



2017 NEW JERSEY SUSTAINABILITY SUMMIT



Welcome to

PROTECTING OUR NATURAL RESOURCES: LOCAL ACTION, REGIONAL IMPACT

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Today's Speakers



Jane Rosenblatt, Program Manager, NJ Future
Staff of Jersey Water Works

Rob Pirani, Program Director
New York - New Jersey Harbor & Estuary Program

Julie Lange Groth, Media Director, Association of NJ Environmental
Commissions (ANJEC)

Jennifer Feltis Cortese, AICP
Office of Water Resources Coordination, NJ Department of
Environmental Protection



Improving Water Quality Through Green Infrastructure

Robert Pirani
June 2017



New York - New Jersey
Harbor & Estuary Program
www.harborestuary.org

HUDSON RIVER FOUNDATION
for Science & Environmental Research



PRESENTATION OBJECTIVES

- Introduce the NY-NJ Harbor & Estuary Program (HEP)
- Describe How Green Infrastructure Can Help Address Water Quality Objectives
- Outline Two Sustainable Jersey Actions Being Advance by Jersey Water Works:
 - Green Infrastructure Planning
 - Green Infrastructure Implementation



OUR HARBOR AND ESTUARY



NY-NJ HARBOR & ESTUARY PROGRAM

Enabling people
and wildlife to
benefit from
fishable and
swimmable
waterways





New York – New Jersey Harbor & Estuary Program

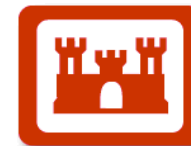
ACTION AGENDA 2017-2022

May 2017 DRAFT FOR DISCUSSION



New York - New Jersey
Harbor & Estuary Program

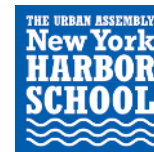
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US Army Corps
of Engineers



**Environmental
Protection**



RIVERKEEPER.
NY's clean water advocate



New Jersey Harbor
Dischargers Group



**THE PORT AUTHORITY
OF NY & NJ**



**NEW YORK CITY
SOIL & WATER CONSERVATION DISTRICT**



OUR GOALS



1. **Water Quality** - Reduce the sources of pollution so that the waters of Harbor Estuary will meet the fishable/swimmable goal of the Clean Water Act, where attainable;



2. **Habitat** - Protect and restore vital habitat, ecological function, and biodiversity that provides society with renewed and increased benefits;



3. **Public Access and Stewardship** - Improve public access to the waters of the Estuary and the quality of experience at public spaces along the waterfront;

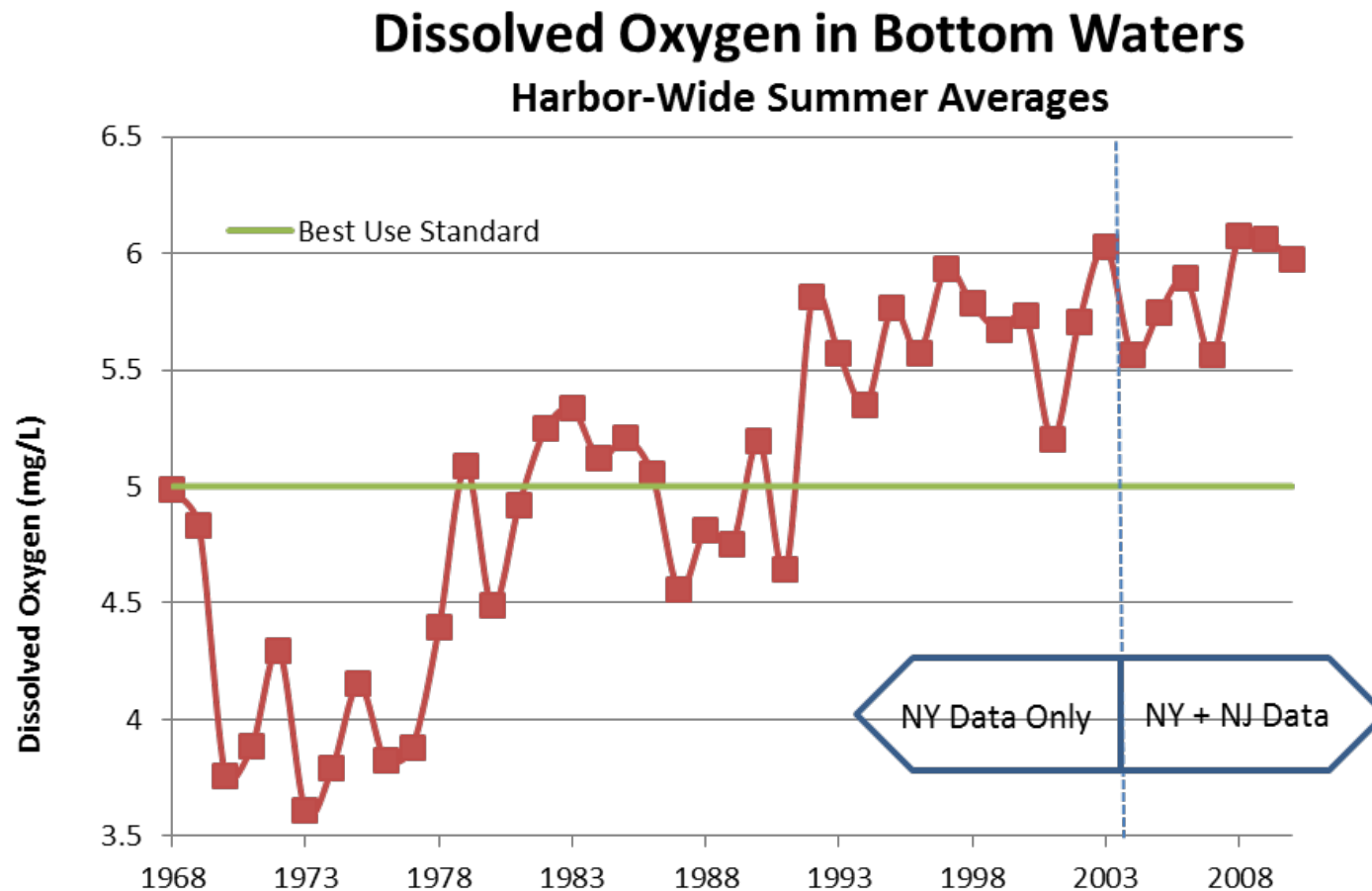


4. **Port and Maritime** - Support port and associated maritime operations so that they are both economically and ecologically viable; and

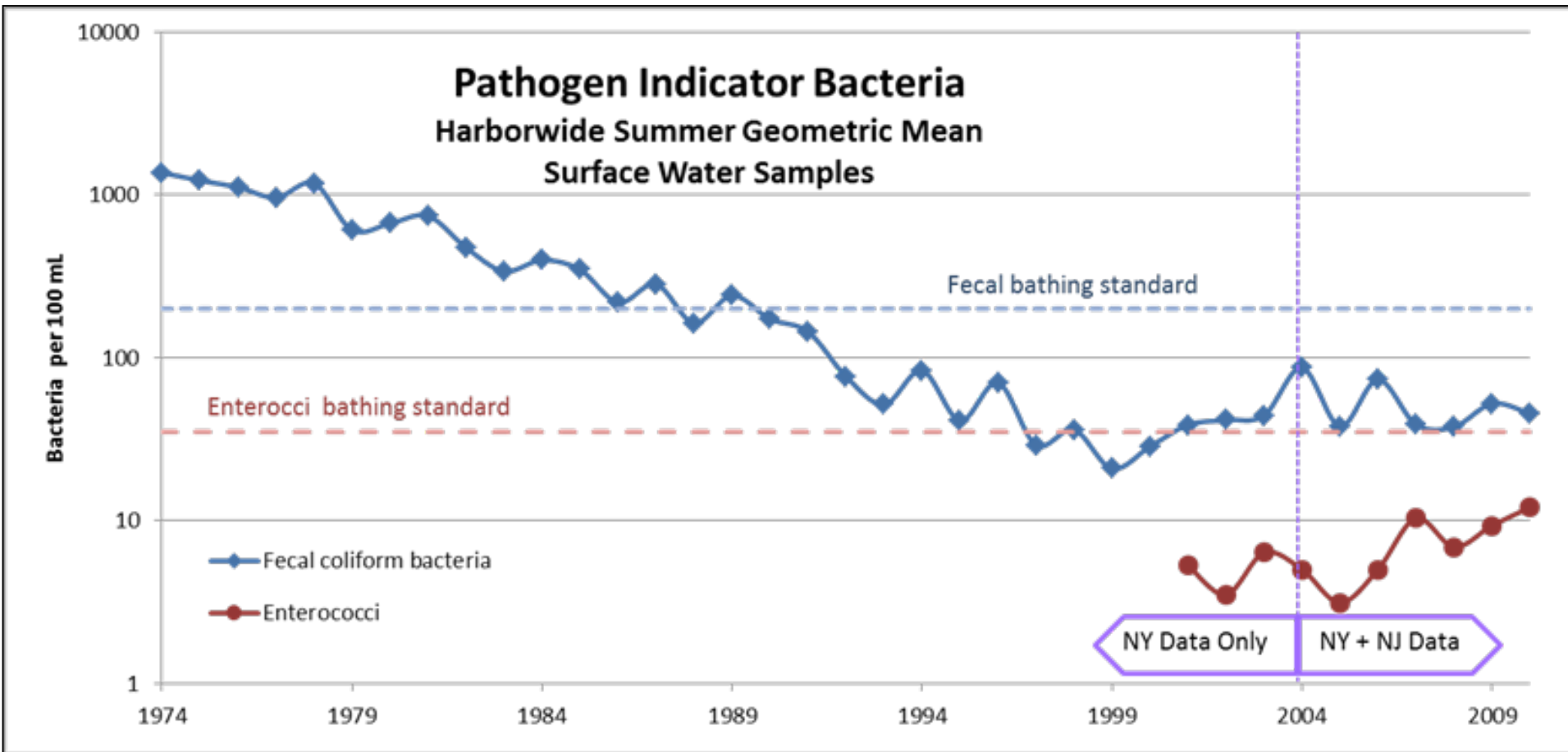


5. **Community Engagement** - Foster community stewardship and involvement in decisions about the Harbor.

WATER QUALITY *HISTORIC IMPROVEMENTS...*

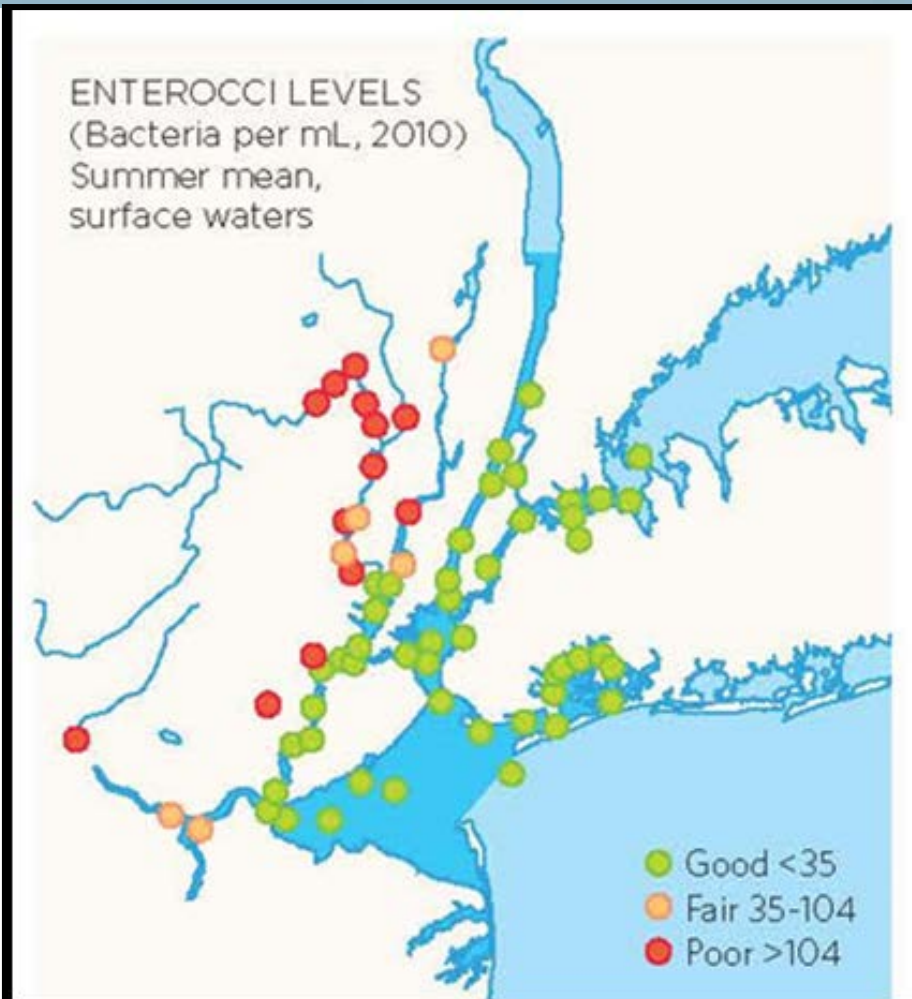
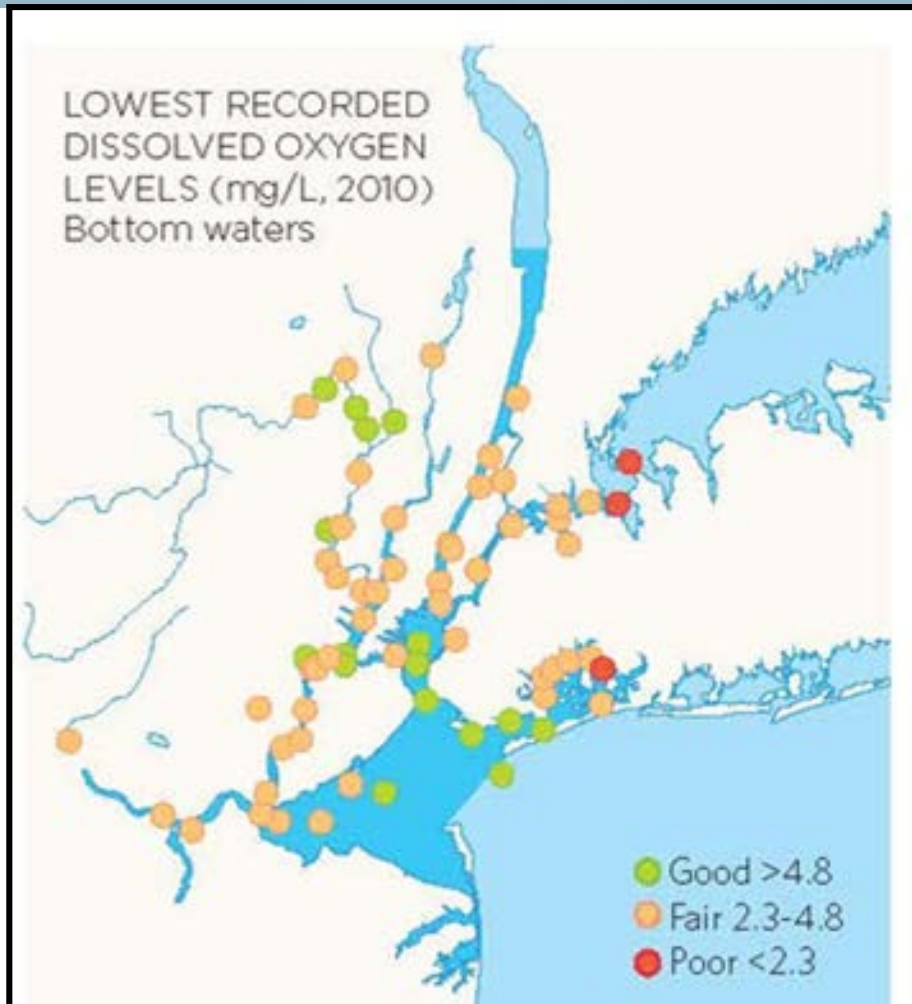


WATER QUALITY *HISTORIC IMPROVEMENTS...*

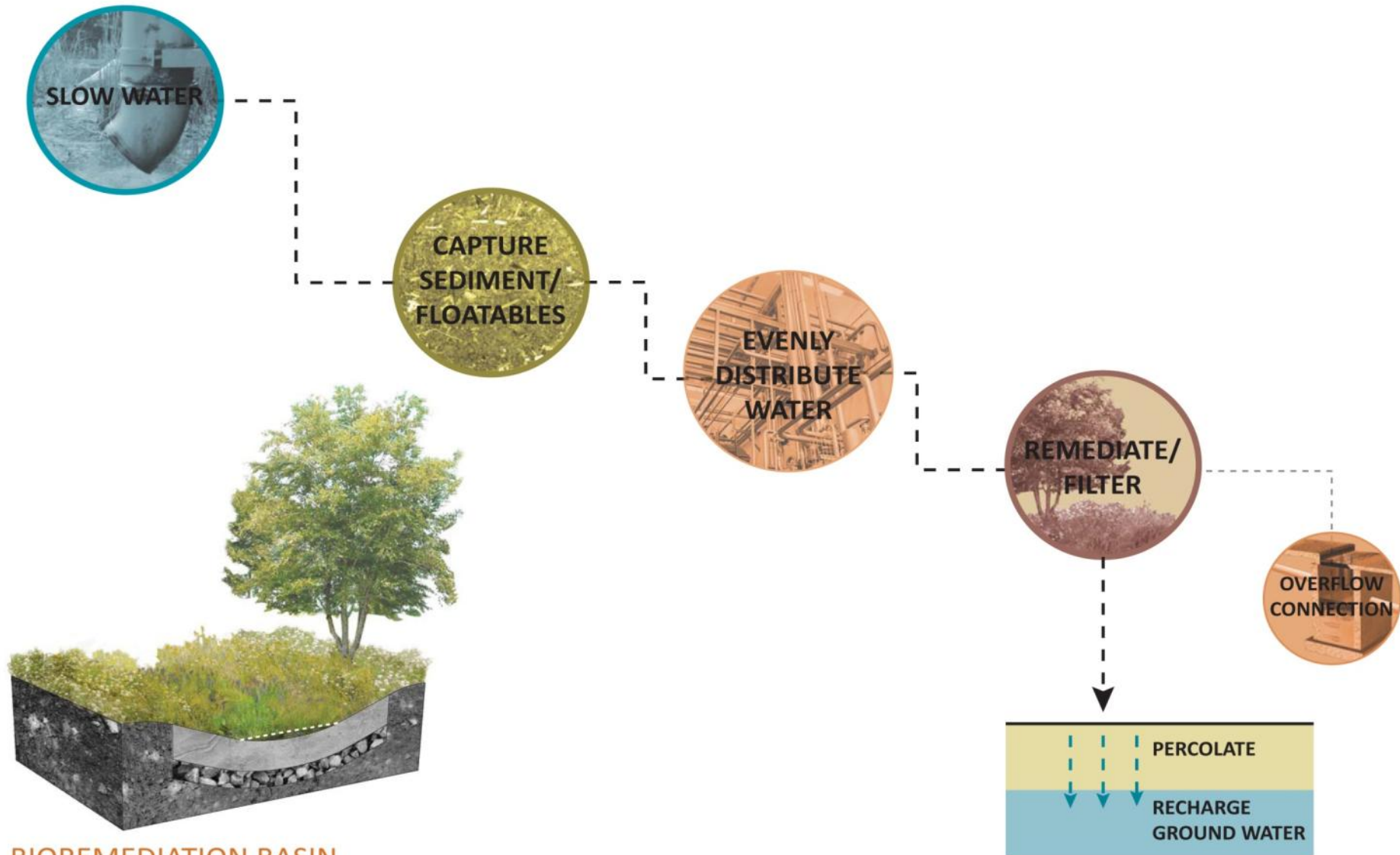


WATER QUALITY

...BUT USES ARE STILL LIMITED



GREEN STORMWATER MANAGEMENT STRATEGY



BIOREMEDIATION BASIN

- Detains and filters stormwater
- Temporary standing water
- Attenuates flow and pollutant load

Image: dLand Studios

Rain Gardens and
Bioretention
Systems



Vegetated Swales



Downspout Planters



Stormwater Planters



Cisterns and Rain
Barrels



Pervious Pavement



Tree Filter Boxes



Green Roof



Sustainable Jersey Green Infrastructure Actions

Jersey Water Works Green Infrastructure
Subcommittee





Green Infrastructure Planning

Tier 1. Impervious Cover
Assessment [5 pts]

Tier 2. Green Infrastructure
Action Plan [10 or 15 pts]

Tier 3. Green Infrastructure
Strategic Plan [20 pts]





Green Infrastructure Planning

Tier 1. Impervious Cover Assessment

- Establishes baseline for Tiers 2 and 3
- Assemble GIS data by watershed and sewershed (if available)
- Analyze data, create charts and maps
- Calculate the impervious cover area
- Calculate the stormwater runoff volumes





Green Infrastructure Planning

Tier 2. Green Infrastructure Action Plan

- Requirements of Tier 1
- Engage the Community
- Set short-term Impervious cover management goal (% or acreage)
- Identify sites for immediate and short-term GI projects
- Determine feasibility
- Develop concept plans and project sheets
- Identify costs, benefits, and funding
- Link to Stormwater Mitigation Plan





Green Infrastructure Planning

Tier 3. Green Infrastructure Action Plan

- Requirements of Tiers 1 & 2
- Identify siting opportunities and constraints
- Set long-term Impervious cover management goal (% or acreage)
- Use opportunities and constraints to identify sites for long-term GI projects and policy recommendations
- Assess the water quantity and quality benefits (modeling)
- Develop an implementation agenda
- Link to Stormwater Mitigation Plan





Green Infrastructure Implementation

Tier 1. Implement Green
Infrastructure demonstration
Projects [10 pts]

Tier 2. Implement Green
Infrastructure Action Plan [20 pts]

Tier 3. Implement Green
Infrastructure Strategic Plan [30 pts]



Technical Resources

- [New Jersey Green Infrastructure Guidance Manual](#)
- [New Jersey Rain Garden Manual](#)
- [Rutgers Water Resources Introduction to Green Infrastructure](#)
- [Rutgers Water Resources Green Infrastructure Fact Sheets](#)
- [US EPA Green Infrastructure Information](#)
- [NJDEP Green Infrastructure Information](#)



Sample Planning Documents

- Sample Impervious Cover Assessments:
 - [New Brunswick Impervious Cover Assessment](#)
 - [Hillsborough Impervious Cover Assessment](#)
 - [Impervious Cover Assessments and Reduction Action Plans for Raritan River Basin Municipalities](#)
- Sample Green Infrastructure Action Plans:
 - [Camden Green Infrastructure Feasibility Study](#)
 - [Newark Green Infrastructure Feasibility Study](#)
 - [Paterson Green Infrastructure Feasibility Study](#)
 - [Impervious Cover Assessments and Reduction Action Plans for Raritan River Basin Municipalities](#)
- Sample Green Infrastructure Strategic Plans:
 - [New York City Green Infrastructure Plan](#)
 - [Milwaukee Metropolitan Sewerage District Fresh Coast Green Solutions Plan](#)
 - [Hoboken Green Infrastructure Strategic Plan](#)





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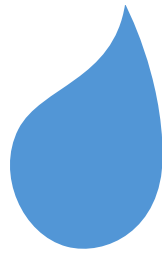
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Protecting our natural resources

Local action
Regional impact





ANJEC Open Space Stewardship Grants



Habitat protection



Brick Twp. Habitat Awareness

Habitat of Lake Riviera



Smallmouth Bass



Eastern Garter Snake



Black Duck

All residents of Lake Riviera are stewards of a healthy ecosystem. People, fish, frogs, turtles, birds, snakes and small mammals all contribute to the protection and health of the lake and be considerate of your neighbors.



Orange-spotted Fish

This project was funded by ANJEC and the Brick Township Environmental Commission



How you impact Lake Riviera



Lake Riviera is a Lentic (still or slow moving water) ecosystem. The health of this lake depends on how the land around it is used. Non-point source pollution can cause a "eutrophic" condition where plants overgrow and decrease oxygen levels, making it difficult for fish to live in the lake. Human activities cause non-point source pollution and impact the lake. Non-point sources of pollution include:

- *Washing of automobiles - detergents wash into the lake and cause overgrowth of plants*
- *Leaking of oils, grease and other car fluids - wash into the lake and pollute the soil, plants and fish*
- *Yards and lawns treated with fertilizers and herbicides - cause overgrowth of plants and decrease oxygen*
- *Pet waste - carries bacteria and pollutes the water, fish and plants*

Even overfishing can impact Lake Riviera, so be a good steward!

This project was funded by a Grant from ANJEC and the Brick Township Environmental Commission



Caldwell Native Pollinator Garden





Ocean City Demonstration Dune



Monroe Butterfly Park





Trail inventory & mapping



Tenafly Borough Trails Master Plan

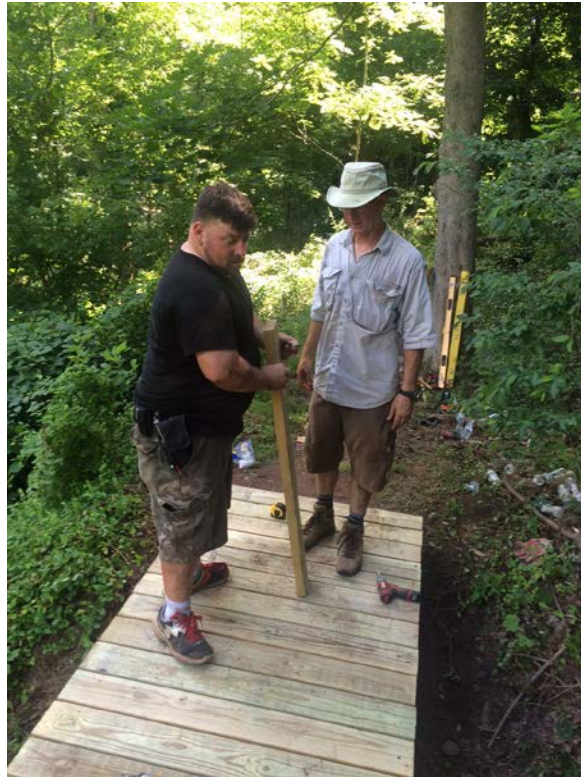
Jackson Twp. trail kiosk and digital nature trail



Jackson Purple Heart Trail



Open Space Awareness



Frenchtown “Open Space Summer”

Tewksbury Water Chestnut Eradication





Byram Twp.

Conservation Easement Program



Open Space Stewardship



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Natural Resource Actions: Local Actions and their Collective Impact

Jennifer Feltis Cortese, AICP
Natural Resources Task Force Leader

June 21, 2017

Current Natural Resource Actions

- ▶ Natural/Environmental Resource Inventory
- ▶ Water Conservation Ordinance
- ▶ Environmental Commission
- ▶ Environmental Commission Site Plan Review
- ▶ Open Space Plans
- ▶ Water Conservation Education Program
- ▶ Easement Inventory and Outreach
- ▶ Easement Inspection and Evaluation
- ▶ Clustering Ordinance
- ▶ Environmental Assessment Ordinance
- ▶ Habitat Conservation Ordinance
- ▶ Stormwater Management Ordinance
- ▶ Tree Protection Ordinance
- ▶ Community Forestry Plan and Canopy Goal
- ▶ Tree Hazard Inventory
- ▶ Tree Maintenance Programs
- ▶ Tree Planting Programs
- ▶ i-Tree Assessment of Municipal Trees

Natural Resource Inventory

What can the NRI/ERI tell you about your town?

- ▶ Geology
- ▶ Geography/ Topography
- ▶ Climate
- ▶ Air
- ▶ Hydrology
- ▶ Soils
- ▶ Wetlands
- ▶ Vegetation
- ▶ Wildlife (including Threatened and Endangered Species habitat)
- ▶ Existing Land Use and Transportation maps
- ▶ **Regional relationships**

ERI and its Collective Impact

- ▶ Natural Resources do not follow municipal boundaries.
- ▶ As a tool for Land Use Planning, the ERI can provide valuable information for having a positive impact on natural resources within the municipality and the surrounding area.
- ▶ As a Land Use Planning tool:
 - ▶ Factual basis for the municipal Master Plan
 - ▶ Tool for determining land use management regulations
 - ▶ Comprehensive guide in the Site Plan review process
 - ▶ Identifies sensitive areas and natural systems
 - ▶ Educational tool
 - ▶ Save dollars by avoiding future problems and mitigation costs
 - ▶ Decision making tool

Environmental Assessment Ordinance

- ▶ Also known as an 'Environmental Impact Statement' (EIS) Ordinance
- ▶ Tool for predicting potential impacts of proposed development on wildlife and habitat, vegetation, soil, water, and other resources.
- ▶ May require measures to avoid or mitigate any environmental impacts
- ▶ Use information gathered for future land use management decisions

Tree Protection Ordinance and Tree Management Actions

- ▶ Trees serve important ecosystem, health and safety benefits :
 - ▶ Prevent flooding
 - ▶ Sequester carbon
 - ▶ Improve water quality
 - ▶ Provide timber
 - ▶ Climate control
 - ▶ Reduce soil erosion
 - ▶ Provide shade and esthetic qualities for streets, common spaces and other developed properties

Collaboration

- ▶ Collaborating with surrounding municipalities to identify shared natural resources could lead to land use policies that complement each other.
 - ▶ Example: Environmental Easements along water corridors that go from one municipality into another to provide connection and water quality protections for wildlife and human activities.
 - ▶ Example: Identifying environmentally sensitive areas that are shared and collaborating on open space planning.

Questions?

New Actions to Consider?

How can you get involved?

- ▶ Contact info@sustainablejersey.com for more information on getting involved.



Final Thoughts



Collective Impact:

n. the commitment of a group of actors from different sectors to a common agenda for solving a specific social problem, using a structured form of collaboration