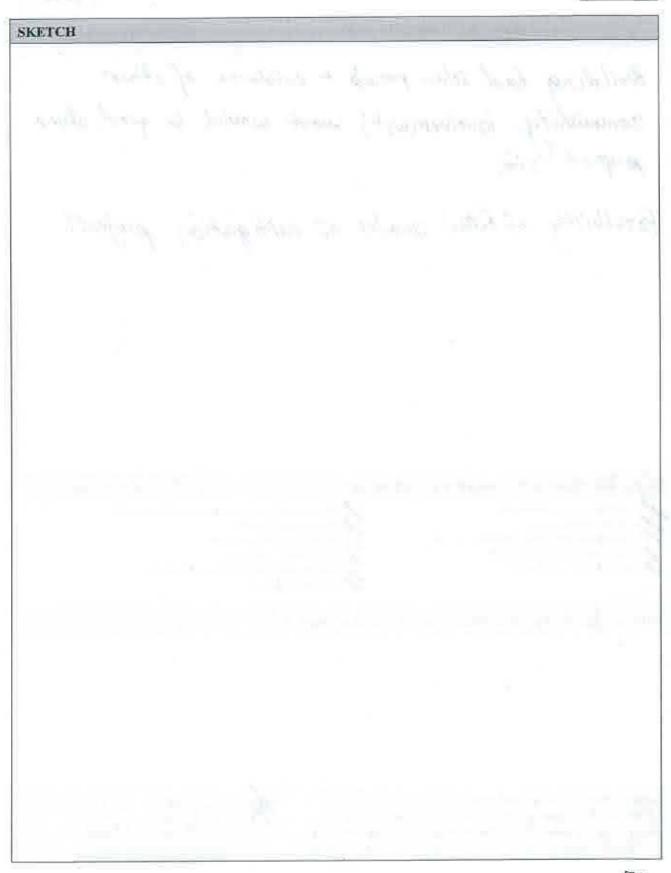
Retrofit	Reconnaissance	Investigation
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RRI

PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Storage:
	Treated Wetland Bioretention wale Other:
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	metrees agress:
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Utility in Cable Electric Possible Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Impacts to a Stream Floodplain Fill 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)	Ves No Riddling after recent Ves No heavy rain; may normally Ves No infiltrate fine or be de to compaction Unique Site ID:
Page 2 of 4	to compact of Unique Site ID:

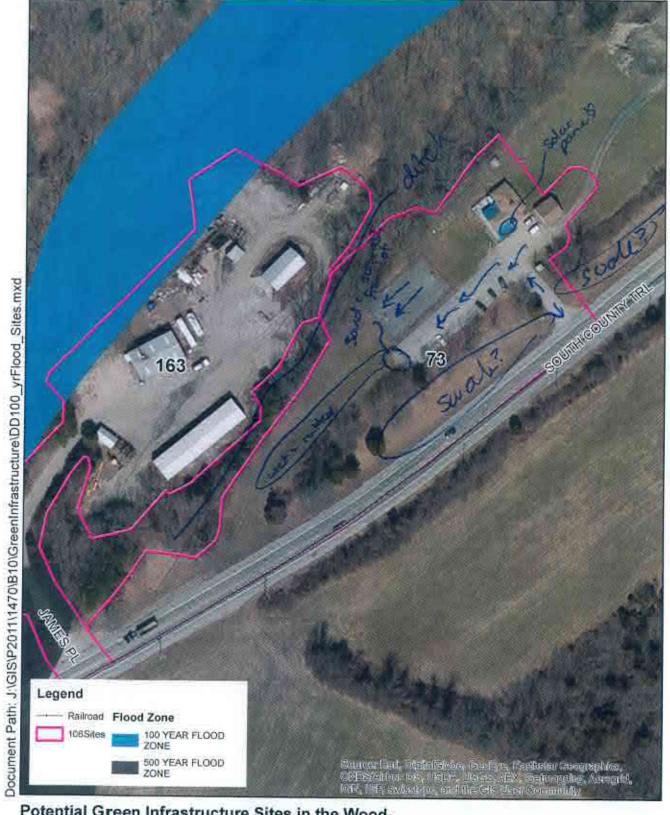


DESIGN OR DELIVERY NOTES	
Building had solar p	arels + evidence of other
community involveme	arels + evidence of other st; wont would be good clone
P I I I O	
Possibility of ROW sur	ales as mitigation project?
FOLLOW OF NEEDED TO COMPLETE DOWN	
FOLLOW-UP NEEDED TO COMPLETE FIELD C Confirm property ownership Confirm drainage area Confirm drainage area impervious cover	Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography
Confirm volume computations Complete concept sketch	Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Other	E commissin types
Other:	
	ONSIDERATIONS

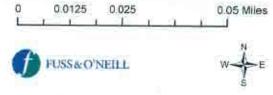


Page 3 of 4

Exeter Town Animal Shelter 165 S. County Trail Exeter, 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





Unique Site ID: 92

WATERSHED:	SUBWATERSHED:	0	UNIQU	E SITE ID: 92
DATE: 6/9/16	ASSESSED BY: Ru/WG	CAMERA ID:	C	PICTURES: 830 -900
GPS ID:	GPS ID: LMK ID: L			LONG:
SITE DESCRIPTION		Sec. Sec. Sec. Sec.	1.4	
	tch Hill Road, a	westerly		
Ownership: If Public, Government Jurisdi	etion:	Part in the second second second	Other:	
Corresponding USSR/USA Fi	eld Sheet? 🔲 Yes	No If yo	s, Unique	Site ID:
Below Outfall In C	ve Roadway Culvert onveyance System r Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stra Underground	Lot [] Individual Rooftop] Small Impervious Area] Landscape / Hardscape] Other:
DRAINAGE AREA TO PROP	OSED RETROFIT	and the second	h Gin	Survey Hopes into a
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area L Residential SFH (< 1 SFH (> 1 Townhous Multi-Fan	ac lots) ac lots) ses	Institutional Industrial Transport-Related Park Undeveloped
EXISTING STORMWATER	MANAGEMENT	Commercial		Other:
Detention Basin (e: ØYes □No homeowner own ~ Pretreatment some PL runoff;			off-site) /
Describe Existing Site Condi Lots of pavement; flows topond Remoff scens well-	tions, Including Existing Site I Simple Storm daid managed on site	Drainage and Con SYStom flo	veyance: ws te	Swale which
Existing Head Available and	Points Where Measured:			8

Page 1 of 4

Retrofit Reconnaissance Investiga	ation
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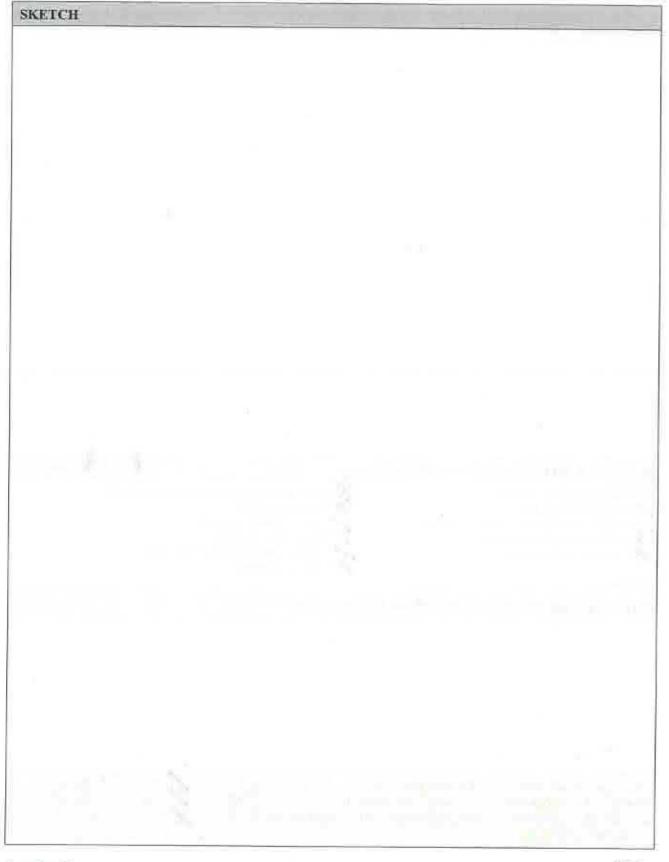


PROPOSED RETROFIT	
Purpose of Retrofit: Recharge Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Storage:
	reated Wetland Bioretention wale Other:
Row Infiltration 2 devole	. CB to help handle water volume
SITE CONSTRAINTS	
Adjacent Land Use: Residential Commercial Institute Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Access: No Constraints Constrained due to Slope Ves No Ves No Structures Other: 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
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation):	Yes No Yes No Yes No Yes No Yes No

Unique Site ID: 92_







Page 3 of 4

Retrofit Reconnaissance	Invest	igation
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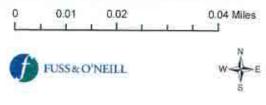


DESIGN OR DELIVERY NOTES	
FOLLOW-UP NEEDED TO COMPLETE FIELD CO	ONCEPT
Confirm property ownership	Obtain existing stormwater practice as-builts Obtain site as-builts
Confirm drainage area impervious cover Confirm volume computations	Obtain detailed topography Obtain utility mapping
Complete concept sketch	Confirm storm drain invert elevations Confirm soil types
Other: INITIAL FEASIBILITY AND CONSTRUCTION CO	NSIDERATIONS
SITE CANDIDATE FOR FURTHER INVESTIGATION IS SITE CANDIDATE FOR EARLY ACTION PROJ	IECT(S): YES NO MAYBE
IF NO, SITE CANDIDATE FOR OTHER RESTORA IF YES, TYPE(S):	TION PROJECT(S): YES NO MAYBE

Watch Hill Fire Department 222 Watch Hill Road 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



odelinfithation?

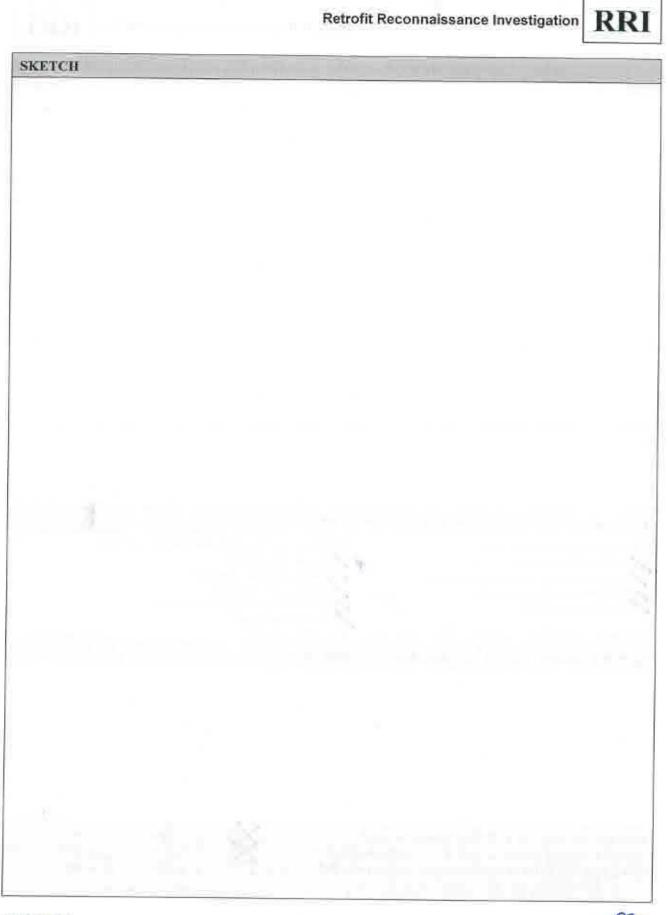


WATERSHED:	SUBWATERSHED	: U	NIQUE SITE ID: 93
DATE: 6/9/16	ASSESSED BY: Kw/wg	CAMERA ID: C	PICTURES: 900 - 930
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Address:			
Ownership: f Public, Government Juri		vate 🗌 Unknown te 🗋 DOT 🕅 C	Other: Federal
Corresponding USSR/USA	Field Sheet? Yes	No If yes, U	nique Site ID:
Below Outfall 🚬 🗌 1	on: Above Roadway Culvert n 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 PR	ROPOSED RETROFIT	Saland Line of	All manner former
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes: Lorez orec	» a uphill/officier inage system	Drainage Area Land Residential SFH (< 1 ac lo SFH (> 1 ac lo Townhouses Multi-Family	ts) Institutional
EXISTING STORMWATE		Commercial	Other:
lf Yes, Describe:	~~		
harge conveyor	parking lot	PL, W/Mary D	nce: MHS + CBS (1, deep) ence of large amon
CONTRACTOR OF A	nd Points Where Measured:		
ge 1 of 4			Unique Site ID: 93



PROPOSED RETROFIT		
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection	Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations	Available Storage:
Proposed Treatment Option:	eated Wetland Bioretention vale	
Convert sidewalks to biosi Underground infilt. to have Biostarctention	la large volume of runoff	e na
SITE CONSTRAINTS	A CAR HAR MAN	
Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	tional Yes No Yes No Yes ONO Yes ONO	Space Tree Impacts Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Impacts to Wetlands Proba Impacts to a Stream Proba Floodplain Fill Proba Impacts to Forests Proba	ble Not Probable ble Not Probable ble Not Probable ble Not Probable ble Not Probable ble Not Probable ble Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	Yes No Yes No Yes No Yes No Yes No	

Unique Site ID: ______

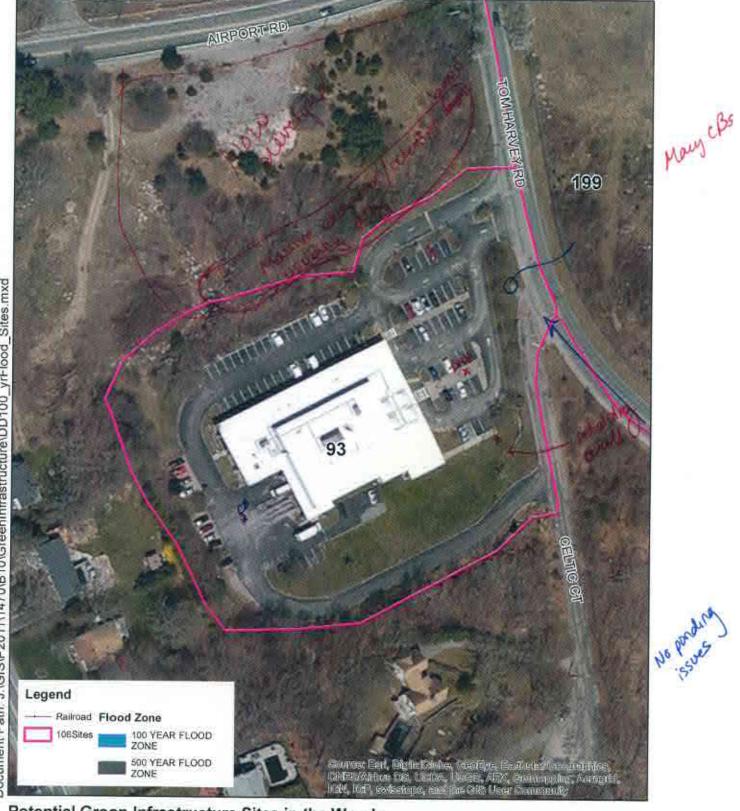


Retrofit	Reconnaissance	Investigation
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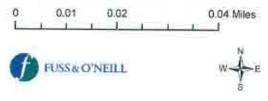


DESIGN OR DELIVERY NOTES	
<i>2</i>	
22	
OLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT	
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	d topography mapping 1 drain invert elevations ypes
	<u>^</u>
ATTIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS	
TE CANDIDATE FOR FURTHER INVESTIGATION:	YES NO MAYBE
SITE CANDIDATE FOR FORTHER INVESTIGATION: SITE CANDIDATE FOR EARLY ACTION PROJECT(S): NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): IF YES, TYPE(S):	YES NO MAYBE
20	
ge 4 of 4	Unique Site ID: 9





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



Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd



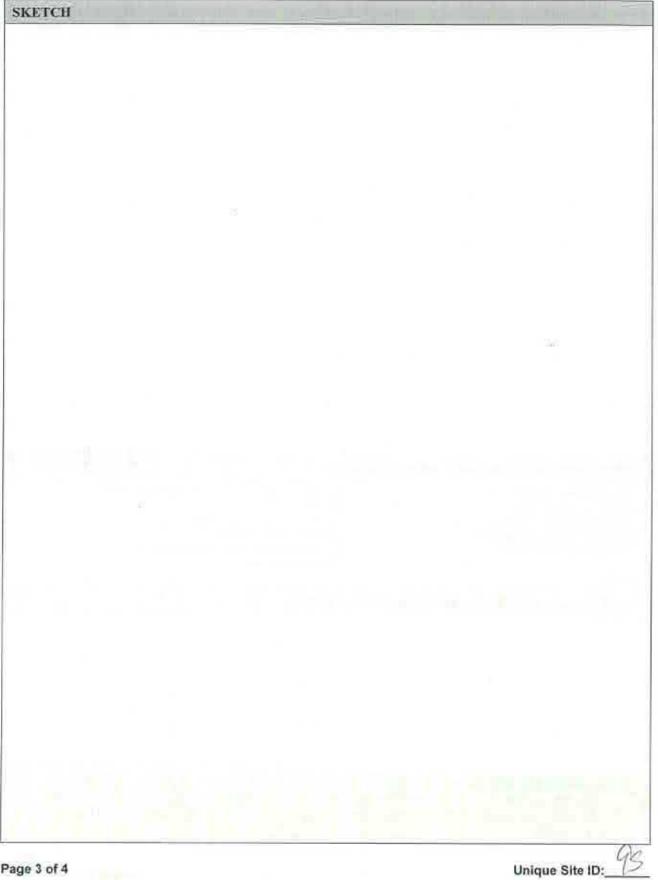
WATERSHED:	SUBWATERSHEI);	UNIQUE SITE ID: 95
DATE: 6/9/16	ASSESSED BY: Rtu/wG	CAMERA ID:	PICTURES:
GPS ID:	LMK ID;	LAT:	LONG:
SITE DESCRIPTION			
Name: Westerly fire Address: 180 Beach	Street, Westerly Rt	8	
Ownership: If Public, Government Jurise		vate 🗌 Unknown tte 🗍 DOT	Other:
Corresponding USSR/USA	rield Sheet? 🗌 Yes	□ No If y	es, Unique Site ID:
Below Outfall	n: Nove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site UHotspot Open Small Parking Individual Str Underground	Lot Small Impervious Area
DRAINAGE AREA TO PRO	POSED RETROFIL	The second second	and the sould be an
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes:	%	Drainage Area I Residential SFH (< 1 SFH (> 1 Townhou Multi-Far Commercial	ac lots) Institutional ac lots) Industrial ac lots) Transport-Related ses Park
EXISTING STORMWATER	MANAGEMENT		
lf Yes, Describe:			
	litions, Including Existing Site	And the transmission of the second	and we have been a
Existing Head Available an	d Points Where Measured:		
		_	



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	ge: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Instit Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? f Yes, Describe: COOD PLATE	Slope Space
Conflicts with Existing Utilities: None Unknown Yes Possible 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 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 Yes No Yes No Yes No); Yes No







PESIGN OR DELIVERY NOTES POLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Confirm drainage area impervious cover Confirm drainage area Confirm drainage area Other: NITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS STIE CANDIDATE FOR FURTHER INVESTIGATION: STIE CANDIDATE FOR FURTHER INVESTIGATION: YES NITIAL FEASIBILITY AND CONSTRUCTION PROJECT(S): YES NO MAYBE NATE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES NO		Retrofit Reconnaissance Investigation	RR
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Confirm solutions Confirm solution	DESIGN OR DELIVERY NOTES		
Confirm property ownership Obtain existing stormwater practice as-builts Confirm drainage area Obtain site as-builts Confirm volume computations Obtain detailed topography Confirm volume computations Obtain utility mapping Confirm storm drain invert elevations Confirm soil types Other:			
Confirm property ownership Obtain existing stormwater practice as-builts Confirm drainage area Obtain site as-builts Confirm drainage area Obtain detailed topography Confirm volume computations Obtain utility mapping Confirm volume computations Obtain utility mapping Confirm solution Confirm solutions Confirm solutions Confirm solutions Other: Confirm solitypes Other: VITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS TITE CANDIDATE FOR FURTHER INVESTIGATION: YES STILE CANDIDATE FOR FURTHER INVESTIGATION: YES STILE CANDIDATE FOR FURTHER INVESTIGATION: YES NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES			
Confirm property ownership Obtain existing stormwater practice as-builts Confirm drainage area Obtain site as-builts Confirm drainage area Obtain detailed topography Confirm volume computations Obtain utility mapping Confirm volume computations Obtain utility mapping Confirm solution Confirm storm drain invert elevations Confirm solitypes Other: Other:			
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Confirm property ownership Obtain existing stormwater practice as-builts Confirm drainage area Obtain site as-builts Confirm volume computations Obtain detailed topography Complete concept sketch Obtain utility mapping Confirm soil types Other: Other:			
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Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Confirm solutions Confirm solution			
Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topography Confirm volume computations Obtain utility mapping Complete concept sketch Confirm storm drain invert elevations Other: Confirm soil types Other: Obtain still ty mapping NITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS Still Candidate For Further Investigation: Still Candidate For Further Investigation: Yes No MayBe E No, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): Yes No MayBe			
Confirm volume computations Complete concept sketch Confirm storm drain invert elevations Other: Initial FEASIBILITY AND CONSTRUCTION CONSIDERATIONS Initial Feasibility and Construction Considerations Strie Candidate For Further Investigation: Strie Candidate For Early Action Project(s): FNO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(s): Yes No MayBe MayBe MayBe MayBe MayBe MayBe MayBe MayBe MayBe No	Confirm drainage area	Obtain site as-builts	
Complete concept sketch Confirm storm drain invert elevations Confirm soil types Other: NITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS ITE CANDIDATE FOR FURTHER INVESTIGATION: STIE CANDIDATE FOR EARLY ACTION PROJECT(S): F NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES NO MAYBE NO MAYBE			
Other:	Complete concept sketch	Confirm storm drain invert elevations	
TTE CANDIDATE FOR FURTHER INVESTIGATION: S SITE CANDIDATE FOR EARLY ACTION PROJECT(S): F NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S):] Other:		
S SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES NO MAYBE	NITIAL FEASIBILITY AND CONSTRUCTION C	ONSIDERATIONS	
S SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES NO MAYBE			
S SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES NO MAYBE			
S SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES NO MAYBE			
S SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES NO MAYBE			
S SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES NO MAYBE			
S SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES NO MAYBE	TTE CANDIDATE FOR FURTHER INVESTIGAT		AYBE
	S SITE CANDIDATE FOR EARLY ACTION PRO	DIECT(S): YES NO M	AYBE
		ATION PROJECT(S): YES NO	AYBE
	ge 4 of 4	Unique Si	to ID.

Westerly Fire Department 180 Beach Street 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

0 0.01 0.02 0.04 Miles



WATERSHED:	SUBWATERSHI	D:	UNIQU	JE SITE ID: 99	
DATE: 6/2/16	ASSESSED BY: RLw/w	ID: LAT:		PICTURES:	- 14:5
GPS ID:	LMK ID:			LONG:	
SITE DESCRIPTION					
Name: Burlingane Address: Burlingane	Management Area , State Park Rolling	giontown Ro	ad		
Ownership: If Public, Government Jur	the second se	Private Unknow State DOT	n 🗌 Other		
Corresponding USSR/US/	A Field Sheet? 🗌 Yes	No If	yes, Unique	e Site ID:	
Below Outfall	on: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Ope Small Parkin Individual S Undergroun	ng Lot treet	Individual Roofto	Area
DRAINAGE AREA TO P	ROPOSED RETROFIT			a i com <u>atio</u>	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%		I ac lots) I ac lots) ouses amily	Institutional Industrial Transport-Re Park Undeveloped Other:	
EXISTING STORMWAT	ER MANAGEMENT				
Existing Stormwater Pra If Yes, Describe: or +o	actice: [Yes]] le CB in parking distant swale	No □Possibli 16t amair dewnslop	iteran K	ce area o	dracins
The second se	erosian along m n areas				6
Existing Head Available	and Points Where Measured:				
Page 1 of 4			-	Unique Sit	e ID: 99

Page 1 of 4



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control
Retrofit Volume Computations - Target Storn	ge: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention NON Swale Other:
SITE CONSTRAINTS	
Adjacent Land Use: Residential Commercial Instit Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	utional Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Sewer Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable 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 Yes No Yes No

Page 2 of 4



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e 3 of 4			Unio	in Cite	ID: 99

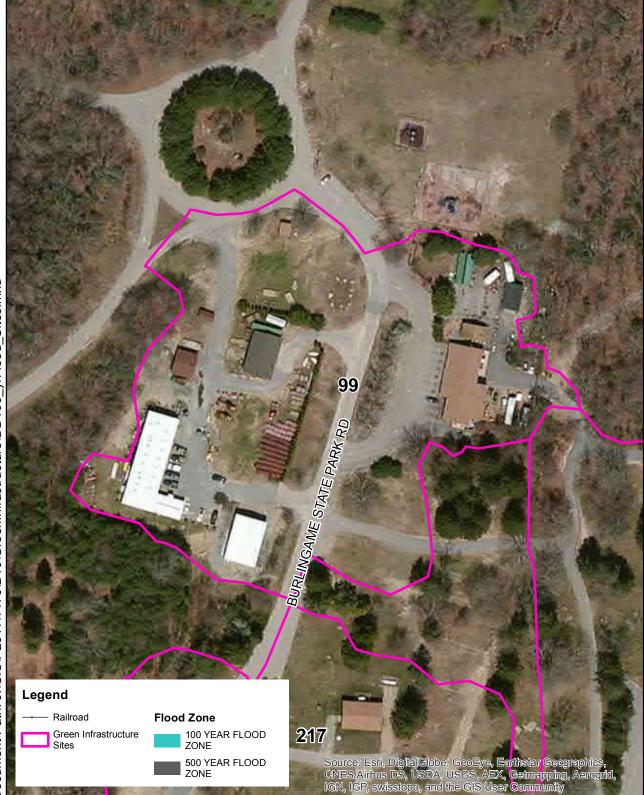
Retrofit Reconnaissance In	nvestigation
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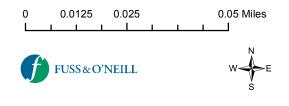
AFLICTARY TO A FLICT THE FLICE A COLLEG	DESIGN OR	DELIVERY	NOTES
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	3
FOLLOW-UP NEEDED TO COMPLETE FIELD C	CONCEPT
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	 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 CO	ONSIDERATIONS
SITE CANDIDATE FOR FURTHER INVESTIGAT IS SITE CANDIDATE FOR EARLY ACTION PRO IF NO, SITE CANDIDATE FOR OTHER RESTOR. IF YES, TYPE(S):	DJECT(S): YES NO MAYBE

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



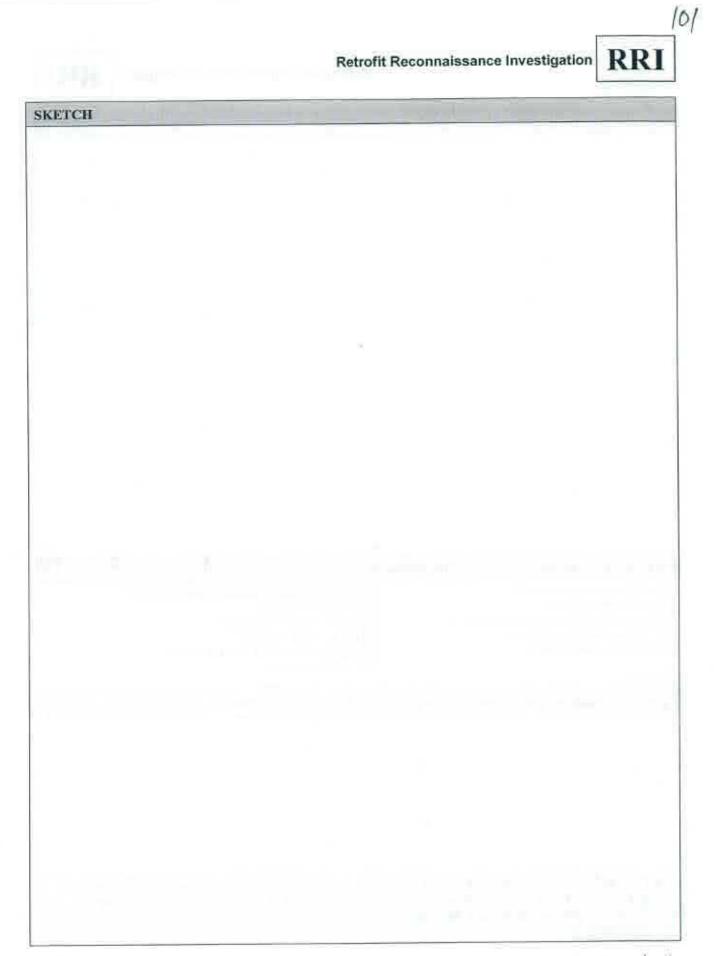


WATERSHED: SUBWATERSHED:		D:	UNIQUE SITE ID: 207		
DATE: 6/2/16	ASSESSED BY: Rug WC	CAMERA ID:	A	PICTURES: 13:10 - 13;	
GPS ID:	LMK ID:			LONG:	
SITE DESCRIPTION			-31		
Name: Contract	Baphist Pilgrim Bo treet, Westerly, RI	uptist church	h - Cent	ral Nurvery School	
Ownership: If Public, Government Jur		rivate Dunknov tate DOT	wn Other	ų	
Corresponding USSR/US/	A Field Sheet? Yes	No If	yes, Uniqu	e Site ID:	
Below Outfall	on: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Op Small Parki Individual S	ing Lot Street	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:	
DRAINAGE AREA TO P	ROPOSED RETROFT				
Drainage Area ≈% Imperviousness ≈% Impervious Area ≈		Drainage Area Land Use:			
Notes:		Townh	SFH (> 1 ac lots) Transport-Relate Townhouses Park Multi-Family Undeveloped Commercial Other:		
EXISTING STORMWATE	ER MANAGEMENT	The second	E l'an n		
Describe Existing Site Co	onditions, Including Existing S	ite Drainage and G	Conveyance	1	
existing Head Available	and Points Where Measured:				
and the second second second					
age 1 of 4			revisit	/ Unique Site ID: 101	
Aleod	approval for	access ;.	weekc	Unique Site ID: 101	
11000	//	1.	June	· (e '	

Retrofit	Reconnaissance	Investigation
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PROPOSED RETROFIT				
Purpose of Retrofit: U Water Quality Demonstration / Education	Recharge Repair	Channel P	rotection Fie	ood Control
Retrofit Volume Computations - 7	farget Storage:	Retrofit	Volume Computations - Av	vailable Storage:
Proposed Treatment Option:		Wetland	Bioretention Other:	
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial			Access:	
Industrial Transport-Rela Undeveloped Other: Possible Conflicts Due to Adjacent If Yes, Describe:		Yes No	Constrained due to	Space Tree Impacts Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Sewer Gas Cable Electric Electric to Streetli Overhead Wires Other:	ghts	ential Permittin a Safety Permits acts to Wetlands acts to a Stream odplain Fill acts to Forests acts to Specimer How many? Approx. DBH er factors:	g Factors: Necessary Probable Probable Probable Probable Probable Probable	Not Probable Not Probable Not Probable Not Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, Evidence of shallow bedrock: Evidence of high water table (gleyin] Yes ☐ No] Yes ☐ No] Yes ☐ No] Yes ☐ No] Yes ☐ No		



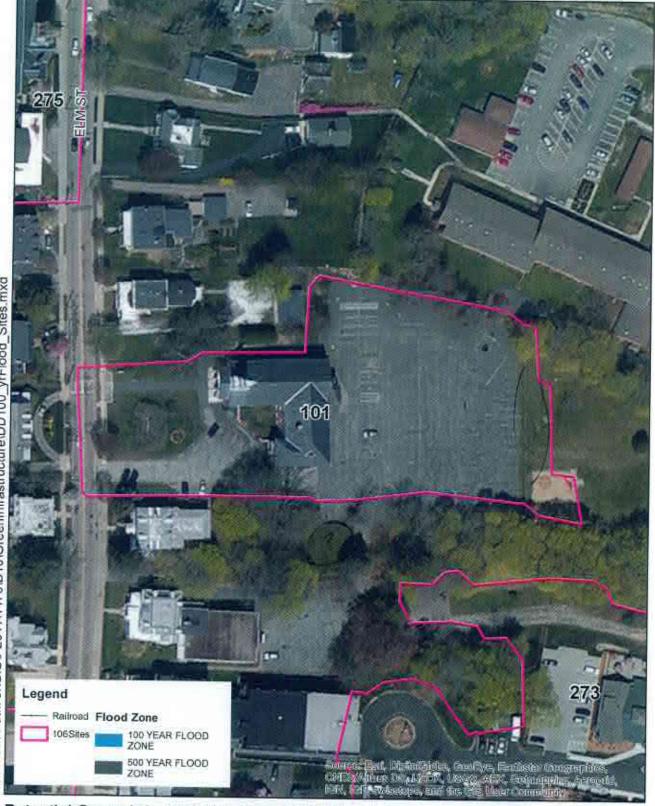
Retrofit	Reconnaissance	Investigation
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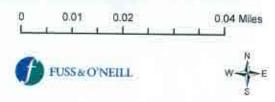
DESIGN	OR	DELL	VERY	NOTES

26	
Confirm property ownership Confirm drainage area Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	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
NITIAL FEASIBILITY AND CONSTRUCTION O	CONSIDERATIONS
TTE CANDIDATE FOR FURTHER INVESTIGA S SITE CANDIDATE FOR EARLY ACTION PR F NO, SITE CANDIDATE FOR OTHER RESTOR	OJECT(S): YES NO MAYBE

Pilgrim Baptist Church- Central Nursery School 16 Elm Street 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

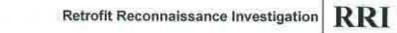




WATERSHED:	SUBWATERSHI	ED: UN	VIQUE SITE ID: 102
DATE: 6/9/16	ASSESSED BY: Aw/ WG		
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Grace Opis Address: 10 Par-K	Leal Methodist Chur Arenve, Westerly, K	ch	
Ownership: If Public, Government Jur	Public P	rivate Unknown tate DOT DO	ther:
Corresponding USSR/US/	A Field Sheet? Yes	🗌 No 🚽 If yes, Un	ique Site ID:
Below Outfall	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 PI	ROPOSED RETROFIT	1 x1 17, 81x 11	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area Land L Residential SFH (< 1 ac lots SFH (> 1 ac lots	s) Institutional Industrial
Notes:		Townhouses	
EXISTING STORMWATE	R MANAGEMENT		
Existing Stormwater Prac If Yes, Describe:	ctice: 🗌 Yes 🕅 No	D Possible	~
Roof non direct	ed to A; PL draig	is to residuction	backyards
cviolunce of place	king (+ sed depositi	on is low comes	
No est CBS, or	ains		
Existing Head Available a	nd Points Where Measured:		



PROPOSED RETROFIT			
Purpose of Retrofit: Water Quality Demonstration / Education Repair	Channel Pro	otection	Flood Control
Retrofit Volume Computations - Target Storage	: Retrofit V	olume Computation	as - Available Storage:
Proposed Treatment Option:	cated Wetland	Bioretention Other:	ble-pares
Describe Elements of Proposed Retrofit, Includi Blaversteation in Missy grass Regnall parking lot to direct Possible Raw swale!			
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	ional	Access: No Constraints Constrained due to Slope Utilities Structures Other:	
Conflicts with Existing Utilities: None Unknown Yes Possible Sewer Water Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH Other factors:	Necessary Pro	obable obable obable obable obable obable obable Not Probable Not Probable Not Probable Not Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation):	Yes No Yes No Yes No Yes No		





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Retrofit Reconnaissance In	vestigation
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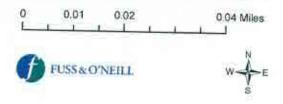


DESIGN OR DELIVERY NOTES	
FOLLOW-UP NEEDED TO COMPLETE FIELD CO	ONCEPT
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invest elevations Confirm soil types
NITIAL FEASIBILITY AND CONSTRUCTION CO	ONSIDERATIONS
	~
SITE CANDIDATE FOR FURTHER INVESTIGATI IS SITE CANDIDATE FOR EARLY ACTION PRO- IF NO, SITE CANDIDATE FOR OTHER RESTORA IF YES, TYPE(S):	DECT(S): XYES NO MAYBE
age 4 of 4	Unique Site ID:_/C

Grace United Methodist Church 10 Park 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



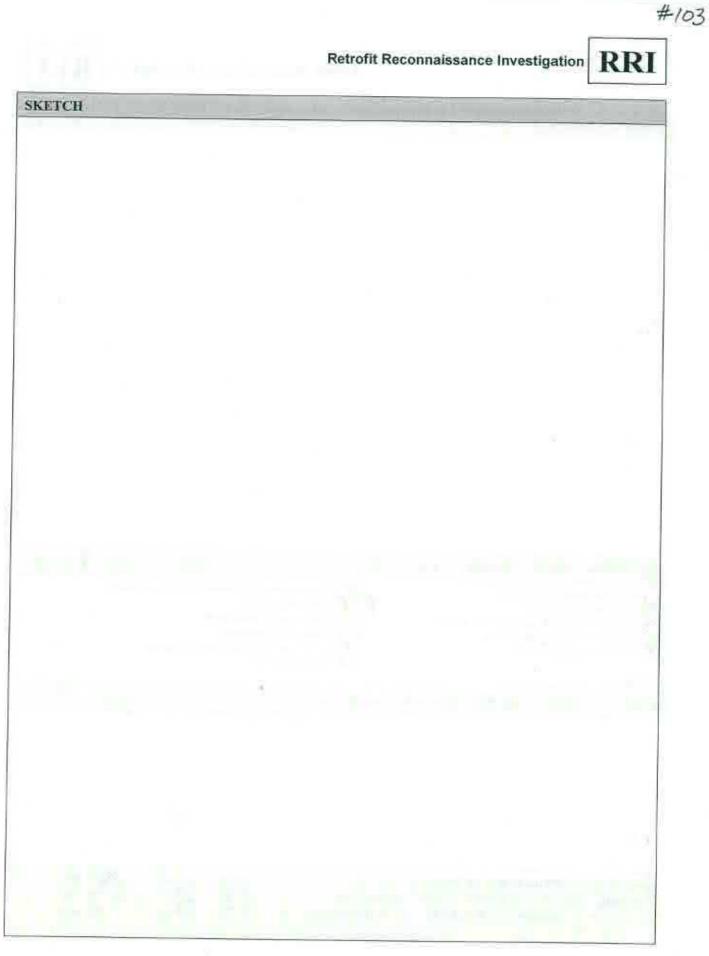
Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd



WATERSHED:	SUBWATERS	HED:	UNIQUE SITE ID: # 103
DATE: 6/2/16	ASSESSED BY: RLW	CAMERA ID:	
GPS ID:	LMK ID:	LAT:	Long:
SITE DESCRIPTION			
Name: Church of Address: III High Str	the Immaculture Co est, Westerly RI	onception	
Ownership: If Public, Government Juri	Bidiction:	Private Unknown State DOT	I Other:
Corresponding USSR/USA	Field Sheet? Yes	No If y	es, Unique Site ID:
Below Outfall	on: bove Roadway Culvert o Conveyance System lear Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Strategy Underground 	Lot Small Impervious Area
DRAINAGE AREA TO PR	OPOSED RETROFIT	Sand Paralla	A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: Bottom of "b drainage area	own"; need to map	Drainage Area L Residential SFH (< 1 SFH (> 1 SFH (> 1 Townhou: Multi-Fan Commercial	ac lots) Institutional ac lots) Industrial ac lots) Transport-Related ses Park
EXISTING STORMWATER	R MANAGEMENT		And to the second secon
Existing Stormwater Prac f Yes, Describe:	nrey infrastructur	and the second	
escribe Existing Site Con	ditions, Including Existing S	Site Drainage and Can	
whing lot contains	s - CBs + one lo Cin Pl	ing drain in d	reway
			uting from top of slope??
any access roa	a/alley contains cu	B ≠ is adjace	it to open lawn; pres
	d Points Where Measured:		

Page 1 of 4

PROPOSED RETROFIT			
Purpose of Retrofit: Water Quality Education Recharge Demonstration / Education	Channel Pr	otection	Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit-A	Folume Compu	tations - Available Storage:
	reated Wetland	Bioretention	
offline practice along all infiltration under lower			
Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	utional Yes No	Access: No Const Constrained Slop Utili Strue Othe	due to e Space ities Tree Impacts ctures ? Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Yes Cable Yes Electric Yes Electric to Streetlights Overhead Wires Other:	Potential Permittin Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimer How many? Approx. DBH Other factors:	Necessary 3	Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation	Yes No Yes No Yes No Yes No	20	



Page 3 of 4

	Retrofit Reconnaissance Investigation	RRI
DESIGN OR DELIVERY NOTES		
9 V		
FOLLOW-UP NEEDED TO COMPLETE FIELD C	Reserve and the second s	Sauer The
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	
Other:	Confirm soil types	
INITIAL FEASIBILITY AND CONSTRUCTION C	ONSIDERATIONS	
SITE CANDIDATE FOR FURTHER INVESTIGAT IS SITE CANDIDATE FOR EARLY ACTION PRO IF NO, SITE CANDIDATE FOR OTHER RESTOR	DJECT(S): 🗌 YES 🖉 NO 🗍 M	Maybe Maybe Maybe



.

SSED BY: kw/wG ID: ato Department Rad, Westerly, R Public Prive Public State Public State Prive Public State Prive Public State Prive P	t 02891 vate DUnknown te DOT	ac lots) ac lots) ses	dividual Rooftop mall Impervious Area andscape / Hardscape ther. brive way Institutional Industrial Gransport-Related Park Undeveloped
ater Department Ral, Westerly, R Public Priv Local Stat st? Yes Iway Culvert nee System Parking Lot RETROFIT _% large lown arm drainage		ation	ID: dividual Rooftop mall Impervious Area andscape / Hardscape ther. brive your Institutional Industrial Gransport-Related Park Undeveloped
Red, Westerly, R Public Prix Local Stat Stat et? Yes way Culvert here System Parking Lot RETROFIT _% large lawn arm druinage		Conter:	dividual Rooftop mall Impervious Area andscape / Hardscape ther. brive way Institutional Industrial Gransport-Related Park Undeveloped
Red, Westerly, R Public Prix Local Stat Stat et? Yes way Culvert here System Parking Lot RETROFIT _% large lawn arm druinage		Conter:	dividual Rooftop mall Impervious Area andscape / Hardscape ther. brive way Institutional Industrial Gransport-Related Park Undeveloped
Local Stat	te DOT No If ye On-Site Hotspot Opera Small Parking Individual Stro Underground Drainage Area L Residential SFH (< 1 SFH (< 1 SFH (> 1 Townhou Multi-Fan	Conter:	dividual Rooftop mall Impervious Area andscape / Hardscape ther. brive way Institutional Industrial Gransport-Related Park Undeveloped
Iway Culvert nce System Parking Lot RETROFIT % large lawn arm druinage	On-Site Hotspot Opera Small Pmking Underground Underground Drainage Area L Residential SFH (< 1 SFH (< 1 SFH (> 1 Townhou Multi-Fan	ation	dividual Rooftop mall Impervious Area andscape / Hardscape ther. brive way Institutional Industrial Gransport-Related Park Undeveloped
Ice System Parking Lot RETROFIT % large lawn orm druinage	Hotspot Open Small Parking Individual Stru Underground Drainage Area L Residential SFH (< 1 SFH (> 1 Townhou Multi-Fan	Let Si eet Li and Use: ac lots) ac lots)	mall Impervious Area andscape / Hardscape ther: <u>brive</u> way Institutional Industrial Gransport-Related Park Undeveloped
_% large lawn orm druinage	Residential SFH (< 1 SFH (> 1 Townhou Multi-Fan	and Use: ac lots) ac lots) ses	Institutional Industrial Gransport-Related Park Undeveloped
large lawn orm druinage	Residential SFH (< 1 SFH (> 1 Townhou Multi-Fan	ac lots) ac lots) ses] Industrial Gransport-Related Park Undeveloped
5.405.007/1-	[] Commercial		
		L	Other:
	5		<u>S</u>
GA .			
retreatment. :	Swale hear tch basins.	ily vege Road	otetabed. Far calatively new. wale?
Where Measured:			
60)			
	Strip. Swale Generating Site retreatment. prod w/ ca convergence + Where Measured: There Measured:	road runoff + off-site of strip. Swale continues u Ge including Existing Site Drainage and Con retreatment. Swale hear prod w/ catch basins. convergence + keeps wate Where Measured:	road runoff + off-site drainage strip. Swale continues up road to Generatment. Swale heavily vege pped w/ catch basins. Road conveyance + keeps water from s Where Measured:



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control Other:
Retrofit Volume Computations - Target Store	nge: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention Swale Other:
Update Row swale if	nding Surface Area, Maximum Depth of Treatment, and Conveyanc
SITE CONSTRAINTS	
Adjacent Land Use: Residential Commercial Insti Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use: If Yes, Describe:	Slope Space
Conflicts with Existing Utilities: None Unknown Yes Possible Water (Water) Gas ? Gas ? Cable ? Electric Proverhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands 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 Yes No Yes No n): Yes No



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107

RRI

DESIGN OR DELIVERY NOTES

· Paul said he feels uncomfortable u/ BMPs due to presuce of drinking water wells -has plans of draining (all storm water drains to Pawcatuck, R via drains) · Signs regarding wellhead protection area, cleanup of pet waster + RIDEM permit for recent storm drain install all attached to ferce. Grapp # 13-011

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT

· Spoke to Paul C. (card obtained)

DPW superintendant

Other: INITIAL FEASIBILITY AND CONSTRUCTION CO		
Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	 Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types 	92
Confirm property ownership Confirm drainage area	 Obtain existing stormwater practice as-builts Obtain site as-builts 	

Volitely site due to presence of wells, would require conving otherly westerly officials not on site SITE CANDIDATE FOR FURTHER INVESTIGATION: YES NO MAYBE YES XNO IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): MAYBE IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES XNO MAYBE IF YES, TYPE(S):_

Page 4 of 4

Westerly Town Water Department 68 White Rock Road Westerly, RI



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

0.05 Miles

0.025

0.0125



	SUBWATERSHED		UNIQU	E SITE ID: 188
DATE: 6/9/16	ASSESSED BY: RW/WG	CAMERA ID:	C	PICTURES: 1136-123
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				
Name: Bradford Sc Address: 15 Church	st (+ St bincents Call	westerly, i	2.I	
Ownership: If Public, Government Juri	sdiction: Public Dri		n D Other:	
Corresponding USSR/USA	Field Sheet? Yes	□ No If y	es, Unique	Site ID:
Below Outfall	on: Above Roadway Culvert n Conveyance System Near Large Parking Lot	On-Site Hotspot Oper Small Parkin Individual St Underground	g Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PI	OPOSED RETROFT	National States	والمراجع بع	LAND REAL PROPERTY AND
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area		Institutional
Notes:	5 m 1	SFH (>) Townhou Multi-Fa	ises	Transport-Related Park Undeveloped Other:
		Commercial		
EXISTING STORMWATE Existing Stormwater Pra-		A Share	ng ng tra	
And the second sec		A Share		
Existing Stormwater Pra- If Yes, Describe: Describe Existing Site Co	nditions, Including Existing Site	Possible Drainage and Co	nveyance:	
Existing Stormwater Pra- If Yes, Describe: Describe Existing Site Co Roof drains prom 2 CBs in Small 1 Parking 1075 drain	nditions, Including Existing Site o to Storm System; ro ot to CIDS-that run t	Possible Possible Drainage and Co of Sometimes o (road?)	nveyance: Flood	s in hearge rain
Existing Stormwater Pra- If Yes, Describe: Describe Existing Site Co Roof drains prom 2 CBs in Small 1 Parking 1075 drain	nditions, Including Existing Site o to Storm System; co	Possible Possible Drainage and Co of Sometimes o (road?)	nveyance: Flood	s in hearge rain
Existing Stormwater Pra- If Yes, Describe: Describe Existing Site Co Roof drains pron 2 CBS in Small 1 Parking Wats drain No farmal draine	nditions, Including Existing Site o to Storm System; ro ot to CIDS-that run t	Possible Possible Drainage and Co of Sometimes o (road?)	nveyance: Flood	s in hearge rain
Existing Stormwater Pra- If Yes, Describe: Describe Existing Site Co Roof drains pron 2 CBS in Small 1 Parking Wats drain No farmal draine	nditions, Including Existing Site of to Starm System; ro of to CIDS-that run t uge; powed areas on	Possible Possible Drainage and Co of Sometimes o (road?)	nveyance: Flood	s in hearge rain
Existing Stormwater Pra- If Yes, Describe: Describe Existing Site Co Roof drains proj 2 CBS in Small 1 Parking Jots drain No farmal draine Existing Head Available :	nditions, Including Existing Site of to Starm System; ro of to CIDS-that run t uge; powed areas on	Possible Possible Drainage and Co of Sometimes o (road?)	nveyance: Flood	s in hearge rain

Cluch



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	ge: Retrofit Volume Computations - Available Storage:
Filtering Practice 🛛 Infiltration 🔲 S	Created Wetland Bioretention Swale Other: Green Roof (School)
	ding Surface Area, Maximum Depth of Treatment, and Conveyance on flat portion of roof; design to g to read drains (ET + durect toward Adf
edge); students might he	we access to roof via statewell
bed. native of upcoming en site constraints	aparsion and detrif more BMPs could be
Adjacent Land Use: Residential Commercial Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Constrained due to
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 Specimen Trees How many? Approx. DBH
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock:	Yes No Yes No Yes No





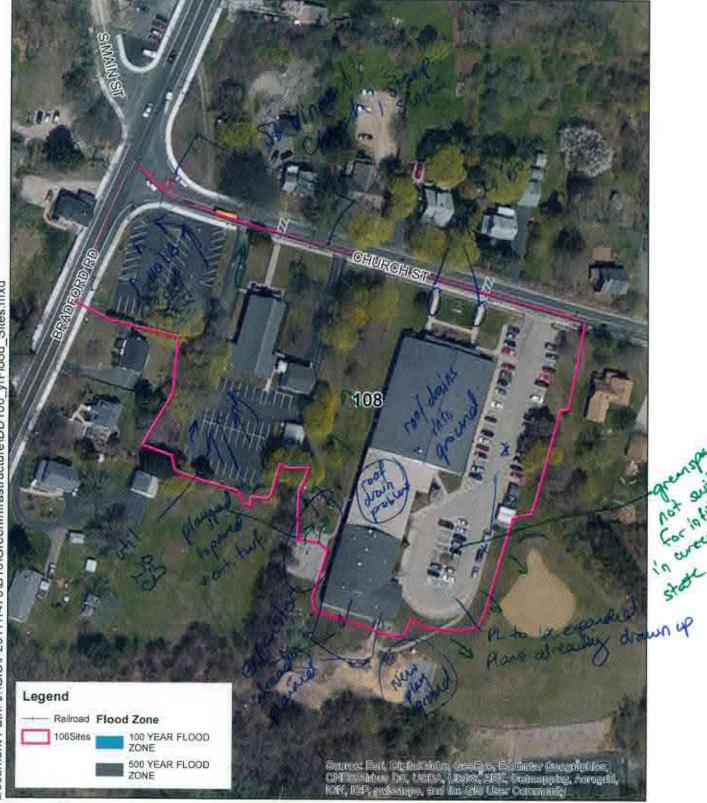


Retrofit Reconnaissance Investiga	tio
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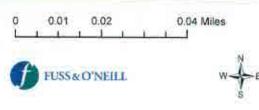


DESIGN OR DELIVERY NOTES	
Gron'l ball field heavily used b	ny students
FOLLOW-UP NEEDED TO COMPLETE FIELD CONC	
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
INITIAL FEASIBILITY AND CONSTRUCTION CONST	
SITE CANDIDATE FOR FURTHER INVESTIGATION: IS SITE CANDIDATE FOR EARLY ACTION PROJECT IF NO, SITE CANDIDATE FOR OTHER RESTORATIO IF YES, TYPE(S):	r(s): Yes No Maybe

Bradford School 15 Church Street 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



Coriofilt.



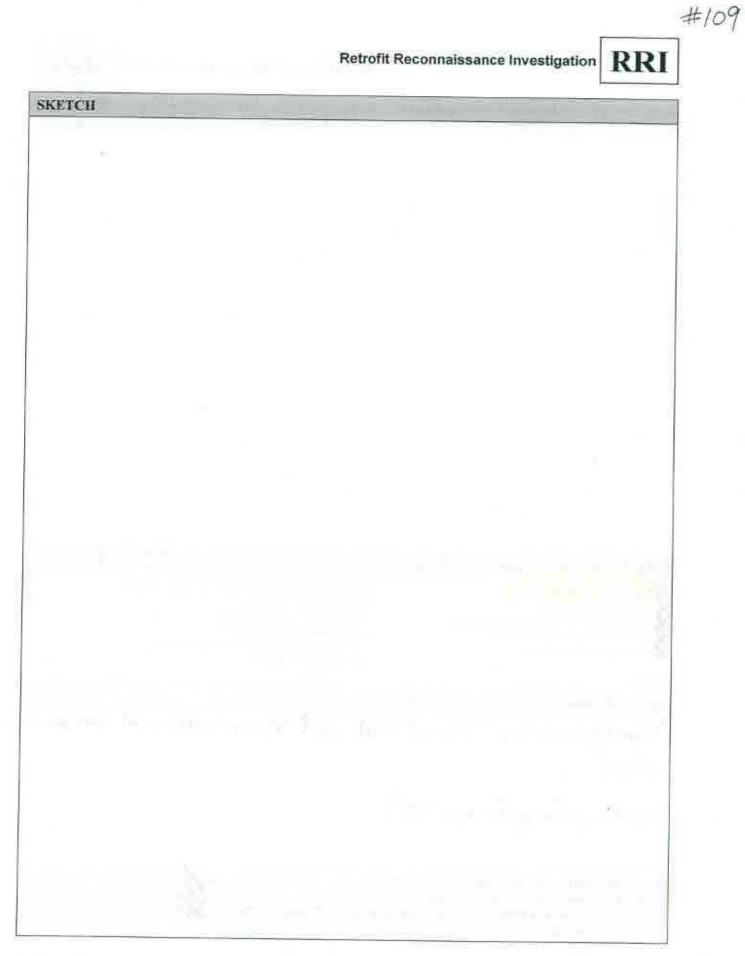
UNIQUE SITE ID: /09 A ID: PICTURES: 900 - 920 LONG: LONG: Jnknown Other:
LONG:
DOT Other:
DOT Other:
DOT Other:
oot Operation Individual Rooftop Parking Tot Small Impervious Area idual Street Landscape / Hardscape rground Other: Soil Stock piles, dis e Area Land Use: Institutional ential Institutional FH (< 1 ac lots)
Parking Tot Small Impervious Area idual Street Landscape / Hardscape rground Other: Soil Stock pices, dis e Area Land Use: Institutional ential Institutional FH (< 1 ac lots)
ential Institutional FH (< 1 ac lots) Industrial FH (> 1 ac lots) Transport-Related ownhouses Park fulti-Family Undeveloped?
ential Institutional FH (< 1 ac lots) Industrial FH (> 1 ac lots) Transport-Related ownhouses Park fulti-Family Undeveloped?
I Older.
ossible
and Conveyance: i disturbed, Bood PLSOF Parking Delaw parking lot (west of es runoff from yoper lot via di) of site enters woods + wetlands

Page 1 of 4

Retrofit Reconnaissance Investigation	RRI

Purpose of Retrofit:	
Water Quality Recharge	ge Channel Protection Flood Control
Retrofit Volume Computations - Target Stor	rage: Retrofit Volume Computations - Available Storage:
/	
Proposed Treatment Option:	Created Wetland
Filtering Practice Infiltration	Swale Other:
Describe Elements of Proposed Retrofit, Inc	luding 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:	Access:
Residential Commercial Ins	stitutional IN No Constraints
Industrial 🔲 Transport-Related 🗌 Pa	
Undeveloped Other:	e? Yes No Utilities Tree Impacts
Possible Conflicts Due to Adjacent Land Us If Yes, Describe:	Structures Property Ownershi
n res, beschibe.	Other:
Conflicts with Existing Utilities:	Potential Permitting Factors:
None None	Dam Safety Permits Necessary Drobable Not Probable
Unknown	Impacts to Wetlands Probable Not Probable
Yes Possible	Impacts to a Stream Probable Not Probable
Sewer	Floodplain Fill Probable Not Probable
7. Water	Impacts to Specimen Trees Probable Not Probable
Gas Gas	
	How many?
Cable	Approx DBH
Cable 7. Electric	Approx. DBH
	STORE
Cable 7. Electric	Approx. DBH Other factors:
Cable 7. Electric 8. Electric to Streetlights Overhead Wires Other:	Other factors:
Cable ? Cable ? Electric Electric to Streetlights Overhead Wires Other: Soils:	Other factors:
Cable 7. Cable 7. Electric 8. Electric to Streetlights 0. Overhead Wires 0. Other: Soils: Soil auger test holes:	Other factors:
Cable 7. Electric 8. Electric to Streetlights Overhead Wires Other:	Other factors:

Page 2 of 4



Page 3 of 4

Retrofit Re	connaissance	Invest	igation
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DESIGN OR DELIVERY NOTES	
POLLOW-UP NEEDED TO COMPLETE FIELD COM	NCEPT
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
Other:	Confirm soil types
NITIAL FEASIBILITY AND CONSTRUCTION CON	SIDERATIONS
Property ownership? Planned la of site	and use? Planned additional developme
OF SITC	
Possible parking for site 278?	
SITE CANDIDATE FOR FURTHER INVESTIGATION IS SITE CANDIDATE FOR EARLY ACTION PROJE IF NO, SITE CANDIDATE FOR OTHER RESTORAT IF YES, TYPE(S):	ECT(S): YES SNO MAYBE
age 4 of 4	Unique Site ID: 10 ^C

Westerly Packing 15 Springbrook Road Westerly, RI



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 W



DATE: 64/16 ASSESSED BY: RW/WS CAMERA ID: A PICTURES: 75 GPS ID: LMK ID: LAT: LONG: Individual Street Iong: 1000000000000000000000000000000000000	DATE: 6 216		HED:	UNI	QUE SITE ID: 110
STIT DESCRIPTION Name: Clenation Address: 39 Spingbrook Incestoring, RT Dwnership: Prublic fPublic, Government Jurisdiction: Dot Dornership: Prublic fPublic, Government Jurisdiction: Dot Corresponding USSR/USA Field Sheet? Yes Proposed Retrofit Location: On-Site Below Outfall In Conveyance System In Road ROW Near Large Parking Lot Other: Small Parking Lot Data Age Area 2 Small Parking Lot Individual Street Landscape / Hardscape Other: Small Parking Lot Drainage Area 2 On-Site mepervious Area 2 % Mutervious Area 2			WG CAMERA ID:	A	PICTURES: 76
Name: Cle neutrony Schwol Address: 39 Spiraghroek Ka Winership: Private Unknown Public, Government Jurisdiction: Local State DOT Other: Porresponding USSR/USA Field Sheet? Yes No If yes, Unique Site ID: Proposed Retrofit Location: On-Site Small Parking Lot Small Impervious Area Below Outfall In Conveyance System Small Parking Lot Banall Impervious Area In Road ROW Near Large Parking Lot Individual Street Landscape / Hardscape Other: Other: Other: Individual Street Landscape / Hardscape Other: Small Parking Lot Institutional Institutional Inpervious Area ≈ % Other: Institutional Inpervious Area ≈ % Park Industrial otes: Sct.gol work Multi-Family Undeveloped Other: Multi-Family Other: Multi-Family Multi-Family Multi-Family Other: Other: Vesting Area Mo Possible		LMK ID:	LAT:		LONG:
Address: 39 Spingbook Kd Westorty, RT Dwnership: Prublic, Government Jurisdiction: Locat State DOT Other: Corresponding USSR/USA Field Sheet? Yes No If yes, Unique Site ID: Proposed Retrofit Location: On-Site Small Parking Lot Below Outfall In Conveyance System Small Parking Lot In Road ROW Near Large Parking Lot Small Parking Lot Other: Underground Other: PRAINAGE AREA TO PROPOSED RETROFIT Proposed Retrofit Location; Institutional Individual Street Other: Drainage Area Land Use: Impervious Area ####################################	Second Constrainty Statistics and the Constrainty of the				
Dynership: fPublic, Government Jurisdiction: Corresponding USSR/USA Field Sheet? Yes No If yes, Unique Site ID: roposed Retrofit Location: torage Existing Pond Below Outfall In Road ROW Near Large Parking Lot Other: PRAINAGE AREA TO PROPOSED RETROFIT rainage Area ≈ mpervious Area ≈ mpervious Area ≈ mpervious Area ≈ Multi-Family Institutional Industrial Institutional Industrial Multi-Family Undeveloped Other: Residential Institutional Industrial Residential Institutional Private Yes No Possible Yes, Describe: Agrey water drainage (catch busins tristation to the single of t					
Public, Government Jurisdiction: Image: Dot image: Do	wnership:	Public			
Proposed Retrofit Location: Brow Outfall Above Roadway Culvert Below Outfall In Conveyance System In Road ROW Near Large Parking Lot Other: Small Parking Lot Drainage Area ≈ On-Site mpervious Area ≈ On-Site Drainage Area ≈ On-Site Institutional Institutional Drainage Area ≈ Multi-Family Individual street Industrial Industrial Transport-Related Park Undeveloped Inter: Other:		sdiction: Local			ir:
Storage On-Site Existing Pond In Conveyance System In Road ROW Near Large Parking Lot Other: Individual Street Underground Other: DRAINAGE AREA TO PROPOSED RETROFT Institutional Drainage Area ≈ % mpervious Area ≈ % Iotes: Scheel building, grands Iotes: Scheel building, grands XISTING STORMWATER MANAGEMENT Xisting Storm water Practice: Image Area basics visited Grey water drainage (catch busics visited)			□ No If yo	es, Uniqu	e Site ID:
DRAINAGE AREA TO PROPOSED RETROFT Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ % Notes: School building, grunds SFH (<1 ac lots)	Storage Existing Pond A Below Outfall I In Road ROW NN	Above Roadway Culvert n Conveyance System	Hotspot Opera Small Parking Individual Stro	Lot	Small Impervious Area
Drainage Area Imperviousness Impervious Area Imp	DRAINAGE AREA TO PR	OPOSED RETROFIT			U Other:
Imperviousness ≈)rainage Area ≈	NAME OF TAXABLE PARTY OF TAXABLE	Drainage Area L	and Use	
Notes: School building, grunds SFH (> 1 ac lots) Industrial SFH (> 1 ac lots) Transport-Related Townhouses Park Multi-Family Undeveloped Commercial Other: Stisting Stormwater Practice: No Possible I Yes, Describe: - Grey water drainage (catch besiers visible)	mperviousness ≈ mpervious Area ≈	%	Residential		Institutional
EXISTING STORMWATER MANAGEMENT Existing Stormwater Practice: No Possible (Yes, Describe: Grey water drainage (catch busins visible)	A CONTRACTOR OF	g, grands	SFH (> 1	ac lots) es	Transport-Related Park Undeveloped
Existing Stormwater Practice: No Possible I Yes, Describe: , Grey water drainage (catch busins visible)	XISTING STORMWATE	R MANAGEMENT	Commercia	-	
	CITE OF A DESCRIPTION OF A				
visiting Hend Available and Points Where Mensured: From Front office: "Swamp area an site" Grades K-4	, Grey water a	drainage (catch b	acisins visible)	veyance	

RRI

PROPOSED RETROFIT			
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Pro	otection 🗌 Flood Control	
Retrofit Volume Computations - Target Storag	e: Retrofit V	olume Computations - Available Storag	ge:
Filtering Practice Infiltration	wale	Bioretention	
Describe Elements of Proposed Retrofit, Includ	ling Surface Area, Max	ximum Depth of Treatment, and Conve	eyance:
Bioretention or swale w/ na purposes; utilize emisting o curb cuts or or take po drainage offline	satch basin(s)	as overflow structure (5)
SITE CONSTRAINTS			
Adjacent Land Use: Configuration of the Adjacent Land Use: Institute and Use: Institute and Use: Institute and Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	to hard to dut utional on site	Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ow Other:	
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits 1 Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH Other factors:	Necessary Probable Not Probable	able able able able
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock:	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No	unable to determine	

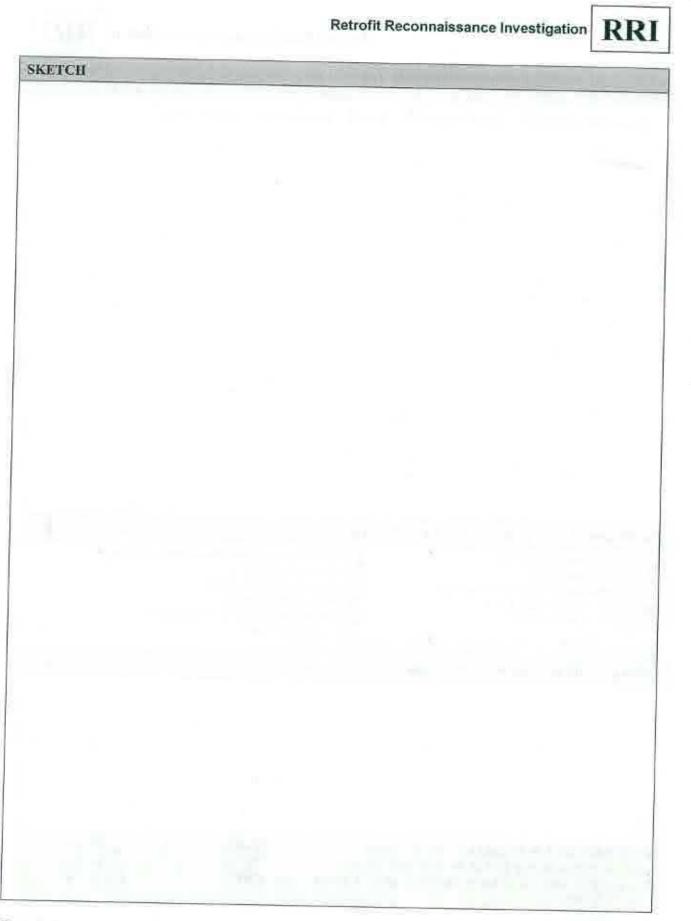
٦ Yes

Yes No

Evidence of shallow bedrock:

Evidence of high water table (gleying, saturation):

Ξ.



Page 3 of 4



DESIGN OR DELIVERY NOTES	
Ground's nicely landscaped; need	l to match aesthutic
lates of	
FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEP	
Confirm drainage area	Obtain existing stormwater practice as-builts 🗡 Obtain site as-builts
Confirm volume computations	Obtain detailed topography Obtain utility mapping
	Confirm storm drain invert elevations Confirm soil types
NITIAL FEASIBILITY AND CONSTRUCTION CONSIDER	
INITIAL PEASIBILITY AND CONSTRUCTION CONSIDER	GHIONS
SITE CANDIDATE FOR FURTHER INVESTIGATION:	YES NO MAYBE
MILE CANDIDATE FOR PERTINE INVESTIGATION:	PARTES I LINU I IMPAIDE
IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S IF NO, SITE CANDIDATE FOR OTHER RESTORATION H	: YES NO MAYBE





WATERSHED: SUBWATERSHED			UNIQUE SITE ID: 160		
DATE: 6/9/16 ASSESSED BY: RW/W		CAMERA ID:	C	PICTURES: 115-2:00	
GPS ID:	LMK ID:	LAT:		LONG:	
SITE DESCRIPTION				والمراجع فالمحاط	
Name: Springbrook E Address: 39 Springbr	to mentary School Dois Road, Westerly,	RJ			
Ownership: If Public, Government Jurisd	iction: Public Priv		Other:		
Corresponding USSR/USA F	ield Sheet? 🗌 Yes	□ No If ye	s, Unique	Site ID:	
Below Outfall	: ove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	Lot [] Individual Rooftop Small Impervious Area Landscape / Hardscape Other:	
DRAINAGE AREA TO PRO	POSED RETROFIT	Provide The L	1.1143	DILLANDIAN TENDIAN SIL	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area L Residential SFH (< 1 a SFH (> 1 a Townhous Multi-Fan Commercial	ac lots) ac lots) es	Institutional Industrial Transport-Related Park Undeveloped Other:	
EXISTING STORMWATER	MANAGEMENT				
Existing Stormwater Practic If Yes, Describe: Iofi Hrotton/d Bionetution or Maintahed	ce: XI Yes □No ry wells? oletention basin o	7 Possible of S. Side J.	f SCho	ol) poorly	
water drains a	itions, Including Existing Site sutward from busis 14 to C.Bs. that	liding (no	signif	want off-site my lead to infiltro	



PROPOSED RETROFIT	Section and section and		
Purpose of Retrofit:	Recharge Repair	Channel Protection Other:	Flood Control
Retrofit Volume Computations -	Target Storage:	Retrofit Volume (Computations - Available Storage:
	t Pond Created ' Itration Swale	Wetland Bioret	
purposes		3.0	bot present ot for educational
SITE CONSTRAINTS			
Adjacent Land Use: Residential Commercial Industrial Transport-Re Undeveloped Other: Possible Conflicts Due to Adjace If Yes, Describe:	Institutional elated Park ent Land Use?		s: o Constraints rained due to] Slope] Utilities] Structures] Structures] Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Gas Gas Gas Electric Electric to Stree Overhead Wires Other:	Dam Impac Impac Flood Impac Impac Impac Impac Impac Impac	tial Permitting Factors Safety Permits Necessar as to Wetlands as to a Stream plain Fill as to Forests as to Specimen Trees low many? approx. DBH r factors:	
Soils: Soil auger test holes: Evidence of poor infiltration (clay Evidence of shallow bedrock: Evidence of high water table (gley	s, fines):	Yes □No Yes □No Yes □No	



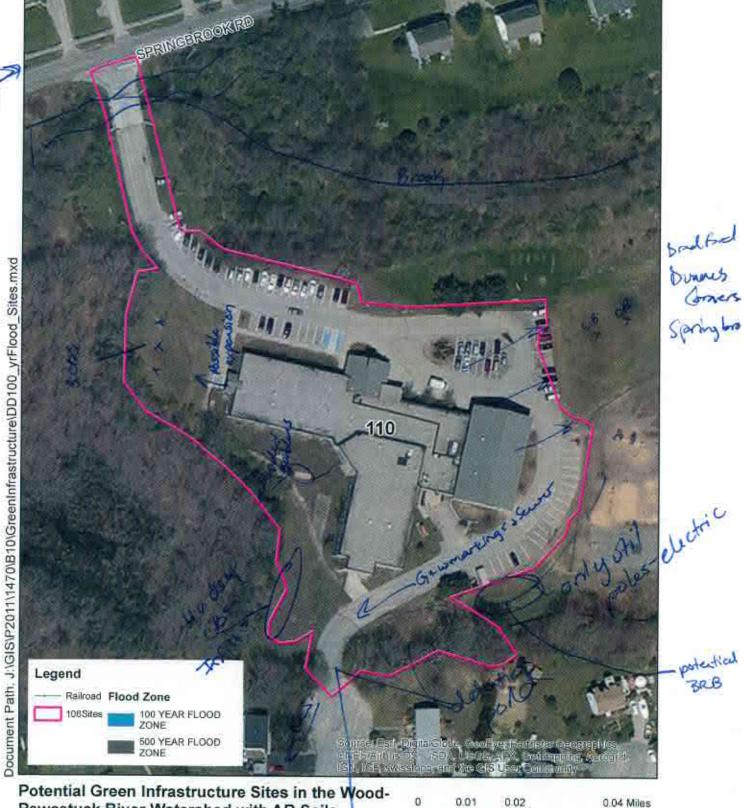
SKETCH

Unique Site ID:_____0

SIGN OR DELIVERY NOTES		
	•	
DLOW-UP NEEDED TO COMPLETE FIELD		
Confirm property ownership Confirm drainage area	Obtain existing stormwater practice as-builts Obtain site as-builts	
Confirm drainage area impervious cover Confirm volume computations	Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations	
Confirm volume computations Complete concept sketch	Confirm storm drain invert elevations	
Other:		
ITIAL FEASIBILITY AND CONSTRUCTION	CONSIDERATIONS	
TE CANDIDATE FOR FURTHER INVESTIGA	TION: YES NO M	AYBE
SITE CANDIDATE FOR EARLY ACTION PI	ROJECT(S):	AYBE
NO, SITE CANDIDATE FOR OTHER RESTO IF YES, TYPE(S):		AYBE
IF 1E5, 11(5).		

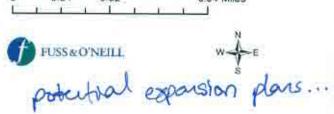
Springbrook Elementary School 39 Springbrook Road Westerly, RI





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

energeners sit.





Dump Cloud	SUBWATERSHE	D:	UNIQU	E SITE ID:
DATE: 6/9/16	ASSESSED BY: RW/W	G CAMERA ID:	C	PICTURES:
GPS ID:	LMK ID:	LAT:	-	LONG:
SITE DESCRIPTION				
Name: Boul ford	Social Club Love, Westerly, RI			
Ownership: If Public, Government Juris	sdiction:	rivate Unknown tate DOT		rveillance
Corresponding USSR/USA	Field Sheet? Yes	□ No If y	es, Unique	Site ID:
Below Outfall	n: bove Roadway Culvert n Conveyance System lear Large Parking Lot	On-Site Hotspot Open Small Parking Individual Str Underground	Lot [] Individual Reofflop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PR	OPOSED RETROFIT	/	all and a start	A DAME OF STREET
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	A %	Drainage Area I Residential SFH (< 1 SFH (> 1 Townhou Multi-Fau	ac lots) ac lots) ses	 Institutional Industrial Transport-Related Park Undeveloped Other:
EXISTING STORMWATE	R MANAGEMENT	C. La		
Existing Stormwater Prac	tice: 🗌 Yes 🕅 N	0 Possible		
	rtice: 🗌 Yes 💢 N	o 🗌 Possible		
Existing Stormwater Prac If Yes, Describe: Describe Existing Site Con No detailed as	nditions, Including Existing Si	te Drainage and Cor	iveyance:	
If Yes, Describe: Describe Existing Site Con No detailed as	nditions, Including Existing Si	te Drainage and Cor	iveyance:	
If Yes, Describe: Describe Existing Site Con No detailed as	nditions, Including Existing Si	te Drainage and Cor	iveyance:	

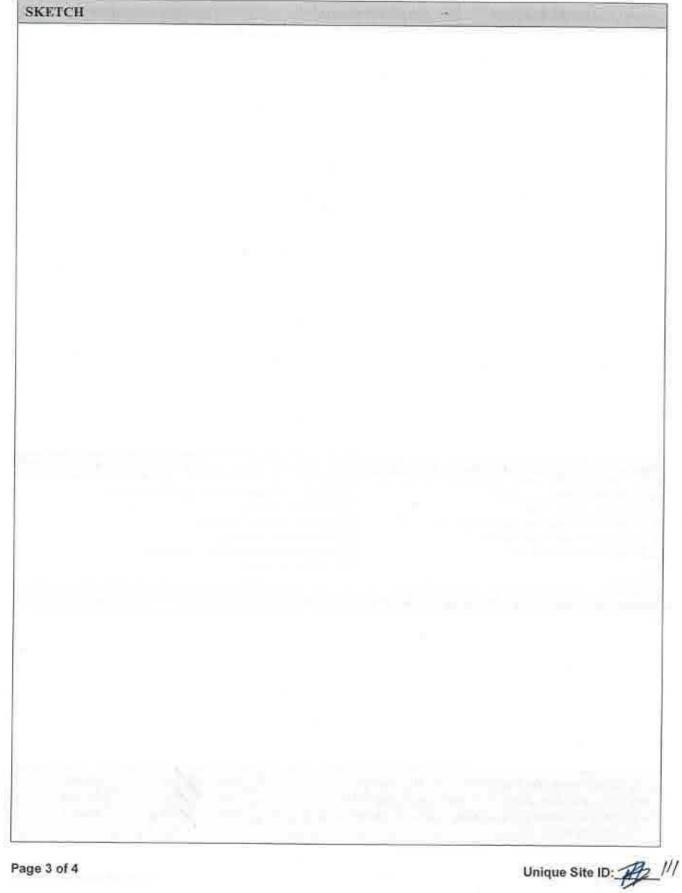
Unique Site ID: ///



PROPOSED RETROFIT	1 - Charles	2 - e	and the second se
Purpose of Retrofit: Water Quality Demonstration / Education	Channe	Protection	Flood Control
Retrofit Volume Computations - Target Stora	ige: Retrof	it Volume Computa	tions - Available Storage:
	Created Wetland Swale	Bioretention	permeable pavement
TTE CONSTRAINTS		Access: No Constrained du Slope Utilitie Structu	e to
1 1 0, 10000 1000			
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permit Dam Safety Perm Impacts to Wetlar Impacts to a Strea Floodplain Fill Impacts to Forests Impacts to Specin How many?_ Approx. DBF	ts Necessary	Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable







Page 3 of 4

Retrofit	Reconnai	ssance	Investi	gatio
1 YOU OUT	necounita	0000100	11110001	gunor



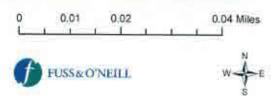
DESIGN	OR	DELIV	VERY	NOTES
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		- 18 - 19				
	ED TO COMPLETE		14.14			
Confirm property Confirm drainage Confirm drainage Confirm volume o Complete concept Other:	area area impervious cove computations	r	Obtain site as Obtain detaile Obtain utility	d topography mapping n drain invert ele		ilts
NITIAL FEASIBILI	TY AND CONSTRUC	TION CONSID	ERATIONS		- H	
IS SITE CANDIDAT	OR FURTHER INVE E FOR EARLY ACT DATE FOR OTHER I :	ION PROJECT(YES YES YES	NO NO NO	MAYBE MAYBE MAYBE
age 4 of 4					Uniqu	ue Site ID:_//)

Bradford Social Club 2 Bowling Lane 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





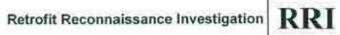
WATERSHED:	SUBWATERSHED:		UNIQUE SITE ID: 12	
DATE: 6/9/16	ASSESSED BY: RW/WC	CAMERA ID: (PICTURES: 215-230
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				had a state of the
Name: Bubcoak Pr Address: 25 Maxso	esbyterian Church O Street, Hopkinkon	RE		
Ownership: If Public, Government Juris	diction:] Other:_	
Corresponding USSR/USA	Field Sheet? 🗌 Yes	□ No If yes	s, Unique S	site ID:
Below Outfall	n: bove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Operal Small Parking Individual Stre	Lot 🗌	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PR	OPOSED RETROFIT		1.18	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	Drainage Area La Residential SFH (< 1 a SFH (> 1 a	ac lots)	Institutional Industrial Transport-Related	
Notes: 2		Townhouses Park		
EXISTING STORMWATE	R MANAGEMENT			THE REPAY NO.
Existing Stormwater Prac If Yes, Describe:	tice: □ Yes □ No	Possible		
	to Street down St			
Existing Head Available a	nd Points Where Measured:			~
age 1 of 4				Unique Site ID: 12



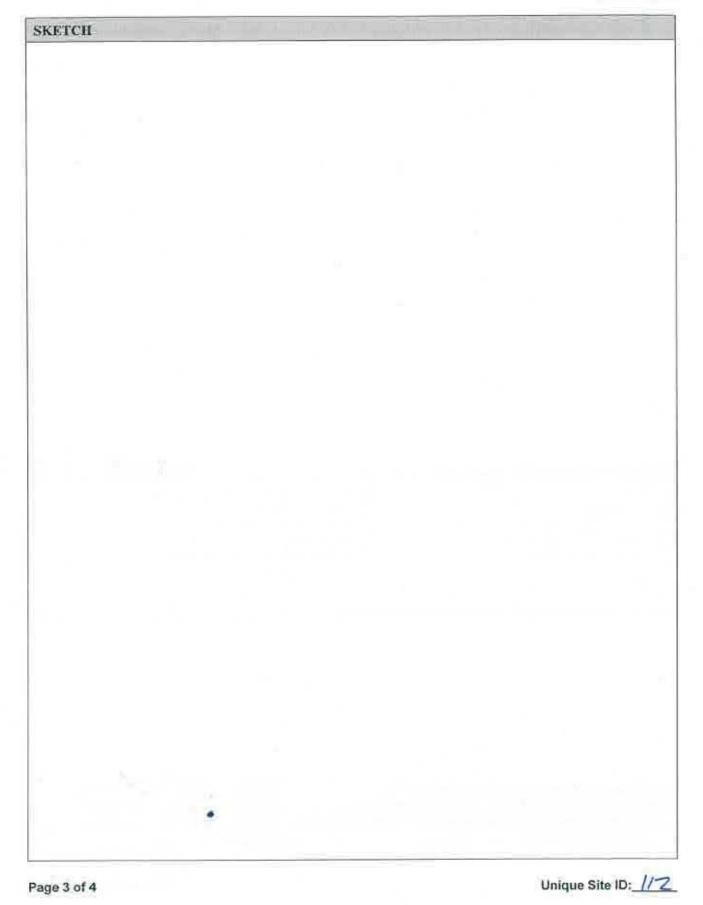
PROPOSED RETROFIT		
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel P	rotection 🗌 Flood Control
Retrofit Volume Computations - Target Stora	5	Volume Computations - Available Storage:
	Created Wetland	Bioretention Other:
presenteable at or in steep slopes limit Breations take curbs out to disperse	Some runo	f into grass?
SITE CONSTRAINTS	. Y	
Adjacent Land Use: Residential Commercial Instit Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	utional	Access: No Constraints Constrained due to fcos Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Conflicts with Existing Utilities: None Unknown Yos Possible Gas Site rear Gas Site rear Electric Electric to Streetlights Overhead Wires Other:	Potential Permittin Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH	Necessary Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	Yes No Yes No Yes No Yes No Yes No	K)

Page 2 of 4

Unique Site ID: //Z









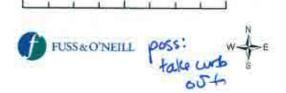
DESIGN	OR DELI	VERY	NOTES
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FOLLOW-UP NEEDED TO COMPLETE FIELD	CONCEPT
Confirm property ownership	Obtain existing stormwater practice as-builts
Confirm drainage area	 Obtain site as-builts Obtain detailed topography
Confirm volume computations Complete concept sketch	Obtain utility mapping Confirm storm drain invert elevations
Other:	Confirm soil types
INITIAL FEASIBILITY AND CONSTRUCTION	CONSIDERATIONS
	ATION: YES NO MAYBE
SITE CANDIDATE FOR FURTHER INVESTIG IS SITE CANDIDATE FOR EARLY ACTION P IF NO, SITE CANDIDATE FOR OTHER RESTO	ROJECT(S): YES NO MAYBE

Babcock Presbyterian Church 25 Maxson 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



0.04 Miles

0.02

0.01

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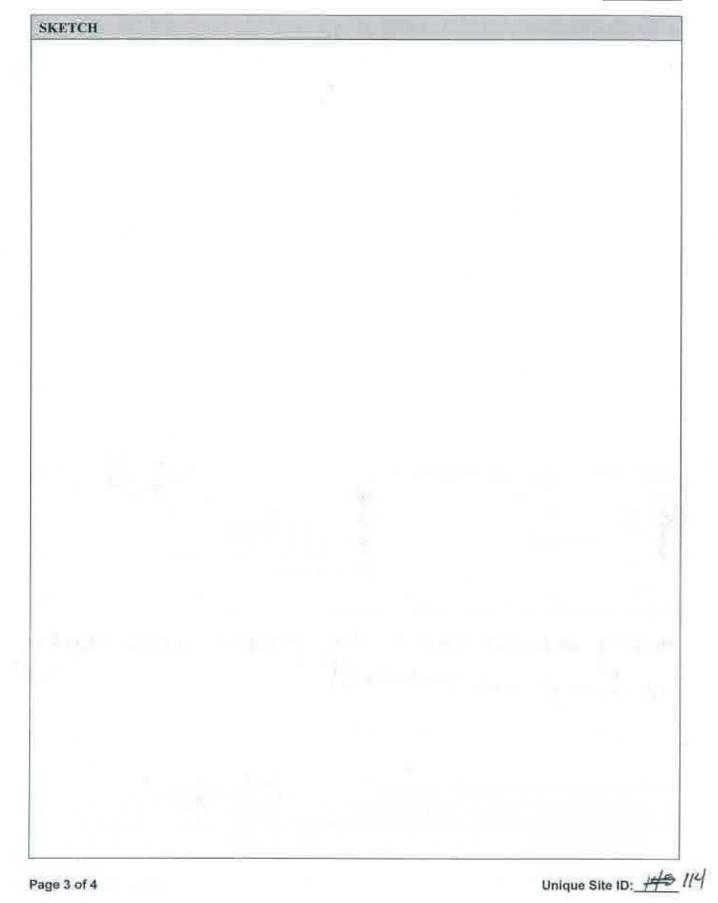


WATERSHED:	SUBWATERSHED	0	UNIQU	E SITE ID:	14
DATE: 6/3/16	ASSESSED BY: RW/WG	CAMERA ID:	C	PICTURES:	1236-1245
GPS ID:	LMK ID:	LAT:		Long:	
SITE DESCRIPTION					
Name: (). S. Post Off Address: 131 Main	ice Sheet Hopkinton, RJ	1			
Ownership: If Public, Government Jurisdi	Public Priv	ate Unknown	Other:	Footon Fed	eral
Corresponding USSR/USA F	ield Sheet? 🗌 Yes	No If ye	s, Unique S		
Below Outfail In C	: Dve Roadway Culvert Conveyance System Ir Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stro Underground	Lot [] Individual Roc] Small Impervis] Landscape / Hi] Other:	ous Area
DRAINAGE AREA TO PROI	POSED RETROFIT		1.00		
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: asljacent resid	% dertial areas	Drainage Area L Kesidential SFH (< 1 SFH (> 1	ac lots) ac lots)	Institution Industrial	
		Townhous Multi-Fan Commercial		Park Undevelop Other:	ed
EXISTING STORMWATER M	MANAGEMENT		a la company		
If Yes, Describe: CBS, Mostly	plugged				
Post office, adj heavy scaliment los	tions, Including Existing Site E acent streets + ad -> packed C esporte being filleo	residu <i>tia</i> Bs	l ares	s drain.	to CBS
xisting Head Available and					-
	intersuiter.				
ge 1 of 4			Ð	Unique Sit	e ID: //4



Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	re: Retrofit Volume Computations - Available Storage:
Filtering Practice Infiltration S	Created Wetland Bioretention Wale Other: ding Surface Area, Maximum Depth of Treatment, and Conveyance: either road (across the road from singled
SITE CONSTRAINTS Adjacent Land Use:	utional Access:
Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use?	Constrained due to Stope Stope Yes □ No Structures Property Ownership
	Slope Space

RRI

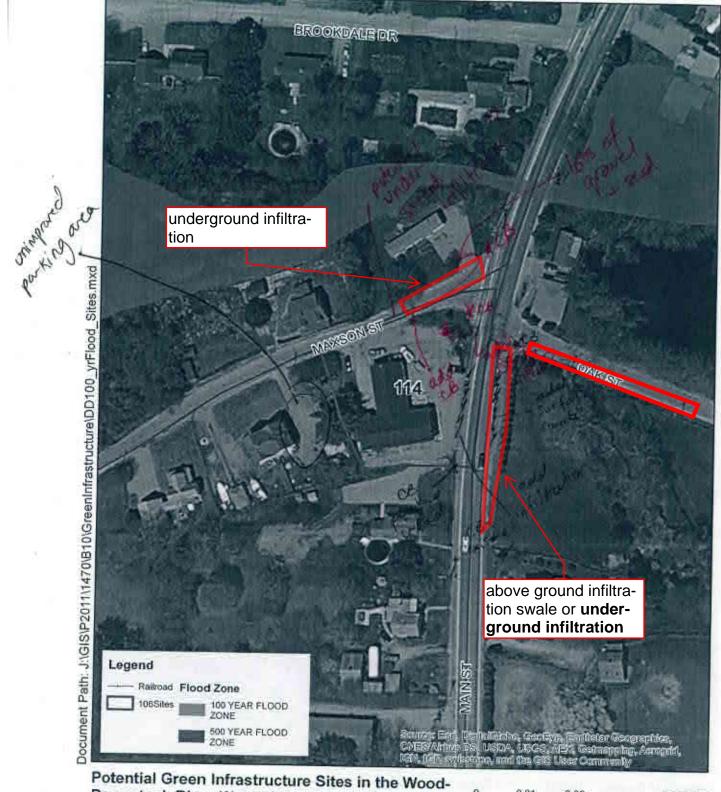


DESIGN OR	DELIVERY NOTES	

DLLOW-UP NEEDED TO COMPLETE FIELD	CONCEPT			220
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	Obtain existing sto Obtain site as-built Obtain detailed top Obtain utility map Confirm storm dra	s ography bing	-builts	
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain existing sto Obtain site as-built Obtain detailed top Obtain utility map	s ography bing	-builts	
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain existing sto Obtain site as-built Obtain detailed top Obtain utility map Confirm storm dra Confirm soil types	s ography bing	-builts	
	Obtain existing sto Obtain site as-built Obtain detailed top Obtain utility map Confirm storm dra Confirm soil types	s ography bing		vbr

Page 4 of 4

U.S. Post Office 131 Main 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

°	0.01	0.02	1 1	0.04 Miles
0	FUSS&O	NEILL		W
		.ad	d CB	s
		+	one	

WATERSHED:	SUBWATERSH	IED:	UNIQUE	SITE ID: 116
DATE: 6/9/16	ASSESSED BY: Rev/u)G CAMERA ID:	C	PICTURES: 230-235
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				
Name: Seventh Do Address: 8 Church	y Baptist Church St, Nopkinton, RI			
Ownership: If Public, Government Jur	isdiction:		vn Other:_	
Corresponding USSR/US/	A Field Sheet? 🗌 Yes	□ No If	yes, Unique S	Site ID:
Proposed Retrofit Locat Storage Existing Pond Below Outfall In Road ROW ?	Above Roadway Culvert In Conveyance System	On-Site Hotspot Ope Small Parkin Individual S Underground	ng Lot] Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO P	ROPOSED RETROFIT	Vana Stevenson	d'uner.	BULT MILLING
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes: Maximit of the second	%	Drainage Area	I ac lots) I ac lots)	Institutional Industrial Transport-Related
the Nor	d past trees to	Townhc Multi-F	amily	Park Undeveloped Other:
EXISTING STORMWATE	ER MANAGEMENT	The second second		
If Yes, Describe: planters in Curb) b	ntparting lot <u>mig</u> l ut not may h			(no surrounding
	enditions, Including Existing S church St.; learg of powernent			recently repaired
Existing Head Available	and Points Where Measured:			
age 1 of 4				Unique Site ID: 116

Page 1 of 4





PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storage	e: Retrofit Volume Computations - Available Storage:
	eated Wetland Bioretention vale Other:
Alt: underground i	biordention along streat
SITE CONSTRAINTS	The second s
Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	tional Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Sewer 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 Yes No Yes No Yes No



SKETCH		

Retrofit	Reconnaissance	Investig	atio
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DESIGN OR DELIVERY NOTES		
199		
OLLOW-UP NEEDED TO COMPLETE FIELD (CONCEPT	A Destruction and and
] Confirm property ownership	Obtain existing storn	water practice as-builts
] Confirm drainage area] Confirm drainage area impervious cover	Obtain site as-builts Obtain detailed topog	ranhy
Confirm volume computations	Obtain utility mapping	lg
Complete concept sketch	Confirm storm drain	invert elevations
] Other:	Contrin son types	
NITIAL FEASIBILITY AND CONSTRUCTION C	ONSIDERATIONS	
TE CANDIDATE FOR FURTHER INVESTIGAT	ION: VI	S NO MAVEE
ITE CANDIDATE FOR FURTHER INVESTIGAT	DJECT(S):	
the second se	DJECT(S):	es No Maybe

Seventh Day Baptist Church 8 Church Street Hopkinton, RI



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Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

0.025 0.05 Miles 0.0125 ertire parking lot JUSD reparded + espanded

WATERSHED:	SUBWATERSHED	ŧ.	UNIQUE SITE ID: 114
DATE: 6/3/16	ASSESSED BY: RW/WG	CAMERA ID: (PICTURES: 1245-13
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Ashaway Address: 243 Main	Street, Happsinton K	I	
Ownership: If Public, Government Juris	diction:		Other:
Corresponding USSR/USA	Field Sheet? Yes	□ No If yes	, Unique Site ID:
Below Outfall	n: bove Roadway Culvert n Conveyance System lear Large Parking Lot	On-Site Hotspot Operati Small Parking I Individual Stree Underground	.ot Small Impervious Area
DRAINAGE AREA TO PR	OPOSED RETROFIT	CALIFIC CALLER	
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: MoSHY on	site	Drainage Area La Residential SFH (< 1 a SFH (> 1 a Townhouse Multi-Fami	c lots)
EXISTING STORMWATE	R MANAGEMENT	and a second	
	only (main 9)		
Describe Existing Site Cor	ditions, Including Existing Site	Drainage and Conv	eyance:
	ditions, Including Existing Site } lot + building o		ick toward
Sediment poo	led in back of le	st	8
Sediment poor downspoorts		st	8
Sediment poor downspoorts	deal in back of la	st	8



PROPOSED RETROFIT	the second s
Purpose of Retrofit:	e Channel Protection Flood Control
Retrofit Volume Computations - Target Stora	age: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention Swale? Other:
surface infiltration or und infiltration und	her parking lot
Adjacent Land Use: Residential Commercial Insti Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? f Yes, Describe:	Slope Space
Conflicts with Existing Utilities: None Unknown Ves Possible Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable Impacts to Forests Impacts to Specimen Trees How many? Approx. DBH
ioils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation	Yes No Yes No Yes No No Yes No

Page 2 of 4



SKETCH	-

Unique Site ID: 19

Page 3 of 4



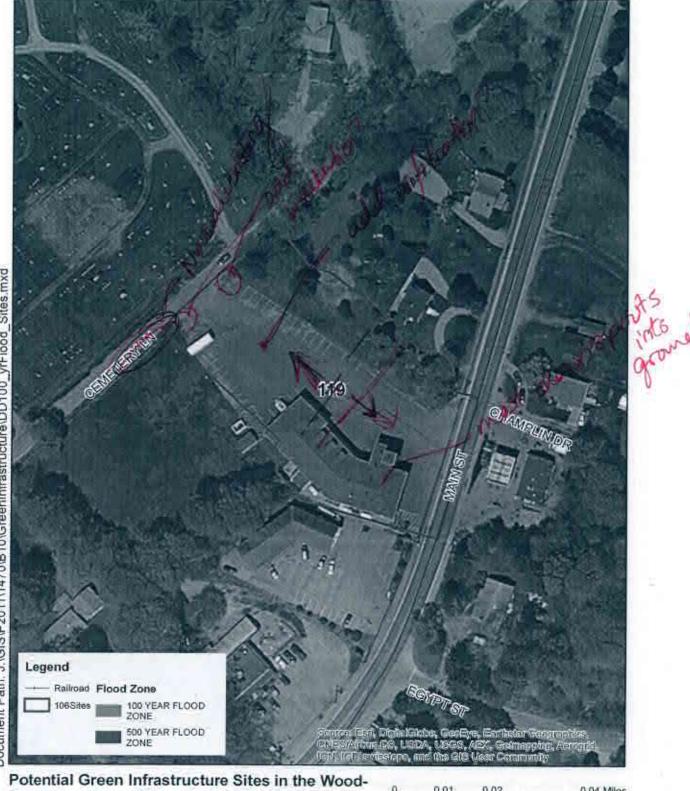
DESIGN OR	DELT	VERY	NOTES
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3	
FOLLOW-UP NEEDED TO COMPLETE FIELD Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
INITIAL FEASIBILITY AND CONSTRUCTION O	CONSIDERATIONS
SHE CANDIDATE FOR FURTHER INVESTIGA IS SITE CANDIDATE FOR EARLY ACTION PR IF NO, SITE CANDIDATE FOR OTHER RESTOR IF YES, TYPE(S):	OJECT(S): YES NO MAYBE

Page 4 of 4

Unique Site ID: _//9

Ashaway Volunteer Fire Association 213 Main Street Hopkinton, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

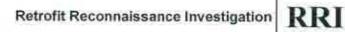
0 0.01 0.02 0.04 Miles FUSS&O'NEILL

RRI

WATERSHED:			UNIQU	E SITE ID: 125
DATE: 6/9/16	ASSESSED BY: Rw/	D BY: Rw/WG CAMERA ID:		PICTURES: 235-245
GPS ID:	LMK ID:	LAT:	14	LONG:
SITE DESCRIPTION				والمتحد ومسالية
Name: Trinity Lot Address: Corner of	Ree 116 . Wells	town Rd,	Hopki	nton RI
Ownership: If Public, Government Jurisdi		Private Unknow State DOT		
Corresponding USSR/USA F	ield Sheet? 🗌 Yes	□ No If y	es, Unique	Site ID:
Below Outfall In C	: ove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Oper Small Parking Individual St Underground	g Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	POSED RETROFIT	and the second second	di nana	the second second
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:		Drainage Area Residential SFH (< 1 SFH (< 1 SFH (> 1 SFH (> 1 One of the second secon	ac lots) ac lots) ises	Institutional Industrial Transport-Related Park Undeveloped Other:
EXISTING STORMWATER	MANACEMENT		8.0	
Existing Størmwater Practi If Yes, Describe:	ce: 🗌 Yes 💢	No 🗌 Possible		
Describe Existing Site Cond	itions, Including Existing S Lalong road d	Site Drainage and Co	nveyance: rmal i	frastructure
existing Head Available and	Points Where Measured:			

RRI

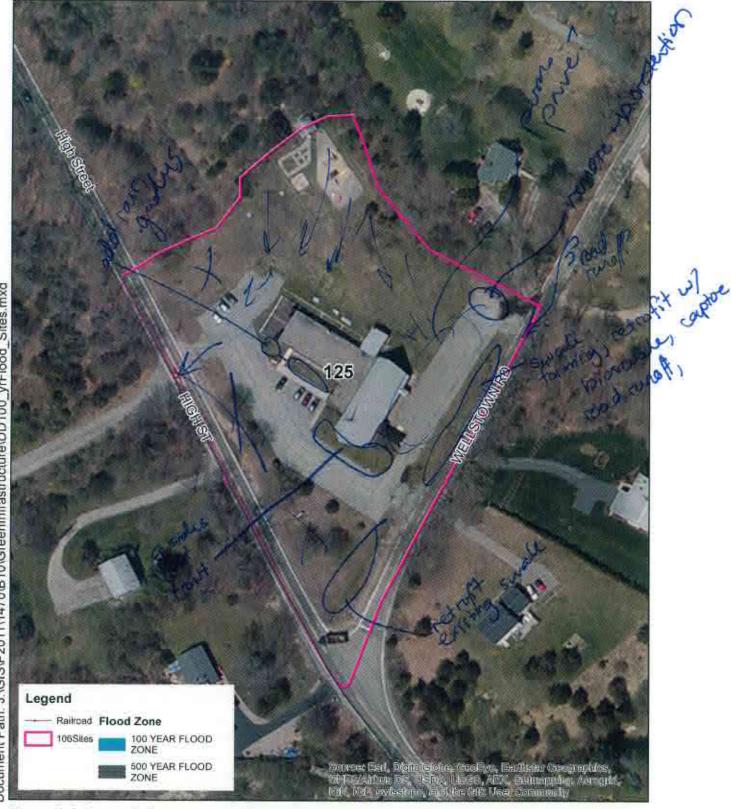
PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	ge: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention
greenspace of high st. Sid	Wellstown Rol and/or bioretention in Le of beigh street
SITE CONSTRAINTS	
Adjacent Land Use: Residential Commercial Instit Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Constrained due to
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Impacts to a Stream Floodplain Fill 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 Yes No Yes No Yes No





	sance Investigation	RRI
DESIGN OR DELIVERY NOTES		
FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT		
Confirm property ownership Obtain existing storm Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topog Confirm volume computations Obtain utility mapping	ng	- 11 ///w
Confirm property ownership Obtain existing storm Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topog Confirm volume computations Obtain utility mappin Complete concept sketch Confirm soil types	graphy	
Confirm property ownership Obtain existing storm Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topog Confirm volume computations Obtain utility mappin Complete concept sketch Confirm storm drain Other: Other:	graphy	
Confirm property ownership Obtain existing storm Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topog Confirm volume computations Obtain utility mappin Complete concept sketch Confirm storm drain Other: Other:	graphy	
Confirm property ownership Obtain existing storm Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topog Confirm volume computations Obtain utility mappin Complete concept sketch Confirm storm drain Other: Other:	graphy	
Confirm property ownership Obtain existing storm Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topog Confirm volume computations Obtain utility mappin Complete concept sketch Confirm storm drain Other: Other:	graphy	
Confirm property ownership Obtain existing storm Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topog Confirm volume computations Obtain utility mappin Complete concept sketch Confirm storm drain Other: Other:	graphy	
Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topog Confirm volume computations Obtain utility mappin Complete concept sketch Confirm storm drain	graphy ig invert elevations	AYBE

Trinity Lutheran Church Corner of Rte 116 and Wellstown 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

0 0.01 0.02 0.04 Miles



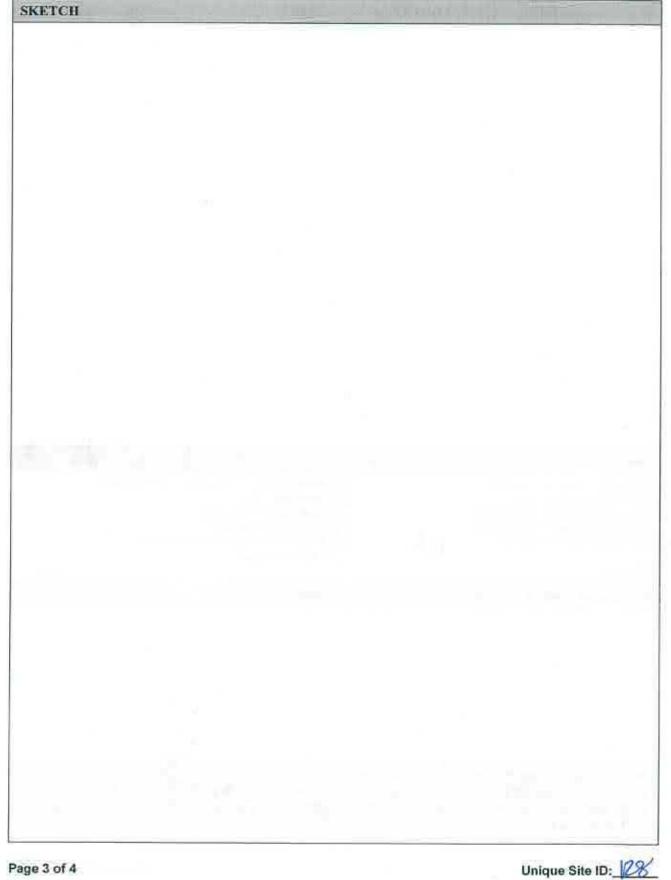
WATERSHED: SUBWATERS		D: UNIQ		NIQUE SITE ID: 128	
DATE: 7/5/16 ASSESSED BY: RUO/CA		CAMERA ID:	C	PICTURES: 813 - 817	
GPS ID:	LMK ID:	LAT:		LONG:	
SITE DESCRIPTION		and the second	2		
Name: Shannor Address: 1632 Shi	k Baptist Cha annock Rd Charle	stown RI			
Ownership: If Public, Government Jurisd	iction:		🗌 Othe	r:	
Corresponding USSR/USA F	ield Sheet? Yes	□ No If ye	s, Uniqu	e Site ID:	
Below Outfall	: ove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:	
DRAINAGE AREA TO PRO	POSED RETROFIT	- Perman	- The	The second second second second	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area L Residential SFH (< 1 SFH (> 1 Townhous Multi-Fan	ac lots) ac lots) es	: Institutional Industrial Transport-Related Park Undeveloped Other:	
EXISTING STORMWATER	MANAGEMENT	IT THERE			
Existing Stormwater Practic If Yes, Describe:	ce: 🗌 Yes 🔎 No	Possible			
Describe Existing Site Cond	itions, Including Existing Site L	Drainage and Con	veyance:		
Steep driveway No erosion pro	+ parking				
Existing Head Available and	Points Where Measured:				



PROPOSED RETROFIT		
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	e DA Channel P	rotection Flood Control
Retrofit Volume Computations - Target Store	age: Retrofit	Volume Computations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Filtering Practice Infiltration	Created Wetland Swale	Bioretention Other:
SITE CONSTRAINTS		Access:
Adjacent Land Use: Inst Residential Commercial Inst Industrial Transport-Related Parl Undeveloped Other: Possible Conflicts Due to Adjacent Land Use If Yes, Describe: Possible Conflicts Possible Conflicts		Access: No Constraints Constrained due to Slope Utilities Structures Other: Constrained due to Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Bas Gas Cable Electric Electric to Streetlights Overhead Wires Other: Other:	Potential Permittin Dam Safety Permits Impacts to Wetland: Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specime How many? Approx. DBH	Necessary Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturatio	Yes No Yes No Yes No Yes No n): Yes No	did not check





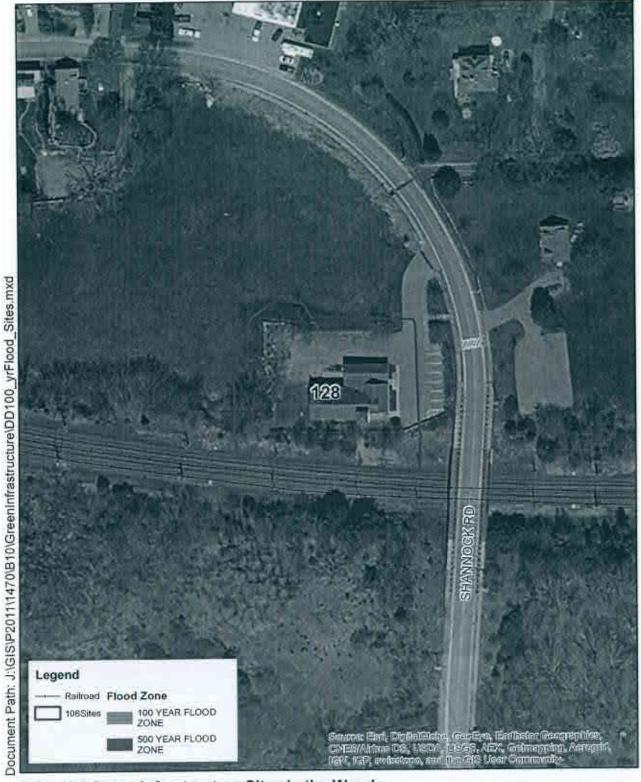


Retrofit I	Reconnaissance	Investigation
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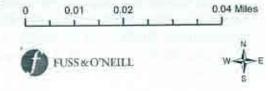


INCEPT
Obtain existing stormwater practice as-builts
Obtain site as-builts Obtain detailed topography
Obtain utility mapping
Confirm storm drain invert elevations Confirm soil types
NSIDERATIONS
DN: YES NO MAYBE
ECT(S): YES NO MAYBE

Shannock Baptist Church 1632 Shannock Road Charlestown, RI



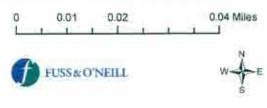
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



Shannock Baptist Church 1632 Shannock Road Charlestown, 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





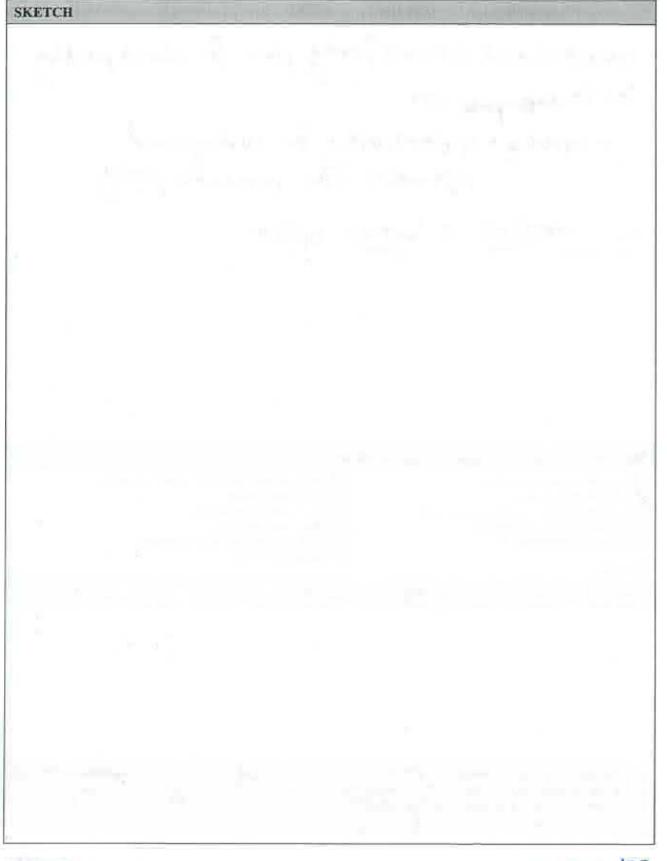
DATE: 7/5/16	SUBWATERSHEI	Uniq	UE SITE ID: 129
Prite TIST -	ASSESSED BY: RW/WG	CAMERA ID: 🔿	PICTURES: 819-838
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION		I LAND IN THE OWNER	TATING LEADING
Name: St Mary's Address: USI-USS	Catholic Church amilia Back Rdy	Charlestown P	2-12
Ownership: If Public, Government Juris	Public Pri	vate 🔲 Unknown	n
Corresponding USSR/USA	Field Sheet? Yes	No If yes, Uniqu	e Site ID:
Below Outfall	n: bove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Operation Small Parking Lot Individual Street Underground	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	OPOSED RETROFIT	R. T. Historykalisk	III THE REPORT OF THE
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	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		
f Yes, Describe:			
dat . i Describe Existing Site Con	f ref gutters go to ditions, Including Existing Site appears to drain ms on site but an	Drainage and Conveyance	ins a lot of sand



PROPOSED RETROFIT	The second
Purpose of Retrofit: Water Quality Demonstration / Education	ge Channel Protection Flood Control
Retrofit Volume Computations - Target Stor	rage: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Filtering Practice	Created Wetland Bioretention
- possible public SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Inst Industrial Transport-Related Par	titutional Constraints Constrained due to
Possible Conflicts Due to Adjacent Land Use If Yes, Describe:	e? Ves No Slope Space Utilities Tree Impacts Structures Property Ownershi
Conflicts with Existing Utilities: None Unknown Yes Possible Bas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable 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, saturatio	PYes No Yes No Yes No Yes No Yes No No Prest No No Prest No
age 2 of 4	n): Yes No prending wooder could be due to road math of Unique Site ID: 12 fires

RR

DESIGN OR DELIVERY NOTES We a should determine pairing plans for church partiling lots to det post = - repairing = opportunity for underground infittration + for pomeable pairing Bioretention is better option FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Obtain existing stormwater practice as-builts Confirm property ownership Z Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topography Confirm volume computations Obtain utility mapping Complete concept sketch Confirm storm drain invert elevations Confirm soil types Other: INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS YES SITE CANDIDATE FOR FURTHER INVESTIGATION: 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):

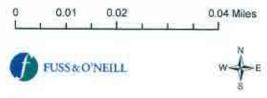


Page 3 of 4

St. Mary's Catholic Church 451-455 Carolina Back Road Charlestown, RI

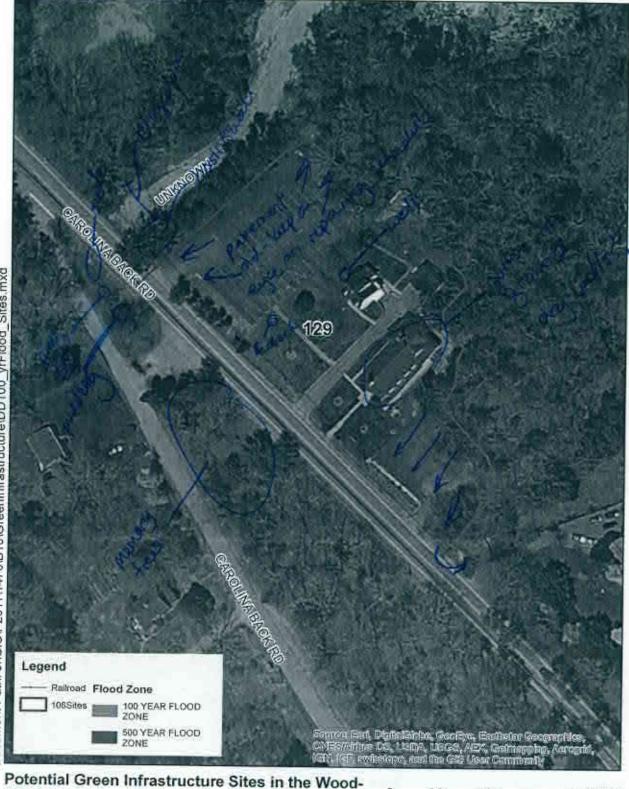


Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

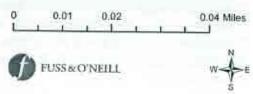


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St. Mary's Catholic Church 451-455 Carolina Back Road Charlestown, RI



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





WATERSHED: . SUBWATERSH		TERSHED:	UNIO	JE SITE ID: 136
DATE: 6/6/16	ASSESSED BY:	WWG CAMERA	D: C	PICTURES: 13:30-14:00
PS ID: LMK ID:		LAT:		LONG:
SITE DESCRIPTION				
Name: <u>Richmond</u> Address: 200 Richo	Carolina fir	e District		
Ownership: f Public, Government Juris	liction: Public	Private Un State DC	nown T 🗌 Other:	
Corresponding USSR/USA	Field Sheet?	es 🗌 No	If yes, Unique	Site ID:
Below Outfall 🗌 In	n: Dove Roadway Culvert Conveyance System Parking Lot	Small P	Operation [arking Lot [al Street [ound [None Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	POSED RETROFIT	and an end of		
Drainage Area ≈ mperviousness ≈ mpervious Area ≈	%	Residen	rea Land Use: ial i (< 1 ac lots)	Institutional
Notes:		Tov	l (> 1 ac lots) nhouses ti-Family cial	Transport-Related Park Undeveloped Other:
EXISTING STORMWATER	MANAGEMENT		2467CTL	
Describe Existing Site Cond Minor Obainau Nothing bad er	litions, Including Exi ge problems rough to #	sting Site Drainage an (CTOS'ON, d a throw mor	epositia ey at	no impacts visible - site
				-1987 N
xisting Head Available and	l Points Where Meas	ured:		
e 1 of 4				

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IVIVI

PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection
Retrofit Volume Computations - Target Stora	age: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention NONE Swale Other:
Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use?	Pres No Slope Slope Tree Impacts
If Yes, Describe:	Other: Property Ownership Other: Other: Dam Safety Permits Necessary Probable Impacts to Wetlands Probable Impacts to a Stream Probable Floodplain Fill Probable Impacts to Specimen Trees Probable How many? Probable 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	A Yes No Yes No Yes No h): Yes No

Retrofit Reconnaissance Inve	st	ia	atio	ł
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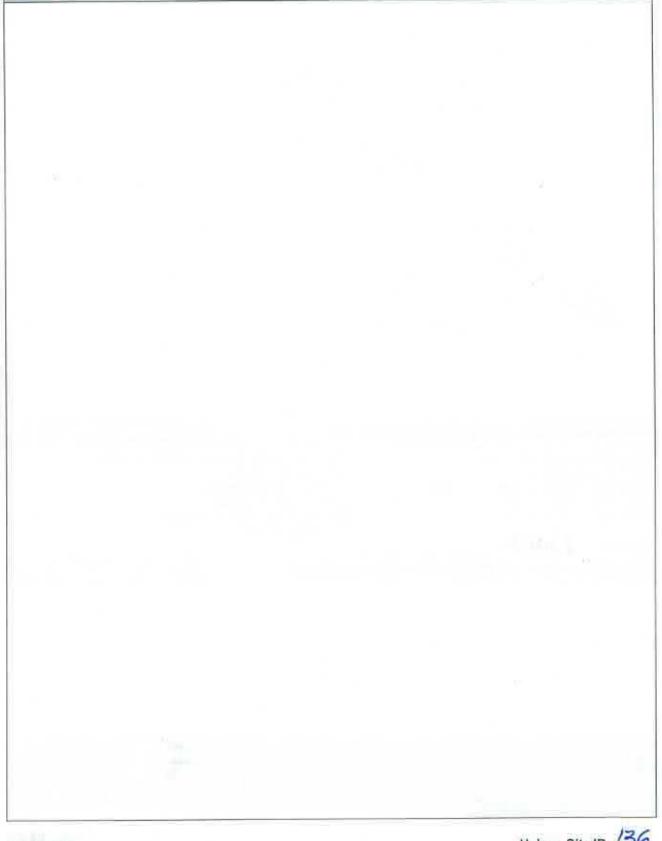


DES	IGN	OR	DELIV	ERV	NOTES

	×
FOLLOW-UP NEEDED TO COMPLETE FIELI	
Confirm property ownership	Obtain existing stormwater practice as-builts
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	 Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	 Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types CONSIDERATIONS ATION:

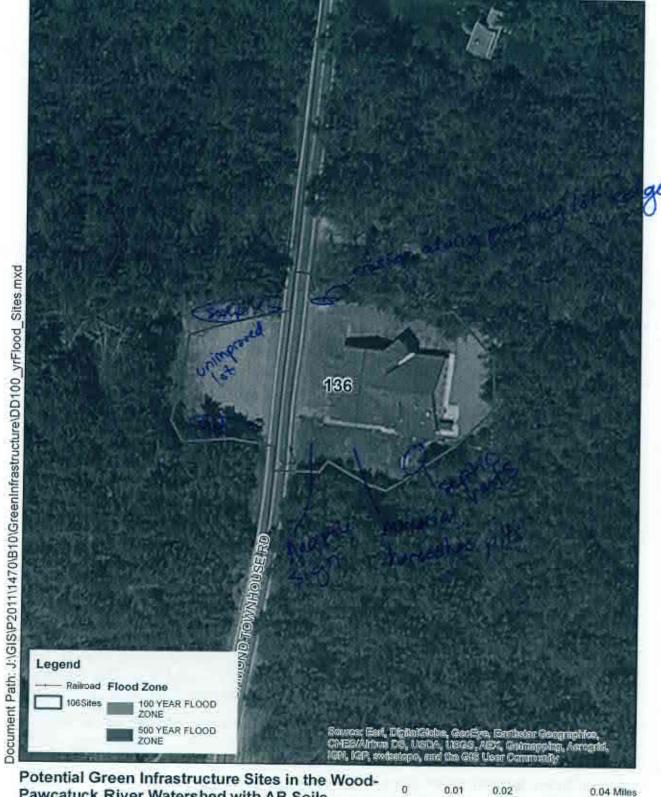


SKETCH

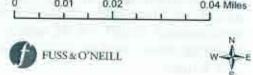




Richmond Carolina Fire District 203 Richmond Town House Road Richmond, RI



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





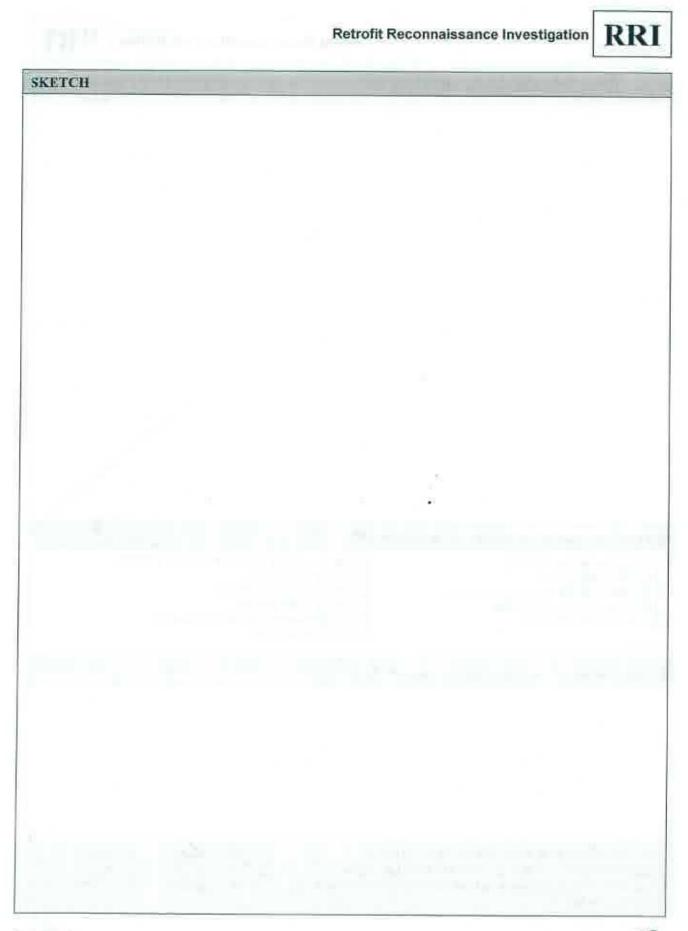
WATERSHED:	SUBWATERSHED	:	UNIQUE SITE ID:
DATE: 6/3/16	ASSESSED BY: RW/WG	CAMERA ID:	C PICTURES: 137
GPS ID:	And the second		LONG: 11-15 -11:23
SITE DESCRIPTION			
Name: Great Swar Address: 160-170 Gr	in Management Area	Kingstown,	RI
Ownership: If Public, Government Jurise	diction: Priv	THE OWNER AND AND AND ADDRESS OF A DECK	Other:
Corresponding USSR/USA	Field Sheet? Yes	□ No If yes	s, Unique Site ID:
Below Outfall	Dove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Operat Small Parking Individual Stree Underground	Lot Small Impervious Area
DRAINAGE AREA TO PRO	POSED RETROFIT	and designed	in a house mailing
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: Majonfinance high æd loads	area - poss spills, from unimproved road.	Drainage Area La Residential SFH (< 1 a SFH (> 1 a Townhouse Multi-Fam Commercial	ac lots) Institutional ac lots) Industrial ac lots) Transport-Related es Park
EXISTING STORMWATER	MANAGEMENT		
Existing Stormwater Practi If Yes, Describe;	ice: 🗌 Yes 🕅 No	Possible	
escribe Existing Site Cond	litions, Including Existing Site	Drainage and Conv	/eyance:
Existing pond	Il imperious surfaces s on site; woods su	mound site	
xisting Head Available and	d Points Where Measured:		

Page 1 of 4

PROPOSED RETROFIT	
Purpose of Retrofit:	ge Channel Protection Flood Control
Retrofit Volume Computations - Target Stor	rage: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option:	Created Wetland Bioretention
vse catch basin as o None feasible	
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Inst Industrial Transport-Related Par Undeveloped Other: Possible Conflicts Due to Adjacent Land Use If Yes, Describe:	Slope Space
Conflicts with Existing Utilities: None Unknown Yes Possible Gas 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, saturatic	→ Yes → No → Yes → No → Yes → No → Yes → No

Unique Site ID: 137

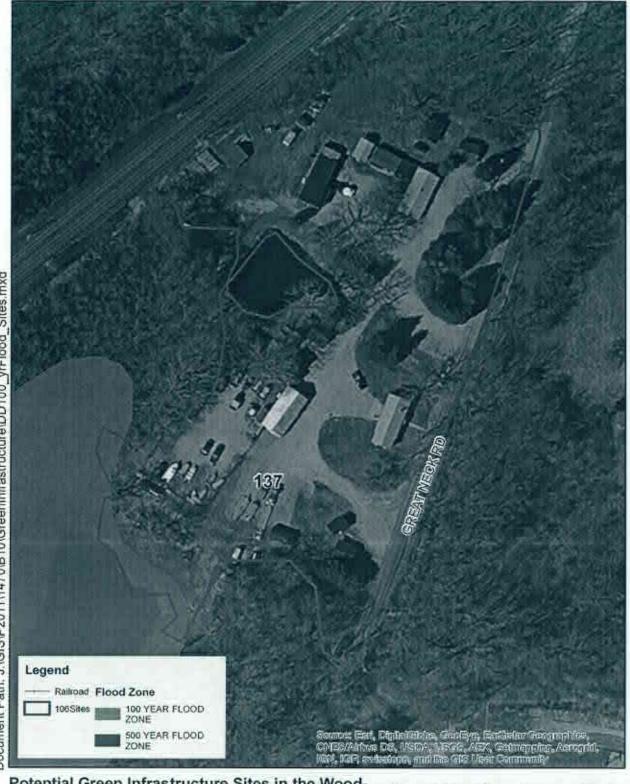
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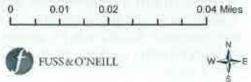
Page 3 of 4

	Retrofit Reconnaissance Investigation	RRI
DESIGN OR DELIVERY NOTES		
FOLLOW-UP NEEDED TO COMPLETE FIELD CO Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	 Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping 	
Complete concept sketch	Confirm storm drain invert elevations Confirm soil types	
Other:		
INITIAL FEASIBILITY AND CONSTRUCTION CO	NSIDERATIONS	
	262	
SITE CANDIDATE FOR FURTHER INVESTIGATIO IS SITE CANDIDATE FOR EARLY ACTION PROJ IF NO, SITE CANDIDATE FOR OTHER RESTORAT IF YES, TYPE(S):	ECT(S): YES NO M	laybe laybe laybe

Great Swamp Management Area 160- 170 Great Neck 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





WATERSHED:	SUBWATERSHED	UNIQ	UE SITE ID: 139
DATE: 6/3/16	ASSESSED BY: RW/WG		PICTURES: /030 - //
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: J=D West Address: 3481 Kings	Mingstown Services/Ce	withouse Center for stown, fit	- the arts
Ownership: If Public, Government Juris	Deblic Priv	e DOT Other	
Corresponding USSR/USA	Field Sheet? Yes	No If yes, Uniqu	e Site ID:
Below Outfall	n: bove Roadway Culvert o Conveyance System lear Large Parking Lot	On-Site Hotspot Operation Small Parking Lot Individual Street Underground	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PR	OPOSED RETROFIT		And the second street of
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: Row susele + site	would drain part	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 STORMWATE	R MANAGEMENT		
Existing Stormwater Prac If Yes, Describe:	tice: Ves XNo	Possible	
Small obtain age problems only formed a lownspourtes of	ditions, Including Existing Site I e area; no device strange a S po into ground. Ind Points Where Measured:	s erosion or	contamination
ge 1 of 4			Unique Site ID: 13

RRI

PROPOSED RETROFIT **Purpose of Retrofit:** Flood Control **Channel Protection** Recharge Water Quality Other: X Demonstration / Education Repair **Retrofit Volume Computations - Available Storage: Retrofit Volume Computations - Target Storage:** Proposed Treatment Option: Wet Pond Created Wetland Bioretention Extended Detention Filtering Practice Infiltration Swale Other: Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance: Parking log lot bioretention? (replace tree islands) Retrofit swale in ReW? SITE CONSTRAINTS Access: Adjacent Land Use: Institutional No Constraints Commercial Residential Constrained due to Transport-Related Park Industrial Undeveloped Other: Slope Space Utilities Possible Conflicts Due to Adjacent Land Use? Yes No Tree Impacts Structures Property Ownership If Yes, Describe: Other: **Potential Permitting Factors: Conflicts with Existing Utilities:** Probable Not Probable Dam Safety Permits Necessary None Unknown Probable Not Probable Impacts to Wetlands Probable Not Probable Impacts to a Stream Possible Yes Probable ANot Probable Floodplain Fill Sewer Probable Not Probable wells Water Impacts to Forests Probable Probable Impacts to Specimen Trees Gas Cable How many? Approx. DBH Electric Electric to Streetlights Overhead Wires Other factors: Other: Soils: No Soil auger test holes: Yes Evidence of poor infiltration (clays, fines): Yes No Yes No Evidence of shallow bedrock: Evidence of high water table (gleying, saturation):





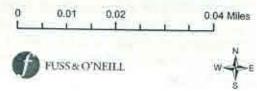


DESIGN OR DELIVERY NOTES		
allow for incorpor	ation of art	
OLLOW-UP NEEDED TO COMPLETE	FIELD CONCEPT	
Confirm property ownership	Obtain existing storn	nwater practice as-builts
Confirm property ownership	Obtain existing storm Obtain site as-builts	
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove	obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mapping	graphy ng
Confirm property ownership Confirm drainage area	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain	graphy ng
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch	obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mapping	graphy ng
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other:	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng invert elevations
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other:	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng invert elevations
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other:	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng invert elevations
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other:	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng invert elevations
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other:	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng invert elevations
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other:	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng invert elevations
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other:	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng invert elevations
 Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch 	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types	graphy ng invert elevations
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other: Other: INITIAL FEASIBILITY AND CONSTRUCT No apparent meal	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types CTION CONSIDERATIONS For treatment/Sor	es No Maybe
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other: INITIAL FEASIBILITY AND CONSTRUCT No appart meel SITE CANDIDATE FOR FURTHER INV IS SITE CANDIDATE FOR FURTHER INV	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types CTION CONSIDERATIONS For treatment/Sour	es No Maybe Es No Maybe
Confirm property ownership Confirm drainage area Confirm drainage area impervious cove Confirm volume computations Complete concept sketch Other: Note: No apparent med	er Obtain existing storm Obtain site as-builts Obtain detailed topo Obtain detailed topo Obtain utility mappin Confirm storm drain Confirm soil types CTION CONSIDERATIONS For treatment/Sour	es No Maybe Es No Maybe

J & D West Kingstown Services/ Courthouse Center for the Arts 3481 Kingstown Road South Kingstown, RI



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	•1	UNIQUE SITE ID: 43
DATE: 7/5/16	ASSESSED BY: Rulug	CAMERA ID: C	
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION		I VIV-TO STATE	
Name: West Kingsto Address: 263 Way	tes Corner Road, Sc	Now Harbor with Kingstein	Church n RI
Ownership: If Public, Government Juri			Other:
Corresponding USSR/USA	Field Sheet? Yes	□ No If yes	, Unique Site ID:
Below Outfall	on: Above Roadway Culvert n Conveyance System Jear Large Parking Lot	On-Site Hotspot Operat Small Parking I Individual Stree Underground	ot Small Impervious Area
DRAINAGE AREA TO PR	OPOSED RETROFIT	No New York	with the second state of the second
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area La Residential SFH (< 1 a)	c lots)
Notes:		☐ SFH (> 1 a ☐ Townhouse ☐ Multi-Fami ☐ Commercial	s 🗌 Park
EXISTING STORMWATER	R MANAGEMENT		
Describe Existing Site Con Food drains into	ditions, Including Existing Site I	Orainage and Conve	eyance:
aligne			
xisting Head Available an	d Points Where Measured:		
ge 1 of 4			Unique Site ID: 143

F

RRI **Retrofit Reconnaissance Investigation** PROPOSED RETROFIT **Purpose of Retrofit:** Recharge **Channel Protection** Flood Control Water Quality Repair Other: Demonstration / Education **Retrofit Volume Computations - Available Storage: Retrofit Volume Computations - Target Storage: Proposed Treatment Option:** Bioretention Wet Pond Created Wetland Extended Detention Other: Infiltration Swale Filtering Practice Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance: Btoretection out front to coupture sitest rocad Some disconnection for lot or puddled corner (k.g. permispots or underground infitte.) SITE CONSTRAINTS Access: Adjacent Land Use: Institutional No Constraints Residential Commercial Constrained due to] Transport-Related
Park Industrial Space Undeveloped Other: Slope Yes No Tree Impacts Possible Conflicts Due to Adjacent Land Use? Utilities Structures Property Ownership If Yes, Describe: Other: **Potential Permitting Factors: Conflicts with Existing Utilities:** Probable Not Probable Dam Safety Permits Necessary None Impacts to Wetlands Unknown Probable Not Probable Impacts to a Stream Possible Yes Floodplain Fill Sewer Impacts to Forests Water Impacts to Specimen Trees Gas Cable How many? Approx. DBH Electric Electric to Streetlights Overhead Wires Other factors: П Other: Soils: Yes No Soil auger test holes: Yes No Evidence of poor infiltration (clays, fines): Yes 1 No Evidence of shallow bedrock: Yes Evidence of high water table (gleying, saturation): No

	Retrofit Reconnaissance Investigation	RR
DESIGN OR DELIVERY NOTES	A REAL PROPERTY AND A REAL	
OLLOW-UP NEEDED TO COMPLETE FIELD	CONCEPT	17 0 2
Confirm property ownership	- Dobrain existing stormwater practice as builts	
Confirm drainage area	Dobtain aite an huilte	
Confirm drainage area	Obtain site as-builts	
Confirm drainage area	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations	
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain site as-builts	
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types	
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types	

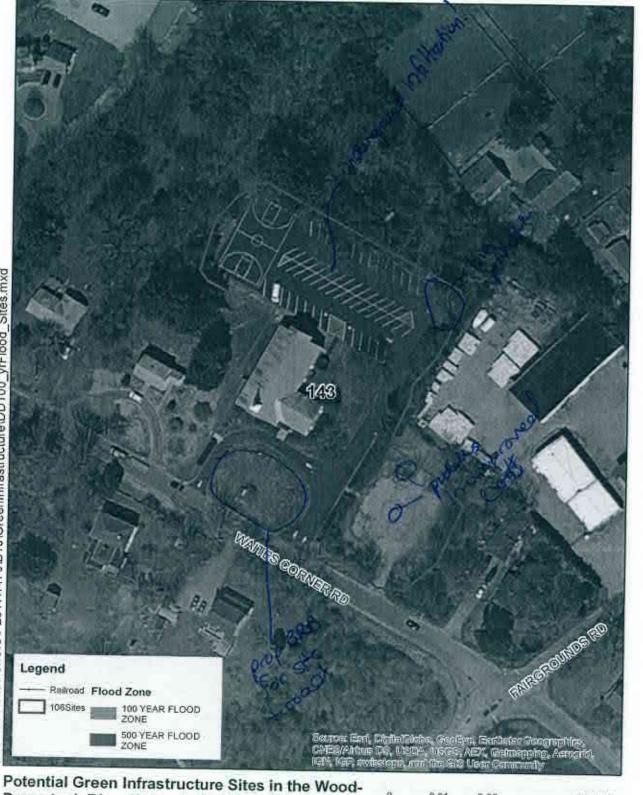




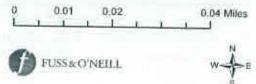


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West Kingston Baptist Church 263 Waites Corner Road South Kingstown, RI



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



Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd



WATERSHED:		SUBWATERSHED:		UNIQUE SITE ID: 144		
DATE: 6/3/16	ASSESSED BY: RUW	G CAMERA ID:	C	PICTURES: 9:00 -9		
GPS ID:	LMK ID:	LAT:		LONG:		
SITE DESCRIPTION						
Name: Farm shed Address:	w/ Greenhouses					
Ownership: If Public, Government Juri		Private Unknown State DOT	Other	L		
Corresponding USSR/USA	A Field Sheet? Yes	□ No If y	es, Unique	Site ID:		
Below Outfall	on: Above Roadway Culvert n Conveyance <u>System</u> Yea r Large Parking Lot	On-Site Hotspot Open Small Parking Individual Str Underground	Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:		
DRAINAGE AREA TO PR	ROPOSED RETROFIT					
Impervious Area ≈	%	Drainage Area I Residential SFH (< 1 SFH (> 1)	ac lots)	Institutional Industrial Transport-Related		
Notes:		☐ Si II (> 1 ☐ Townhou ☐ Multi-Far	ses	Park Undeveloped Other:		
EXISTING STORMWATE	R MANAGEMENT			and the second		
Existing Stormwater Prac If Yes, Describe: Swale j	ctice: ≥Yes □1 Grass acts as	the second second				
Describe Existing Site Co	nditions, Including Existing S	ite Drainage and Cor	veyance:			
		ж				
xisting Head Available a	nd Points Where Measured:		-			
ge 1 of 4			_	Unique Site ID: 144		



PROPOSED RETROFIT	to part the g	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Pro	otection 🗌 Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit V	olume Computations - Available Storage:
	reated Wetland	Bioretention Other:
SITE CONSTRAINTS		
Adjacent Land Use: Adjacent Land	utional	Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Oscillation Sewer Water Gas Cable Electric Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits N Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH Other factors:	Necessary Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	Yes No Yes No Yes No Yes No Yes No	77



Unique Site ID://44

Retrofit Reconnaissance Investigation RRI

SKETCH

Retrofit	Reconnaissance	Investigatio
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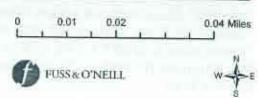
DESIGN OR DELIVERY NOTES

×.	
FOLLOW-UP NEEDED TO COMPLETE FIELD (CONCEPT
Confirm property ownership Confirm drainage area	Obtain existing stormwater practice as-builts Obtain site as-builts
Confirm drainage area impervious cover	Obtain detailed topography
Confirm volume computations	Obtain utility mapping
Complete concept sketch	Confirm storm drain invert elevations Confirm soil types
Other:	
INITIAL FEASIBILITY AND CONSTRUCTION C	ONSIDERATIONS
SITE CANDIDATE FOR FURTHER INVESTIGAT	TON: TYES NO MAYBE
IS SITE CANDIDATE FOR EARLY ACTION PRO	DJECT(S): YES NO MAYBE
IF NO, SITE CANDIDATE FOR OTHER RESTOR IF YES, TYPE(S):	ATION PROJECT(S): YES NO MAYBE
age 4 of 4	Unique Site ID: //

Farm Shed with Greenhouses 370 Plains Road South Kingstown, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd

WATERSHED:	SUBWATER	RSHED:	UNIQUE	SITE ID: 145
DATE: 6/3/16	ASSESSED BY: fu	WG CAMERA ID	C	PICTURES: 1305 - 133
GPS ID:	LMK ID:	LAT:	a.	LONG:
SITE DESCRIPTION				
Name: Wood Riv Address: 823 Main	er Health Ser Street, Hopkinto	vices n, R#		
Ownership: If Public, Government Juri		Private Unkno	wn Other:_	×
Corresponding USSR/USA	Field Sheet? Yes	No I	f yes, Unique S	Site ID:
Below Outfall	on: Above Roadway Culvert n Conveyance System Vear Large Parking Lot	On-Site Hotspot Or Small Park Individual Undergrou	ing Lot Street	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PR	OPOSED RETROFIT			
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%		a Land Use: 7 1 ac lots) 1 ac lots)	Institutional Industrial
Notes:		Townh D Multi- Commercia	ouses Family	Transport-Related Park Undeveloped Other:
EXISTING STORMWATE	R MANAGEMENT		20 1 2 10	In the second second second
Existing Stormwater Prac If Yes, Describe:	rtice: 🗌 Yes	No Possib	e	
Powed Swo				st to Main Str
Existing Head Available a	alin RFC	m: 3 swale	D	bottom of hill
age 1 of 4				Unique Site ID: 145

Canal.



PROPOSED RETROFIT				· · · · · · · · · · · · · · · · · · ·
Purpose of Retrofit:	Recharge Repair	Channel P	rotection	Flood Control
Retrofit Volume Computations - Ta	rget Storage:	Retrofit	Volume Compu	tations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Po Filtering Practice Infiltrat	A prototy .	ted Wetland	Bioretention	
capture water from parking spaces route to swale al	ong reas	slar biord	ution D	light pole in parking
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Industrial Transport-Relate	Institution	nal	Access:	Constraints in the second s
Industrial Infansport-Relate Undeveloped Other: Possible Conflicts Due to Adjacent I If Yes, Describe:		TYes No	Slope	Space ies D Tree Impacts tures Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible 2 Sewer 3 Water 2 Gas 2 Cable 2 Electric 2 Electric to Streetlig! 0 Overhead Wires 0 Other:	D In F In In In	otential Permittin ham Safety Permits npacts to Wetlands npacts to a Stream loodplain Fill npacts to Forests npacts to Specimer How many? Approx. DBH ther factors:	Necessary	Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fi	nes):	Yes No		

Page 2 of 4



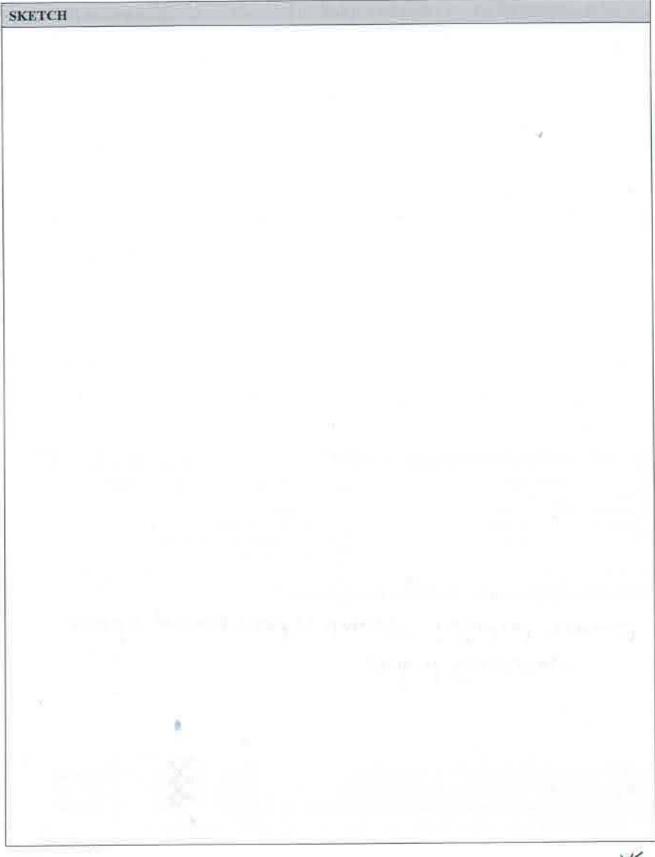
Unique Site ID: 145

DESIGN OR DELIVERY NOTES

FOLLOW-UP NEEDED TO COMPLETE FIEL Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain Obtain Obtain Obtain Obtain Confin	n existing stormwate n site as-builts n detailed topograph n utility mapping m storm drain inves m soil types	У	
INITIAL FEASIBILITY AND CONSTRUCTIO	21222 Contraction and Contraction	9507		
private property under unlikely pro	sl steep s rect	lopes + lim	ited spac	e
)			

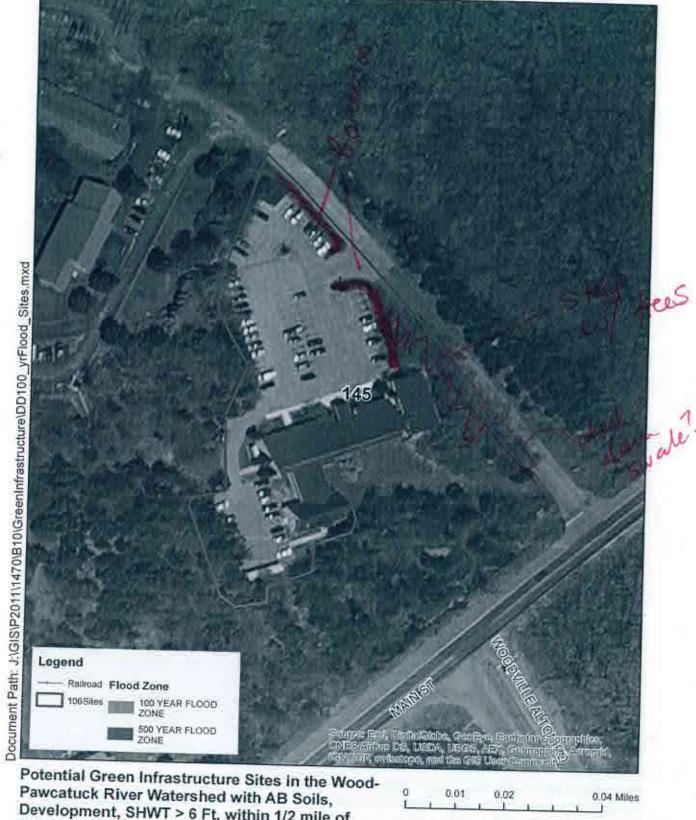
Page 4 of 4





Page 3 of 4

Wood River Health Services 823 Main Street Hopkinton, RI



Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

WATERSHED:	SUBWATERSHED	:	UNIQU	ESTEID: KA
DATE: 6/3/16	ASSESSED BY: RW/WG	CAMERA ID:	C	PICTURES: 1 //-//:/
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				
Name: Address:	Courthout	= Finer Dep	artmi	+
Ownership: If Public, Government Jurisd	iction:	vate 🗌 Unknown te 🗌 DOT	Other:	
Corresponding USSR/USA F	ield Sheet? Yes	No If ye	es, Unique	Site ID:
Below Outfall In (: ove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stra Underground	Lot [Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	POSED RETROFIT	and the second		
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:		Drainage Area L Residential SFH (< 1 SFH (> 1 Townhou: Multi-Fan Commercial	ac lots) ac lots) ses	Institutional Industrial Transport-Related Park Undeveloped Other:
EXISTING STORMWATER	MANAGEMENT	Annual Control of Control of Control		
If Yes, Describe:				
Describe Existing Site Condi Downsports empty No formal to	itions, Including Existing Site to groun of reatment visible	Drainage and Con	veyance:	
xisting Head Available and	Points Where Measured:			
ge 1 of 4		_		Unique Site ID: 147

Purpose of Retrofit: Water Quality Demonstration / Education	e Channel Protection	Flood Control
Retrofit Volume Computations - Target Stor	age: Retrofit Volume Computation	is - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Filtering Practice Infiltration	Created Wetland Dioretention	
SITE CONSTRAINTS		
Adjacent Land Use:	Slope	Space Tree Impacts Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Impacts to Wetlands Pro Impacts to a Stream Pro Floodplain Fill Pro Impacts to Forests Pro	bable Not Probable bable Not Probable bable Not Probable bable Not Probable bable Not Probable bable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock:	Ves No Yes No Yes No	

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Unique Site ID:______

	Retrofit Reconnaissance Investigation	RR
DESIGN OR DELIVERY NOTES		
VESIGITOR DELIVERT NOTES		
1		
OLLOW-UP NEEDED TO COMPLETE FIELD CO	ONCEPT	
Confirm property ownership Confirm drainage area	Obtain existing stormwater practice as-builts	
Confirm drainage area impervious cover	Obtain site as-builts Obtain detailed topography	
Confirm volume computations Complete concept sketch	Obtain utility mapping	
	Confirm storm drain invert elevations Confirm soil types	
Other: ITIAL FEASIBILITY AND CONSTRUCTION CO		_

Ano available



ETCH		
3		
<i>y</i>		
e 3 of 4	Unique Si	te ID: 14

Print mapt draw concept

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Retrofit Reconnaissance Investigation RRI



WATERSHED:	SUBWATERSHED	30004934	IE SITE ID: 152
DATE: 7/5/16	ASSESSED BY: fw/ws	CAMERA ID: C	PICTURES: 11:35-11:40
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION		Spirit Conservation and a second	ali in de la herra herr
Name: South Ki Address: 21(5 Sout	Agstown Nursing Launty Trail, So	+ Kehab oth Kingstown, R	T
Ownership: If Public, Government Juri	sdiction:	ate DOT Other	
Corresponding USSR/US/	A Field Sheet? Yes	🗌 No 🛛 If yes, Uniqu	e Site ID:
Below Outfall	on: 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 P	ROPOSED RETROFIT	TO A STAR OF THE ADAY	and way arealing
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:		Drainage Area Land Use Residential SFH (< 1 ac lots) SFH (> 1 ac lots) Townhouses Multi-Family Commercial	Institutional Industrial Transport-Related Park Undeveloped
EXISTING STORMWAT Existing Stormwater Pro If Yes, Describe:		o 🗌 Possible	
	onditions, Including Existing Si	ite Drainage and Conveyanc	e:
Existing Head Available	e and Points Where Measured:		
Page 1 of 4			Unique Site ID: 15

Retrofit	Reconnaissance	Investigation
	i to o o i i i di i o di i o di	Investigation



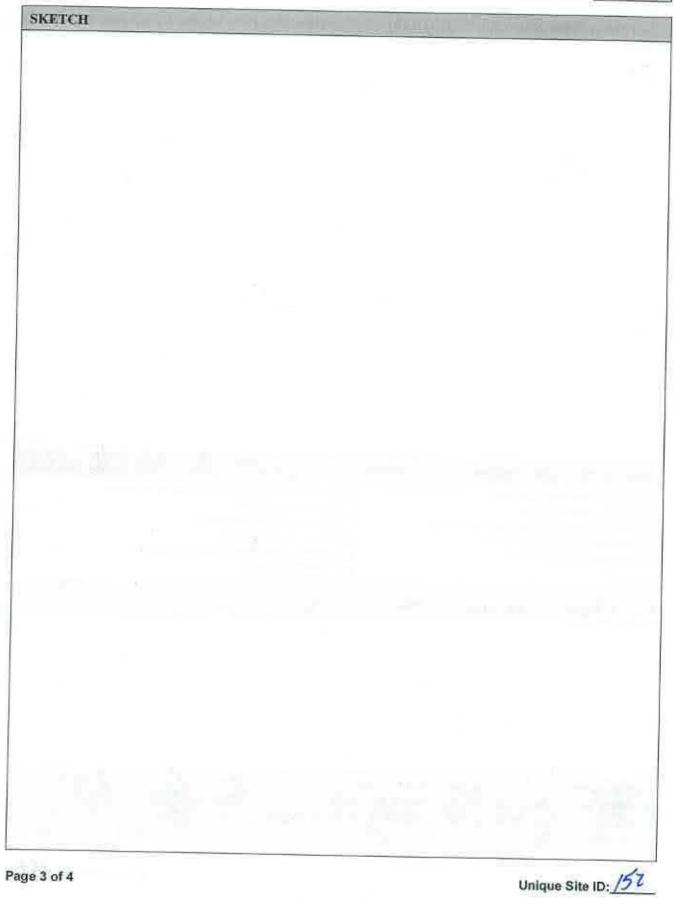
PROPOSED RETROFIT	A REAL PROPERTY.	The second	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	e Chan	nel Protection	Flood Control
Retrofit Volume Computations - Target Store			putations - Available Storage:
	Created Wetland Swale	Bioretention	n
	8.		
TTE CONSTRAINTS	1	and the second	
Adjacent Land Use: Residential Commercial Instit Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? f Yes, Describe:			due to e Space ties Tree Impacts ctures Property Ownership
Conflicts with Existing Utilities: None Unknown 'es Possible Gas Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permit Dam Safety Perm Impacts to Wetlau Impacts to a Strea Floodplain Fill Impacts to Forest Impacts to Specin How many? Approx. DBF Other factors:	iting Factors: hits Necessary nds am s nen Trees	Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
oils: oil auger test holes: vidence of poor infiltration (clays, fines): vidence of shallow bedrock: vidence of high water table (gleying, saturation):	Ves No Ves No Yes No Yes No		

Page 2 of 4

deal

Retrofit Reconnaissance In	vestigation
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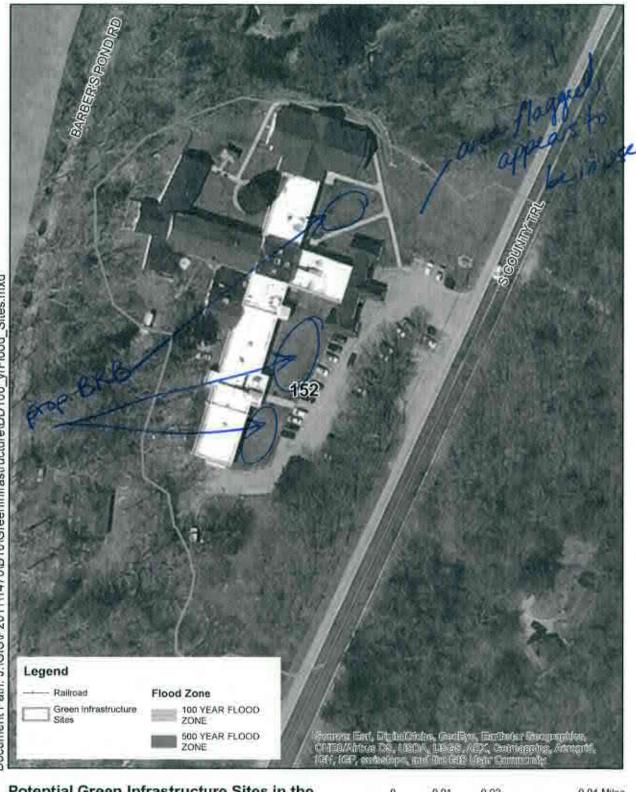
Retrofit Reconnaissance Ir	rvestigation
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DESIGN OR	DEL	VERY N	OTES
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OLLOW-UP NEEDED TO COMPLETE FIELD C	-
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm 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
ITIAL FEASIBILITY AND CONSTRUCTION CO	INSIDERATIONS

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



WATERSHED:	SUBWATERS	HED: UN	QUE SITE ID: 154
DATE: 6/6/16	ASSESSED BY: RW/		PICTURES:
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Hope Voller Address:	y Luyoming fire b	istrict	
Ownership: If Public, Government Jur		Private Unknown State DOT Oth	ier:
Corresponding USSR/US/	A Field Sheet? [] Yes	No If yes, Unic	
Below Outfall	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
DRAINAGE AREA TO PI	ROPOSED RETROFIT		
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area Land Us Residential SFH (< 1 ac lots) SFH (> 1 ac lots)	Institutional Industrial
		☐ Townhouses ☐ Multi-Family ☐ Commercial	Transport-Related Park Undeveloped Other:
EXISTING STORMWATE	R MANAGEMENT		
lf Yes, Describe:			
All in pervious,	ditions, Including Existing Si dracins to CBS A	ite Drainage and Conveyance	to river
xisting Head Available at	nd Points Where Measured:		
ge 1 of 4			Unique Site ID.

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Unique Site ID:____

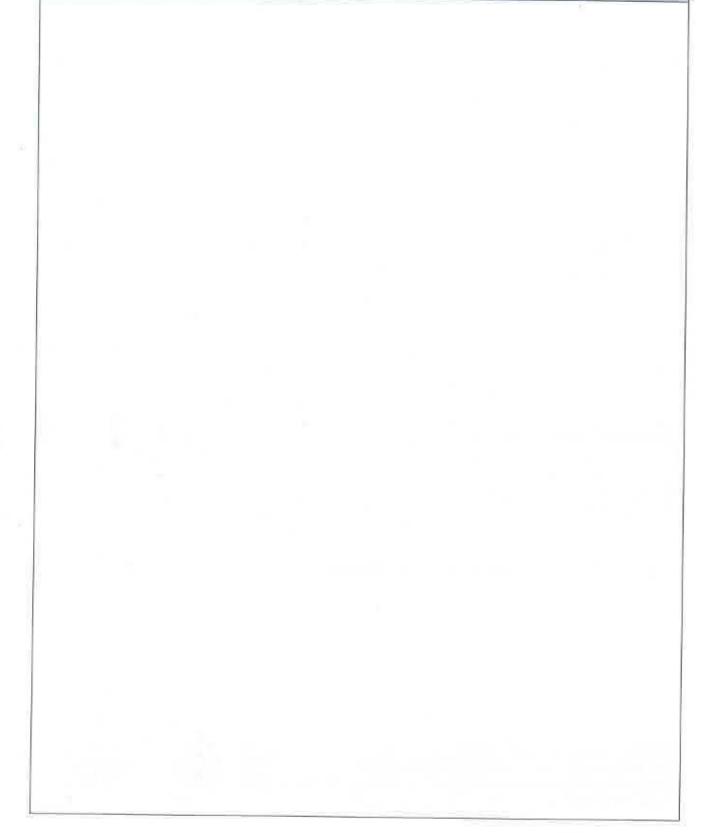


PROPOSED RETROFIT		
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control	
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Sto	rage:
Louisviewer he weeking the set of	reated Wetland Bioretention wale Other:	
Industrial Transport-Related Park Undeveloped Other:	tional Access: No Constraints Constrained due to Slope Space Tree Impa	rete
Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:		Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Quarter Water Quarter Gas Quarter Electric Quarter Electric Quarter Overhead Wires Quarter Overhead Wires	Impacts to Wetlands Probable Not Pr Impacts to a Stream Probable Not Pr Floodplain Fill Probable Not Pr Impacts to Forests Probable Not Pr	obable obable obable obable robable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation	Yes No Yes No Yes No Yes No	

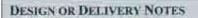
Page 2 of 4



SKETCH



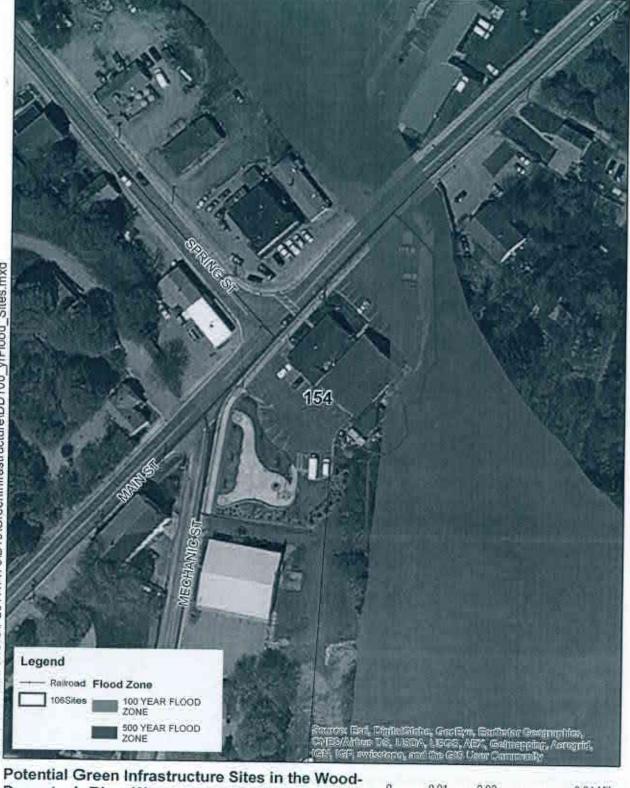
Page 3 of 4



		v						
25								
FOLLOW-UP	NEEDED TO CO	MPLETE FIE	LD CONCE	РТ			1 1 8 1	
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 					
	SIBILITY AND C	ONSTRUCTIO	ON CONSID	ERATIONS		Sult of the		

Unique Site ID:____

Hope Valley- Wyoming Fire District 996 Main 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

0 L	1	0.01	1	0.02	Ð		0.04 Miles
đ) :	USS &	07	VEILL.			W SE

WATERSHED:	SUBWATERSHEI):	UNIQUI	SITE ID: 155	
DATE: 6/6/16	ASSESSED BY: $R\omega/\omega G$	CAMERA ID:	C	PICTURES: //:50 - 12:0	
GPS ID:	LMK ID:	LAT:	18	LONG:	
SITE DESCRIPTION					
Name: Lang wor fly Address: 24 Spring	Street, Heptinton	RI			
Ownership: If Public, Government Juris	sdiction:		n		
Corresponding USSR/USA	Field Sheet? Yes	□ No If y	es, Unique S	Site ID:	
Below Outfall	on: bove Roadway Culvert n Conveyance System lear Large Parking Lot	On-Site Hotspot Oper Small Parking Individual Str	Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:	
DRAINAGE AREA TO PR	OPOSED RETROFT		There		
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes: /inited to (on-site (road is	Drainage Area I Residential SFH (< 1 SFH (> 1 Townhou	ac lots) ac lots)	Institutional Industrial Transport-Related	
Burbeel)	nan antara serie dan	Multi-Family Other:			
EXISTING STORMWATE	R MANAGEMENT				
If Yes, Describe:				8	
gravel currently of; some sed g coop dains to gette over edge of	nditions, Including Existing Site plowed; gravel p going over back or into the ground; embackment and Points Where Measured:	into reservoir	windrom	- 2 8	
age 1 of 4				Unique Site ID: 155	



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control Other:
Retrofit Volume Computations - Target Storag	ge: Retrofit Volume Computations - Available Storage:
그는 것 같아요. 아님, 아님, 집에서 가장 집에서 감독했다. 그는 그는 것이 이야지 않는 것 같아요. 가 나는 것 같아요. 것 같아요. 가 나는 한 것 같아요. 가 나는 것 같아요. 가 나는 것 같아요. 가 나는 것 같아요. 이 ? 가 나는 것 같아요. 가 나는 것 같아요. 이 ? 가 나는 것 같아요. 가 나는 것 같아요. 가 나는 것 같아요. 이 ? 아요. 가 나는 것 같아요. 가 나는 것 같아요. 이 ? 아요. 이 ? 아요. 이 ? 아요. 가 나는 것 같아요. 이 ? 아요. 하는 것 ? 아요. 이 ? 아요.	reated Wetland Disconnection Disconnection wale Other: porous pavement w/ level
disconnect guttus to flow ou include practices to dispu	se flow
SITE CONSTRAINTS	
Adjacent Land Use: Residential Commercial Institution Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Access: - (cosibility) No Constraints Constrained due to Slope Utilities Tree Impacts Structures Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors:
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock:	Ves No Yes No Yes No

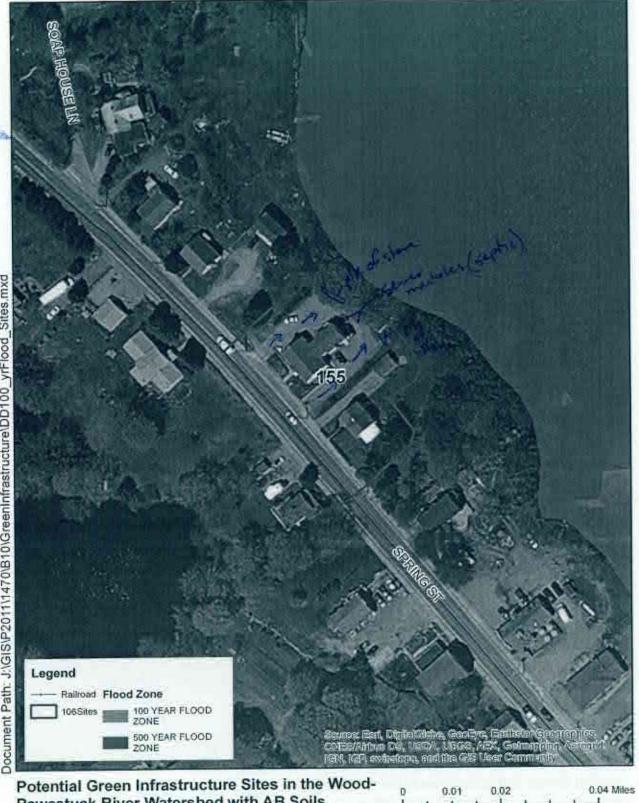
Unique Site ID:____



Page 3 of 4

DESIGN OR DELIVERY NOTES	Retrofit Reconnaissance Investigation	RRI
	and the second second second second	
FOLLOW-UP NEEDED TO COMPLETE FIELD CO	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 CON	SIDERATIONS	and the second second

Langworthy Public Library 24 Spring Street Hopkinton, RI



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



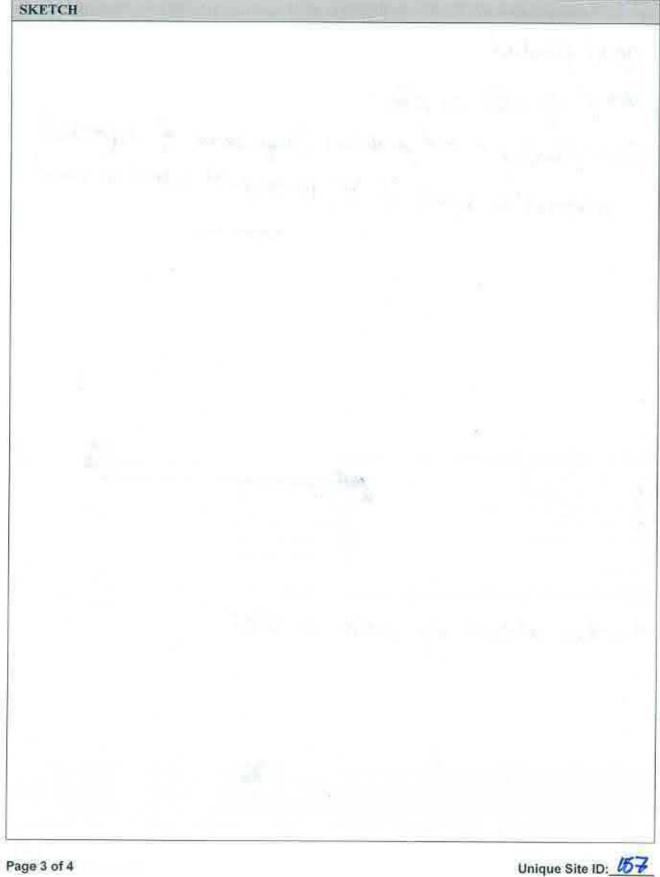
WATERSHED:	SUBWATERSI	HED:	UNIQUE SITE ID: 157
DATE: 6/6/16	ASSESSED BY:	CAMERA ID:	PICTURES: 13:15-13:
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Richmond Address: 168 Main	Slice Dept S. Richmond RI		
Ownership: If Public, Government Jur	isdiction:	Private Unknown State DOT	Other:
Corresponding USSR/US	A Field Sheet? Yes	No Ifye	s, Unique Site ID:
Below Outfall	ion: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Opera Small Parking Jndividual Stree Underground	Lot Small Impervious Area
DRAINAGE AREA TO PI	ROPOSED RETROFIT		
Drainage Area ≈ mperviousness ≈ mpervious Area ≈ Notes: 00 - Site 6	%	Drainage Area L Residential SFH (< 1 : SFH (> 1 : Townhous	ac lots) Institutional ac lots) Industrial ac lots) Transport-Related
	0	Multi-Fam Commercial	
EXISTING STORMWATE	R MANAGEMENT	· · · · · · · · · · · · · · · · · · ·	
escribe Existing Site Co	nditions, Including Existing S		
parking let ful	I of sand ; roof	obains to pa	string lot
xisting Head Available a	No Points Where Measured:	one replaced	as some pt
e 1 of 4			Unique Site ID: 157

Page 1 of 4

PROPOSED RETROFIT	
Purpose of Retrofit: Recharge Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Stora	ge: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option:	linted
	Swale Diener Ro ftop disconnection
	or unduground
🔲 Industrial 🛛 🗂 Transport-Related 🗌 Park	
SITE CONSTRAINTS Adjacent Land Use: Commercial Instit	tutional Constraints Constrained due to
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Industrial Transport-Related Undeveloped Other: Possible Conflicts Due to Adjacent Land Use?	tutional Constraints Constrained due to Slope Space Yes No Utilities Tree Impacts Structures Property Ownership

Page 2 of 4





Page 3 of 4

RRI

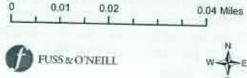
DESIGN OR DELIVERY NOTES good potential! det if dry wells on site Clear flooding + sed problem (large berns of deposited material a back of lot; parting lot coated in sond FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Obtain existing stormwater practice as-builts Confirm property ownership Obtain site as-builts Confirm drainage area Confirm drainage area impervious cover Obtain detailed topography Obtain utility mapping Confirm volume computations Confirm storm drain invert elevations Complete concept sketch Confirm soil types Other: INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS Are there already dry wells on site? NO SITE CANDIDATE FOR FURTHER INVESTIGATION: YES MAYBE YES NO MAYBE IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): IF NO, SIFE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES NO MAYBE IF YES, TYPE(S):

Page 4 of 4

Richmond Police Department 1168 Main Street Richmond, RI



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: 159	
DATE: 7/5/16	ASSESSED BY: RW/WG	CAMERA ID:	C PICTURES: //-//:/5	
GPS ID;	LMK ID:	LAT:	LONG:	
SITE DESCRIPTION	and the second		ANTER ANTER ANTER ANTER	
Name: Rhode Fsic Address: Sy Noose	nell State Police recky Hill Read Ri	ichmond, R	E	
Ownership: If Public, Government Juri		vate Unknown ite DOT	1 Other:	
Corresponding USSR/USA	Field Sheet?	🗌 No 🛛 If ye	es, Unique Site ID:	
Below Outfall	on: Above Roadway Culvert n Conveyance System Jear Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	cet Small Impervious Area Landscape / Hardscape	
DRAINAGE AREA TO PR	OPOSED RETROFIT	Sec. Stations	n bernisin forahasing f	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area Land Use: Residential Institutional SFH (<1 ac lots)		
EXISTING STORMWATE	R MANAGEMENT		a martin Seguritan a Martin	
lf Yes, Describe:				
Road drains to drains down hi	nditions, Including Existing Site highway, no forme ghway directly in aging bridge	e Drainage and Con al infrastru nto creek,	nveyance: active; water cirrent Iwetland a bridge	
Existing Head Available a V. Close to im po	ured water!			

PROPOSED RETROFIT	The second se
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control
Retrofit Volume Computations - Target Storas	ge: Retrofit Volume Computations - Available Storage:
·····································	Created Wetland Bioretention
both j grass pretreamu Overflow? -d fi'cult - new SITE CONSTRAINTS Adjacent Land Use: PResidential Commercial Institu Industrial Transport-Related Park Undeveloped Other: AG Possible Conflicts Due to Adjacent Land Use?	dexfitter system
If Yes, Describe:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Floodplain Fill 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 Yes No Yes No Yes No

Page 2 of 4

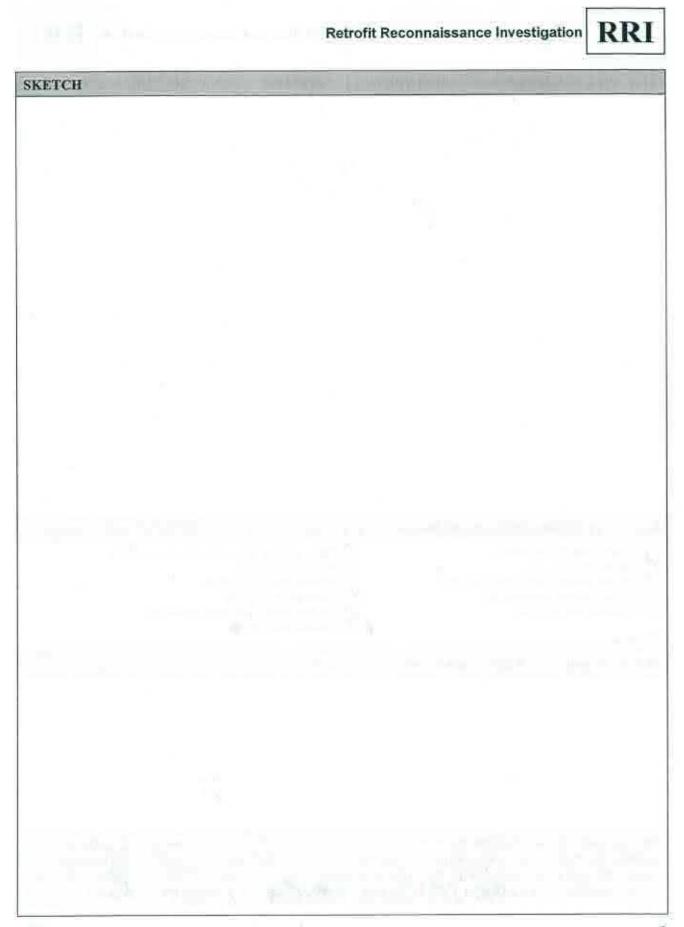
Retrofit	Reconnaissance	Investiga	tion
	i i vo vi i i u u u u u u u	ILLA COLLEC	111011



DESIGN OR DELIVERY NOTES	
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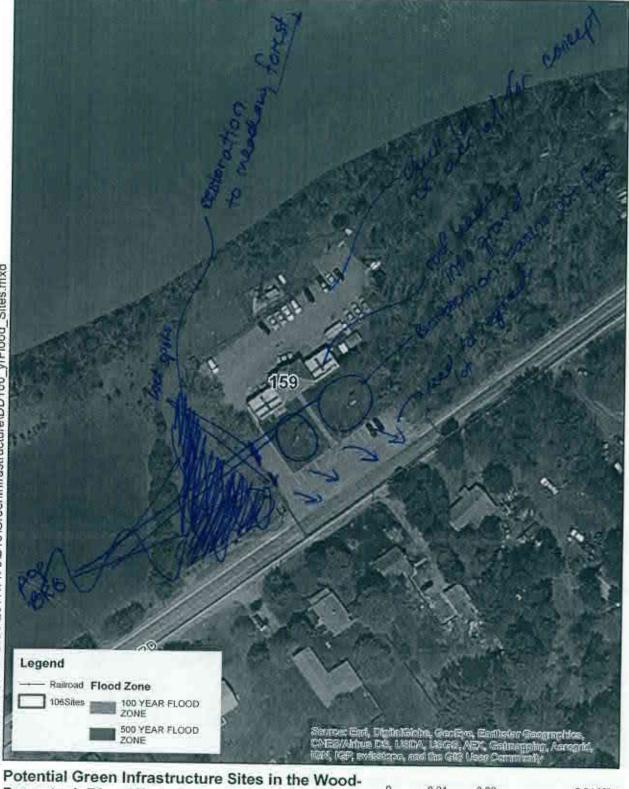
OLLOW-UP NEEDED TO COMPLETE FIELD C Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	CONCEPT Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
NITIAL FEASIBILITY AND CONSTRUCTION CO	ONSIDERATIONS

Page 4 of 4

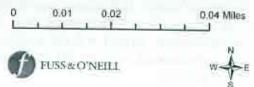


Page 3 of 4

Rhode Island State Police 54 Nooseneck Hill Road Richmond, 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





WATERSHED:	SUBWATERSHEI): UNIO	UE SITE ID: 163
DATE: 6/6/16	ASSESSED BY: Rw/w6	CAMERA ID:	
GPS ID:	LMK ID:	LAT:	PICTURES: 7:30-8
SITE DESCRIPTION			LONG:
Name: Exeter P Address: 175 South	County Trail, Excter, 1	Idjacent to Animal S	Sheller
Ownership: If Public, Government Jun	North The second	/ate Unknown	
Corresponding USSR/US	A Field Sheet? Yes		
In Road ROW	Above Roadway Culvert In Conveyance System Near Large Parking Lot	No If yes, Unique On-Site Hotspot Operation Small Parking Lot Individual Street Underground	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PI	ROPOSED RETROFIT	L] Omer:
Drainage Area ≈		Drainage Area Land Use:	The basely within
Imperviousness ≈ Impervious Area ≈ Notes: off-sike little confributing o	wea	Residential SFH (< 1 ac lots) SFH (> 1 ac lots) Townhouses Multi-Family Commercial	Institutional Industrial Transport-Related Park Undeveloped
EXISTING STORMWATE	R MANAGEMENT		Other:
If Yes, Describe:			
Describe Existing Site Con	Hereita e a constant de la constant		
	ditions, Including Existing Site Dr	ainage and Conveyance:	
xisting Head Available and	Points Where Measured:		
ł.			
je 1 of 4			
1 6365			Unique Site ID: 163

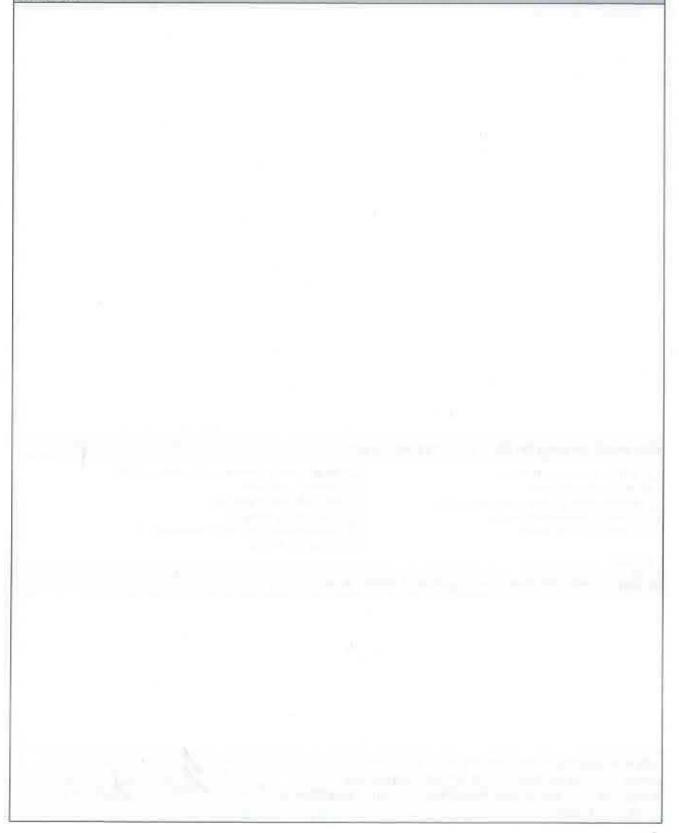
ROPOSED RETROFIT			
Water Quality Demonstration / Education	Channel Prote		Flood Control
etrofit Volume Computations - Target Storage:	Retrofit Vo	ume Computa	tions - Available Storage:
roposed Treatment Option: Extended Detention Wet Pond Swa Filtering Practice Infiltration Swa Describe Elements of Proposed Retrofit, Includin	ated Wetland	Bioretention Other:	
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Other: Possible Conflicts Due to Adjacent Land Use?		Access: No Constr Constrnined of Slope Utilit Struc	raints fue to s Space ies Tree Impacts tures Property Ownershi
If Yes, Describe: Conflicts with Existing Utilities:	Potential Permitting Dam Safety Permits Impacts to Wetlands	Necessary	Probable Not Probable Probable Not Probable Probable Not Probable
Yes Possible Gas Gas Cable	Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH		Probable Not Probable Probable Not Probable Probable Not Probable

Page 2 of 4





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Page 3 of 4

Retrofit Reconnaissance Investigation	on
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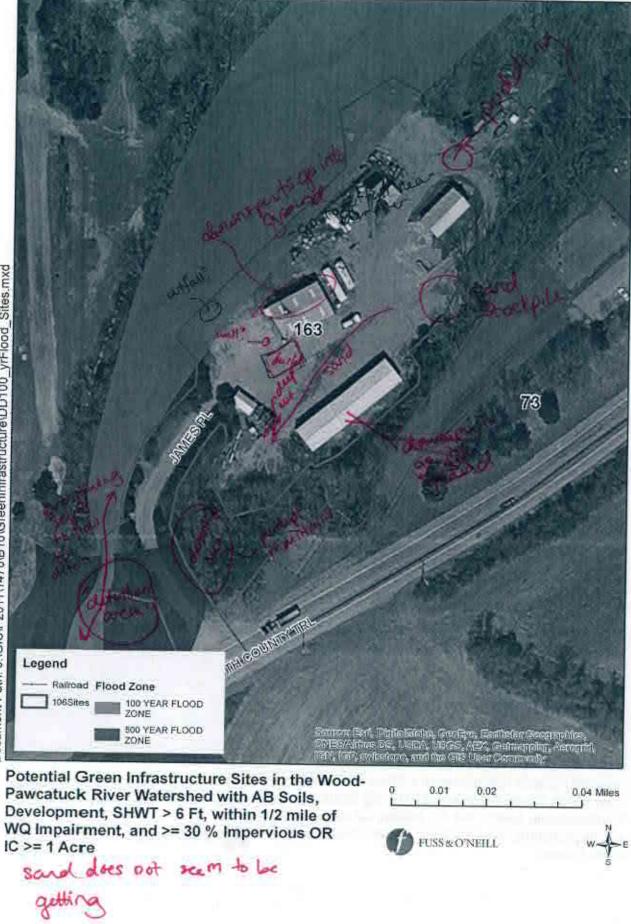
DESIGN OR DELIVERY NOTES

OLLOW-UP NEEDED TO COMPLETE FIELD C	CONCEPT
Confirm property ownership Confirm drainage area	 Obtain existing stormwater practice as-builts Obtain site as-builts
Confirm drainage area impervious cover	Obtain detailed topography
Confirm volume computations	 Obtain utility mapping Confirm storm drain invert elevations
Complete concept sketch	Confirm solt types
] Other:	
A REAL PROPERTY AND A REAL	ONSIDEPATIONS
NITIAL FEASIBILITY AND CONSTRUCTION C	AN SIDERATIONS
NITIAL FEASIBILITY AND CONSTRUCTION C	
	TON: DJECT(S): YES NO MAYBE

Page 4 of 4

8

Unknown 175 S. County Trail Exeter, RI



Document Path: J:\GiS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd

WATERSHED:	SUBWATERSHED	: U	NIQUE SITE ID: 172
DATE: 68/6	ASSESSED BY: RW/WG	CAMERA ID: C	PICTURES: 8:45-9
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Address: 742 old Ten 4	led Road, Exeter RI		
Ownership: If Public, Government Jurisdic		ate Unknown	Church?
Corresponding USSR/USA Fie			ique Site ID:
Below Outfall In Co	e Roadway Culvert nveyance System Large Parking Lot	On-Site Hotspot Operation Small Parking Lot Individual Street Underground	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PROPO	SED RETROFIT	- onderground	
Drainage Arca ≈	and the second sec	Drainage	CONTRACTOR IN AND AND AND AND AND AND AND AND AND AN
Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area Land U Residential SFH (< 1 ac lots SFH (> 1 ac lots Townhouses) Institutional Industrial Transport-Related
	12	Multi-Family	Park Undeveloped
EXISTING STORMWATER M	A N & COMPANY	Commercial	_] Other:
Most runoiff creek -Ruoff to Ruoff to word ro pt; Swale along Swale is v. steep; Do sed buildup o	ns, Including Existing Site Dr ad flows through road carries was all slopes arows D lot: appears w	rainage and Conveyance sock wall a to Under driv al lot v. steep	e: concertrated
xisting Head Available and Po	nts Where Measured:		
je 1 of 4			Unique Site ID: 172



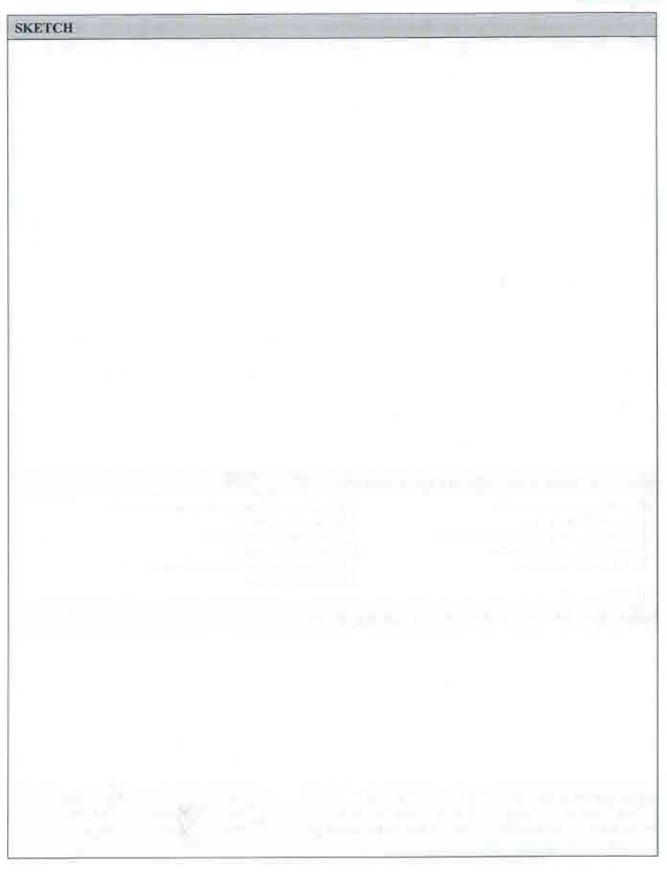
PROPOSED RETROFIT			
Purpose of Retrofit: Water Quality Demonstration / Education	the second s	Channel Protection Other:	Flood Control
Retrofit Volume Computations - Target Storage:	×	Retrofit Volume C	omputations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Cre Filtering Practice Infiltration Sw Describe Elements of Proposed Retrofit, Includin	A	Other:	
Describe Elements of Proposed Retrofit, Includin Small basin/bloswale in row of driveway too skeep? SHE CONSTRAINTS			
Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:		Const	s: Constraints rained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Electric Electric to Streetlights Overhead Wires Other:	Dam Sa Impacts Impacts Floodpli Impacts Impacts How	to Forests to Specimen Trees- w many? prox. DBH	s: ry Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	ΠY	es No es No es No es No	

Retrofit Reconnaissance	Investio	atio
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FOLLOW-UP NEEDED TO COMPLETE FIELD	CONCEPT
Confirm property ownership	December 2011
contain property ownership	Obtain existing stormwater practice as-builts
Confirm drainage area	Obtain existing stormwater practice as-builts Obtain site as-builts Obtain datailed tenegraphy
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	 Obtain site as-builts Obtain detailed topography Obtain utility mapping
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	 Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations
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Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other: NITIAL FEASIBILITY AND CONSTRUCTION C	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types CONSIDERATIONS
Confirm drainage area Confirm drainage area Confirm volume computations Complete concept sketch	





Page 3 of 4

Building with parking Lot 742 Ten Rod Road Exeter, RI



WATERSHED:	SUBWATERSHED	: U	NIQUE SITE ID: 172
DATE: 68/6	ASSESSED BY: RW/WG	CAMERA ID: C	PICTURES: 8:45-9
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Address: 742 old Ten 4	led Road, Exeter RI		
Ownership: If Public, Government Jurisdic		ate Unknown	Church?
Corresponding USSR/USA Fie			ique Site ID:
Below Outfall In Co	e Roadway Culvert nveyance System Large Parking Lot	On-Site Hotspot Operation Small Parking Lot Individual Street Underground	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PROPO	SED RETROFIT	- onderground	
Drainage Arca ≈	and the second sec	Drainage	CONTRACTOR IN AND AND AND AND AND AND AND AND AND AN
Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area Land U Residential SFH (< 1 ac lots SFH (> 1 ac lots Townhouses) Institutional Industrial Transport-Related
	12	Multi-Family	Park Undeveloped
EXISTING STORMWATER M	A N & COMPANY	Commercial	_] Other:
Most runoiff creek -Ruoff to Ruoff to word ro pt; Swale along Swale is v. steep; Do sed buildup o	ns, Including Existing Site Dr ad flows through road carries was all slopes arows D lot: appears w	rainage and Conveyance sock wall a to Under driv al lot v. steep	e: concertrated
xisting Head Available and Po	nts Where Measured:		
je 1 of 4			Unique Site ID: 172



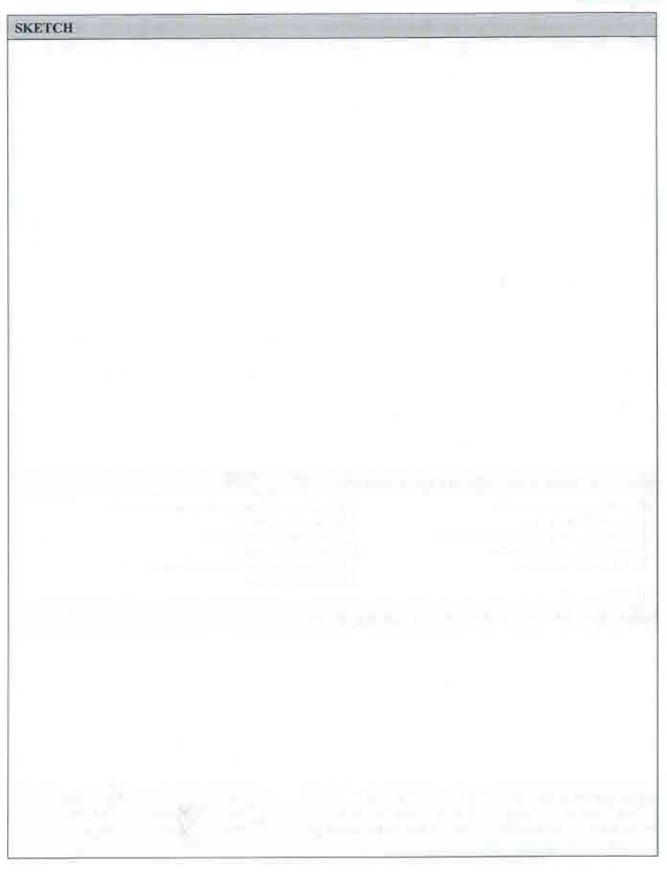
PROPOSED RETROFIT			
Purpose of Retrofit: Water Quality Demonstration / Education	the second s	Channel Protection Other:	Flood Control
Retrofit Volume Computations - Target Storage:	×	Retrofit Volume C	omputations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Cre Filtering Practice Infiltration Sw Describe Elements of Proposed Retrofit, Includin	A	Other:	
Describe Elements of Proposed Retrofit, Includin Small basin/bloswale in row of driveway too skeep? SITE CONSTRAINTS			
Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:		Const	s: Constraints rained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Electric Electric to Streetlights Overhead Wires Other:	Dam Sa Impacts Impacts Floodpli Impacts Impacts How	to Forests to Specimen Trees- w many? prox. DBH	s: ry Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	ΠY	es No es No es No es No	

Retrofit Reconnaissance	Investio	atio
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FOLLOW-UP NEEDED TO COMPLETE FIELD	CONCEPT
Confirm property ownership	December 2011
contain property ownership	Obtain existing stormwater practice as-builts
Confirm drainage area	Obtain existing stormwater practice as-builts Obtain site as-builts Obtain datailed tenegraphy
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	 Obtain site as-builts Obtain detailed topography Obtain utility mapping
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Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other: NITIAL FEASIBILITY AND CONSTRUCTION C	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types CONSIDERATIONS
Confirm drainage area Confirm drainage area Confirm volume computations Complete concept sketch	





Page 3 of 4

Building with parking Lot 742 Ten Rod Road Exeter, RI



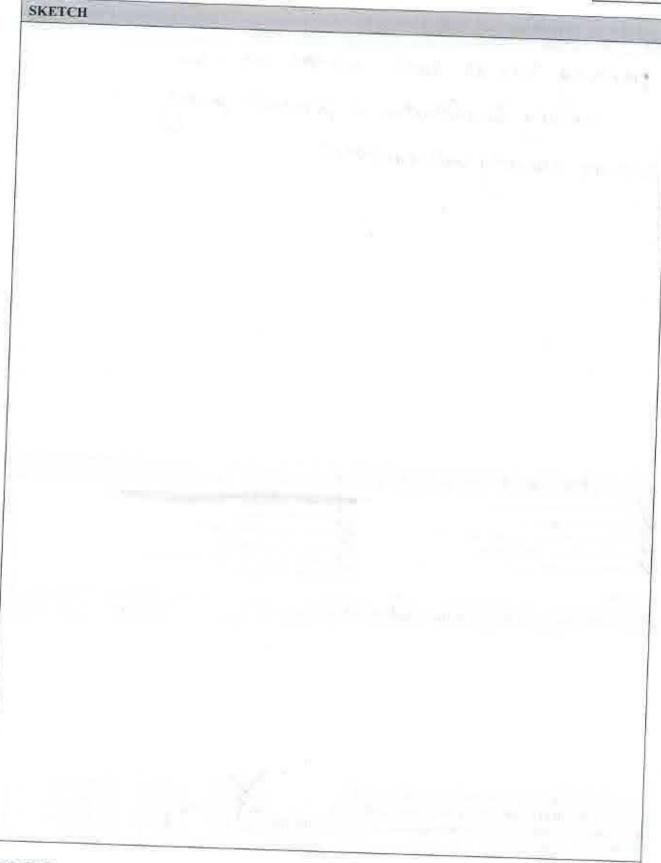
n	RRI
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WATERSHED:	SUBWATERSHED		UNIQUE SITE ID: 175		
DATE: 6/6/16	ASSESSED BY: RW/WG	CAMERA ID:	C	PICTURES: 820-84	
GPS ID:	LMK ID:	LAT:	X	LONG:	
SITE DESCRIPTION					
Name: Exclusion Tom Address: 675 ad ter	Itall + Fire Dept				
Ownership: If Public, Government Juri	sdiction: Public Priv		Other:		
Corresponding USSR/USA	Field Sheet? Yes	□ No If ye	s, Unique	New Lotte	
Below Outfall	on: bove Roadway Culvert n Conveyance System lear Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	tion [Lot [] Individual Rooftop Small Impervious Area Landscape / Hardscape Other:	
DRAINAGE AREA TO PR	OPOSED RETROFIT		C. The second		
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area L Residential SFH (< 1) SFH (> 1) Townhous Multi-Fan	ac lots) ac lots) ses	Institutional Industrial Transport-Related Park Undeveloped Other:	
EXISTING STORMWATE	RMANAGEMENT	Commercial	1111		
Existing Stormwater Prac If Yes, Describe:	tice: 🗌 Yes 🕅 No	Possible			
lo catch basins	ditions, Including Existing Site D or Swales on Arain m lence of high seal loa	ain site		esition along	
xisting Head Available an	d Points Where Measured:				
ge 1 of 4			-	Unique Site ID: 193	



PROPOSED RETROFIT			
Water Quality Recharge	Channel Pro	otection Flood Control	
Retrofit Volume Computations - Target Storage	:: Retrofit V	olume Computations - Available Storage:	
LATCHACK DEPENDING Land I THE STATE	reated Wetland	Bioretention	
Overtop over bern or level Possibly excavate +/or armor road damage ======	sprender h roadside su	vale to prevent erostor +	
SITE CONSTRAINTS	miel Marza		
Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	itional	Access: No Constraints Constrained due to Slope Constrained due to Slope Constrained due to Stope Constrained due to Space Constrained due to Structures Constrained due to Space Constrained due to Constrained due to Space Constrained due to Structures Constrained due to Constrained due	
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Probable Not Probable Impacts to a Stream Probable Probable Not Probable Not Probable Not Probable Not Probable 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 Yes No Yes No Yes No		

Page 2 of 4



Page 3 of 4

RRI

DESIGN OR DELIVERY NOTES Parking lots 2 both substes are v. new -unlikely for infiltration or permeable paving sites are currently well maintained FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Gibliom costing stormward processes builts Confirm property ownership Obtain site as-builts Confirm drainage area Obtain detailed topography Obtain utility mapping \mathbb{Z} Confirm volume computations Confirm storm drain invert elevations Complete concept sketch Confirm soil types Other: INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS MAYBE NO YES SITE CANDIDATE FOR FURTHER INVESTIGATION: MAYBE NO IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES XNO MAYBE IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES IF YES, TYPE(S):

Page 4 of 4

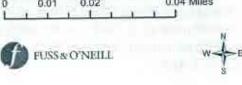
Exeter Town Hall 675 Ten Rod Road Exeter, RI

Sephie



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

ranoff + sed = surlovs need





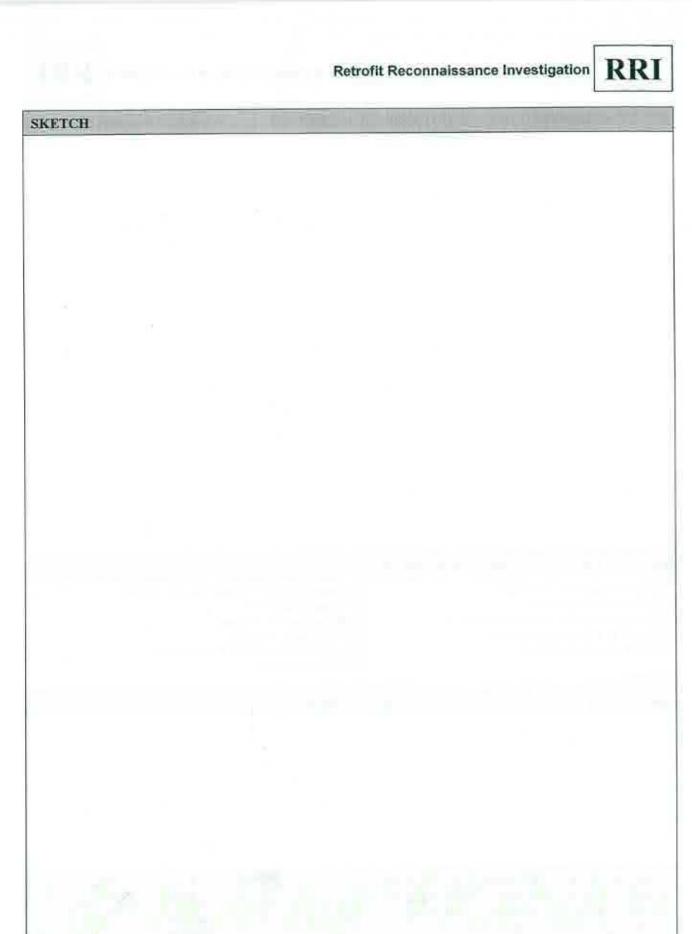
WATERSHED:	SUBWATERSHED	:	UNIQU	E SITE ID: 179
DATE: 7/5/16	ASSESSED BY: RWWG	CAMERA ID:		PICTURES: 140 - 145
GPS ID: LMK ID:		LAT:		LONG:
SITE DESCRIPTION	9 - 9 - 9	The A PLAN IN	W LLWIS	
Name: Small Buildi Address: 302 victory		of Town	Hall	Annex
Ownership: If Public, Government Jurisdic	Dublic Dein	ate Unknown		
Corresponding USSR/USA Fie	ld Sheet? Yes	and the second second	es, Unique	
Below Outfall In Co	re Roadway Culvert niveyance System Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	tion	Individual Rooftop Small Impervious Area Landscape / Hardscape
DRAINAGE AREA TO PROP	DSED RETROFIT			Concert States of States
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area L Residential	ac lots)	Institutional
Notes:		SFH (> 1 ac lots)		Transport-Related Park Undeveloped Other:
EXISTING STORMWATER M	ANAGEMENT	and the second		
Existing Stormwater Practice: If Yes, Describe:	Yes No	Possible		
Describe Existing Site Condition	ons, Including Existing Site D	Drainage and Conv	eyance:	
xisting Head Available and Pe	pints Where Measured:		_	

PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control
Retrofit Volume Computations - Target Stora	ge: Retrofit Volume Computations - Available Storage:
A CONTRACTOR OF	Created Wetland Bioretention Swale Other:
	tutional
Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Slope Space
Conflicts with Existing Utilities: None Unknown Yes Possible Base Gas Cable Electric Electric to Streetlights Overhead Wires Other: Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to Wetlands Impacts to a Stream Probable Not Probable Probable Not Probable Impacts to a Stream Probable Not Probable Not Probable Not Probable 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 □ Yes □ No □ Yes □ No n): □ Yes □ No

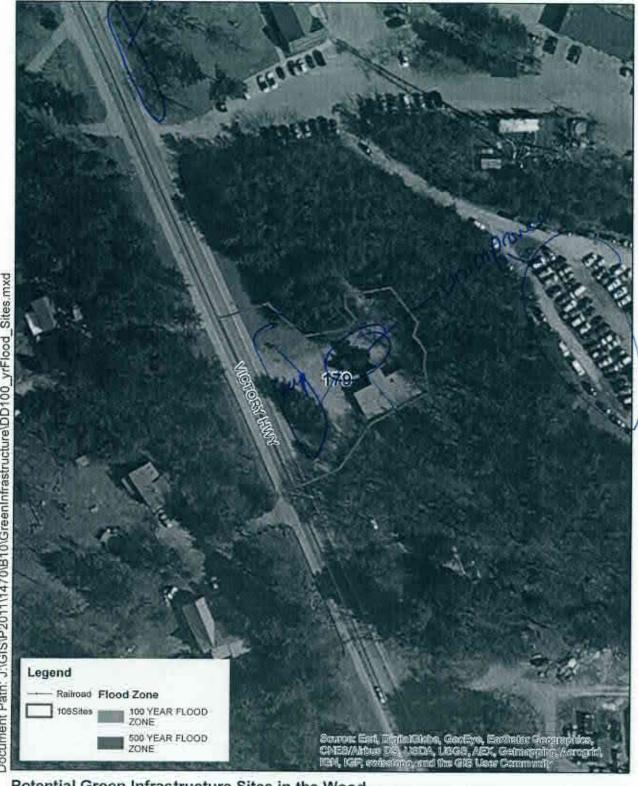
Retrofit Reconnaissance Inve	stigation
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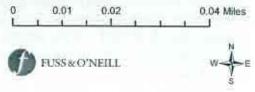
OLLOW-UP NEEDED TO COMPLETE FIELD (Confirm property ownership Confirm drainage area	CONCEPT Obtain existing stormwater practice as-builts Obtain site as-builts
1 communicationage area	
Confirm drainage area impervious cover	Obtain detailed topography
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	 Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations
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Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types CONSIDERATIONS
Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types ONSIDERATIONS



Small Building with Parking Lot 302 Victory Highway an West Greenwich, 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



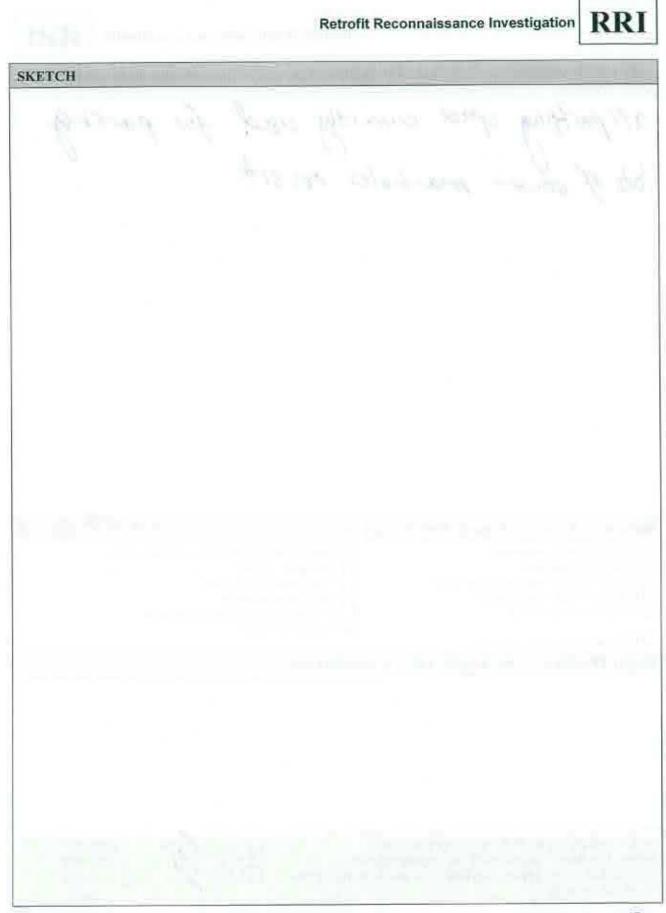


WATERSHED:	SUBWATERSHED		UNIQUE	SITE ID: 183
DATE: 7/16	ASSESSED BY: RW/WG	CAMERA ID: B	Ohone	PICTURES: 16:07 - 1014
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				
Name: West Broad		3		
Ownership: If Public, Government Juris	Public Priv	vate Unknown te DOT C	Other:	
Corresponding USSR/USA	Field Sheet? Yes	□ No If yes,	Unique S	ite ID:
Below Outfall	n: bove Roadway Culvert Conveyance System eur Large Parking Lot	On-Site Hotspot Operation Small Parking Lo Individual Street Underground	ot 🗌	Individual Rooftop Small Impervious Area Landscape / Hardscape Other: Front of buildug
DRAINAGE AREA TO PRO	OPOSED RETROFIT	Sale of the second	and the	0
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area Lan Residential SFH (< 1 ac SFH (> 1 ac Townhouses	lots) lots)	Institutional Industrial Transport-Related Park
EXISTING STORMWATER	MANAGEMENT	Multi-Family Commercial	У	Undeveloped
Existing Stormwater Pract If Yes, Describe:	iice: 🗌 Yes 🗾 No	Possible		
Describe Existing Site Con hear ity paves of site	ditions, Including Existing Site	Drainage and Conve blc all wo	yance: Acr d	drains straight
Existing Head Available an	d Points Where Measured:		-	

Retrofit	Reconnaissance	Investigatio
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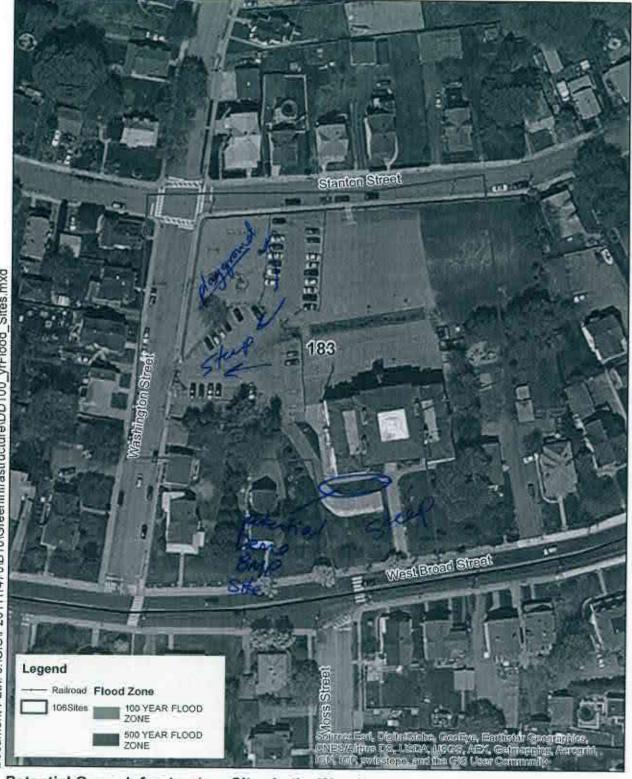
PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Storage:
	reated Wetland Bioretention wale Other:
SITE CONSTRAINTS	
Adjacent Land Use:	Access: No Constraints Constrained due to Slope Ves No Ves No Ves No Structures Other:
Conflicts with Existing Utilities: None Unknown Yes Possible B 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 Probable Not Probable Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable 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 Yes No Yes No Yes No



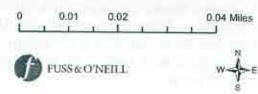


DESIGN OR DELIVERY NOTES
all parting space currently used for parking 18ts of sewer marholes on site
FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT
Confirm property ownership Obtain existing stormwater practice as-builts Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topography Confirm volume computations Obtain utility mapping Complete concept sketch Confirm soil types
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): IF YES,

West Broad Street School W. Broad Street Stonington, 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



Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd



WATERSHED:	SUBWATERSHE	D: UNIC	UNIQUE SITE ID: 185	
DATE: 7/1/16	ASSESSED BY: Rufwe	CAMERA ID: B. Phon	L PICTURES: 9-930	
GPS ID:	LMK ID:	LAT:	LONG:	
SITE DESCRIPTION				
Name: <u>N. Storing Fon</u> Address:	Middle + High S	School		
Ownership: If Public, Government Juri		ivate 🗌 Unknown ate 🔲 DOT 🗌 Othe	er:	
Corresponding USSR/USA	Field Sheet? Yes	🗌 No 👘 If yes, Uniqu	ie Site ID:	
Below Outfall	on: Above Roadway Culvert n 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 PR	ROPOSED RETROFIT	Autorit mes		
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	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 STORMWATE	R MANAGEMENT	Contraction of the		
Existing Stormwater Prad If Yes, Describe:	ctice: 🗌 Yes 🗙 N	D Possible		
	nditions, Including Existing Sit	and see all second and the second		
Probably thru	age a back + } center of build lots-No formal c	king?	(U) (U) (U) (U)	
Existing Head Available a	nd Points Where Measured:	0		





PROPOSED RETROFIT		minkens an - st	
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protecti	on 🗍 Floo	d Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volum	e Computations - Ava	ilable Storage:
	Treated Wetland Bio	pretention	
Demo bioretertion & dry -exfiltration w/ overflow Multi- Chamber treatment Dry swale in back of school + bioretertion for drivewo	v just in case - work aroun w/ check dow	d trees + si s near libre	gasjet
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	utional	🗌 Utilities 🛛 🔛	Space Tree Impacts Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Fact Dam Safety Permits Neces Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen Trees How many? Approx. DBH	sary Probable Probable Probable Probable Probable Probable	Not Probable Not Probable Not Probable Not Probable Not Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	Yes No Yes No Yes No	get boildus	

Page 2 of 4







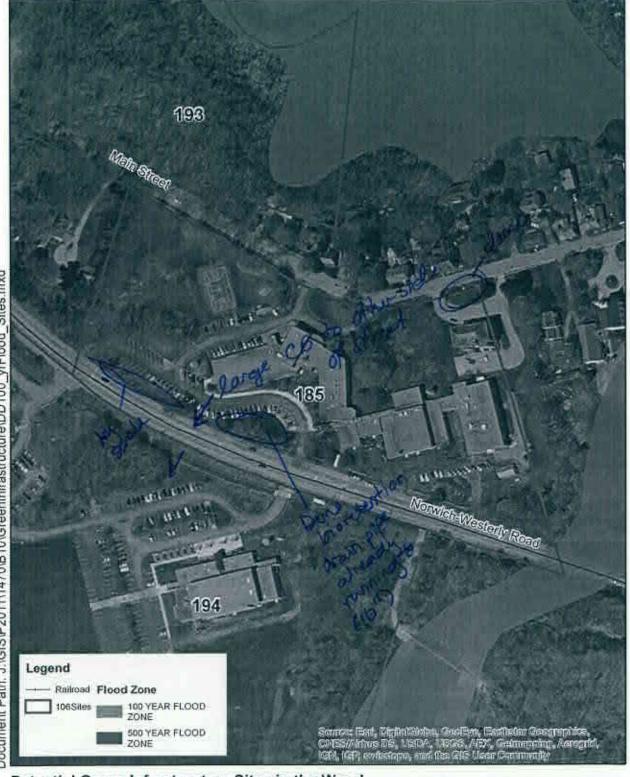
Page 3 of 4



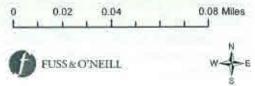
	_
DESIGN OR DELIVERY NOTES	
Evidence of form, stormwater, green thinking	
Evidence of farm, stormwater, green thinking site had bonfites, chickens, greenhouse, compost on	
site had bootpires, chickens, quarter i	
ste	
FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT	100
Confirm property ownership Stormwater practice as-builts	-
Confirm drainage area impervious cover	
Confirm volume computations Complete concept sketch	
Other:	_
INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS	
SITE CANDIDATE FOR FURTHER INVESTIGATION: YES NO MAYBE	
IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES NO MAYBE IF YES, TYPE(S):	
	-

Unique Site ID:<u>185</u>

Wheeler High/middle 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



Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd



WATERSHED:	SUBWATERSHED		UNIQUE	SITE ID: 171
DATE: 7/1/16	ASSESSED BY: RW/WG	CAMERA ID:	phone	PICTURES: 1020-105
GPS ID:	LMK ID:	LAT:	2	LONG:
SITE DESCRIPTION		and the days	HIRSCY IN	
Name: West V Address: ZS W.	ne & School Ane St, Stonington,			
Ownership: If Public, Government Jur	isdiction: Public Privile	vate Unknown te DOT [] Other:	
Corresponding USSR/US/	A Field Sheet? Yes	□ No If yes	, Unique S	ite ID:
Below Outfall	on: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Operat Small Parking I Individual Stree Underground	Lot 🗌	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO P	ROPOSED RETROFIT	Contraction of the second	L MI TRU	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area La Residential SFH (< 1 a SFH (> 1 a	c lots)	Institutional Industrial Transport-Related
Notes:		Townhouse Multi-Fam	es	Park Undeveloped Other:
EXISTING STORMWATH	R MANAGEMENT	- New York	and the set	
If Yes, Describe:				
Deep CBS	nditions, Including Existing Site along road of roof abachage problems assoc.			2.2
Existing Head Available :	and Points Where Measured:			
1 - Barrison (1999) - Barrison (1990) - Barrison				
ige 1 of 4	Sand Section			Unique Site ID: 191

PROPOSED RETROFIT	No. 12 Anna Anna Anna Anna Anna Anna Anna Ann	- Mill of the state of the
Purpose of Retrofit: Water Quality Rechar Demonstration / Education Repair		Floed Control
Retrofit Volume Computations - Target Sto	orage: Retrofit Volume Comp	utations - Available Storage:
/		/
Proposed Treatment Option: Extended Detention Wet Pond Filtering Practice Infiltration Describe Elements of Proposed Retrofit, Inf Foot door: drain the p School along		of Treatment, and Conveyance:
Front 167 : bioretention of	ion bim 1st + street w/	sed foreback
top across of ferced off	biordution w/existi	ng CB as anoflow
top across of ferced off	biorctution w/existing on - demo, w/sed for	ng CB as anoflow
Adjacent Land Use:	estitutional ark estitutional ark estitutional ark estitutional ark estitutional ark estitutional ark estitutional estitut	traints due to be Space ities Property Ownership
Adjacent Land Use: Residential Commercial In Industrial Transport-Related Pa Undeveloped Other: Possible Conflicts Due to Adjacent Land Use	estitutional ark se? Yes No	traints due to be Space ities Property Ownership

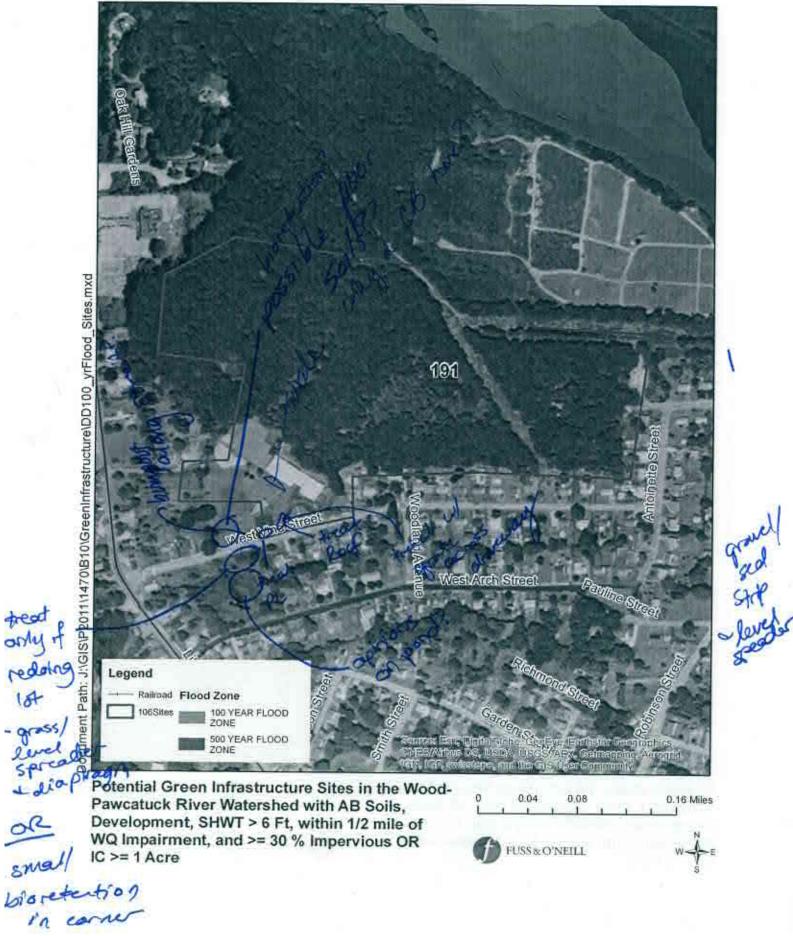


DESIGN OR DELIVERY NOTES	States and the second s
· Old school - pote	thalky scheduled for upgrade
· Old school - pote	dus on site appearace
parking los appears i	in need of upgrades
across smeet	
OLLOW-UP NEEDED TO COMPLETE FIELD (CONCEPT
Confirm property ownership Confirm drainage area Confirm drainage 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
Other: flooding problems?	Confirm soil types
NITIAL FEASIBILITY AND CONSTRUCTION C	ONSIDERATIONS
TTE CANDIDATE FOR FURTHER INVESTIGAT	TON: YES NO MAYBE



THE PARTY PARTY		-
SKETCH		

West Vine Street School 25 West Vine Street Stonington, RI



- gross/ level Spr dia

fred only



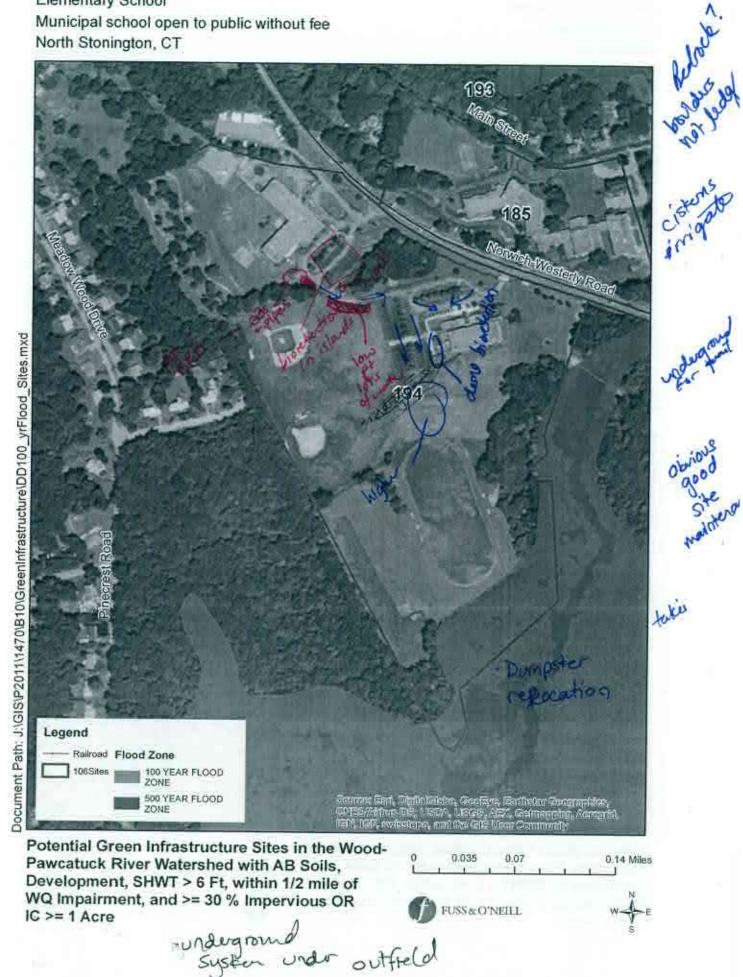
Duran de	SUBWATERSHE	D:	UNIQU	E SITE ID: /94
DATE: 7/	ASSESSED BY: RW/W	6 CAMERA ID:	P	PICTURES: 8-9
GPS ID;	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				
Name: <u>AV. Storing to</u> Address:	n Elementary School	(
Ownership: If Public, Government Juris		ivate Unknow ate DOT	n]] Other:	
Corresponding USSR/USA	Field Sheet? Yes	No If y	es, Unique	Site ID:
Below Outfall	bove Roadway Culvert n Conveyance System lear Large Parking Lot	On-Site Hotspot Opei Small Parkin Individual St Underground	g Lot reet	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PR	OPOSED RETROFIT	ALL COLOR	- Contractor	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area Residential SFH (< SFH (> SFH (> Townhoe Multi-Fa	l ac lots) ac lots) uses	Institutional Industrial Transport-Related Park Undeveloped Other:
EXISTING STORMWATE				No mar in the
Existing Stormwater Prac	1	practices		Ner nin anter autor
Existing Stormwater Prac If Yes, Describe: May Describe Existing Site Con	tice: Yes N	practices	nveyance:	
Existing Stormwater Prac If Yes, Describe: May Describe Existing Site Con Steep park Lats of	tice: Yes No have infiltration	practices	nveyance:	
Existing Stormwater Prac If Yes, Describe: May Describe Existing Site Con Steep park Lots of	tice: Yes No have infiltration aditions, Including Existing Site by, lots of work deep catch be	practices	nveyance:	
Existing Stormwater Prac If Yes, Describe: May Describe Existing Site Con Steep park Lots of	tice: Yes No have infiltration aditions, Including Existing Site by, lots of work deep catch be	practices	nveyance:	

PROPOSED RETROFIT	
Purpose of Retrofit:	ge Channel Protection Flood Control
Retrofit Volume Computations - Target Stor	rage: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option:	Created Wetland Bioretention Swale Other: Cistor ns for worker Cap
grade + CBS to cap bioretection demo cells + in parking latisla	ons where stormwater canc by other water for use in irrigation along admin building parking lot als
SITE CONSTRAINTS	and the second
Adjacent Land Use: Residential Commercial Ins Industrial Transport-Related Par Undeveloped Other: Possible Conflicts Due to Adjacent Land Use If Yes, Describe:	Slope Space
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to Wetlands Impacts to Stream Probable Probable Not Probable Impacts to a Stream Probable Probable Not Probable Not Probable 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, saturatic	Yes No Yes No Yes No Yes No Yes No

SKETCH They are a make part calibration and the manifold and there are any second the market of a market being much the part of the second se

RRI Retrofit Reconnaissance Investigation DESIGN OR DELIVERY NOTES alt are fields fertilized evidence of large irrigation system ? - drawn from well? Note existing stormwater outlets in swale along main Dumpster relocation from s. to north end of lot 2 admin building FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Obtain existing stormwater practice as-builts Confirm property ownership Obtain site as-builts Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Obtain detailed topography Obtain utility mapping Complete concept sketch 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 X NO MAYBE IF YES, TYPE(S):

Elementary School Municipal school open to public without fee North Stonington, CT





WATERSHED:	SUBWATERSHED		UNIQUE SITE ID: 199	
DATE: 7/5/16	ASSESSED BY: KW/WG	CAMERA ID:	C PICTURES: 124	5-10:
GPS ID:	LMK ID:	LAT:	LONG:	
SITE DESCRIPTION				10
Name: Westerly Address: 62 Alrea	Airport -+ Road, Westerly)	RI		
Ownership: If Public, Government Juris	sdiction:		Other:	
Corresponding USSR/USA	Field Sheet? 🗌 Yes	□ No If yes	s, Unique Site ID:	_
Below Outfall	on: Above Roadway Culvert n Conveyance System Near Large Parking Lot	On-Site Hotspot Operat Small Parking I Individual Stree Underground	Lot Small Impervious Are	
DRAINAGE AREA TO PR	ROPOSED RETROFIT	All Marshell		THE PART
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area La Residential SFH (< 1 a SFH (> 1 a Townhous Multi-Fam Commercial	ac lots) Institutional ac lots) Industrial ac lots) Transport-Relate es Park	:d
EXISTING STORMWATE	R MANAGEMENT	- Contractor	CELLER LESS N. P. TANK	8 m
Existing Stormwater Pra If Yes, Describe:	ctice: Yes No			
Envestigated P Lot @front end	nditions, Including Existing Site Parking areas only. France Hightly pack ubs; CBs in lat un Unimproved	ical; island		- ~/
Existing Head Available	and Points Where Measured:			
# visit was shart a	due to how potential	2 site =		
Page 1 of 4			Unique Site ID	199



PROPOSED RETROFIT			
Purpose of Retrofit: Water Quality Demonstration / Education	Recharge Repair	Channel Protection	Flood Control
Retrofit Volume Computations -	Target Storage:	Retrofit Volume Comp	outations - Available Storage:
	Pond Created V tration Swale	Wetland Bioretention	1
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Industrial Transport-Rel Undeveloped Other: Possible Conflicts Due to Adjacen		es ∕No	due to
Adjacent Land Use: Residential Commercial Industrial Transport-Rel: Undeveloped Other;	t Land Use? Y t Land Use? Y Potenti Dam Sa Impacts I	res No Constrained Slop Utilitie Struction Constrained Slop Utilitie Struction Othe ial Permitting Factors: afety Permits Necessary s to Wetlands s to a Stream lain Fill to Forests to Specimen Trees w many? prox. DBH	due to e Space ties Tree Impacts tures Property Ownership



Page 3 of 4

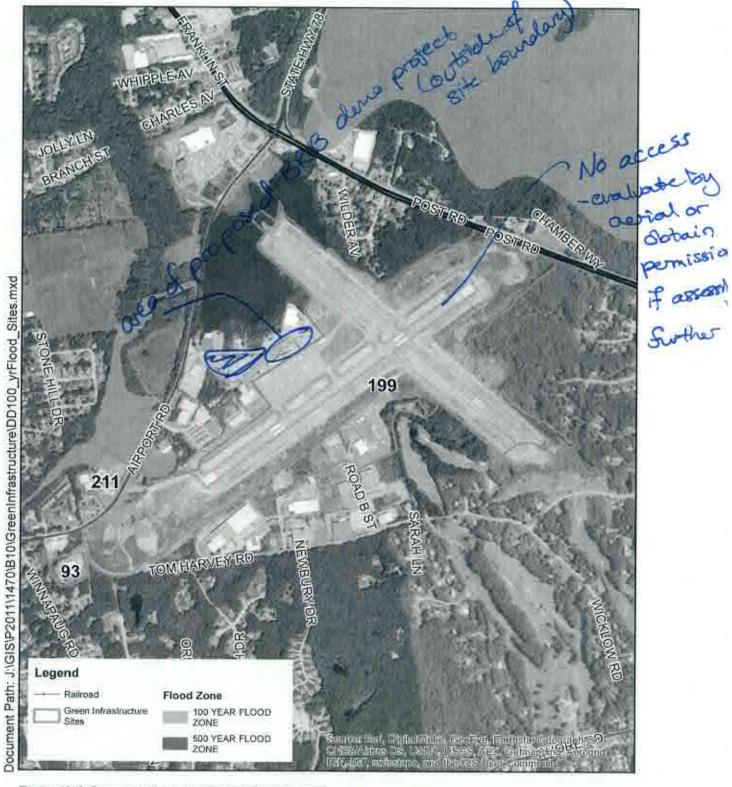
Retrofit	Reconnaissance	Investigatio
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DESIGN OR	DELIVERY	NOTES

100	
OLLOW-UP NEEDED TO COMPLETE FIELD C	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
NITIAL FEASIBILITY AND CONSTRUCTION C	ONSIDERATIONS
TTE CANDIDATE FOR FURTHER INVESTIGAT S SITE CANDIDATE FOR EARLY ACTION PRO F NO, SITE CANDIDATE FOR OTHER RESTOR IF YES, TYPE(S):	DJECT(S): YES MO MAYBE
IF YES, TYPE(S):	Unique Site ID: 1

Westerly State Airport 62 Airport 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

0.1		0.2				0.4 Miles
1	1	1	1	1	1	
				\tilde{U}		
FUSS	NO'	NED	1			
				0.1 0.2	<u> </u>	<u>, , , , , , , , , , , , , , , , , , , </u>



4 C	SUBWATERSHE	SUBWATERSHED:		UNIQUE SITE ID: 201	
DATE: 6/9/16	ASSESSED BY: RW/W	G CAMERA ID:	C	PICTURES: 2-215	
GPS ID:	LMK ID:	LAT:		LONG:	
SITE DESCRIPTION					
Name: Parting Lo Address: 350 Ribe	t - formulu a the	on RI /att	raction		
)wnership: f Public, Government Jurisd		rivate Unknown tate DOT	n Other:		
Corresponding USSR/USA I	Field Sheet? Yes	□No If y	es, Unique	Site ID:	
Below Outfall	n: pove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Oper Small Parking Individual Str Underground	g Lot [eet [Individual Rooftop Small Impervious Area Landscape / Hardscape	
RAINAGE AREA TO PRO	POSED RETROFIT	T	nivan ji	and the second	
Drainage Area ≈ mperviousness ≈ mpervious Area ≈	%	Drainage Area I	ac lots)	Institutional Industrial Transport-Related	
lotes:		Townhou	SFH (> 1 ac lots) Transport-Related Townhouses Park Multi-Family Undeveloped Commercial Other: Amazona t		
XISTING STORMWATER	MANAGEMENT		2 1 2 1		
xisting Stormwater Practi f Yes, Describe:	ice: Yes N	lo 🗌 Possible			
site consists of	litions, Including Existing Sit f areignation paw c along road, t-	rement, w/	"ghost		
	1 inforstructure				
			_		
	and the second se				
xisting Head Available and	d romts where Measured:				
	d Foints where Measured:				
	a romts where Measured:				
	d Fomts where Measured:				



PROPOSED RETROFIT		
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control	
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Storage:	
	reated Wetland Bioretention wale Dother: Parcnest Renard	
If hohen site is redevelo water BMPs ("have on the	ped, approach developer about storm. "he radar")	
SITE CONSTRAINTS	Access:	
Residential Commercial Institu Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Itional	
Conflicts with Existing Utilities: None SUnknown Yes Possible Sewer Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to Wetlands Impacts to a Stream Probable Not Probable Not Probable Not Probable Impacts to a Stream Probable Not Probable Not Probable Not Probable 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 Yes No Yes No Yes No	







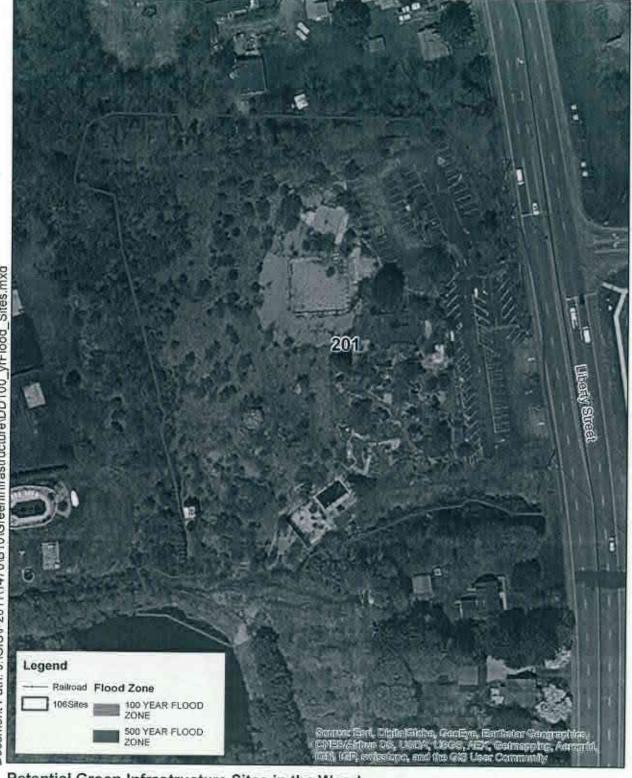




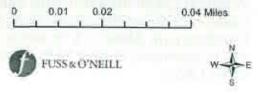


DESIGN OR DELIVERY NOTES	
FOLLOW-UP NEEDED TO COMPLETE FIELD CON	CEPT
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	 Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
INITIAL FEASIBILITY AND CONSTRUCTION CON-	SIDERATIONS
SITE CANDIDATE FOR FURTHER INVESTIGATION IS SITE CANDIDATE FOR EARLY ACTION PROJECTION IF NO, SITE CANDIDATE FOR OTHER RESTORATION IF YES, TYPE(S):	CT(S): YES NO MAYBE
Page 4 of 4	Unique Site ID: 201

Parking lot 350 Liberty Street Stonington, 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



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WATERSHED:	SUBWATERSE	IED:	UNIOUE	SITE ID: 206
DATE: 6/6/16	ASSESSED BY: Ru/	CAMERA ID:	0	PICTURES: #:00 - 14:3
GPS ID:	LMK ID:	LAT:	10	Long:
SITE DESCRIPTION				20.101
Name: Parking Lo Address: 406 Arca	+ Next to Lake	RE		
Ownership: If Public, Government Juris	Public 🔲	Private Unknown State DOT	1 Other:	
Corresponding USSR/USA		Country Country State	es, Unique S	ite ID:
Below Outfall In In	a: Sove Roadway Culvert Conveyance System Sar Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stro Underground	ation	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	POSED RETROFIT		1.0.1	and the second s
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes: Rand (crou	wheal, from beats	Drainage Area L Residential SFH (< 1 SFH (> 1 Townhous Multi-Fan	ac lots) ac lots) ses	Institutional Industrial Transport-Related Park Undeveloped
EXISTING STORMWATER	12	Commercial	_	Other:
f Yes, Describe:		No 🗍 Possible		
OCOUNTY During of	itions, Including Existing Si Verify Sealtment piles 2 pond deeple			sit seal to poor
sisting Hend Available and	Points Where Measured:		_	
e 1 of 4	1.			Unique Site ID: 206

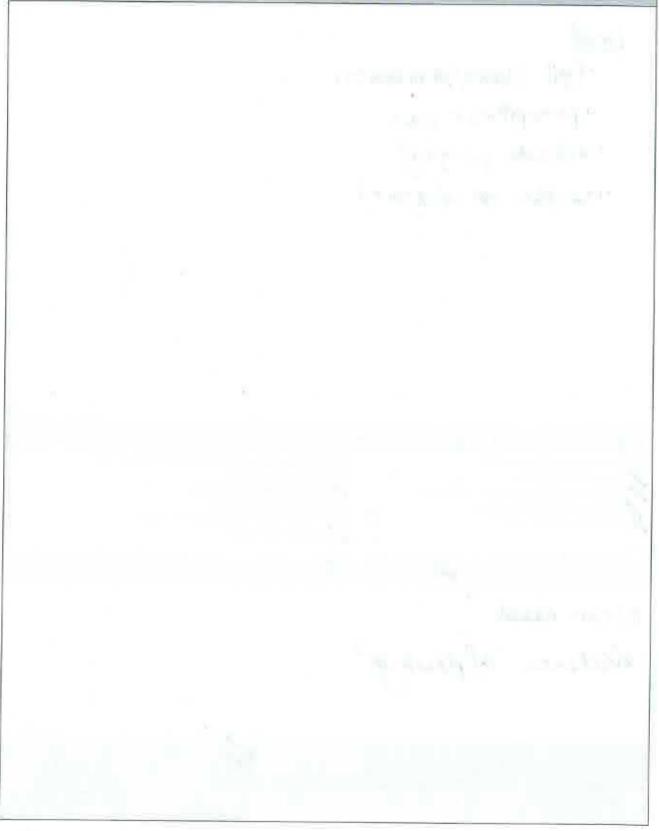
Page 1 of 4

Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control
Retrofit Volume Computations - Target Storage	e: Retrofit Volume Computations - Available Storage:
Filtering Practice Infiltration Z S	reated Wetland Wale Other: parking driving lare Clo ing Surface Area, Maximum Depth of Treatment, and Conveyance:
Bioretention to collect drives potentially road runoff. Swale w/ check dams a bioscie bioretention; would Close brear both turning /a	long west side of read + enturing dat require "maning face us in parking lot + cheate single
SITE CONSTRAINTS	
Adjacent Land Use:	Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Adjacent Land Use: Residential Commercial Institution Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use?	Access: Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership

Page 2 of 4







Page 3 of 4

Unique Site ID: 20G

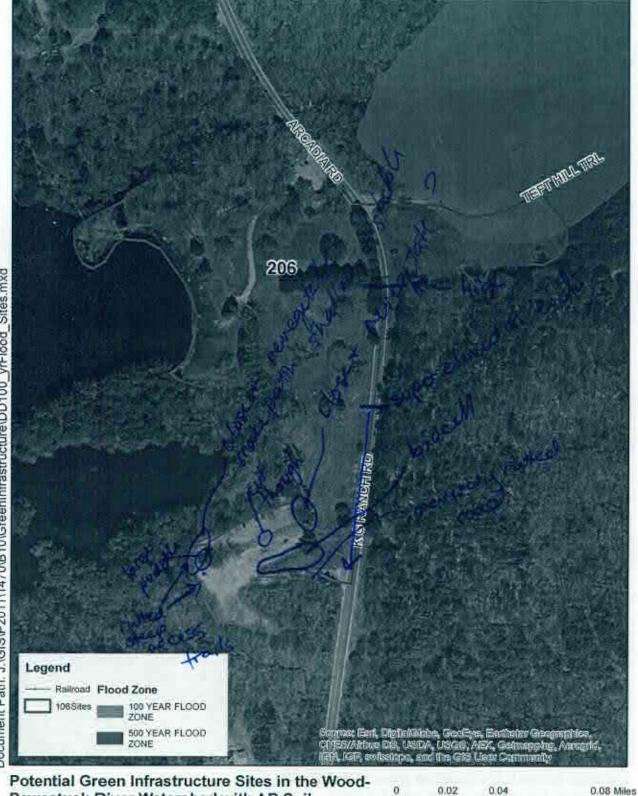


DESIGN	OR	DEL	VERY NOTES	

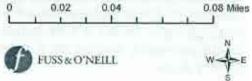
New · trail closure/stubilization · portapotties - more · delineate parting? · repurface lot w/ gravel FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Obtain existing stormwater practice as-builts Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Obtain site as-builts Obtain detailed topography Confirm volume computations Obtain utility mapping Confirm storm drain invert elevations Complete concept sketch Confirm soil types Other: INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS cheer need evidence of plouting? SITE CANDIDATE FOR FURTHER INVESTIGATION: NO MAYBE YES NO. MAYBE IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): NO MAYBE YES IF YES, TYPE(S):_

Page 4 of 4

Parking lot near lake 406 Arcadia Road Exeter, RI



Pawcatuck River 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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	-	-		
	R	L	2	
1.2				

WATERSHED:	TERSHED: SUBWATERSHED: UNIQUE SITE ID: 2/6		16		
DATE: 6/2/16	ASSESSED BY: Kulufug	CAMERA ID:	A	PICTURES:	1250 - 13110
GPS ID:	LMK ID:	LAT:		LONG:	
SITE DESCRIPTION					
Name: Public Cor Address: 99 Wilson	nplex - Baseball Re Street, Westerly RI	outs/parking	Stat		
Ownership: If Public, Government Juri	and the second se	ivate 🗌 Unknow ate 🗌 DOT	n Other:_		
Corresponding USSR/USA	A Field Sheet? 🗌 Yes	No Ify	es, Unique s	Site ID:	
Below Outfall	on: Above Roadway Culvert n Conveyance System Near Large Parking Lot	On-Site Hotspot Oper Small Parkin Individual St Underground	gLot [] Individual Roo] Small Impervid] Landscape / Ha] Other:	ous Area
DRAINAGE AREA TO PI	ROPOSED RETROFIT		TT-ST 1		ka mining
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: Bssible DA f		Drainage Area Residential SFH (<) SFH (>) SFH (>) Drainage Area	l ac lots) l ac lots) uses	Institution Industrial Transport- Park Undevelop Other:	Related
EXISTING STORMWATE	P MANACEMENT			Carl Contractor	
If Yes, Describe:					
Was frond	nditions, Including Existing Sit drawnage, No CBS cross Nourcing lat exi 27 Joes no	in large lot	; one	CB in bac	its parking 1
Existing Head Available :	and Points Where Measured:				

PROPOSED RETROFIT		
Purpose of Retrofit:	ge Channel Protection Flood Control	
Retrofit Volume Computations - Target Sto	rage: Retrofit Volume Computations - Available Sto	rage:
Proposed Treatment Option: Extended Detention Wet Pond Filtering Practice Infiltration	Created Wetland Bioretention	
Partial Permeable Parking Reduce parking 2 lot st	ze	
SITE CONSTRAINTS Adjacent Land Use: Commercial Ins Commercial Ins Industrial Transport-Related Pa Undeveloped Other: Possible Conflicts Due to Adjacent Land Us If Yes, Describe:	Slope Space	
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 Probable Not Pro Impacts to a Stream Probable Not Pro Impacts to Forests Impacts to Specimen Trees How many? Approx. DBH	obable obable obable obable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturati	on):	



Page 3 of 4

Unique Site ID: 216

#216

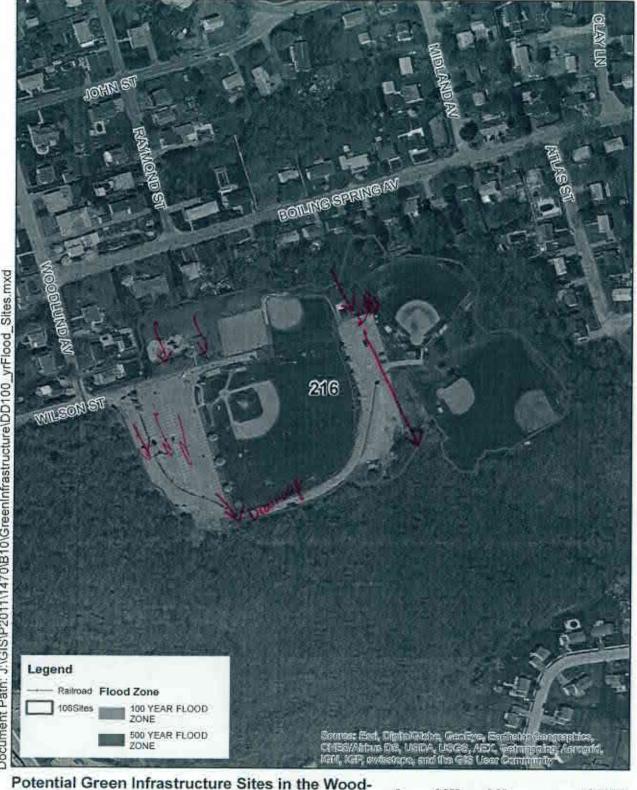


DESIGN OR DELIVERY NOTES

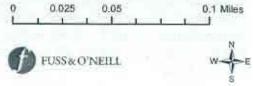
FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Obtain existing stermwater practice as-builts Obtain site as-builts Obtain detailed topography Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Obtain utility mapping Confirm storm drain invert elevations Confirm soil types Other: INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS Parking lot usage? possible to split to main + overflow bs SITE CANDIDATE FOR FURTHER INVESTIGATION: YES No MATEL IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): YES NO MAYBE IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): XYES NO MAYBE IF VES, TYPE(S): Monotweed Ramara

Page 4 of 4

Baseball Fields/ parking lot at Public Complex 99 Wilson Street Westerly, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



Document Path: J:/GIS/P2011/1470/B10/GreenInfrastructure/DD100_yrFlood_Sites.mxd



WATERSHED:	SUBWATERSHEI	D: UNIO	UE SITE ID: 217
DATE: 6/2/16	ASSESSED BY: Rw/wG	A STORES AND A STO	PICTURES: -2.4
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			- Addition
Name: Burlingane Address: Burlingane	Management Area State park Road		
Ownership: If Public, Government Juris	diction:	vate Unknown ite DOT Other	
Corresponding USSR/USA	Field Sheet? Yes	No If yes, Unique	
Below Outfall In Road ROW N Other:	bove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Operation Small Parking Lot Individual Street Underground	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	OPOSED RETROFIT		
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area Land Use:	Institutional Industrial
Notes:		SFH (> 1 ac lots) Townhouses Multi-Family Commercial	Transport-Related Park Undeveloped Other:
EXISTING STORMWATER	MANAGEMENT	and the second second	
Describe Existing Site Cond Greedually 810	litions, Including Existing Site ping; no formal o	Drainage and Conveyance: Stainage	
xisting Head Available and	Points Where Measured:		
ge 1 of 4			Unique Site ID: 2/7

RRI

PROPOSED RETROFIT		
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Pro	
Retrofit Volume Computations - Target Storage	n Retrofit V	olume Computations - Available Storage:
L'Alchided Determinent	reated Wetland	Bioretention Other:
SITE CONSTRAINTS		Access:
Adjacent Land Use: Residential Commercial Institution Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use?	itional	No Constraints Constrained due to Slope Space Utilities Tree Impacts
If Yes, Describe:		Structures Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Base Water Cable Cable Electric Electric to Streetlights Overhead Wires Overhead Wires	Potential Permittin Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimer How many? Approx. DBH Other factors:	Necessary Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	Yes No	





KETCH			

	Retrofit Reconnaissance Investigation RRI
DESIGN OR DELIVERY NOTES	
1	
FOLLOW-UP NEEDED TO COMPLETE FIELD CO	ONCEPT
Confirm drainage area	 Obtain site as-builts Obtain detailed topography
Confirm volume computations	Obtain utility mapping
Complete concept sketch	Confirm storm drain invert elevations Confirm soil types
Other: INITIAL FEASIBILITY AND CONSTRUCTION CO	NSIDEBATIONS
INTIAL PEASIBILITY AND CONSTRUCTION CO	NALIZER X FROMS
SITE CANDIDATE FOR FURTHER INVESTIGATION IS SITE CANDIDATE FOR EARLY ACTION PROJ	ECT(S): YES NO MAYBE
IF NO, SITE CANDIDATE FOR OTHER RESTORA- IF YES, TYPE(S):	TION PROJECT(S): YES NO MAYBE



DATE: $G/2/1/6$ ASSESSED BY: Rw/wG CAMERA ID: A PICTURES: GPS ID: LMK ID: LAT: LONG: SITE DESCRIPTION Name: Area Adjacent + to Ceean Commonity YACCA Address: $77-85$ Might Stat Westory ZI Long: Commonity YACCA Ownership: Transort Public Private Unknown $60/C3$ If yes, Unique Site ID: Corresponding USSR/USA Field Sheet? Yes No If yes, Unique Site ID: On-Site Storage Existing Pond Above Roadway Culvert On-Site Individual Roof Below Outfall Above Roadway Culvert On-Site Individual Roof Small Parking Lot Individual Roof Drainage Area \approx Model of ther: On-Site Small Impervion Individual Roof Imperviousness \approx % Drainage Area \approx Drainage Area \approx Individual Street Individual Street Imperviousness \approx % Drainage Area \approx Multi-Family Undevelope Notes: Read Everything drafts to park	21
GPS ID: LMK ID: LAT: LONG: STIE DESCRIPTION Name: Area Adjacent to Ocean Community VACA Address: 77-95 High Sheat, Constory, RT Ownership: Ownership: 77-95 High Sheat, Constory, RT Ownership: Ownership: Prublic Government Jurisdiction: Private Unknown 60/C3 Ownership: Prublic, Government Jurisdiction: Coal State DOT Other: Corresponding USSR/USA Field Sheet? Yes No If yes, Unique Site ID: Proposed Retrofit Location: Strage On-Site Individual Roof Small Impervious Small Impervious Below Outfall Above Roadway Culvert Hotspot Operation Individual Roof Other: Underground Other: Small Impervious Drainage Area Individual Street Landscape / Ha Other: Winderground Other: Individual Street Imperviousness ≈ Malimpervious Area ≈ Individual Street Individual Street Imperviousness ≈ Malmervious SFH (< 1 ac lots)	-1243
SITE DESCRIPTION Name: Area Adjacent to Ocean Community YMCA Address: 77-85 Kigh Shat , Westory, AI Ownership: Public Private Unknown 60/C3 If Public, Government Jurisdiction: Protocal State DOT Other. Corresponding USSR/USA Field Sheet? Yes No If yes, Unique Site ID: Proposed Retrofit Location: Storage On-Site Individual Roof Stristing Pond Above Roadway Culvert Hotspot Operation Individual Roof Below Outfall In Conveyance System Small Impervio Small Impervio Other: Underground Other: Small Impervio Other: Underground Other: Individual Street Drainage Area &= Munderground Other: Individual Street Impervious Area ≈ % SFH (< 1 ac lots)	1010
Address: #4-95 High State; Westory RI Ownership: Prublic If Public, Government Jurisdiction: Proceed State Corresponding USSR/USA Field Sheet? Yes Proposed Retrofit Location: State Storage On-Site Below Outfall In Conveyance System Below Outfall In Conveyance System Other: Small Parking Lot Other: Individual Roof Other: Small Parking Lot Individual Street Landscape / Hat Other: Drainage Area ≈ Imperviousness ≈ % Imperviousness ≈ % Imperviousness ≈ % SFH (<1 ac lots)	
If Public, Government Jurisdiction: Corresponding USSR/USA Field Sheet? Yes No If yes, Unique Site ID: Proposed Retrofit Location: Storage State Below Outfall In Road ROW Near Large Parking Lot Individual Street Individual Street Underground Other: Drainage Area ≈ Impervious Area ≈ Motes: Residential Motes: Motes: Residential Motes: Residential Motes: Mo	
Proposed Retrofit Location: Storage Below Outfall In Conveyance System Below Outfall In Road ROW Near Large Parking Lot Drainage Area ≈ Imperviousness ≈ % Imperviousness ≈ % Notes: Residential Everything drainset remaining Construction Multi-Family Underground Construction Steff (< 1 ac lots)	
Proposed Retrofit Location: Storage Storage Delow Outfall In Road ROW Near Large Parking Lot DRAINAGE AREA TO PROPOSED RETROFIT Drainage Area ≈ Imperviousness ≈ Multi-ramily Impervious Area ≈ Multi-ramily Order: Notes: Residential Impervious Area ≈ Multi-ramily Order: Notes: Residential Impervious Area ≈ Yes Notes: Residential Industrial ? Transport-R Other: Oundevelope Commercial Oundevelope Other: Yes Notes: Residential Industrial ? Transport-R Park Other: Townhouses Park Other: Yes No Possible Yes <td></td>	
DRAINAGE AREA TO PROPOSED RETROFTT Drainage Area ≈	is Area
Imperviousness =% Impervious Area =% Notes: Read Everything drains to park SFH (<1 ac lots) Industrial ? SFH (<1 ac lots) Industrial ? SFH (>1 ac lots) Transport.R Townhouses Park Multi-Family Undevelope Commercial Other: EXISTING STORMWATER MANAGEMENT Existing Stormwater Practice: Yes No Possible If Yes, Describe: Rain Garden al pre-treatment; Unmaintained ? Rain Garden al pre-treatment; Unmaintained ? CBS surrounding purk	
EXISTING STORMWATER MANAGEMENT Existing Stormwater Practice: Yes INO Possible I Yes, Describe: Yes INO Possible Rain Garden as pre-treatment; unmaintained? COSts surrounding purk	elated
Rain Garden en/pretreatment; unmaintained?	
Describe Existing Site Conditions, Including Existing Site Drainage and Conveyance: CBs throughout parks w/ deep sumps to catch Sediment	
xisting Head Available and Points Where Measured:	

Page 1 of 4



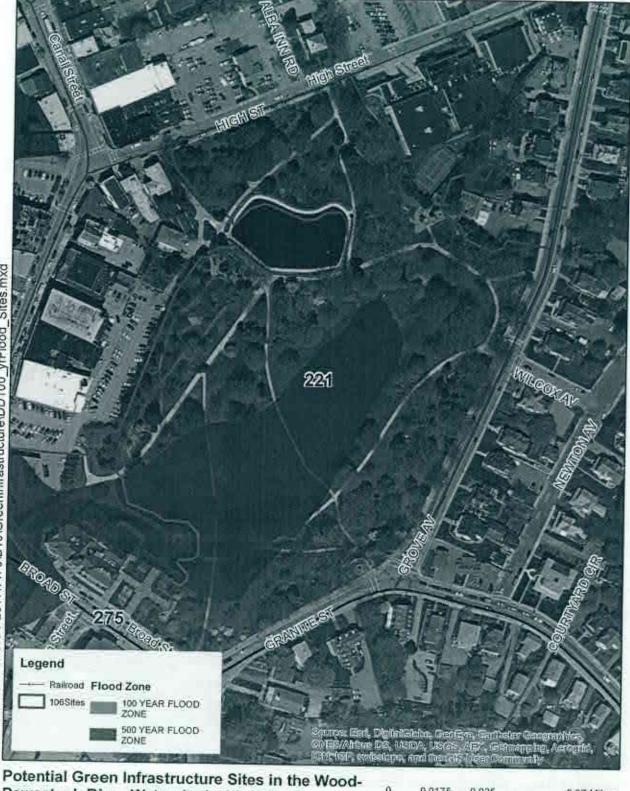
PROPOSED RETROFIT		
Water Quality Compose of Retrofit: Water Quality Component Recharge Demonstration / Education Repair	Other:	
tetrofit Volume Computations - Target Stora	ge: Retrofit Vol	hume Computations - Available Storage:
Littlibet a beer to be hand	Created Wetland	Bioretention Other:
Infiltration Under f Dry Swale Under b SITE CONSTRAINTS Adjacent Land Use:		Access:
Residential Commercial Inst Industrial Transport-Related Par Undeveloped Other: Possible Conflicts Due to Adjacent Land Use If Yes, Describe:		Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Sewer Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits N Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH	iecessary Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils:		

#221 central leaptist RRI **Retrofit Reconnaissance Investigation** SKETCH Rain w.hopeult Brodge 642 food 7 . Way tool pond want to do stream - Want bubbler - wase growth a publim under bridge) -fountain only clears surface Major want to pump - all psts planted water to it (equite as opposed to Inf swale pond: geosynthetic Clayliner (2006) Catch basins - sump streamis coverd (use to run dawn middle of field. All nighborhoods abain hore of and basin covos are bolted down current system surcharged; catch basin covos are bolted down suggest rain garden OCB OCB 000 Sidewall road catch basins go to "trunk line" Unique Site ID: Page 3 of 4 down certer of town"

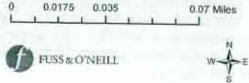
RRI

DESIGN OR DELIVERY NOTES better to treat @ source? -Sind places higher in watershed Nearby - Mich parking lot - possible additional site for BMPs FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Confirm property ownership Obtain existing stormwater practice as-builts Confirm drainage area Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topography Confirm volume computations 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) Party staff + owners very arrenable to water quality improvement Suggestions SITE CANDIDATE FOR FURTHER INVESTIGATION: NO YES 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 Unique Site ID:

Park Area near Ocean Community YMCA 77-85 High Street Westerly, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



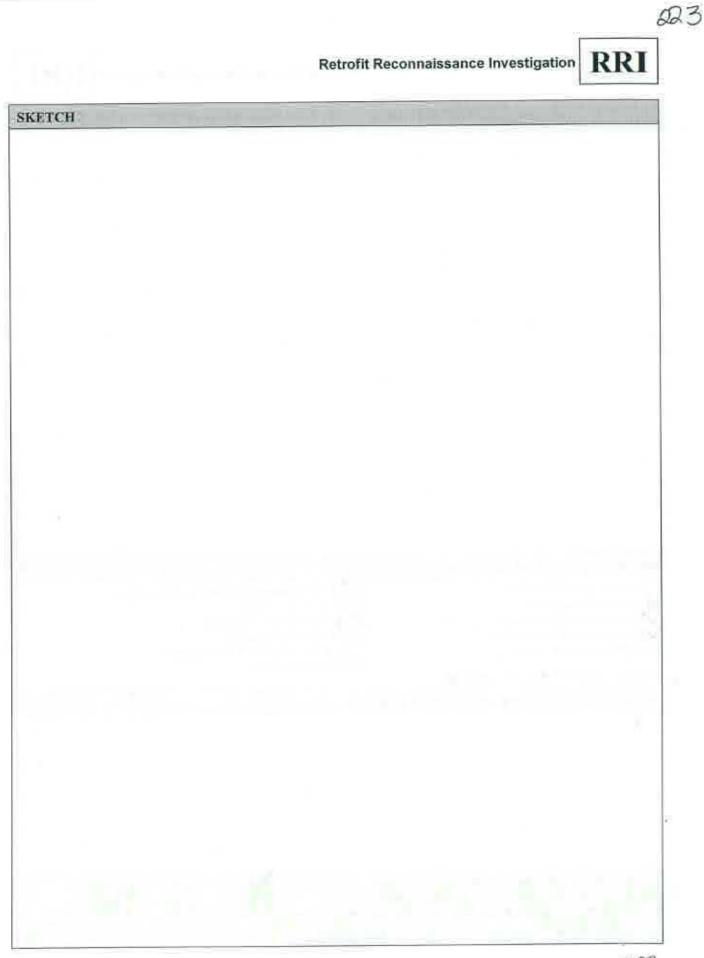
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Retrofit I	Reconnaissance	Invest	tigatio
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DESIGN OR	DELIVERY	NOTES
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FOLLOW-UP NEEDED TO COMPLETE FIELD C	CONCEPT
Confirm property ownership Confirm 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
NITIAL FEASIBILITY AND CONSTRUCTION CO	ONSIDERATIONS
SITE CANDIDATE FOR FURTHER INVESTIGATI S SITE CANDIDATE FOR EARLY ACTION PRO. F NO, SITE CANDIDATE FOR OTHER RESTORA IF YES, TYPE(S):	JECT(S): TYPE TIME TIME



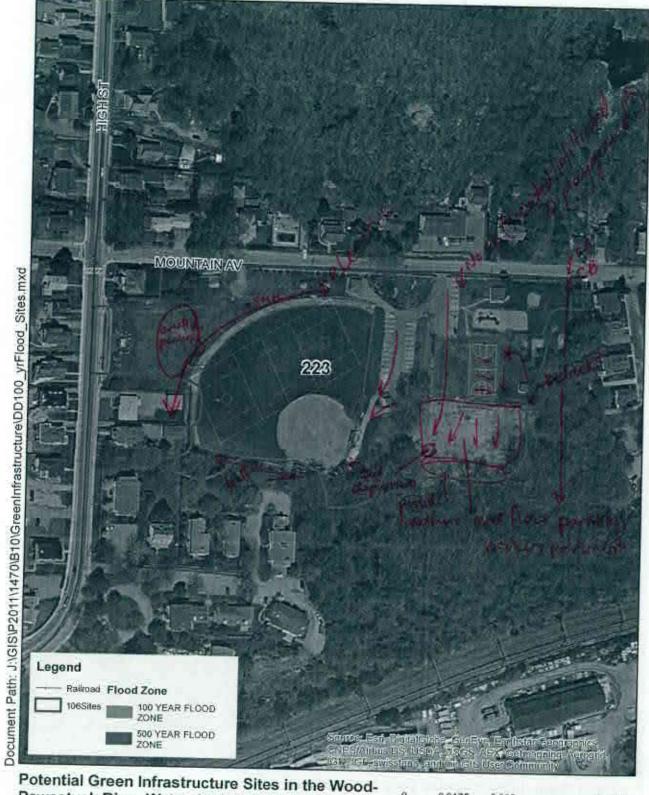
Page 3 of 4

WATERSHED:	SUBWATERSHED		UNIQUE	SITE ID: 223
DATE: 6/2/16	ASSESSED BY: RW/WG	CAMERA ID:	- sector mesence	PICTURES: 1830 - 11 05
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION	And the second second			
Name: Craig Field Address: Mountain A	Recreation Complex renue, Westerly RI			
Ownership: If Public, Government Juris	Public Priv	e DOT] Other:	
Corresponding USSR/USA	Field Sheet? Yes	No If yes	, Unique Si	ite ID:
Below Outfall	n: bove Roadway Culvert i Conveyance System ear Large Parking Lot	On-Site Hotspot Operat Small Parking Individual Stree Underground	tot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PR	OPOSED RETROFIT			The surgers of
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes: possible to ca.	ptwe offsite runoff	Drainage Area La Residential SFH (< 1 a SFH (> 1 a Townhouse Multi-Fam Commercial	c lots) c lots) 25	Institutional Industrial Transport-Related Park Undeveloped Other:
EXISTING STORMWATER	R MANAGEMENT			
Existing Stormwater Pract If Yes, Describe: Or Off -Site CBs only		Possible		
drainage Channels sediment, minor field Not draincol Southurn part	ditions, Including Existing Site on site Minor, dus crossion contry only but not soggy; u d Points Where Measured:	iappear befo	re wo	
age 1 of 4				Unique Site ID: 223



PROPOSED RETROFIT	
Purpose of Retrofit: Image: Constraint of the second sec	Channel Protection Flood Control
Retrofit Volume Computations - Target Storage	e: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond C Filtering Practice Infiltration	reated Wetland Bioretention wale & Other:Permeable purking lot
OUSCOR NECT CB, in NC CORNE SITE CONSTRAINTS Adjacent Land Use:	neable parent c boerflow parking lot(s) c (bioswale) utional <u>Access:</u> per
Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Constrained due to Slope ? Space Utilities Tree Impacts Structures Property Ownership Other: Bedrock
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Probable Not Probable Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable 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 Yes No Yes No): Q Yes No Souther edge

Craig Field Recreation Complex Mountain Avenue Westerly, RI



0 0.0175 0.035 0.07 Miles

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KK		F	1

WATERSHED: SUBWATERSHED: UNIQUE SITE ID:		UNIQUE SITE ID: 224	
DATE: 6/9/16	ASSESSED BY: RW/WG	CAMERA ID:	PICTURES: 224- 1245-
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Lorge Parkin Address: 60 010 H	lopkinton Rd, Westerli	d ARI	
Ownership: If Public, Government Jur	isdiction: Detail	A PAGE 11 THE PAGE AND A PAG	Town-Owned, 99-year lease
Corresponding USSR/US/	A Field Sheet? Yes	□ No If ye	s, Unique Site ID:
Below Outfall	on: Above Roadway Culvert In Conveyance System المعاركة Near Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	Lot Small Impervious Area
DRAINAGE AREA TO PI	ROPOSED RETROFIT	unger die staar	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area L	ac lots)
Notes: includes h	ughway	SFH (> 1)	es 🛛 Park
EXISTING STORMWATE	ER MANAGEMENT	a production	interest and the uniterest of the
Existing Stormwater Pra If Yes, Describe:	etice: ∑Yes □No Swall -NOt	Possible green') full	f sal
Partying Lot Dam 2 CBs in road d Swall along swe	aged by renditions, Including Existing Site aged by rendit f roun to 10t; lots dr dge of site filled u flocoding in upper t	locally airs to fields y Sed from	adjacent quarry
existing Head Available	and Points Where Measured:		
CB @ bottom of	drainage improves field (sw carner) r ted by quarry suce	ceeives su	what reduction what - other runoff; out
age 1 of 4	- query and		Unique Site ID: 224



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	ge: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond C Filtering Practice Infiltration S	Created Wetland
Infiltrators under parking lo may have to be deep due	to terraceal relationship bluen lot & fickels
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park	Constrained due to
Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Yes No Slope Space Utilities Tree Impacts Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable 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 Yes No Yes No Yes No



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			2	

Retrofit	Reconnaissance	Investigation
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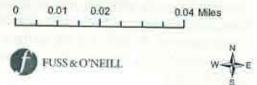
DESIGN OR DELIVERY NOTES

FOLLOW-UP NEEDED TO	O COMPLETE FUEL	D CONCEPT			
Confirm property owne Confirm drainage area Confirm drainage area i	impervious cover itations	Foi	tain site as-builts tain detailed topogra tain utility mapping nfirm storm drain inv		
Confirm volume compute Complete concept sketc	is allowed to	A Co	nfirm soil types	ert erevations	
Complete concept sketc	is allowed to	matering	nfirm soil types		
Other: in who	is allowed to	matering	nfirm soil types		
Complete concept sketc	is allowed to	matering	nfirm soil types		
Complete concept skete	is allowed to	matering	nfirm soil types		
Complete concept skete	is allowed to	matering	nfirm soil types		
Other: The who	is allowed to	matering	nfirm soil types		

Large Parking Lot for Football Field 60 Old Hopkinton Road 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

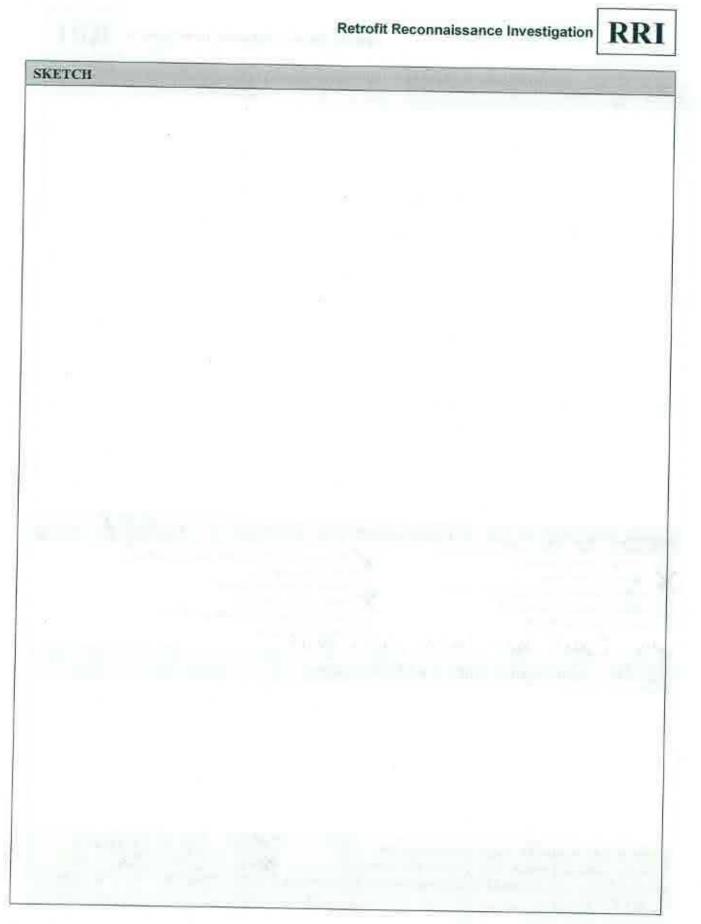


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WATERSHED:	SUBWATERSHED):	UNIQUE SITE ID: 227
DATE: 6/3/16	ASSESSED BY: RW/WG	CAMERA ID:	
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION		1.00	20/10.
Name: Hop Linton K Address: 188 Main Str	rect Hopkinton R		
Ownership: If Public, Government Jurise	A Public D Prin	vate Unknown	Other:
Corresponding USSR/USA	Field Sheet? Yes		s, Unique Site ID:
Below Outfall	n: hove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Operat Small Parking I Individual Stree	tion Individual Rooffop Lot Small Impervious Area
DRAINAGE AREA TO PRO	POSED RETROFT		
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: includus road, Netighborhoodi p	some residential otentially	Drainage Area La Residential SFH (< 1 a SFH (> 1 a Townhouse Multi-Fami Commercial	ic lots) Institutional ic lots) Industrial ic lots) Transport-Related es Park ily Undeveloped
EXISTING STORMWATER	MANAGEMENT	Commercial	Other:
escribe Existing Site Candi		- C - 2. 15	outbuilding (rain bu
one small heavi	Hed CBA D rol Hed CBA D rol id in/capped in Pa	ads edge	eyance:
former CB sille Nalfor Of PL po	wed, half uning Points Where Measured:	proved, so	and from road +
isting Head Available and	Points Where Measured:	dep	whing lot
	1. 1. 180		0

PROPOSED RETROFIT	
Water Quality Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	ge: Retrofit Volume Computations - Available Storage:
Filtering Practice Infiltration	Created Wetland Bioretention Swale Other:
Focus on Road ROW + C -offline? Mountain Road ROW to	a plant set ag a bara a set par
SITE CONSTRAINTS	
Adjacent Land Use: Residential Commercial Instit Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Constrained due to
Conflicts with Existing Utilities: None Unknown Yes Possible Gas 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?
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation	Yes No Yes No Yes No Yes No



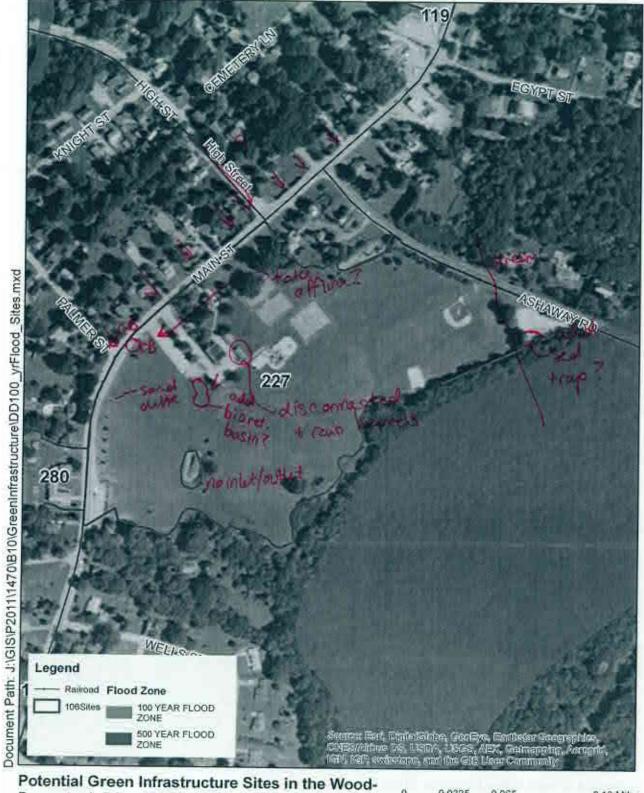


Retrofit Reconnaissance	Investigation
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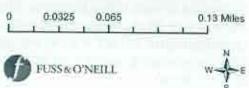
DESIGN OR DELIVERY NOTES			
1.62			
	ĸ		
FOLLOW-UP NEEDED TO COMPLETE FIELD CO Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain ex Obtain sit Obtain de Obtain ut	isting stormwat e as-builts tailed topograp lity mapping storm drain inve	uilts
NITTAL FEASIBILITY AND CONSTRUCTION CON	ilet, + OLHU	soil types	
SITE CANDIDATE FOR FURTHER INVESTIGATIO IS SITE CANDIDATE FOR EARLY ACTION PROJ IF NO, SITE CANDIDATE FOR OTHER RESTORA- IF YES, TYPE(S):	ECT(S);	s): Yes	MAYBE MAYBE MAYBE

Hopkinton Recreation Department 188 Main Street Hopkinton, RI



Pawcatuck River 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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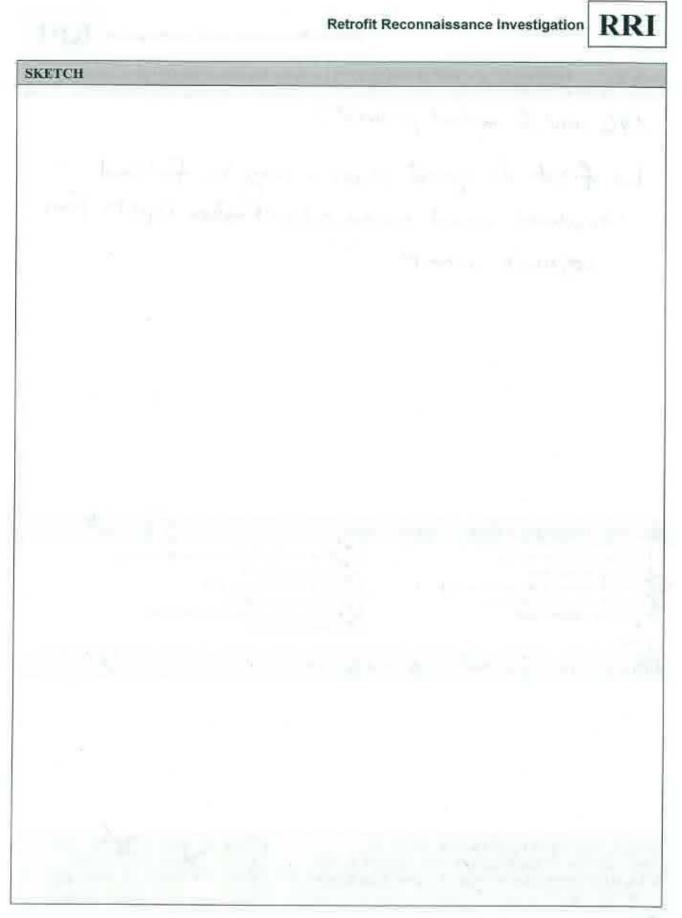


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WATERSHED:	SUBWATERSH	SUBWATERSHED:		UNIQUE SITE ID: 229	
DATE: 6/3/16	Assessed By: RW/W	G CAMERA ID:	C	PICTURES: 9:45 - 103	
GPS ID:	LMK ID:	Contraction of the Contraction o		LONG:	
SITE DESCRIPTION				أنجه الترجيك والمكاف والأ	
Name: TUCkertown Address: 1010 TUCK					
Ownership: If Public, Government Juris		Private Unknov State DOT	vn		
Corresponding USSR/USA	Field Sheet? Yes	No If	yes, Unique	Site ID:	
Below Outfall	n: bove Roadway Culvert o Conveyance System lear Large Parking Lot	On-Site Hotspot Ope Small Parki Individual S Undergroun	ng Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:	
DRAINAGE AREA TO PR	OPOSED RETROFIT		المخط الرجا		
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes:	%	Residential	SFH (< 1 ac lots) Industrial SFH (> 1 ac lots) Transport-Related		
	100	Townhouses Multi-Family Commercial Other:		Undeveloped	
EXISTING STORMWATER	R MANAGEMENT			الروار الالتبيا والمالي أأرب	
Existing Stormwater Prac If Yes, Describe: 2 catch basin capture wate	sjobuinage und	No Possible let fields, D	, re conv	reys but does not	
	visible; no form deposited on par		gr	nding. water 2 time:	
Existing Head Available at	ther dag " sign	ns on sit	د		

Page 1 of 4

PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Recharg Demonstration / Education Repair	ge Channel Protection Flood Control
Retrofit Volume Computations - Target Stor	rage: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Filtering Practice Infiltration] Created Wetland Bioretention] Swale Dother: per nearble parking
SITE CONSTRAINTS	under fields? J remare fertilizer in of fields
Adjacent Land Use: Residential Commercial Ins Industrial Transport-Related Par Undeveloped Other: Possible Conflicts Due to Adjacent Land Use f Yes, Describe:	Slope Space
Conflicts with Existing Utilities: None Unknown Ves Possible Sewer Quart 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 Yes No Yes No Yes No



Page 3 of 4

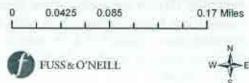
RRI

DESIGN OR DELIVERY NOTES little need for treatment precived? but ifields in good shape - may be fertilized . treatment would remove nutrients from inputs from adjacent swamp/ FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Confirm property ownership Obtain existing stormwater practice as-builts Obtain site as-builts Confirm drainage area Obtain detailed topography Confirm drainage area impervious cover Confirm volume computations Obtain utility mapping Complete concept sketch Confirm storm drain invert elevations Confirm soil types Other: INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS NO SITE CANDIDATE FOR FURTHER INVESTIGATION: YES MAYBE YES NO MAYBE IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): NO YES MAYBE IF YES, TYPE(S):

Tuckertown Park 1010 Tuckertown Park Drive South Kingstown, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre





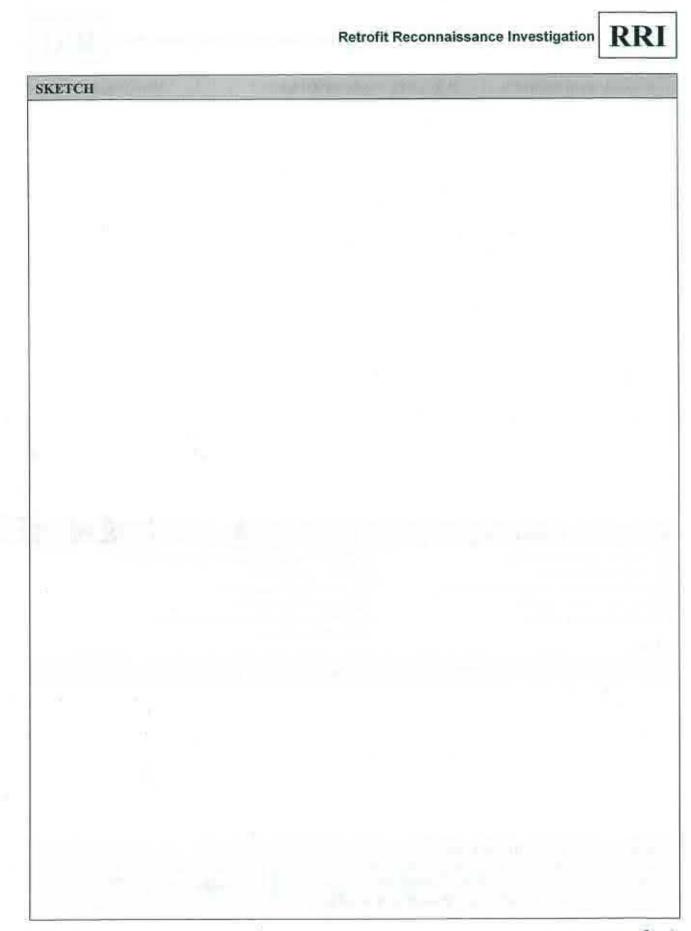
Unique Site ID: 232

WATERSHED:	SUBWATERSHI	ED:	UNIQUI	SITE ID: 232
DATE: 7/5/16	ASSESSED BY: RW/W	G CAMERA ID:	C	PICTURES: (, 1 + - 1.20
GPS ID:	LMK ID;	LAT:		LONG:
SITE DESCRIPTION		adio de l'ana ila		ing and a surger of the
Name: Pavilion Ste Address: 35 Frontie	Road, Hopkinty	n, RI		
Ownership: If Public, Government Jurisdi	Public P	rivate Unknown tate DOT	Other:_	
Corresponding USSR/USA Fi	ield Sheet? 🗌 Yes	□ No If ye	es, Unique S	Site ID:
Below Outfall In C	we Roadway Culvert Conveyance System r Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stru Underground	Lot] Individual Rooftop] Small Impervious Area] Landscape / Hardscape] Other.
DRAINAGE AREA TO PROP	POSED RETROFIT		a. II. In	A REAL PROPERTY AND A REAL
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:		Drainage Area L Residential SFH (< 1 SFH (> 1 Townhou Multi-Far	ac lots) ac lots) ses	Institutional Industrial Transport-Related Park Undeveloped
		Commercial		Other:
EXISTING STORMWATER	1	lo 🗌 Possible	1.1.III.a.M.	and the second se
If Yes, Describe:				
Describe Existing Site Condi Newly resurfaced Rest of site is requ	1 lot dractine to C	Bs		restment
incis veg	CHONED) . 10-10011	S. Muse	Jor 1	
Existing Head Available and	Points Where Measured:			-

Page 1 of 4

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1.2		-0	a.,	

PROPOSED RETROFIT	the standard standard the second standard
Purpose of Retrofit: Recharge Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storage	e: Retrofit Volume Computations - Available Storage:
	reated Wetland Bioretention wale Other:
SITE CONSTRAINTS	
Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe: Yes	tional Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership
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 Wetlands Impacts to a Stream Probable Floodplain Fill 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



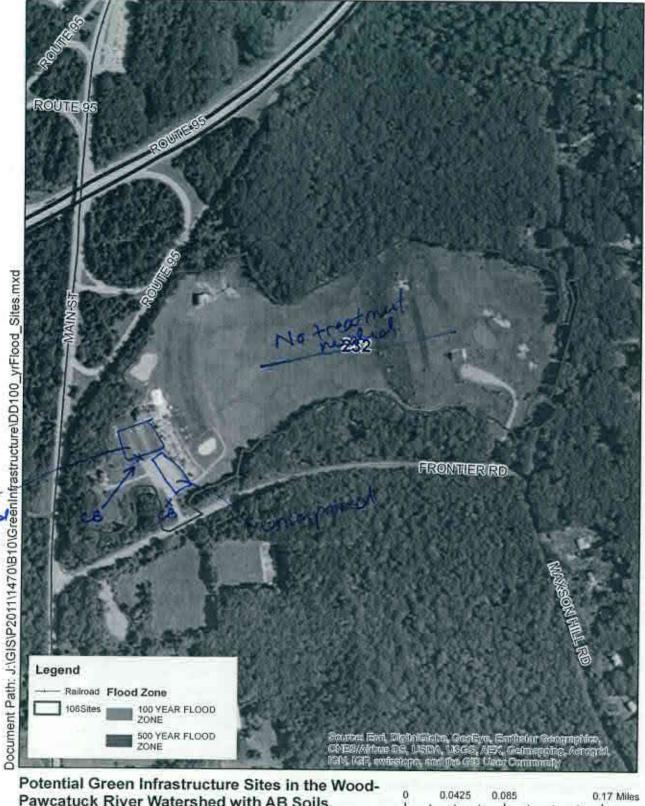
Retrofit	Reconnaissance	Investigatio
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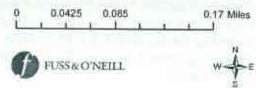
DESIGN OR DELIVERY NOTES

17	
	51 8
FOLLOW-UP NEEDED TO COMPLETE FIELD Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	O 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 INVESTIGA IS SITE CANDIDATE FOR EARLY ACTION PH IF NO, SITE CANDIDATE FOR OTHER RESTO IF YES, TYPE(S): MODION (Procession)	ROJECT(S):

Pavillion Steak House/ Open Space? 35 Frontier Road Hopkinton, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



resh . Rurface parking 10t



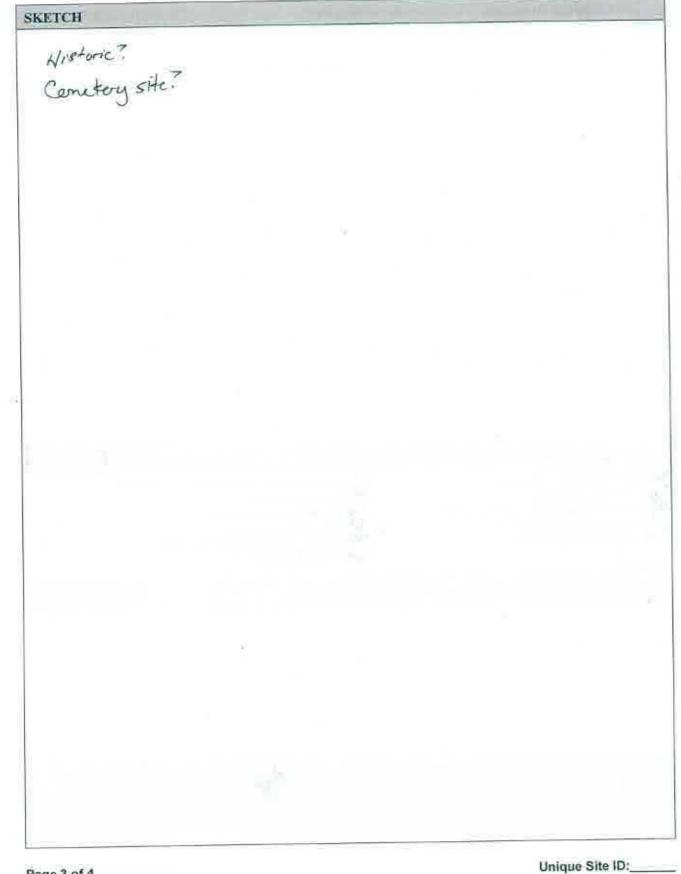
WATERSHED:	SUBWATERSHED:		UNIQUE SITE ID: 248	
DATE: 6/6/16	ASSESSED BY: RW/WG	CAMERA ID:	C	PICTURES: /2:05-
GPS ID:	PS ID: LMK ID: LAT:		1	LONG:
SITE DESCRIPTION				
Name: Abardoned Address: 899 Main 3	Parking Lot Enc Street (Rte 3/Nooseno	hantid f	forest	of KI
Ownership: If Public, Government Jurisdi	ction: Dublic Pri	te	Other	
Corresponding USSR/USA F	ield Sheet? 🗌 Yes	□ No If ye	es, Unique	Site ID:
Below Outfall In C	: ove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Open Small Parking Individual Str Underground	Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	POSED RETROFIT	in the second second	1.85	and the second second second
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes: also captures	Read runo ff	Drainage Area L Residential SFH (< 1 SFH (> 1 Townhou Multi-Far	ac lots) ac lots) ses	Institutional Industrial Transport-Related Park Undeveloped Other: UnKnown
EXISTING STORMWATER	MANAGEMENT	a series an and	-	
Existing Stormwater Practi- If Yes, Describe:	ce: 🗌 Yes 🕅 No	Possible		
Describe Existing Site Cond Paved, Overgrown 'Ghast" infrastant	itions, Including Existing Site 107; portion of thre (CBS)	Prainage and Cor Rife, 3 Okraeler	iveyance: 15 to	16†
Existing Head Available and	Poter When Marine			
Contrag treas acculate and	Lunda Trans Lundantos			
		x.		

Page 1 of 4



PROPOSED RETROFTT			
Purpose of Retrofit: Water Quality Demonstration / Education	e Channel Pr	otection 🗌 Flo	od Control
Retrofit Volume Computations - Target Stora	ige: Retrofit V	Folume Computations - Av	ailable Storage:
	Created Wetland Swale	Bioretention	aurol areas
tourn purchase in order to p Encourage stormwater again	treatmet it	: sifeever d	eveloped
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Insti Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use' If Yes, Describe:	\/	Access: No Constraints Constrained due to Slope Utilities Structures Other:	Space Tree Impacts Property Ownership
Conflicts with Existing Utilities: None Could be Unknown Yes Possible consuct Water Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits I Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH	Factors: Necessary Probable ? Probable ? Probable ? Probable Probable Probable	Not Probable Not Probable Not Probable Not Probable Not Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation	Yes No Yes No Yes No Yes No		

Unique Site ID:____



Page 3 of 4



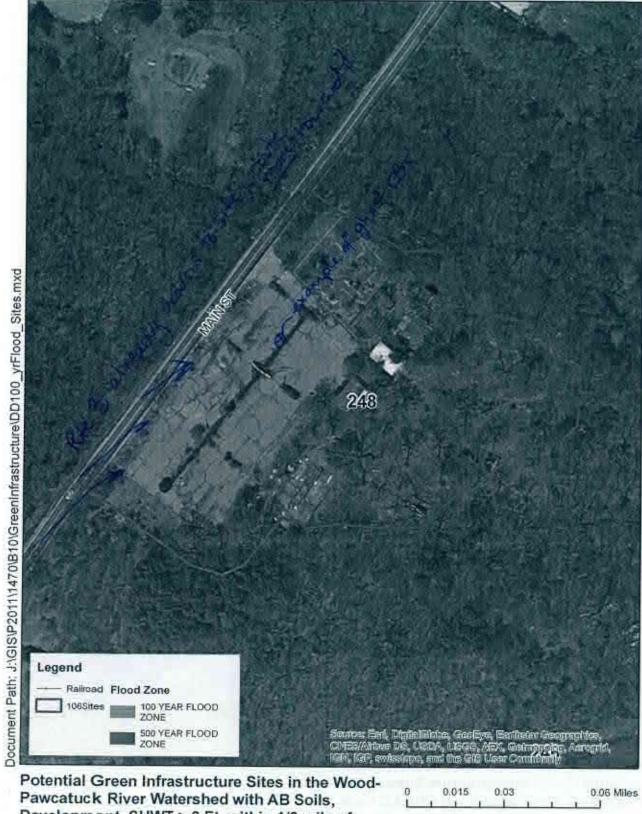
DESIGN OR DELIVERY NOTES

FOLLOW-UP NEEDED TO COMPLETE FIE	
Confirm property ownership Confirm drainage area	Obtain existing stormwater practice as-builts Obtain site as-builts
Confirm drainage area impervious cover Confirm volume computations	Obtain detailed topography
Complete concept sketch	Confirm storm drain invert elevations
Other:	Confirm soil types
INITIAL FEASIBILITY AND CONSTRUCTION	ON CONSIDERATIONS
SITE CANDIDATE FOR FURTHER INVESTIG	
IS SITE CANDIDATE FOR EARLY ACTION IF NO, SITE CANDIDATE FOR OTHER REST	PROJECT(S); YES NO MAYBE
IF YES, TYPE(S):	TORATION PROJECT(S): YES NO MAYBE

Page 4 of 4

Unique Site ID:_____

Abandoned parking lot 894 Main Street (Rte 3/ Nooseneck Hill Road) Hopkinton, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre 0 0.015 0.03 0.06 Miles

Address: <u>1118</u> Mala St Dwnership: f Public, Government Jurise Corresponding USSR/USA Proposed Retrofit Location Storage Existing Pond	fiction: Public Local	Private Unknown State DOT	LONG:	
GPS ID: SITE DESCRIPTION Name: <u>Charibo</u> Address: <u>118</u> Malo St Ownership: f Public, Government Jurise Corresponding USSR/USA Proposed Retrofit Location Storage Existing Pond A	Hu loagu Hepkinton Hepkinton Inction: Depublic Local Field Sheet? Yes	Private Unknown State DOT		
Name: <u>Charibo</u> Address: <u>118</u> <u>Malo</u> St Ownership: f Public, Government Jurise Corresponding USSR/USA Proposed Retrofit Location Storage Existing Pond A	iction: Public Field Sheet? Yes	State DOT		
Address: <u>118 Malo St</u> wmership: f Public, Government Jurise Corresponding USSR/USA Proposed Retrofit Location Storage Existing Pond A	iction: Public Field Sheet? Yes	State DOT		
Ownership: f Public, Government Jurise Corresponding USSR/USA Proposed Retrofit Location Storage Existing Pond A	fiction: Public Local	State DOT		
Proposed Retrofit Location Storage		No If ye		
Storage	n:		s, Unique Site ID:	
Below Outfall	bove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	Lot Small Impervious Area	
DRAINAGE AREA TO PR	OPOSED RETROFIT			
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area Land Use: Residential Institutional SFH (< 1 ac lots)		
votes.		Townhouses Multi-Family Commercial Other:		
EXISTING STORMWATE	R MANAGEMENT			
Existing Stormwater Prac If Yes, Describe:				
No formal st to read syst Parking lots grounds, no	/	te', road C runoff but se ass	ed settles out before	
			Unique Site ID: 25	

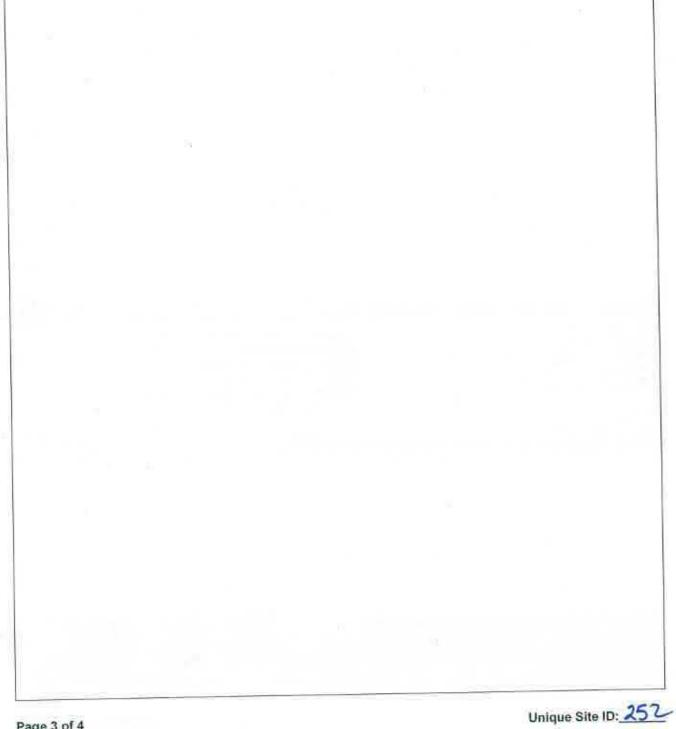


PROPOSED RETROFIT			
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel P	rotection	Flood Control
Retrofit Volume Computations - Target Stora	ge: Retrofit	Volume Comput	ations - Available Storage:
	Created Wetland	Bioretention	1
SITE CONSTRAINTS		Access:	
	utional	No Constra Constrained du Slope Utilitie Structu	e to Space s Tree Impacts
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits I Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH	Factors:	Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
oils: foil auger test holes: vidence of poor infiltration (clays, fines): vidence of shallow bedrock: vidence of high water table (gleying, saturation):	Yes No Yes No Yes No Yes No		

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SKETCH



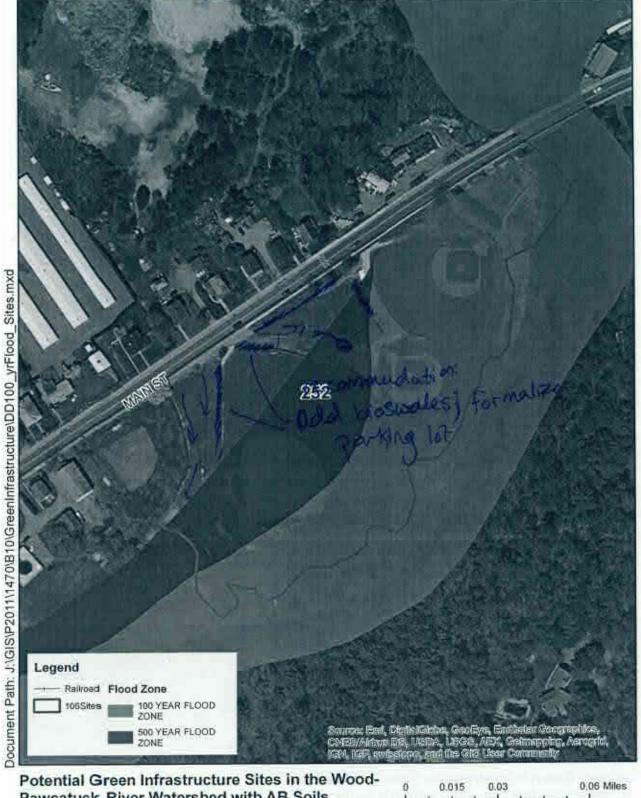
Page 3 of 4



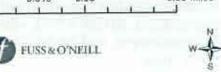
DESIGN OR DELIVERY NOTES	
site currently well ma current parking use is	intained, highly visible
current parking use is	
FOLLOW-UP NEEDED TO COMPLETE FIELD CO	NCEPT
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	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 COM	NSIDERATIONS
X	
SITE CANDIDATE FOR FURTHER INVESTIGATIO	
IS SITE CANDIDATE FOR EARLY ACTION PROJE IF NO, SITE CANDIDATE FOR OTHER RESTORAT IF YES, TYPE(S):	ECT(S): YES NO MAYBE

1 -

Chariho Little League 1118 Main Street Hopkinton, RI



Potential Green Infrastructure Sites in the woo 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	ED: UNIQUE SITE ID: 271		SITE ID: 271
DATE: 7/5/16	ASSESSED BY: Rulug	CAMERA ID:	2	PICTURES: 910-928
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				
Name: The Wester Address: 25 Wells	ly Hospital Street, Westerly	RI		
Ownership: If Public, Government Juris	diction:		Other:	
Corresponding USSR/USA	Field Sheet? 🗌 Yes	□ No If yes	s, Unique S	ite ID:
Below Outfall	n: bove Roadway Culvert o Conveyance System lear Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PR	OPOSED RETROFT	Leading I	a landa	LESS IN THE PROPERTY OF THE
Imperviousness ≈ Impervious Area ≈	inage Area≈% erviousness≈% ervious Area≈		Drainage Area Land Use: Residential SFH (< 1 ac lots) SFH (> 1 ac lots) Transport-Relate	
Notes:		Townhouses Multi-Family Commercial		Park Undeveloped Other:
EXISTING STORMWATE	R MANAGEMENT	27 1 28 1 1111	(summe	A DEMONSTRATING S SO
Existing Stormwater Prac If Yes, Describe: dy wells	tice: □Yes □No ? 2 private med	1. facility		
Describe Existing Site Con	nditions, Including Existing Site	Drainage and Con	veyance:	
Existing Head Available a	nd Points Where Measured:			
				Contract of the second s

PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Storage:
	reated Wetland Bioretention /bioswale
improve existing basi large dry wells ??	pretreatent for inflittradion o in employee lot
SITE CONSTRAINTS	The second s
Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Access: No Constraints Constrained due to Slope Yes No Yes No Yes No Yes Ono Yes Ono Slope Structures Other: Other:
Conflicts with Existing Utilities: None Unknown Yes Possible 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 Yes No Yes No Yes No





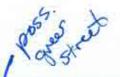


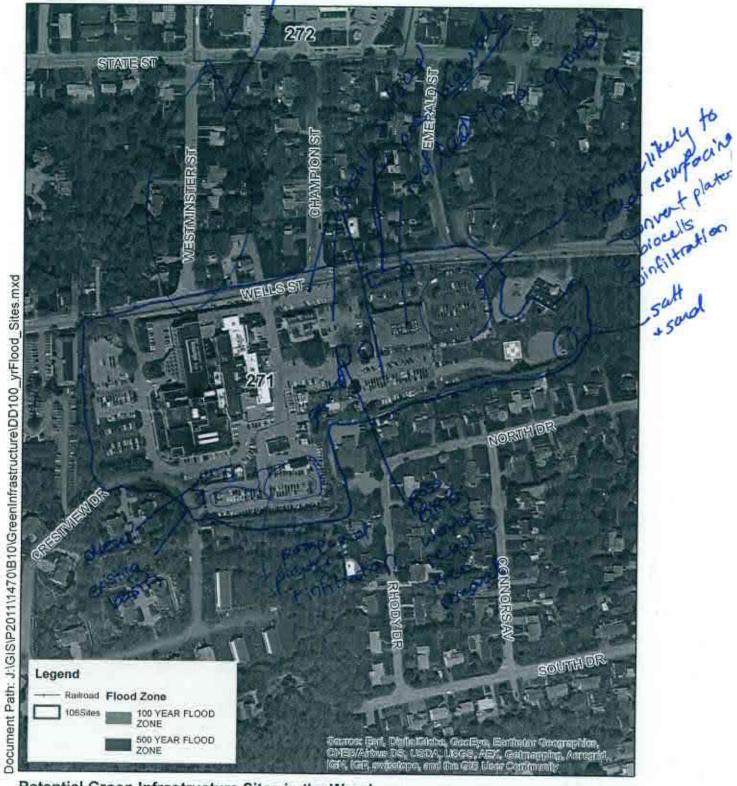


RRI

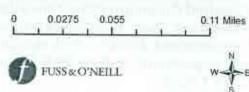
DESIGN OR DELIVERY NOTES -pay attention to fature facility upgrades -little space; parking lots v. full -many lots recently resurfaced FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Dobtain existing stormwater practice as-builts Confirm property ownership Obtain site as-builts Confirm drainage area impervious cover Obtain detailed topography Obtain utility mapping Confirm volume computations Confirm storm drain invert elevations Complete concept sketch Confirm soil types wells Sother: Cueck 00 INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS NO **AAYBE** 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 IF YES, TYPE(S):

The Westerly Hospital 25 Wells Street 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



to

7

WATERSHED:	SUBWATERSHED		UNIQUE SITE ID: 272
DATE: 7/2/16	ASSESSED BY: Ru/wg	CAMERA ID:	C PICTURES: 929-10:0
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION	ويستعلم والمحالي المراجع والتكار		- Ohnes and a finger of the sheet
Name: 03 Store	contor Cetitens Ce est westerly KI	untrer - Stat	n st School
Ownership: If Public, Government Jur	isdiction:	ate DOT	Other:
Corresponding USSR/US	A Field Sheet? Yes	□ No If ye	es, Unique Site ID:
Below Outfall	ion: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Str Underground	g Lot Small Impervious Area reet Landscape / Hardscape
DRAINAGE AREA TO P	ROPOSED RETROFIT	TRANC	an the Constitution and the or the
Drainage Area ≈% Imperviousness ≈% Impervious Area ≈%		Drainage Area I Residential SFH (< 1 SFH (> 1)	I ac lots) Industrial I ac lots) Transport-Related
Notes:		Townhou Multi-Fa Commercial	
EXISTING STORMWAT	ER MANAGEMENT	- IIICE BINNI	The former in the second second second
Existing Stormwater Pr If Yes, Describe:		Hogsited +	needs maintenance
Describe Existing Site (water draws Mostly igto	ground w/ some	ite Drainage and Co 15 1. Ster aborgrou	onveyance: in bts ' wofdrains oll + wooding pavement /s
Existing Head Availabl	e and Points Where Measured:		

Page 1 of 4



PROPOSED RETROFIT	the second se
Purpose of Retrofit: Water Quality Demonstration / Education Repair	Channel Protection Flood Control Other:
Retrofit Volume Computations - Target Stora	ge: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention Swale Other:
Dem PL+ c playgroud Denter: SITE CONSTRAINTS	(shallow, grassed)
Adjacent Land Use: Residential Commercial Institu Godositat Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Access: No Constraints Constrained due to Slope Space Ves No Yes No Structures Property Ownership Other: Structure
Conflicts with Existing Utilities: None Unknown Yes: Possible Gas 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 Yes No Yes No Yes No Yes No

Page 2 of 4

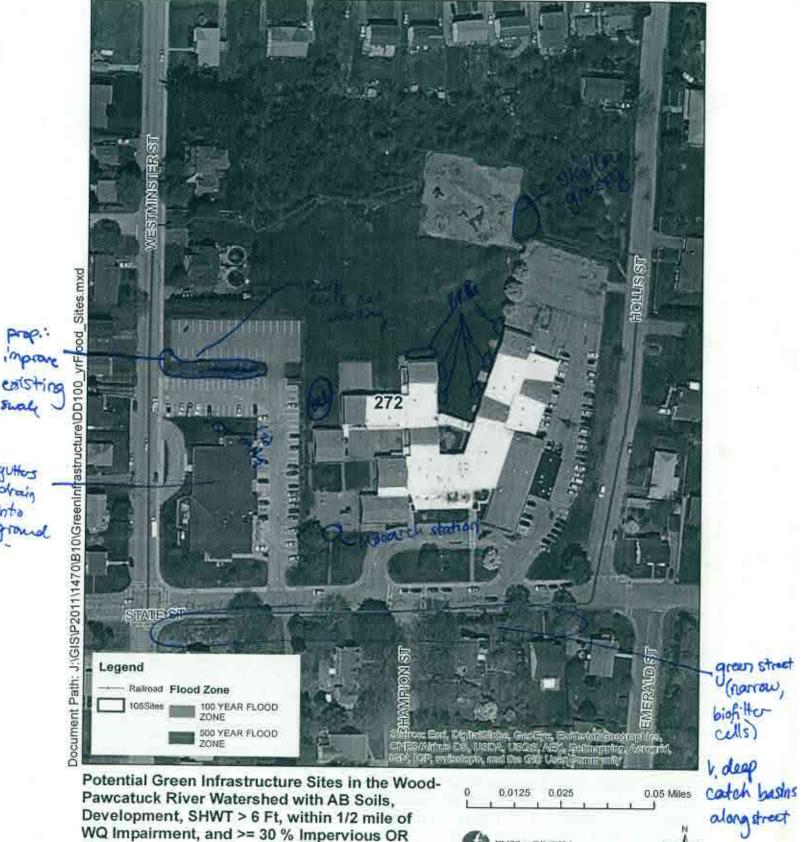




DESIGN OR DELIVERY NOTES	and the second
Split into two sites	
Green streets potential in	surrounding neighborhoods
Ψ.	
	15
FOLLOW-UP NEEDED TO COMPLETE FIELD CO	NETERT
the second s	AN LEFT
Confirm property ownership	Nobtain existing stormwater practice as-builts
Confirm property ownership Schier Confirm	Obtain existing stormwater practice as-builts
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	Obtain site as-builts Obtain detailed topography Obtain utility mapping
Confirm drainage area Confirm drainage area impervious cover	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	Obtain site as-builts Obtain detailed topography Obtain utility mapping
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types NSIDERATIONS
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types NSIDERATIONS NSIDERATIONS
Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other: INITIAL FEASIBILITY AND CONSTRUCTION CONSTRUCTURE CONS	Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types NSIDERATIONS NSIDERATIONS

Page 4 of 4

Westerly Senior Citizens Center and State Street School 35 State Street Westerly, RI



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

sual gutters

prop.

otrain nto ground



WATERSHED:	SUBWATERSHED:	HED: UNIQUE SITE ID: 273	
DATE: 6/2/16	ASSESSED BY: RW, BUG	CAMERA ID: A	PICTURES: /3:20 -
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Plus X S Address:	chool		
Ownership: If Public, Government Jurisd		rate 🗌 Unknown ie 🗌 DOT 🗌 Othe	c
Corresponding USSR/USA I	ield Sheet? 🗌 Yes	🗌 No 🛛 If yes, Uniqu	e Site ID:
Below Outfall	: ove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Operation Small Parking Lot Individual Street Underground	 Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	POSED RETROFIT	The Third and the	The second second
Drainage Area ≈% Imperviousness ≈% Impervious Area ≈		Drainage Area Land Use: Residential SFH (<1 ac lots) SFH (>1 ac lots) SFH (>1 ac lots) Drainage Area Land Use: Institutional Industrial Transport-Related	
Notes:	8	Townhouses Multi-Family Commercial	Park Undeveloped Other:
EXISTING STORMWATER	MANAGEMENT		A STATE OF STATE
	litions, Including Existing Site firely used for vari		
Existing Head Available an	d Points Where Measured:		
Preliminary As	sessment Only	due to lack	of site access
age 1 of 4 . Unlike	y, but staff ma	y contact us	Unique Site ID: 2



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storage	e: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Cr Filtering Practice Infiltration Sv	reated Wetland Bioretention vale Other:
Adjacent Land Use: Institut Residential Commercial Industrial Transport-Related Undeveloped Other:	Constrained due to
Industrial Transport-Related Park	tional INo Constraints Constrained due to
Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use?	tional INo Constraints Constrained due to Slope Space Ves No Utilities Tree Impacts Structures Property Ownership

Retrofit	Reconnaissance	Investigat
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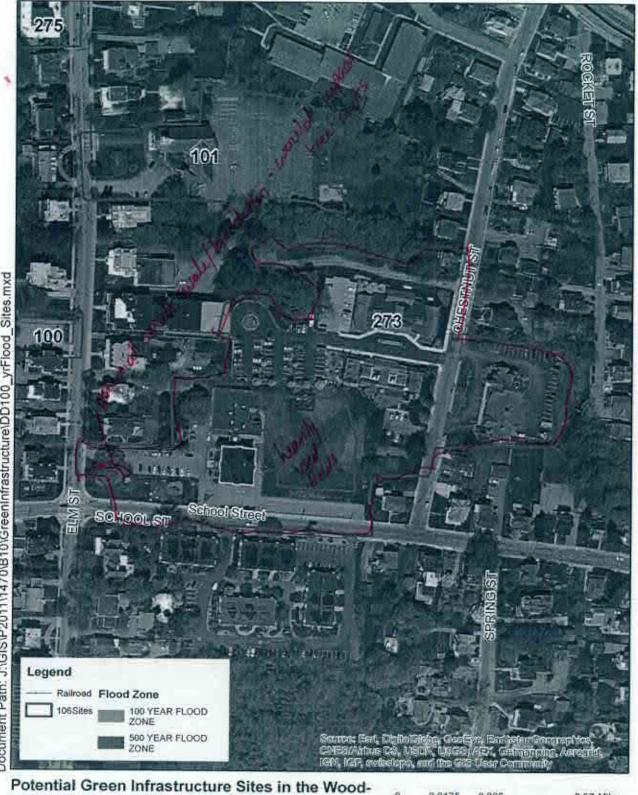
DESIGN OR DELIVERY NOTES	And the second second second	
No space available on	site	
FOLLOW-UP NEEDED TO COMPLETE FIELD CON	CEPT	1
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	 Obtain existing stormwater practice 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 CONS		_
SITE CANDIDATE FOR FURTHER INVESTIGATION IS SITE CANDIDATE FOR EARLY ACTION PROJEC IF NO, SITE CANDIDATE FOR OTHER RESTORATION IF YES, TYPE(S):	T(S): YES NO NO	IAYBE IAYBE IAYBE



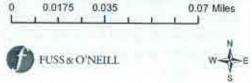
273

ETCH			

St. Pius X School 32 Elm Street Westerly, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



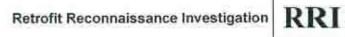
Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd



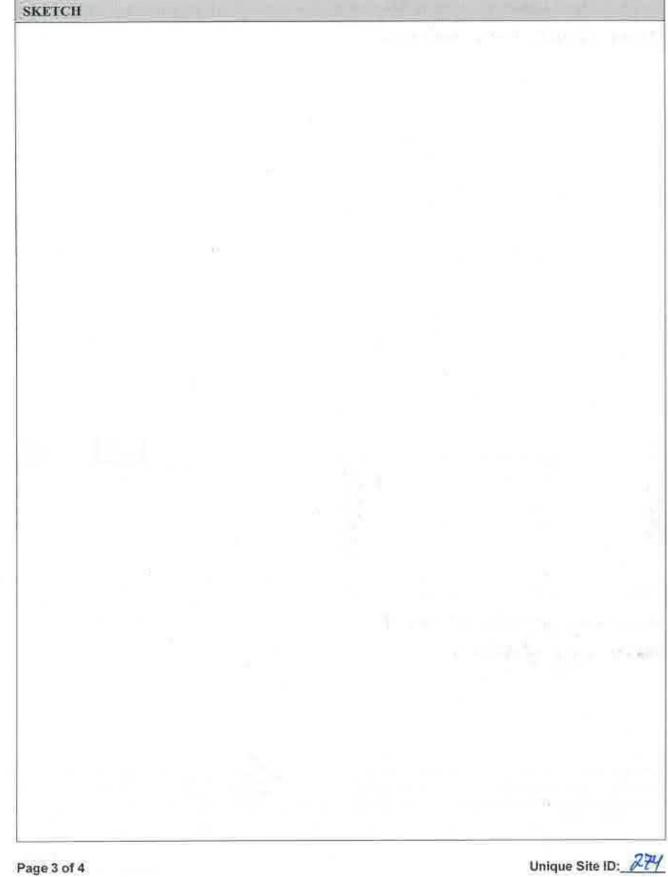
WATERSHED:	SUBWATERSHED	:	UNIQUI	SITE ID: 274	
DATE: 6/9/16	ASSESSED BY: RW/WG	CAMERA ID:	C	PICTURES: \$ 10:15-	
GPS ID:	LMK ID:	LAT:		LONG:	
SITE DESCRIPTION					
Name: Westerly Address: 23 Work	High School Archive # Usestury, R:	t			
Ownership: If Public, Government Jur	isdiction:		n D Other:_		
Corresponding USSR/US/	A Field Sheet? 🗌 Yes	□ No If y	es, Unique !	Site ID:	
Below Outfall	on: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Oper Small Parking Individual Str	g Lot] Individual Rooftop] Small Impervious Area] Landscape / Hardscape] Other:	
DRAINAGE AREA TO P	ROPOSED RETROFIT		3 132	Contraction of the second	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area I Residential SFH (< 1 SFH (> 1	ac lots) ac lots)	Institutional Industrial Transport-Related	
		Townhou Multi-Fa Commercial		Park Undeveloped Other:	
EXISTING STORMWAT	ER MANAGEMENT	ALL ALL ALL		And Many and Many	
Existing Stormwater Pro If Yes, Describe: infiltration tan	300	Possible			
Describe Existing Site Co	and; oreflow hear	Drainage and Co	nveyance:		
arry building	has a central storm	Arain sys	bern	9	
				~	
and the second	and Points Where Measured;				
Babcoele CB Surc	narges				
6 38	and present				
Page 1 of 4				Unique Site ID: 2	

PROPOSED RETROFIT			N - HERRICH
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protect	tion 🗍 Fl	ood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volu	me Computations - A	vailable Ștorage:
		ioretention ther:	
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Institut Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use?	tional	ccess: No Constraints onstrained due to Stope	Space Tree Impacts
If Yes, Describe:		Structures C	Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Fac Dam Safety Permits Nece Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen Tree How many? Approx. DBH Other factors:	ssary Probable Probable Probable Probable Probable Probable	Not Probable Not Probable Not Probable Not Probable Not Probable
Soils: Soil auger test holes:			5 4 -3

Page 2 of 4







Page 3 of 4



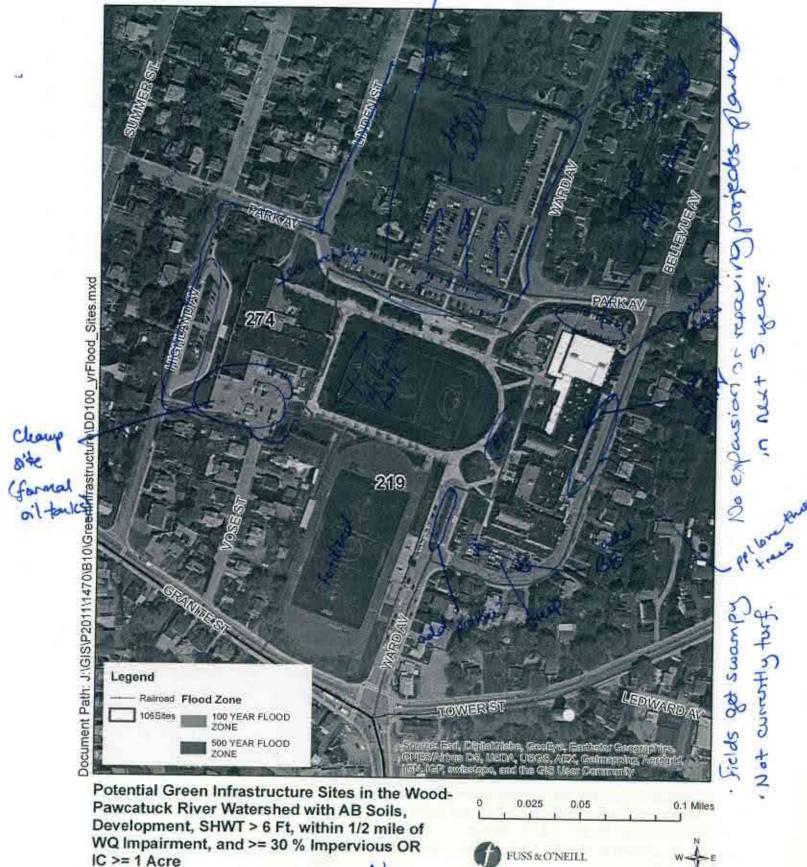
DESIGN OR DELIVERY NOTES	the state of the second s
Street width is town ordinar	Ice
3	
FOLLOW-UP NEEDED TO COMPLETE FIELD Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types
Other:	Commissi types
INITIAL FEASIBILITY AND CONSTRUCTION	CONSIDERATIONS
State of laying of teachers	ATION: XYES NO MAYBE
IS SITE CANDIDATE FOR EARLY ACTION PI IF NO, SITE CANDIDATE FOR OTHER RESTO IF YES, TYPE(S):	

Page 4 of 4

Unique Site ID: 274

Westerly High School 23 Ward Avenue Westerly, RI

constorm



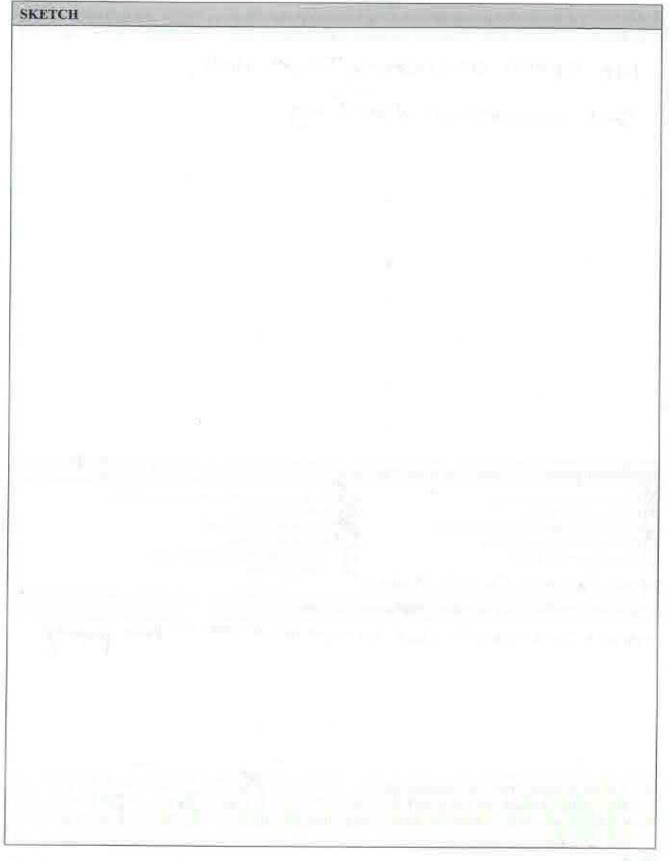
every not has central drawn to storm surer



WATERSHED:	SUBWATERSHE	D:	UNIQUE	SITE ID:
DATE: 6/2/16	ASSESSED BY: RW/WG	CAMERA ID:	A	PICTURES: ~ -+5
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				
Name: Westerly To Address: 45 Broad	wh Hall Street, Westerly, RI			
Ownership: If Public, Government Juri		ivate Unknown ate DOT	Other:	
Corresponding USSR/US/	A Field Sheet? Yes	□ No If ye	s, Unique Sit	e ID:
Below Outfall	Above Roadway Culvert n Conveyance System Vear Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	tion Lot	ndividual Rooflop mall Impervious Area andscape / Hardscape Dther:
DRAINAGE AREA TO PR	ROPOSED RETROFIT		- Inter The	
Impervious Area ≈	%	Drainage Area La	ic lots)	Institutional Industrial
Notes:		SFH (> 1 a	es	Transport-Related Park Undeveloped Other:
EXISTING STORMWATE	R MANAGEMENT	X NO. THE R		
Describe Existing Site Cor	ing lot CBs in	Drainage and Conv	/eyance:	
lot of in sm	all area, high i	mpervious	percent	age
xisting Head Available au	d Points Where Measured:			_
e 1 of 4				Unique Site ID: 275

Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control Other:
Retrofit Volume Computations - Target Storag	ge: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention
· New cut down born t -v. visible to public	is allow part of parking lot to ent pract
SITE CONSTRAINTS	tutional Access:
Possible Conflicts Due to Adjacent Land Use?	Constrained due to Space Slope Space Ves No Structures Property Ownership
	Constrained due to ☐ Slope ☐ Yes ☐ No ☐ Utilities ☐ Tree Impacts

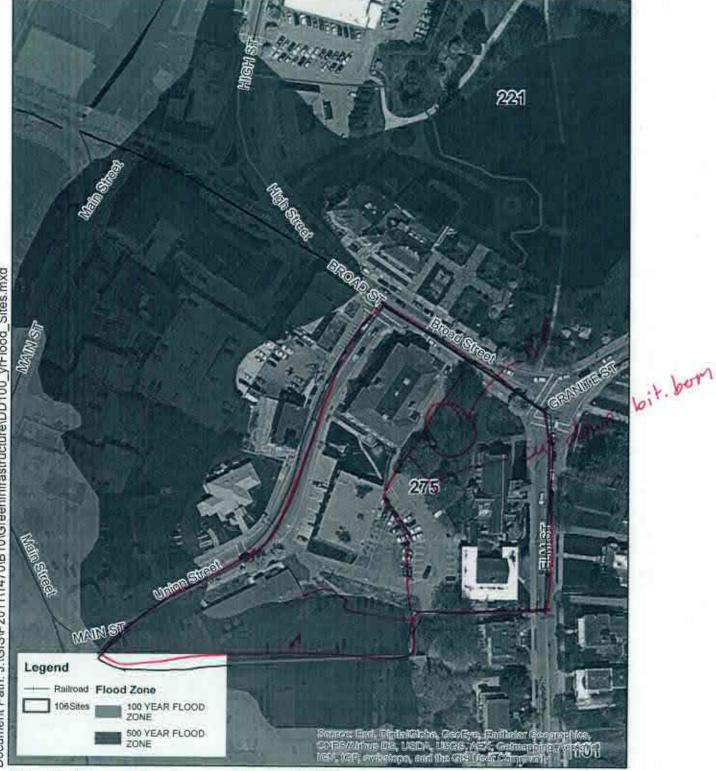




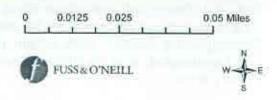


DESIGN OR DELIVERY NOTES
No space as westerly Town Hall; Socies on church next about if any
Store of Charles of
FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm drainage area impervious cover
Confirm volume computations Complete concept sketch
Stother: Contact Christ Church Di Confirm soil types
INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS
contact Christ church about biordention on their sit their property
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 IF YES, TYPE(S):

Westerly Town Hall 45 Broad Street 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



WATERSHED: SUBWATERSHE		D: UNIQUE		E SITE ID: 276	
DATE: 7/1/10	ASSESSED BY: Rulu	CAMERA ID:	phane	PICTURES: /	1-11:18
GPS ID:	LMK ID:	LAT:	1	LONG:	
SITE DESCRIPTION	And the second s		li vi st	2	
Name: Tower Str Address: 93 Tower	et School Com Street, Wester	musity Carte	~		
Ownership: If Public, Government Jurisd		tate DOT	Other:		
Corresponding USSR/USA I	Field Sheet? 🗌 Yes	□ No If ye	s, Unique S	ite ID:	
Below Outfall	: ove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	Lot 🗾	Individual Rooft Small Imperviou Landscape / Har Other:	is Area
DRAINAGE AREA TO PRO	POSED RETROFIT	and the second	There and	in hourse working	W B T
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	Drainage Area Land Use: Residential Institutional SFH (< 1 ac lots) Industrial SFH (> 1 ac lots) Transport-Related				
	12	Townhouses Park Multi-Family Other:			d
EXISTING STORMWATER	MANAGEMENT	The second s		VILLING SID	
If Yes, Describe:		o 🗌 Possible			
in a bowl" a foo noctually percha	litions, Including Existing Si nt; front + back 1 on hill to not much Lis	is steep	teres to constitute the to		
visting Head Available an	d Points Where Measured:			1.1	



PROPOSED RETROFIT	
Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Storage:
	reated Wetland Bioretention wale Other: parenet disconnection
possible demo bioretention (D - charge plowing	ion projects w/ pla recredulph is edge of for thest lot) operation
SITE CONSTRAINTS	
Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? f Yes, Describe:	utional Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownersh Other:
Conflicts with Existing Utilities:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream
None Unknown Yes Possible Water Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Floodplain Fill Probable Not Probable Impacts to Forests Probable Not Probable Impacts to Specimen Trees Probable Not Probable How many? Approx. DBH Other factors:

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2



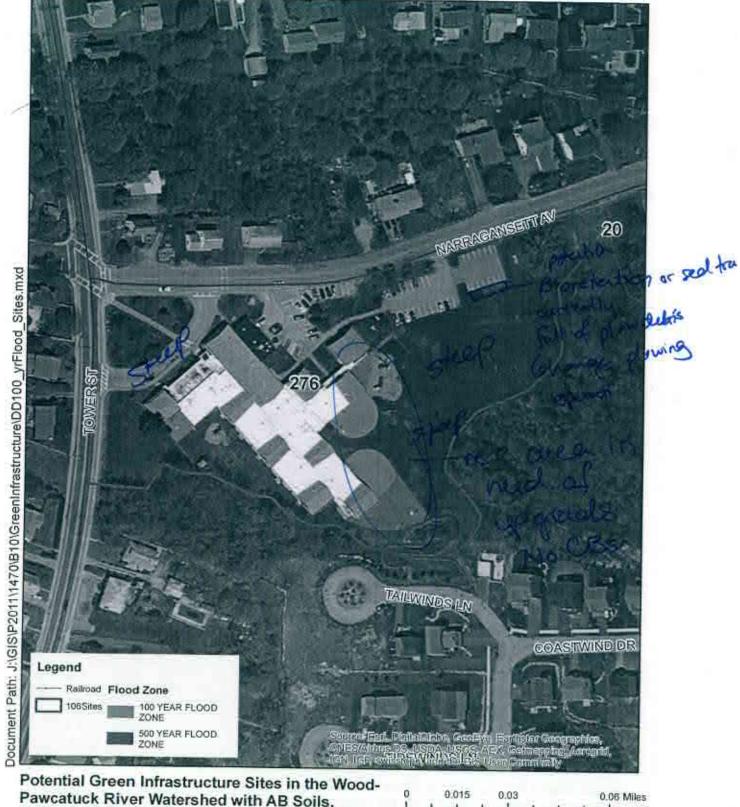


SKETCH	i nevi	knic		m zyn,	- 21	
			 _			_
e 3 of 4				Unique	Site ID:	276



DESIGN OR DELIVERY NOTES
Rec. area in need of poprades
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: Confirm storm drain invert elevations Confirm soil types
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): IF YES,

Tower Street School Community Center 93 Tower Street Westerly, RI



FUSS& O'NEILL

Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

RRI

WATERSHED:	SUBWATERSHED	:	UNIQUE SITE ID: 277
DATE: 6/2//6	ASSESSED BY: RW/WG	CAMERA ID:	PICTURES: # 10/5
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION		Y	
Name: Coesterly & Address: Z80 Kigh	Street, westerly, RI		
Ownership: If Public, Government Jurise	diction:	and the second se] Other:
Corresponding USSR/USA	Field Sheet? Yes	No If yes,	Unique Site ID:
Below Outfall	n: bove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Operation Small Parking L Individual Street Underground	ot Small Impervious Area
DRAINAGE AREA TO PRO	OPOSED RETROFIT		
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: possible offsit Main 17002, though o		Drainage Area Lar Residential SFH (< 1 ac SFH (> 1 ac Townhouses Multi-Famil Commercial	lots) Industrial Iots) Transport-Related Park
EXISTING STORMWATER	MANAGEMENT	1 14.01	
Existing Stormwater Practi If Yes, Describe: Swale (se Catch be	The second se	□ Possible I druinage fri appear to b	ne green infrastructure
Describe Existing Site Cond Steep slopes from Downspouts empty		Drainage and Conve	yance:
xisting Head Available and	Points Where Measured:	d: ask "Ch	ris" for site access
SITE ONLY 1	the many assess	-)	

Page 1 of 4

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RRI

PROPOSED RETROFIT		terrer (the second	
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Pro	tection	Flood Control
Retrofit Volume Computations - Target Storage	e: Retrofit Ve	Hume Computations	- Available Storage:
Proposed Treatment Option:	11011	Bioretention Other:	
Swale 2 site of existing require tree removal accept swale from parts Replace raised islands w/ bio	cing lot (need)	new CB)	
SITE CONSTRAINTS		service and the	rear and a second second
Adjacent Land Use: Residential Commercial Institute Industrial Transport-Related Park Undeveloped Other: Highwarz Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	rtional ? Yes X No	Access: No Constraints Constrained due to Slope Utilities Structures Other:	Space Tree Impacts Property Ownership
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits N Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH	Vecessary Prot Prot Prot Prot Prot Prot	bable Not Probable bable Not Probable bable Not Probable bable Not Probable bable Not Probable bable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	Yes No Yes No Yes No Yes No		







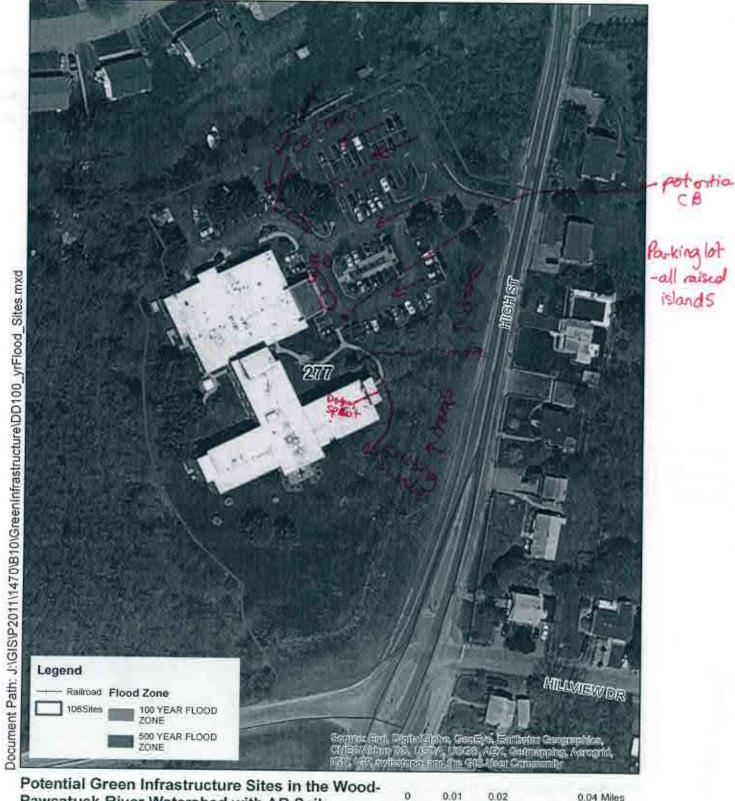
Page 3 of 4

Retrofit I	Reconnaissance	Investigation
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DESIGN OR DELIVERY NOTES	
	31
FOLLOW-UP NEEDED TO COMPLETE FIELD	Course
CARL THE COLOR STRUCTURE STRUCTURE STRUCTURE STRUCTURES STRUCTURES	Obtain existing stormwater practice as-builts
Confirm property ownership Confirm drainage area	Obtain existing stormwater practice as-ounts
Confirm drainage area impervious cover	Obtain detailed topography
Confirm volume computations Complete concept sketch	Obtain utility mapping Confirm storm drain invert elevations
Other: Obtain site access pe	Confirm soil types
INITIAL FEASIBILITY AND CONSTRUCTION	
ENTIAL PEASIBILITY AND CONSTRUCTION	CANSIDERATIONS
Carros the orders town	
SITE CANDIDATE FOR FURTHER INVESTIG	
IS SITE CANDIDATE FOR EARLY ACTION H	
IF NO, SITE CANDIDATE FOR OTHER REST IF YES, TYPE(S):	

Westerly Health Center 280 High Street Westerly, RI

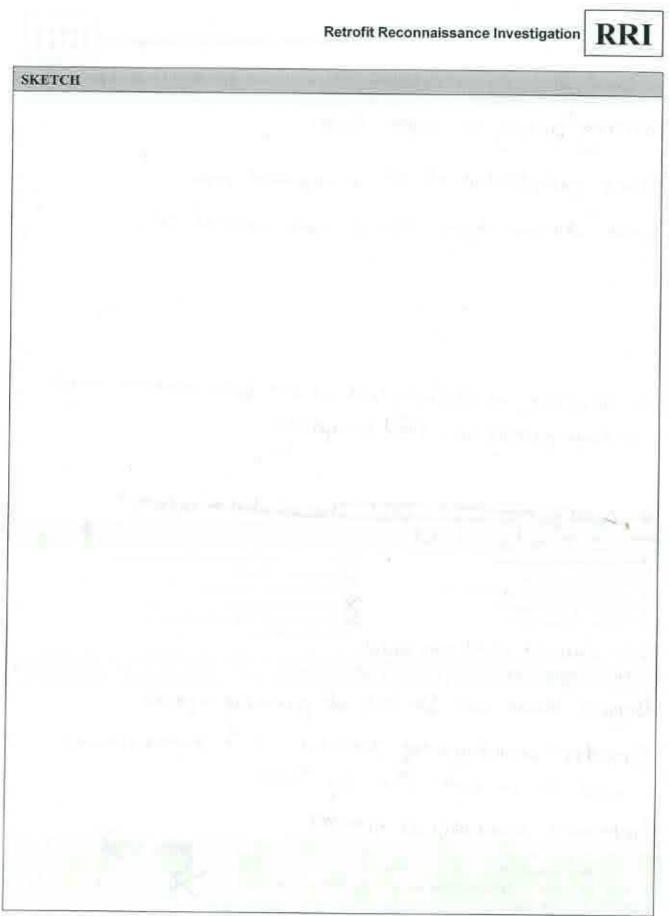


Potential Green Infrastructure Sites in the Wood Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

WATERSHED:	SUBWATERSHED:		UNIQUE	SITE ID: 278
DATE: 6/2/16	ASSESSED BY: RW, WG	CAMERA ID:	A	PICTURES: 925-10:
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION				Dond.
Name: Bus Depot Address: 8 Spo	"Westerly Municipa ingbrook Road we	U Garage A	onex "	
Ownership: If Public, Government Juris	Public D Prive	ate Unknown	Other:	
Corresponding USSR/USA	Field Sheet? Yes	□ No If ye	es, Unique S	ite ID:
Below Outfall	bove Roadway Culvert Conveyance System For Large Parking Lot	On-Site Hotspot Opera Small-Parking Individual Stre Underground	Lot	Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PRO	POSED RETROFIT			
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: On site draine	nge only, probably	Drainage Area L Residential SFH (< 1) SFH (> 1) SFH (> 1) Townhous Multi-Fam	ac lots) ac lots) es	Institutional Industrial Transport-Related Park Undeveloped
EXISTING STORMWATER	MANACEMENT	Commercial		Other:
If Yes, Describe:) cotch b o	sto 2 4 years old			
water drains to cat Water leaves bu Sediment 2 enlige	itions, Including Existing Site D the basin in parking li as depot sw corner of parking lot; cleo d, probably connects t	ot ; No cat thrusmall er woder (s	swale; swale;	drops considerable
inisting Head Available and Sminage to swo		ar Maintena	arca bu	ilding stars not to fines
ge 1 of 4				Unique Site ID: <u>278</u>



PROPOSED RETROFIT	
Purpose of Retrofit: Recharge Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storage	e: Retrofit Volume Computations - Available Storage:
	reated Wetland Without Other:
Located near existing catch Repaire + regrade lot; take might need deep filter to ach	tice to remove contaminants bosin using CB as overflow + taking up son parking spaces (n veve WR ieve WR ice under buses (promeable fillering surface)
Adjacent Land Use: Residential Commercial Institution Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe: If Yes, Describe:	Access: No Constraints Constrained due to Slope Yes No Yes No Yes No Structures Constrained due to Slope Structures Property Ownership Other: Drainage Property Structures Structures Drainage Property Structures Struct
Conflicts with Existing Utilities: None Unknown Yes Possible ? ? ? Water ? Gas ? Cable Electric ? Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable Not Probable Not Probable 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 Yes No Yes No Yes No Yes No



Page 3 of 4

Unique Site ID: 27-8

RRI

DESIGN OR DELIVERY NOTES Existing partying lot in poor shape Buses park a top of lot. in unpaved area Diesel storage tanks D/H of buses, uphill of CB PL: 40 spaces; not efficiently laid out but buses enter/exit through employee parting lot; filled to capacity needed 2140 FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Obtain existing stormwater practice as-builts Confirm property ownership Obtain site as-builts Confirm drainage area Obtain detailed topography Confirm drainage area impervious cover Confirm volume computations Obtain utility mapping Complete concept sketch Confirm storm drain invert elevations Confirm soil types & Other: determine actual sites needed INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS Biggest issue will be loss of partying spaces Consider recordiguring parting lot + maring entrance east for straight Shot for buses Determine ownership a site 109 SITE CANDIDATE FOR FURTHER INVESTIGATION: YES YES NO IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): MAYBE IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES NO MAYBE IF YES, TYPE(S):

WATERSHED:	SUBWATERS	SUBWATERSHED: UNIQUE SITE ID: 280		SUBWATERSHED:			
DATE: 7/1/16	ASSESSED BY:	G CAMERA ID:	G CAMERA ID: B phone PICTURES: 1128-11		B phone PICTURES: 1128-		1140
GPS ID:	LMK ID:	LAT:	Lo	NG:	-		
SITE DESCRIPTION			sul gun ha	and the second			
lame: Ashauny ddress: 12A Hills	Elementary Sche de Arc, Hapkinton	81 RE					
Dwnership: f Public, Government Jur		Private Unknow State DOT	n Other:				
Corresponding USSR/US/	A Field Sheet? 🗌 Yes	No If	es, Unique Site ID	t			
Below Outfall	on: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Ope Small Parkin Individual St	g Lot Sma reet Land	ridual Rooftop Il Impervious Area Iscape / Hardscape r:			
DRAINAGE AREA TO P	ROPOSED RETROFIT	The second second	CO. S. T. MICH	The second	1		
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area	l ac lots)	Institutional Industrial			
Notes:		SFH (> Townho Multi-Fa	uses	Transport-Related Park Undeveloped Other:			
EXISTING STORMWATE	ER MANAGEMENT	Just - Dast - to	USENAL DE L	L. Marken Harris			
xisting Stormwater Pra Yes, Describe:	ectice: 🗌 Yes 这	No 🗌 Possible					
Describe Existing Site Co	anditions, Including Existing	Site Decimere and C					
old building ground fow CBS DD 5	nditions, Including Existing - coof drains to ibe	, PL; new e	- buildin	g roof	obail		
Contra secon level a							
Existing Head Available	and Points Where Measured	1:					
ge 1 of 4				Jnique Site ID:_	int		

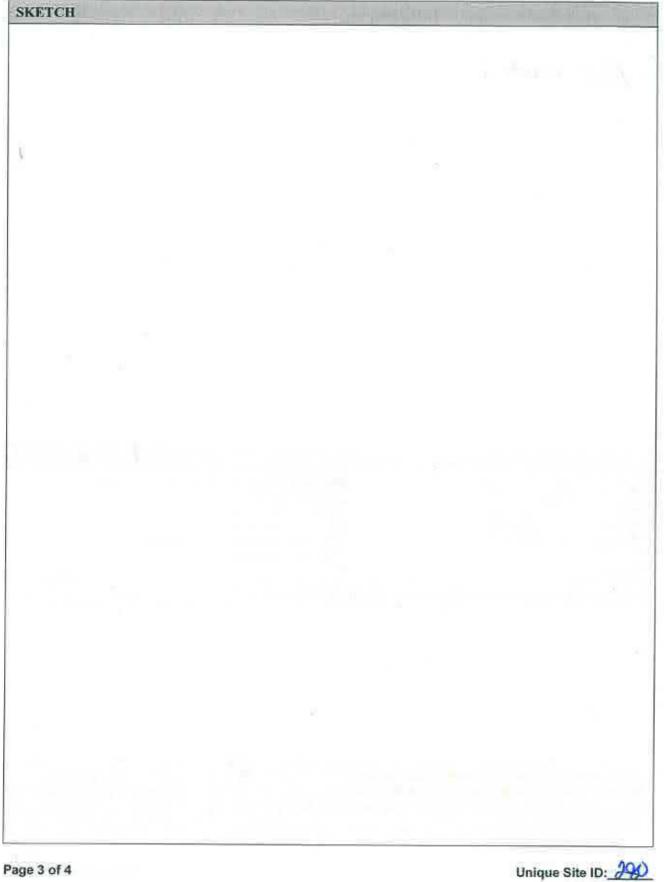


PROPOSED RETROFIT	to a second second with the second
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention wale Other: Permeable parting to
· permeable parking let · bioretention in front 10 · bioretention for rooftop of newer school	disconnection behind + in front
SITE CONSTRAINTS Adjacent Land Use: Commercial Instite Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Access: No Constraints Constrained due to Slope Space Utilities Tree Impacts Structures Property Ownership Other: Ownership
Conflicts with Existing Utilities: None Unknown Yes Pessible Sewer Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to Wetlands Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable 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 Yes No Yes No Yes No

Page 2 of 4







Retrofit	Reconnaissance	Investi	gation
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Bus route?

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT	alatin II an an iteration of the
Confirm drainage area impervious cover Obtain site a Obtain detail Obtain detail Obtain utility	led topography y mapping rm drain invert elevations
INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS	And The other of the overlation to the other
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):	YES NO MAYBE YES NO MAYBE YES NO MAYBE YES NO MAYBE
Page 4 of 4	Unique Site ID: 280

Ashaway Elementary School 12A Hillside Avenue 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

fussa o'neill

0.025

0.0125



0.05 Miles

WATERSHED:	SUBWATERSHED			E SITE ID: 75 281
DATE: 7/1/16	ASSESSED BY: RWWG	CAMERA ID: 🖁	Phone	PICTURES: 2:09
GPS ID:	LMK ID:	LAT:		LONG:
SITE DESCRIPTION			uni7in	
Name: Charlest	olina Back Rd	[دو		
Ownership: If Public, Government Ju	Public Pri	ivate 🗌 Unknown ate 🗌 DOT	Other:	
Corresponding USSR/US	A Field Sheet? Yes	□ No If ye	s, Unique	Site ID:
Proposed Retrofit Loca Storage Existing Pond Below Outfall In Road ROW	tion: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stro	Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
	PROPOSED RETROFIT	The state of the second	in say	and we are say that the generation of the
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area I Residential SFH (< 1 SFH (> 1) SFH (> 1)	ac lots) ac lots)	Institutional Industrial Transport-Related Hig
Notes:		Townhou Multi-Far Commercial		Park Undeveloped Other:
EXISTING STORMWA	TER MANAGEMENT	a substantia	NRIIIII	A LONG WE WINTER
If Yes, Describe: Describe Existing Site V. Steep, Wa Steep roads	Conditions, Including Existing S to drained off sit + parking lots	Site Drainage and Co	nveyance 85 +	"surface conveyances
Existing Head Availab	ole and Points Where Measured:			
Page 1 of 4				Unique Site ID: 🔑

Page 1 of 4

	Retrofit Reconnaissance Investigation RRI
PROPOSED RETROFIT	The second se
Purpose of Retrofit: Water Quality Demonstration / Education	Channel Protection Flood Control
Retrofit Volume Computations - Target Storage:	Retrofit Volume Computations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Created Filtering Practice Infiltration Swale	Wetland Bioretention
treat road using of iltration	urface Area, Maximum Depth of Treatment, and Conveyance: under parking lot

SITE CONSTRAINTS Adjacent Land Use: Residential Access: Commercial Institutional No Constraints Transport-Related D Park Constrained due to Undeveloped D Other: Slope Space Possible Conflicts Due to Adjacent Land Use? Yes No Utilities Tree Impacts If Yes, Describe: Structures Property Ownership Other: **Conflicts with Existing Utilities: Potential Permitting Factors:** None Dam Safety Permits Necessary Probable 🚺 Not Probable Unknown colike Impacts to Wetlands Probable 11 Not Probable Yes Possible Impacts to a Stream Probable 17 Not Probable Sewer Floodplain Fill Probable 7 Not Probable Water Probable 10 Not Probable Impacts to Forests Gas Impacts to Specimen Trees Probable 💋 Not Probable Cable How many? Electric Approx. DBH Electric to Streetlights Overhead Wires Other factors: Π Other: 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





Retrofit	Reconnaissance	Investigatio
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	DESIGN OR	DELIVERY NOTES	
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OLLOW-UP NEEDED TO COMPLETE FIELD C	ONCEPT	and the second street	
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch	Obtain existing Obtain site as-b Obtain detailed Obtain utility m	topography apping drain invert elevatio	
Other:			and the Party of Street of
TTE CANDIDATE FOR FURTHER INVESTIGATI STTE CANDIDATE FOR EARLY ACTION PRO NO, SITE CANDIDATE FOR OTHER RESTORA	JECT(S):	YES NO YES NO YES NO	MAYBE MAYBE MAYBE

Unique Site ID:_125_281

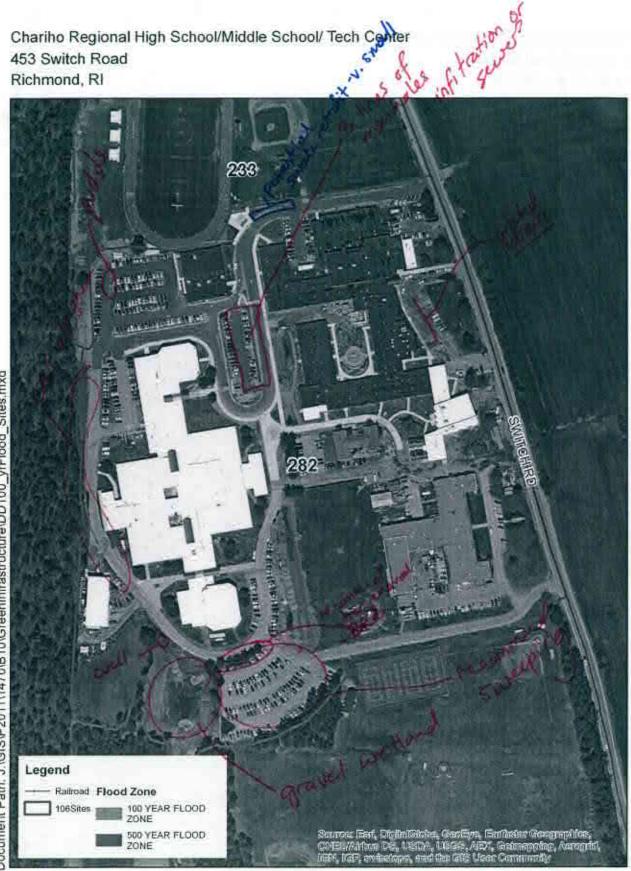
Charlestown Elementary School 363 Carolina Back Road Charlestown, RI



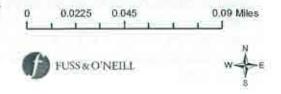
Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

0	0.015	0.03	-	0.06 Miles
ſ	FUSS&)'NEILL		w∯s

Chariho Regional High School/Middle School/ Tech Center 453 Switch Road Richmond, 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



Document Path: J:\GIS\P2011\1470\B10\GreenInfrastructure\DD100_yrFlood_Sites.mxd

WATERSHED:	SUBWATERSHI	ED:	UNIQUE	SITE ID: 282	
DATE: 7 116	ASSESSED BY: RW/WC	CAMERA ID: B	Phone	PICTURES: 282	13:00
GPS ID:	LMK ID:	LAT:		LONG:	
SITE DESCRIPTION	10 rpt	an Can Salla Mar	INCOME.		
Name: <u>Charihe'</u> Address:	igh School/Middle	School & Care			
Dwnership: f Public, Government Ju		Private Unknown State DOT	Other:_		
Corresponding USSR/US	SA Field Sheet? 🗌 Yes	□ No If ye	s, Unique S	Site ID:	
Proposed Retrofit Loca Storage Existing Pond Below Outfall In Road ROW Other:	tion: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stre Underground	Lot	Individual Rooftop Small Impervious Area Landscape / Hardscape Other:	the second
DRAINAGE AREA TO I	PROPOSED RETROFT	The second	THE I		tox-m1
Drainage Area ≈% mperviousness ≈% mpervious Area ≈		Residential	SFH (< 1 ac lots) Industrial		
Notes:		SFH (> 1 ac lots) Transport-Related Townhouses Park Multi-Family Undeveloped Commercial Other:			
EXISTING STORMWAT	TER MANAGEMENT			Sandy and America	
and the second	Conditions, Including Existing S	the state of the s	and the second second second		
Existing Head Available	and Points Where Measured:				
osioning orau Avanabia	and rounds where measured:				
age1of4 /6, 73 /6,0 z	000 2,800 50 1,100			Unique Site ID:_	282



PROPOSED RETROFT	Charge Consult the one of the Life Shift of the Archive Here
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	e Channel Protection Flood Control
Retrofit Volume Computations - Target Stora	age: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention Swale Other:
Stre Constraints	no project in existing small
Adjacent Land Use:	form Slope Space
Conflicts with Existing Utilities: None MO-OV Unknown MO-OV Yes Possible Sewer Water Gas Cable Electric Electric to Streetlights Overhead Wires Other: Other: 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	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

Page 2 of 4







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DESIGN OR DELIVERY NOTES	and the second
Multiple fuel tants on size	
Multiple fuel tants on site little opportunity for proj	ects (space, utilites)
	~
	21
FOLLOW-UP NEEDED TO COMPLETE FIELD CON	CEPT
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
] Other:	Confirm soil types
NITIAL FEASIBILITY AND CONSTRUCTION CONS	IDERATIONS
	onissin
	on so
ITE CANDIDATE FOR FURTHER INVESTIGATION S SITE CANDIDATE FOR EARLY ACTION PROJECTION F NO, SITE CANDIDATE FOR OTHER RESTORATION IF YES, TYPE(S):	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
ge 4 of 4	Unique Site ID: 282



WATERSHED:	SUBWATERSHI	ED: UNIQUE	SITE ID: 283	
DATE: 7/1/16	ASSESSED BY: Ruw	G CAMERA ID: B phane	PICTURES: 2-230	
GPS ID:	LMK ID:	LAT:	LONG:	
SITE DESCRIPTION				
Name: West K Address: 3119 May	ingstown Elementa	ut School Ra		
Ownership: If Public, Government Juri		Private Unknown State DOT Other:		
Corresponding USSR/USA	Field Sheet? Yes	□ No If yes, Unique	Site ID:	
Below Outfall	on: 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: <u>along</u> drivewaw	
DRAINAGE AREA TO P	ROPOSED RETROFIT	to the provide the second	The state of the second second	
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Noter:	%	Drainage Area Land Use: CRESIDENTIAL CRESIDE	Institutional Industrial Transport-Related	
Notes:		In Multi-Family Commercial	Undeveloped	
EXISTING STORMWAT	ER MANAGEMENT			
Existing Stormwater Pro If Yes, Describe:		No Possible		
Ster 2 large	e clos in part	Site Drainage and Conveyance ung lot oppear CBs drain to	to capita	
Existing Head Availabl	e and Points Where Measure	d:		
			Unique Site ID: 2	

Page 1 of 4

Retrofit Rec	onnaissance	Investigatio
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PROPOSED RETROFIT			
Purpose of Retrofit: Water Quality Demonstration / Education	Channel P	rotection	Flood Control
Retrofit Volume Computations - Target Stora	ige: Retrofit	Volume Computat	ions - Available Storage:
	Created Wetland Swale	Bioretention	
swale + bioretution alon bioretution 2 top of entra dry wells?			
SITE CONSTRAINTS			
Adjacent Land Use: Residential Commercial Instit Industrial Transport-Related Park Undeveloped Other Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	utional	Access: No Constraint Constrained due t Slope Utilities Structure: Other:	o
Conflicts with Existing Utilities: None Unknown Ves Possible Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits ? Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH Other factors:	Vecessary Pr Pr Pr Pr Pr Pr Pr Pr	obable obable obable obable obable obable obable obable obable obable Not Probable Not Probable Not Probable
oils: oil auger test holes: vidence of poor infiltration (clays, fines): vidence of shallow bedrock: vidence of high water table (gleying, saturation):	☐ Yes Ø No ☐ Yes Ø No ☐ Yes Ø No ☐ Yes Ø No		

Retrofit Reco	nnaissance	Investigation
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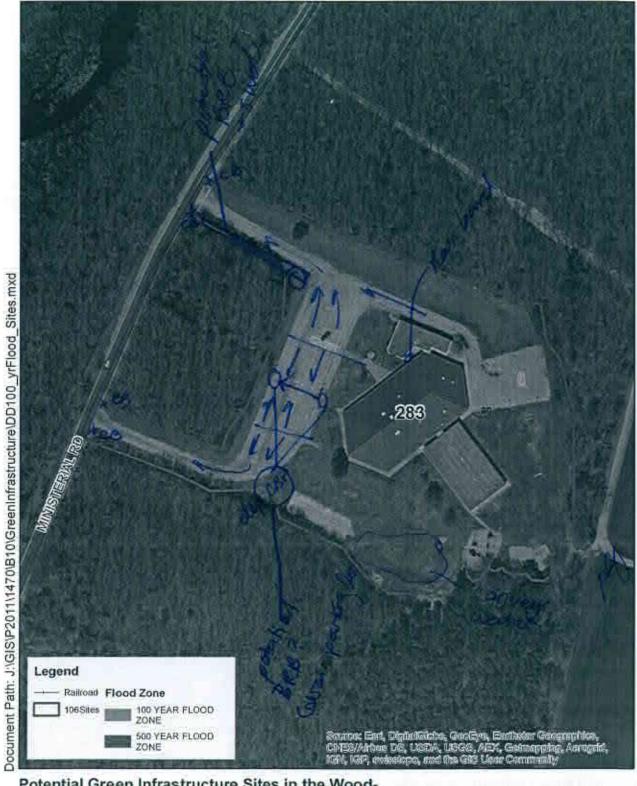
DESIGN OR DELIVERY NOTES		and the second second	
	e.		
			Τ.
FOLLOW-UP NEEDED TO COMPLETE I	FIELD CONCEPT		The State Comments
Confirm property ownership	Obta	in existing stormwater	practice as-builts
Confirm drainage area Confirm drainage area impervious cover	· 🖊 Obta	in site as-builts in detailed topography	T
Confirm volume computations Complete concept sketch	Obta Cont	in utility mapping firm storm drain invert o	levations
] Other:	Conf	firm soil types	
NITIAL FEASIBILITY AND CONSTRUCT	TION CONSIDERATIO	INC	
	HONCONSIDERATIC	AN3	
11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		d'an an	na ńa
TTE CANDIDATE FOR FURTHER INVES S SITE CANDIDATE FOR EARLY ACTION		Yes	NO MAYBE
	ON PROJECT(S):	YES	



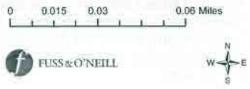
SKETCH



West Kingston Elementary School 3119 Ministerial 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



WATERSHED:	SUBWATERSHED	SUBWATERSHED: UNIQUE SITE ID:		SUBWATERSHED: UNIQUE SITE ID: 284+41+	
DATE: 6/3/16	ASSESSED BY: RW/W6	CAMERA ID:	C	PICTURES: 9 19-944	
GPS ID:	LMK ID:	LAT: LONG:			
SITE DESCRIPTION					
Name: Boss Arena, Address: Keeney F	west Road, South Kingsto	029, RF			
Ownership: If Public, Government Jurisd	iction:		n Other:		
Corresponding USSR/USA F	'ield Sheet? Yes	□ No If y	es, Unique	Site ID:	
Below Outfall	: ove Roadway Culvert Conveyance System ar Large Parking Lot	On-Site Hotspot Oper Small Parking	g Lot	Individual Roaftop Small Impervious Area Landscape / Hardscape Other:	
DRAINAGE AREA TO PRO	POSED RETROFIT			The Column and the second	
Drainage Area≈ Imperviousness≈ Impervious Area≈ Notes: May include ru Faulties	noff from adjacet	Drainage Area	ac lots) ac lots) ises	Institutional Industrial Transport-Related Park Undeveloped Other:	
EXISTING STORMWATER	MANAGEMENT				
f Yes, Describe:	scattored, pawement	<u>damage</u> d			
arge parking lots Berns + parki	itions, Including Existing Site ω w/grey infrastr ng lot cornurs bao	rective or	ly. Cl	Bs widely scaffered	
vilding downsport	s gointo ground ' surrounding par	U	2010		
xisting Head Available and			ayed	1	
	239 due to Speci				

Page 1 of 4



PROPOSED RETROFIT		
Purpose of Retrofit:	Channel Pr	Protection 🗍 Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit V	Volume Computations - Available Storage:
The second	reated Wetland	Dioretention Dother: permeable pavement
Convert grass medians/ed Convert parting to perr Underground Enfiltradi Caub Earts for sheet flo	lges to biore neable ion pru	etent Route downsports to rain garden Octong tennis courts
SITE CONSTRAINTS	IN THE REAL	
Adjacent Land Use: Residential Commercial Institu Industrial Transport-Related Park Cundeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	utional	Access: No Constraints Constrained due to Slope Utilities Structures Structures Other: Constrained due to Space Difference Property Ownersh
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many?_ <u>P</u> Approx. DBH	s Necessary s Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Not Probable Not Probable Not Probable Not Probable Not Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation)	Yes No Yes No Yes No Yes No	

Unique Site ID:____

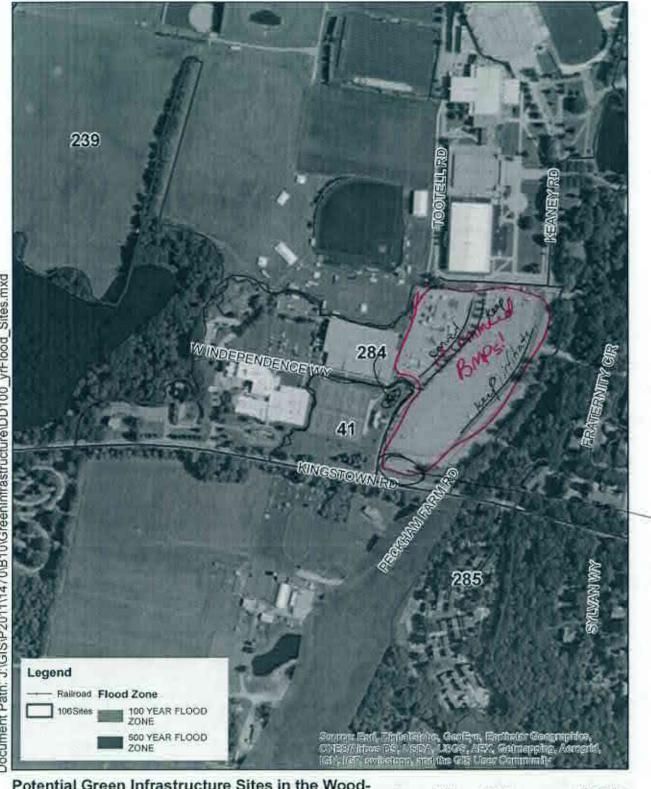
Retrofit Reconnaissance Investig	gation
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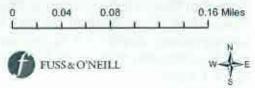
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		2		
		2		
		2		

	ELIVERY NOTES	
Conver	ting grass strips	to biorctation 11 loss of driving/parking space;
	Julia Sma	11 loss of dring/a king space
would	d require sman	it loss of or nig parting spice,
would	d hulans/maio	teraior of pairment around
00001	- neip w/ 1 s	3
cati	ch basins	
ORI al	ready has clear in	terest in stormwater monagement
Cur	U	
Manager Manager	EEDED TO COMPLETE FIELD	
Confirm drai		Obtain existing stormwater practice as-builts Obtain site as-builts
	nage area impervious cover me computations	Obtain detailed topography Obtain utility mapping
Complete co		Confirm storm drain invert elevations
Other:		Confirm soil types
NITIAL FEASI	BILITY AND CONSTRUCTION C	CONSIDERATIONS
2 2		
	TE FOR FURTHER INVESTIGAT DATE FOR EARLY ACTION PRO	
F NO, SITE CA	NDIDATE FOR OTHER RESTOR	
IF YES, TYP	E(S):	
		1
ge 4 of 4		Unique Site ID:28

Boss Arena 1 Keaney 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



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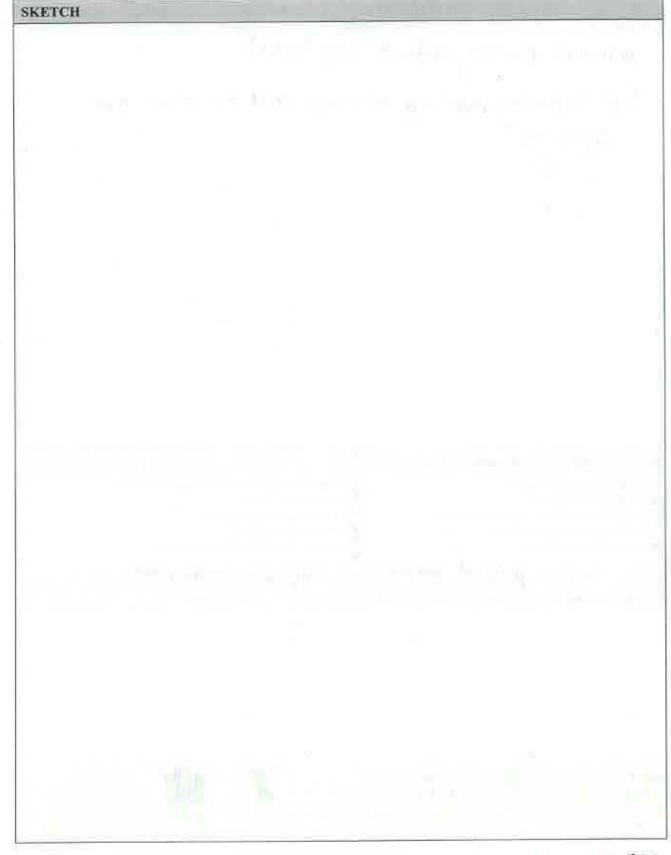


WATERSHED:	SUBWATERSHED:		UNIQUE	SITE ID: 285
DATE: 6/3/16	ASSESSED BY: RW/WG	CAMERA ID:	\$ C	PICTURES: \$30-900
GPS ID:	LMK ID:	LAT:	1	LONG:
SITE DESCRIPTION				
Name: Ugive site KI Address: 210 Flagg	Read, South Kings	lots along town, RID	Flagg	
Ownership: If Public, Government Jurisdi	Public Priv	ate 🗌 Unknown		
Corresponding USSR/USA F	ield Sheet? 🗌 Yes	□ No If yo	s, Unique S	Site ID:
Below Outfall In C	ove Roadway Culvert onveyance System r Large Parking Lot	On-Site Hotspot Opera Small Parking Individual Stru Underground	Lot] Individual Rooftop Small Impervious Area Landscape / Hardscape Other:
DRAINAGE AREA TO PROP	POSED RETROFIT	and the second		
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Townhouses Park Multi-Family Undeveloped		Industrial Transport-Related Park Undeveloped
EXISTING STORMWATER		[] Commercial	_	Other:
@ Plains Rd parting	e: Dives INO the basins 2 NW end No treatment	Possible I of campus	; poss.	peneable parme
	tions, Including Existing Site I			no islands
Existing Head Available and	Points Where Measured:			-6 - 8

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PROPOSED RETROFIT		
Purpose of Retrofit:	: Channel Pr	rotection Store Flood Control
Retrofit Volume Computations - Target Stors	nge: Retrofit V	/olume Computations - Available Storage:
	Created Wetland	Bioretention Other: permeable parra
infiltration system? Undergrand		
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use: If Yes, Describe:	The second se	Access: No Constraints Constrained due to Slope Utilities Structures Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Water Gas Cable Electric Electric to Streetlights Overhead Wires Other: Steef	Potential Permitting Dam Safety Permits Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests Impacts to Specimen How many? Approx. DBH	Necessary Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
Soils: Soil auger test holes: Evidence of poor infiltration (clays, fines): Evidence of shallow bedrock: Evidence of high water table (gleying, saturation	Yes No Yes No Yes No Yes No	



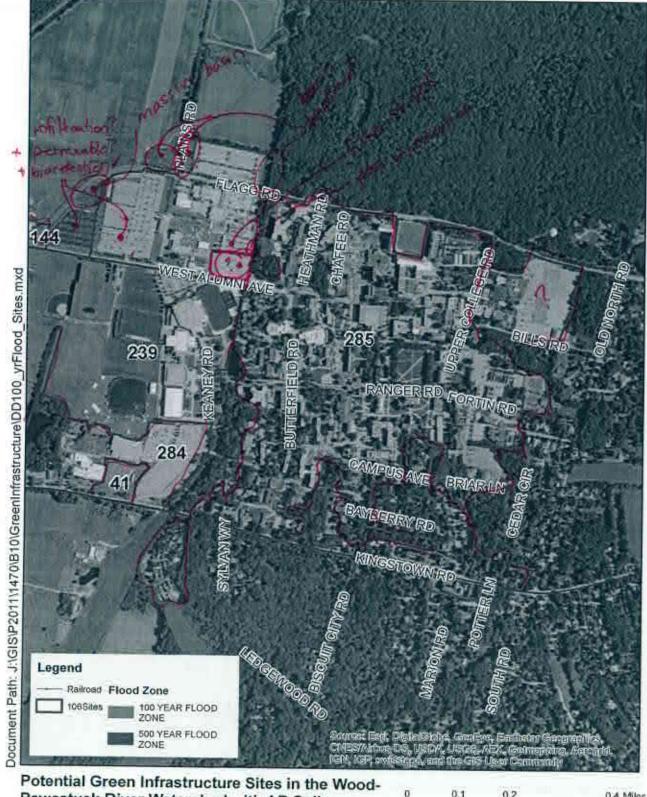


Page 3 of 4

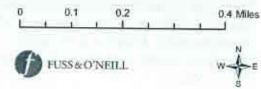
RR

DESIGN OR DELIVERY NOTES -potential parking conflicts (e.g. buses) high capacity parking lot may need to retain max. Capacity FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Obtain existing stormwater practice as-builts Confirm property ownership Confirm drainage area Obtain detailed topography Confirm drainage area impervious cover Obtain utility mapping Confirm volume computations Complete concept sketch Confirm storm drain invert elevations Confirm soil types Other: C RI may have INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS **X**YES MAYBE SITE CANDIDATE FOR FURTHER INVESTIGATION: Q YES MAYBE IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES MAYBE IF YES, TYPE(S):

URI Campus and parking lots along Flagg Road 210 Flagg Road South Kingstown, RI



Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



VATERSHED: SUBWATERSHE			
DATE: 7/1/16	ASSESSED BY: KW	CAMERA ID:	23 1
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			the second s
Name: Address:			
Ownership: If Public, Government Jur	risdiction: Public Local	Private Unknow State DOT	n Other:
Corresponding USSR/US	A Field Sheet? 🗌 Yes	□ No If y	es, Unique Site ID:
Below Outfall	ion: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Oper Small Parking Individual Str Underground	g Lot Small Impervious Area
DRAINAGE AREA TO P	ROPOSED RETROFIT		THE REPORT OF THE REPORT OF
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area I Residential SFH (< 1 SFH (> 1 SFH (> 1 Townhou	ac lots) Institutional ac lots) Industrial ac lots) Transport-Related uses Park
		Multi-Fa Commercial	mily Undeveloped
EXISTING STORMWATT Existing Stormwater Pra	etice: Xes] No Dessible	
If Yes, Describe:	1 - 1	vo hall	and the second sec
in res, pescribe,	- Dfr.		
n res, beschibe.	- a tou		a state of the sta
in rea postnike.	- a for	- Telle and	
	- a for		
Describe Existing Site Co	onditions, Including Existing	Site Drainage and Co	
Describe Existing Site Co		Site Drainage and Co	
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Describe Existing Site Co	onditions, Including Existing	Site Drainage and Co	
Describe Existing Site Co	onditions, Including Existing	Site Drainage and Co	
Describe Existing Site Co No formal ob	onditions, Including Existing	Site Drainage and Con	
Describe Existing Site Co No formal ob	onditions, Including Existing	Site Drainage and Con	
Describe Existing Site Co No formal ob	onditions, Including Existing	Site Drainage and Con	
Describe Existing Site Co No formal ob	onditions, Including Existing	Site Drainage and Con	



PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Rechar Demonstration / Education Repair	ge Channel Protection Flood Control
Retrofit Volume Computations - Target Sto	rage: Retrofit Volume Computations - Available Storage:
Proposed Treatment Option: Extended Detention Wet Pond Filtering Practice Infiltration	Created Wetland Bioretention
SITE CONSTRAINTS Adjacent Land Use: Residential Commercial	stitutional
Industrial Transport-Related Pa Undeveloped Other: 91 gel Possible Conflicts Due to Adjacent Land Us If Yes, Describe:	Slope Space
Conflicts with Existing Utilities: None Unknown Yes Possible Gas Gas Cable Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Probable Not Probable Impacts to a Stream Probable Probable Not Probable 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 □ Yes □ No □ Yes □ No on): □ Yes □ No

Page 2 of 4



SKETCH last A

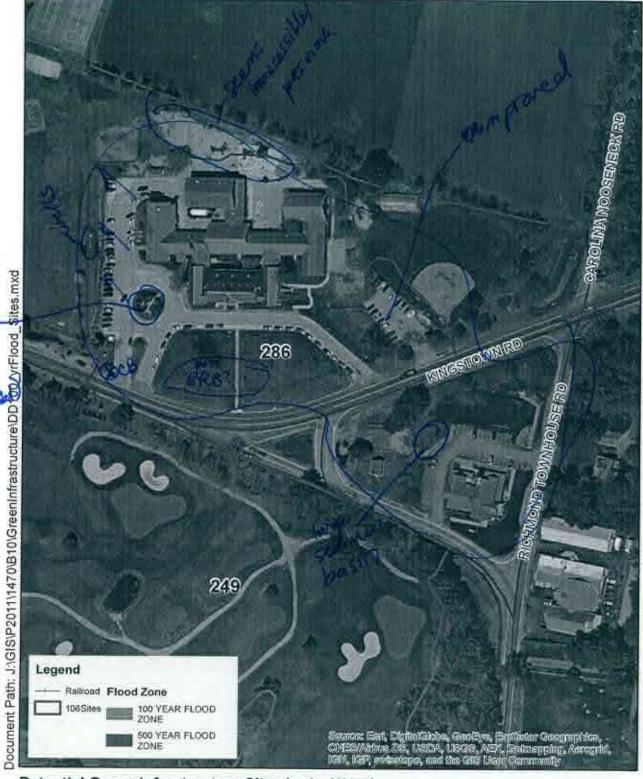




DESIGN OR DELIVERY NOTES	at a state of the second second second second
- greenhouse on site	
OLLOW-UP NEEDED TO COMPLETE FIELD (Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	CONCEPT Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations
Complete concept sketch	Confirm soil types
Other:	CONSIDERATIONS
TTE CANDIDATE FOR FURTHER INVESTIGAT S SITE CANDIDATE FOR EARLY ACTION PRO F NO, SITE CANDIDATE FOR OTHER RESTOR IF YES, TYPE(S):	OJECT(S): YES X NO MAYBE

Page 4 of 4

Richmond Town Hall/ Richmond Elementary School 5 Richmond Townhouse Road/ 190 Kingstown Road Richmond, RI

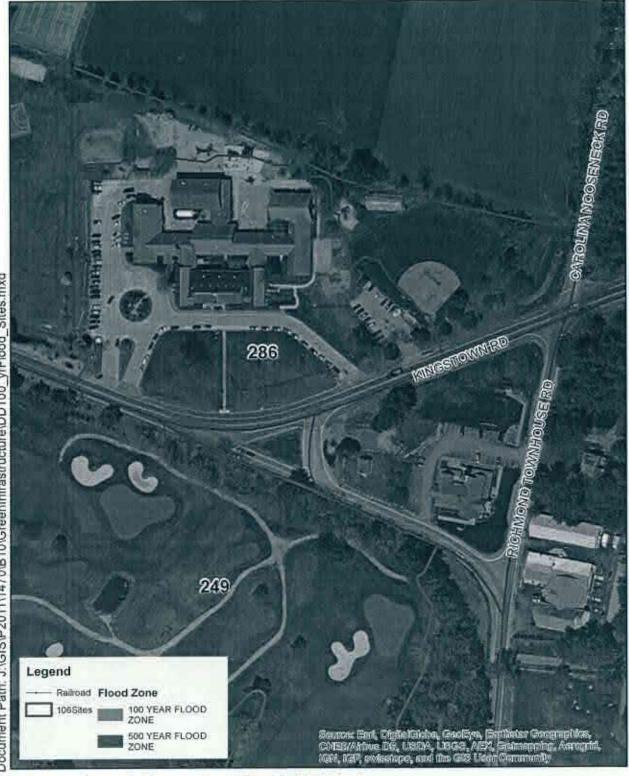


Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre

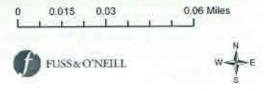
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0 0.015 0.03 0.06 Miles

Richmond Town Hall/ Richmond Elementary School 5 Richmond Townhouse Road/ 190 Kingstown Road Richmond, 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



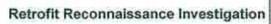
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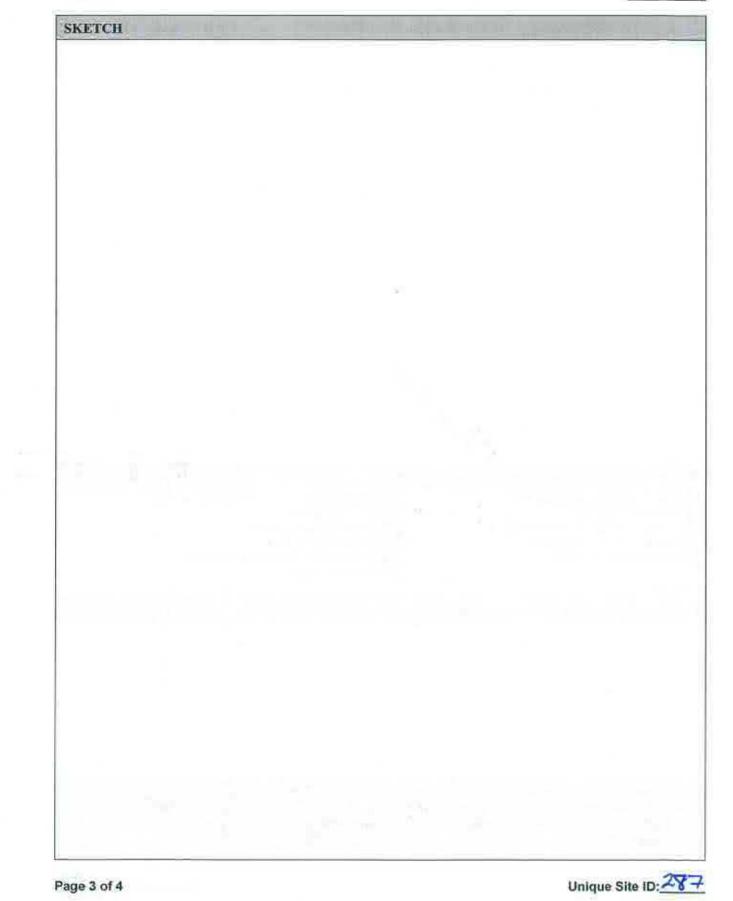
WATERSHED:	SUBWATERSHE	D:	UNIQUE SITE ID: 287
DATE: 7/5/16	ASSESSED BY: RW/W	G CAMERA ID:	PICTURES: [645-1]
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION	and the second second	all set and	
Name: Wood Rive	- Acschool/Hope Val	ing Elementas	zy School
Ownership: If Public, Government Jur	Public P	rivate 🗌 Unknown	Other:
Corresponding USSR/US/	A Field Sheet? Yes	□ No If yes	, Unique Site ID:
Below Outfall	on: Above Roadway Culvert In Conveyance System Near Large Parking Lot	On-Site Hotspot Operat Small Parking I Individual Stree Underground	Lot Small Impervious Area
DRAINAGE AREA TO P	ROPOSED RETROFIT		State Martin - under the state
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area La Residential SFH (< 1 a SFH (> 1 a Townhous Multi-Fam Commercial	Institutional ac lots) Industrial ac lots) Transport-Related es Park
EXISTING STORMWAT Existing Stormwater Pro- If Yes, Describe:	The second se	No Possible playgroud g	seems in good shape
	onditions, Including Existing S		veyance:
Existing Head Available	and Points Where Measured:		
Page 1 of 4			Unique Site ID: 28

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ROPOSED RETROFIT	The second s
Water Quality Recharg Demonstration / Education	ge Channel Protection Flood Control
etrofit Volume Computations - Target Stor	rage: Retrofit Volume Computations - Available Storage:
roposed Treatment Option: Extended Detention Wet Pond Filtering Practice Infiltration	Created Wetland Bioretention Swale Other:
ITE CONSTRAINTS	ing portaing spaces + lottall
djacent Land Use: Residential Commercial Insti- Industrial Transport-Related Park Undeveloped Other: Sible Conflicts Due to Adjacent Land Use Yes, Describe:	Slope _ Space
onflicts with Existing Utilities: None Confirm Unknown es Possible Sewer Water	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Floodplain Fill Impacts to Forests

Page 2 of 4







Retrofit	Reconnais	ssance Inv	estigation
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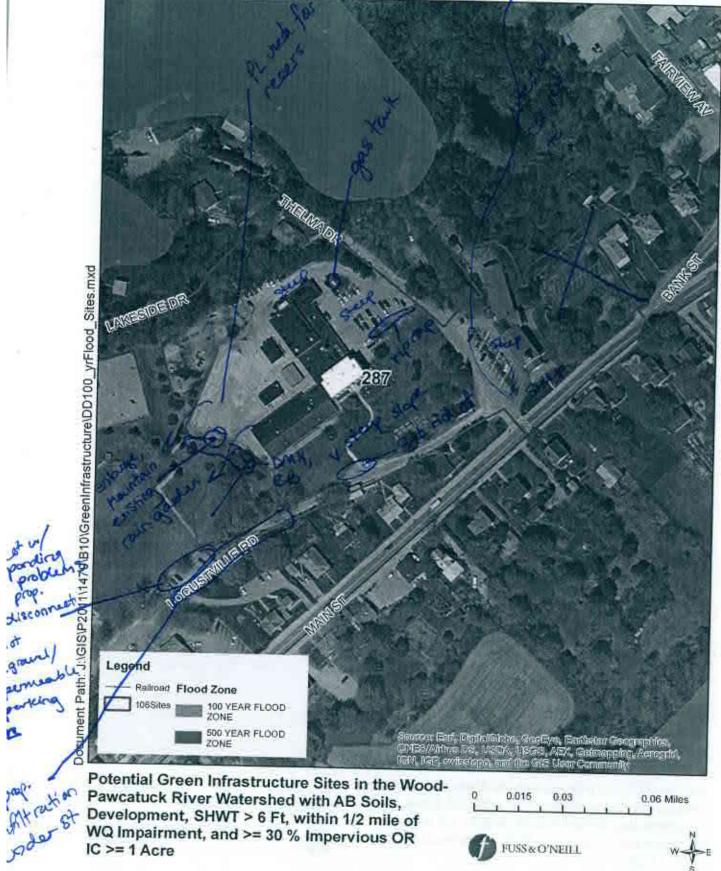


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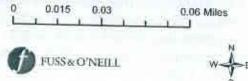
Page 4 of 4

Wood River Preschool/ Hope Valley Elementary School 1059 Main Street Hopkinton, RI





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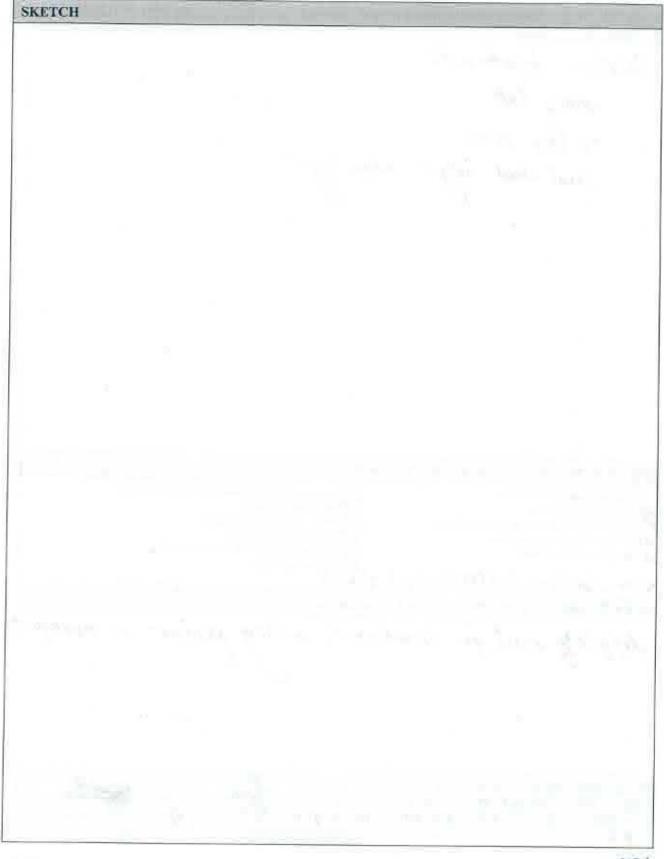
WATERSHED:	SUBWATERSHE	D:	UNIQU	E SITE ID: 288
DATE: 6/6/16	ASSESSED BY: RW/WC	CAMERA ID:	0	PICTURES: //: 20 - //:40
GPS ID:	LMK ID:	LAT:	-	LONG:
SITE DESCRIPTION	and the second second			
Name: DPW Facility Address: 51 Bank St	? Unknown Hepkinton RI			
Ownership: If Public, Government Jurisd		ivate Unknow	n	
Corresponding USSR/USA J	ield Sheet? Yes	No If y	es, Unique	Site ID:
Below Outfall	ove Roadway Culvert Conveyance System ar Large Parking Lot	On, Site Hotspot Oper Small Parking Individual Str Underground	Lot] Individual Rooftop] Small Impervious Area] Landscape / Hardscape] Other:
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Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes: V. (areye, V. h	ighly disturbed	Drainage Area I	ac lots) ac lots) ses	Institutional Industrial Transport-Related Park Undeveloped Other:
EXISTING STORMWATER	MANAGEMENT			
If Yes, Describe:				•
large amounts of save	tions, Including Existing Site & I salt in runoff; Mus Straight into enters CB	most runs o	veyance: Nto roa.	d + into creele
xisting Head Available and				
definite need for	trea			
		1.0		
ge 1 of 4				Unique Site ID: 288

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PROPOSED RETROFIT **Pugpose of Retrofit: Channel Protection** Flood Control Recharge Water Quality Other: Repair Demonstration / Education **Retrofit Volume Computations - Available Storage: Retrofit Volume Computations - Target Storage: Proposed Treatment Option:** Bioretention Wet Pond Infiltration Created Wetland Extended Detention Other: Swale Filtering Practice Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance: @ Road ROW: excavate slope @ D/S end of 107 + create such bioswale or sed basin; remove some partying lot + build retaining wall \$0 support adjacent lot (+ add mare parking) ander front lot: infiltration chambers; new CBs or retrofit CBS to direct water; provide cleanouts SITE CONSTRAINTS Adjacent Land Use: Access: ANo Constraints Commercial Residential Institutional Constrained due to Transport-Related Park Industrial Space Undeveloped Other: Slope Tree Impacts Ves No Utilities Possible Conflicts Due to Adjacent Land Use? Property Ownership Structures If Yes, Describe: Dother: environmental conorns **Potential Permitting Factors: Conflicts with Existing Utilities:** Probable Not Probable Dam Safety Permits Necessary None Probable Not Probable Unknown Impacts to Wetlands Impacts to a Stream Yes Possible Probable Not Probable Sewer Floodplain Fill Probable Not Probable Probable Not Probable Impacts to Forests Water Gas Impacts to Specimen Trees Cable How many? Electric Approx. DBH Electric to Streetlights Other factors: Befinitely whin wetland laffer Overhead Wires Other: Soils: Yes Soil auger test holes: Yes No Evidence of poor infiltration (clays, fines): No Yes Evidence of shallow bedrock: No wettand narb Evidence of high water table (gleying, saturation): Yes





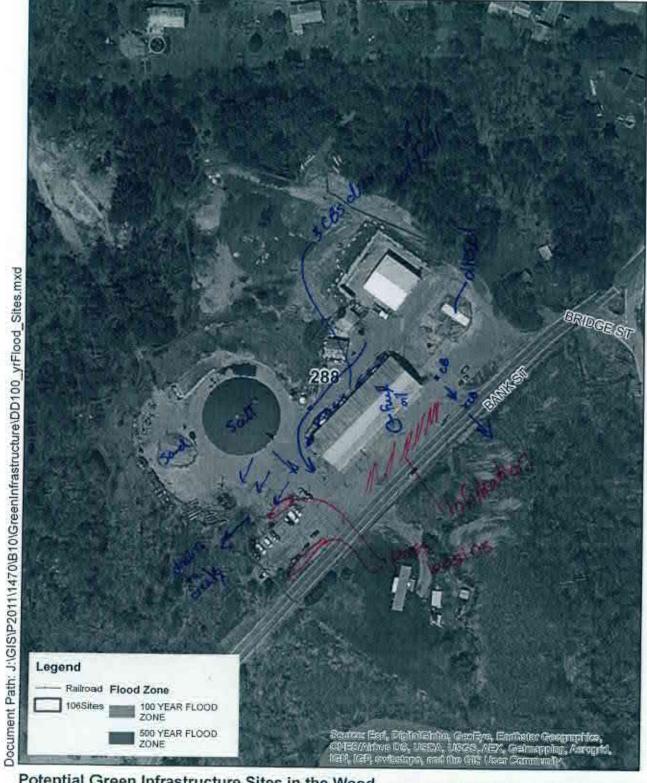
Page 3 of 4



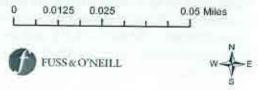
DESIGN OR DELIVERY NOTES Winter freatments mostly Salt "V. Ettle brine saud used only when icy FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT Obtain existing stormwater practice as-builts Confirm property ownership Obtain site as-builts Confirm drainage area Obtain detailed topography Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Obtain utility mapping Confirm storm drain invert elevations Confirm soil types & other Confirm LUNPPL (Hotspot status INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS definitely need for treatment; willing partner in managent YES NO MAYBE SITE CANDIDATE FOR FURTHER INVESTIGATION: NO YES TANK BE IS SITE CANDIDATE FOR EARLY ACTION PROJECT(S): MAYBE IF NO, SITE CANDIDATE FOR OTHER RESTORATION PROJECT(S): YES XNO IF YES, TYPE(S): Unique Site ID:

Page 4 of 4

DPW Facility? Unknown 51 Bank Street Hopkinton, RI



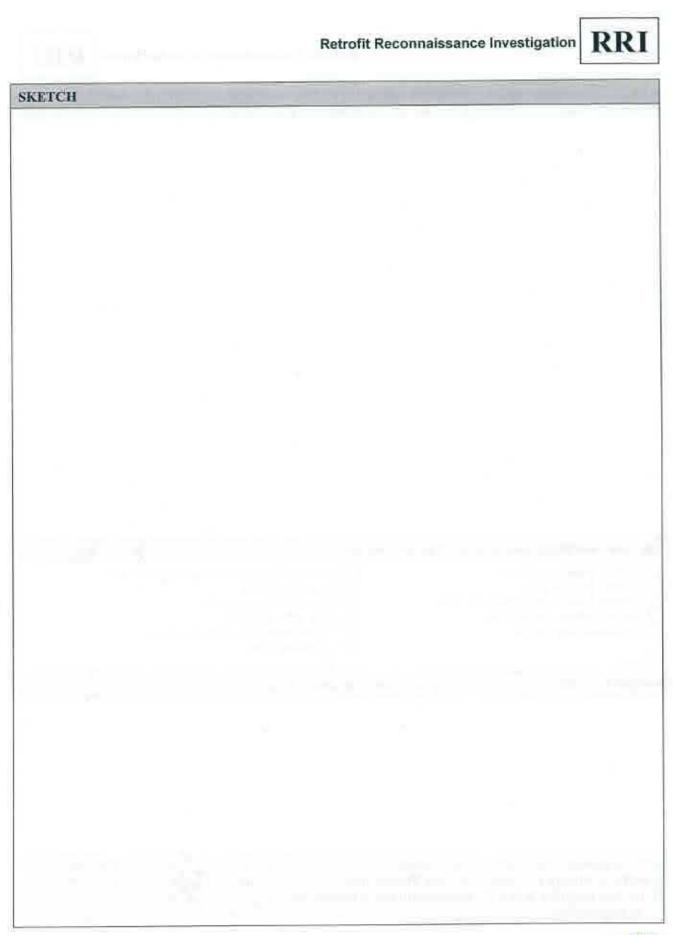
Potential Green Infrastructure Sites in the Wood-Pawcatuck River Watershed with AB Soils, Development, SHWT > 6 Ft, within 1/2 mile of WQ Impairment, and >= 30 % Impervious OR IC >= 1 Acre



WATERSHED:	SUBWATERS	HED:	UNIQUI	e Site ID: 🏼 🖉 290	2
DATE: 6/6/16	ASSESSED BY: KW/	CAMERA ID: C		PICTURES: //:00 -	
GPS ID:	LMK ID:	LAT:		LONG:	
SITE DESCRIPTION					
Name: Unknown Address: 260 Area	adia Rd, Richma	ond			
Ownership: If Public, Government Juris	diction: Decal	Private Unknown State DOT	Other:_		
Corresponding USSR/USA	Field Sheet? Yes	□ No If ye	s, Unique	Site ID:	
Below Outfall	n: bove Roadway Culvert i Conveyance System jear Large Parking Lot	On-Site UHotspot Opera Small Parking Underground	Lot [] Individual Rooftop] Small Impervious Area] Landscape / Hardscape] Other:	No
DRAINAGE AREA TO PR	OPOSED RETROFIT			101 41 11 2 2	1
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	Drainage Area L Residential SFH (< 1 SFH (> 1	ac lots) ac lots)	Institutional Industrial Transport-Related	
		Multi-Far	nily	Undeveloped	
EXISTING STORMWATE	R MANAGEMENT				
	iditions, Including Existing	Contraction of the second s	the second se		
No need for	conditions improvement	nt over cu	rent	conditions	
Existing Head Available a	nd Points Where Measured				
age 1 of 4				Unique Site ID:	290

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PROPOSED RETROFIT	
Purpose of Retrofit: Water Quality Recharge Demonstration / Education Repair	Channel Protection Flood Control
Retrofit Volume Computations - Target Storag	e: Retrofit Volume Computations - Available Storage:
	Created Wetland Bioretention
	utional Access:
Industrial Transport-Related Park Undeveloped Other: Possible Conflicts Due to Adjacent Land Use? If Yes, Describe:	Constrained due to Slope Space Ves No Structures Property Ownership Other:
Conflicts with Existing Utilities: None Unknown Yes Possible Output Sewer Water Gas Electric Electric to Streetlights Overhead Wires Other:	Potential Permitting Factors: Dam Safety Permits Necessary Impacts to Wetlands Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable Impacts to a Stream Probable Not Probable 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 Yes No Yes No Yes No

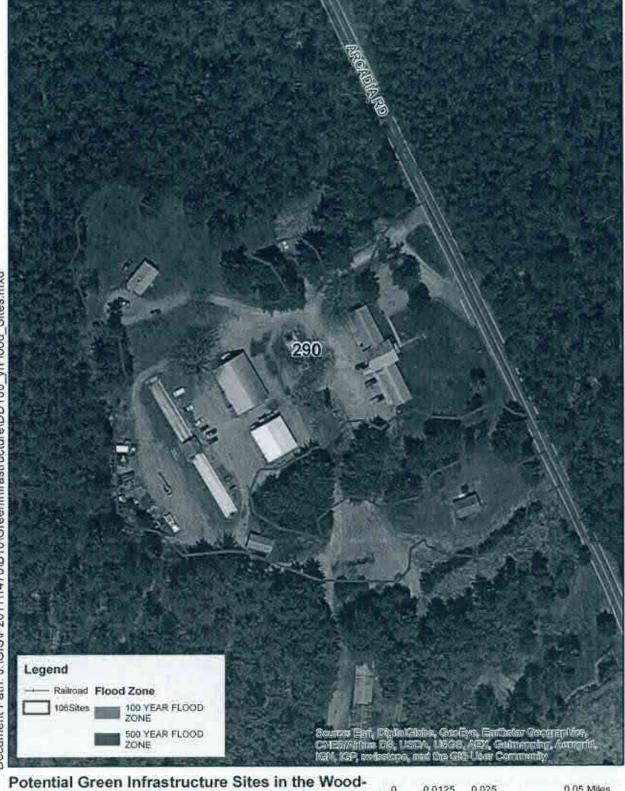


Page 3 of 4

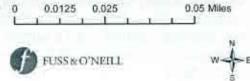
	Retrofit Reconnaissance Investigation	RRI
DESIGN OR DELIVERY NOTES		
DESIGN OR DELIVERY NOTES Bestion or Delivery Notes Bestion or Delivery Notes		
Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations	 Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations 	
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 	
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Confirm property ownership Confirm drainage area Confirm drainage area impervious cover Confirm volume computations Complete concept sketch Other:	 Obtain existing stormwater practice as-builts Obtain site as-builts Obtain detailed topography Obtain utility mapping Confirm storm drain invert elevations Confirm soil types 	

Page 4 of 4

Unknown (1/4 Mile North of Wood-Pawcatuck Watershed Association) 260 Arcadia Road Richmond, 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



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WATERSHED:	SUBWATERSHED:	SUBWATERSHED:		UNIQUE SITE ID: 58 293	
DATE: 6/6/16	ASSESSED BY: Rw/WG	CAMERA ID:	C	PICTURES: 950- 95 5	
GPS ID:	LMK ID:	LAT:	P	LONG:	
SITE DESCRIPTION					
Name: <u>Phoenix Huose</u> Address:					
Ownership: If Public, Government Juris	☐ Public Priv diction: ☐ Local ☐ Stat	e DOF	Don Other:	profit + various	
Corresponding USSR/USA	Field Sheet? Yes	□ No If y	es, Unique	Site ID:	
Below Outfall	n: bove Roadway Culvert Conveyance System ear Large Parking Lot	On-Site Hotspot Oper Small Parking Individual Sti Underground	g Lot [reet [Individual Rooftop Small Impervious Area Landscape / Hardscape Other:	
DRAINAGE AREA TO PRO	OPOSED RETROFIT	and the second second			
Drainage Area ≈ Imperviousness ≈ Impervious Area ≈ Notes:	%	SFH (< 1 ac lots)		Undeveloped	
EXISTING STORMWATEI	R MANAGEMENT			For any service of the service of th	
Existing Stormwater Prac If Yes, Describe:	tice: □Yes ØNo	Possible			
Describe Existing Site Con	ditions, Including Existing Site	Drainage and Co	nveyance:		
Existing Head Axailable as Not assess	sed in detail du	e to reitu	re of	institution	
			_	207	

Page 1 of 4

Retrofit Reconnaissance Investigation RRI



Puppose of Retrofit:				
Water Quality Demonstration / Education	Recharge Repair	Channel Prot	ection	Flood Control
Retrofit Volume Computations	- Target Storage:	Retrofit Vo	lume Comput:	ations - Available Storage:
	et Pond Created	Wetland	, Bioretention Other:	
SITE CONSTRAINTS				
Adjacent Land Use: Residential Commercia Industrial Transport-F Undeveloped Other: Possible Conflicts Due to Adjac If Yes, Describe:	Related 🗍 Park	Yes 🗌 No	Access: No Constrained du Slope Utilitie Structu Other:	ie to Space Tree Impacts Ires Property Ownership



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Page 3 of 4



DESIGN (OR DELIV	ERY	NOTES
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S SITE CANDIDATE FOR EARLY ACTION PI F NO, SITE CANDIDATE FOR OTHER RESTO	

Page 4 of 4

Camera pics - 950-955 6/6/16

Phoenix House and other Office Buildings? Gaspee Road and Main Street Exeter, 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

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Retrofit Reconnaissance Investigation RRI



WATERSHED:	SUBWATERSHED		UNIQUE SITE ID: 294
DATE: 6/6/16	ASSESSED BY: Rulug	CAMERA ID: C	PICTURES: 900 - 93:
GPS ID:	LMK ID:	LAT:	LONG:
SITE DESCRIPTION			
Name: Exeter Ry Address: 767 Ten Ko	d Rd Creek		
Ownership: If Public, Government Juri	sdiction: Public Priv] Other:
Corresponding USSR/USA	Field Sheet? Yes	□ No If yes	, Unique Site ID:
Below Outfall	Above Roadway Culvert n Conveyance System Vear Large Parking Lot CBs that can be	On-Site Hotspot Operati Small Parking 1 Individual Stree Underground	.ot Small Impervious Area
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Drainage Area ≈ Imperviousness ≈ Impervious Area ≈	%	Drainage Area La Residential SFH (< 1 ac	c lots)
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Existing Stormwater Prac If Yes, Describe:		Possible	
possible prac	tices under lawn		
several large,	nditions, Including Existing Site I	, one wy	1 lots of sediment
steep slope in ra	obvious lare	ge amount	of sediment & runoff
xisting Head Available a	nd Points Where Measured:		
ge 1 of 4			Unique Site ID: 294

Retrofit Reconnaissance Investigation RRI

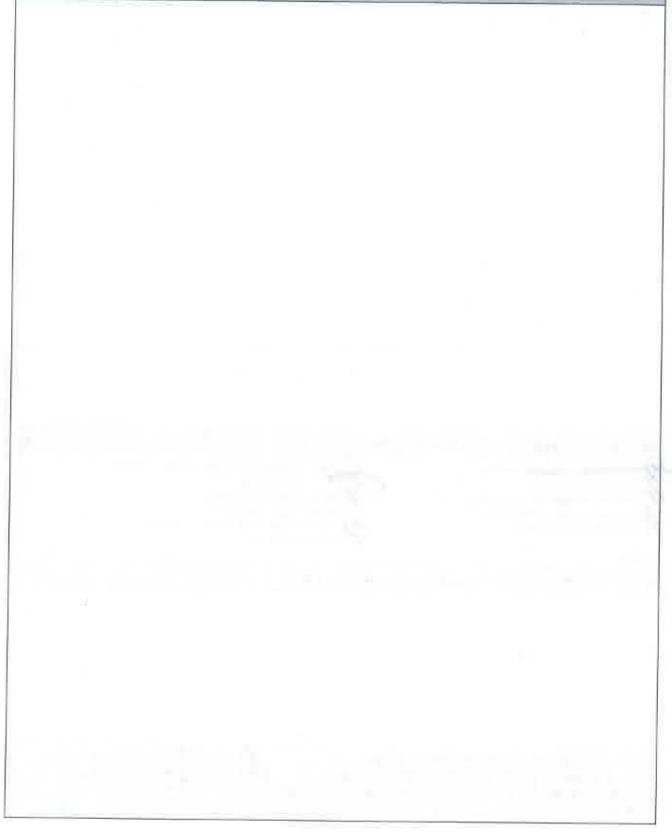
Purpose of Retrofit: Recharge Channel Protection Flood Control Demonstration / Education Repair Other: Flood Control Retrofit Volume Computations - Target Storage: Retrofit Volume Computations - Available Storage: Proposed Treatment Option: Retrofit Volume Computations - Available Storage: Proposed Treatment Option: Retrofit Volume Computations - Available Storage: Proposed Treatment Option: Bioretention Bittering Practice Infiltration Bioretention Wet Pond Bioretention Other: Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance: Bioretention Quarket Production Bioretention Quarket Production <td< th=""><th>PROPOSED RETROFIT</th><th></th><th></th><th></th></td<>	PROPOSED RETROFIT			
Water Quality Recharge Channel Protection Flood Control Demonstration / Education Repair Other: Flood Control Retrofit Volume Computations - Target Storage: Retrofit Volume Computations - Available Storage: Proposed Treatment Option: Retrofit Volume Computations - Available Storage: Extended Detention Wet Pond Bioretention Other: Other: Other: Describe Elements of Proposed Reform (including Surface Area, Maximum Depth of Treatment, and Conveyance: Bioretention Bioretuntion (including Surface Area, Maximum Depth of Treatment, and Conveyance: Bioretuntion (including Surface Area, Maximum Depth of Treatment, and Conveyance: Bioretuntion (including Surface Area, Maximum Depth of Treatment, and Conveyance: Funderstreatment, and Conveyance: Bioretuntion (including Surface Area, Maximum Depth of Treatment, and Conveyance: Funderstreatment, and Conveyance: Bioretuntion (including Surface Area, Maximum Depth of Treatment, and Conveyance: Funderstreatment, and Conveyance: Bioretuntion (including Surface Area, Maximum Depth of Treatment, and Conveyance: Funderstreatment, and Conveyance: Bioretuntion (including Surface Area, Maximum Depth of Treatment, and Conveyance: Funderstreatment, and Conveyance: Bioretuntion (including Surface Area, Maximum Depth of Treatment, and Conveyanc	and the second	1	ARTICLE	- Insite
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□ Extended Detention □ Wet Pond □ Created Wetland □ Bioretention □ Peritering Practice □ Infiltration □ Swale □ Other:	Retrofit Volume Computations	- Target Storage:	Retrofit Volume Comput	and the second second second second second
Describe Elements of Proposed Retrofit, Including Surface Area, Maximum Depth of Treatment, and Conveyance: Bioreturficen & east end of lawn to Capture Twoff from lawns, mult roads - take drains of line if possible * also armor roof Ortfall? STFE CONSTRAINTS Adjacent Land Use: Residential Commercial Institutional Dindustrial Transport.Related Park Undeveloped Other: AG Undeveloped Other: AG Possible Conflicts Due to Adjacent Land Use? Ves Possible Conflicts Due to Adjacent Land Use? Ves Possible Sever Value Sever Water Conflicts with Existing Utilities: None Unknown Ves Possible Gas Cable Cable Cable Cable Cable Cable Conflict to Streetlights Overhead Wires Other factors: Down any? Approx. DBH Other factors: Down any? Approx. DBH Other factors: Down any? Approx. DBH	Extended Detention We			
Bioretuition & east end of lawn to capture Wolf from Jawns, mult rodols - take drains of line if possible * also armor roof outfall? STEE CONSTRAINTS Adjacent Land Use: Residential Commercial Institutional Blodindustrial Transport-Related Park Undeveloped Cother: AG Possible Conflicts Due to Adjacent Land Use? Ves No If Yes, Describe: Conflicts with Existing Utilities: Wone Unknown Newdos Yes Possible Not Probable Water Water Conflicts to Streetlights Overhead Wires Other factors: Constrained due to Blodpe Blodpian Fill Blodpian Fill Blodpia		Retrofit, Including Su	face Area, Maximum Depth o	of Treatment, and Conveyance:
Twoff from Jawns, mult roads - take drains of line if possible * also armor roof Outfall? STEE CONSTRAINTS Adjacent Land Use: Residential Commercial Institutional Mindustrial Transport-Related Possible Conflicts Due to Adjacent Land Use? Yes Possible Conflicts with Existing Utilities: Probable None Undeveloped Vurknown Neddy Yes Possible Other: Dam Safety Permits Necessary Probable Not Probable Not Probable Not Probable Water Base of Profests Base of Cable Probable Water Base of Probable Base of Cable Not Probable Water Base of Probable Base of Cable Not Probable Wo many? Approx. DBH Approx. DBH Other factors: Other factors: Other factors:				
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Institutional Institutional Institutional Institutional Industrial Transport-Related Park Institutional Institutional Indeveloped Other: AG Institutional Institutional Institutional Indeveloped Other: Institutional Institutional Institutional Institutional Indeveloped Other: Institutional Institutional Institutional Institutional Indeveloped Other: Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional Institutional <	That of each and the second se			
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	None Unknown Neod Yes Possible Sewer Water Gas Gas Electric Electric to Stre Overhead Wire Overhead Wire	o to to to to to to to to to t	Safety Permits Necessary	Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable Probable Not Probable
	Evidence of poor infiltration (cla Evidence of shallow bedrock: Evidence of high water table (gle	X	Yes No Use Where Yes No	on site; not inpr

Page 2 of 4

Unique Site ID:____







Page 3 of 4

Retrofit Reconnaissance	Inves	tigation
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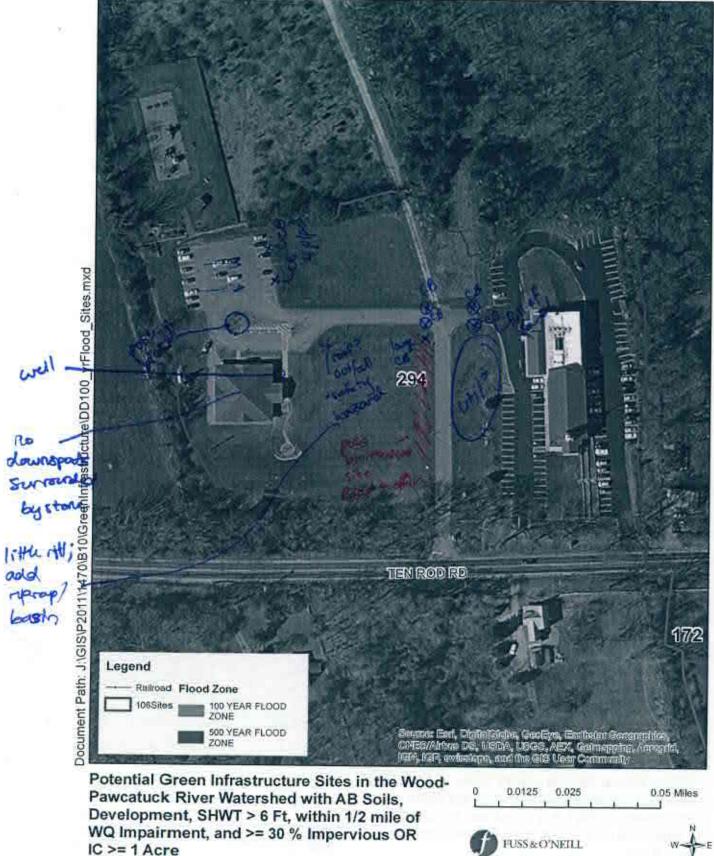
DESIGN OR DELIVERY NOTES

FOLLOW-UP NEEDED TO COMPLETE FIELD CONCEPT	
Confirm drainage area Confirm drainage area impervious cover	I topography
Confirm volume computations Complete concept sketch Confirm soil ty	drain invert elevations
Other:	pc3
INITIAL FEASIBILITY AND CONSTRUCTION CONSIDERATIONS	
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

Page 4 of 4

Unique Site ID:____

Exeter Public Library 762 Ten Rod Road Exeter, RI



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Attachment 7

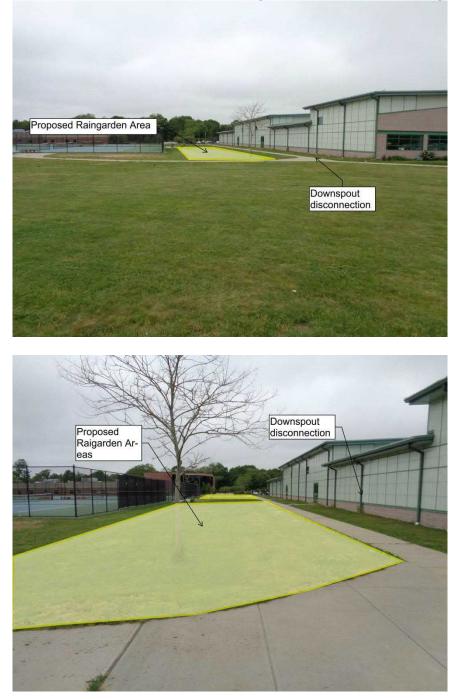
Field Photos

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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

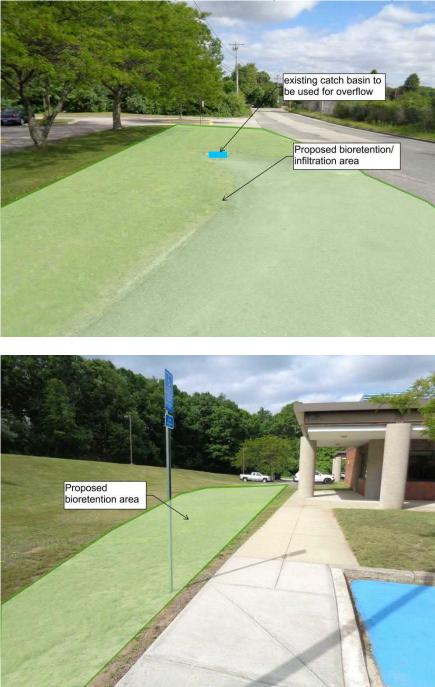




Site 73: Exeter Town Animal Shelter, South County Trail, Exeter, RI



Site 93: US Post Office (Westerly, RI), Tom Harvey Road, Westerly, RI





Site 102: Grace United Methodist Church, Spruce Street, Westerly, RI

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



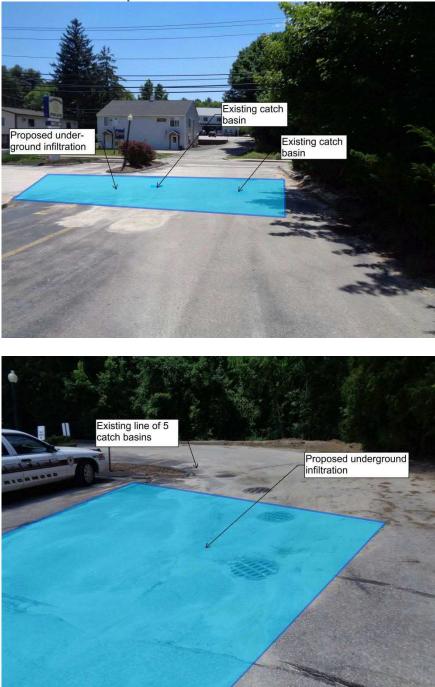


Site 129: St. Mary's Catholic Church, Carolina Back Road, Charlestown, RI

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 173: Exeter Town Hall, Ten Rod Road, Exeter, RI





Site 185: Wheeler High School, North Westerly Road, North Stonington, CT



Site 185A: Wheeler Library, Main Street, North Stonington, CT







Site 191: West Vine Street School, West Vine Street, 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





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





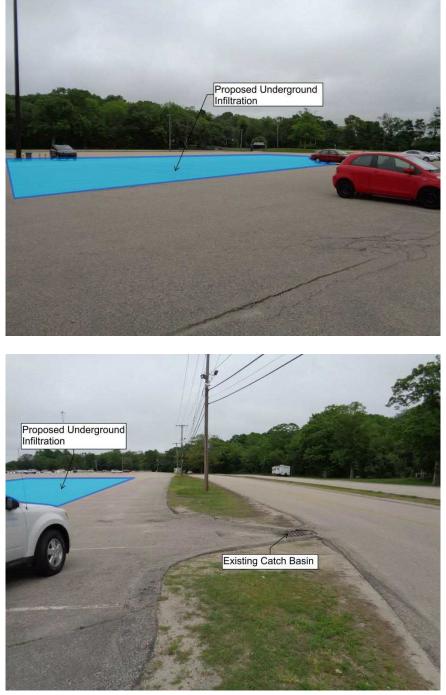




Site 283: West Kingstown Elementary School, Ministerial Road, South Kingstown, RI



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.



Image 1: Typical installation of underground infiltration system below an existing parking lot. (Image source: stormtech.com)

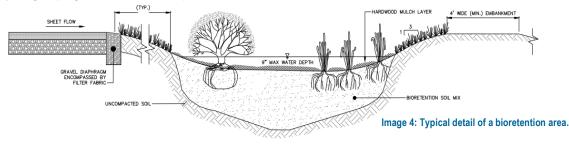




Image 2: View of current outlet exiting parking area. Note erosion along embankment.

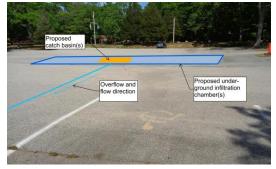


Image 3: View of parking area and location of proposed green infrastructure.

PLANT BIORETENTION BASIN WITH A SELECTION OF TREES, SHRUBS, GRASSES, AND PERENNIALS FROM THE "RHODE ISLAND COASTAL PLANT GUIDE"

GRANULAR WELL GRADED SOIL/AGGREGATE MIXTURE: <35% FINES. COMPACT IN 6 IN LIFTS TO 95% PROCTOR DENSIT SEE THE TABLE OF ACCEPTAL SC-740 END CAR PAVEMENT 3/4 - 2 INCH WASHEL CRUSHED, ANGULAR STON 12" MIN. (Th MIN. (TYP.

STORMTECH SC-740 CHAMBER INFILTRATION SYSTEM NOT TO SCALE

Image 5: Typical detail of an underground infiltration chamber.



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

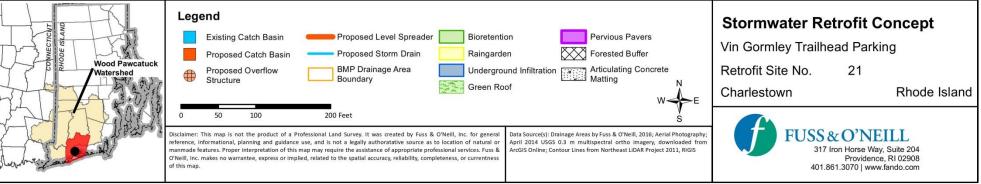
Total Phosphorus ≈ **0.4 lbs/year** Total Nitrogen ≈ 8.5 lbs/year Total Suspended Solids ≈ 349.2 lbs/year Bacteria (FC) ≈ 61.7 billion colonies/year

Estimated Cost

Underground Infiltration: \$98,244 Bioretention Area: \$24,494







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Retrofit Site 41 – Tennis Courts at Boss Arena, URI Campus Rain Gardens Kingstown Road, South Kingstown, Rhode Island

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.



Image 3: View of proposed raingarden area between Boss Arena and tennis courts.





Retrofit Concept Summary

Total Drainage Area: 1.1 acres Total Impervious Area: 0.9 acres Total Water Quality Volume: 3,280.5 ft³ Recharge Volume: 1,148.2 ft³

Estimated Pollutant Removal

Raingardens Total Phosphorus ≈ **0.4 lbs/year** Total Nitrogen ≈ **9.2 lbs/year** Total Suspended Solids ≈ **356.3 lbs/year** Bacteria (FC) ≈ **266.6 billion colonies/year**

Estimated Cost Rain Garden Area: \$44,124

Images 1&2: Before and after rain garden construction, Portland, ME. (Image source: http://www.portlandmaine.gov/1491/Back-Cove-Rain-Garden).

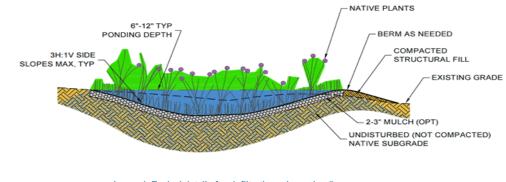
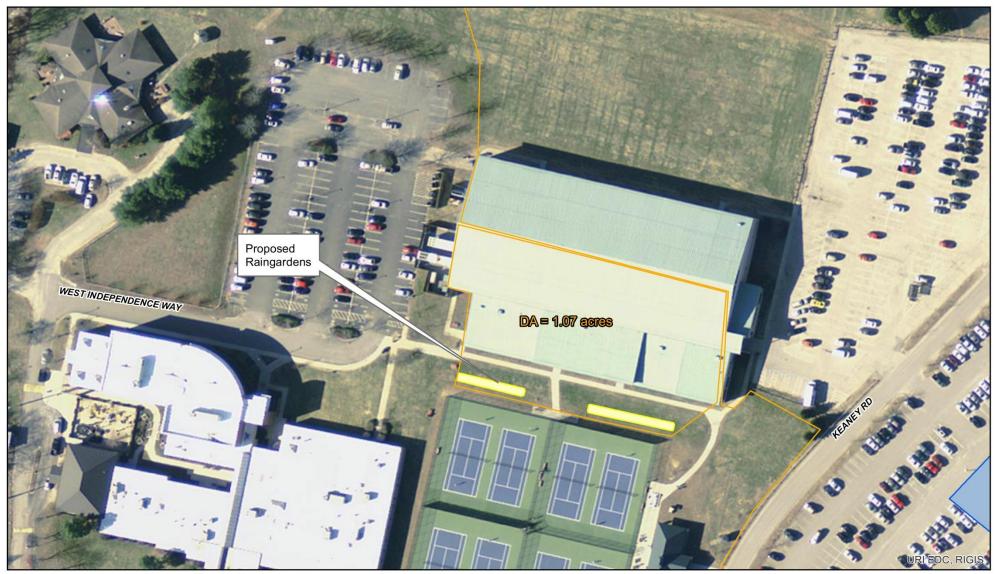
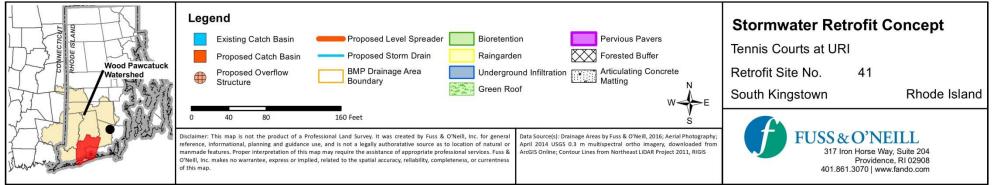


Image 4: Typical detail of an infiltrating rain garden (Image source: http://www.5counties.org/docs/lu_planning/04_rain_garden.pdf).







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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.

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

Bioretention Area Total Phosphorus ≈ **0.2 lbs/year** Total Nitrogen ≈ **4.2 lbs/year** Total Suspended Solids ≈ **180.0 lbs/year** Bacteria (FC) ≈ **117.8 billion colonies/year**

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

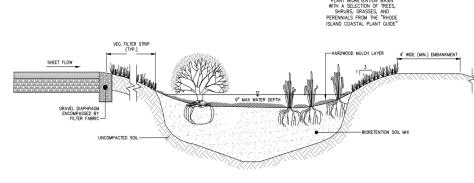


Image 3: Typical detail of a bioretention area.



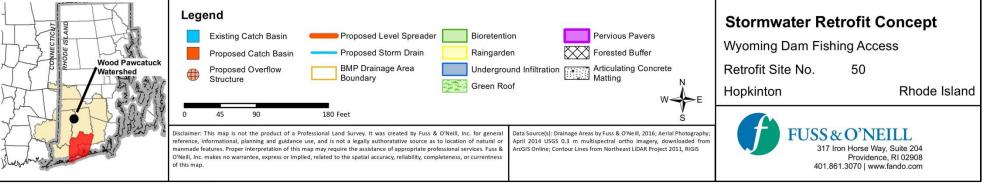
Image 4: View of tiered bioretention area (Image source: UMASS).



Image 5: View of a typical porous paver profile. (Image source: http://therubbercompany.com)







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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 2: Example of a roadside bioretention/infiltration basin. (Image source: www.ermsteed.com)



Image 1: View of proposed bioretention/infiltration area alongside South County Trail in Exeter, RI.

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

PLANT BIORETENTION BASIN WITH A SELECTION OF TREES, SHRUBS, GRASSES, AND PERENNIALS FROM THE "RHODE ISLAND COASTAL PLANT GUIDE"

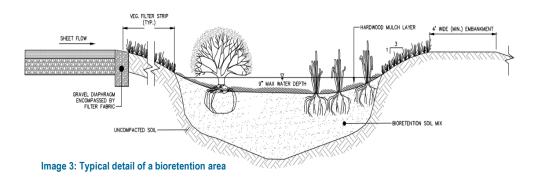
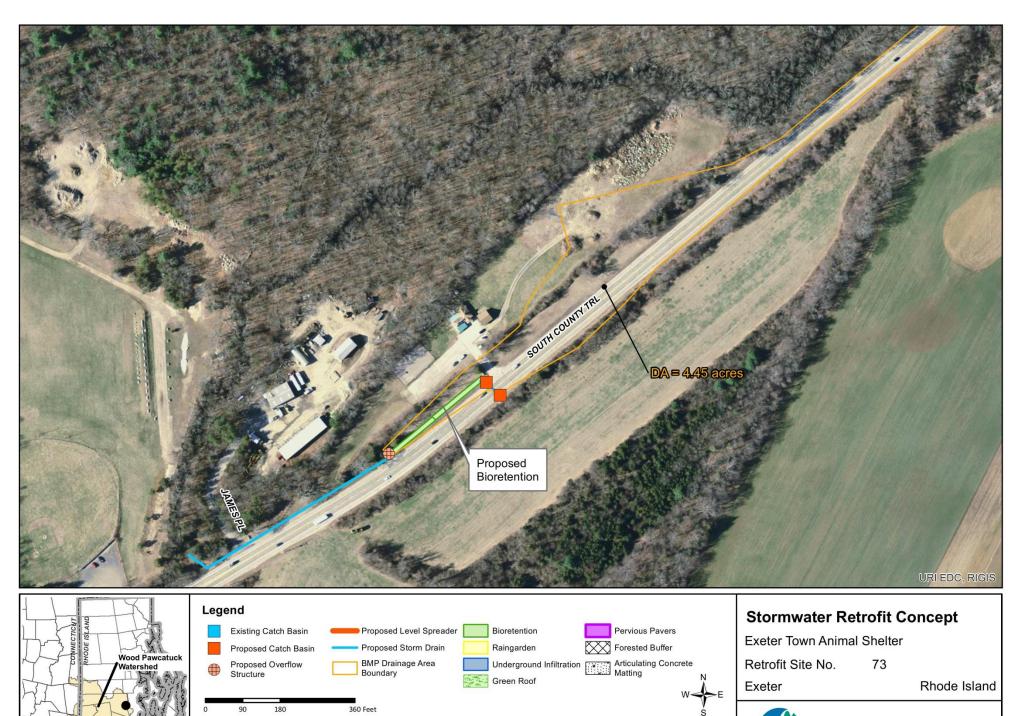




Image 4: Additional space for bioretention/infiltration basin adjacent to Exeter Animal Shelter.





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 authoratative 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, Loc. Source(s): Drainage Areas by Fuss & O'Neill, 2016; Aerial Photography; ArcGIS Online; Contour Lines from Northeast LIDAR Project 2011, RIGIS O'Neill, Inc. Source(s): Drainage Areas by Fuss & O'Neill, 2016; Aerial Photography; ArcGIS Online; Contour Lines from Northeast LIDAR Project 2011, RIGIS of this map.

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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

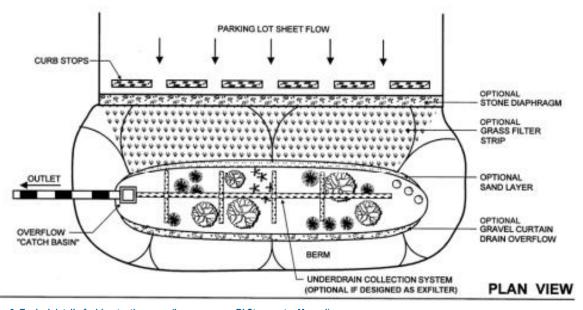


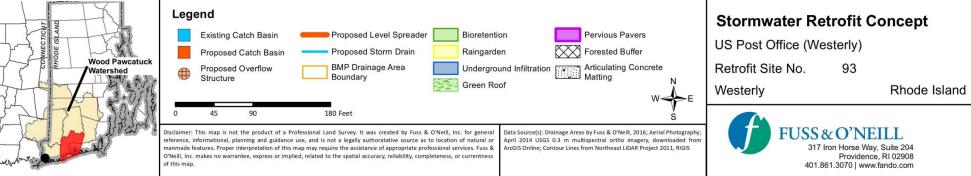


Image 3: View of proposed bioretention area along Tom Harvey Road on the eastern side of the main post office building.



Image 2: Typical detail of a bioretention area. (Image source: RI Stormwater Manual)





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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 1: View of typical bioretention area or raingarden with mature plantings. (Image source: <u>http://www.installitdirect.com/wp-</u> content/uploads/2015/01/how-to-build-a-rain-garden.jpg)

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

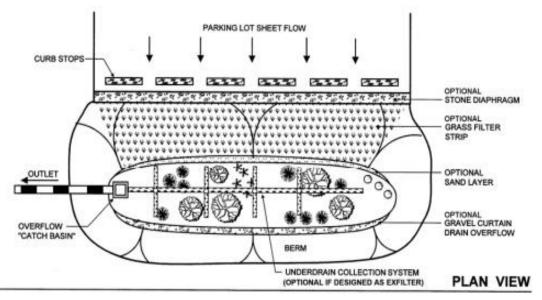


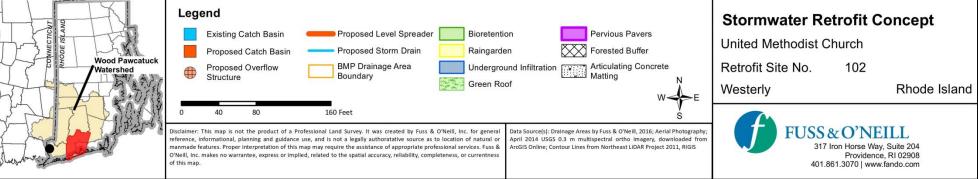
Image 2: Typical detail of a bioretention area. (Image source: RI Stormwater Manual)



Image 3: View of proposed bioretention area along eastern edge of church parking lot.







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Retrofit Site 108 – Bradford School Underground Infiltration and Green Roof Demonstration Project Church Street, Westerly, Rhode Island

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 instreet 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.



Image 3: View of green roof and outdoor class space. (Image source: National Wildlife Federation Blog)



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)

Retrofit Concept Summary

Total Drainage Area: 1.3 acres Total Impervious Area: 1.2 acres Total Water Quality Volume: 4,326.1 ft³ Recharge Volume: 1,514.1 ft³

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/Costbenefit_considerations_for_green_roofs

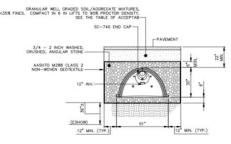
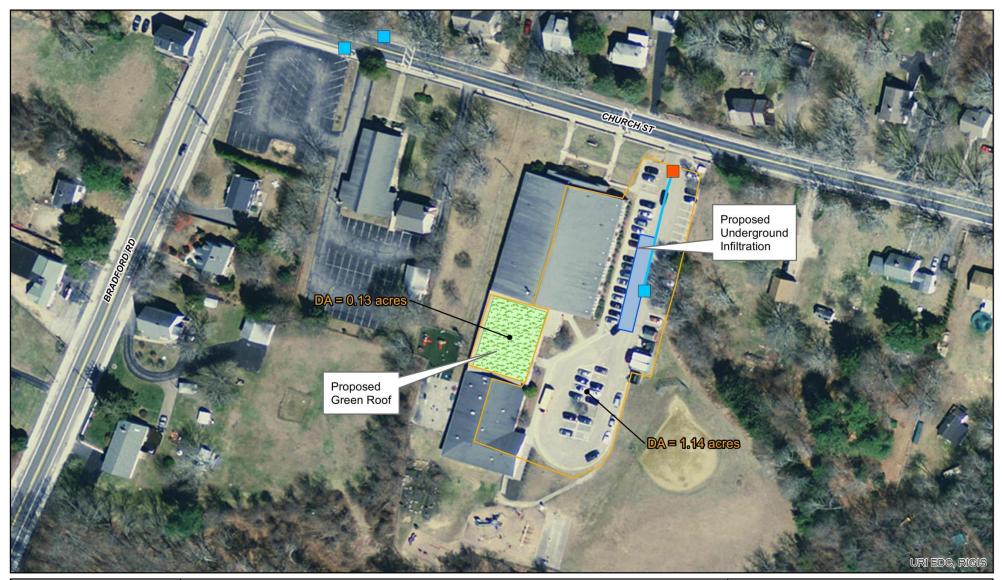
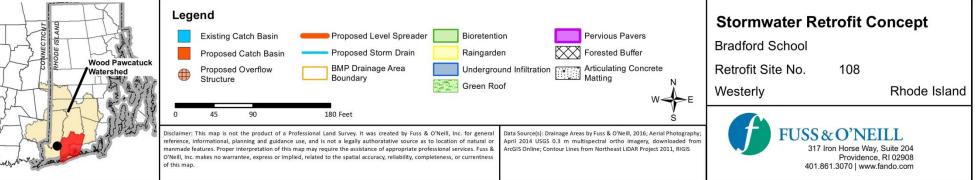


Image 5: Typical detail of an underground infiltration chamber







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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, Rl. 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.



Image 1: Typical installation of underground infiltration chambers beneath a roadway. (Image source: http://capecodwatershed.blogspot.com/)

Retrofit Concept Summary Total Drainage Area: 22.6 acres Total Impervious Area: 5.4 acres Total Quality Volume: 11,111.4 ft³ Recharge Volume: 1,111.1 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

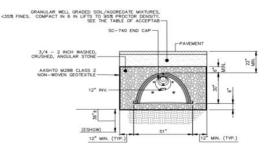
*Practice modified to treat 0.5" WQv for larger Drainage Area due to size and cost considerations



Image 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.

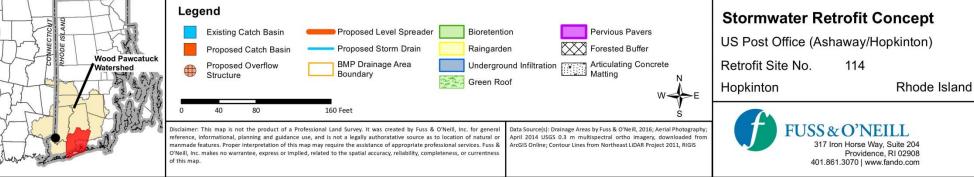


STORMTECH SC-740 CHAMBER INFILTRATION SYSTEM

Image 4: Typical detail of an underground infiltration chamber.







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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 rightof-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.



Image 1: View of proposed bioretention area along Wellstown Road.

Image 3: View of proposed rain garden area adjacent to church.

oposed raingarden area

Retrofit Concept Summary Total Drainage Area: 2.9 acres Total Impervious Area: 1.2 acres Total Water Quality Volume: 4,518.7 ft³

Estimated Pollutant Removal

Recharge Volume: 2,711.2 ft³

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**

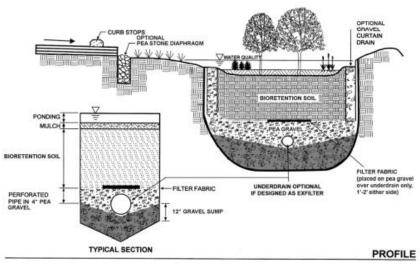
Raingarden(s) Total Phosphorus ≈ **0.1 lbs/year** Total Nitrogen ≈ **1.7 lbs/year** Total Suspended Solids ≈ **67.9 lbs/year** Bacteria (FC) ≈ **233.1 billion colonies/year**

Estimated Cost Bioretention Area(s): \$52,252 Raingarden(s): \$8,527



Image 4: Typical view of mature plantings in rain garden or bioretention area.

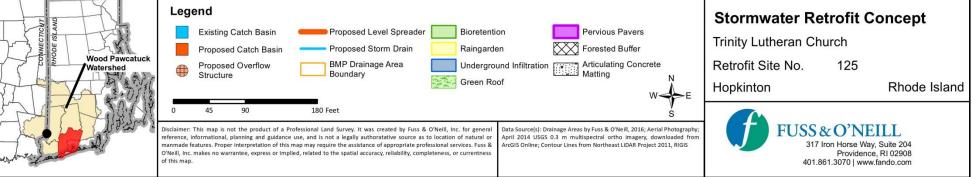




Adapted from MDE, 2000

Image 2: Typical profile view of a bioretention area. (Image source: RI Stormwater Manual)





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Retrofit Site 129 – St. Mary's Catholic Church Bioretention Carolina Back Road, Charlestown, Rhode Island

Site Description

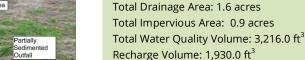
The proposed retrofit concept is located adjacent to St. Mary's Church on Carolina Back Road in Charlestown, Rl. The site includes the roadway and intersection of Carolina Back Road and Old Carolina Back Road across the street from the church and rectory buildings. No structural drainage infrastructure 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 rightof-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.



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.



Estimated Pollutant Removal

Retrofit Concept Summary

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



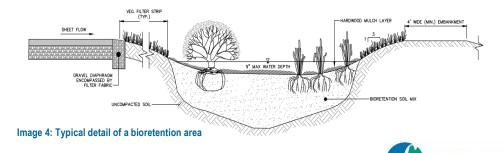
Image 2: View of proposed location for bioretention area along Carolina Back Road in Charlestown, RI.



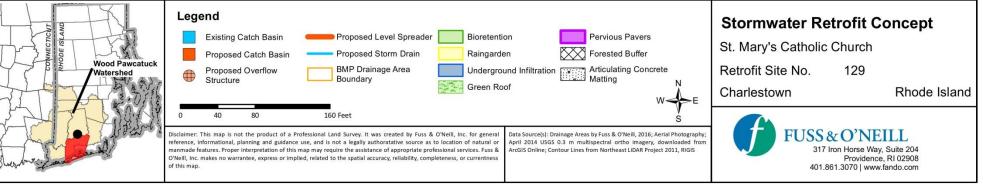
Image 3: View of typical bioretention area functioning during rain event. (Image source: http://www.portlandmaine.gov/1491/Back-Cove-Rain-Garden)

PLANT BIORETENTION BASIN WITH A SELECTION OF TREES, SHRUBS, GRASSES, AND PERENNIALS FROM THE "RHODE ISLAND COASTAL PLANT GUIDE"

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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.

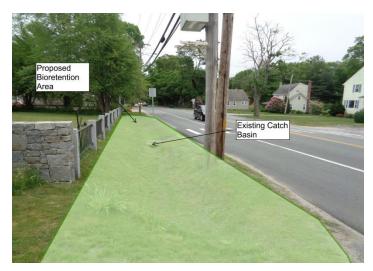


Image 3: View of proposed bioretention area to be located on Kingstown Road, in front of the Courhouse Center for the Arts in South Kingstown, RI.

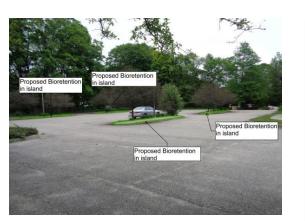


Image 2: View of proposed bioretention areas located within parking lot islands at the Courthouse Center for the Arts.



Image 1: View of typical bioretention area with mature plantings. (Image source: <u>http://www.installitdirect.com/wp-</u> content/uploads/2015/01/how-to-build-a-rain-garden.jpg)

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**

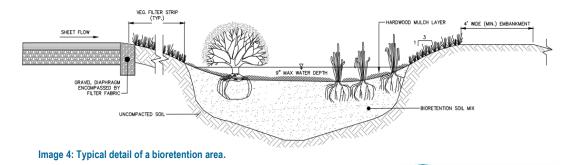
Estimated Cost

Bioretention Areas: \$121,381

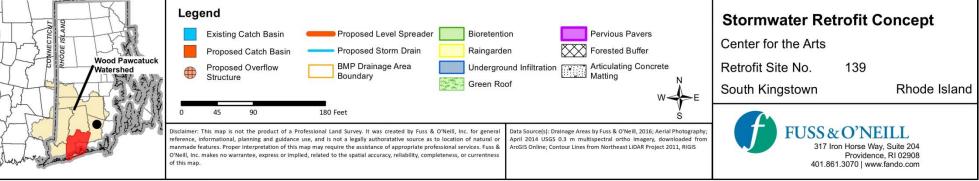
*Pollutant removal calculated for combined bioretention areas. The practice in front of the Courthouse Center for the Arts sized to treat 47% of the 1" WQv.

> PLANT BIORETENTION BASIN WITH A SELECTION OF TREES, SHRUBS, GRASSES, AND PERENNIALS FROM THE "RHODE ISLAND COASTAL PLANT GUIDE"

> > USS&O'NEILL







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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.

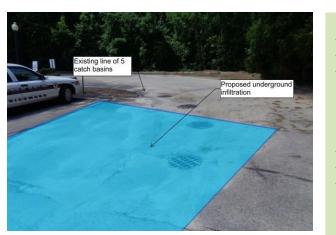


Image 1: View of proposed underground infiltration area and existing catch basins adjacent to Main Street and the front of the police station.

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**

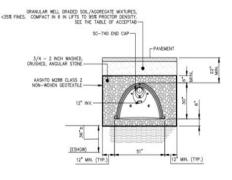
Estimated Cost Underground Infiltration: \$40,990



Image 2: Typical installation of underground infiltration system below an existing parking lot. (Image source: stormtech.com)



Image 1: View of proposed underground infiltration area and existing line of catch basins located at the rear of the police station.

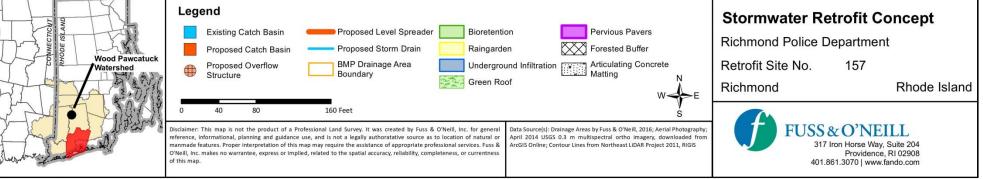


STORMTECH SC-740 CHAMBER INFILTRATION SYSTEM

Image 4: Typical detail of an underground infiltration chamber.







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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.



Figure 3: proposed location of bioretention area along Nooseneck Hill Road in Richmond, RI, at the State Police Barracks.





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.

> PLANT BIORETENTION BASIN WITH A SELECTION OF TREES, SHRUBS, GRASSES, AND PERENNIALS FROM THE "RHODI ISLAND COASTAL PLANT GUIDE

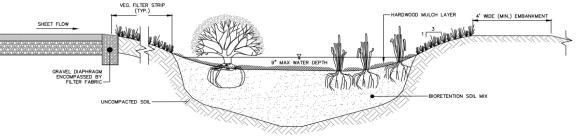
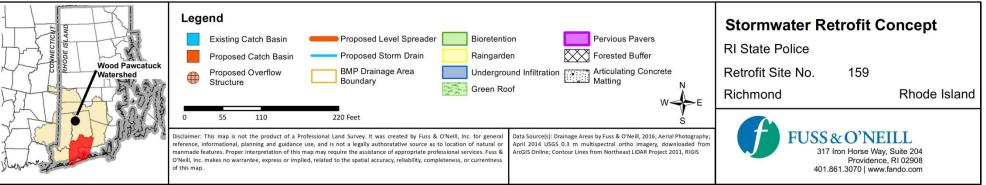


Figure 4: Typical detail of a bioretention area.







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 Road 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.



Image 3: View of typical bioretnention area with rendering of plantings. (Image source: Johnson County Soil and Water District)



Image 1: View of initial portion of bioretention area. This area could be designed as a pretreatment cell for the larger bioretention area.



Image 2: View of larger proposed bioretention area in front of the fire station. This section should have some pretreatment for sediment.

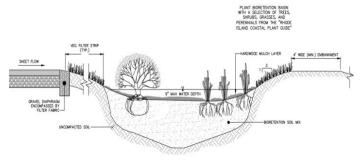


Image 4: Typical detail of a bioretention area.

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**

Raingarden 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**

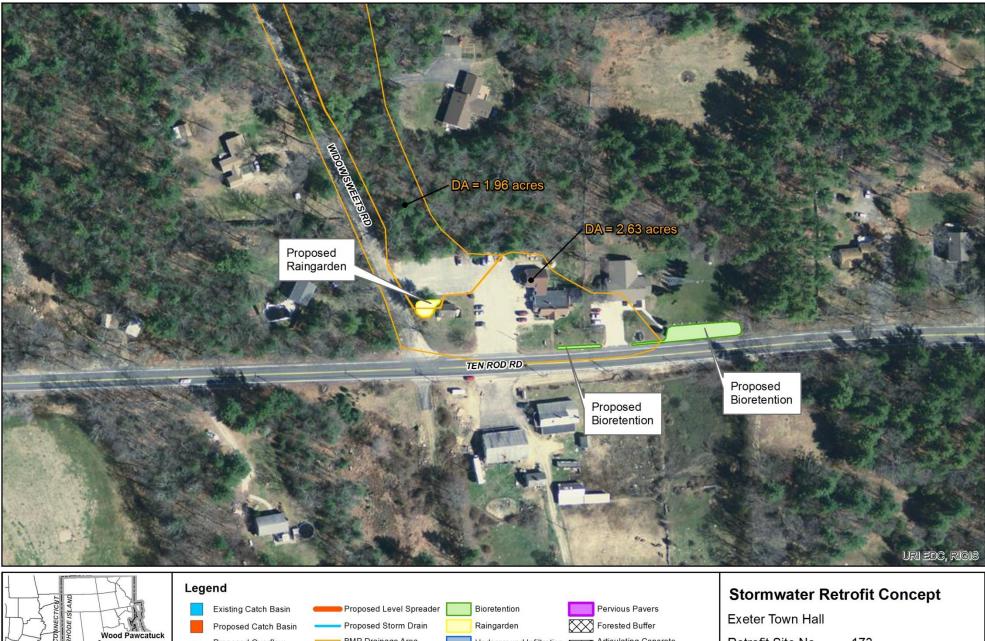
Estimated Cost Bioretention Area: \$79,589 Raingarden Area: \$23,181

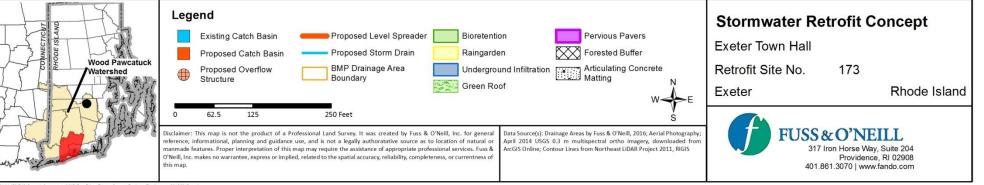
*Rain garden sized to treat 83% of the 1" WQv due to space limitations of the site.



Image 5: View looking upgradient of proposed bioretention area in front of fire station.







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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, Cl. 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/inifiltration 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.



Image 1: View of proposed western bioretention area between parking lot and North Westerly Road.

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 3: View of proposed bioretention area to be located in front of school. Image looking east.



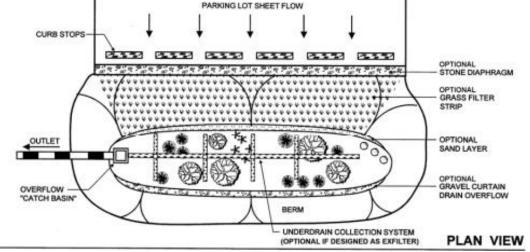
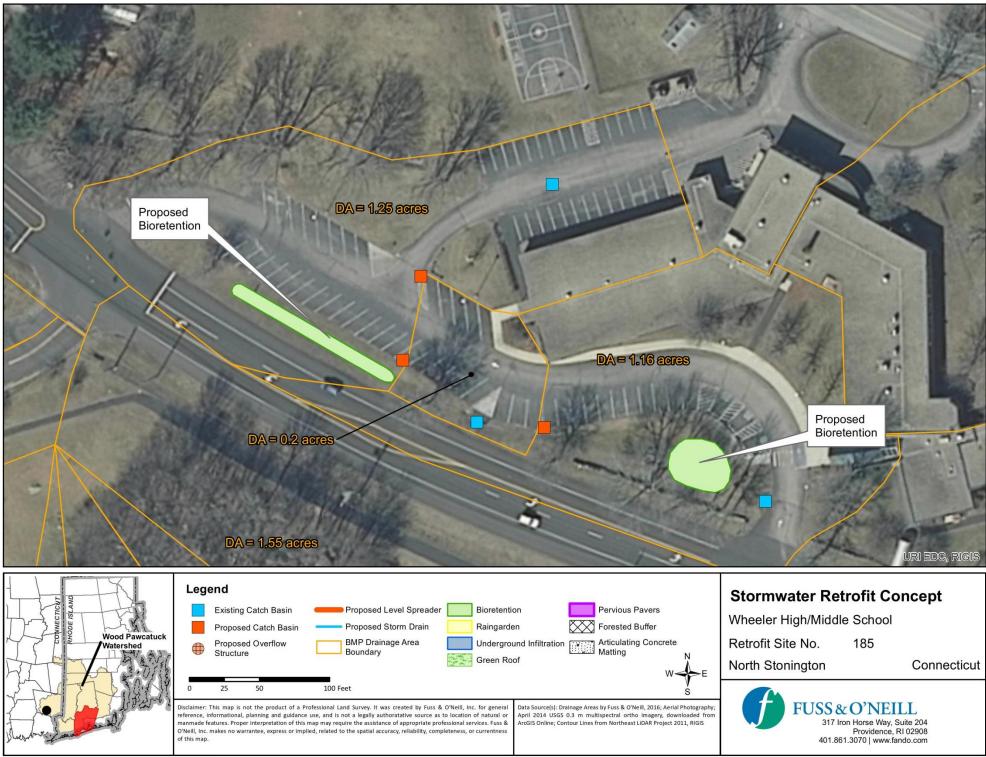


Image 2: Typical detail of a bioretention area. (Image source: RI Stormwater Manual, 2010)



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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.



Image 1: View of typical bioretention area with rendering of plantings. (Image source: Johnson County Soil and Water District.)

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



Image 2: View of proposed bioretention area to be placed along eastern edge of driveway.

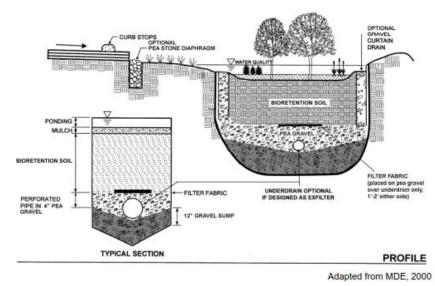


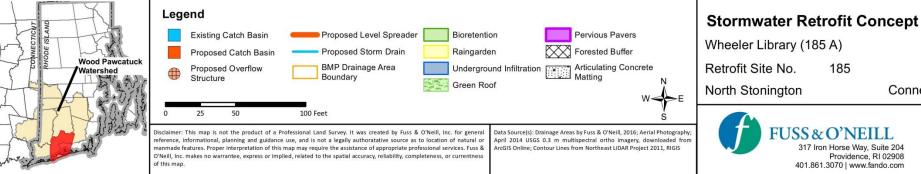
Image 3: Profile view of a typical bioretention practice. (Image source: RI Stormwater Manual, 2010)



Image 4: View of proposed bioretention area to be located along Main Street in front of the library.







Connecticut

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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.



Image 1: View of typical raingarden with mature plantings. (Image source: <u>http://www.installitdirect.com/wp-content/uploads/2015/01/how-to-build-a-</u>rain-garden.jpg)

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

Raingarden(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

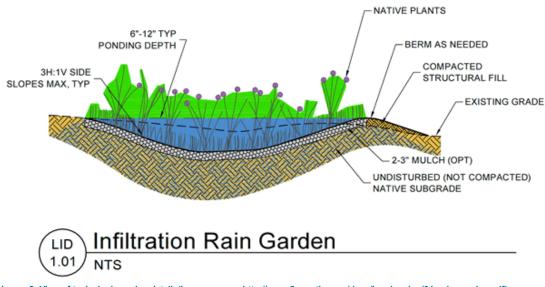
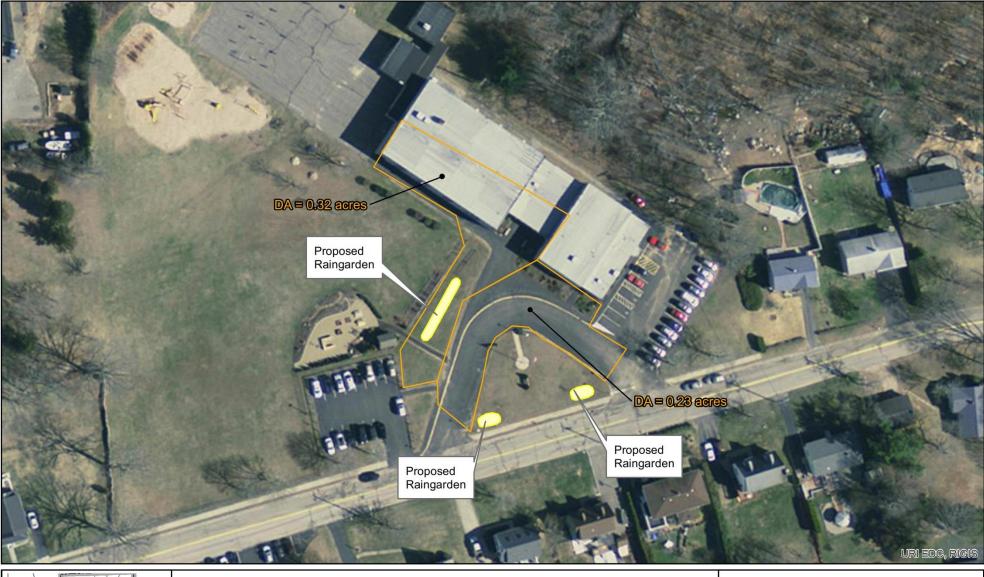


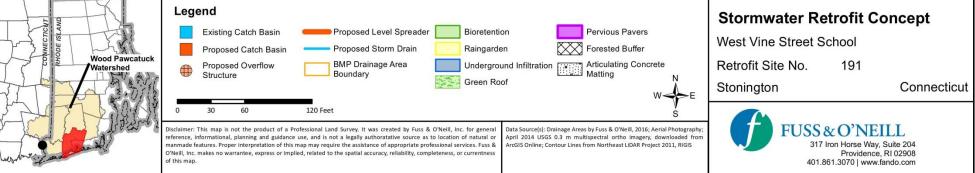
Image 2: View of typical raingarden detail. (Image source: http://www.5counties.org/docs/lu_planning/04_rain_garden.pdf)



Image 3: View of area for proposed rain garden at entrance to West Vine Street Elementary School, Stonington, CT.







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Retrofit Site 194 – North Stonington Elementary and Administration Bioretention North Westerly Road, North Stonington, Connecticut

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 stromwater from the Wheeler High School site located across North Westerly Road. It is presumed that the piped storm drain system ultimately discharges to Assekonk Brook.

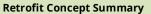
Proposed Concept

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.



Image 1: View of proposed catch basin on north eastern portion of the site. This area could potentially accept stormwater flows from the Wheeler High School lot as well.

PLANT BIORETENTION BASIN WITH A SELECTION OF TREES, SHRUBS, GRASSES, AND PERENNIALS FROM THE "RHODE



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

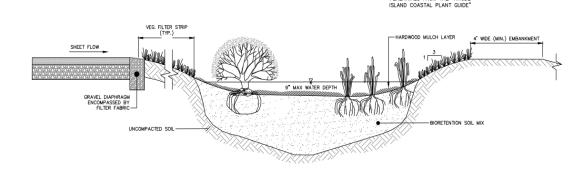
*includes portion of drainage area from Wheeler High School parking lot

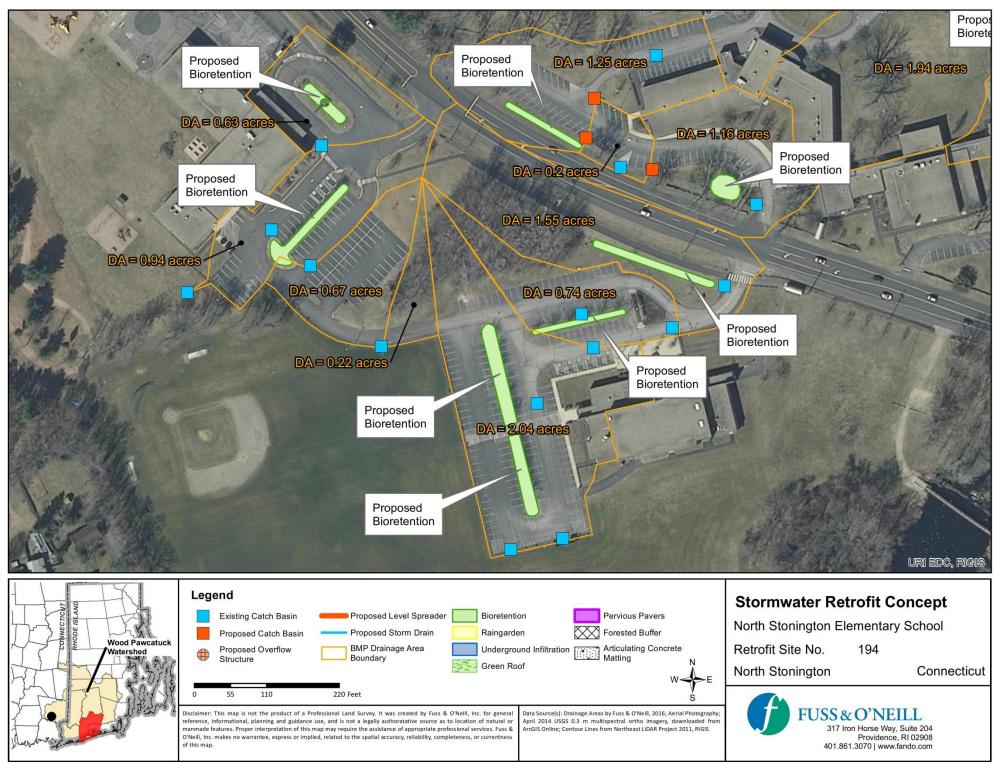


Image 3: View of proposed bioretention area located within parking lot island in the bus loop in front of the elementary school building.



Image 2: Typical detail of a bioretention area





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Retrofit Site 206 – Browning Mill Pond Parking Access Bioretention and Forested Buffer Arcadia Road, Exeter, Rhode Island

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.



Image 1: View of proposed bioretention/infiltration practice.



Image 2: View of area of proposed forested buffer

Retrofit Concept Summary

Total Drainage Area: 1.2 acres Total Impervious Area: 0.8 acres Total Water Quality Volume: 2,854.8 ft³ Recharge Volume: 1,712.9 ft³

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

Forested 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 Forested Buffer: \$18,796

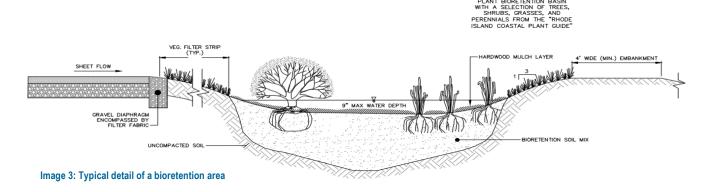
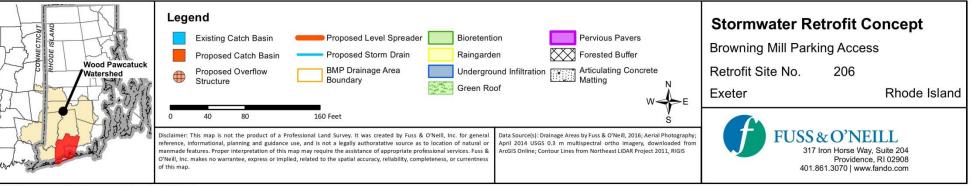




Image 4: View of trail leading from parking area to the pond. Note the evidence of erosion along the trail sides.







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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.

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



Image 3: View looking southwest down Nooseneck Hill Road where a proposed bioretention area could be located along the roadside.



Image 2: View of typical bioretention cell with mature plantings. (Image source: http://www.installitdirect.com/wp-content/uploads/2015/01/how-to-build-a-rain-garden.jpg)

PLANT BIORETENTION BASIN WITH A SELECTION OF TREES, SHRUBS, GRASSES, AND PERENNIALS FROM THE "RHODE ISLAND COASTAL PLANT GUIDE"

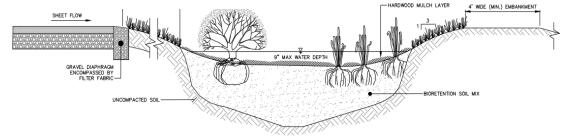
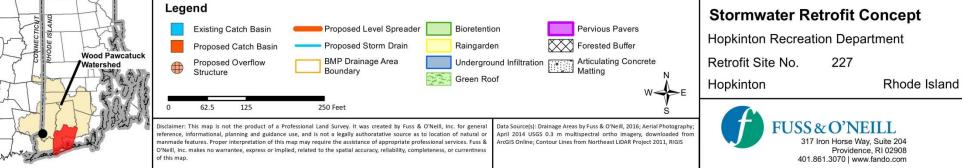


Image 4: Typical detail of a bioretention area.







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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, Rl. 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.



Image 2: View of lone catch basin near the south of access road and parking in Tuckertown Park.

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

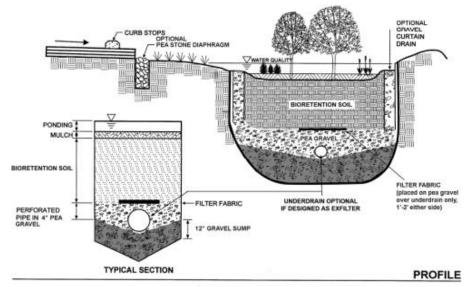
Estimated Pollutant Removal

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 3: Location of proposed bioretention area located adjacent to soccer fields at Tuckertown Park, South Kingstown, RI.

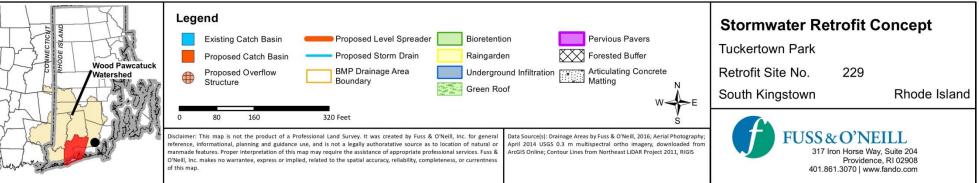


Adapted from MDE, 2000

Image 1: Profile view of a typical bioretention practice. (Image source: RI Stormwater Manual, 2010)







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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.

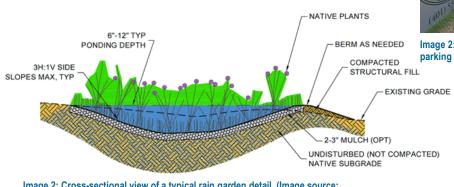


Image 2: Cross-sectional view of a typical rain garden detail. (Image source: http://www.5counties.org/docs/lu_planning/04_rain_garden.pdf



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.

Total Nitrogen ≈ **6.4 lbs/year** Total Suspended Solids ≈ **299.6 lbs/year** Bacteria (FC) ≈ **121.2 billion colonies/year**

Estimated Cost Raingardens: \$38,792

Raingardens

Retrofit Concept Summary

Recharge Volume: 1,373.8 ft³

Estimated Pollutant Removal

Total Phosphorus ≈ **0.3 lbs/year**

Total Drainage Area: 1.0 acres

Total Impervious Area: 0.8 acres

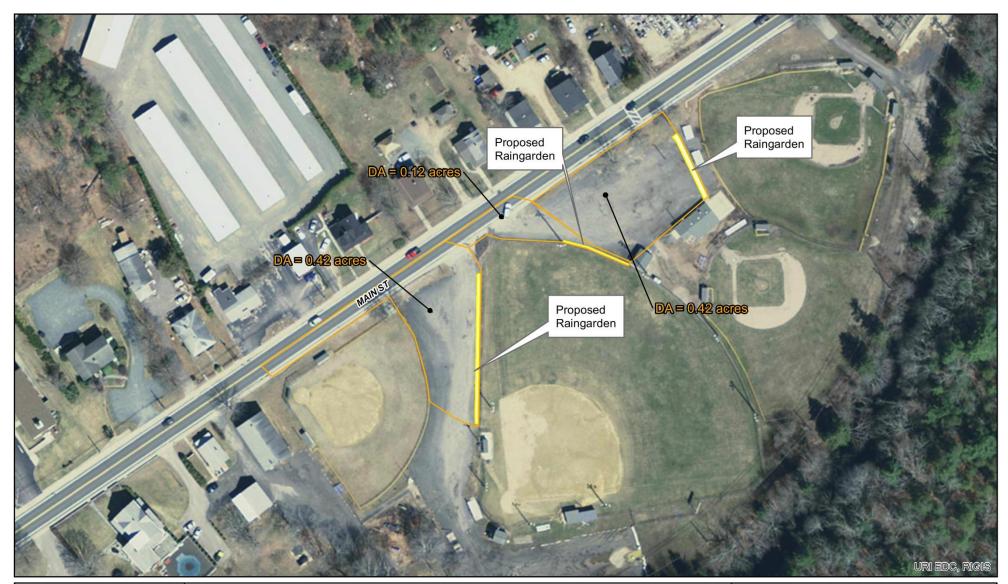
*Total Water Quality Volume: 2,289.6 ft³

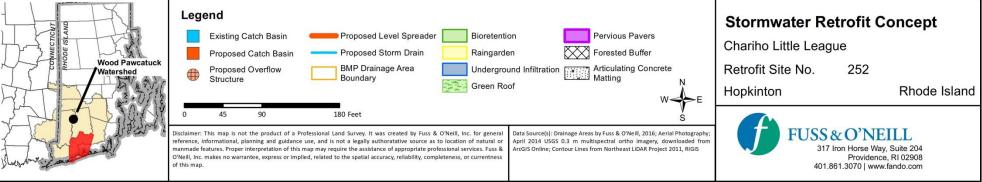
*Drainage area to western raingarden sized for 0.5" WQv due to space limitations.



Image 4: View of mature plantings in a rain garden or bioretention area. (Image source: http://www.installitdirect.com/wpcontent/uploads/2015/01/how-to-build-a-rain-garden.jpg)







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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

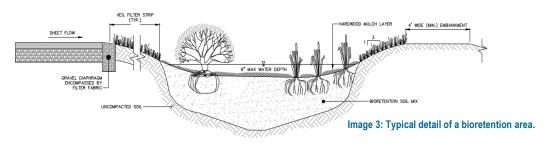
Install a bioretention/infiltration system at the northwestern corner of the main parking lot. The connectivity of the parking lot catch basins would need to be confirmed to determine if the catch basins could be rerouted to the new bioretention area. Sufficient space exists for a bioretention basin 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.



Image 1: View of proposed bioretention area looking north. Note area of observed erosion.



Image 1: View of proposed bioretention area looking east. Note area of observed erosion.



PLANT BIORETENTION BASIN MITH A SELECTION OF TREES

SHRUBS, GRASSES, AND PERENNIALS FROM THE "RHODE ISLAND COASTAL PLANT GUIDE"

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 Pollutant 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

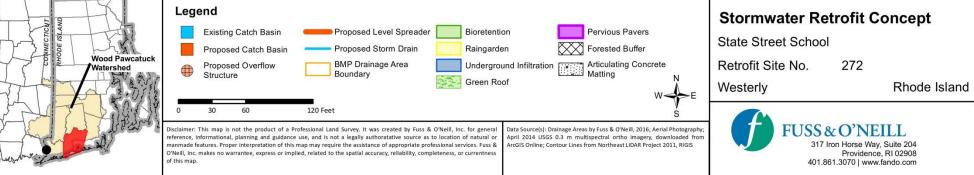
Estimated Cost Bioretention Area: \$68,204 Raingarden Area: \$15,099



Image 4: View of typical bioretention practice, post construction.







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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.



Image 1: Close-up view of proposed bioretention/infiltration area.

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 lbs/year** Bacteria (FC) ≈ **307.5 billion colonies/year**

Estimated Cost Bioretention Area: \$51,032



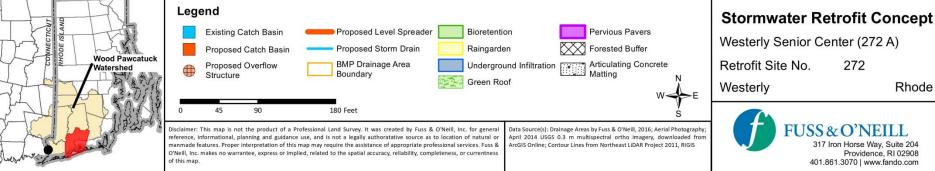
Image 2: Rendering of a typical bioretention area. (Image source: Johnson County Soil and Water District)



Image 3: View of proposed bioretention/infiltration area and some of the parking area that would drain to it.







Rhode Island

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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

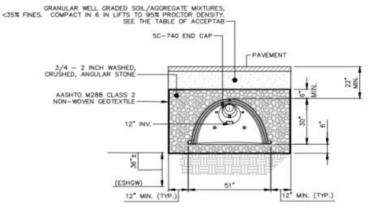
Install an underground infiltration system beneath the parking area along the former alignment of Park Avenue. The underground system could be sized to infiltrate runoff from the parking lot only or sized to infiltrate additional runoff from current infrastructure along the up-gradient end of Park Avenue, pending confirmation of the connectivity of the existing drainage system.



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/)



STORMTECH SC-740 CHAMBER INFILTRATION SYSTEM

NOT TO SCALE Image 3: Typical detail of an underground infiltration chamber.



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

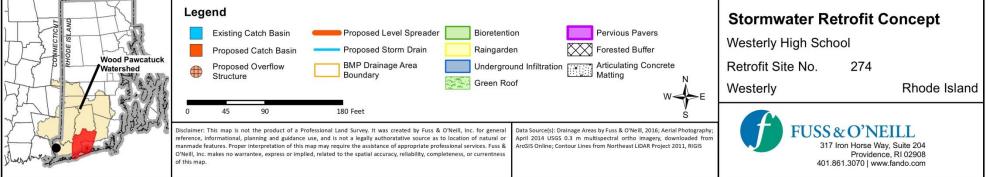
Estimated Pollutant Removal

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





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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.

Retrofit Concept Summary

Total Drainage Area: 0.5 acres Total Impervious Area: 0.4 acres Total Water Quality Volume: 1337.4 ft³ Recharge Volume: 802.5 ft³

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



Image 2: View of proposed bioretention area between Westerly Town Hall and Christ Episcopal Church looking north, Westerly, RI.

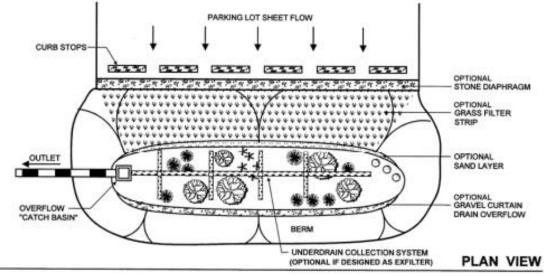


Image 3: Typical detail of a bioretention cell. (Image source: RI Stormwater Manual, 2010)





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 authoratative source as to location of natural or mammade features. Proper interpretation of this map may require the assistance of appropriate professional services. Fuss & O'Neill, Inc. makes no warrantee, express or implied, related to the spatial accuracy, reliability, completeness, or currentness of this map.

S Data Source(s): Drainage Areas by Fuss & O'Neill, 2016; Aerial Photography; April 2014 USGS 0.3 m multispectral ortho imagery, downloaded from ArcGIS Online; Contour Lines from Northeast LIDAR Project 2011, RIGIS

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Retrofit Site 276 – Tower Street School and Community Center Bioretention Tower Street, Westerly, Rhode Island

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.

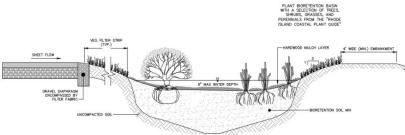


Image 1: Typical detail of a bioretention area.

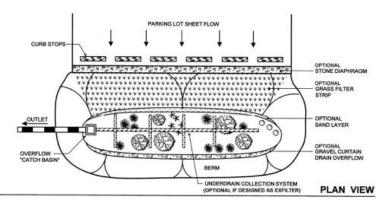


Image 2: Typical plan view of a bioretention area. (Image source: Rhode Island Stormwater manual, 2010)



Image 3: View of proposed bioretention area adjacent to parking lot at Tower Street School and Community Center. Direction of photo is looking northeast.

Retrofit Concept Summary

Total Drainage Area: 2.2 acres Total Impervious Area: 0.7 acres Total Water Quality Volume: 2,459.7 ft³ Recharge Volume: 860.9 ft³

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



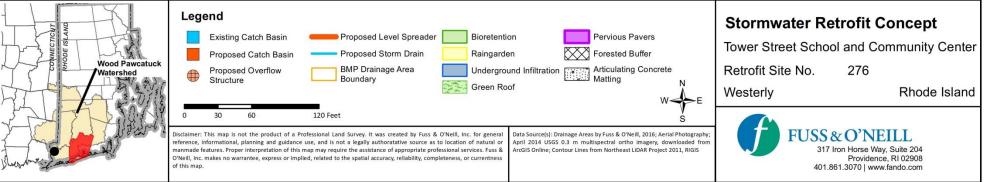
Image 4: View of typical bioretention cell with established plantings. (Image source: <u>http://www.installitdirect.com/wp-content/uploads/2015/01/how-to-build-a-rain-garden.jpg)</u>



Image 5: View of proposed bioretention area looking northwest.







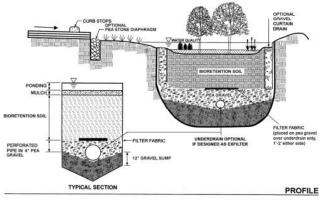
Retrofit Site 280 – Ashaway Elementary School Underground Infiltration and Bioretention Hillside Avenue, Ashaway, Rhode Island

Site Description

The proposed retrofit concept is located at the Ashaway Elementary School on Hillside Avenue in Ashaway, Rl. 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.



Adapted from MDE, 2000

Figure 2: Profile view of a typical bioretention practice. (Image source: RI Stormwater Manual, 2010)

Figure 1: View of typical linear infiltration chamber installation beneath a road, Mashpee, MA. (Image source: http://capecodwatershed.blogspot.com/)



Figure 3: Proposed location for bioretention practice located within courtyard at Ashaway Elementary School, Ashaway, RI.

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

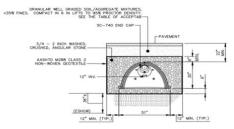
Bioretention Area

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

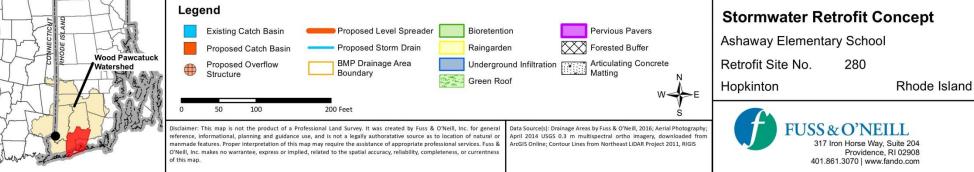
*Underground infiltration conceptually designed to treat 0.5" WQv due to size, space and cost considerations.



STORMTECH SC-740 CHAMBER INFILTRATION SYSTEM NOT TO SCALE Figure 4: Typical detail of an underground infiltration chamber.







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Retrofit Site 283 – West Kingston Elementary School Underground Infiltration and Bioretention Ministerial Road, South Kingstown, Rhode Island

Site Description

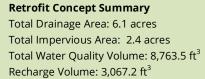
The proposed retrofit concept is located at the West Kingston Elementary School on Ministerial Road in West Kingston, RI. The site consists of a large parking lot adjacent to an elementary school building. There is a semicircular traffic pattern on the site. Two separate driveways lead from Ministerial 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.



Image 1: Location of proposed underground infiltration system in parking lot of Ashaway Elementary School, West Kingston, RI.



Estimated Pollutant Removal

Underground Infiltration Total Phosphorus ≈ **1.3 lbs/year** Total Nitrogen ≈ **15.6 lbs/year** Total Suspended Solids ≈ **516.3 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



Image 2: Proposed location for linear bioretention swale along driveway entrance/exit at Ashaway Elementary School.



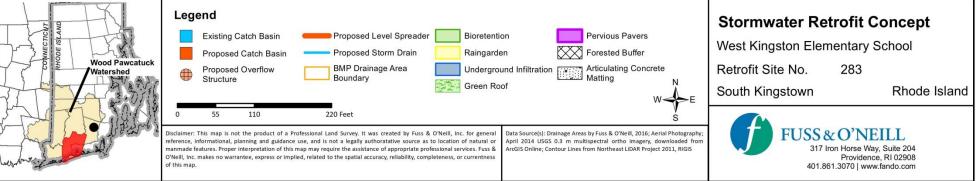
Image 3: View of tiered bioretention area (Image source: UMASS)



Image 4: Typical installation of underground infiltration system below an existing parking lot. (Image source: stormtech.com)







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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, Rl. 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.



Image 1: Proposed location of underground infiltration system. Note existing catch basin that could be used for overflow.

Retrofit Concept Summary

Drainage Area: 36.5 acres Impervious Area: 10.7 acres Water Quality Volume: 38,847.2 ft³ Recharge Volume: 3,884.7 ft³

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 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)

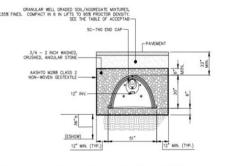
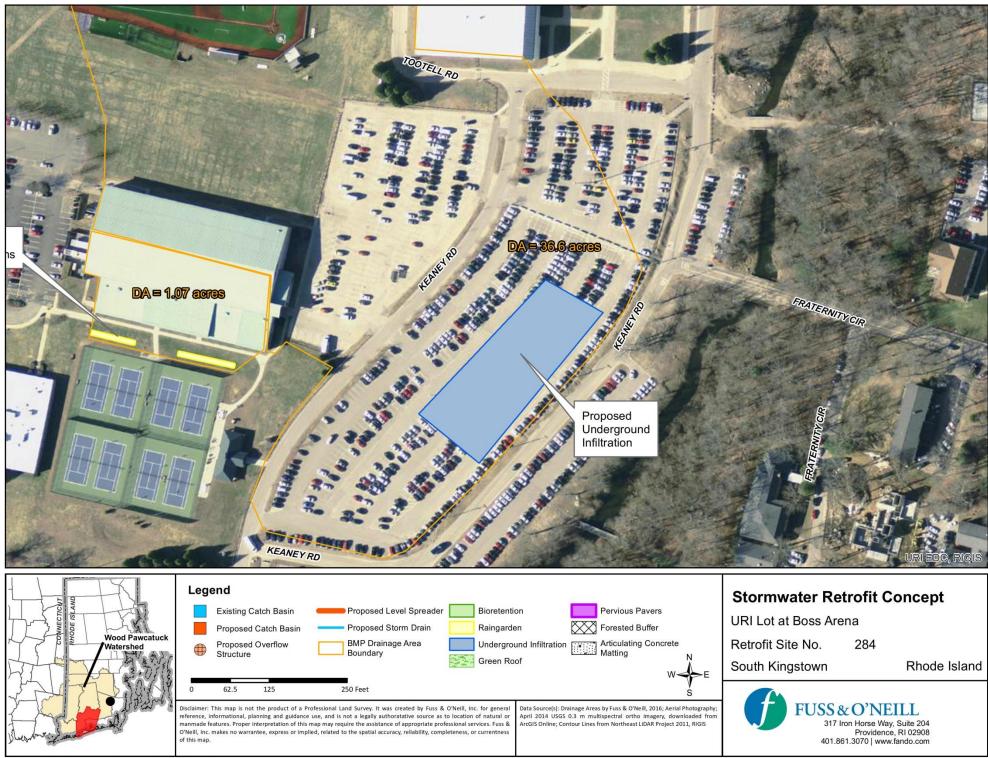




Image 4: Typical detail of an underground infiltration chamber





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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.



Image 1: Location of proposed bioretention basins in front of Richmond Elementary School, Richmond, RI.

PLANT BIORETENTION BASIN

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

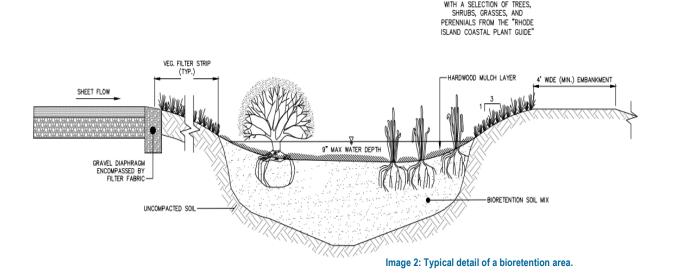
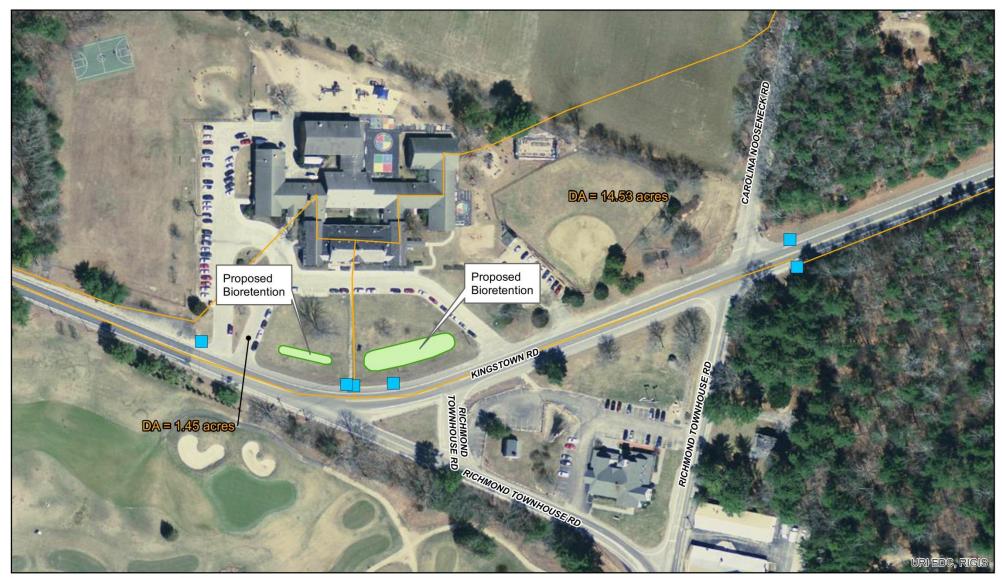
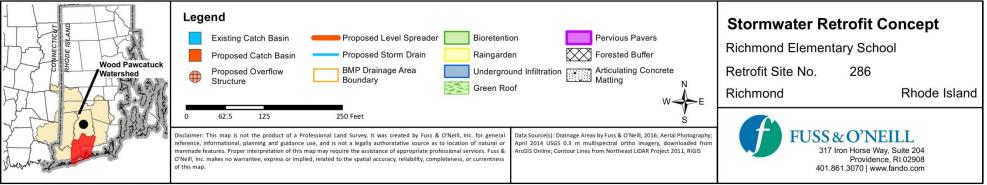


Image 3: View of typical bioretention area with mature plantings. (Image source: http://www.installitdirect.com/wp-content/uploads/2015/01/how-to-build-a-rain-garden.jpg)







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Attachment 9

Planning Level Cost Estimates

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Planning-Level Cost Estimates for Proposed Stormwater Best Management Practices Wood-Pawcatuck Watershed

					Cos	t per l	Impervic	us Acre Tr	eated	d		Cos	t			
вмр			Impervious Area	Impervious Area		Initi	ial Cost	Average				Initial Cost	A	age Annual		Total Cost
Number	BMP Name	BMP Type	Treated (sf)	Treated	Total Initial	Ann	nualized	Annual		Total	T-+	Annualized Over		intenance	Total Annual	(Over 20 Years)
			ireated (si)	(Acres)	Cost ¹		ver 20	Maintena		nnual Cost	Total Initial Cost ¹	20 Years ²	IVIG	Cost ³	Cost	(0001 20 10013)
							'ears ²	ce Cost ³								
21a	Vin Gormley Trailhead Parking	Underground Infiltration	82,172.1	1.9	\$ 52,080	\$	3,501	\$ 1,76			\$ 98,244.37 \$ 24,494.34	\$ 6,603.56 \$ 1,646.40	\$	3,333.30	\$ 9,936.87	\$ 198,737.30 \$ 49,568,73
21b	Vin Gormley Trailhead Parking Total	Bioretention	21,853.0	0.5	\$ 48,825	\$	3,282	\$ 1,65	9 \$	1	\$ 24,494.34 \$ 122,738.70	\$ 1,646.40	\$	832.03	\$ 2,478.44	\$ 49,568.73 \$ 248,306.03
	Total									L	\$ 122,738.70					\$ 246,306.03
41	URI Tennis Courts	Raingardens	39,365.5	0.9	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 44,123.57	\$ 2,965.80	\$	1,498.80	\$ 4,464.60	\$ 89,292.03
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50a	Wyoming Dam Fishing Access	Pervious Pavers	13,320.1	0.3	\$ 363,922	\$	24,461	\$ 3,31	9 \$	27,780	\$ 111,282.69	\$ 7,479.94	\$	1,014.82	\$ 8,494.77	\$ 169,895.32
50b	Wyoming Dam Fishing Access	ACM	3,522.4	0.1	\$ 363,922	\$	24,461	\$ 3,31	9 \$	27,780	\$ 29,428.30	\$ 1,978.04	\$	268.37	\$ 2,246.41	\$ 44,928.20
50c	Wyoming Dam Fishing Access	Bioretention	17,843.8	0.4	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 20,000.56	\$ 1,344.35	\$	679.39	\$ 2,023.74	\$ 40,474.76
											\$ 160,711.55					\$ 255,298.28
70	Exeter Town Animal Shelter	Disectortics	05 536 3	2.2	A (A A A A A A A A A A A A A A A A A A	<u> </u>		A 1 05		1.0.10	A 107 000 15	A B 1 1 0 B 0 B	<u>^</u>	0.007.45	• • • • • • • • •	
73	Exeter Town Animal Shelter	Bioretention	95,536.2	2.2	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 107,083.45	\$ 7,197.69	\$	3,637.45	\$ 10,835.14	\$ 216,702.77
93a	US Post Office in Westerly	Bioretention	9,284.5	0.2	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 10,406.65	\$ 699.49	\$	353.50	\$ 1,052.99	\$ 21,059.74
93b	US Post Office in Westerly	Bioretention	11,193.0		\$ 48,825		3,282	\$ 1,65							\$ 1,269.44	\$ 25,388.79
93c	US Post Office in Westerly	Bioretention	23,133.8		\$ 48,825		3,282	\$ 1,65		4,940	\$ 25,929.89	\$ 1,742.90		880.80	\$ 2,623.69	\$ 52,473.83
93d	US Post Office in Westerly	Bioretention	20,248.5	0.5	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 22,695.84	\$ 1,525.52	\$	770.94	\$ 2,296.46	\$ 45,929.14
											\$ 71,578.22					\$ 144,851.50
102	United Methodist Church	Bioretention	32,408.8	0.7	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 36,325.97	\$ 2,441.68	\$	1,233.93	\$ 3,675.61	\$ 73,512.19
	4								_			-				-
108a	Bradford School ⁴	Green roof	4,823.6	0.1					\$		\$ -	\$-	\$	-	\$ -	\$ -
108b	Bradford School	Underground Infiltration	47,089.0	1.1	\$ 52,080	\$	3,501	\$ 1,76	7 \$	5,268	\$ 56,299.22	\$ 3,784.19	\$	1,910.16	\$ 5,694.35	\$ 113,887.00
114a	US Post Office in Ashaway/Hopkinton	Underground Infiltration	30,920.9	0.7	\$ 52,080	\$	3,501	\$ 1,76	7 \$	5,268	\$ 36,968.82	\$ 2,484.89	\$	1,254.30	\$ 3,739.19	\$ 74,783.76
114b	US Post Office in Ashaway/Hopkinton	Underground Infiltration	204,831.1		\$ 52,080		3,501	\$ 1,76			\$ 244,894.43	\$ 16,460.75		-	\$ 24,769.69	\$ 495,393.87
		Ŭ								.,	\$ 281,863.24		·		, ,	\$ 570,177.63
										ľ						
125a	Trinity Lutheran Church	Raingardens	1,144.5	0.0	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 1,282.85	\$ 86.23	\$	43.58	\$ 129.80	\$ 2,596.08
125b	Trinity Lutheran Church	Raingardens	2,543.8	0.1	\$ 48,825		3,282	\$ 1,65			\$ 2,851.30	\$ 191.65		96.85	\$ 288.51	\$ 5,770.11
125c	Trinity Lutheran Church	Raingardens	3,918.8		\$ 48,825		3,282	\$ 1,65					\$	-	\$ 444.45	\$ 8,888.99
125d	Trinity Lutheran Church	Bioretention	28,798.3		\$ 48,825		3,282	\$ 1,65			\$ 32,279.11	\$ 2,169.66	\$	1,096.47	\$ 3,266.13	\$ 65,322.63
125e	Trinity Lutheran Church	Bioretention	17,818.9	0.4	\$ 48,825	\$	3,282	\$ 1,65	9 \$	1,010	\$ 19,972.68	\$ 1,342.48	\$	678.44	\$ 2,020.92	\$ 40,418.33
										-	\$ 60,778.42					\$ 122,996.15
129	St Mary's Catholic Church	Bioretention	38,592.5	0.9	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 43.257.09	\$ 2,907.56	\$	1,469.37	\$ 4,376.93	\$ 87,538.56
125		Biorecention	50,552.5	0.5	\$ 10,0 <u>2</u> 0	Ţ	0,202	φ 1,00	Ţ	1,010	•,201100	φ 2,001.00	Ŷ	1,100.01	φ 1,010.00	• •••,•••••
139a	Center for the Arts	Bioretention	82,271.8	1.9	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 92,215.77	\$ 6,198.35	\$	3,132.42	\$ 9,330.77	\$ 186,615.33
139b	Center for the Arts	Bioretention	26,020.6	0.6	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 29,165.68	\$ 1,960.39	\$	990.71	\$ 2,951.10	\$ 59,022.05
											\$ 121,381.45					\$ 245,637.38
157	Richmond Police Department	Underground Infiltration	34,284.4	0.8	\$ 52,080	\$	3,501	\$ 1,76	7\$	5,268	\$ 40,990.14	\$ 2,755.18	\$	1,390.74	\$ 4,145.92	\$ 82,918.45
450		Dia 11			¢ 10.0		0.000	e		4.0.10	* *****	• • • • • • • •	¢	4.000.45	¢ 0.000.00	
159	RI State Police	Bioretention	34,680.6	0.8	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 38,872.37	\$ 2,612.83	\$	1,320.43	\$ 3,933.26	\$ 78,665.29
173a	Exeter Town Hall	Bioretention	71,006.5	1.6	\$ 48,825	\$	3,282	\$ 1,65	9 \$	4,940	\$ 79,588.93	\$ 5,349.63	\$	2,703.51	\$ 8,053.13	\$ 161,062.62
173b	Exeter Town Hall	Raingardens	20,681.3	0.5	\$ 48,825		3,282	\$ 1,65		-	\$ 23,181.05	\$ 1,558.13		787.42	\$ 2,345.55	\$ 46,911.06
									_		\$ 102,769.98		***			\$ 207,973.69

					(Cost p	er Impervi	ous A	cre Trea	ated			Cost	t			
				Impervious			nitial Cost		erage	T							
BMP Number	BMP Name	BMP Type	Impervious Area	Area	Total Init	ial A	nnualized	A	nnual	1	Total		Initial Cost		age Annual	Total Annual	Total Cost
Number			Treated (sf)	Treated	Cost ¹		Over 20	Mai	intenan	Ann	ual Cost	Total Initial Cost ¹	Annualized Over		intenance	Cost	(Over 20 Years)
				(Acres)			Years ²	ce	Cost ³				20 Years ²		Cost ³		
185a	Wheeler High/Middle School	Bioretention	35,280.6	0.8	\$ 48,8	25 \$	3,282	\$	1,659	\$	4,940	\$ 39,544.84	\$ 2,658.03	\$	1,343.27	\$ 4,001.31	\$ 80,026.15
185c	Wheeler High/Middle School	Bioretention	36,884.4	0.8	\$ 48,8	25 \$	\$ 3,282	\$	1,659	\$	4,940	\$ 41,342.48	\$ 2,778.86	\$	1,404.34	\$ 4,183.20	\$ 83,664.00
185d	Wheeler High/Middle School	Bioretention	30,587.3	0.7	\$ 48,8	25 \$	5 3,282	\$	1,659	\$	4,940	\$ 34,284.33	\$ 2,304.45	\$	1,164.58	\$ 3,469.03	\$ 69,380.56
185e	Wheeler High/Middle School	Bioretention	17,065.3	0.4	\$ 48,8	25 \$	5 3,282	\$	1,659	\$	4,940	\$ 19,127.96	\$ 1,285.70	\$	649.75	\$ 1,935.44	\$ 38,708.90
												\$ 134,299.61					\$ 271,779.62
191a	West Vine Street School	Raingardens	10,137.8	0.2	\$ 48,8				1,659	\$	4,940	\$ 11,363.16	\$ 763.78	\$	385.99	\$ 1,149.77	\$ 22,995.41
191b	West Vine Street School	Raingardens	9,560.5	0.2	\$ 48,8	25 \$	3,282	\$	1,659	\$	4,940	\$ 10,716.03	\$ 720.29	\$	364.01	\$ 1,084.29	\$ 21,685.83
											ŀ	\$ 22,079.19					\$ 44,681.24
194a	North Stonington Elementary and Administration Buildings	Bioretention	19,167.7	0.4	\$ 48,8				1,659	\$	4,940	\$ 21,484.44	\$ 1,444.09	\$	729.79	\$ 2,173.88	\$ 43,477.66
194b	North Stonington Elementary and Administration Buildings	Bioretention	31,255.9	0.7	\$ 48,8				1,659	\$	1	\$ 35,033.75	\$ 2,354.82		1,190.04	\$ 3,544.86	\$ 70,897.14
194c	North Stonington Elementary and Administration Buildings	Bioretention	17,646.4	0.4	\$ 48,8				1,659	\$	1	\$ 19,779.28	\$ 1,329.48		671.87	\$ 2,001.35	\$ 40,026.96
194d	North Stonington Elementary and Administration Buildings	Bioretention	25,250.8	0.6	\$ 48,8				1,659	\$	1	\$ 28,302.78				\$ 2,863.79	\$ 57,275.81
185b	Wheeler High/Middle School	Bioretention	6,320.4	0.1	\$ 48,8				1,659	\$	4,940	\$ 7,084.29	\$ 476.18	\$	240.64	\$ 716.82	\$ 14,336.35
194e	North Stonington Elementary and Administration Buildings	Bioretention	21,060.9	0.5	\$ 48,8	25 \$	\$ 3,282	\$	1,659	\$	4,940	\$ 23,606.50	\$ 1,586.73	\$	801.87	\$ 2,388.60	\$ 47,772.03
194f	North Stonington Elementary and Administration Buildings	Bioretention	66,506.3	1.5	\$ 48,8	25 \$	\$ 3,282	\$	1,659	\$	4,940	\$ 74,544.72	\$ 5,010.58	\$	2,532.16	\$ 7,542.74	\$ 150,854.75
194g	North Stonington Elementary and Administration Buildings	Bioretention	2,205.9	0.1	\$ 48,8	25 \$	\$ 3,282	\$	1,659	\$	4,940	\$ 2,472.56	\$ 166.19	\$	83.99	\$ 250.18	\$ 5,003.67
												\$ 212,308.32					\$ 429,644.38
206a	Browning Mill Pond Parking Access	Forest Buffer	15,095.0	0.3	\$ 35,8	05 \$	\$ 2,407	\$	1,312	\$	3,719	\$ 12,407.66	\$ 833.99	\$	454.77	\$ 1,288.76	\$ 25,775.17
206b	Browning Mill Pond Parking Access	Forest Buffer	7,772.6	0.2	\$ 35,8	05 \$	5 2,407	\$	1,312	\$	3,719	\$ 6,388.82	\$ 429.43	\$	234.16	\$ 663.59	\$ 13,271.87
206d	Browning Mill Pond Parking Access	Bioretention	11,389.9	0.3	\$ 48,8	25 \$	5 3,282	\$	1,659	\$	4,940	\$ 12,766.61	\$ 858.12	\$	433.66	\$ 1,291.78	\$ 25,835.54
					\$ 35,8	05						\$ 31,563.08					\$ 64,882.59
227	Hopkinton Recreation Department	Bioretention	64,336.4	1.5	\$ 48,8	25 \$	3,282	\$	1,659	\$	4,940	\$ 72,112.59	\$ 4,847.10	\$	2,449.55	\$ 7,296.65	\$ 145,932.91
229	Tuckertown Park	Bioswales	150,484.1	3.5	\$ 48,8	25 \$	\$ 3,282	\$	1,659	\$	4,940	\$ 168,672.76	\$ 11,337.46	\$	5,729.54	\$ 17,067.00	\$ 341,339.91
252a	Chariho Little League	Raingardens	15,894.4	0.4	\$ 48,8	25 \$	3,282	\$	1,659	\$	4,940	\$ 17,815.48	\$ 1,197.48	\$	605.16	\$ 1,802.64	\$ 36,052.86
252b	Chariho Little League	Raingardens	4,446.8	0.1	\$ 48,8	25 \$	5 3,282	\$	1,659	\$	4,940	\$ 4,984.23	\$ 335.02	\$	169.31	\$ 504.32	\$ 10,086.49
252c	Chariho Little League	Raingardens	14,267.8	0.3	\$ 48,8	25 \$	5 3,282	\$	1,659	\$	4,940	\$ 15,992.26	\$ 1,074.93	\$	543.23	\$ 1,618.16	\$ 32,363.24
												\$ 38,791.98					\$ 78,502.60
272a	Westerly Senior Center	Bioretention	45,528.6	1.0	\$ 48,8	25 \$	3,282	\$	1,659	\$	4,940	\$ 51,031.49	\$ 3,430.12	\$	1,733.46	\$ 5,163.57	\$ 103,271.47
272b	State Street School	Raingardens	13,470.9	0.3	\$ 48,8		, .		1,659	\$.,	\$ 15,099.10		\$		\$ 1,527.79	\$ 30,555.77
272c	State Street School	Bioretention	60,849.1	1.4	\$ 48,8	25 \$	3,282	\$	1,659	\$	4,940	\$ 68,203.75	\$ 4,584.36	\$	2,316.77	\$ 6,901.13	\$ 138,022.64
											ŀ	\$ 83,302.85					\$ 168,578.42
274	Westerly High School	underground infiltration	24,572.8	0.6	\$ 52,0	80 \$	\$ 3,501	\$	1,767	\$	5,268	\$ 29,379.11	\$ 1,974.74	\$	996.79	\$ 2,971.53	\$ 59,430.63
275	Westerly Town Hall	Bioretention	16,049.2	0.4	\$ 48,8	25 \$	3,282	\$	1,659	\$	4,940	\$ 17,989.05	\$ 1,209.15	\$	611.06	\$ 1,820.21	\$ 36,404.11
										Ė				Ė			
276	Tower Street School and Community Center	Bioretention	29,516.5	0.7	\$ 48,8	25 \$	3,282	\$	1,659	\$	4,940	\$ 33,084.10	\$ 2,223.77	\$	1,123.81	\$ 3,347.58	\$ 66,951.68
280a	Ashaway Elementary School	Underground Infiltration	172,979.9	4.0	\$ 52,0	80 \$	3,501	\$	1,767	\$	5,268	\$ 206,813.42	\$ 13,901.11	\$	7,016.90	\$ 20,918.01	\$ 418,360.29
280b	Ashaway Elementary School	Bioretention	19,083.5	0.4	\$ 48,8				1,659	\$	4,940	\$ 21,390.07	\$ 1,437.75		726.59	\$ 2,164.33	\$ 43,286.69
	· ·						,	Ì	,			\$ 228,203.50	. ,	Ì		. ,	\$ 461,646.98
283a	West Kingstown Elementary	Underground Infiltration	56,028.9	1.3	\$ 52,0	80 \$	3,501	\$	1,767	\$	5,268	\$ 66,987.69	\$ 4,502.63	\$	2,272,80	\$ 6,775.43	\$ 135,508.56
283b	West Kingstown Elementary	Bioretention	49,133.2	1.1	\$ 48,8				1,659	\$	4,940	\$ 55,071.80	\$ 3,701.69			\$ 5,572.39	\$ 111,447.77
	,		.,														

					Co	t per Impe	rviou	s Acre Trea	ted			Cost	t			
BMP Number	BMP Name	ВМР Туре	Impervious Area Treated (sf)	Impervious Area Treated (Acres)	Total Initial Cost ¹	Initial C Annuali Over 2 Years	ed	Average Annual Maintenan ce Cost ³	Total Annual C	ost	Total Initial Cost ¹	Initial Cost Annualized Over 20 Years ²	Average Annua Maintenance Cost ³	l Total Annual Cost	(0	Total Cost Over 20 Years)
284	URI Lot at Boss Arena	Underground Infiltration	466,166.7	10.7	\$ 52,080	\$ 3,	501	\$ 1,767	\$ 5,2	68	\$ 557,345.36	\$ 37,462.36	\$ 18,909.99	\$ 56,372.35	\$	1,127,446.95
286a	Richmond Elementary School	Bioretention	31,566.9	0.7	\$ 48,825	\$ 3,2	282	\$ 1,659	\$ 4,9	40	\$ 35,382.32	\$ 2,378.25	\$ 1,201.88	\$ 3,580.13	\$	71,602.55
286b	Richmond Elementary School	Bioretention	136,425.7	3.1	\$ 48,825	\$ 3,2	282	\$ 1,659	\$ 4,9	40	\$ 152,915.19	\$ 10,278.30	\$ 5,194.28	\$ 15,472.58	\$	309,451.62
											\$ 188,297.52				\$	381,054.16
									Total:		\$ 3,279,293.39			Total:	\$	6,566,260.90

NOTES

Inflation Rate- based on the RSMeans Historical Cost Index. January 1, 2016. http://rsmeansonline.com/References/CCI/3-Historical%20Cost%20Indexes/1-Historical%20Cost%20Indexes.PDF 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.

¹Total 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 R.S. 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



Attachment 10

Pollutant Loading and Reduction Calculations

Pollutant Loading and Removal Calculations – Wood-Pawcatuck Watershed

			Pollutant I	.oad - L (lbs)		R	emoval Rate	es - Decima	8	Load	Reduction	- L (lbs)	Load Reduction F
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies
Site21	Underground Infiltration	48.51	3.87	1194.08	531.95	0.65	0.65	0.90	0.95	31.5	2.5	1,074.7	505.36
Site 21b	Bioretention	15.51	1.21	387.96	88.17	0.55	0.30	0.90	0.70	8.5	0.4	349.2	61.72
			Pollutant	oad - L (lbs)		R	emoval Rate	es - Decima	1%	Load	Reduction	- L (lhs)	Load Reduction I
Site		TN	ТР	TSS	FC	TN	ТР	TSS	FC	TN	ТР	TSS	(Billion Colonies
41	Raingardens	16.63	1.35	395.89	380.81	0.55	0.30	0.90	0.70	9.15	0.40	356.30	266.57
	-			.oad - L (lbs)			emoval Rate		-		Reduction	. ,	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonie
50a	Pervious Pavers	6.78	0.86	274.29	100.51	0.90	0.40	0.40	0.95	6.10	0.34	109.72	95.49
50c	Bioretention	7.70	0.67	200.00	168.26	0.55	0.30	0.90	0.70	4.23	0.20	180.00	117.78
			Pollutant I	Load - L (lbs)		R	emoval Rate	es - Decima	۱%	Load	Reduction	- L (lbs)	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonie
73	Bioretention	60.24	9.04	3004.37	101.05	0.55	0.30	0.90	0.70	33.13	2.71	2703.93	70.74
									/			. (11	
	-			.oad - L (lbs)			emoval Rate		-	Load	Load Reduction		
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonie
93a	Bioretention	3.88	0.31	92.36	89.03	0.55	0.30	0.90	0.70	2.14	0.09	83.12	62.32
93b	Bioretention	4.70	0.38	111.75	107.72	0.55	0.30	0.90	0.70	2.58	0.11	100.58	75.40
93c	Bioretention	15.48	2.13	698.40	51.26	0.55	0.30	0.90	0.70	8.51	0.64	628.56	35.88
93d	Bioretention	13.31	1.10	208.32	137.37	0.55	0.30	0.90	0.70	7.32	0.33	187.49	96.16
									Total	20.55	1.18	999.74	269.76
			Pollutant I	.oad - L (lbs)		R	emoval Rate	es - Decima	1%	Load	Reduction	- L (lbs)	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonie
102	Bioretention	24.52	3.73	642.96	507.96	0.55	0.30	0.90	0.70	13.49	1.12	578.66	355.57
								.		-		. (11	
				Load - L (lbs)			emoval Rate	*			Reduction	()	Load Reduction
Site	Crear Deef	TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonie
108a	Green Roof	2.05	0.17	48.66	46.90	0.90	0.30	0.55	0.70	1.84	0.05	26.76	32.83
108b	Underground Infiltration	19.75	1.60	469.79	452.83	0.65	0.65	0.90	0.95	12.84	1.04	422.81	430.19
			Pollutant I	Load - L (lbs)		R	emoval Rate	es - Decima	1%	Load	Reduction	- L (lbs)	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonie
114a	Underground Infiltration	23.00	2.67	404.70	363.06	0.65	0.65	0.90	0.95	14.95	1.73	364.23	344.91
114b	Underground Infiltration	185.76	20.98	2877.92	2731.35	0.65	0.65	0.90	0.95	120.75	13.63	2590.13	2594.79

Pollutant Loading and Removal Calculations – Wood-Pawcatuck Watershed

			Pollutant L	.oad - L (lbs)		R	emoval Rate	es - Decimal	%	Load	Reduction ·	L (lbs)	Load Reduction FC
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies)
125a	Raingardens	0.47	0.04	11.27	10.87	0.55	0.30	0.90	0.70	0.26	0.01	10.15	7.61
125b	Raingardens	1.06	0.09	25.15	24.24	0.55	0.30	0.90	0.70	0.58	0.03	22.63	16.97
125c	Raingardens	1.64	0.13	39.02	37.62	0.55	0.30	0.90	0.70	0.90	0.04	35.12	26.33
125d	Bioretention	21.85	1.98	424.87	286.99	0.55	0.30	0.90	0.70	12.02	0.59	382.38	200.89
125e	Bioretention	12.33	1.64	448.50	45.98	0.55	0.30	0.90	0.70	6.78	0.49	403.65	32.18
								Total	Raingarden	1.74	0.08	67.90	50.91
								Total B	ioretention	18.80	1.09	786.04	233.08
											_	-	
			Pollutant L	.oad - L (lbs)			emoval Rate				Reduction ·	. ,	Load Reduction FC
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies)
129	Bioretention	22.23	2.64	676.56	300.15	0.55	0.30	0.90	0.70	12.23	0.79	608.90	210.11
			Dollutant	and I (lbs)		D	amousl Data	. Desimal	0/	Lood	Doduction	L (lbs)	Load Doduction FC
Cita		TN		.oad - L (lbs)			emoval Rate				Reduction -	1 1	Load Reduction FC
Site 139a	Discretantian	TN 64.20	TP 9.71	TSS 1625.40	FC 1296.54	TN 0.55	TP 0.30	TSS 0.90	FC 0.70	TN 35.31	TP 2.91	TSS 1462.86	(Billion Colonies) 907.58
139a 139b	Bioretention	64.20 10.97	9.71 0.89	260.91	251.42	0.55	0.30	0.90	0.70	6.03	0.27	234.82	175.99
1390	Bioretention	10.97	0.89	260.91	251.42	0.55	0.30	0.90	Total ¹		-		
									TOtal	22.63	1.64	922.36	602.55
			Pollutant L	.oad - L (lbs)		R	emoval Rate	es - Decimal	%	Load	Reduction ·	L (lbs)	Load Reduction FC
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies)
157	Underground Infiltration	14.38	1.17	341.98	329.64	0.65	0.65	0.90	0.95	9.35	0.76	307.79	313.16
			Pollutant L	.oad - L (lbs)			emoval Rate			Load	Reduction ·	()	Load Reduction FC
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies)
159	Bioretention	26.85	4.45	975.47	355.38	0.55	0.30	0.90	0.70	14.77	1.33	877.92	248.76
			Dellutent	.oad - L (lbs)		D	emoval Rate	. Desimal	0/	اممعا	Reduction ·	L (lla a)	
Site		TN	TP	TSS	FC	TN		TSS - Decimal	% FC	TN	TP	TSS	Load Reduction FC (Billion Colonies)
	Bioretention	38.12	4.55	1330.18	437.87	0.55	0.30	0.90	FC 0.70	20.96	1.36	1197.16	(Billion Colonies) 306.51
173a	Bioretention												
173b		12.16	0.96	232.37	128.93	0.55	0.30	0.90	0.70	5.55	0.24	173.58	74.91
			Pollutant L	.oad - L (lbs)		R	emoval Rate	es - Decimal	%	Load	Reduction -	L (lbs)	Load Reduction FC
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies)
185a	Bioretention	4.84	0.68	218.79	33.72	0.55	0.30	0.90	0.70	2.66	0.20	196.91	23.60
185c	Bioretention	17.39	1.87	578.89	275.83	0.55	0.30	0.90	0.70	9.57	0.56	521.00	193.08
185d	Bioretention	13.99	1.13	332.76	320.75	0.55	0.30	0.90	0.70	7.70	0.34	299.48	224.53
185e	Bioretention	7.27	0.59	172.99	166.75	0.55	0.30	0.90	0.70	4.00	0.18	155.69	116.72
									Total	12.23	0.76	717.91	216.68
Site 185 (185a&c)													
Site 185 (185a&c) Site 185A (185d&e)									Total	11.70	0.52	455.17	341.25

Pollutant Loading and Removal Calculations – Wood-Pawcatuck Watershed

			Pollutant L	.oad - L (lbs)		R	emoval Rate	es - Decima	۱%	Load	Load Reduction F		
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies)
191a	Raingardens	4.33	0.35	102.88	99.17	0.55	0.30	0.90	0.70	2.38	0.11	92.59	69.42
191b	Raingardens	4.00	0.32	95.17	91.73	0.55	0.30	0.90	0.70	2.20	0.10	85.65	64.21
		•	•						Total	4.58	0.20	178.24	133.63
			Pollutant I	.oad - L (lbs)		R	emoval Rate	es - Decima	1%	Load	Reduction -	I (lbs)	Load Reduction F
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	ТР	TSS	(Billion Colonies)
194a	Bioretention	8.25	0.67	196.11	189.04	0.55	0.30	0.90	0.70	4.54	0.20	176.50	132.33
194b	Bioretention	13.30	1.08	316.32	304.90	0.55	0.30	0.90	0.70	7.31	0.20	284.69	213.43
194c	Bioretention	7.60	0.62	180.78	174.26	0.55	0.30	0.90	0.70	4.18	0.18	162.70	121.98
194d	Bioretention	14.20	1.88	600.54	120.80	0.55	0.30	0.90	0.70	7.81	0.56	540.49	84.56
185b	Bioretention	2.70	0.22	64.13	61.81	0.55	0.30	0.90	0.70	1.48	0.07	57.72	43.27
194e	Bioretention	9.06	0.73	215.39	207.62	0.55	0.30	0.90	0.70	4.98	0.22	193.85	145.33
194f	Bioretention	28.31	2.30	673.38	649.08	0.55	0.30	0.90	0.70	15.57	0.69	606.05	454.36
194g	Bioretention	1.09	0.09	25.81	24.88	0.55	0.30	0.90	0.70	0.60	0.03	23.23	17.41
20.8	Biorecention	1.05	0105	20101	1.00	0.00	0.00	0.50	Total ²	47.96	2.34	2102.93	1255.95
									Total	47.90	2.34	2102.93	1255.95
			Pollutant I	.oad - L (lbs)		R	emoval Rate	es - Decima	1%	Load	Reduction -	(lhs)	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	ТР	TSS	(Billion Colonies
206a	Forested Buffer ³	6.10	0.39	178.77	74.05		0.50	0.65	10		0.19	116.20	-
	Forested Buffer ³									-			
206b		3.10	0.20	92.20	40.01	0.55	0.50	0.65	0.70	-	0.10	59.93	-
206d	Bioretention	5.95	0.74	262.38	30.58	0.55	0.30	0.90	0.70	3.27	0.22	236.14	21.41
			Pollutant L	.oad - L (lbs)		R	emoval Rate	es - Decima	1%	Load	Reduction -	L (lbs)	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies
227	Bioretention	58.77	7.67	1352.64	890.03	0.55	0.30	0.90	0.70	32.32	2.30	1217.37	623.02
				.oad - L (lbs)	-		emoval Rate				Reduction -	. ,	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies
229	Bioretention	118.58	15.91	3067.86	2038.21	0.55	0.30	0.90	0.70	65.22	4.77	2761.07	1426.75
			Pollutant L	.oad - L (lbs)		R	emoval Rate	es - Decima	۱%	Load	Reduction -	L (lbs)	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonies
252a	Raingardens	6.56	0.47	185.07	99.38	0.55	0.30	0.90	0.70	3.61	0.14	166.56	69.57
252b	Raingardens	2.27	0.24	64.19	36.43	0.55	0.30	0.90	0.70	1.25	0.07	57.77	25.50
252c	Raingardens	5.71	0.36	167.29	74.75	0.55	0.30	0.90	0.70	3.14	0.11	150.56	52.32
									Total	6.42	0.27	299.62	121.23
		·											
				.oad - L (lbs)			emoval Rate				Reduction -	()	Load Reduction
Site		TN	TP	TSS	FC	TN	TP	TSS	FC	TN	TP	TSS	(Billion Colonie
272a	Bioretention	19.16	1.55	455.74	439.30	0.55	0.30	0.90	0.70	10.54	0.47	410.17	307.51
0 - 0 -	Raingardens	5.68	0.46	135.06	130.19	0.55	0.30	0.90	0.70	3.12	0.14	121.55	91.13
272b 272c	Bioretention	26.48	2.26	633.81	603.60	0.55	0.30	0.90	0.70	14.57	0.68	570.43	422.52