



# Final Report

**NEI Job Code:** 318-002  
**Project Code:** 2016-007  
**Contractor:** City of Warwick, RI  
**Contact:** Eric J. Earls, P.E., City Engineer  
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Stormwater Management: Suburban Parkway, Warwick, RI

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**Title of Project: Stormwater Management: Suburban Parkway, Warwick, RI**

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## **Executive Summary**

The City of Warwick and Oakland Beach Association have had this project on the radar since it was referenced on the 2010 Oakland Beach Association Master Plan. In 2015, the City, using Community Development Block Grant funding, hired a design group to provide biddable construction documents for stormwater treatment facilities within the roadway median along Suburban Parkway and Strand Avenue.

The City of Warwick stormwater management program has prioritized the Oakland Beach area due to the highly sensitive nature of the area. The City submitted a full proposal to construct stormwater best management practices along Suburban Parkway and Strand Avenue. These roads and the surrounding subwatersheds discharge surface runoff to Warwick Cove (east) and Brushneck Cove (west).

This stormwater management project consists of constructing a bioretention area within the roadway median along Suburban Parkway and Strand Avenue. The project will involve the installation of a series of bioretention basins and vegetated swales within the medians of these two roadways. The total project will be approximately 2,000 feet long. Suburban Parkway and Strand Avenue currently have closed drainage systems that are regularly overburdened during even moderate storm events. This project will increase the capacity of the stormwater system, increase infiltration, and improve water quality.

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# 1 Project Synopsis

This stormwater management project consists of constructing a bioretention area within the roadway median along Suburban Parkway and Strand Avenue. The project will involve the installation of a series of bioretention basins and vegetated swales within the medians of these two roadways. The total project will be approximately 2,000 feet long. Suburban Parkway and Strand Avenue currently have closed drainage systems that are regularly overburdened during even moderate storm events. This project will increase the capacity of the stormwater system, increase infiltration, and improve water quality.

# 2 Tasks Completed

The project consisted of the following tasks:

- Task 1: Excavation and grading, \$90,000



Figure 1. This photo shows one of the bioretention locations with top soil removed and rough grading to sub grade material.

- Task 2: Installation of bioretention media/stone, \$45,000



Figure 2. Bio-Retention basin with bio-retention media and stone erosion controls.

- Task 3: Install/adjust drainage structures, \$25,000



Figure 3. Existing drainage structure prior to being adjusted to meet new grades.

- Task 4: Furnish and install plantings, \$14,000



- Task 5: Quarterly Reporting, \$4,000
- Task 6: Final Report, \$2,000

### 3 Methodology

- Task 1: Excavation and grading, \$90,000
  - The City saw cut the pavement and removed asphalt
  - The Contractor removed and stockpiled topsoil and subsoil
  - The Contractor regraded the area to create bioretention areas
- Task 2: Installation of bioretention media/stone
  - The City screened the topsoil, \$45,000
  - The City mixed the bioretention media
  - The Contractor placed the bioretention media
  - The Contractor purchased and placed the stone
- Task 3: Install/adjust drainage structures, \$25,000
  - The Contractor purchased and installed new drainage structures
  - The Contractor adjusted existing drainage structures to new grades
  - The Contractor converted existing drainage structures, as necessary
- Task 4: Furnish and install plantings, \$14,000
  - The Contractor furnished and installed plantable media and seed
  - The Contractor maintained these areas through the growing period
- Task 5: Quarterly Reporting, \$4,000
  - The City provided quarterly reports as required
- Task 6: Final Report, \$2,000
  - This report will fulfil this requirement

## 4 Quality Assurance Tasks Completed

Not Applicable.

## 5 Deliverables Completed

No deliverables were required for this project.

## 6 Conclusions

The City received both positive and negative comments during and immediately after construction. Local residents were concerned about the aesthetic and potentially for standing water in the basins. Since the grass has taken hold and asphalt has been placed, the criticism has decreased significantly.

We do still receive calls regarding litter in the basin, but once we point out that the litter will be removed as part of our regular maintenance program and that the alternative would be that that litter would be in the waterways, the residents understand how the system is meant to function.

We are encouraged by the early results and anticipate that this project will minimize beach closures and continue to be used as a template on how municipalities can adapt existing infrastructure with green infrastructure.

## 7 References

This project was originally reference in the 2010 Oakland Beach Association Master Plan.

## 8 Appendices

### Appended Documents:

Attach any articles, press releases (which should acknowledge NEIWPC, EPA and partnership with NBEP, a list of acronyms and published documents pertaining to this project

**Photos:** Mail a CD to your Project Officer with any photo documentation you have of your project with proper photo credit that NEIWPC, EPA and NBEP can use in future publications.

**Electronic Data:** Mail a CD to your Project Officer with any electronic datasets you have generated through your project.

Relevant items are included in the CD.