“Improving Regional Water Quality: Integrating 319(h) Grant Projects Into Remediation Activities”

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319(h) At a Glance

- Approximately $2.5 million granted annually to the State of New Jersey from EPA for "pass through" grants to address non point source (NPS) pollution
- Primary goal of funding is to eliminate state water quality use impairments as identified on New Jersey's 303(d) list of impaired water bodies
- EPA mandates that half of the yearly funding be utilized to fund implementation projects identified in approved watershed based plans
- Occasionally, EPA awards 319(h) discretionary funding for specific projects (EJ, Living Shorelines)

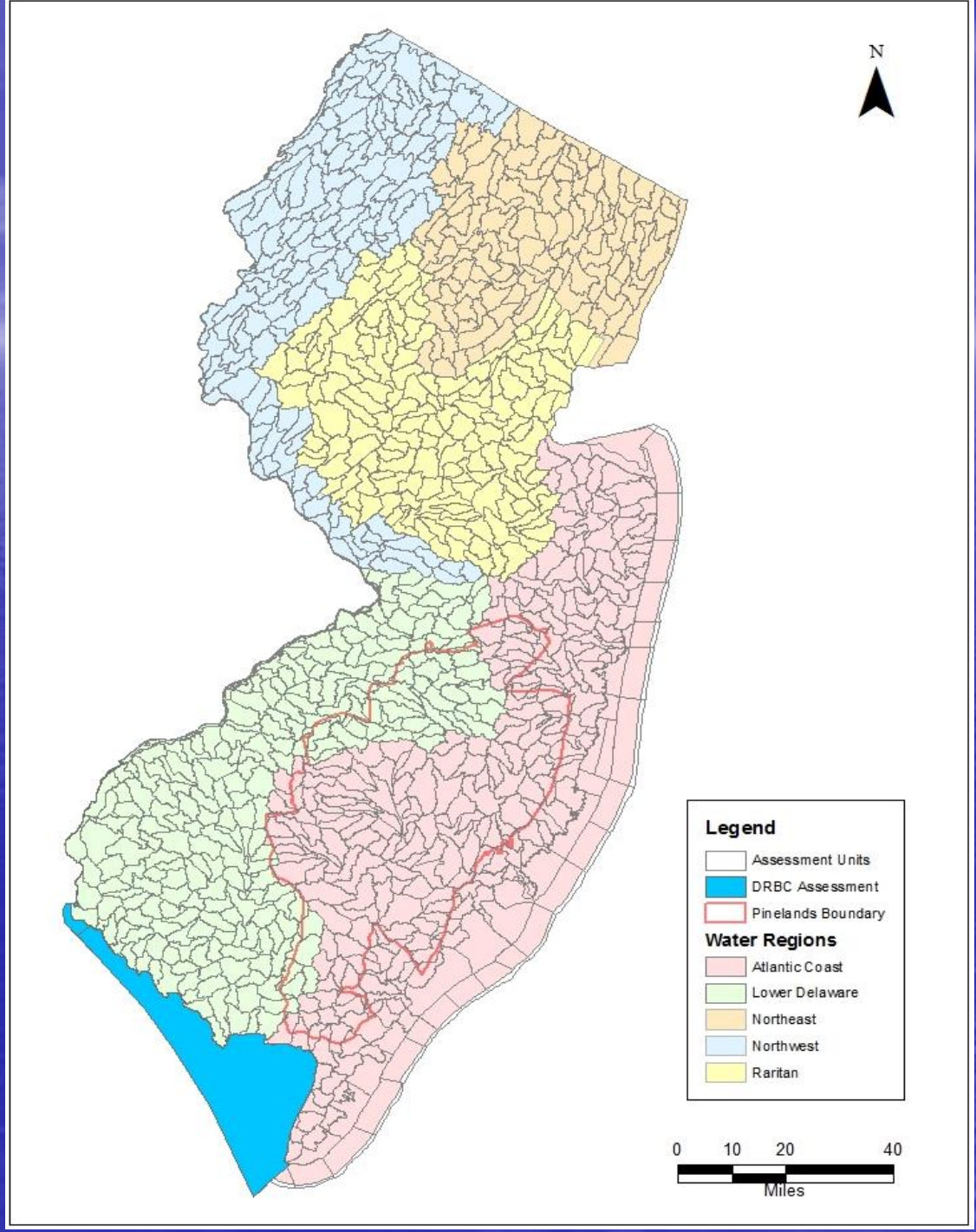
The federal Clean Water Act requires states to generate two separate reports every two years:

- **305(b) Report:** Assesses overall water quality and support of designated uses in all "principal" waters of the State; identifies strategies to maintain and improve water quality.
- **303(d) List:** Identifies all waters of the State that do not meet SWQS/support designated uses and require TMDLs.

New Jersey's Water Regions and Assessment Units

Source: Draft 2014 Methods Document

February 23, 2015



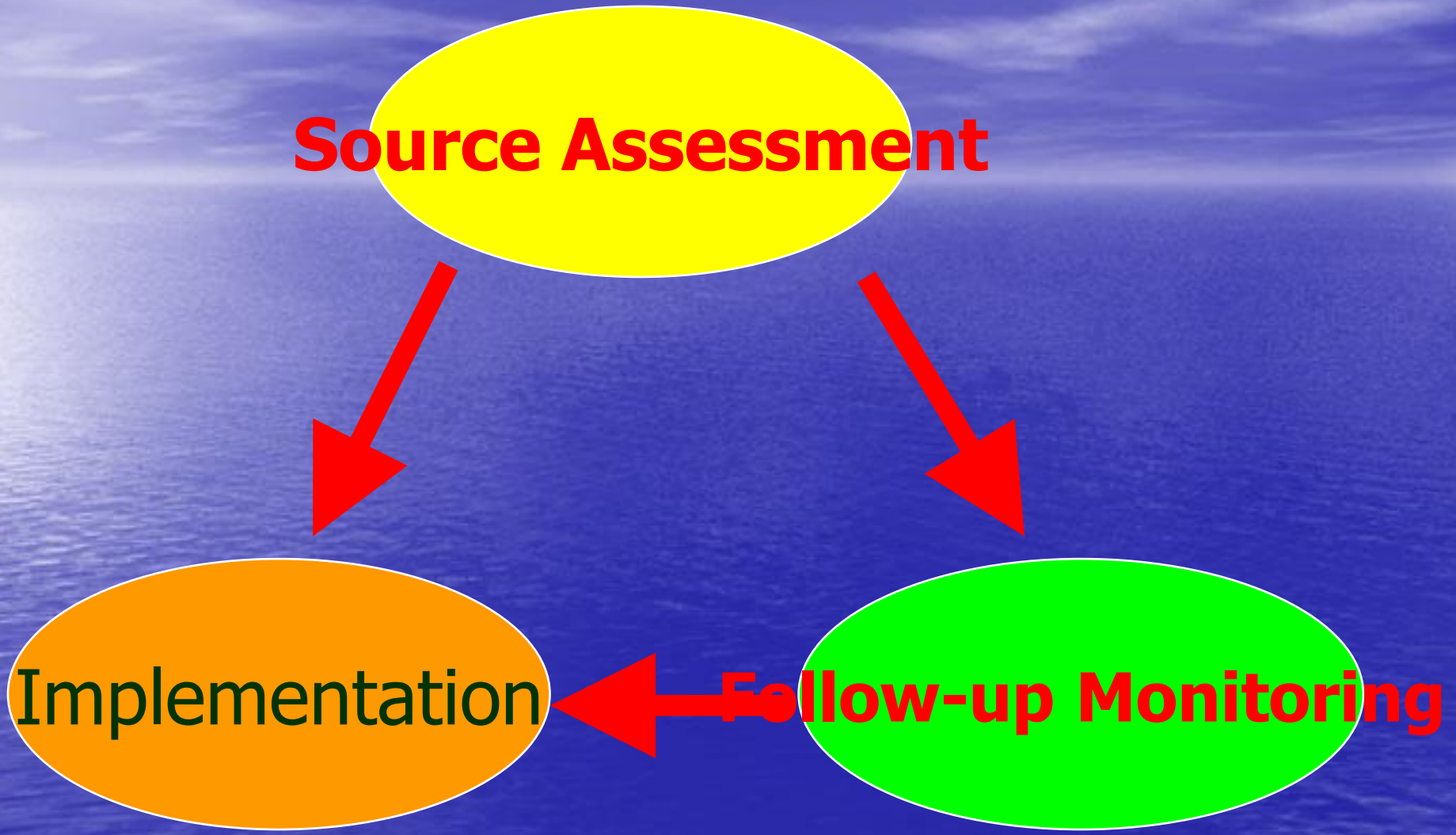
CWA Requirement

- TMDLs are required, under Section 303(d) of the federal Clean Water Act, to be developed for waterbodies that cannot meet surface water quality standards after the implementation of technology-based effluent limitations

What are TMDLs?

- Total Maximum Daily Loads (TMDLs) represent the assimilative or load capacity of the receiving water, taking into consideration:
  - point sources of pollutants - NJPDES Permitted (WLA)
    - Treatment facilities
    - Phase II Stormwater
    - CSO's
  - nonpoint sources of pollutants - (LA)
    - NPS other than point source stormwater
    - Background
  - surface water withdrawals
- Express as TMDL = WLA + LA + MOS*

*Margin of Safety accounts for uncertainty in the data, models and solutions


Source Assessment
Implementation
Follow-up Monitoring

Types of Projects We Fund :

- Development of watershed based plans
- Implementation of projects identified in approved watershed based plans
- Projects to help meet NPS total maximum daily load allocations (TMDL's)
- Green Infrastructure in communities with Combined Sewers (CSO's)
- Environmental education and outreach for project types listed above

Watershed Based Plans Include:

- Watershed characterization
- Prioritized list of implementation measures
- Cost estimates of those implementation measures
- Estimated load reductions necessary to achieve the designated water quality standard of the waterbody
- Involves local partner input and participation through a watershed process

Types of Implementation Measures

- Various BMP projects such as bio-infiltration (rain garden), stormwater basin retrofits (green infrastructure), and stream bank restorations (also includes Living Shorelines in tidal areas)
- Change in local ordinances or practices such as fertilizer application, pet waste clean up and establishing "no mow" zones
- Targeted education and outreach specific to use impairment parameter (such as nitrogen, phosphorus, total suspended solids and pathogens)

Petty’s Run, Trenton

Camden: old & deteriorated water infrastructure

…vulnerable to both stormwater & tidal flooding…

Residents ranked flooding as the #1 environmental problem in many of Camden's neighborhoods…

Camden Collaborative Initiative

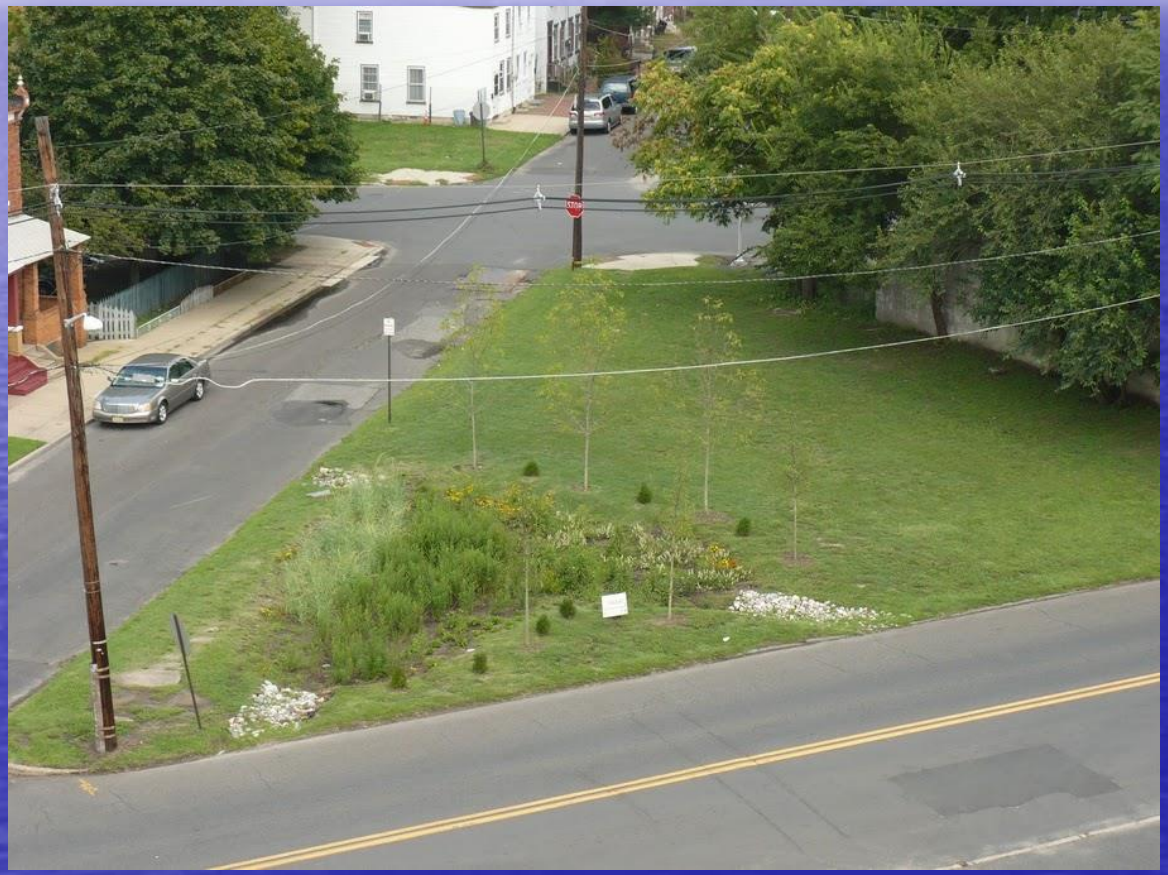
"…is a solutions-oriented partnership between governmental, non-profit, private, and community-based agencies formed to plan and implement innovative strategies to improve the environment and the quality of life of Camden's residents" (formalized 1/24/2013)

Voluntary collaboration between:

City of Camden
Cooper's Ferry Partnership
Camden County Municipal Utilities Authority
NJDEP
USEPA

Camden City Rain Gardens Partnership With Camden MUA, Rutgers and DEP

12 Rain gardens treat 800,000 gallons of stormwater per year



319 (h) funded projects within Camden

Cooper River Regional Stormwater
$400,000

Environmental Justice City of Camden
$300,000

Living Shorelines to Enhance Wetlands
$323,000 (discretionary)

Living Shorelines at Phoenix Park
$258,000

Cramer Hill (Camden, NJ)–Unique urban environment…

Brownfield Sites: Opportunities for Living Shorelines

Harrison Ave Landfill – Phase I:

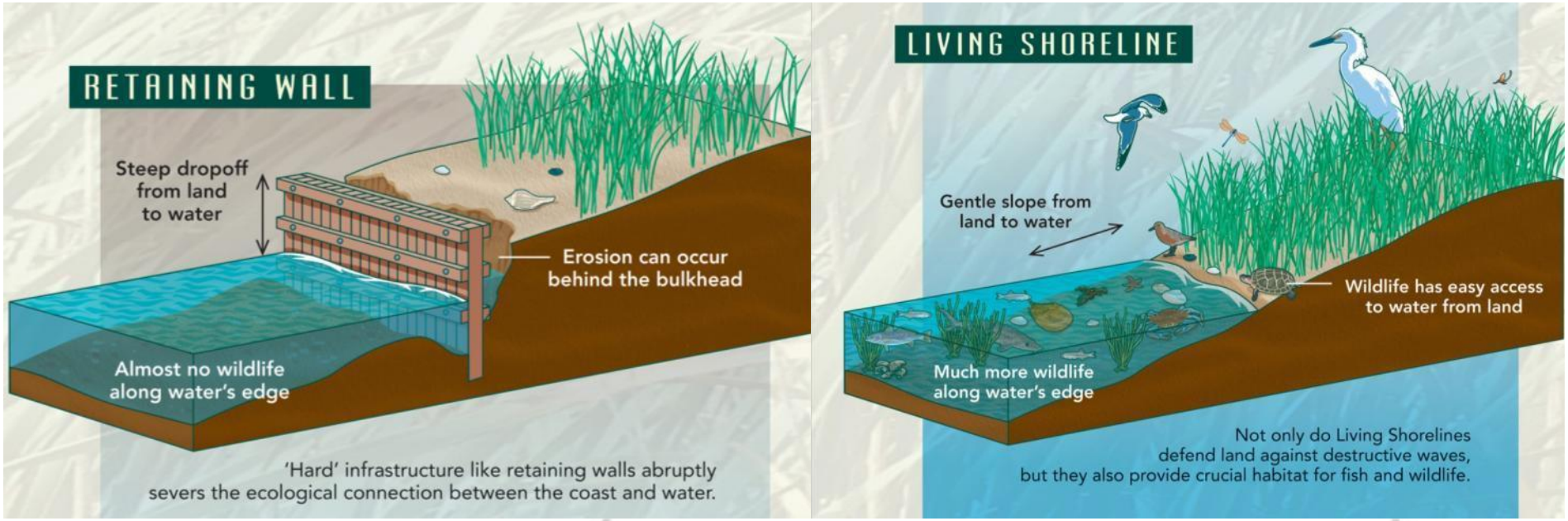
Remediation: Salvation Army Camden (Kroc) Community Center

Landfill Remediation/Closure:

- *In Cramer Hill neighborhood & on 2 rivers*
- *Relocation of waste away from building*
- *Foundation & Cap: Local dredge material*

Kroc Center completed and Grand Opening held in October 2014

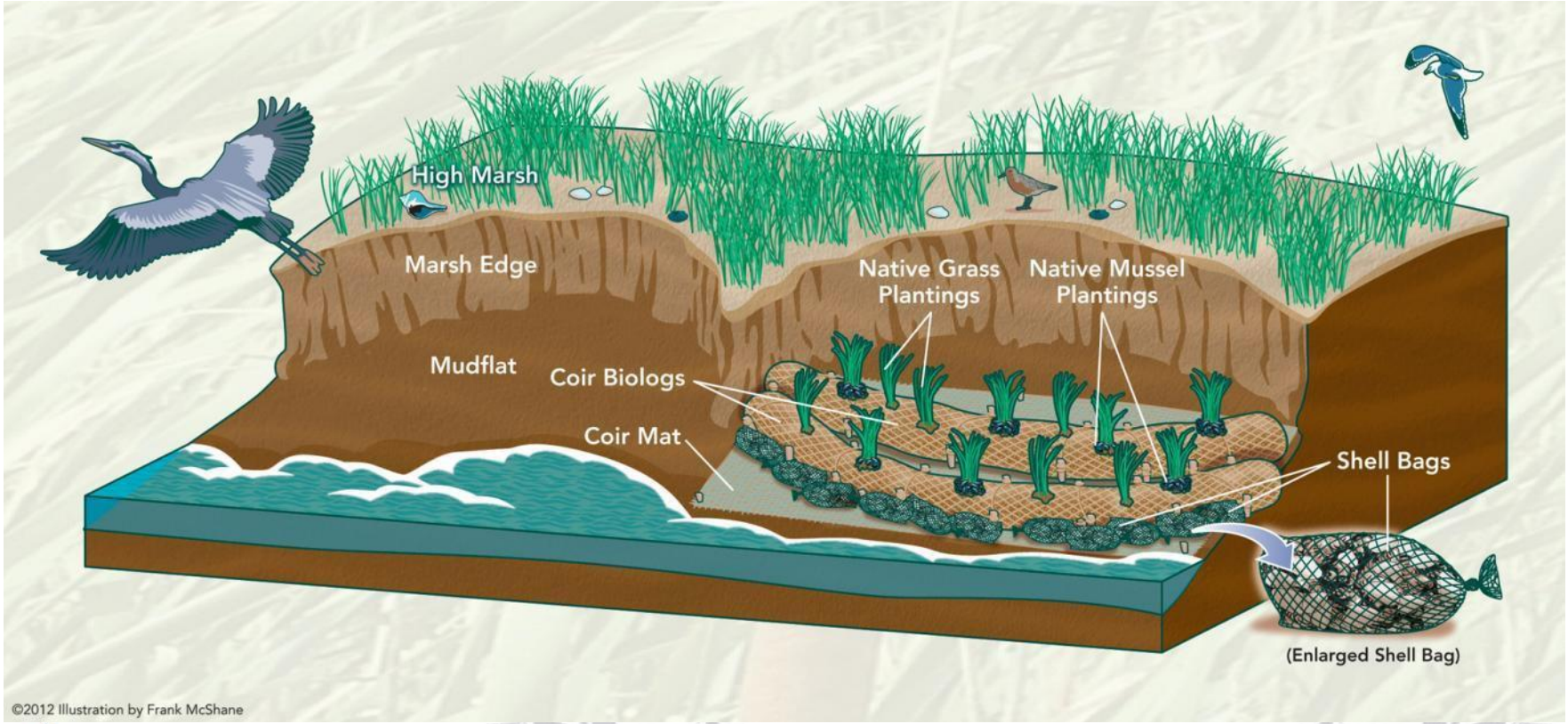
What is a Living Shoreline?



Hardened Shoreline v. Living Shoreline

PARTNERSHIP FOR THE DELAWARE ESTUARY INC.

Creating a Living Shoreline



All-Natural Plant/Mussel Tactic

PARTNERSHIP FOR THE DELAWARE ESTUARY INC.

Creating a Living Shoreline

PARTNERSHIP FOR THE DELAWARE ESTUARY INC.

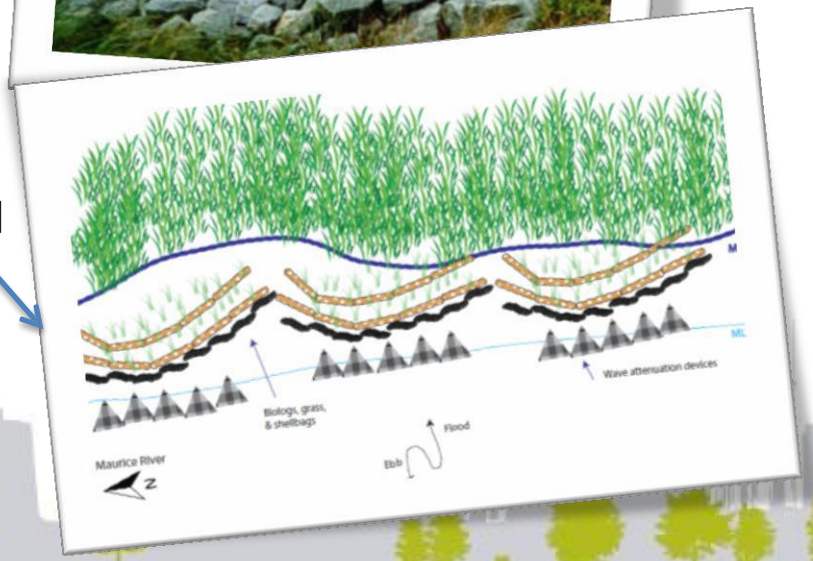
Living Shoreline Adaptations

With Stone Sill

With Stone Groin

Offshore

Hybrid



Harrison Ave Landfill: Living Shoreline Design Elements

Mussels Are Habitat INITIATIVE
Restoring Our Nation's Water Quality

Biofiltration Potential

Start

No mussels | 8 adult mussels

Later

No mussels | 8 adult mussels

Slide from Dick Neves, VA Tech

Delaware River Mussel Surveys

- Lots of animals
- 7 different species
- Several sites sampled

Main Line Health

Health&Science

SECTION D

MONDAY, JANUARY 17, 2011 B The Philadelphia Inquirer WWW.PHILLY.COM

Surprising survivors

In an urban stretch of the Delaware River, a researcher found imperiled species of freshwater mussels, valuable as aquatic vacuum cleaners.

DAVID M WARREN / Staff Photographer

Tidewater mucket shells — a species of mussels — found along the Delaware River in 1893, displayed at the Academy of Natural Sciences.

By Sandy Bauers
INQUIRER STAFF WRITER

If not for the heat of a summer day, one of the major biological finds in the Delaware River in recent years might not have occurred.

It was June, and researchers were scouring the banks and shallows of the river between Trenton and Philadelphia for evidence of freshwater mussels, important water-filtering organisms that are becoming increasingly hard to find in the region's streams.

Danielle Kreeger, science director of the nonprofit Partnership for the Delaware Estuary, had spotted shells along the banks during a wetlands project, and she wanted to see if live mussels were in the river nearby.

So far, no luck.

But Kreeger, who was out on the river in a boat, got hot. Putting on her mask and snorkel, she slipped into the river and swam through the murky water toward the bottom.

Suddenly, she saw them. The riverbed was studded with mussels. They weren't the edible kind, but it was better still — a seven-species mother lode including two species thought to be locally extinct. One, the tidewater mucket, hasn't been seen in this area for more than half a century. The discovery bodes well for the mussels and the river itself.

"I stayed underwater for quite a while,

See MUSSELS on D2

Partnership for the Delaware Estuary

Researcher Danielle Kreeger unexpectedly found seven species of mussels — two thought to be locally extinct — in the river.

The newfound mussel species include (from left) creeper; yellow lampmussel; and elliptio.

Our Vision for What's Possible…

if we can create the right habitat for mussels

- 1200 foot long stream channel
- 1.38 million mussels
- Filter 4.6 million gallons water/day
- Remove 6.1 tons of particulates/day
- USEPA & NOAA: 2 grants $342,000 for study & design

Rough estimate based on known averages, for illustrative purposes only!

Next Gen Living Shorelines – 2015-2017

Harrison Landfill, North Camden

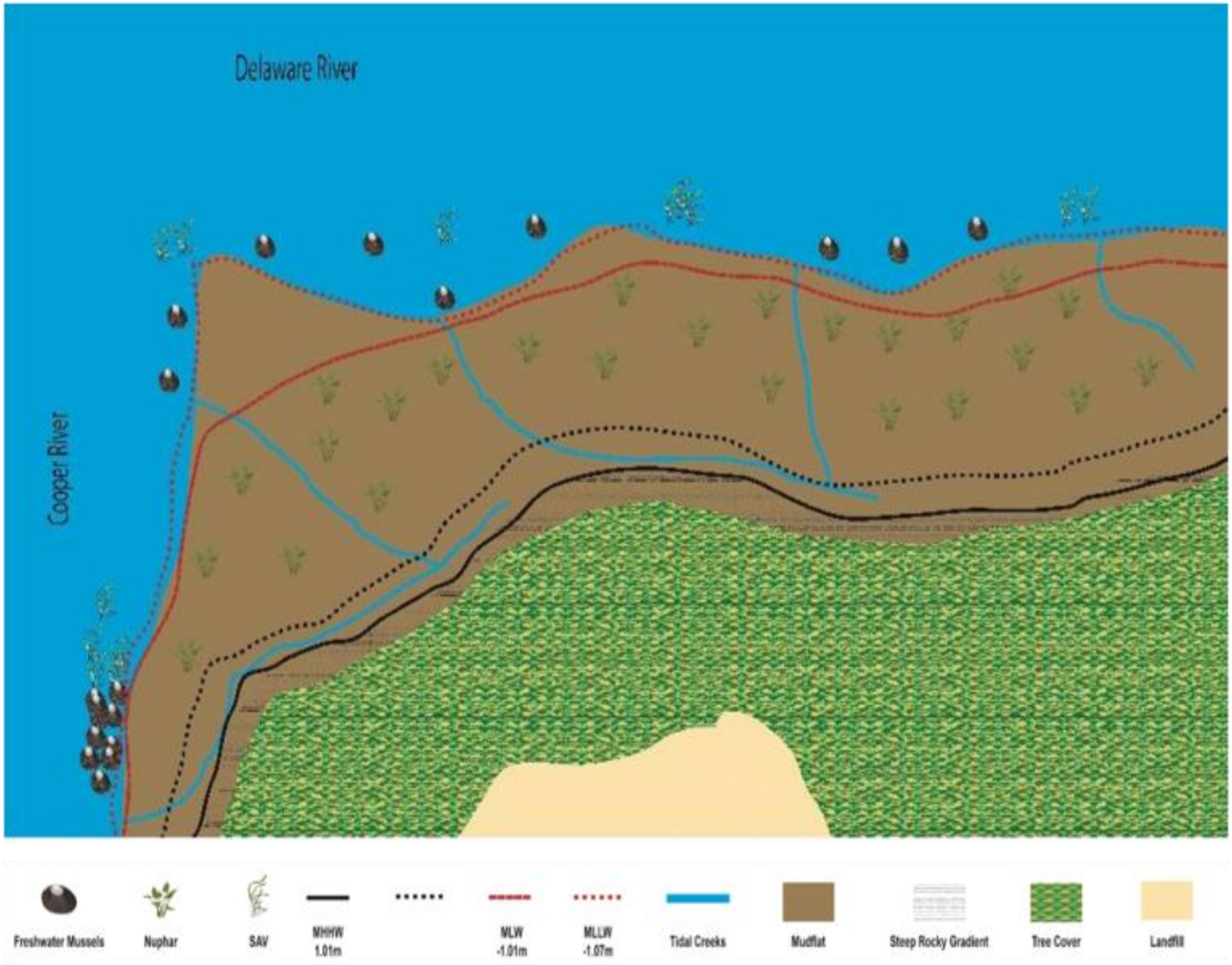
- Leads: PDE/NJDEP
- Hybrid Mosaic Concept
- Site Evals in 2015
- Studies, Design in 2016
- Permit Ready in 2017

Next Gen Living Shorelines – 2015-2017

Existing Conditions

few mussels

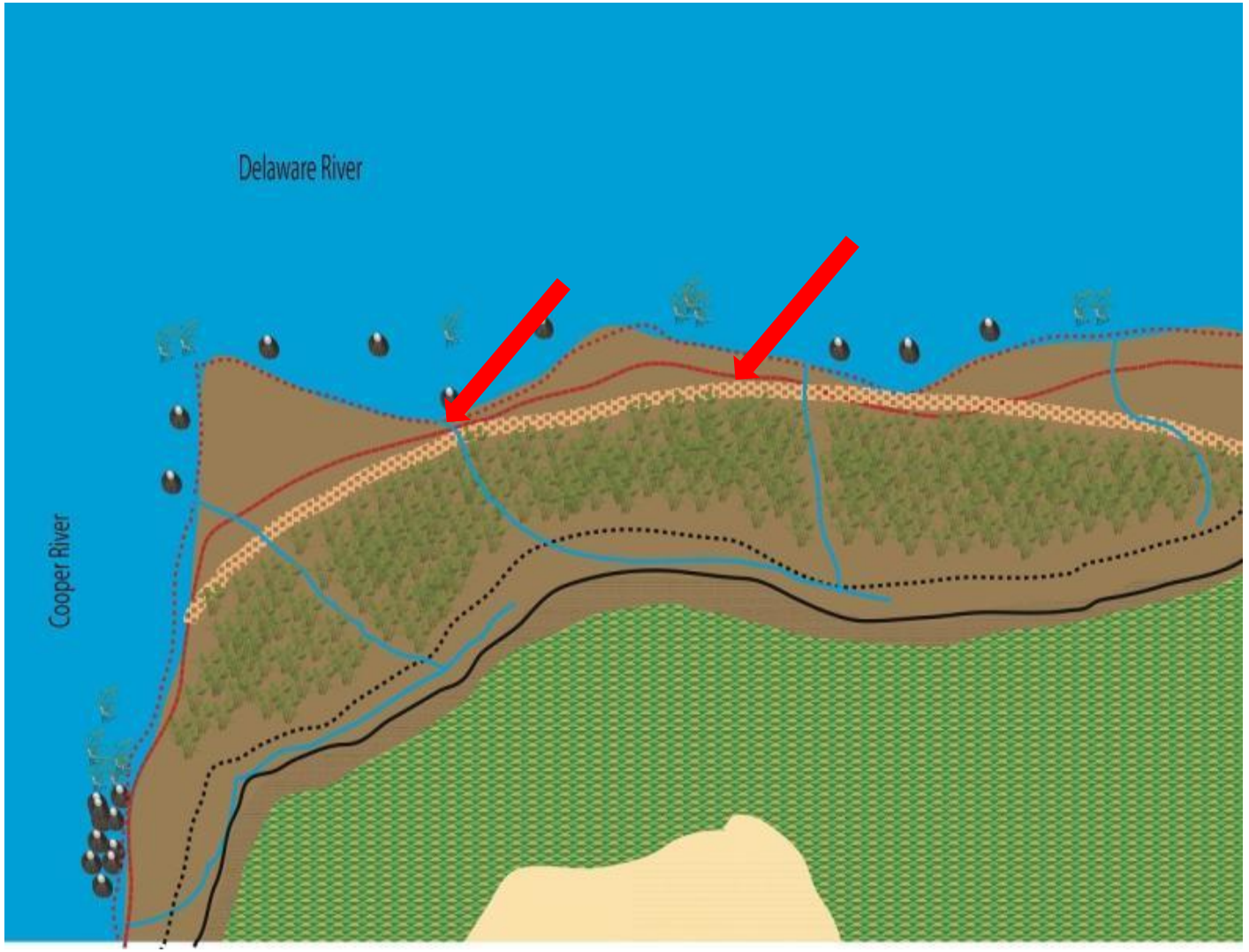
limited low marsh



Next Gen Living Shorelines – 2015-2017

Option:

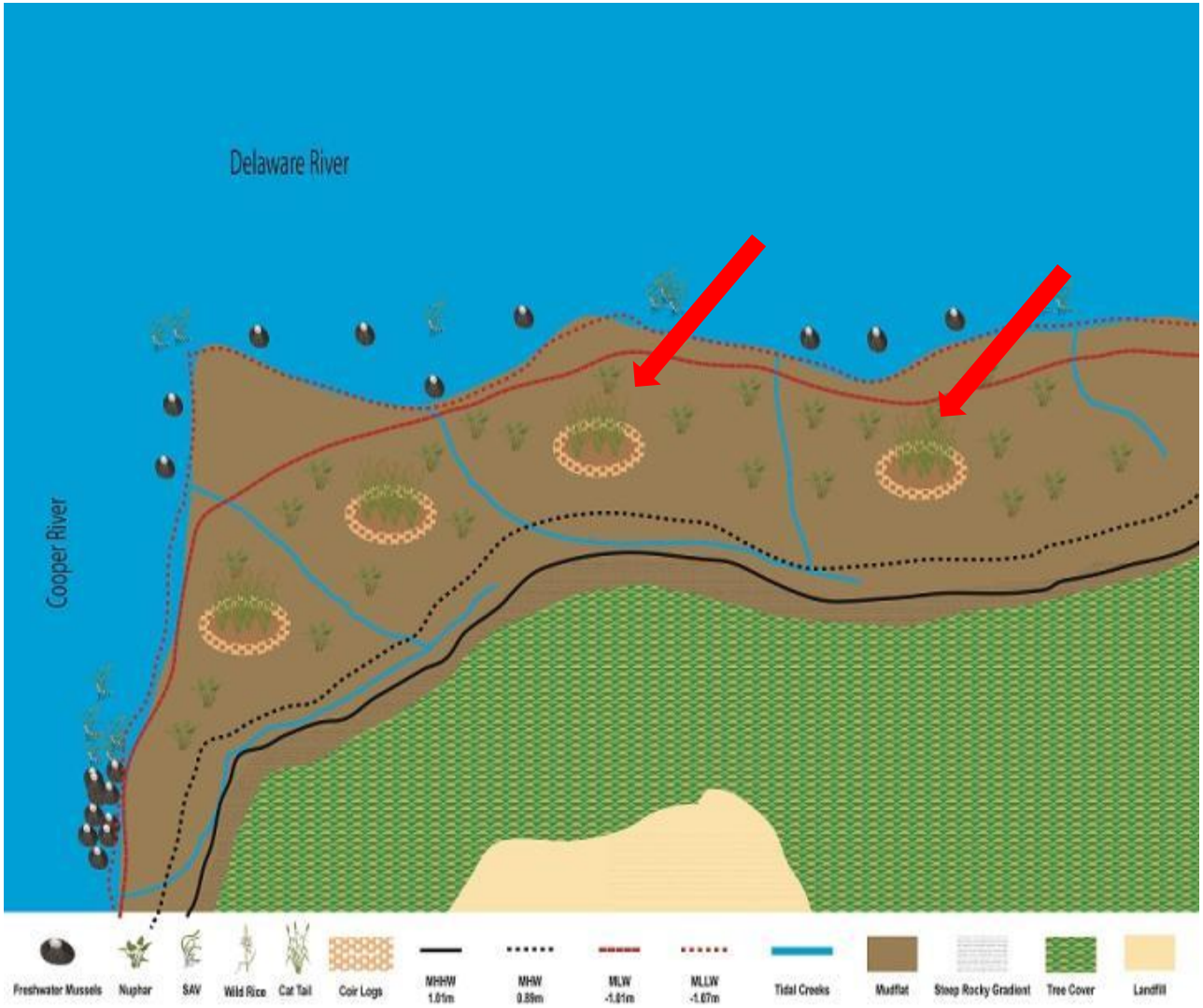
Enhance Low Marsh



Next Gen Living Shorelines – 2015-2017

Option:

Enhance High Marsh

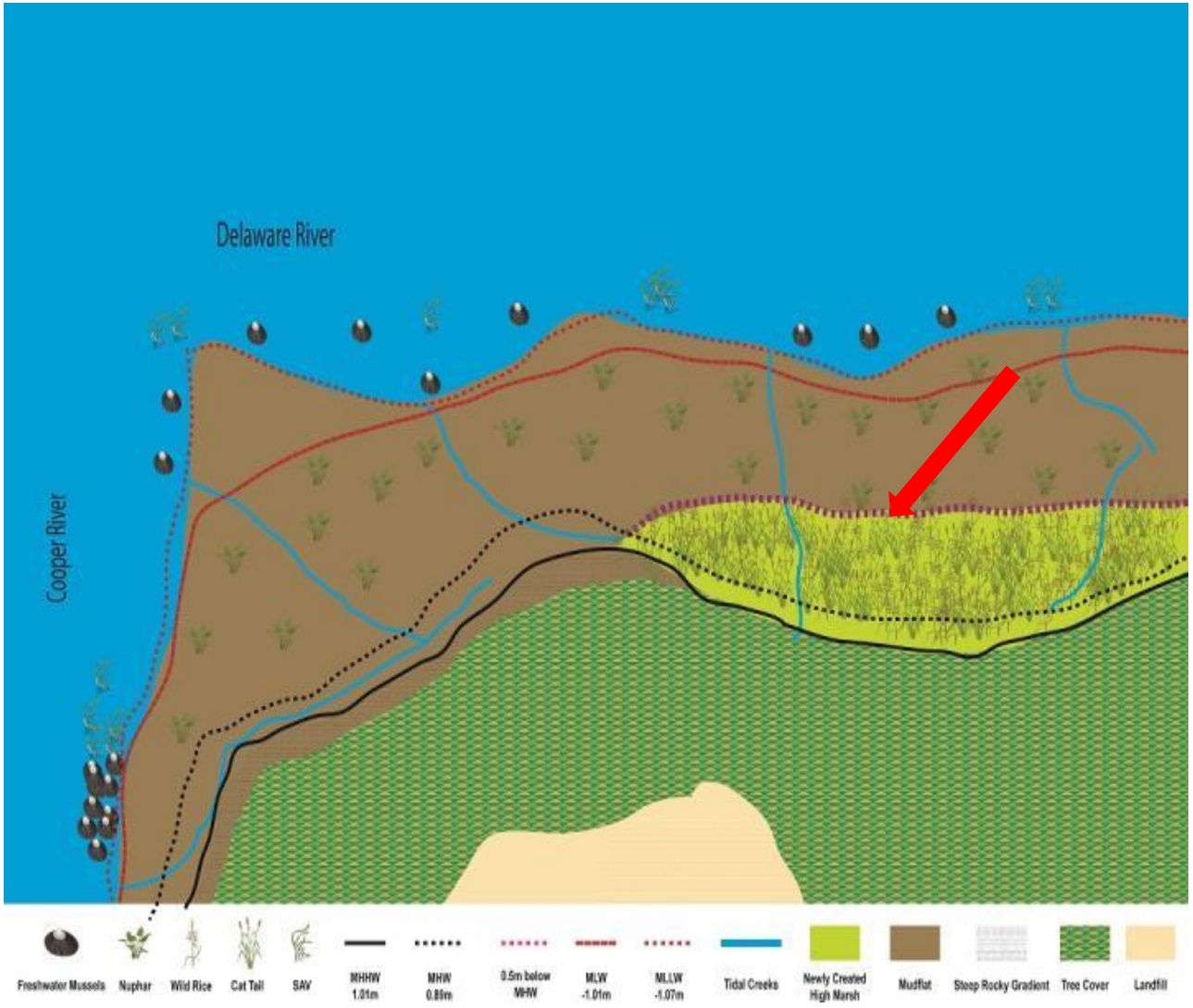


Next Gen Living Shorelines – 2015-2017

Option:

Regrade

Riparian



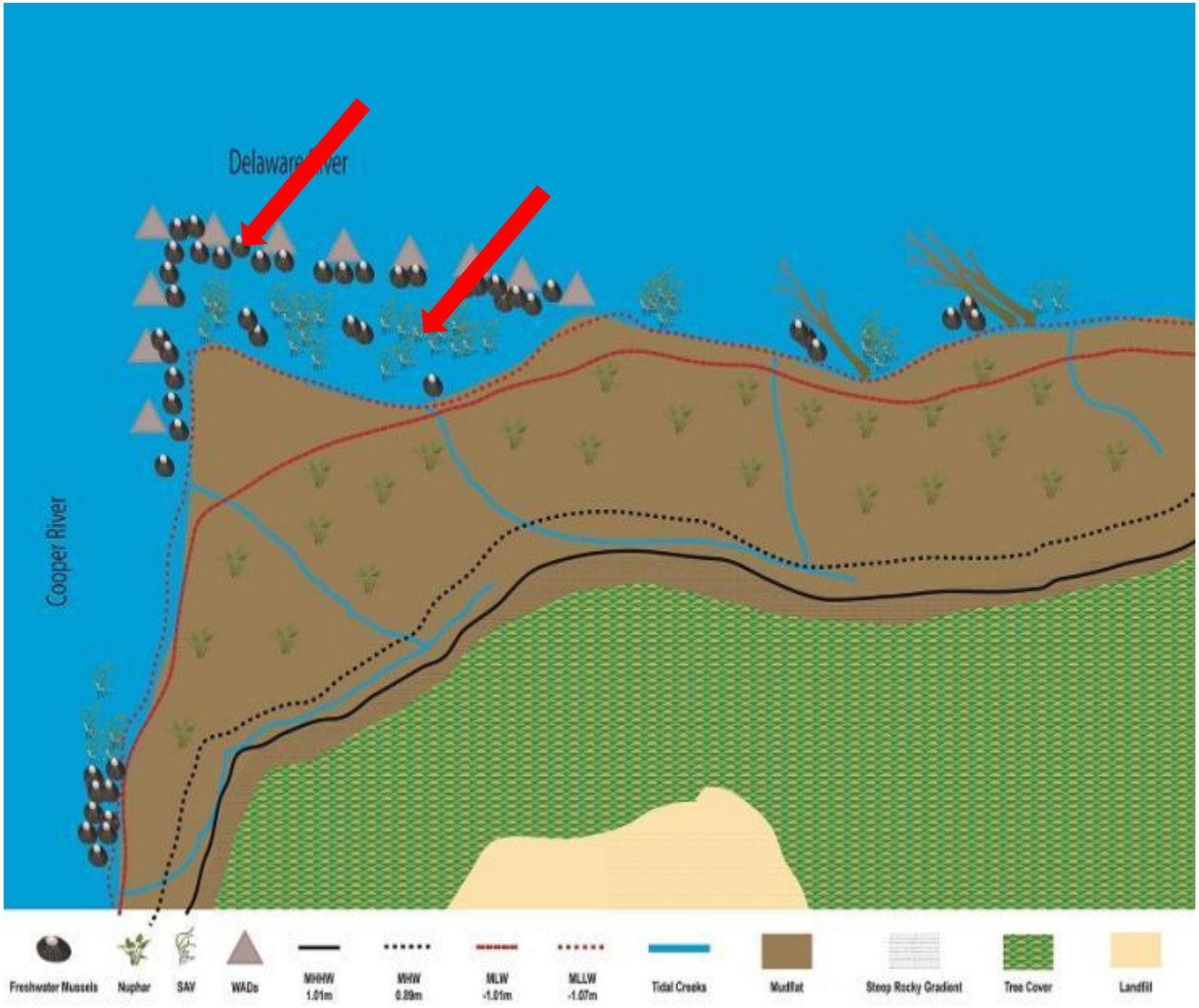
Next Gen Living Shorelines – 2015-2017

Option:

Expand Freshwater Mussel Bed

+

Submerged Vegetation Features

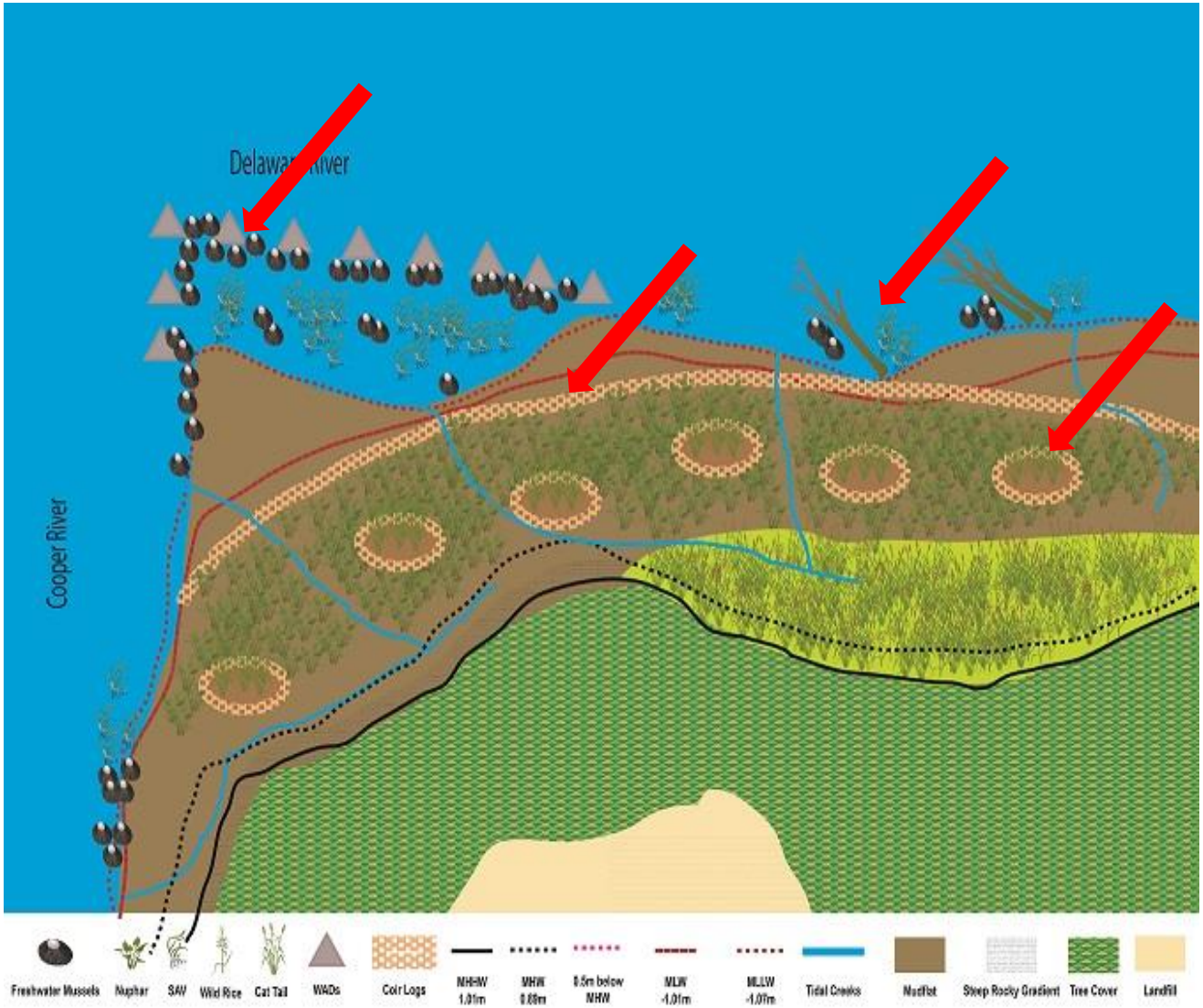


Next Gen Living Shorelines – 2015-2017

Option:

All of Above

Mosaic of Synergistic Habitats

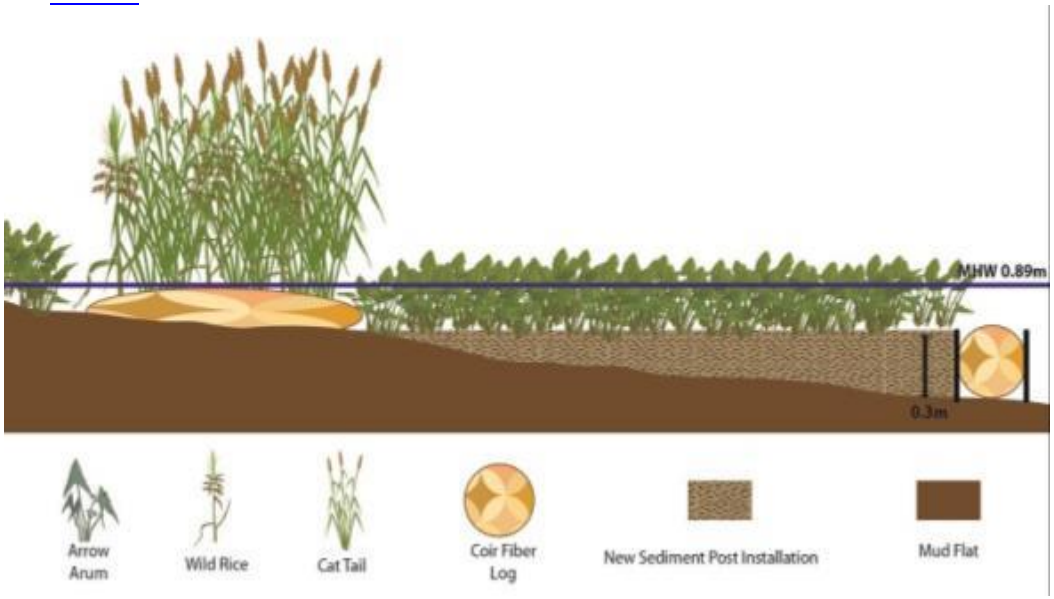


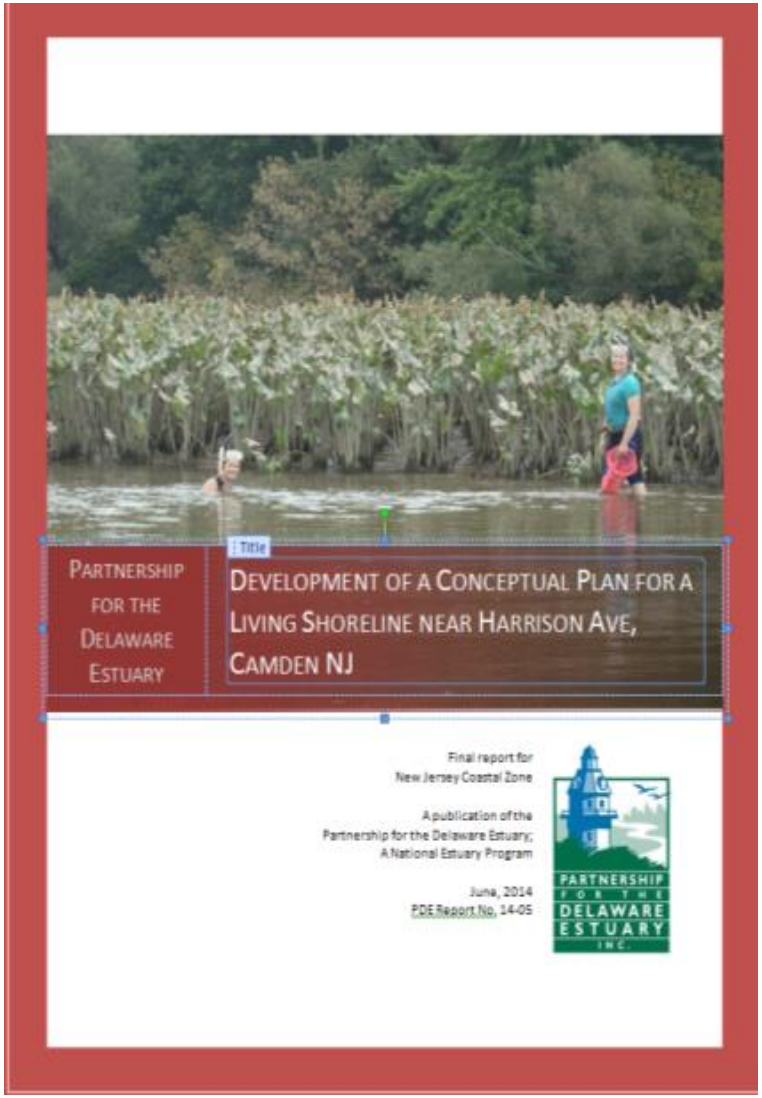
Next Gen Living Shorelines – 2015-2017

For more info:

PDE Report 14-05

http://delawareestuary.org/sciencereports





Next Gen Living Shorelines – 2015-2017

South Camden

Phoenix Park

-Preliminary concept

-Phases I & II funded via NJEIT loans

-Phase III funded via 2014 319(h) grant

2015 Section 319(h) RFP

SFY 2015 Section 319(h)
Grants for Nonpoint Source Pollution Control

REQUEST FOR PROPOSALS

Volunteer planting in a renovated stormwater basin at the Community Medical Center in Toms River, NJ
American Littoral Society 319(h) Project
Photo by American Littoral Society, June 9, 2014

New Jersey Department of Environmental Protection
Division of Water Monitoring and Standards
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Camden model going Statewide

Funded

Green Infrastructure for the City of Newark	$312,517
Green Infrastructure for the City of Perth Amboy	$489,000
Paterson North Haledon Avenue Green Streets	$330,500

Projects under consideration for SFY2015

Green Infrastructure for the City of Paterson	$500,000
Green Infrastructure for the City of Bayonne	$500,000
Green Infrastructure for Jersey City	$500,000
Green Infrastructure for Ridgefield Park	$250,000
City of Hackensack Green Streets	$300,000
City of Camden Gateway Park	$65,000

Thank You!

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