

REBUILD BY DESIGN
MEADOWLANDS

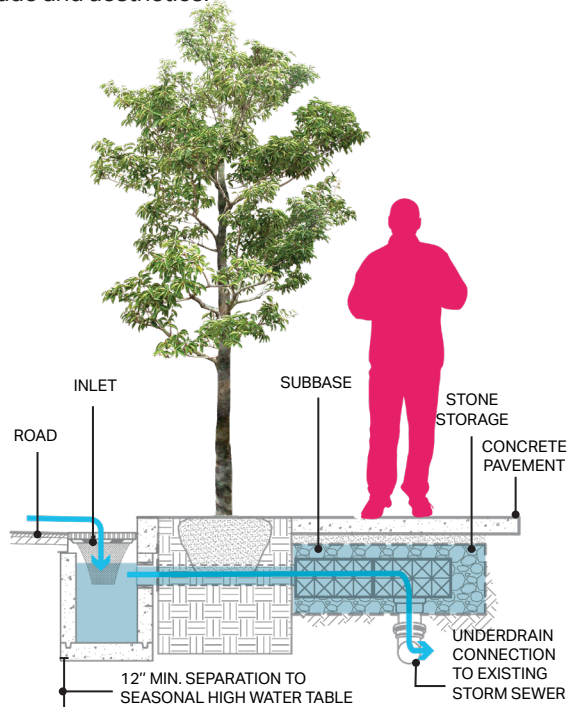
STREETSIDE GREEN INFRASTRUCTURE TYPE IMPROVEMENTS

AN APPROACH TO REDUCE FLOOD-RISK



TYPICAL SUB-SURFACE STORAGE WITH TREE TRENCH

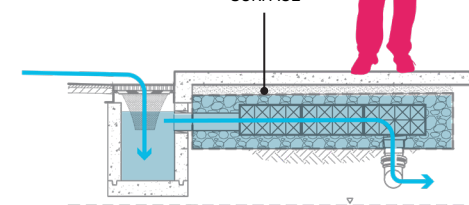
This green infrastructure strategy consists of a non-vegetated subsurface drainage system that collects runoff temporarily and street tree planters with subsurface stormwater storage systems designed to temporarily capture runoff and provide street trees for shade and aesthetics.



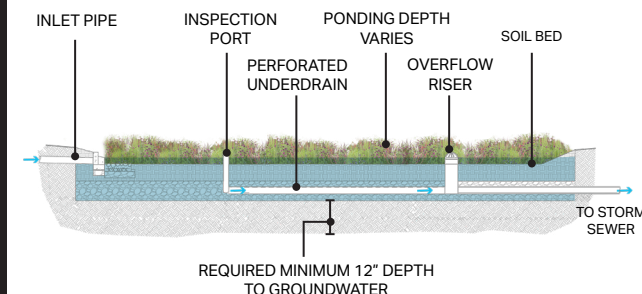
SUBSURFACE STORAGE

These are non-vegetated subsurface systems into which street runoff is diverted by stormwater inlets and stored during storm events.

FILTRATION
OCCURS BELOW
THE SIDEWALK
SURFACE



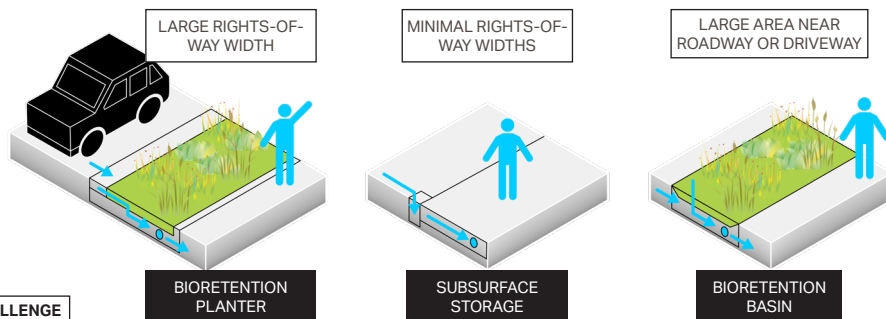
TYPICAL BIORETENTION SYSTEM



Bioretention systems consist of a vegetated depression with additional stone layers underneath that filter and temporarily store stormwater runoff.

TYPICAL CHALLENGES AND GOALS

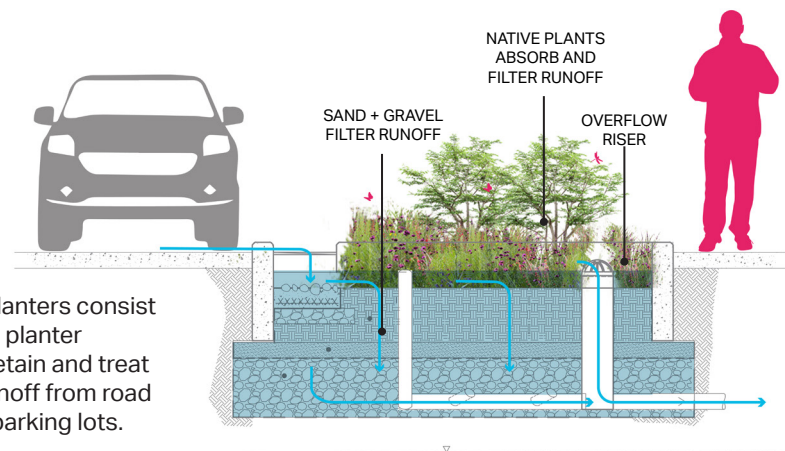
Typical roadways contribute significant amounts of unfiltered rain runoff into the drainage system. Green infrastructure, including the strategies below, can improve the water quality and water management through a variety of design systems. These features slow the flow of water which helps to reduce risk of overwhelming the storm system. This document describes an approach to resilient streetside green infrastructure as seen in the Rebuild by Design Meadowlands case study.



CHALLENGE
SOLUTION

TYPICAL BIORETENTION PLANTER

Bioretention planters consist of a vegetated planter designed to detain and treat stormwater runoff from road surfaces and parking lots.



For more information please visit:
www.nj.gov/dep/floodresilience/rbd-meadowlands.htm

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MEADOWLANDS CASE STUDY

STREETSIDE GREEN INFRASTRUCTURE IMPROVEMENTS

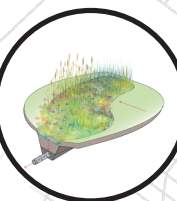


PROPOSED PROJECTS IN THE MEADOWLANDS

Public roadways throughout the project area were considered for street-side green infrastructure-type improvements as part of the Rebuild by Design Meadowlands project. In order to holistically improve water quality, reduce runoff rates, and promote infiltration, streetside green infrastructure was considered for implementation along the public right-of-way throughout the entire Project Area. This strategy captures stormwater runoff from roads and sidewalks close to the source. Due to the presence of high groundwater, utility conflicts, and planned construction projects, there are a limited number of locations where green infrastructure can be applied. These systems are proposed in 10 locations. Although individually small, these features collectively lessen the burden on the storm infrastructure and improve the ecology and community quality of life.

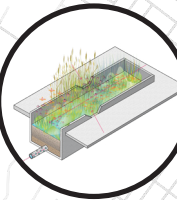
BIORETENTION BASINS

Temporarily store and filter runoff during storm events to lessen burden on infrastructure.



BIORETENTION PLANTERS

Runoff is filtered through a stone layer and native vegetation uptakes water.



STREETSIDE GREEN INFRASTRUCTURE-TYPE IMPROVEMENTS

- 1 Monroe Street: Subsurface Storage (6 systems)
- 2 Moonachie Avenue: Bio-filter Planter
- 3 Moonachie Avenue: Bio-filter Planter
- 4 Moonachie Avenue: Bio-filter Basin
- 5 East Park Street: Subsurface Storage

STORMWATER MANAGEMENT COMPONENTS

1 biofilter basin

4 subsurface storage units

4 biofilter planters



72%

peak runoff rate reduction for 2-year storm events

35%

peak runoff rate reduction for 10-year storm events

1.53

acres of impervious surface runoff managed

HOW IT WORKS

Green infrastructure performance can be improved by creating a network of sites. As more sites and green infrastructure efforts are implemented within a watershed, positive performance and results aggregate. As water moves beyond municipal boundaries, understanding how the network impacts the performance of the larger drainage area is helpful in refining management goals. By establishing the system across municipal boundaries and property boundaries, more effective management is achieved by understanding how specific challenges can be addressed holistically by specific tools.

ADDITIONAL INFORMATION

This project is one component of the efforts the NJDEP is facilitating to assist communities in building resilience. For more information, check out the following resources:

PROJECT VIDEO - REBUILD BY DESIGN MEADOWLANDS
www.youtube.com/watch?v=Q3X5U4CTlXo

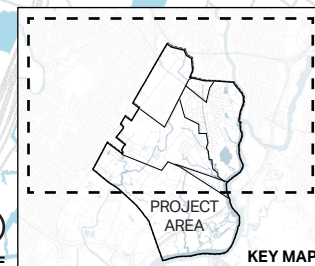
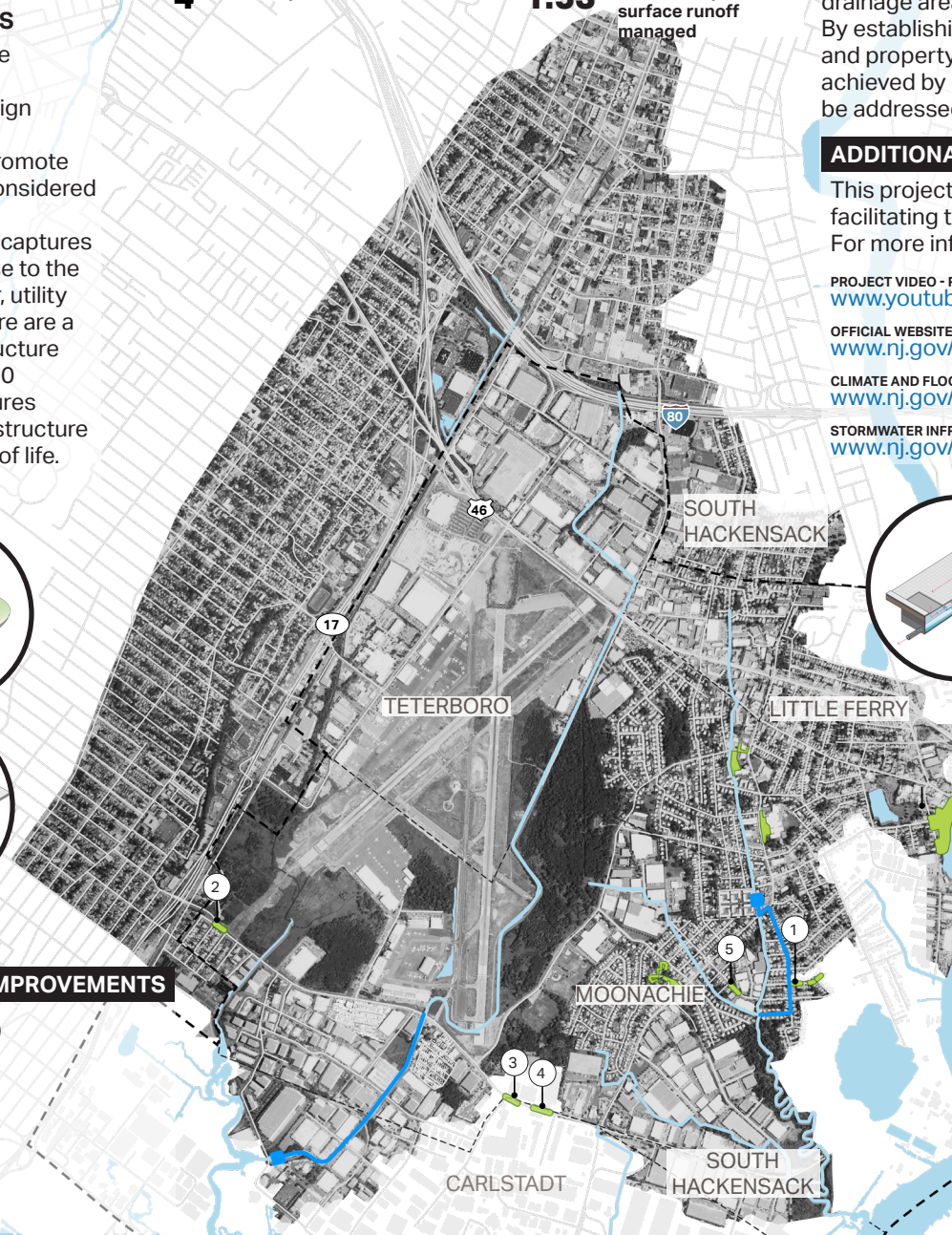
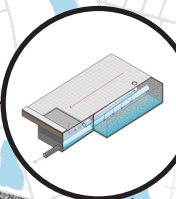
OFFICIAL WEBSITE - REBUILD BY DESIGN MEADOWLANDS
www.nj.gov/dep/floodresilience/rbd-meadowlands.htm

CLIMATE AND FLOOD RESILIENCE
www.nj.gov/dep/cfr/

STORMWATER INFRASTRUCTURE TOOLKIT
www.nj.gov/dep/floodresilience/toolkit.html

SUBSURFACE STORAGE

Captures and treats roadway run-off underground before draining back into storm system after 72 hours.



NOT TO SCALE