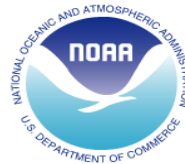


U.S. Department of Commerce



National Oceanic and Atmospheric Administration
National Ocean Service



OFFICE of RESPONSE and RESTORATION

THE URBAN WATERS FEDERAL PARTNERSHIP-PHILADELPHIA AND THE URBAN DELAWARE RIVER

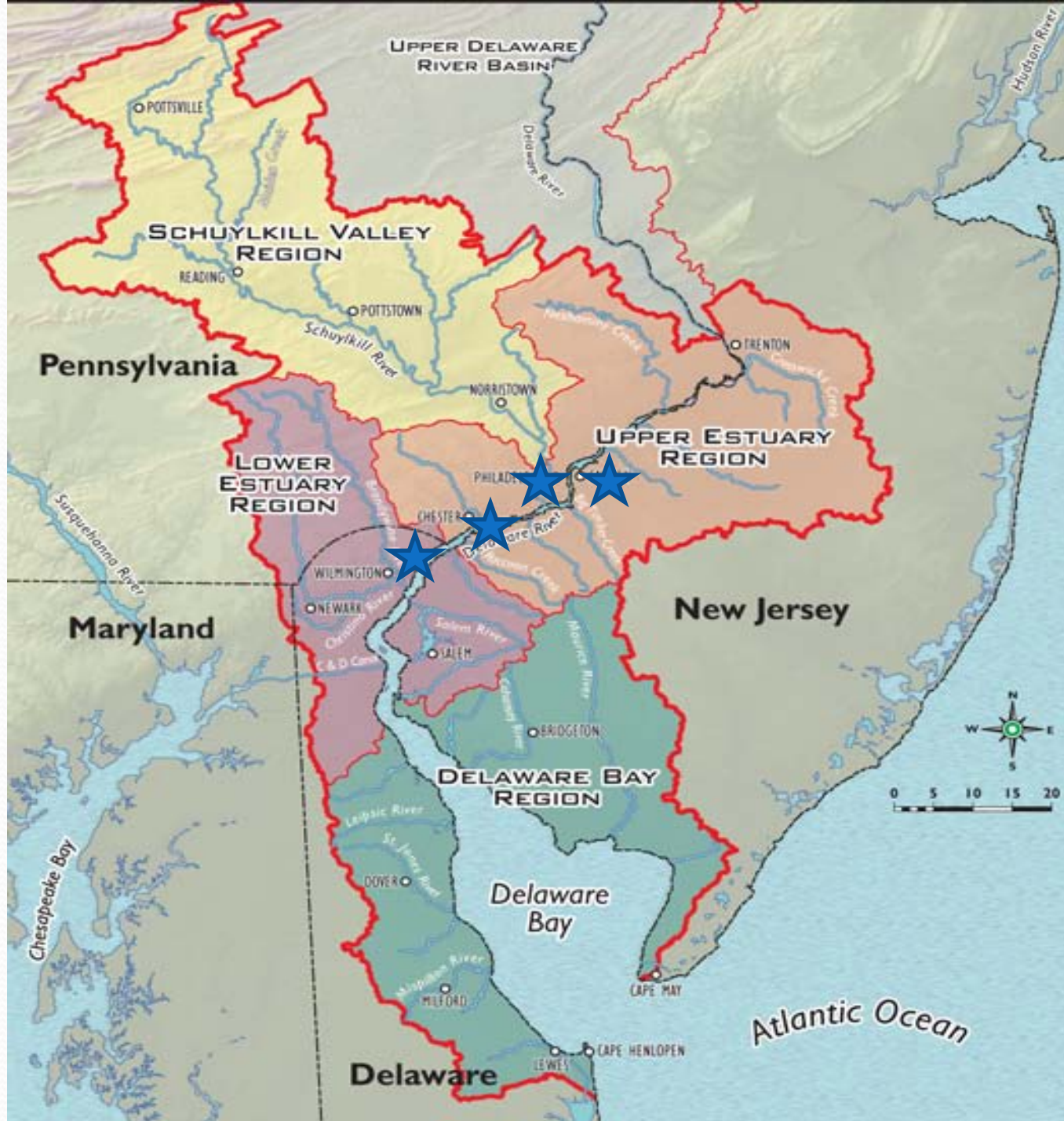
Brownfield Community of Practice

Simeon Hahn, NOAA & Julie Ulrich, TNC

Delaware Estuary Science and Environmental Summit

January 27, 2015





Urban River Coastal Communities Present Several Challenges

- Industrial History and Legacy Contaminants
- Large amount of ecological habitat loss (wetlands, fish passage, riparian areas, in stream habitat, forests)
- Water quality issues
- Outdated infrastructure
- Flooding/Combined Sewer Overflows
- Recreational Access
- Redevelopment plans
- Vulnerability to climate change
- Economic issues/unemployment
- High crime rates
- Environmental Justice Issues
- Federal funding is complex and limited



...and Several Opportunities

- Cleanup and restoration of waste sites
- Brownfield recovery and reuse
- Stabilizing shorelines and improving fish and wildlife habitat
- Adding recreational access –bringing communities to the water
- Planning for climate change
- Mitigating flooding
- Leveraging limited funding



NOAA Coastal Flood Exposure Mapper

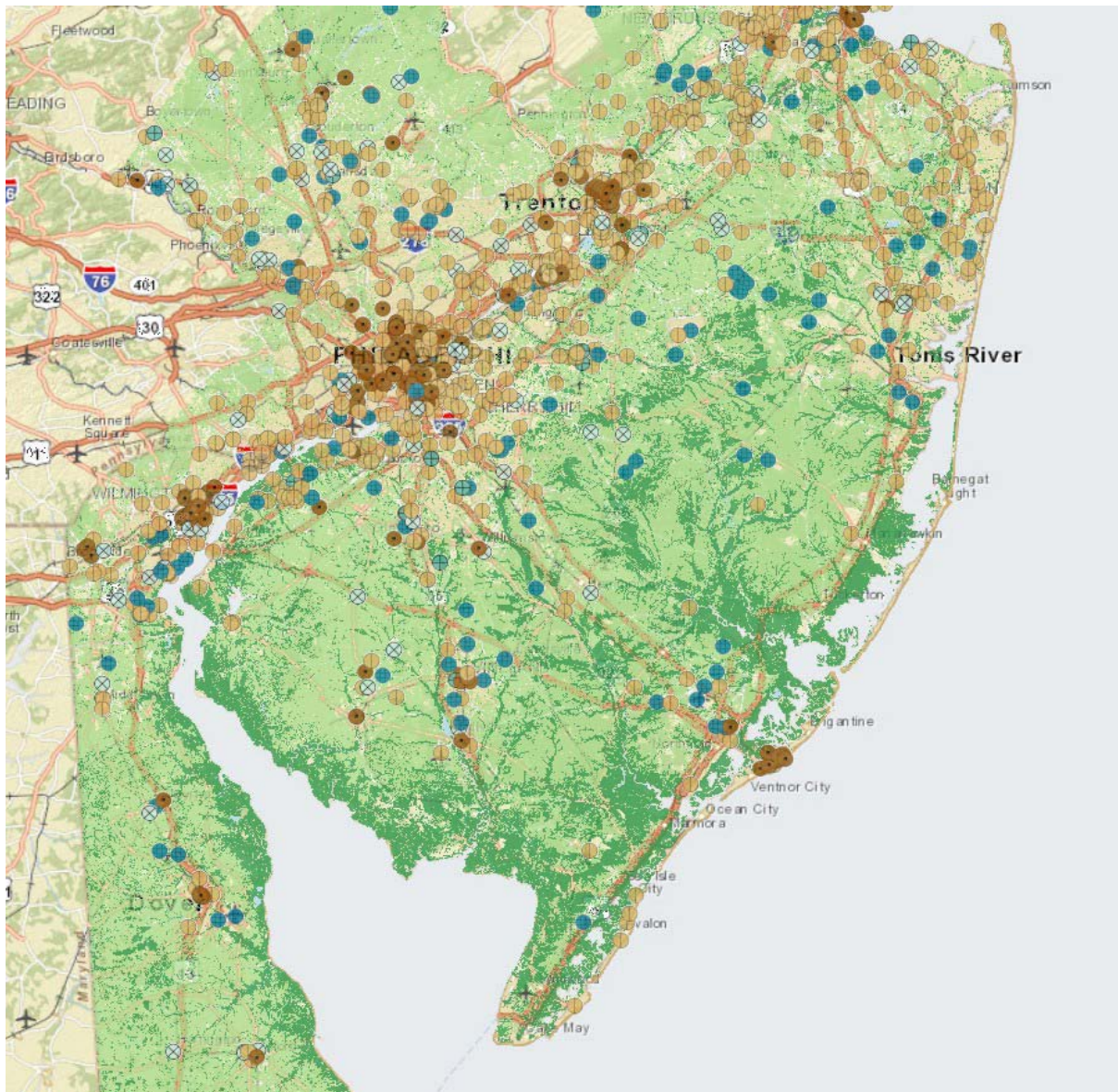
Produced by the NOAA Coastal Services Center

<http://www.csc.noaa.gov/digitalcoast/tools/flood-exposure>

The current geography includes most of the Hurricane Sandy impact area (coastal counties of Delaware, New Jersey, Pennsylvania, and New York). Expansion plans are underway for the rest of the East Coast and Gulf of Mexico.

Features

- Allows users to select a location and explore maps that show people, places, and natural resources exposed to coastal flood hazards
- Creates a collection of maps to download or share online to communicate flood exposure
- Provides guidance for using the maps to engage community members and stakeholders in conversations about potential coastal flood impacts
- Offers access to map services and tips on using them in an online mapping platform



Natural Areas and Open Space



Wetlands



Other Natural Areas and Open Space



Beaches and Dunes

Potential Pollution Sources



Brownfield Property



Hazardous Waste - Large Quantity Generator

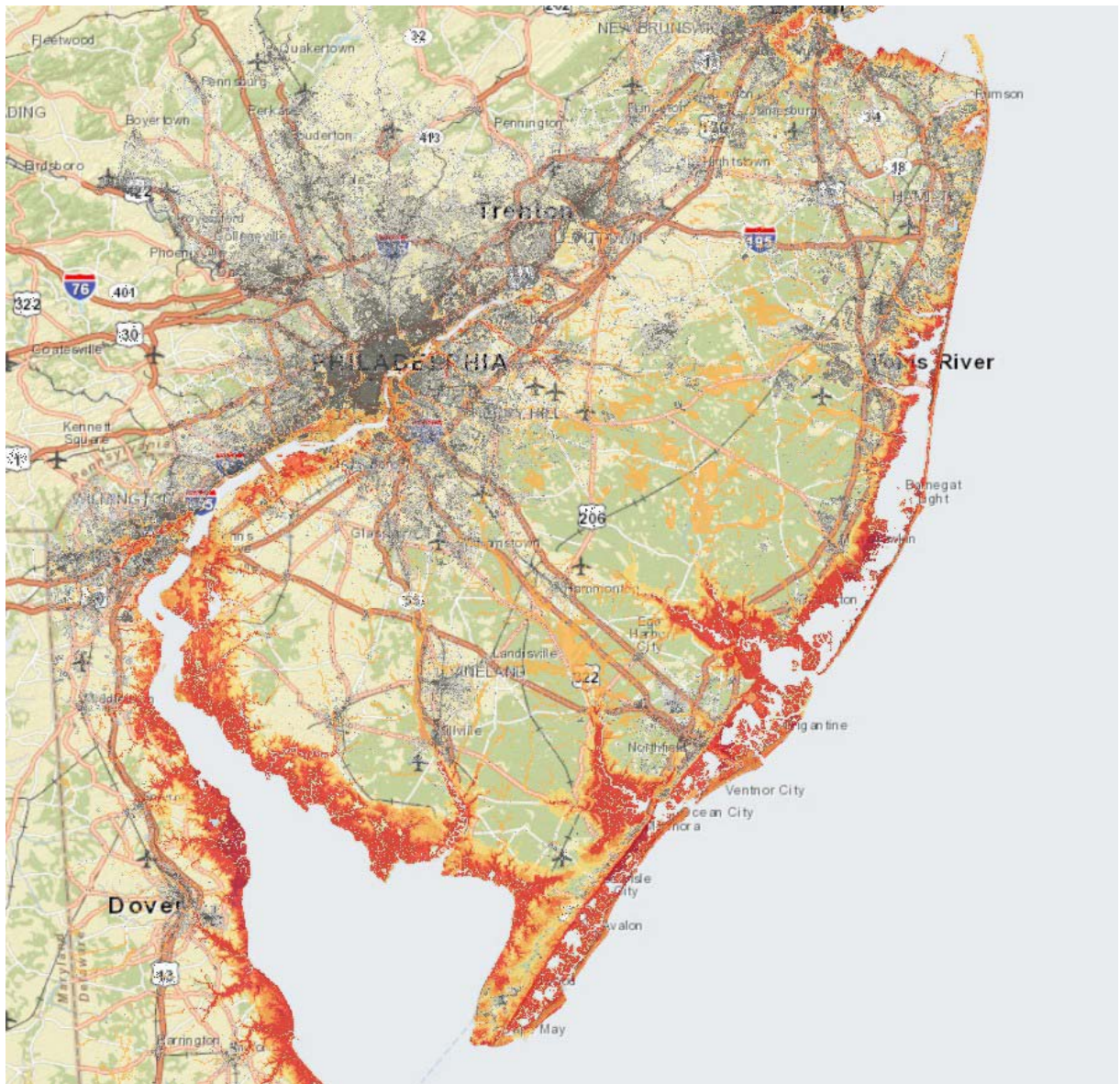


Pesticide Producer

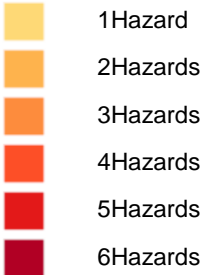


Hazardous Waste – Treatment, Storage,
Disposal Superfund Site

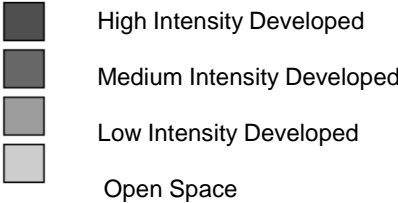
Ecosystem Exposure
Potential Pollution Sources



Flood Hazard Composite



Development



Infrastructure Exposure
Development

Keystone Species



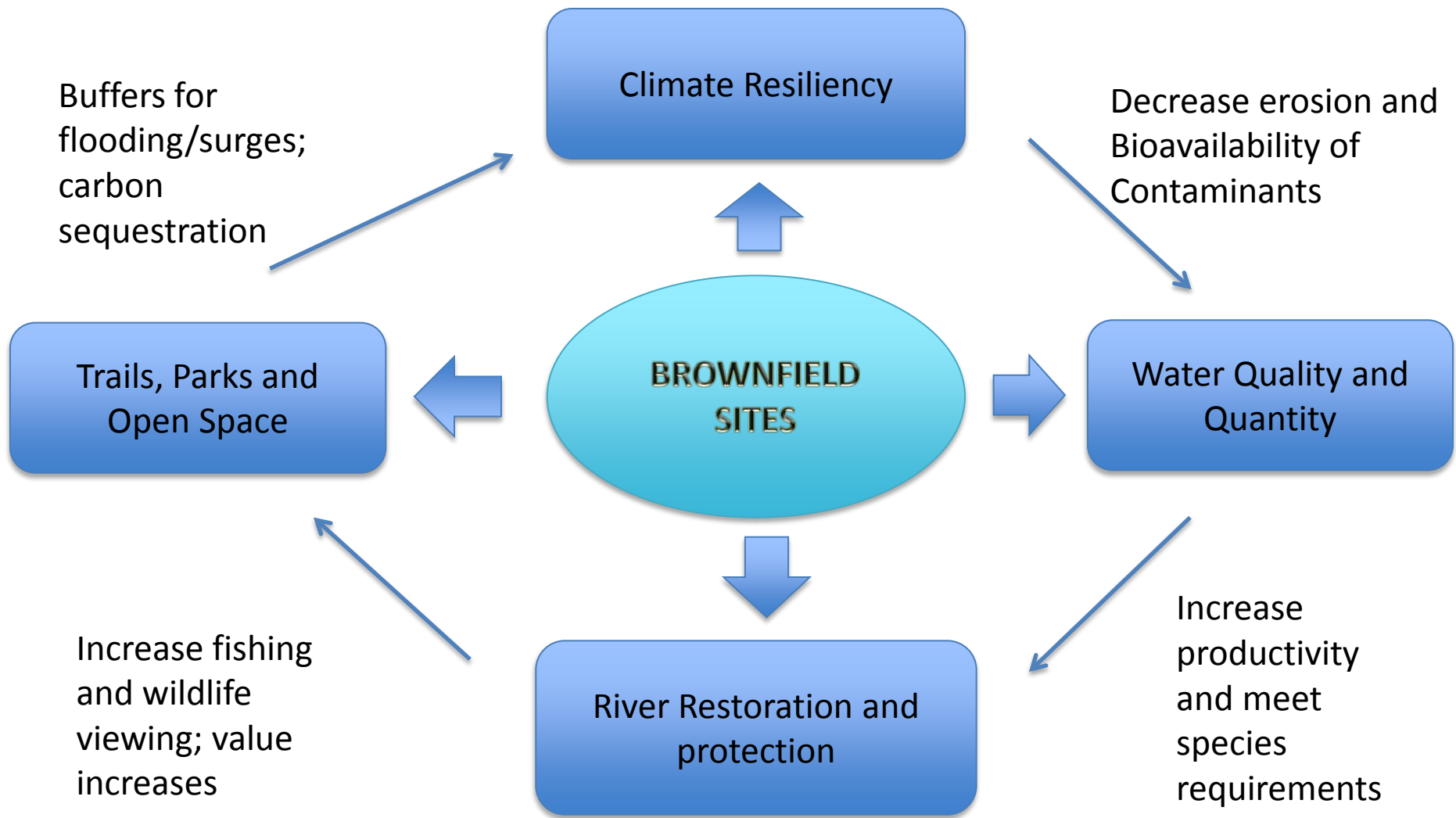
Updates:

- Meetings and Site Visits in Camden, Chester, and Wilmington to Discuss and Highlight Brownfield Sites, Activities, and Priority Sites related to UWFP Goals
- Discussion of Brownfield Program authorities, funding opportunities, policies, etc
- Two Specific Topics for White Papers:
 - “Triple Bottom Line” Approach
 - Permitting/Living Shorelines and other Restoration Issues

Performance Goals for Brownfields

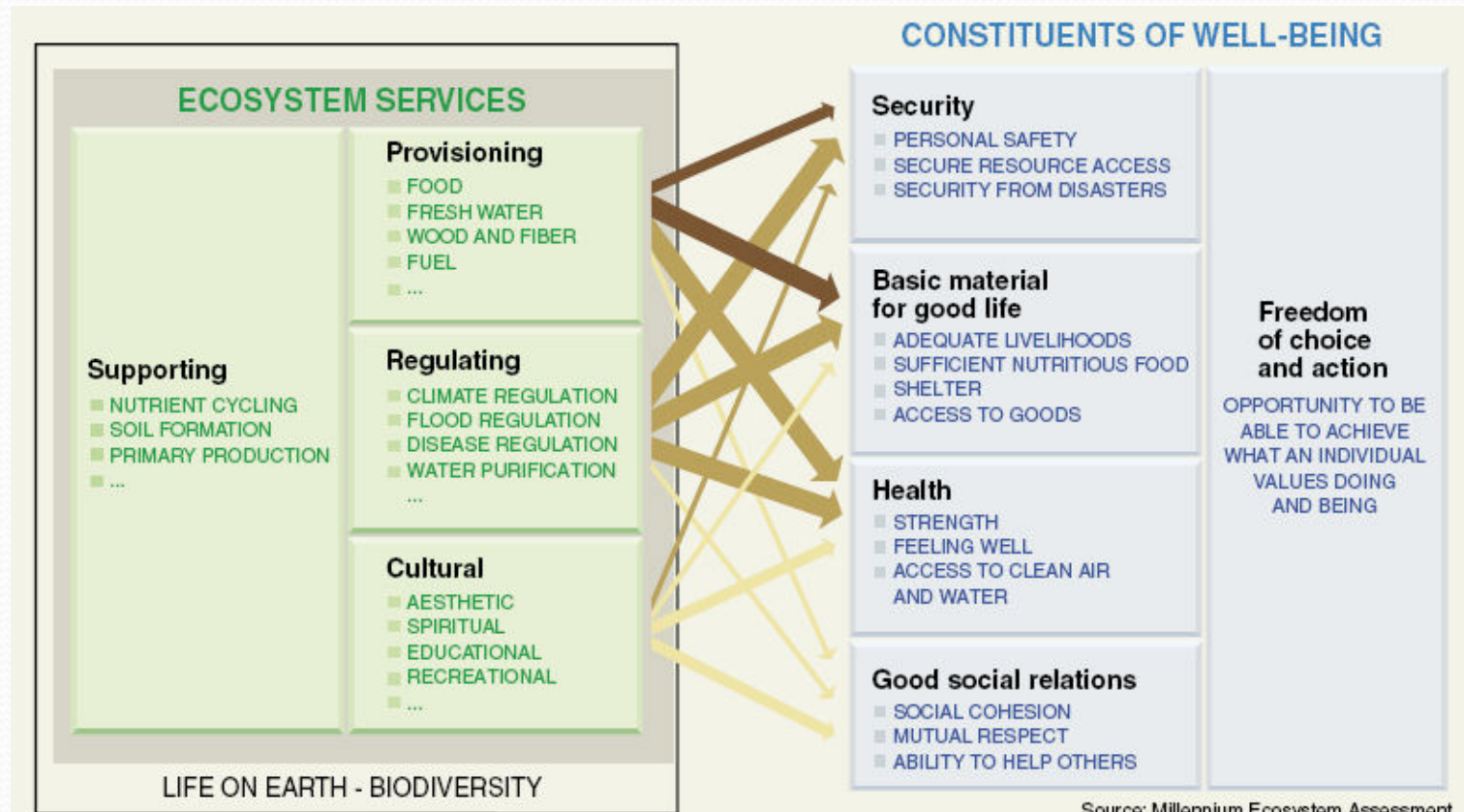
- Integrate with other Programs/Efforts:
 - PCB TMDL
 - Delaware Estuary Program CCMP Goals
 - Living Resources
 - Wetland/Riparian/Shoreline Habitats
 - Water Quality
 - Climate Change Resilience
 - Socio-Economic/Community Needs
 - Beneficial Use of dredge Material

Ecosystem Service Connectivity Example



Why Focus on Urban Water Areas?

MEA Defined Ecosystem Services as “the Benefits that People Obtain from Ecosystems (2005)



Source: Millennium Ecosystem Assessment

ARROW'S COLOR
Potential for mediation by socioeconomic factors

- Low
- Medium
- High

ARROW'S WIDTH
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong

Restoration Planning and Implementation/ Living Shorelines



Poured Asphalt at Philly Coke Site



Failing Bulkheads at Old Phila. Piers

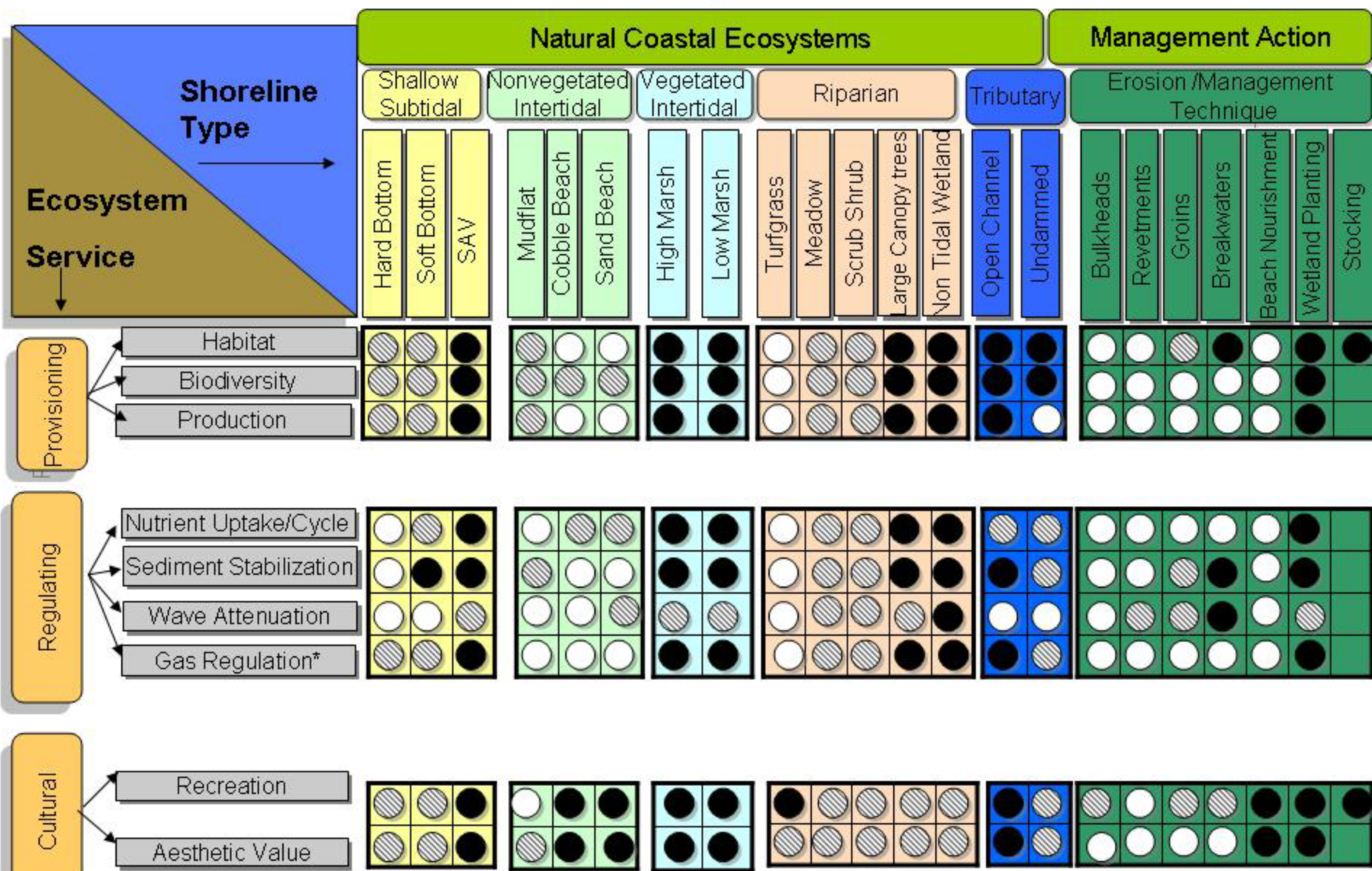


Unstable Shoreline at Lardners Point – Restored!

Value Added Restoration Matrix

Ecosystem Service vs Shoreline Type

 High Service Value
  Intermediate Service Value
 Low Service Value



*Gas regulation is carbon sequestration, carbon dioxide and oxygen production

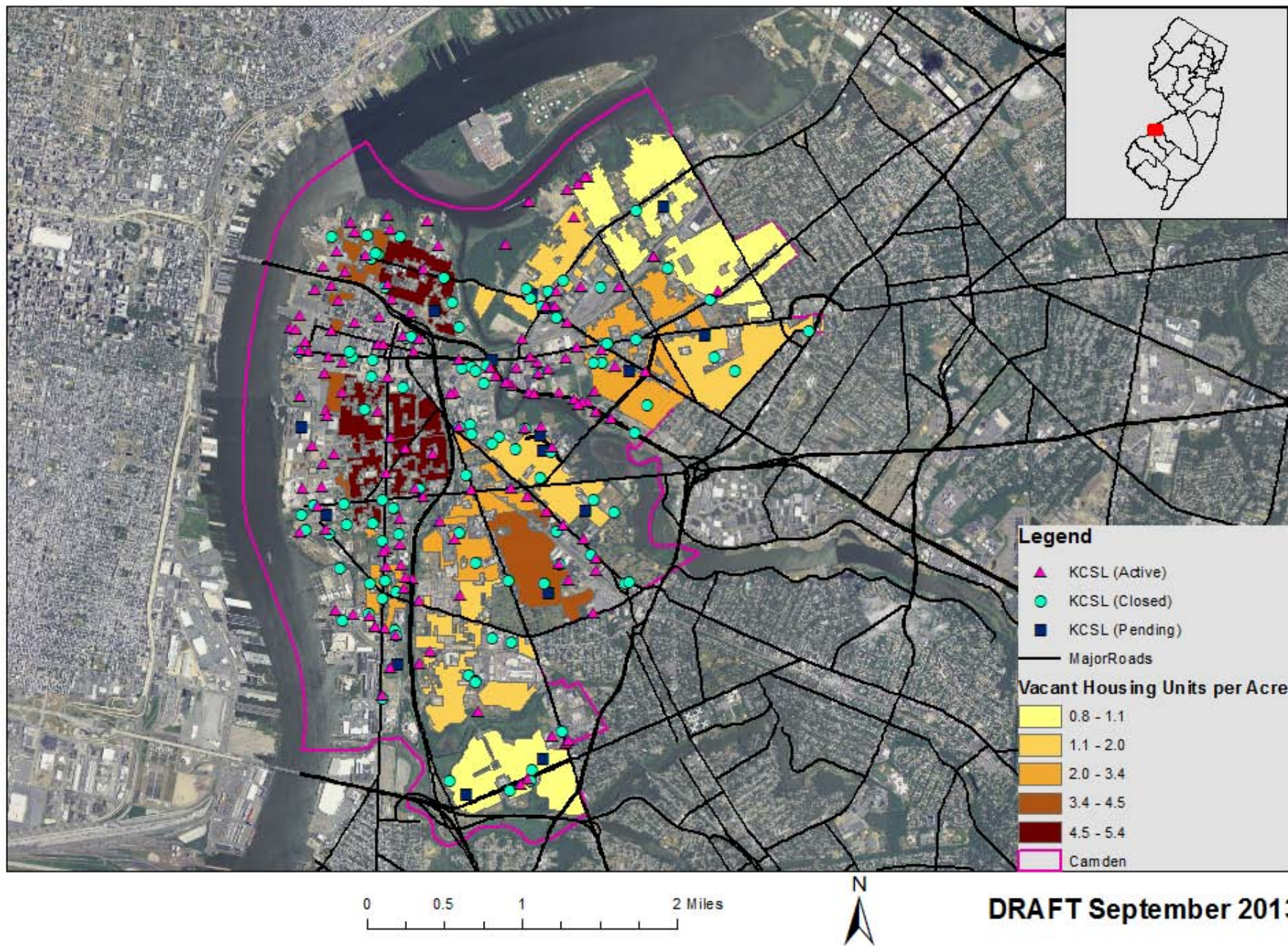
Camden:

Deteriorated water infrastructure & brownfield sites...



...contribute to flooding & quality of life issues

Camden Contaminated Sites and Vacant Housing Units



Brownfield Redevelopment in Camden:

NORTH CAMDEN: EXISTING LAND USE

(41%) Brownfields

(32%) Vacant Residential

>1-mile of brownfields along riverfront

Brownfield redevelopment improves stormwater management & ecosystem services thru...

- (1) Existing sites: impervious surfaces, buildings, foundations, and highly-compacted soils
- (2) Redevelopment: requires removal of impervious surfaces & contaminated soils AND soil improvements and upgraded stormwater management
- (3) Urban riparian zone restoration

EPA (2011) found that brownfield redevelopment reduced stormwater runoff by 47-62%



Evergreen Site, North Camden, NJ



Former American Minerals site
becomes...

PHOENIX PARK



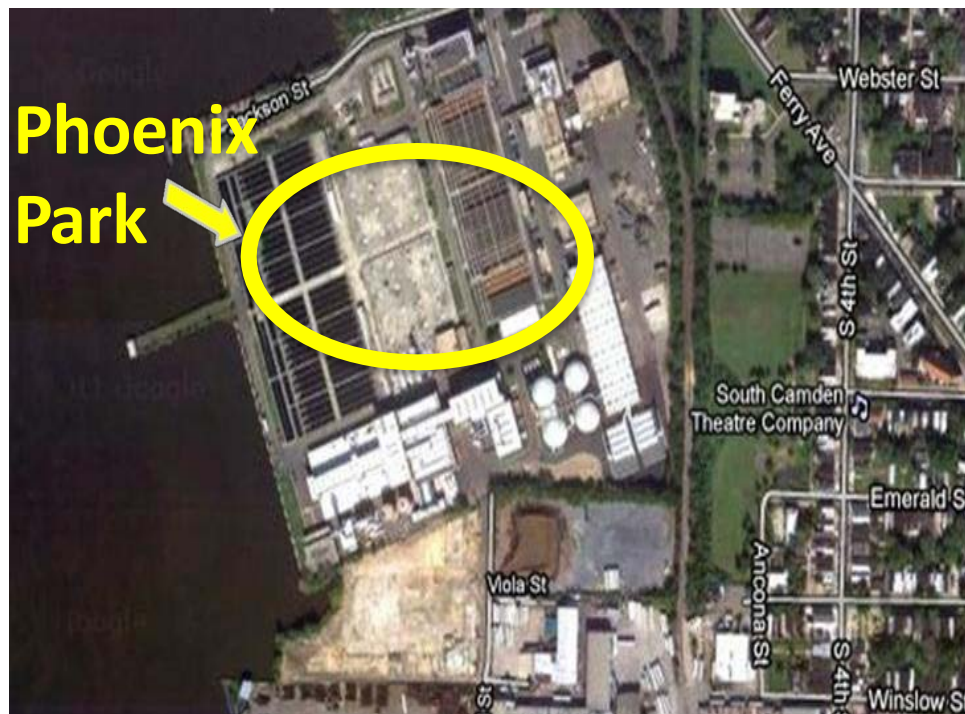
BENEFITS:

- Connects community to waterfront
- 5.5-acre park on former brownfield site Manages >5 million gallons of stormwater/yr
- Resilient shoreline & water quality benefits

FUNDING:

\$800,000 Camden County Open Space
\$2.7 million NJ Environmental Infrastructure Trust
\$655,000 (p/o) NJDEP Supplemental Environmental Project
\$19,000 NJDEP/USEPA Living Shoreline Grant

Groundbreaking August 7, 2014





Camden Brownfield Reuse for Stormwater Mgmt.

Waterfront South Rain Gardens Park

BEFORE:

Abandoned contaminated gas station
~1/2 million gallons of contaminated
stormwater runoff every year



Funding Sources:

DEP C&E Supplemental Env't Project (p/o\$655,000)
DEP SRP Petroleum UST Fund Grant (\$122,000)
EPA Brownfields Petroleum Ass't Grant (\$100,000)
Rutgers 319h Watershed grant (p/o \$300,000)

AFTER:

Gateway/pocket park Manages/treats >1
million gallons of stormwater each year
from site & *streets*!



Partners:

Heart of Camden / Sacred Heart Church Center for
Environmental Transformation
Camden County Municipal Utilities Auth. (CCMUA)
New Jersey Department of Env't Protection (NJDEP)
Camden Redevelopment Agency
Camden SMART (City of Camden, Cooper's Ferry Partnership,
Rutgers University, NJ Tree Foundation, CCMUA, NJDEP)

Green Infrastructure Suitability Rank for Residential Area in Cooper River Watershed

Suitability Rank



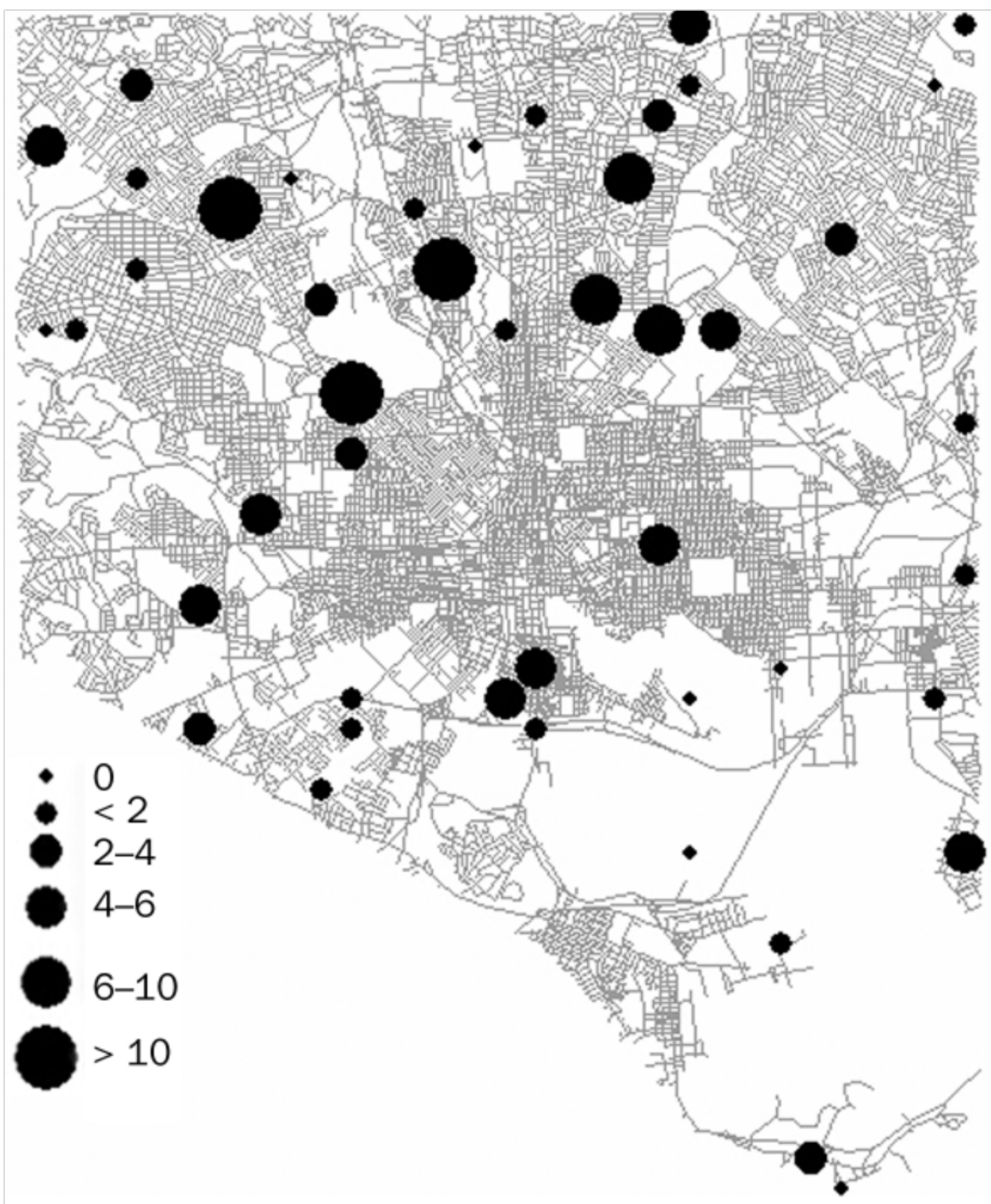
Criteria Used in Suitability Analysis

Criteria	Weight
Soil	25%
Slope	25%
Tree Canopy	10%
Surface Runoff	20%
Land Use	20%

Data Sources

U.S. Census Bureau
New Jersey DEP
U.S. Department of Agriculture
U.S. Geological Survey

The Nature Conservancy
Protecting nature. Preserving life.™





Moving Forward

- This is an emerging project and one that will most benefit from wide collaboration and partnership within Urban Waters Federal Partnership
- Just beginning initial phase of a potential multi-phase initiative
- Begin incorporating needs of Urban Water partner cities to develop an effective tool to be shared
- Collaborating With: NJ DEP, CCMUA, CRA, Cooper's Ferry, Camden SMART, NJCF, NJIT, NOAA, USFS