



NEW JERSEY BROWNFIELD SUMMIT

Building Resilient Futures From Brownfield Pasts

**Welcome esteemed
panelists and guests!**

**Use the QR code here to
access our summit
website and agenda!**





NEW JERSEY BROWNFIELD SUMMIT

Building Resilient Futures From Brownfield Pasts



Dr. Colette Santasieri
Executive Director
NJIT TAB



**NEW
JERSEY
BROWNFIELD
SUMMIT**

**EPA Region 2 and
NJ Department of Environmental Protection
Roundtable Discussion**



Terry Wesley

Supervisor, Brownfields Section
Land and Redevelopment Programs Branch
Land, Chemicals and Redevelopment Division
U.S. Environmental Protection Agency, Region 2



**NEW JERSEY
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION**

Gwen Zervas

Director, Division of Remediation Management
Contaminated Site Remediation & Redevelopment
NJ Department of Environmental Protection

What is



NJIT provides free technical assistance to state, regional, county, tribal, and local government entities and nonprofit organizations interested in learning about, identifying, assessing, cleaning up, and redeveloping brownfield sites in EPA Regions 2 & 4.

Contact Us:



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(973) 642-4165



www.njit.edu/tab



[company/njit-tab](https://www.linkedin.com/company/njit-tab)

**NEW
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The State of Climate Change in New Jersey



Dr. Anthony Broccoli

Distinguished Professor of Atmospheric Science
Rutgers University



The State of Climate Change in New Jersey

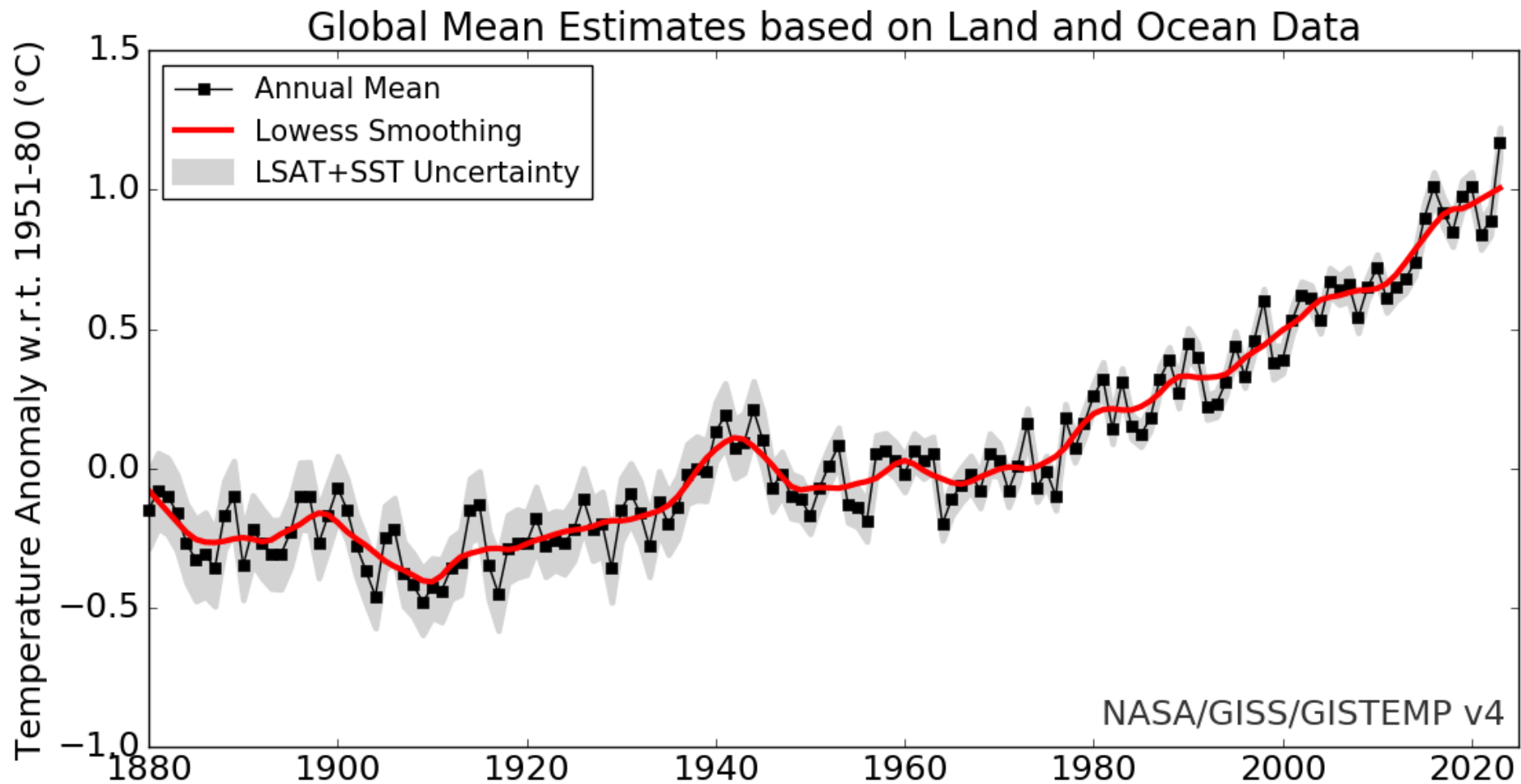
Anthony J. Broccoli
Department of Environmental Sciences
Rutgers University

New Jersey Brownfield Summit:
Building Resilient Futures From Brownfield Pasts
New Jersey Institute of Technology
June 12, 2024

Climate Change 101: The Basics

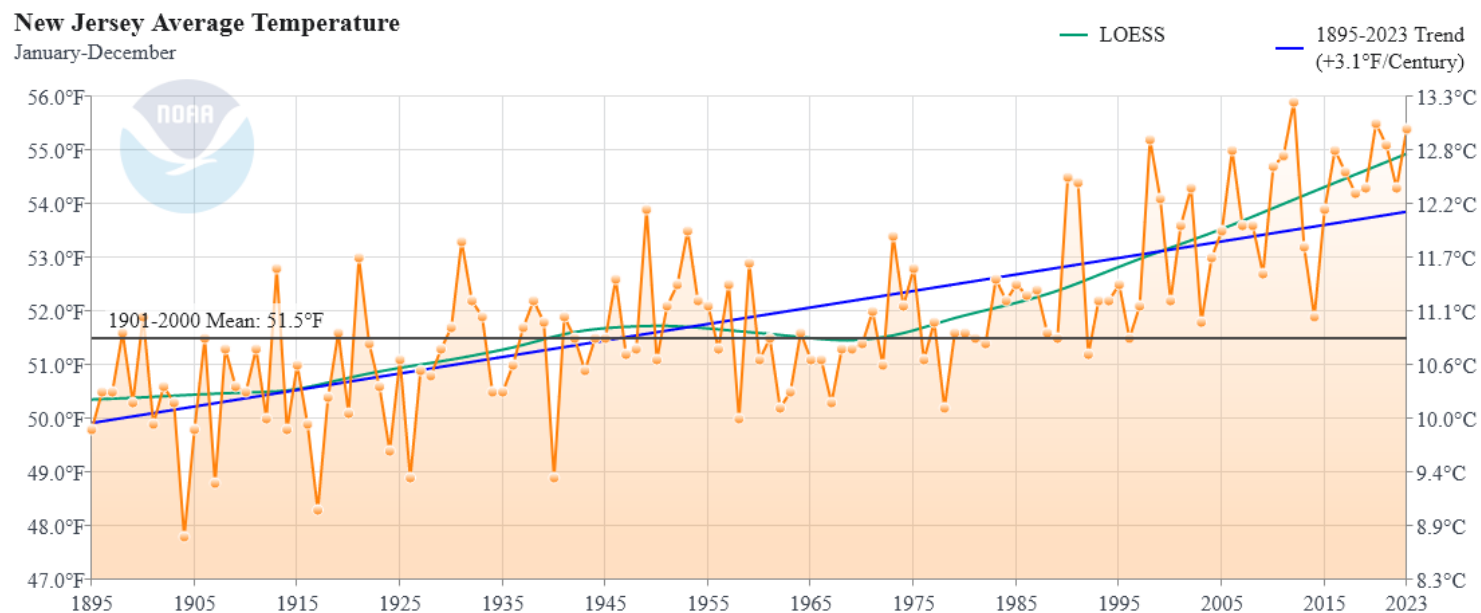
- Combustion of fossil fuels (coal, petroleum, natural gas) emits carbon dioxide into the atmosphere (currently about 10 billion tons of carbon per year)
- Roughly half of the carbon dioxide remains in the atmosphere; the remainder is taken up by vegetation on land or goes into the ocean (causing ocean acidification)
- Increasing carbon dioxide heats the earth; global temperatures have risen by $\sim 2^{\circ}\text{F}$ during the past century.
- Increasing temperatures also cause other changes in climate and sea level.

Trends in global average temperature



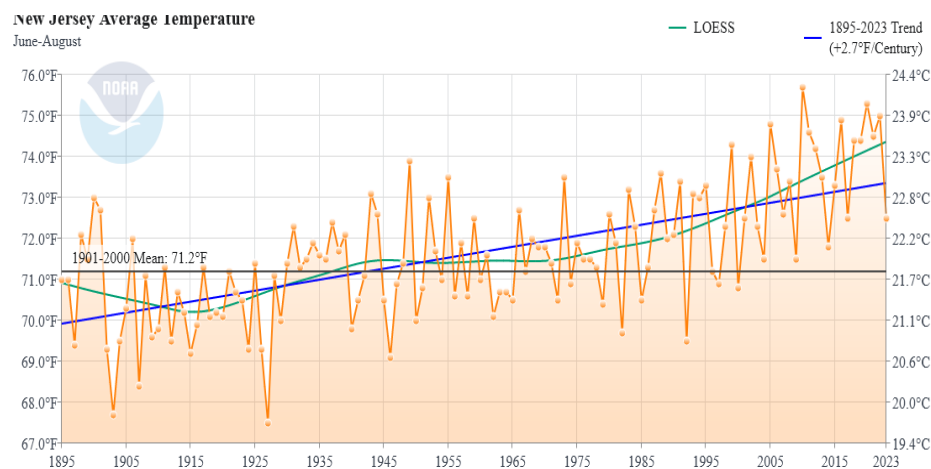
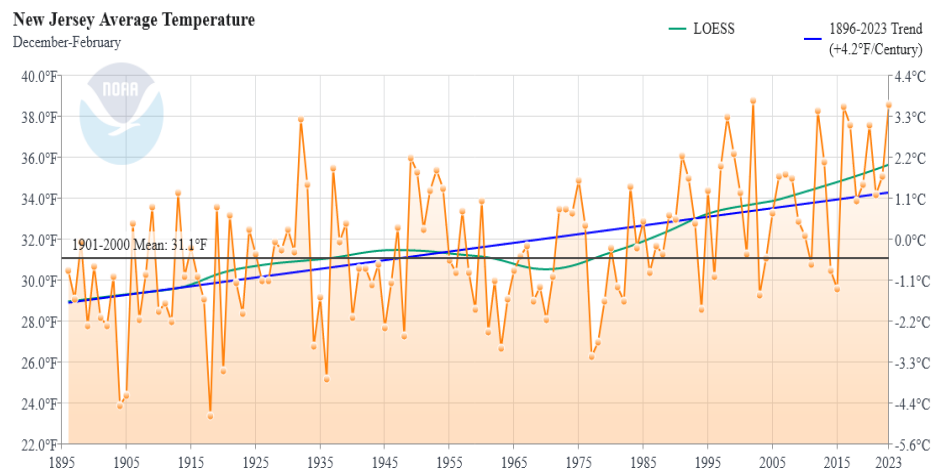
Source: NASA/Goddard Institute for Space Studies

Trends in annual mean New Jersey temperature



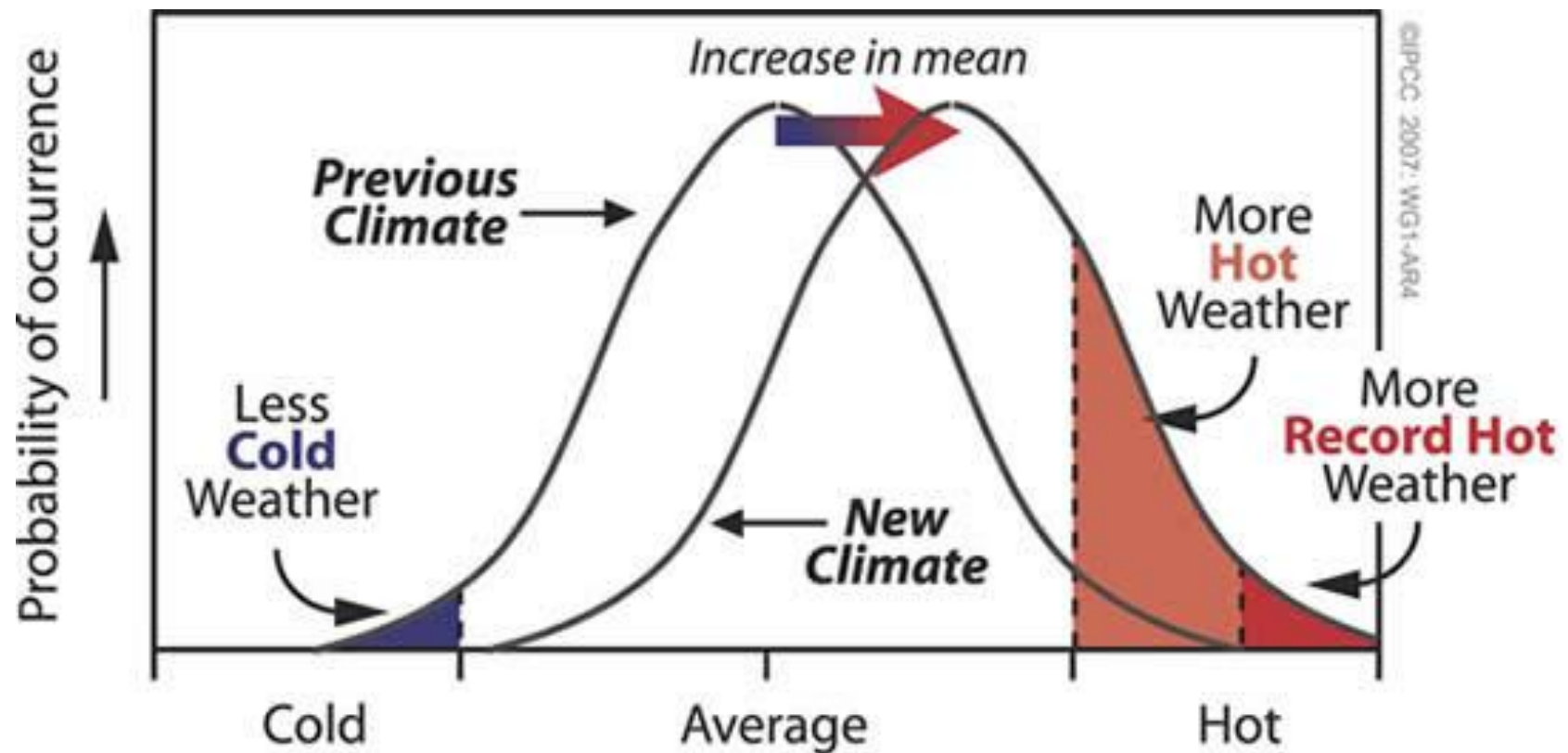
- Long-term upward trend of 3.1°F per 100 years
- More rapid warming since 1970
- The 10 warmest years have occurred since 1998
- 21 of the 22 warmest years have occurred since 1990.
- 2012 was the warmest year on record and 2020 was the second warmest.

Trends in winter and summer temperature in N.J.



- Larger warming trend in winter (4.2°F/100 yrs) than in summer (2.7°F/100 yrs).
- Year-to-year temperature variability is much larger in winter, which can make it harder to perceive long-term trends.
- 8 of the 9 warmest winters have occurred since 1998.
- The 12 warmest summers have occurred since 1999.

Changes in average temperature lead to changes in extremes

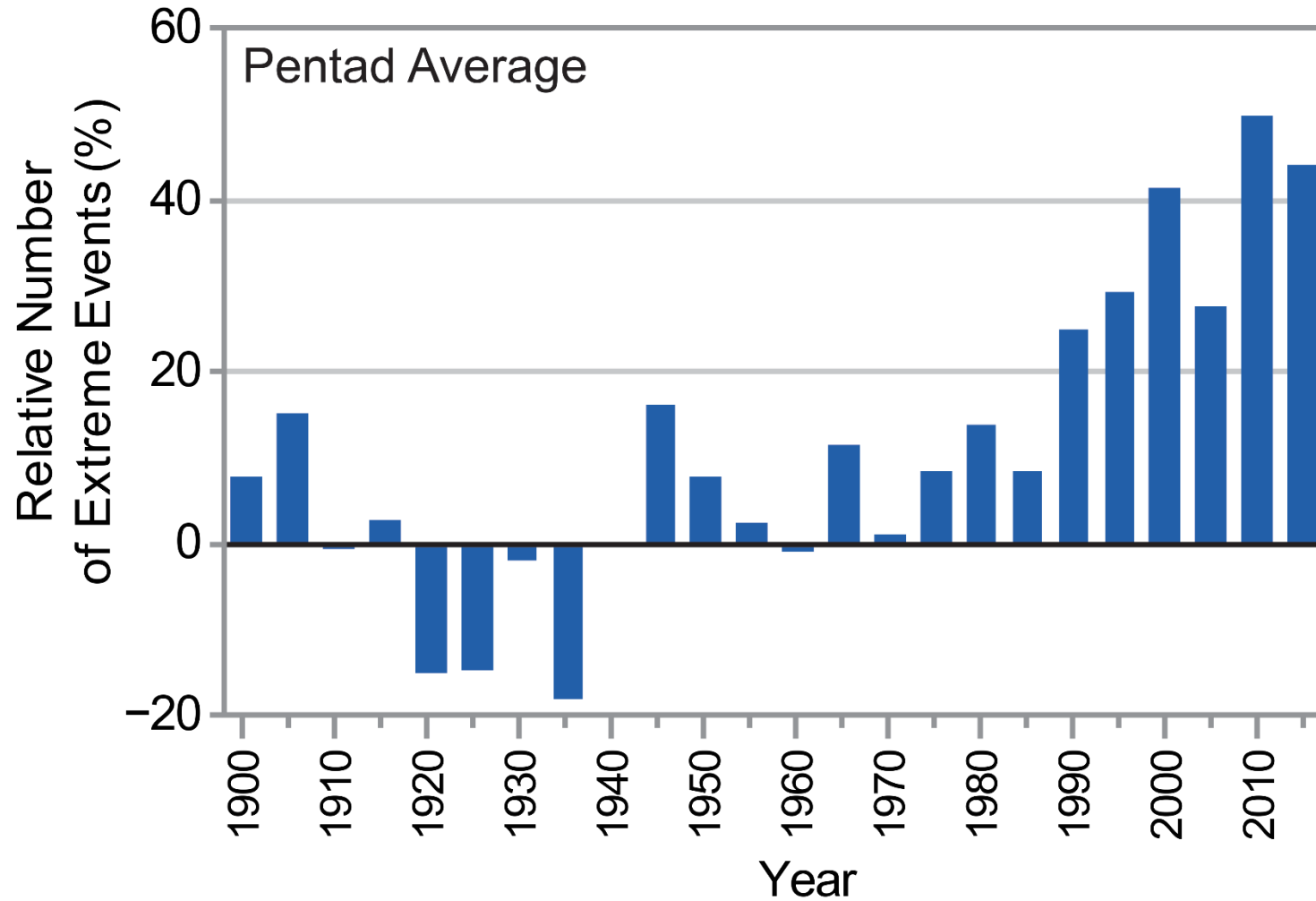


Unusually warm and cold months in New Jersey

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Jan							4																	1
Feb																		1	2		3			3
Mar													1				4							
Apr											2							1		5				3
May					3								5			1			4					
Jun									4		1													
Jul											5	4										1		
Aug						4											2		3			5	1	
Sep						3										2	5		3					
Oct								1											3				2	
Nov							2			3		5				1						3		
Dec		5					2									1							3	3

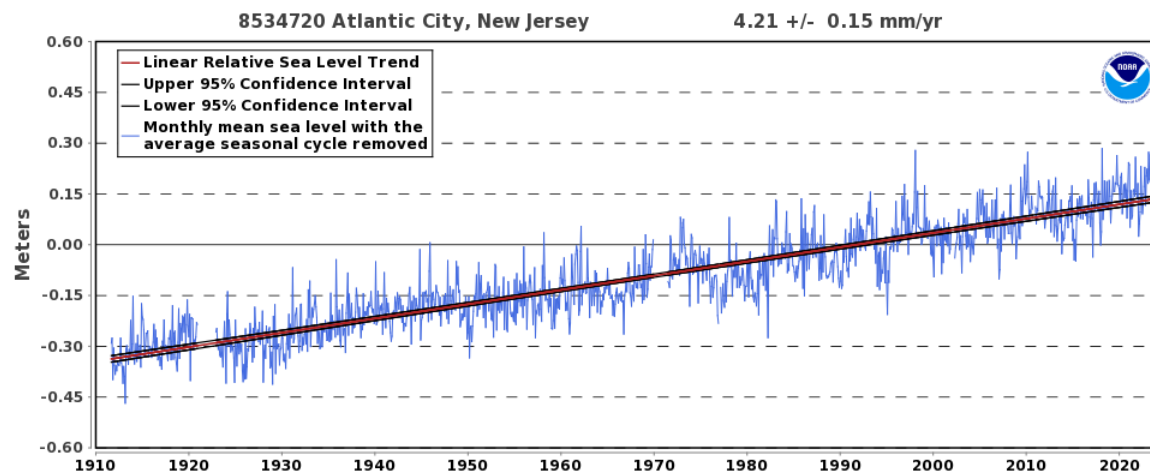
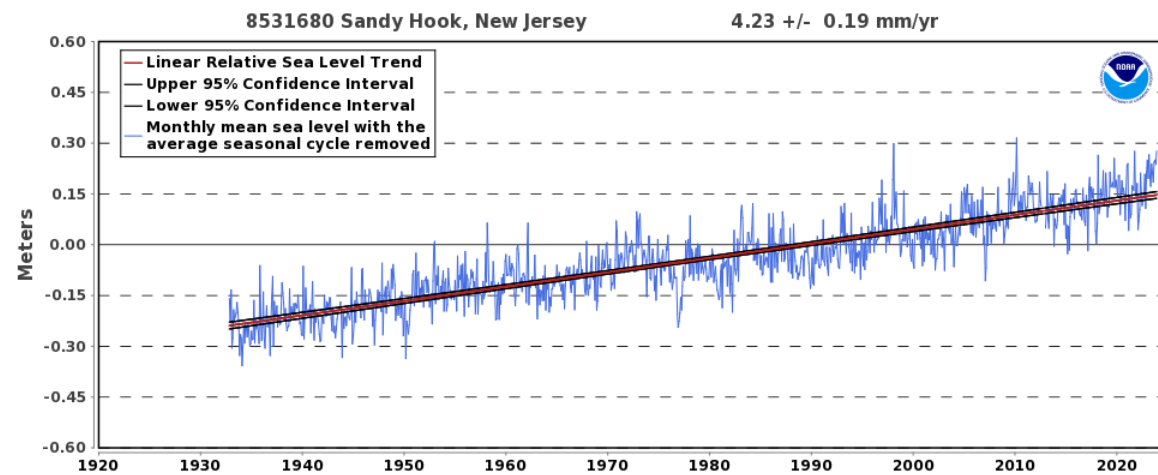
- Unusually warm and cold months are defined as the five warmest and coldest for each calendar month (total of 60 warm and 60 cold plus ties)
- Since 2000, there have been 43 unusually warm months and 0 unusually cold months

2-Day Precipitation Events Exceeding 5-Year Recurrence Interval



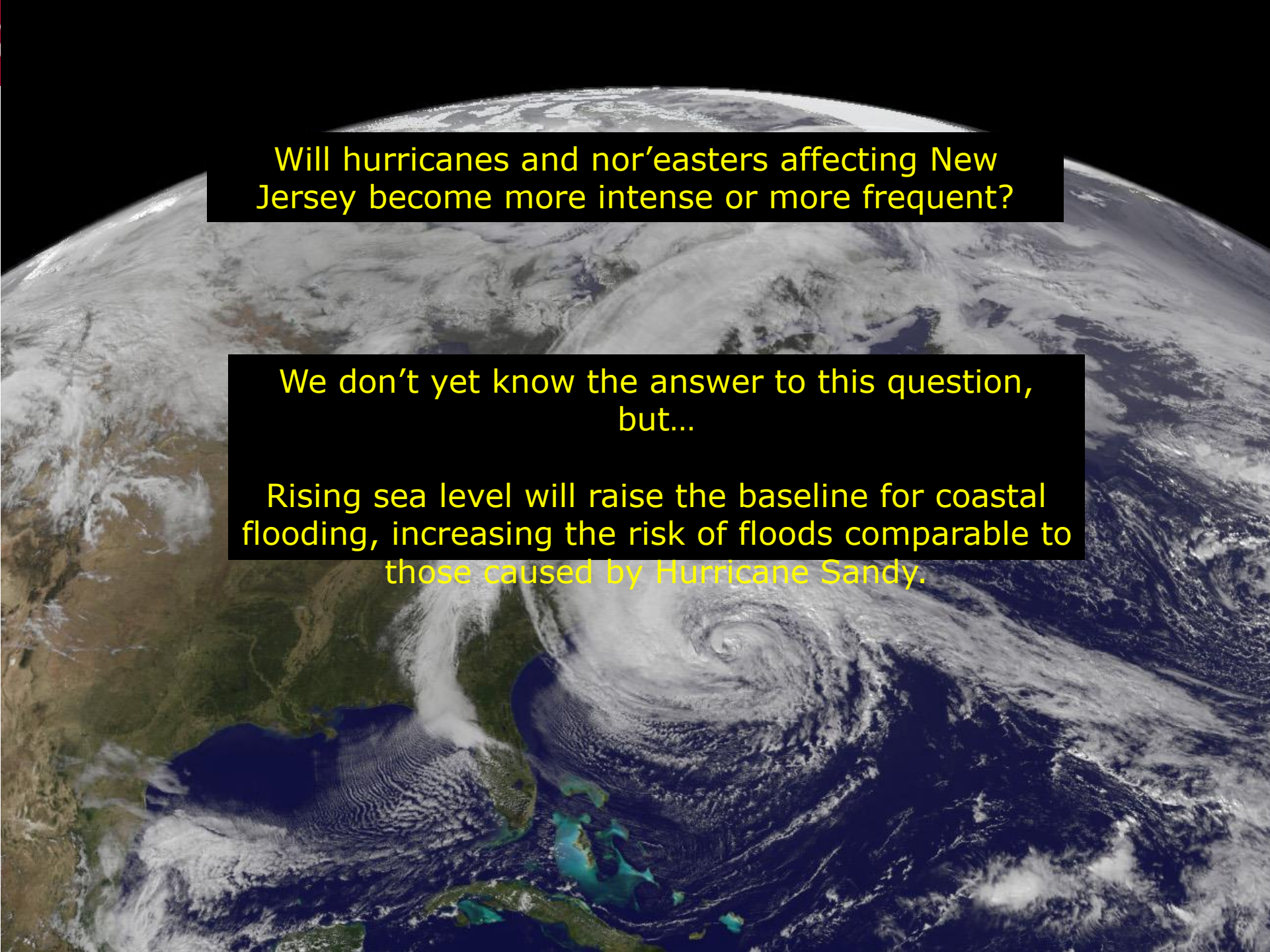
Source: National Climate Assessment (2017)

New Jersey sea level trends



- The rate of global sea level rise has nearly doubled in the past two decades.
- Sea level in New Jersey is rising more rapidly than the global average because land is also subsiding.



A satellite image of Earth from space, showing a large, well-defined hurricane swirling over the Atlantic Ocean. The hurricane's eye is clearly visible, surrounded by dense, white cloud bands. The surrounding ocean is a deep blue, and the landmasses of North and South America are partially visible in shades of green and brown. The curvature of the Earth is visible at the top and bottom edges of the frame.

Will hurricanes and nor'easters affecting New Jersey become more intense or more frequent?

We don't yet know the answer to this question,
but...

Rising sea level will raise the baseline for coastal flooding, increasing the risk of floods comparable to those caused by Hurricane Sandy.

New Jersey's climate future

- More warm extremes and fewer cold extremes
- Heavy rains become more intense
- More frequent dry spells
- Rising sea level with increased frequency and intensity of coastal flooding



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Redeveloping Brownfields to Create Resilient Communities



Carrie Martin, AICP
Environmental Sustainability Planner
NJIT TAB

Redeveloping Brownfields to Create Resilient Communities

Carrie Martin, AICP

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NJIT TAB



What Does Climate Change Have To Do with Brownfields?

“Any former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of a contaminant.”

- N.J.S.A. 58:10B-23.d



Vacant Land



Dry Cleaner



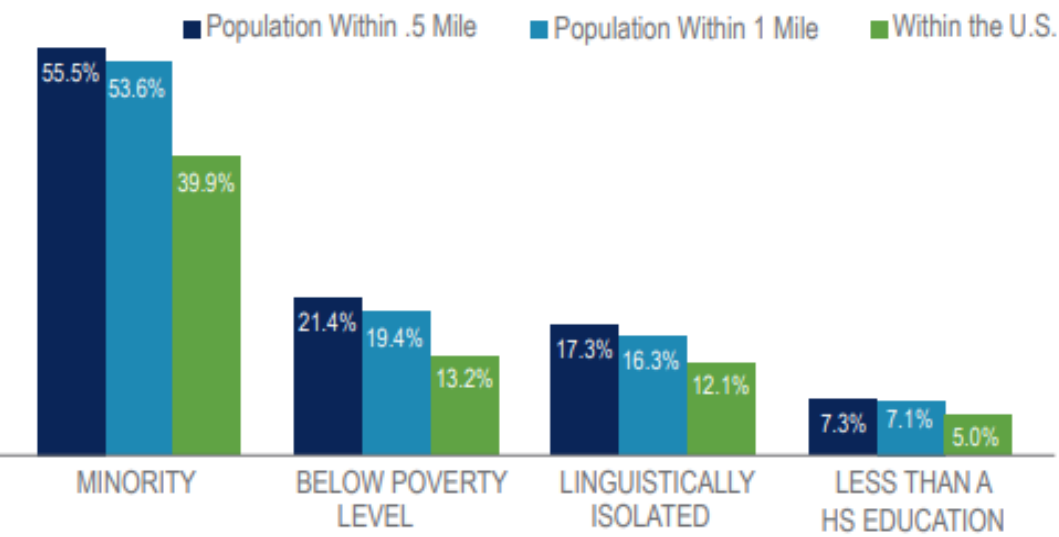
Factory

COMMUNITY CHARACTERISTICS NEAR BROWNFIELD SITES

Brownfield sites from Assessment, Cleanup and Redevelopment Exchange System (ACRES) as of FY20
Population Data from 2016-2019 American Community Survey

The population living within .5- and 1-mile of a Brownfield site is:

- ▶ more minority,
- ▶ more low income,
- ▶ more linguistically isolated, and
- ▶ less likely to have a high school education than the U.S. population as a whole.



Climate Impacts on Brownfields



Underground Storage Tank



Hurricane Harvey in Houston, TX

Unaddressed brownfield sites are susceptible to increased and repeated damage from extreme events that can mobilize contaminants and compromise structures on brownfield sites.

Climate Resilience

“A capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment” – EPA



Structures damaged by flooding



Elevated structure

Climate Adaptation

“Adjustment in natural or human systems to a new or changing environment that exploits beneficial opportunities or moderates negative effects.” – EPA



Green roof on top of the Jacob Javits Convention Center in New York City

HOW CAN BROWNFIELD REDEVELOPMENT PLANNING ADD TO CLIMATE SAFETY? FLOODING PROBLEM



Potentially contaminated brownfield site

1

Paved, impervious site and road areas

2

Poor drainage for stormwater management

3

HOW CAN BROWNFIELD REDEVELOPMENT PLANNING ADD TO CLIMATE SAFETY? FLOODING SOLUTION

1 Remove and reduce
contaminants to
clean the site

2 Add safe, permeable
surfaces for walking or
biking

3 Improve drainage
and stormwater
management

Flooding Solutions: Permeable Surfaces & Stormwater Management

- **Permeable pavement** has openings in it to allow water to soak into the soil
- **Bioswales** are channels that are either vegetated, mulched, or xeriscaped, and used for stormwater retention and treatment.
- Combine for green streets & parking lots

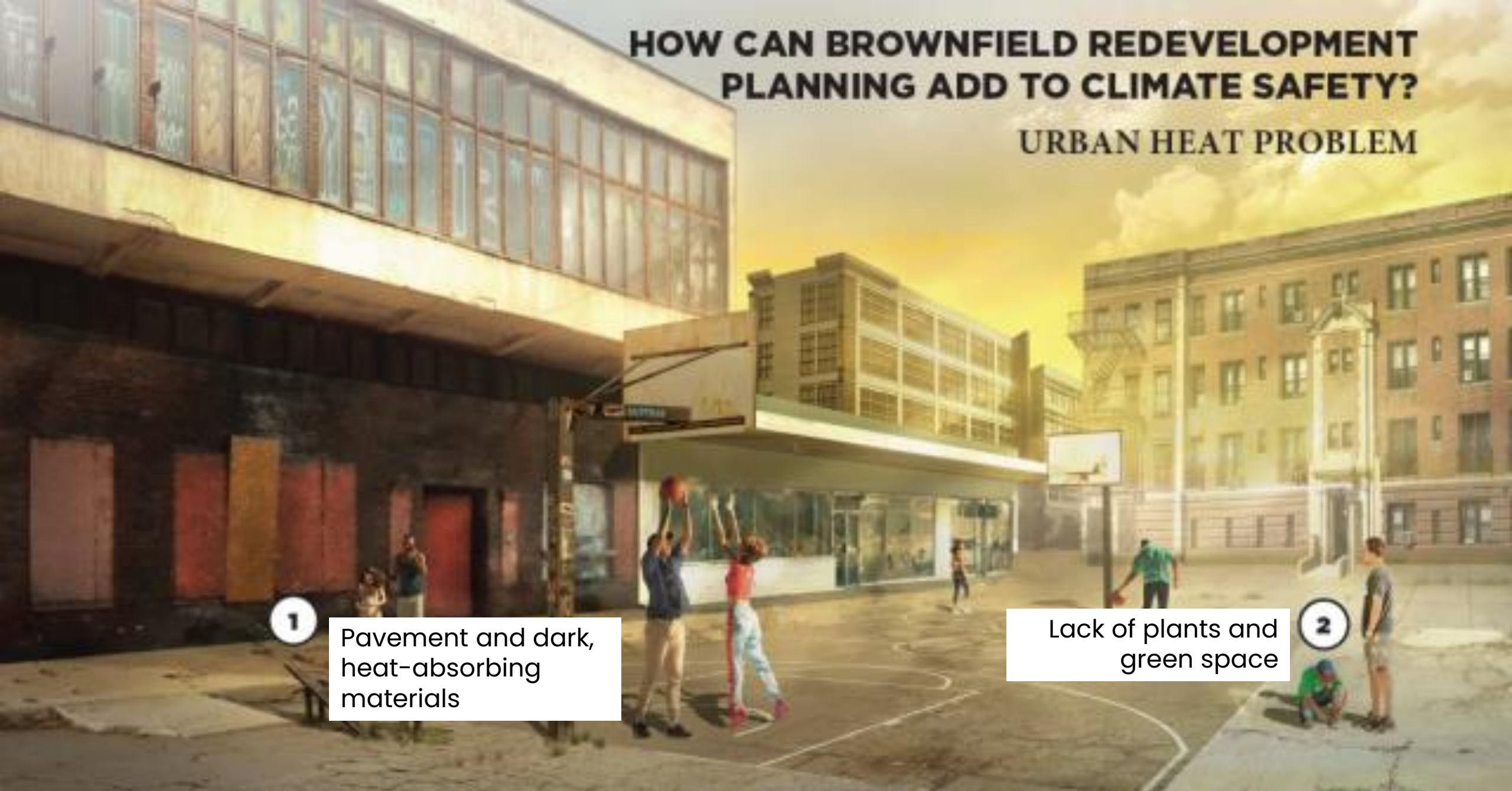


Green Street in Seattle, WA (Image Credit: Abby Hall, US EPA)

Green Parking Lots (Image Credit : Naturally Resilient Communities)

HOW CAN BROWNFIELD REDEVELOPMENT PLANNING ADD TO CLIMATE SAFETY?

URBAN HEAT PROBLEM



1

Pavement and dark, heat-absorbing materials

Lack of plants and green space

2

HOW CAN BROWNFIELD REDEVELOPMENT PLANNING ADD TO CLIMATE SAFETY? URBAN HEAT SOLUTION



1

Use lighter color and reflective pavement and materials

2

Plant trees, add water features and expand green space

Urban Heat Solutions: Reflective Materials, Green Space, Water Features

- **Lighter color and reflective materials** absorb less heat than blacktop.
- **Green roofs** are created by building layers of drainage, engineered soil, and vegetation on a building's roof. They capture and store stormwater to reduce flood impacts, and cool buildings during extreme heat events.
- **Trees** provide aesthetic benefits and shade, improve air quality, and capture and store greenhouse gases from the atmosphere.

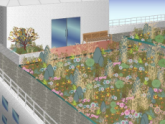


Considerations for Green Infrastructure

Note that your LSRP will help you determine what's appropriate for your site.

Resources to Guide Implementation

9.4 GREEN ROOFS



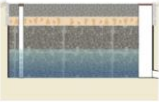
A green roof, also known as a vegetated roof, is a roof that has been covered with a growing medium and vegetation. Green roofs are effective for reducing the amount of stormwater runoff leaving a site. A green roof consists of vegetation planted in growing media on top of a drainage layer that intercepts stormwater runoff and reduces the total volume of runoff through evapotranspiration.

N.J.A.C. 7-8 Stormwater Management Rules – Applicable Design and Performance Standards	
Green Infrastructure	Yes
Stormwater Runoff Quantity	Yes
Groundwater Recharge	Not Allowed
Stormwater Runoff Quality	Not Allowed

Stormwater Runoff Quantity Control Mechanisms and Corresponding Criteria	
Volume Reduction*	
Reduced Curve Number	Based on the available water capacity of the growing medium
Growing Medium	Must meet the design criteria specifications. See Pages 6 and 7, plus either Page 9 for Extensive Green Roofs or Page 10 for Intensive Green roofs, as appropriate
Maximum Roof Slope	20%
Evapo-transpiration	
Appropriate Species Selection	See Page 6
Minimum Density of Vegetation	85%

New Jersey Stormwater Best Management Practices Manual
Green Infrastructure BMPs, Chapter 9.4: Green Roofs
March 2021
Page 1

9.6 PERVIOUS PAVING SYSTEMS

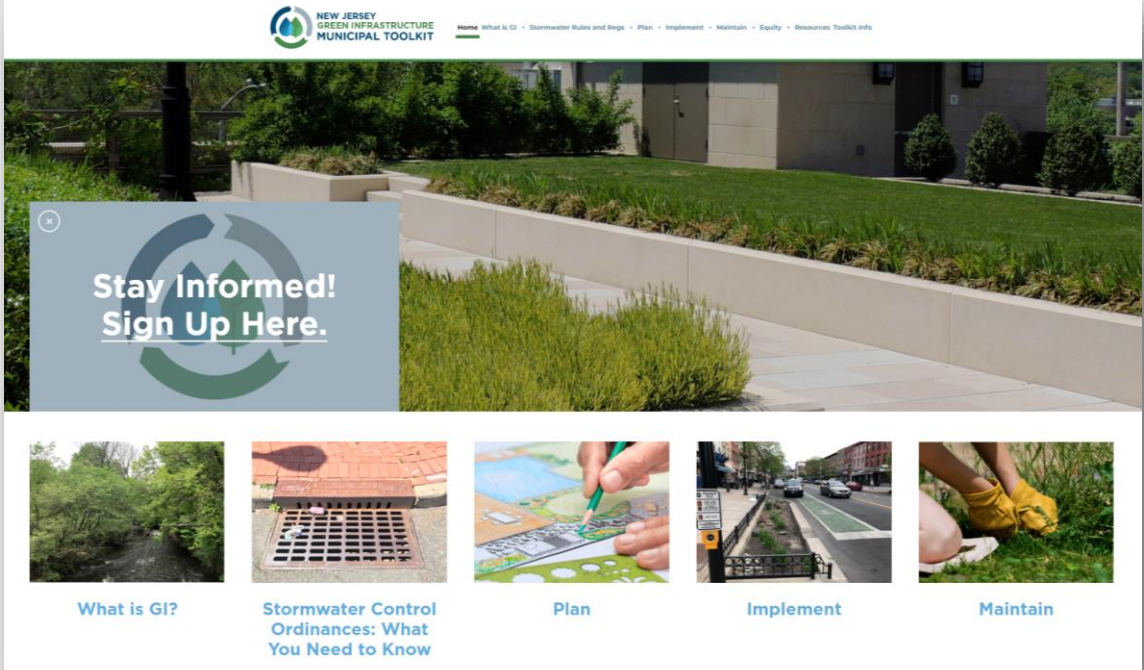


A pervious paving system is a stormwater management facility used to address the impacts of land development. The system consists of a durable, permeable surface course, which allows stormwater runoff to move through it; this surface course is placed over a transition layer and a storage bed of open-graded, i.e., devoid of fine particles, aggregate. There are two types: underdrained systems and systems designed to infiltrate into the subsoil. When designed in accordance with this chapter, the total suspended solid (TSS) removal rate is 80%.

N.J.A.C. 7-8 Stormwater Management Rules – Applicable Design and Performance Standards	
Green Infrastructure	Yes
Stormwater Runoff Quantity	Yes
Groundwater Recharge	Yes, for systems designed to infiltrate into the subsoil
Stormwater Runoff Quality	80% TSS Removal

Stormwater Runoff Quality Mechanisms and Corresponding Criteria	
Filtering	
Maximum Area of Additional Inflow	≤ 3 x the Area of Pervious Paving System
Maximum Drain Time	72 hours, Using Slowest Design Permeability Rate
Porous Asphalt, Pervious Concrete and Permeable Interlocking Paver Units	6.4 inches/hour Minimum Infiltration Rate

New Jersey Stormwater Best Management Practices Manual
Green Infrastructure BMPs, Chapter 9.6: Pervious Paving Systems
March 2021
Page 1



NEW JERSEY GREEN INFRASTRUCTURE MUNICIPAL TOOLKIT

Home | What is GI | Stormwater Rules and Regs. | Plan | Implement | Maintain | Equity | Resources | Toolkit Info

Stay Informed! Sign Up Here.

What is GI? | Stormwater Control Ordinances: What You Need to Know | Plan | Implement | Maintain

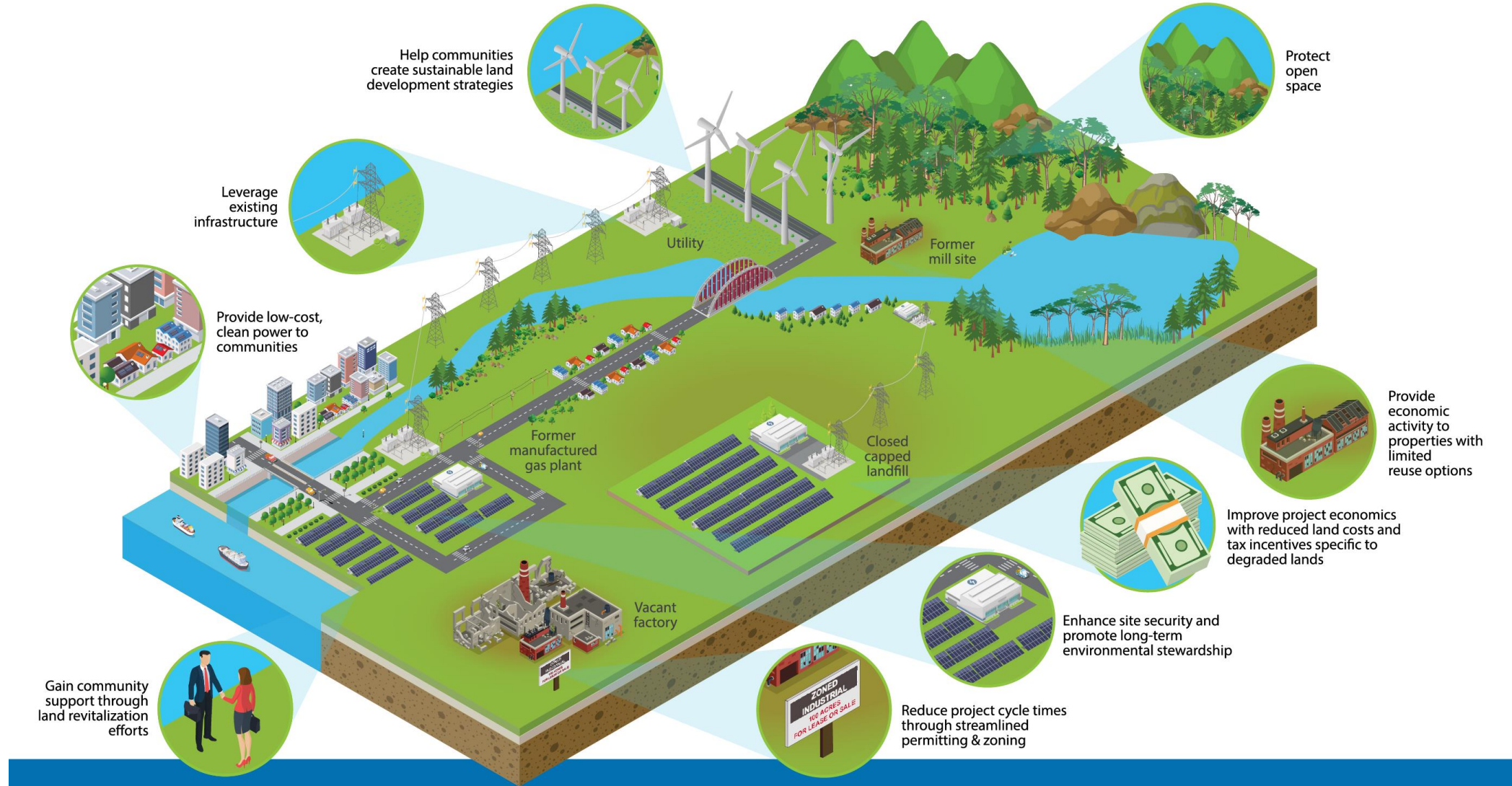
Climate Mitigation

“Measures to reduce the amount and speed of future climate change by reducing emissions of heat-trapping gases or removing carbon dioxide from the atmosphere” – EPA



RE-Powering America's Land

Potential Advantages of Reusing Potentially Contaminated Land for Renewable Energy



Energy Efficiency

- Energy efficient technology can be integrated into new, renovated, and retrofitted buildings on site.
- Benefits of integrating energy efficient technology:
 - Lower energy costs for owners and tenants
 - Reduced energy consumption
 - Reduced operating expenses

Solutions

- Replace and upgrade lighting and HVAC systems
- Install new energy-efficient appliances and windows
- Incorporate building systems that automatically control heating, ventilation, air conditioning and lighting

QUESTIONS?

BREAK

**Use the QR code here to
access our summit
website and agenda!**



**NEW
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**Understanding the Climate
Vulnerability
of Your Brownfield Community**



Jessica Jahre, AICP, CFM

Project Manager,
Michael Baker International



Pritpal Bamhrah, AICP

Senior Research Specialist,
NJ Climate Change Resource Center,
Rutgers University



BUILDING CLIMATE RESILIENCE:

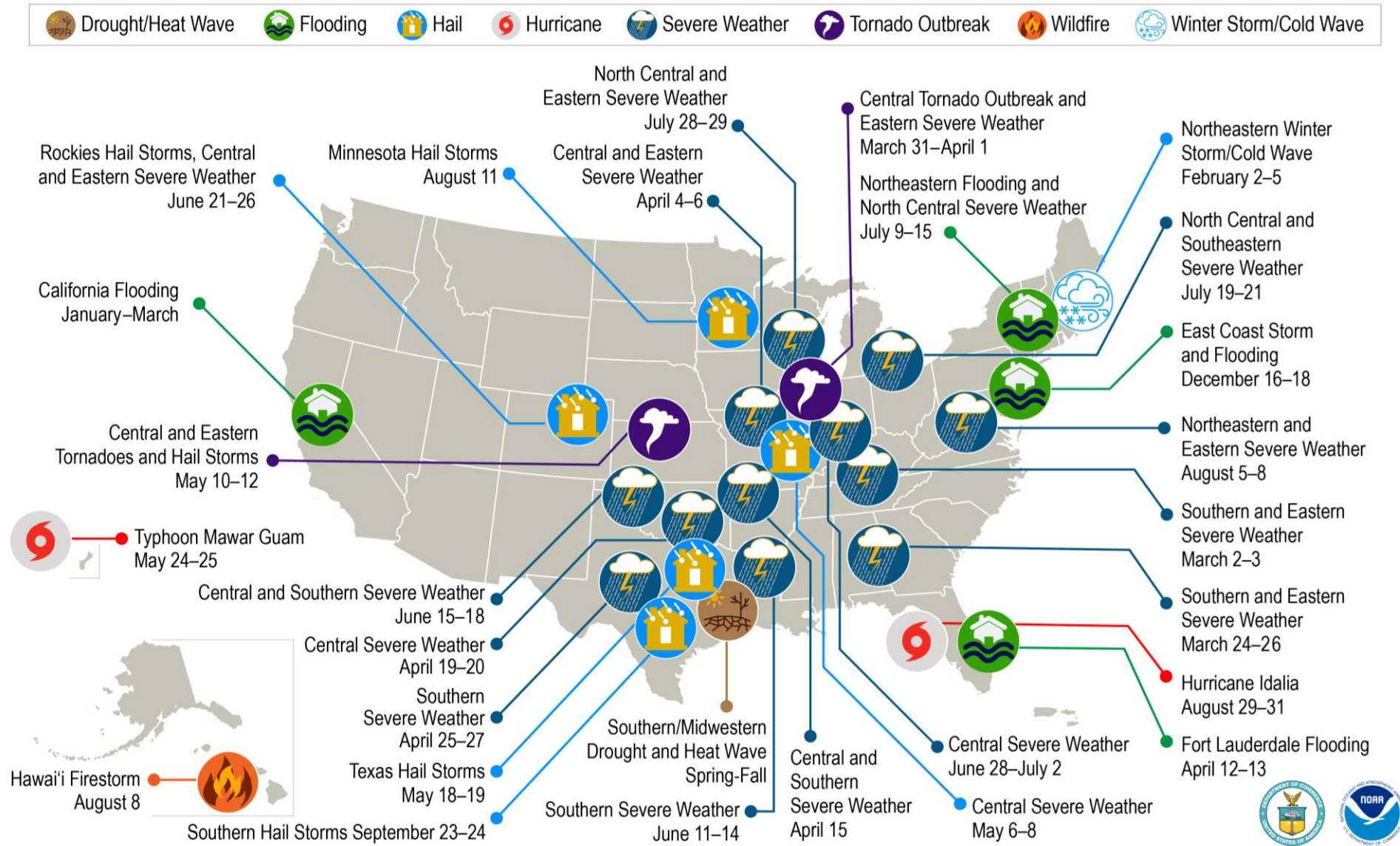
Understanding Climate Vulnerability for a Brownfield Community

CLIMATE CHANGE IS:

- **REAL & ALREADY HERE**



U.S. 2023 BILLION-DOLLAR WEATHER AND CLIMATE DISASTERS

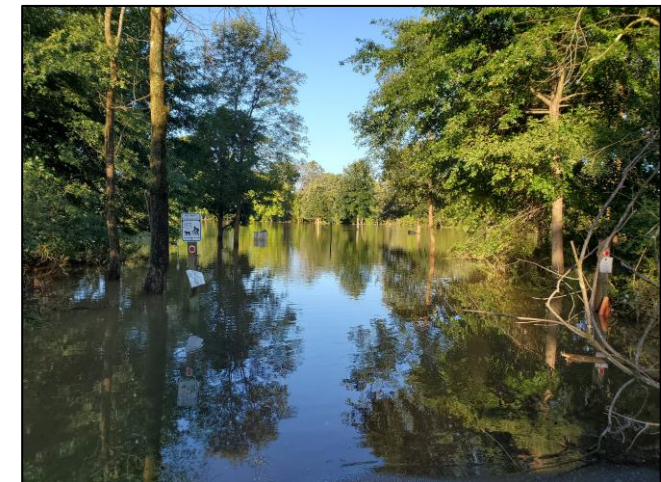
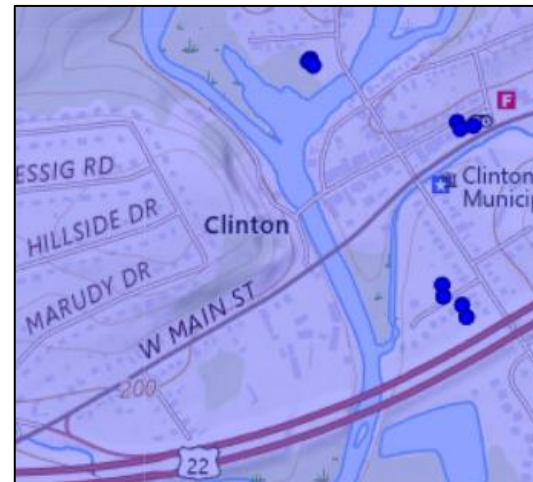


This map denotes the approximate location for each of the 28 separate billion-dollar weather and climate disasters that impacted the United States in 2023.



UNDERSTAND THE HISTORY OF THE SITE AND SURROUNDING AREA

- Read the local hazard mitigation plan
- Look for imagery
- Use Google & social media
- Search for high water marks
- Talk to neighbors & community officials



CLIMATE CHANGE IS:

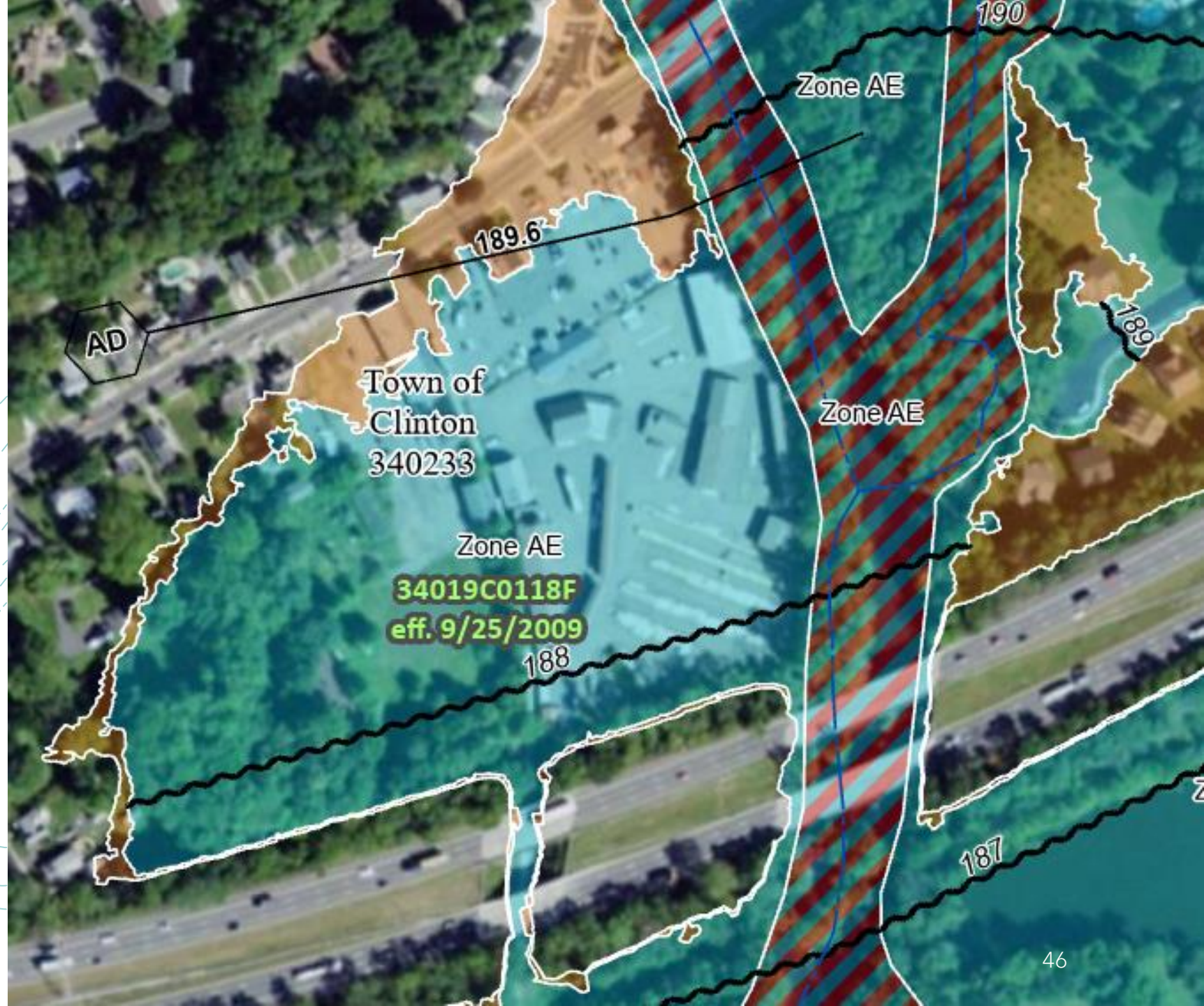
- REAL & ALREADY HERE
- **UNCERTAIN**



Uncertain

Understand the Science

- New DEP rules, FFRMS
- For flood - use 1%, .02%,
- Sea Level Rise - understand multiple projections
- Custom modeling



CLIMATE CHANGE IS:

- REAL & ALREADY HERE
- UNCERTAIN
- **DYNAMIC**



Dynamic

Identify risk tolerance

- Don't assume you know all the climate impacts
- Embrace reality of residual risk
- Understand adaptative capacity potential
- Explore multiple uses & alternatives

Climate change having unprecedented effect in Maine

Kathryn Carley
4th June 2024, 21:14 GMT+10

A year of record global heat has pushed Earth closer to dangerous threshold

Story by Scott Dance • 2d • ⌚ 5 min read

Maps show how "Tornado Alley" has shifted in the U.S.

Story by Kerry Breen • 23h • ⌚ 2 min read

Study: Climate change could make groundwater unsafe for millions

8h • ⌚ 2 min read

Climate change added a month's worth of extra-hot days in past year

The past 12 months have been the planet's hottest ever measured, and the burning of fossil

The New York Times • 23d

The Possible Collapse of the U.S. Home Insurance System

And what it shows is maybe the threat of climate change isn't quite what we thought. Maybe instead of climate change wrecking communities in the form of a big storm or a wildfire or a flood ...

CLIMATE CHANGE IS:

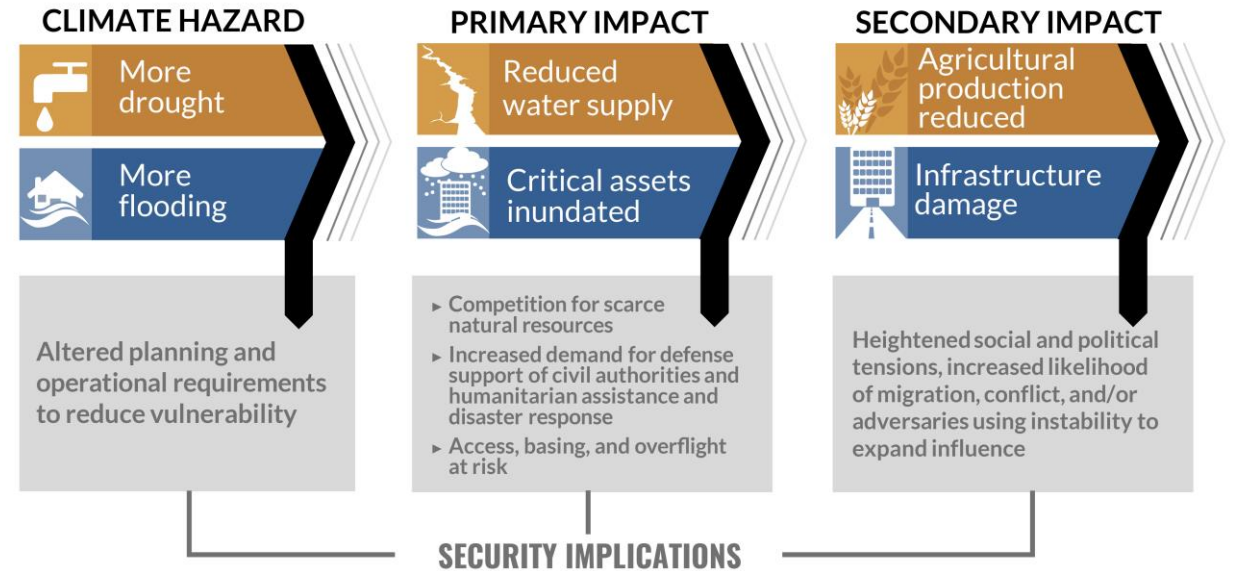
- REAL & ALREADY HERE
- UNCERTAIN
- DYNAMIC
- **A THREAT MULTIPLIER**



A Threat Multiplier

Consider existing vulnerabilities

- Aging infrastructure
- Water table changes
- Climate gentrification
- Social vulnerability
- Aging population
- Income instability
- Disinvestment
- Traffic
- Parking



Sewer overflows in North Carolina reflective of aging infrastructure, growing population & extreme weather events

In 2024, there have already been 30 reported sewer overflows in Wake County, totaling more than 336,000 gallons of raw sewage spilling into the environment.

CLIMATE CHANGE IS:

- REAL & ALREADY HERE
- UNCERTAIN
- DYNAMIC
- A THREAT MULTIPLIER
- **COMPOUNDING**



Compounding

Explore the Complexities

- Leverage tools and guidance
- Use scenario planning
- Form problem statements

Climate change is increasing the chances of multiple climate hazards occurring simultaneously or consecutively across the US and its territories.

- Fifth National Climate Assessment



CLIMATE CHANGE IS:

- REAL & ALREADY HERE
- UNCERTAIN
- DYNAMIC
- A THREAT MULTIPLIER
- COMPOUNDING
- **AN OPPORTUNITY**



An Opportunity

Build co-benefits:

- Meet sustainability goals
- Opens funding opportunities
- Builds community support
- Fosters partnerships
- Benefit-Cost Analysis favors co-benefits
- Put it in your plan



THANK YOU

Jessica Jahre

Jessica.Jahre@mbakerintl.com



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of Your Brownfield Community**



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Senior Research Specialist,
NJ Climate Change Resource Center,
Rutgers University

Understanding the Climate Vulnerability for Redevelopment of Brownfield Sites

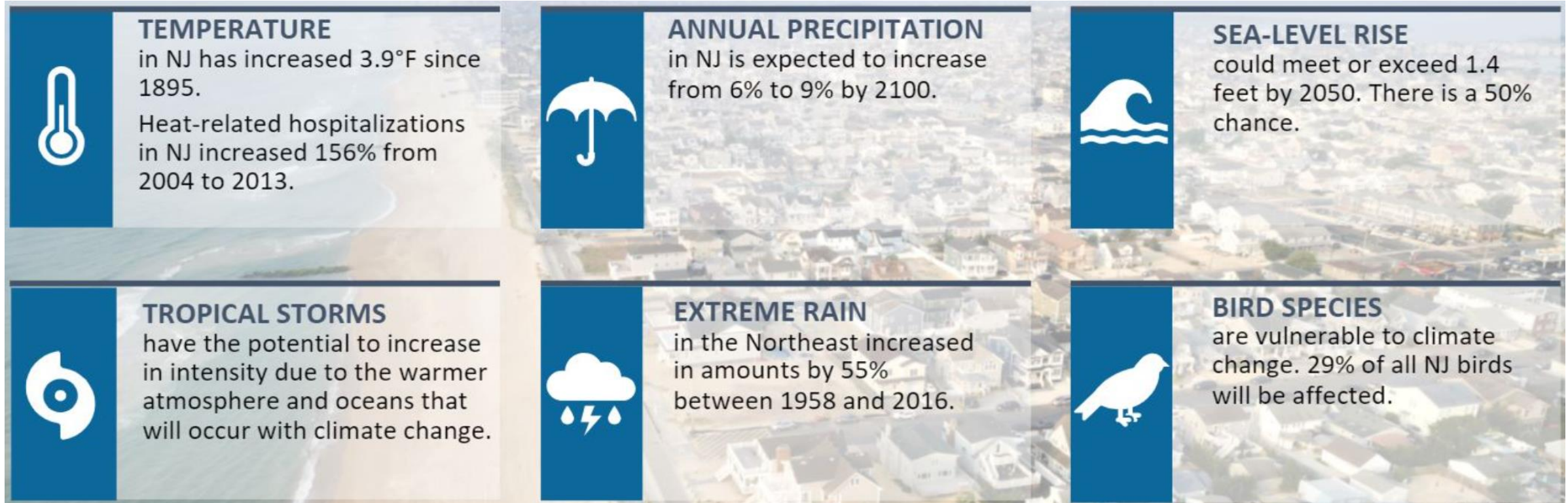
Using NJ Adapt Suite of Tools

NJIT - June 12, 2024

Pritpal Bamhrah, AICP
Senior Research Specialist
NJ Climate Change Resource Center, Rutgers
Email – pritpal.bamhrah@ejb.rutgers.edu

Climate Change Related Data

Resilience - The ability to prepare for and adapt to changing conditions; and withstand and recover timely from disruptions.



Source: NJDEP StoryMap- Climate Change in New Jersey, <https://storymaps.arcgis.com/collections/311582f534fd485facda6fd7f3a0519?item=3>

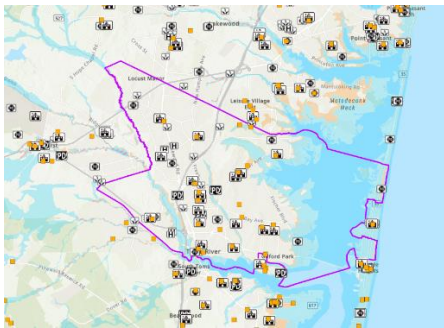
Climate Change Related Data

Rutgers University has developed a suite of data visualization and mapping decision support tools from various data sources that offer critical support to end users in

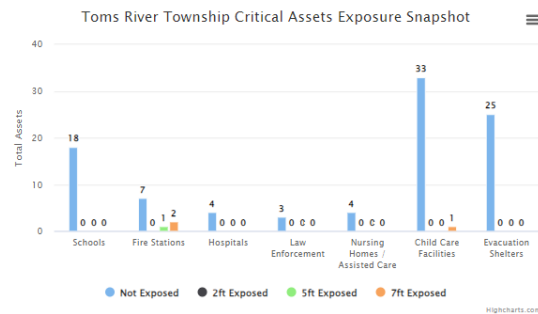
planning for future climate conditions

assessing climate change related hazards

communicating risks and hazards



Maps



Graphs

Built Infrastructure Assets Exposure Snapshot

Toms River Township
Ocean County

[DOWNLOAD PDF](#) [DOWNLOAD DATA](#)

Introduction

Data Last Updated: 2022-07-21 09:31:11

Built infrastructure (i.e., wastewater treatment facilities, energy generation locations, bridges, evacuation routes and rail lines) may be in areas that flood now, or are expected to flood in the future. It is important to understand the exposure of built infrastructure since communities and their residents rely on the services these infrastructure sources provide. Knowing the services provided by built infrastructure will help a



Reports

Get Started with Hazard Evaluation

This section provides information about how to use NIADAPT data tools to assess current and future vulnerabilities to climate change-related natural hazards. Within each hazard is a description of how to navigate NIADAPT data and tools to create documents in the form of maps, downloadable reports, and non-spatial/statistical visualizations.

Coastal Flooding

Inland Flooding

Extreme Precipitation

Extreme Heat

Continue with Assessment of Impacts

This section provides information on how to use NIADAPT data tools to assess impacts of climate change-related hazards on populations, critical facilities, and community assets. The 5014 assessments on the NIADAPT tool help you understand the adaptation of the future.






Guides

Locating NJ ADAPT

Rutgers.edu | New Brunswick | RBHS | Newark | Camden | Online | Rutgers Health | Rutgers Search Facebook Twitter YouTube

R | RUTGERS-NEW BRUNSWICK
New Jersey Climate Change
Resource Center Home About Events Contact

Project Areas | Climate News & Info | Reports & Publications | Education & Training | Our Latest Work

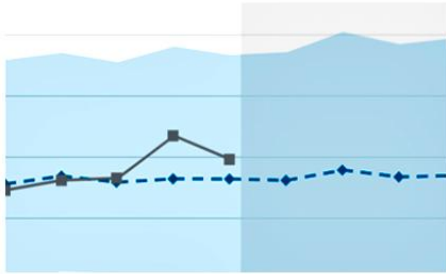
 <p>NJ ADAPT A suite of online data-visualization and mapping tools</p>	 <p>Climate Corps Research, analysis and project work by a team of seasoned grad students</p>	 <p>Research & Analysis Science with real-world applications to New Jersey's climate challenges.</p>	 <p>Technical Assistance & Training Guidance on using our tools, webinars on emerging issues</p>	 <p>Climate Justice Support for climate action in New Jersey's overburdened communities</p>
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NJ Climate Change Resource Center

Providing actionable science, planning tools, and technical guidance to policymakers, practitioners, and communities addressing climate change in New Jersey.

njclimateresourcecenter.rutgers.edu

Overview of NJ Floodmapper



Climate Dashboard

New Jersey climate trends in moderate and high emissions scenarios



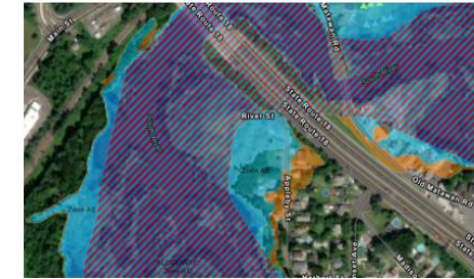
Climate Planning Tool

A guide to using coastal flooding data in climate change planning



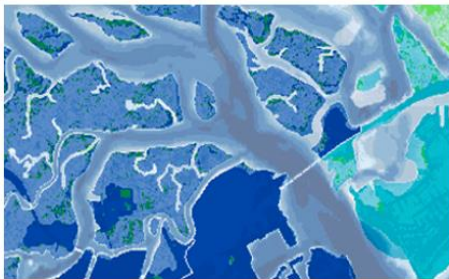
Climate Snapshots

Climate risks summarized by municipality, county and statewide



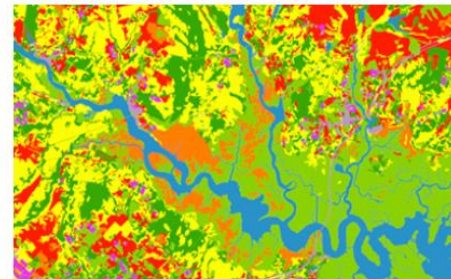
Local Planning Navigator

A decision-support tool for building community resilience



NJ FloodMapper

An interactive flood exposure data mapping tool



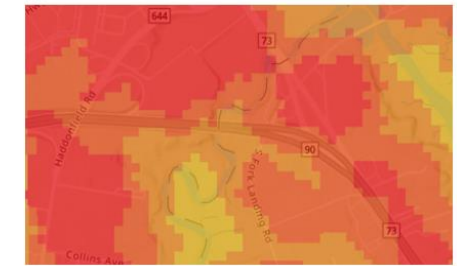
NJ Forest Adapt

A data mapping tool for forest management



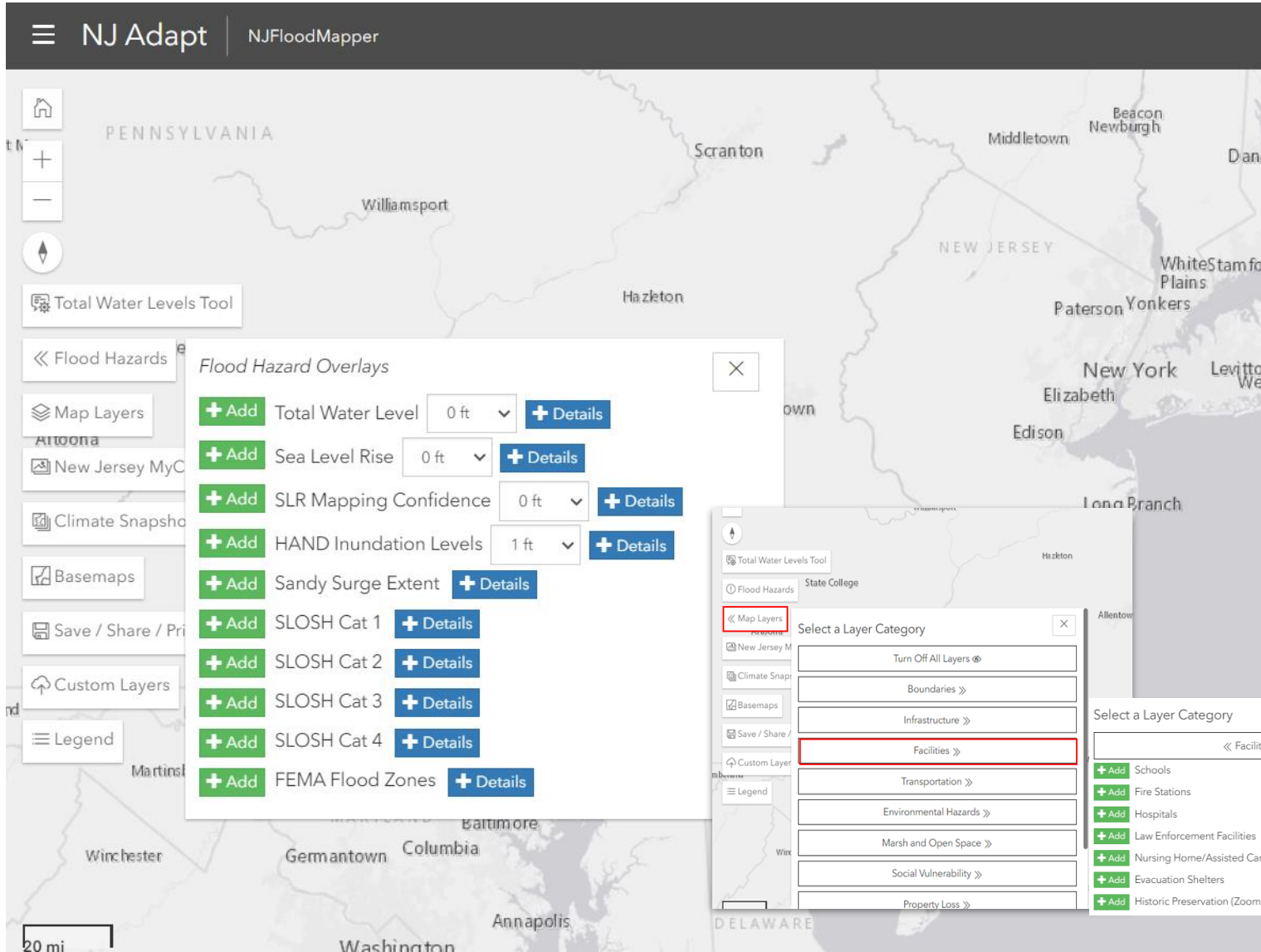
NJ HazAdapt

Data and resources for hazard mitigation planning



NJ Public Health Adapt

Climate planning for improved health outcomes



Social Vulnerability Data

- NJDEP EJ Overburdened Communities
- CDC Social Vulnerability Index
- Municipal Revitalization Index
- Asset Limited, Income Constrained, Employed
- Homeless – NJ Counts Point-in-Time
- Veterans Population
- Housing Stock Age
- Landscan

Total Water Level Approach



Total Water Levels Tool

High emissions

- 7.2 ft. Less than a 5% Chance of Exceeding
- 5.3 ft. Less than a 17% Chance of Exceeding
- 3.4 ft. Approximately a 50% Chance of Exceeding
- 2.1 ft. At least an 83% Chance of Exceeding
- 1.4 ft. At least a 95% Chance of Exceeding

Select a Sea Level Rise Estimate

Step 4 Analyzing at least two sea-level rise estimates is beneficial. Choosing one estimate in the 'likely' range, along with the 'high-end' estimate will allow you to see how a range of SLR scenarios change community level exposures to flooding.

You can choose between the following SLR estimates:

'High-End' Estimates:

There is less than a 5% chance of exceeding the SLR height value indicated. Using a high-end estimate is especially important for planning assets with long lifetimes (e.g., a bridge), or limited ability to move out of harm's way (e.g., a wastewater treatment plant).

Likely estimates:

- There is less than a 17% chance of exceeding the SLR height value indicated
- There is approximately a 50% chance of exceeding the SLR height value indicated
- There is at least an 83% chance of exceeding the SLR height value indicated

'Low-End' Estimate:

There is at least a 95% chance of exceeding the SLR height value indicated.

[NJ Sea Level Rise Estimates Example](#)

Step 4 of 5

[Previous](#) [Next](#)

Total Water Levels Tool

Select a Flood Event or Choose Your Own Height:

Select a Flood Event

Historical Events

Step 5 - Choose between Flood Events Height using tide gauge specific data:

1. Historical Storm flood heights (e.g., Sandy)
2. Mean Higher High Water (MHHW)
3. NOAA's Annual Exceedance Probabilities (AEP), and

Flood event water levels are specific to each tide gauge and come from NOAA's Extreme Water Levels statistics program. Mean Higher High Water reflects permanent inundation, or where residents' feet will be wet on an almost daily basis. Selecting other water levels reflects recurring floods (i.e., the 99% AEP) or episodic flood events that could result from coastal storms (i.e., the 1% AEP). You can also choose historic flood events (like Sandy) to see how previous storms would look like in the future.

Step 5 of 5

[Previous](#) [Next](#)

Total Water Levels Tool

Total Water Level Summary

Tide Gauge: Atlantic City, NJ
Emission Scenario: High emissions
Timeframe: 2090 Planning Horizon
SLR Estimate: Less than a 17% Chance of Exceeding - 5.3 ft.
Flood Event: 10-year-flood (10% AEP) - 3.3 ft. above MHHW

Total Water Level Estimate: 8.6 ft.
Total Water Level Estimate Mapper: 9 ft.

Results - The resultant Total Water Level is rounded to the nearest whole foot. The TWL inundation map represents 'still water', which reflects the astronomical tide, the storm surge, and limited wave setup caused by breaking waves.

The Total Water Level does not portray wave runoff, the movement of water up a slope. Therefore, the inundation mapping more closely corresponds to FEMA's Still Water Flood Elevations (SWEL), not the Base Flood Elevation (BFE). **Therefore, this analysis could under-represent the amount of inundation, as the calculations do not consider wave velocity and other dynamic effects from storms.**

Summary

[Previous](#) [Next](#) [Close Wizard](#) [+ Add To Map](#)



Brownfield Development Areas (Outline) of New Jersey

✔ Authoritative



NJ Dept. of Environmental Protection Bureau of GIS
NJDEP Bureau of GIS

[View Map](#) [Download](#) [More ▾](#)



Summary

The data enables the NJDEP to share BDA parcel data and other GIS spatial components with all the shareholders, in an easily accessible format via NJ GeoWeb. The shareholders can then use common data to research questions and make informed accurate decisions.

This is a graphical representation of the outline boundary for Brownfield Development Areas (BDA) in New Jersey. The data included in the layer enables GIS to map, as polygons, all current BDA's in New Jersey. A brownfield is any former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of contamination. Under the BDA approach, NJDEP works with selected communities affected by multiple brownfields to design and implement remediation and reuse plans for these properties simultaneously.

Details

 **Dataset**
Feature Layer

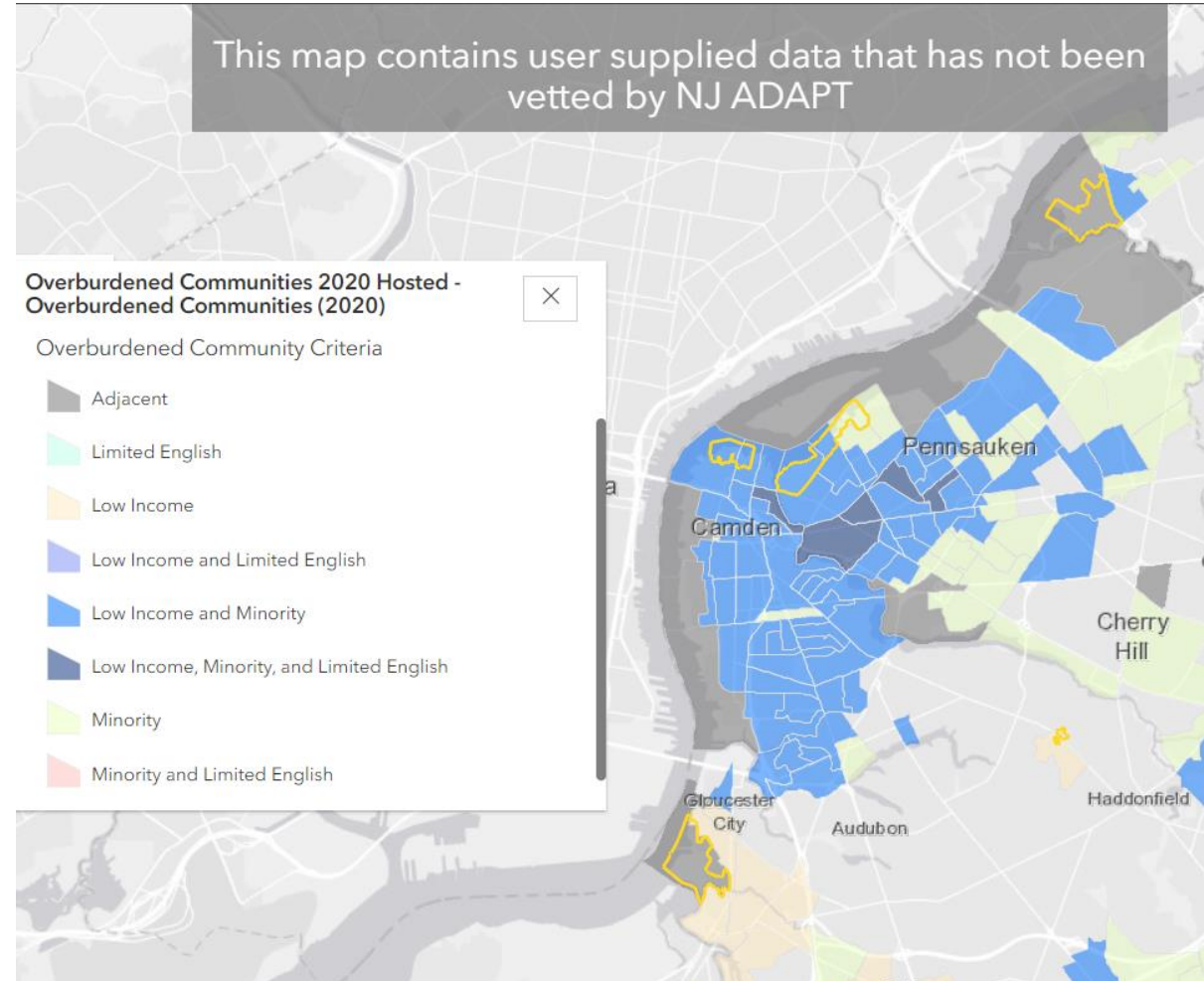
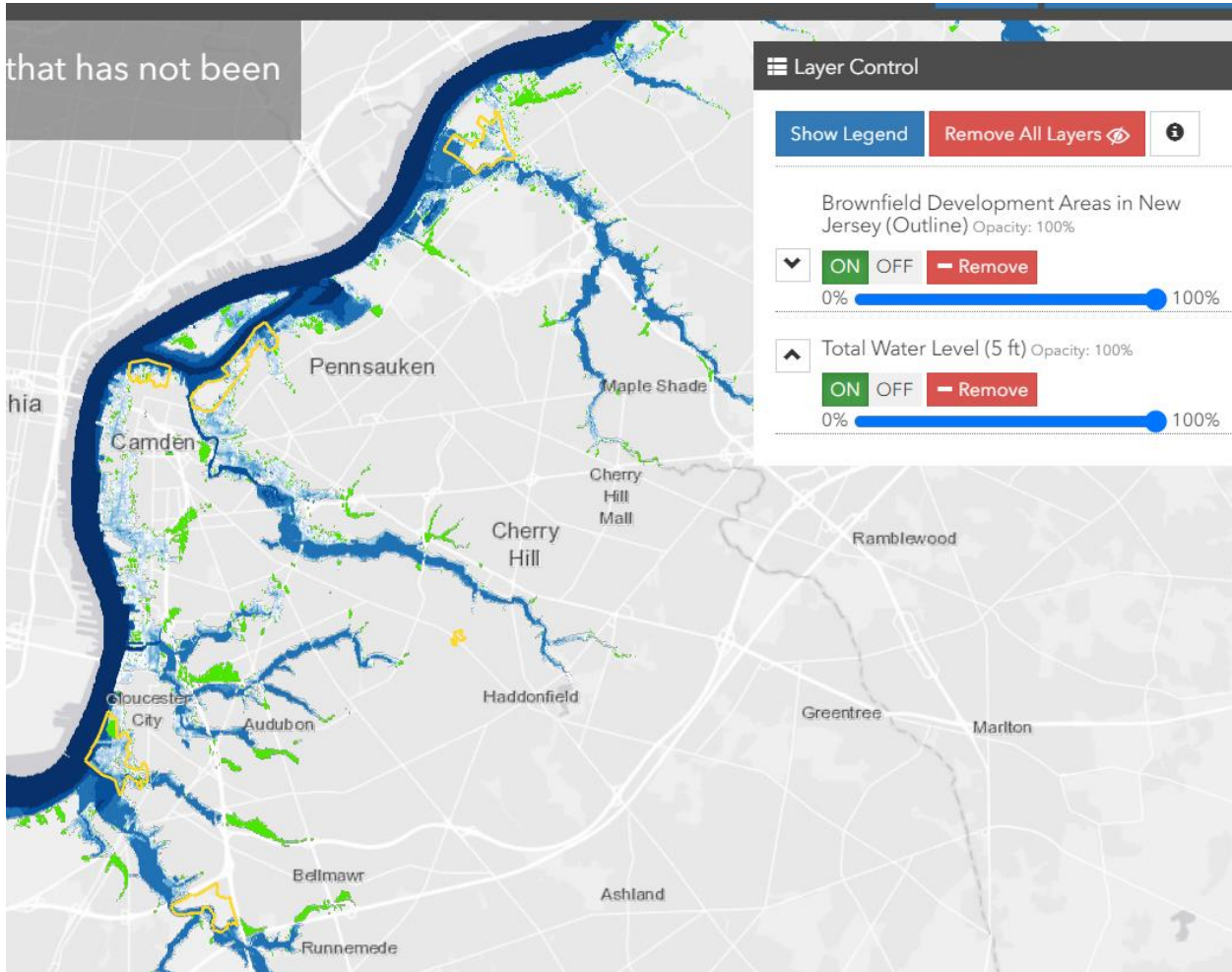
 **November 3, 2022**
Info Updated

 **As Needed**
Data Updated: November 3, 2022

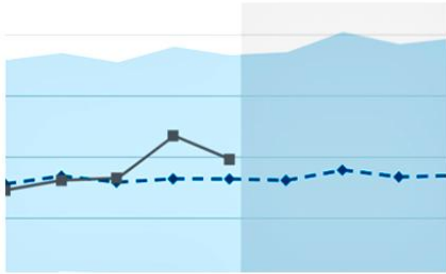
 **October 31, 2022**
Published Date

Records: 22

Brownfield Sites in Flood Zones and OBC



Overview of Climate Snapshots



Climate Dashboard

New Jersey climate trends in moderate and high emissions scenarios



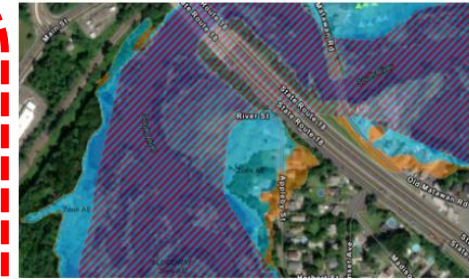
Climate Planning Tool

A guide to using coastal flooding data in climate change planning



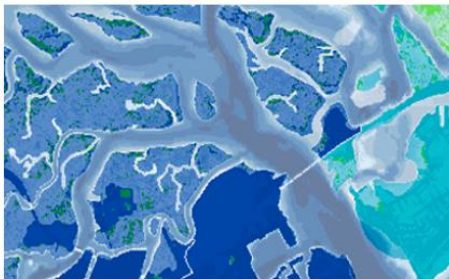
Climate Snapshots

Climate risks summarized by municipality, county and statewide



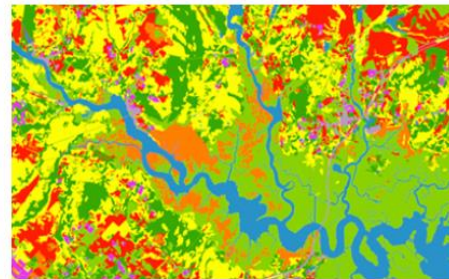
Local Planning Navigator

A decision-support tool for building community resilience



NJ FloodMapper

An interactive flood exposure data mapping tool



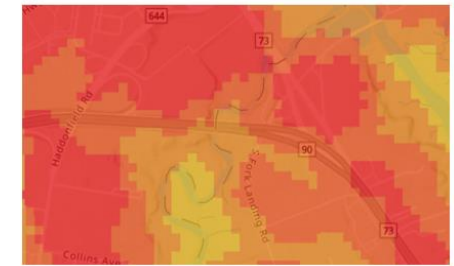
NJ Forest Adapt

A data mapping tool for forest management



NJ HazAdapt

Data and resources for hazard mitigation planning



NJ Public Health Adapt

Climate planning for improved health outcomes

Climate Snapshots (<https://climatesnapshots.rutgers.edu/>) provide easy access to information about the people, places, and assets that are at risk from climate impacts in each of New Jersey’s municipalities.

Please select a county and / or municipality

County	Municipality
Atlantic County	County-Wide Statistics



Built and Natural Resource Impact Reports

-  Built Infrastructure Report
Summarizes the potential flood exposure of built infrastructure on which the community relies for services including wastewater treatment, energy generation, and transportation.
-  Critical Assets Report
Summarizes the potential flood exposure of critical facilities and assets that the community needs to provide education, care, and public safety to residents.
-  Natural and Working Lands Report
Summarizes the potential flood exposure of natural and working lands, as well as sea-level rise impacts on coastal marshes (erosion and retreat) and public water access points.

Health and Social Equity Impact Reports

-  Public Health Report
Summarizes projected heat increases and the potential flood exposure of health-related sites including hospitals, nursing homes, and contaminated sites.
-  Vulnerable Populations Report
Summarizes potential flood exposure based on demographic data including socioeconomic status, housing, household composition, disability, minority status, language, and vehicle access.
-  Disability Profile Report
Summarizes current demographics regarding disability, including as related to age, race and type of disability.

Forestry Reports (Municipal Only)

-  Forest Data Report
The Forest Data Snapshot provides a quick look at how forests play an important role in providing wildlife habitat, wood products, recreation, carbon sequestration, clean air and water.
-  Forest Climate Risk Report
The Forest Climate Risk Snapshot provides a summary of how changes in temperature may impact the forest resources and tree species in New Jersey.

njclimateresourcecenter.rutgers.edu/nj-adapt/

Built Infrastructure Assets Exposure Snapshot

Gloucester City

Camden County

[DOWNLOAD PDF](#)

[DOWNLOAD DATA](#)

Introduction

Date Last Updated: 03/09/2023

Built infrastructure (i.e., wastewater treatment facilities, energy generation locations, bridges, evacuation routes and rail lines) may be in areas that flood now, or are expected to flood in the future. It is important to understand the exposure of built infrastructure since communities and their residents rely on the services these infrastructure sources provide. Knowing the services provided by built infrastructure will help a community plan for flooding.

There are 3 types of flood events:

1. **Riverine (or "fluvial")** flood events occur when intense rain events cause rivers and streams to overflow their banks.
2. **Flash (or "pluvial")** floods occur when intense rainfall causes a flood event that is not directly associated with a body of water. For example, flash flood events include floods in roadways from impaired stormwater management systems.
3. **Coastal** flood events occur when sea-level rise, high tides, and storm surge combine to create flood events that range from nuisance high-tide floods to destructive storm tides from seawater.

The Federal Emergency Management Agency (FEMA) models flood hazards, both riverine (1) and coastal (3), as part of the National Flood Insurance Program (NFIP) regulations and insurance requirements. FEMA does not model flash flood events (2) for their NFIP flood mapping.

In addition, coastal flood event exposures are assessed using a Total Water Level (TWL) approach for tidally influenced waters. The TWL approach combines sea-level rise and extreme water level information from NOAA to assess exposure to a variety of coastal flood events to complement FEMA flood mapping. The Appendix below provides additional background.

Built Infrastructure Assets in Exposed Areas

Assets	Total Assets	# Exposed at 2ft TWL	# Exposed at 5ft TWL	# Exposed at 7ft TWL
Wastewater	0	0	0	0
Energy Generation	1	0	N/A	1
Power Plants	0	0	0	0
NJ Bridges*	16	3	5	11
Gas Stations	2	0	0	0

* The National Bridge Inventory is a collection of information (database) describing the more than 600,000 of the Nation's bridges located on public roads as of December 31, 2018, including Interstate Highways, U.S. highways, State and county roads, as well as publicly-accessible bridges on Federal lands. It presents a State by State summary analysis of the number, location, and general condition of highway bridges within each State.

[LINK TO INFRASTRUCTURE LIVE MAP](#)



Built Infrastructure Assets in FEMA Flood Zone Areas

Assets	Total Assets	# Exposed In ...	
		1% Annual Chance Flood	0.2% Annual Chance Flood
Wastewater	0	0	0
Energy Generation	1	1	1
Power Plants	0	0	0
NJ Bridges*	16	5	8
Gas Stations	2	0	0

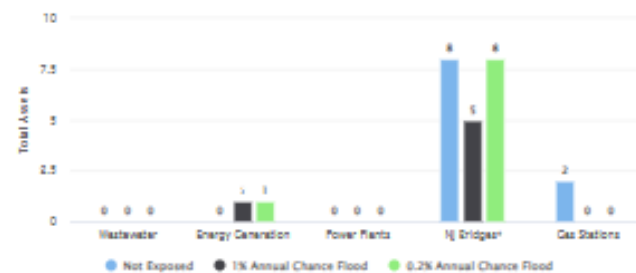
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The FEMA National Flood Hazard Layer (NFHL) dataset represents the current effective flood data across the United States. Areas in the National Flood Hazard Layer are:

- **Floodway:** The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood height.
- **1% Annual Chance Flood:** The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is that water-surface elevation of the 1% annual chance flood.
- **0.2% Annual Chance Flood:** The 0.2% annual flood (500-year flood) is the flood that has a 0.2% chance of being equaled or exceeded in any given year.
- **Areas of Undetermined Flood Hazard** are areas with possible but undetermined flood hazards.
- **FEMA Flood Zone exposure analyses** are inclusive of lesser FEMA flood designations. The number exposed to 1% Annual Chance Flood includes those exposed in the Regulatory Floodway area in its analysis and the 0.2% Annual Chance Flood includes those exposed in the 1% Annual Chance Flood and in the Regulatory Floodway.

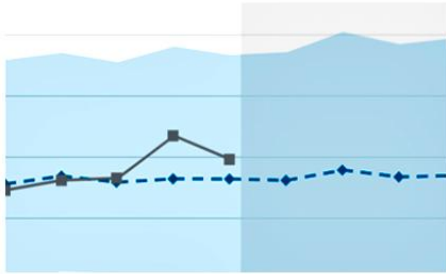
[LINK TO INFRASTRUCTURE LIVE MAP](#)

Gloucester City Built Infrastructure Assets in FEMA Flood Zone Areas



Highbeam.com

Overview of Local Planning Navigator



Climate Dashboard

New Jersey climate trends in moderate and high emissions scenarios



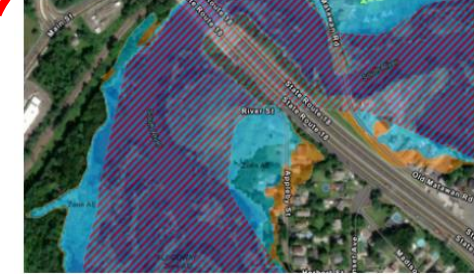
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A guide to using coastal flooding data in climate change planning



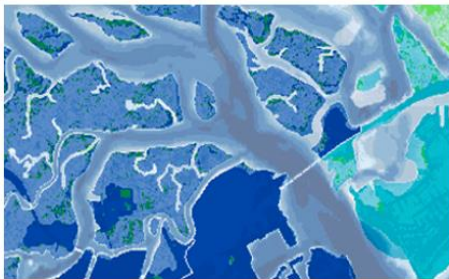
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Climate risks summarized by municipality, county and statewide



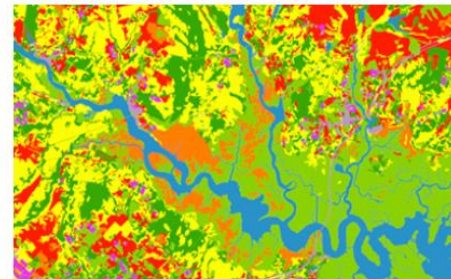
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A decision-support tool for building community resilience



NJ FloodMapper

An interactive flood exposure data mapping tool



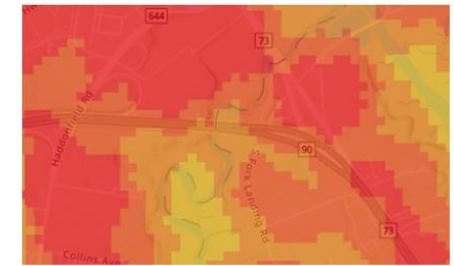
NJ Forest Adapt

A data mapping tool for forest management



NJ HazAdapt

Data and resources for hazard mitigation planning



NJ Public Health Adapt

Climate planning for improved health outcomes

Climate Change Related Hazard Vulnerability Assessment

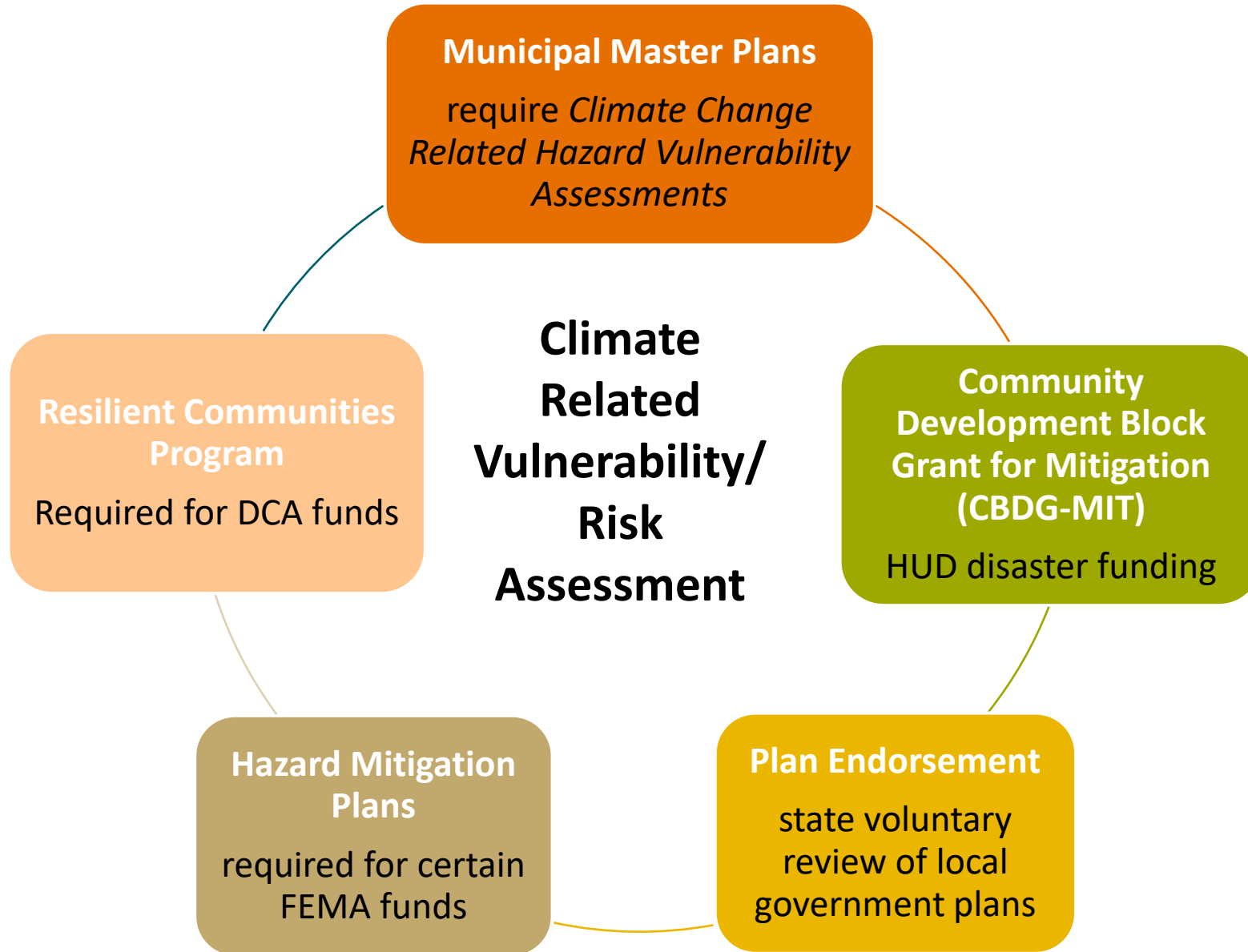
2021 statutory amendments to the **New Jersey Municipal Land Use Law** require a *Climate Change Related Hazard Vulnerability Assessment* (CCRHVA) as part of the land use element of a municipal Master Plan

CCHRVA Requirements

 Current and Future Threats Analysis	Analyze threats and vulnerabilities associated with climate change-related natural hazards.
 Build-Out Analysis	Conduct a build-out analysis for future residential, commercial, industrial development and assess associated threats and vulnerabilities.
 Critical Infrastructure Identification	Identify critical facilities, utilities, roadways, and infrastructure crucial for evacuation and maintaining quality of life during natural disasters.
 Master Plan Impact Analysis	Analyze potential impacts of natural hazards on relevant components and elements of the master plan.
 Risk Reduction Strategies	Provide strategies and design standards to reduce or avoid risks associated with natural hazards.
 Policy Statement	Include a policy statement on the consistency, coordination, and integration of the climate change-related hazard vulnerability assessment with other relevant plans.
 Scientific Basis	Rely on the most recent natural hazard projections and best available science provided by the New Jersey DEP.

Source: [Office of Planning Advocacy Department of State, Business Action Center: Municipal Climate Resilience Planning Guide](#)

Overlap across Plans/Funding Mechanisms



The screenshot shows the website's navigation bar with the Rutgers logo and 'RUTGERS' text. Below the navigation bar, there are dropdown menus for 'County: Statewide' and 'Municipality: Select a municipality'. A main menu is visible with options for 'MAIN MENU', 'HAZARD EVALUATION', and 'IMPACTS'. The main content area features a blue-tinted map background with the text 'NJ Adapt Local Climate-Related Hazard Planning Navigator' and the subtitle 'Integrating the latest science and data to build more resilient communities'. Below this, there is a paragraph explaining the tool's purpose and a call to action to sign up for email updates.

The Local Planning Navigator provides end users with New Jersey specific data from NJADAPT to help better understand climate-related hazards faced by their localities. The Navigator is a useful tool to support overall efforts to build community resilience. It is designed to enable end users to assess climate-related hazards as required or recommended by various state and federal programs and can be specifically used to complete certain elements of a Climate Change Related Hazard Vulnerability Assessment (CCRHVA) as required by New Jersey's Municipal Land Use Law.

Continual enhancements and improvements are being made to this guide, and users are highly recommended to **sign up for our email updates to stay informed**. We want to hear from you about your experience using this Navigator so we can continue to improve NJADAPT; please take a few minutes to email us at ora-it@njaes.rutgers.edu to tell us about your experience using this Navigator and NJADAPT tools in general.

Get Started with Hazard Evaluation

This section provides information about how to use NJADAPT data tools to assess current and future vulnerabilities to climate change-related natural hazards. Within each hazard is a description of how to navigate NJADAPT data and tools to create documents in the form of maps, downloadable reports, and non-spatial/statistical visualizations.



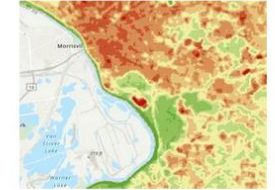
Coastal Flooding



Inland Flooding

Hazard Type	Current	Medium-Emissions, High-Certainty	Medium-Emissions, Low-Certainty	High-Emissions, Mid-Certainty	High-Emissions, Low-Certainty
2030 Sea Level Rise	0.08	0.50	0.01	0.01	0.01
2050 Sea Level Rise	0.20	0.40	0.02	0.02	0.02
2070 Sea Level Rise	0.50	0.21	0.20	0.20	0.10
2090 Sea Level Rise	0.71	0.54	0.30	0.30	0.20
2100 Sea Level Rise	1.00	1.00	1.00	1.00	0.80
2150 Sea Level Rise	0.95	0.70	0.51	0.48	0.25

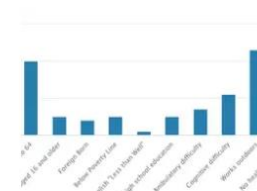
Extreme Precipitation



Extreme Heat

Continue with Assessment of Impacts

This section provides information on how to use NJADAPT data tools to assess impacts of climate change-related hazards on populations, critical facilities, and community assets. The 2021 amendments to the Municipal Land Use Law that require the adoption of a Climate Change-Related Hazard Vulnerability Assessment (CCRHVA) specifies that a CCRHVA must include an identification of "critical facilities, utilities, roadways, and other infrastructure that is necessary for evacuation purposes and sustaining quality of life during a natural disaster."



Demographics



Critical Facilities and Infrastructure

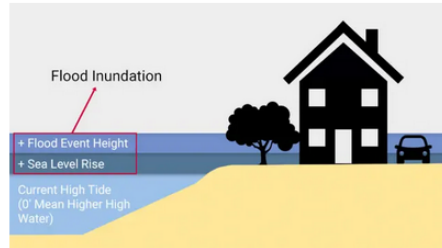


Community Assets

Coastal Flooding

Coastal flood inundation is affected by contributions from three factors:

- Tidal flooding - Flooding caused by twice-daily high-tides (also known as "sunny day" flooding or "nuisance" flooding). The term Mean Higher High Water (MHHW) is used to describe the average height of the highest tide over a recorded period;
- Sea-level rise - Sea-level rise increases the overall height of tidally-influenced waterbodies and, in doing so, increases the frequency and expanse of tidal flooding and worsens the impact of event-related flooding;
- Events - Flooding caused by events such as storms.



When planning for future coastal flooding, it is essential for end users to apply a future scenario(s) for sea-level rise to their hazard projections. The New Jersey Department of Environmental Protection (NJDEP) issued guidance for sea-level rise planning in 2021; further explanation of NJDEP guidance is in the box below.

Review NJDEP Guidance on Planning for Sea-Level Rise

In its **June 2021 sea-level rise guidance** for New Jersey, NJDEP outlines the following recommendations:

Planning Horizon - NJDEP encourages end users to consider both the design and reasonable life of activities for which hazards are being assessed when determining what planning horizon to apply. For example, NJDEP's guidance points out that planning for a 30-year typical mortgage may be useful when assessing impacts to residential structures. NJDEP recommends, in general, use of a 2100 planning horizon when planning for significant investments in infrastructure, such as coastal energy facilities.

Emissions scenarios - Projections for sea-level rise after 2050 are affected by the amount of greenhouse gas emissions in the global atmosphere. As outlined in the **2020 New Jersey Scientific Report on Climate Change**, a high GHG emissions scenario corresponds to a future in which there is continued growth of fossil fuel consumption; a moderate GHG emissions scenario corresponds to a future consistent with current global policies, and a low GHG emissions scenario corresponds to a future consistent with global accords such as the **2015 Paris Agreement**. NJDEP recommends, in general, use of a moderate emissions scenario.

Risk Tolerance - NJDEP recommends that end users consider the extent to which certain activities have the capacity to adapt to and/or tolerate hazards and risks. For those activities that have less risk tolerance, NJDEP recommends planning for high end projections of sea-level rise; for those activities that have high risk tolerance, NJDEP recommends that end users consider the extent to which those activities may have limited impacts and plan accordingly.

Geographic area of flooding - NJDEP recommends that end users add 5.1 feet to the geographic extent of the one-percent (100 year) storm base flood elevation to accommodate sea-level rise in coastal areas.

Building height - To allow for a margin of safety, NJDEP recommends that end users add a minimum of one foot of freeboard to the projected SLR for buildings and structures.



Get Started

Using NJADAPT Tools to Assess Coastal Flooding Hazards

Please select your desired geography in the menu at the top of this page to get customized analysis and outputs from this and the other tools in this navigator.

Please note some areas in New Jersey are not threatened by coastal flooding.

Maps

- **Explore an interactive map of current high-tide flooding** (2 feet of coastal flooding). This is the amount of nuisance flooding some parts of New Jersey are currently experiencing at highest high-tide. This data is sourced from the National Oceanic and Atmospheric Administration (NOAA).
- **Explore an interactive map of sea-level rise by the year 2100** (5 feet of coastal flooding). This map shows where the NJDEP advises the shoreline will potentially be in 2100. This data is sourced from NOAA.
- **Explore an interactive map of high-tide flooding by the year 2100** (7 feet of coastal flooding). This map shows the amount of nuisance flooding some parts of New Jersey are expected to experience at highest high-tide in the year 2100. This data is sourced from NOAA.

Reports - Climate Snapshots

- NJADAPT provides a numerous reports that detail flood impacts from 2ft (current) and 7ft (future) high-tide events, and 5ft of sea-level rise expected for 2100 (NJDEP recommendation), including effects to power plants, evacuation shelters, farmland, evacuation routes, as well as to people, including populations disproportionately affected by climate change. **Explore flood impact reports here** and **explore flood impacts on public health sites and vulnerable populations here**.

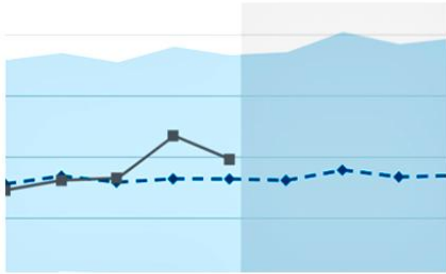
Statistical Data - NJHazAdapt

- **Download MOD IV property tax parcel data** showing percentage of flooding by following the link to NJHazAdapt, selecting your location at the top of the page, and then scrolling down to the MOD-IV Parcel Flood Analysis section at the bottom of the page. This data can be joined in GIS software to the NJ Geographic Information Network's **Parcels Composite of NJ** for mapping purposes.
- Review step-by-step guidance on creating a MOD IV property tax parcel data analysis for flooding using these **GIS Assessment Steps**.

Important information about NJADAPT data

The NJADAPT data tools incorporate provisions that ensure that the NJADAPT data are consistent with NJDEP's sea-level rise 2021 guidance. MOD IV data are property tax parcel data for the State of New Jersey that NJADAPT has included to allow exploration of how individual parcels of property are affected by flooding.

Overview of NJ HazAdapt



Climate Dashboard

New Jersey climate trends in moderate and high emissions scenarios



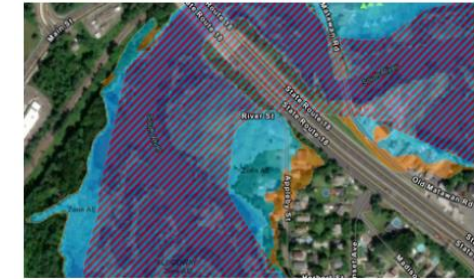
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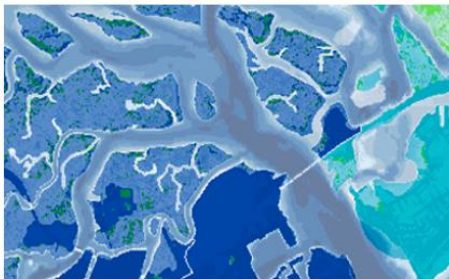
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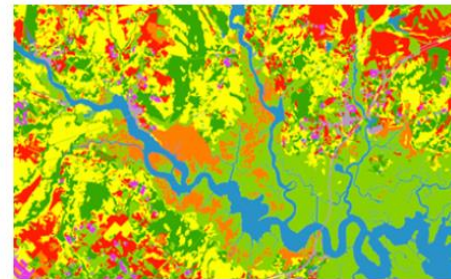
Local Planning Navigator

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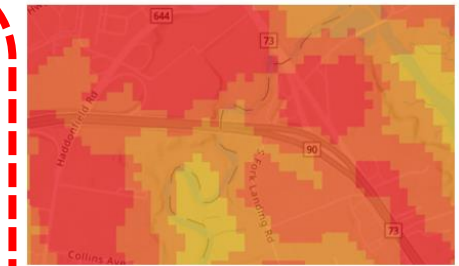
NJ Forest Adapt

A data mapping tool for forest management



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Data and resources for hazard mitigation planning

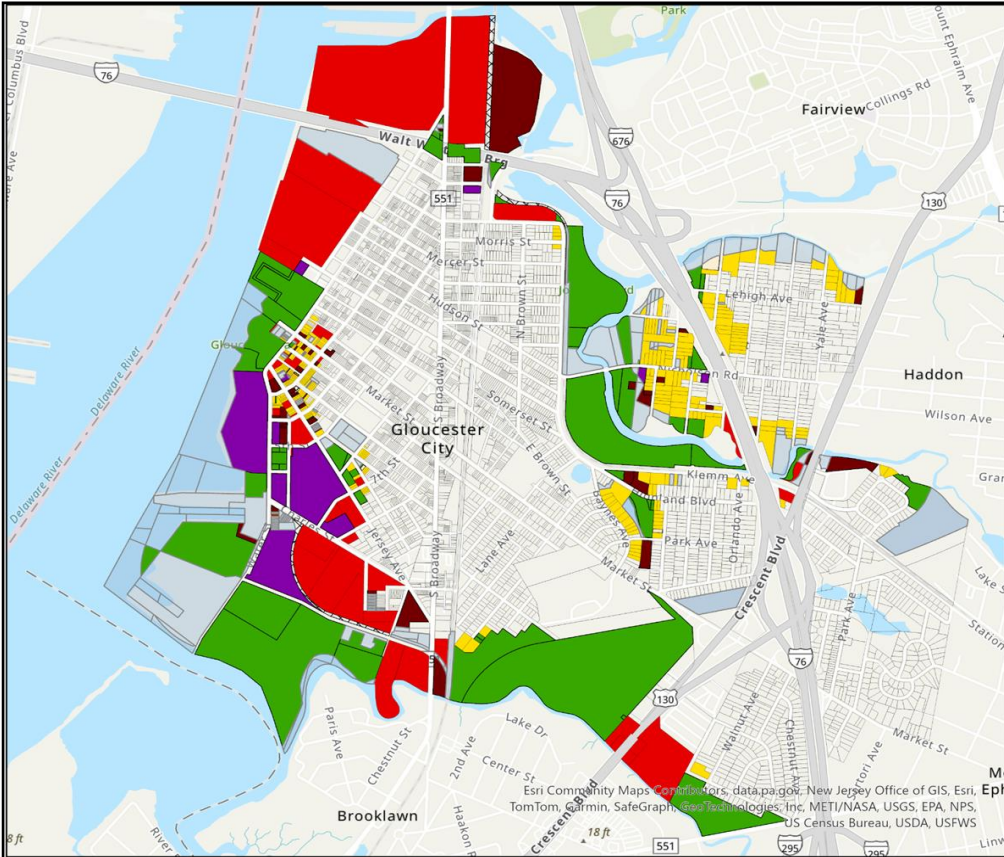


NJ Public Health Adapt

Climate planning for improved health outcomes

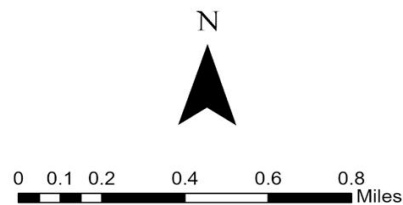
MOD IV Parcel Flood Analysis – Gloucester City

100-Year Flood Event (1% Chance Annual Flood)



100 Year Flood Exposure by Property Class

- Vacant (1)
- School and School Property (15A, 15B, 15C)
- Church & Charitable (15D)
- Cemeteries & Graveyards (15E)
- Residential (2)
- Commercial (4A)
- Industrial (4B)
- Apartment (4C)
- Class I Railroad Property (5A)
- Other Exempt (15F)



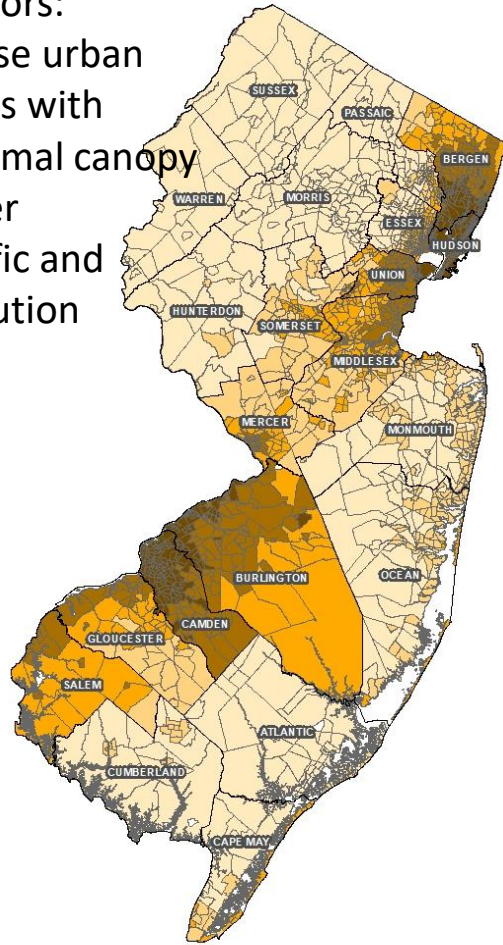
Property Class	Value of Flooded Land Parcels	Value of Flooded Improvement	# Parcels Flooded	Total Area flooded (in Acres)
Vacant (1)	\$ 2,921,500	\$ -	46	4.4082
Residential (2)	\$ 8,508,300	\$ 25,295,950	307	36.3338
Public and School Property (15A)	\$ 4,110,300	\$ 20,030,800	2	0
Public and School Property (15C)	\$ 11,604,500	\$ 24,912,700	66	6.5392
Other Exempt (15F)	\$ 165,000	\$ 274,200	4	0.2289
Commercial (4A)	\$ 12,844,500	\$ 38,992,400	46	7.5464
Industrial (4B)	\$ 3,146,600	\$ 10,256,500	11	2.7694
Apartment (4C)	\$ 14,000	\$ 89,600	1	0.0344
Railroad Class I (5A)	\$ 487,500	\$ -	3	0
Total	\$ 43,802,200	\$ 119,852,150	486	58

Heat Vulnerability Index

Exposure

Key factors:

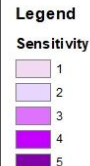
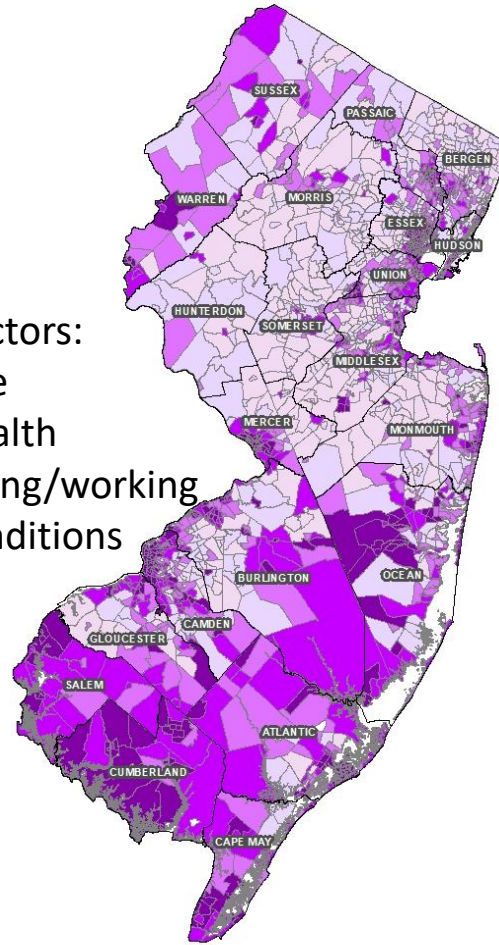
- Dense urban areas with minimal canopy cover
- Traffic and pollution



Sensitivity

Key factors:

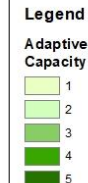
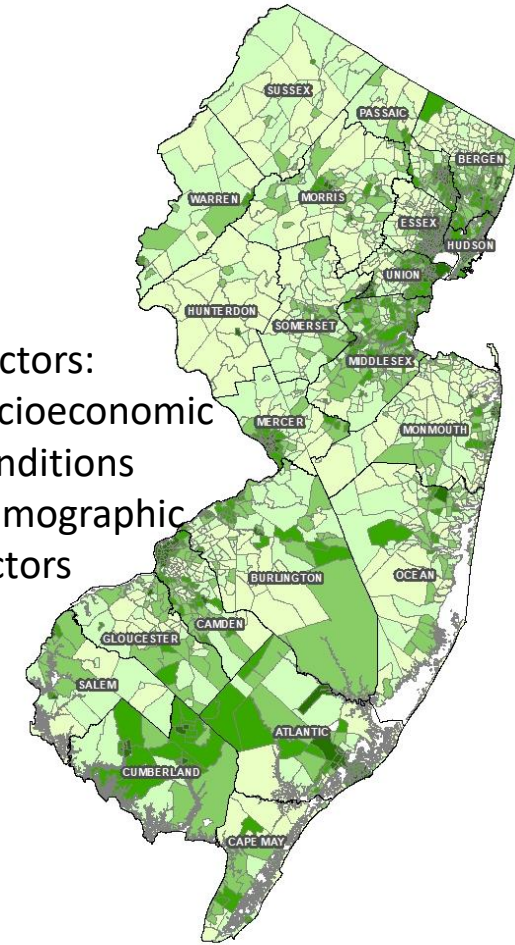
- Age
- Health
- Living/working conditions

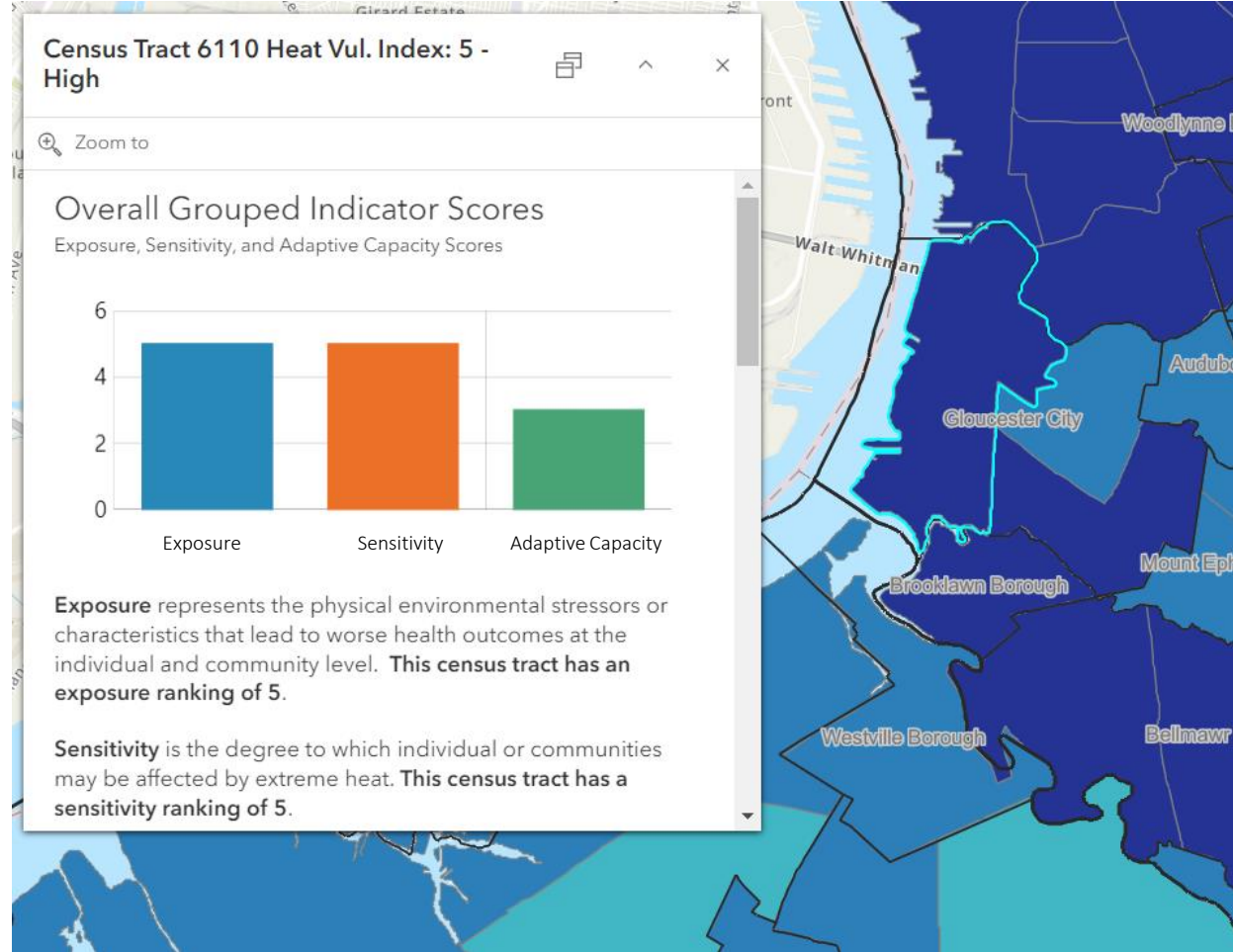
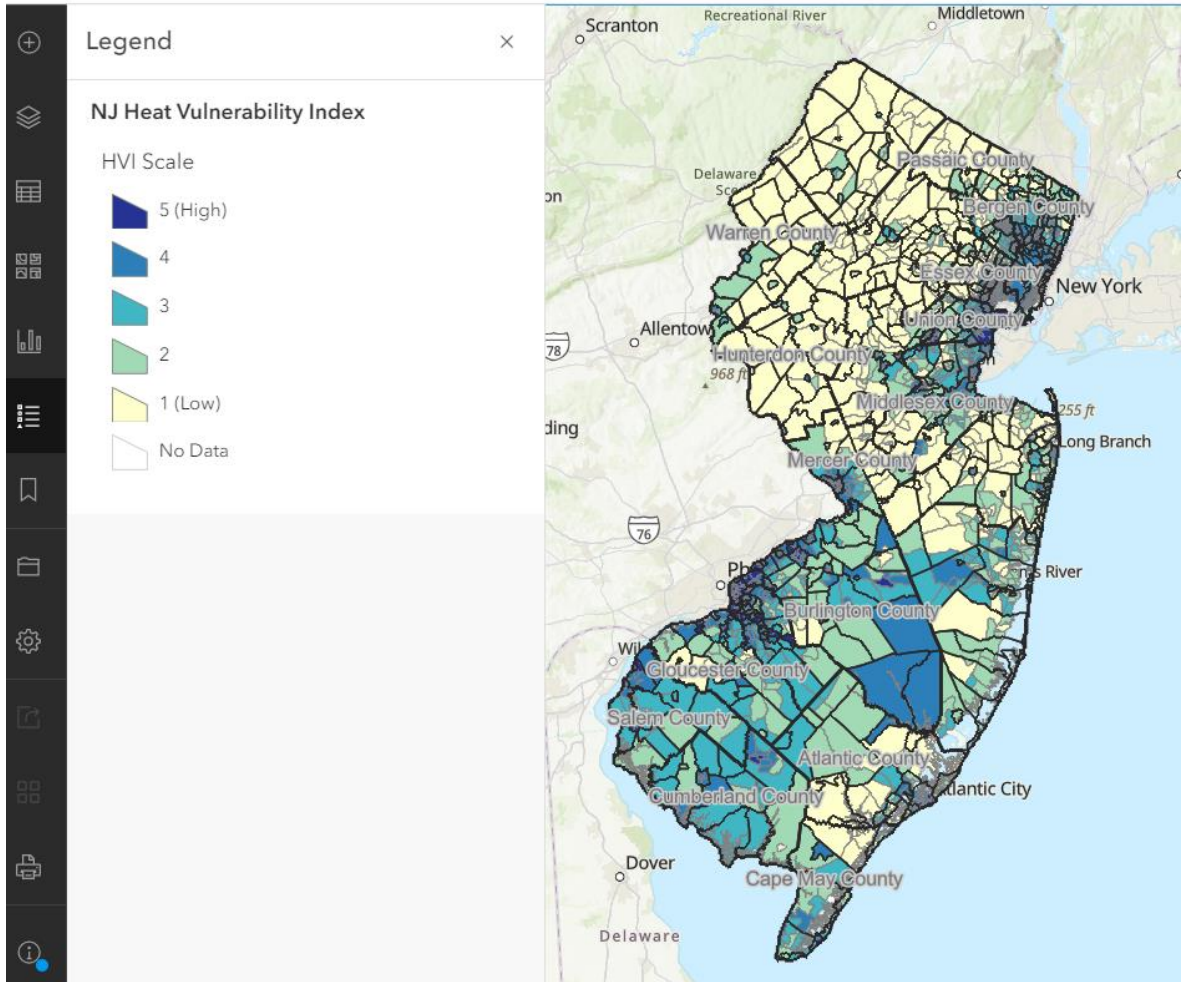


Adaptive Capacity

Key factors:

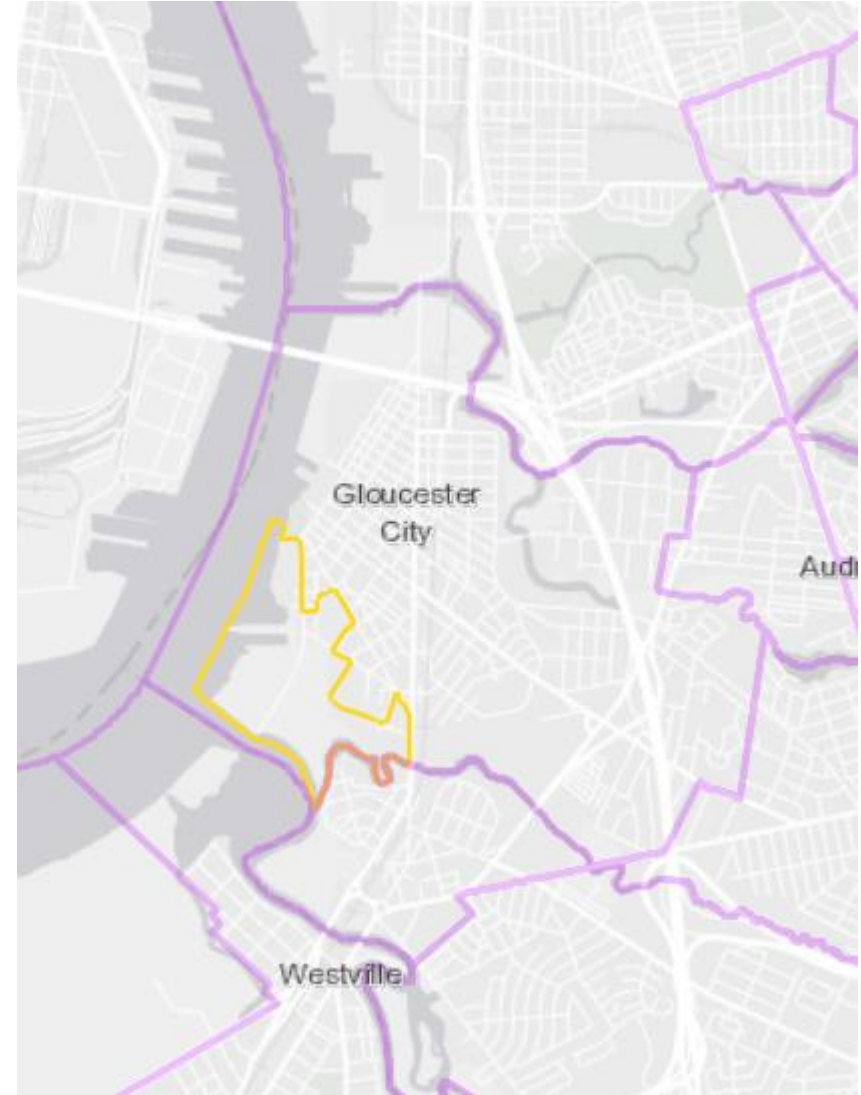
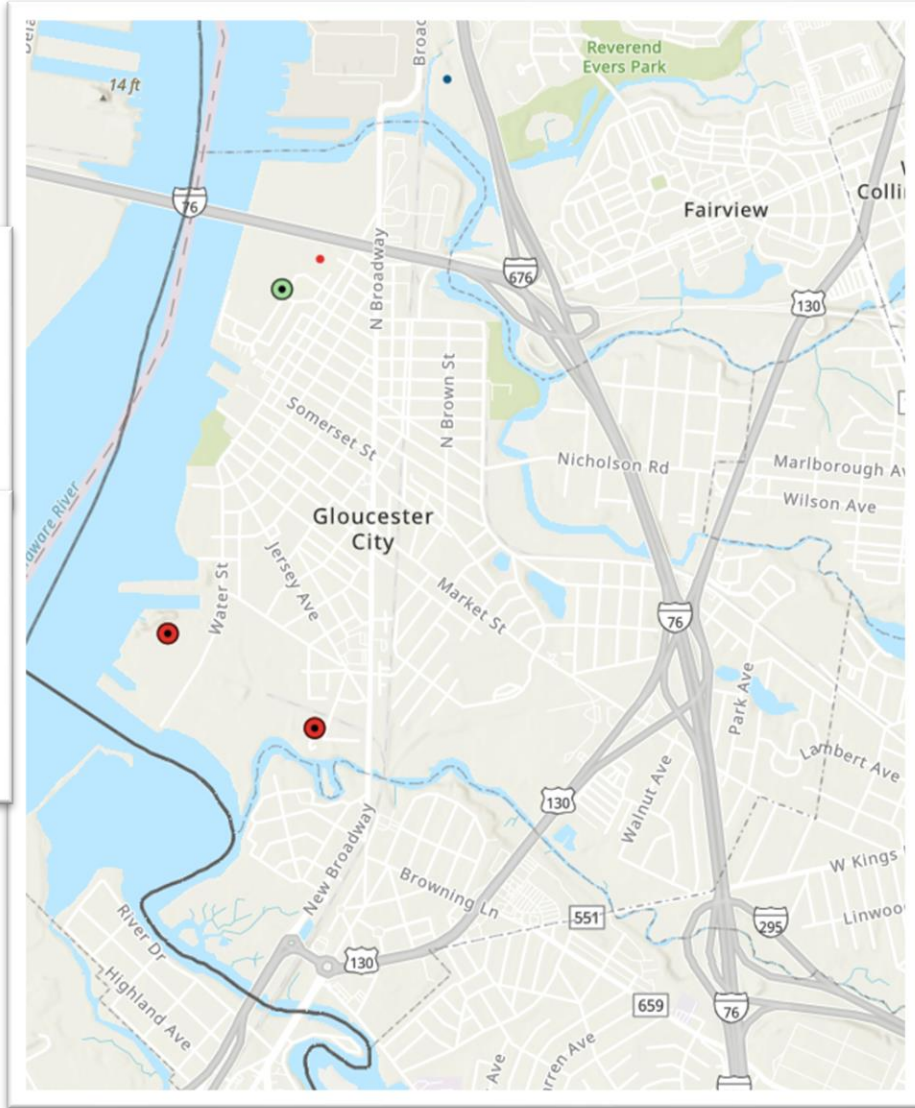
- Socioeconomic conditions
- Demographic factors





Hazardous Facilities and Flooding Analysis

- Toxic Catastrophe Prevention Act Sites**
- TCPA Sites
- Current Flood Risk In OBC
 - Current Flood Risk
 - Future Flood Risk
 - Sites with Limited Flood Risk
- Known Contaminated Sites List**
- KCSL Sites
- Current Flood Risk In OBC
 - Current Flood Risk
 - Future Flood Risk In OBC
 - Sites with Limited Flood Risk



Key Takeaways

Climate change is posing continued risk to human health, infrastructure, natural resources, social and economic systems

Climate change-related data and tools are essential drivers for decisions about zoning, redevelopment, housing, open space, and other investments by local and regional governments

Rutgers' NJ Adapt is a powerful public resource available for high-level planning and learning about the impacts of climate change on people, assets, and communities in New Jersey

**NEW
JERSEY
BROWNFIELD
SUMMIT**

**Success Stories:
How Redeveloped Brownfields Can
Make Your Community More Resilient**



Ed Confair
Vice President,
Landscape & Resiliency
AKRF, Inc.



William Kurzenberger, AICP
Planner III
Topology



John Evangelista
Deputy Director,
Groundwork Elizabeth

Success Stories: How Redeveloped Brownfields Can Make Your Community More Resilient



New Jersey Brownfield Summit

AKRF, Inc.

June 12, 2024



Edward Confair, PE, PLA

Vice President, Landscape & Resiliency

AKRF, Inc.

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215-330-4113 x. 311

econfair@akrf.com



Presenter Profile
NJ Brownfield Summit

June 12, 2024

Case Study Highlights

Impacts of Flooding on Hoboken

Resiliency Planning - Parks as Defense

Community Benefits from resilient strategic planning

Designing a Resiliency Park

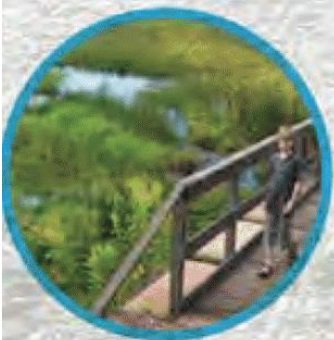


Learning Objectives
Case Study - Hoboken Parks as Defense

June 12, 2024



RETENTION



CONSTRUCTED WETLANDS



SUBSURFACE STORAGE

BASF SITE

PINO SITE

BLOCK 12 SITE



DETENTION



GREEN ROOFS



RAINWATER HARVESTING



BIOSWALES



STORMWATER PLANTERS

INFILTRATION

Parks as Defense



**Northwest
Resiliency Park**

**1 Million Gallons
of Storage**

8th & Monroe

Concept Phase

7th & Jackson

**470,000 Gallons
of Storage**

**Southwest
Resiliency Park**

**200,000 Gallons
of Storage
600,000 gallon
expansion**

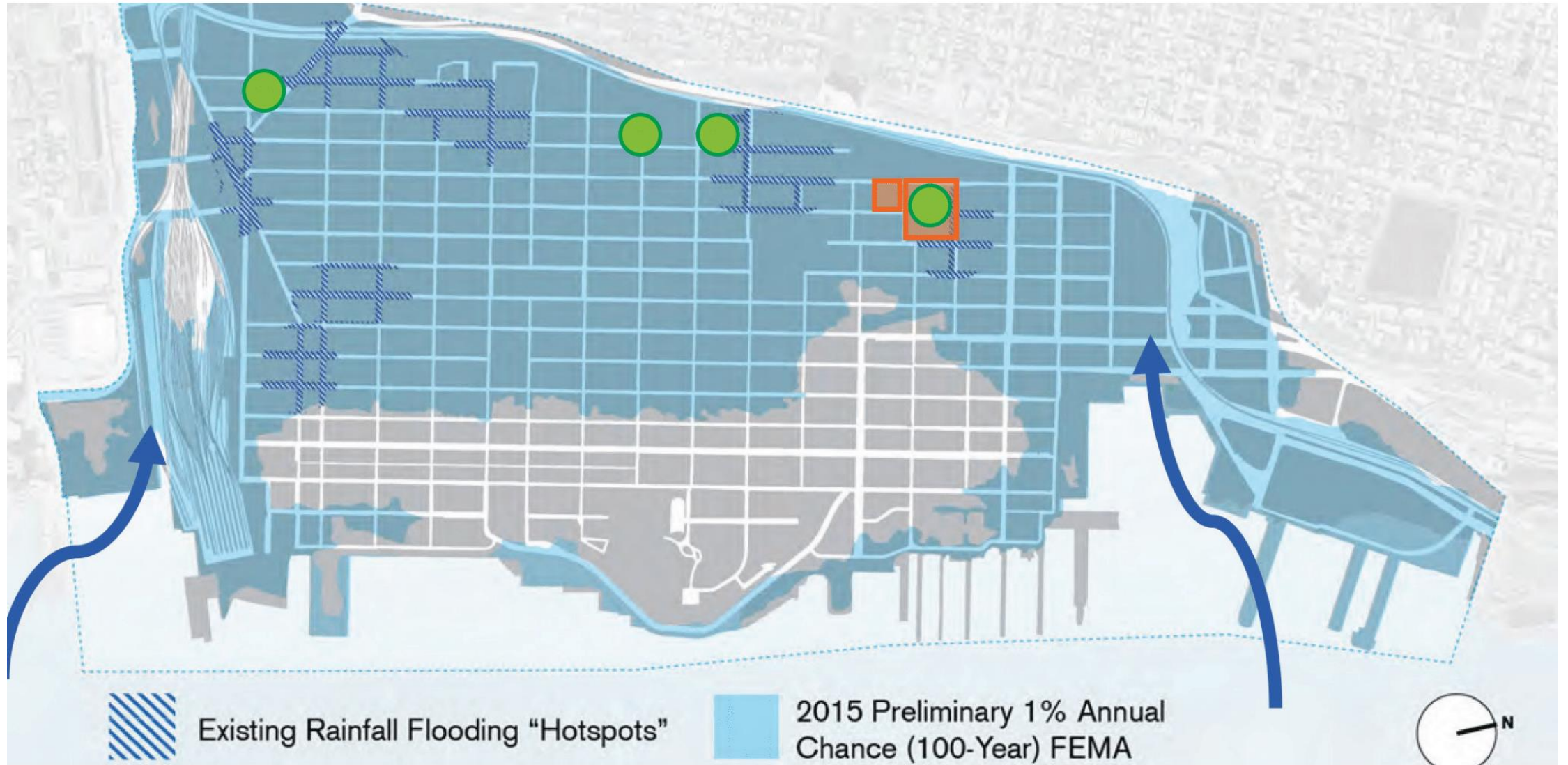


Image Credit: Rebuild By Design Hudson River Final Environmental Impact Statement

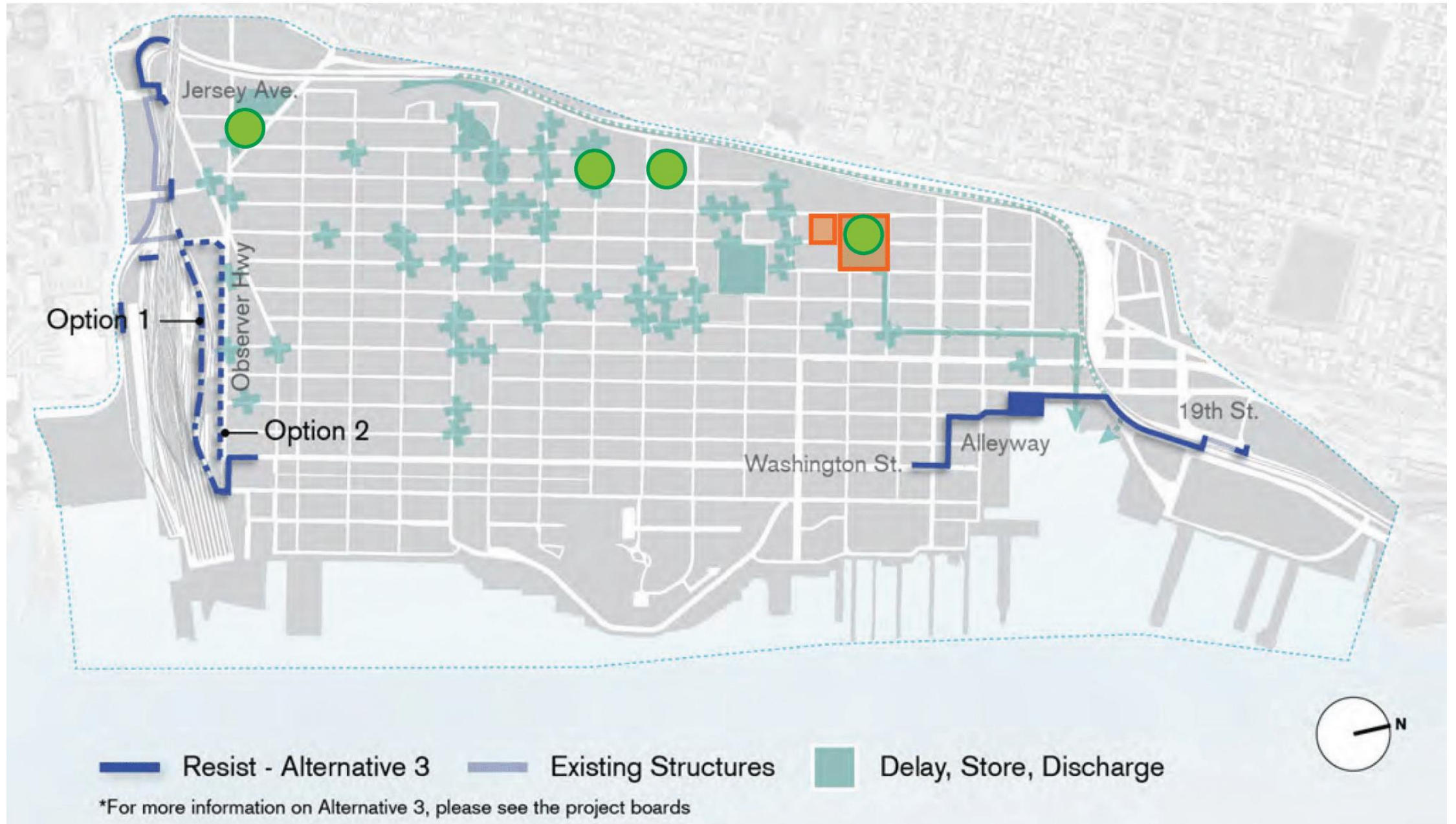


Image Credit: Rebuild By Design Hudson River Final Environmental Impact Statement

Hoboken Northwest Resiliency Park

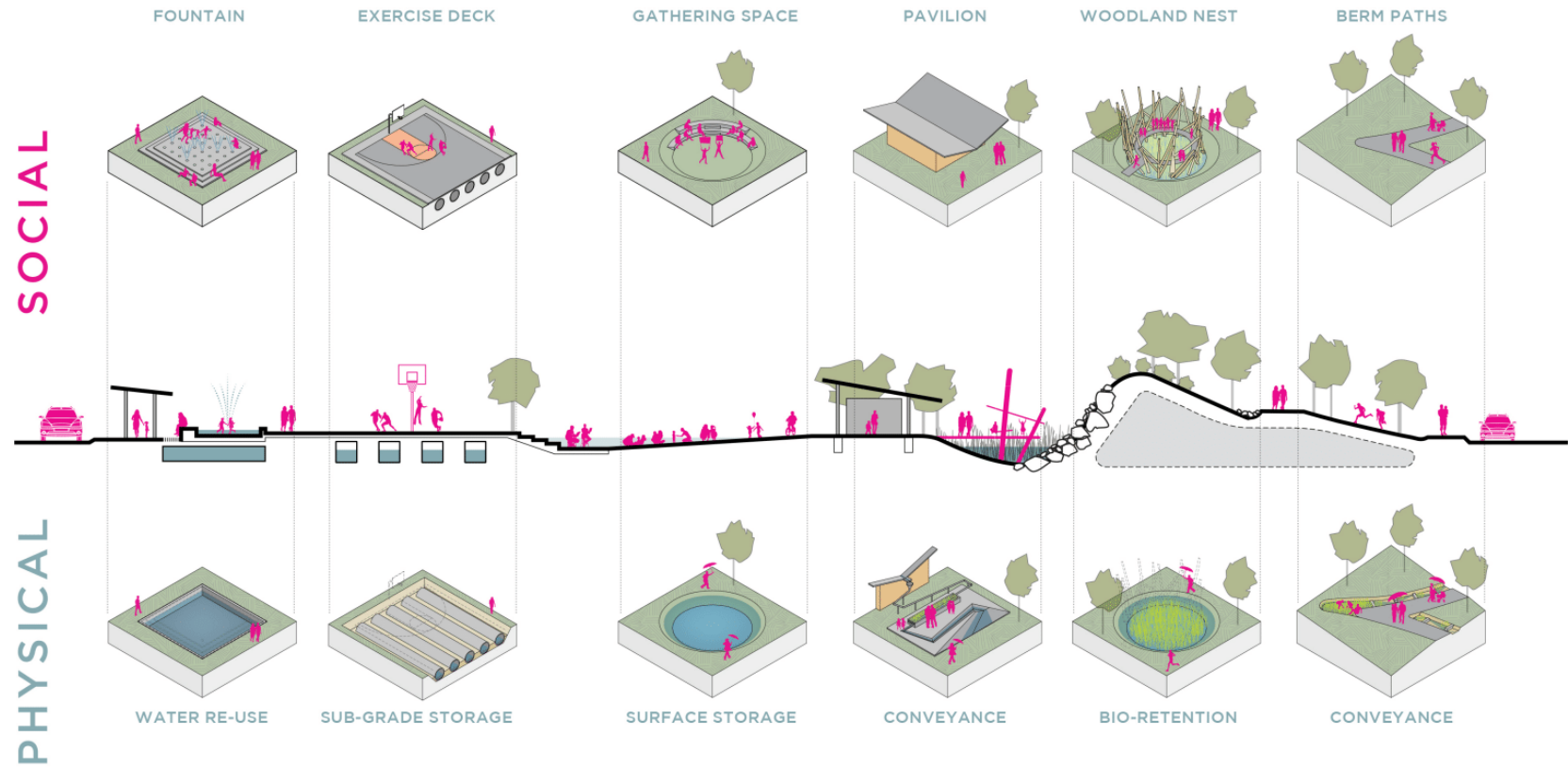
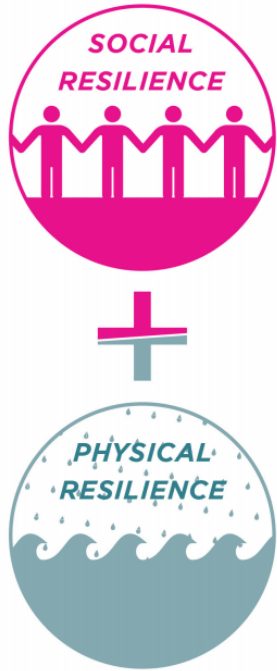


Image Credit: AKRF, Inc.



Image Credit: OLIN

Define design and performance criteria for both physical infrastructure systems as well as community based social interdependencies



Physical Infrastructure Planning

Hoboken Master Plan identifies former BASF site as future parkland

2004

Green Infrastructure Strategic Plan identifies former BASF site as future resiliency park

2014

Rebuild by Design advances former BASF site as part of Delay, Store, Discharge strategy










2016

City of Hoboken acquires former BASF property and opens Northwest Pop-Up Park

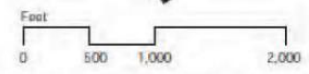
2017

NHSA incorporates Northwest Resiliency Park in CSO Reduction Long Term Control Plan

2019

-  Existing Parks and Recreation
-  Planned/Possible New Parks and Recreation
-  Private Open Space
-  Existing Waterfront Walkway
-  Future Waterfront Walkway
-  Connection to Adjacent Municipalities
-  "Green Circuit"
-  "Urban Trail" Street
-  Pedestrian Crossing of Light Rail

Note: Letters are keyed to Table III-2



Map prepared by Philips Pross Shapiro Associates, Inc.
March 2004
Base map source: Wilbur Smith Associates

Map 4: Open Space Concept

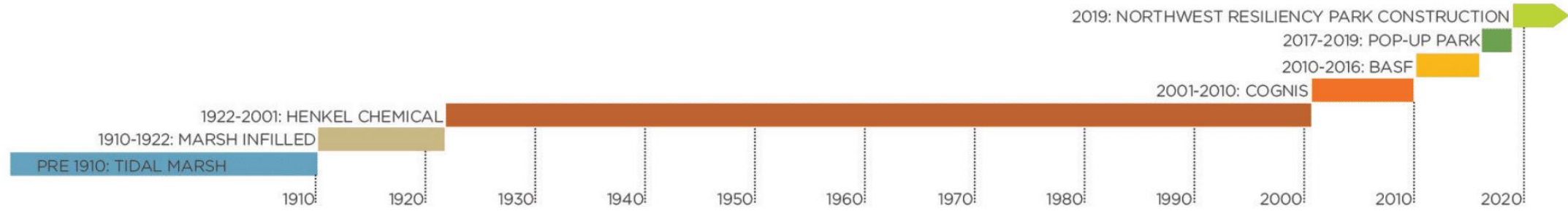


Figure 1.2.1 (Timeline of Development and Ownership)

Source: The New York Public Library Digital Collections

1897



Figure 1.2.2 (1897 photograph of Hoboken meadows)
 Source: Rutgers University Community Repository

1890

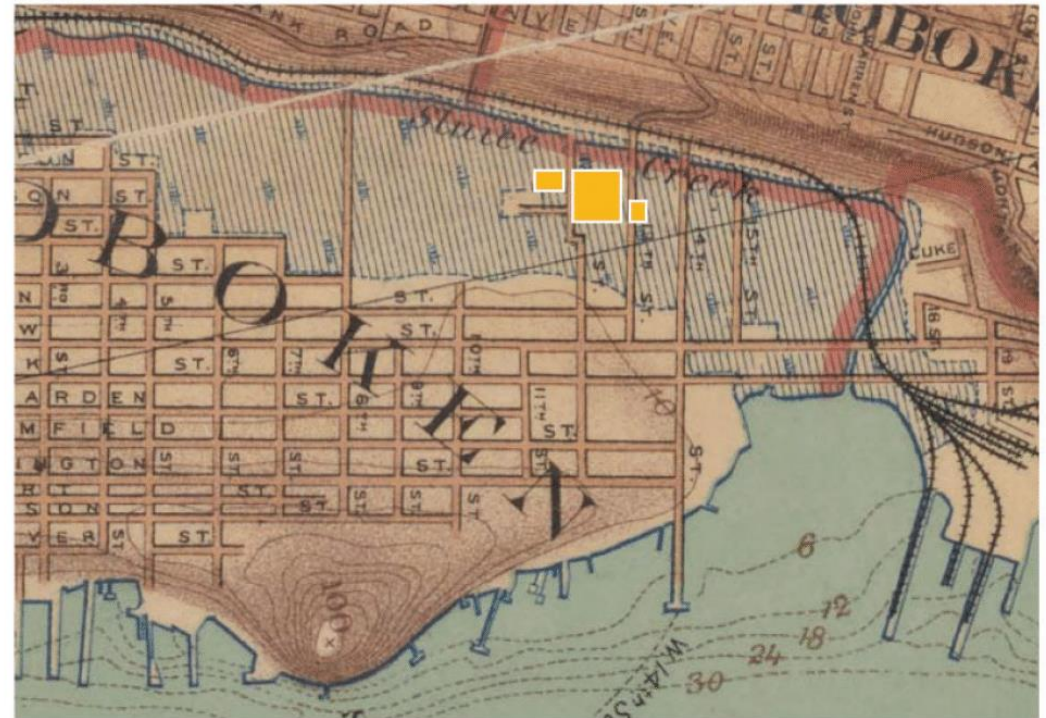


Figure 1.2.3 (1890 topographic map showing marsh extent)
 Source: New York Public Library Digital Collections

1967



Figure 1.2.4 (1967 photograph of northwest Hoboken)
Source: Rutgers University Community Repository

1930



Figure 1.2.5 (1930 aerial image)
Source: New Jersey Geographical Information Network

2017



Figure 1.2.6 (2017 photograph of Pop-Up Park)

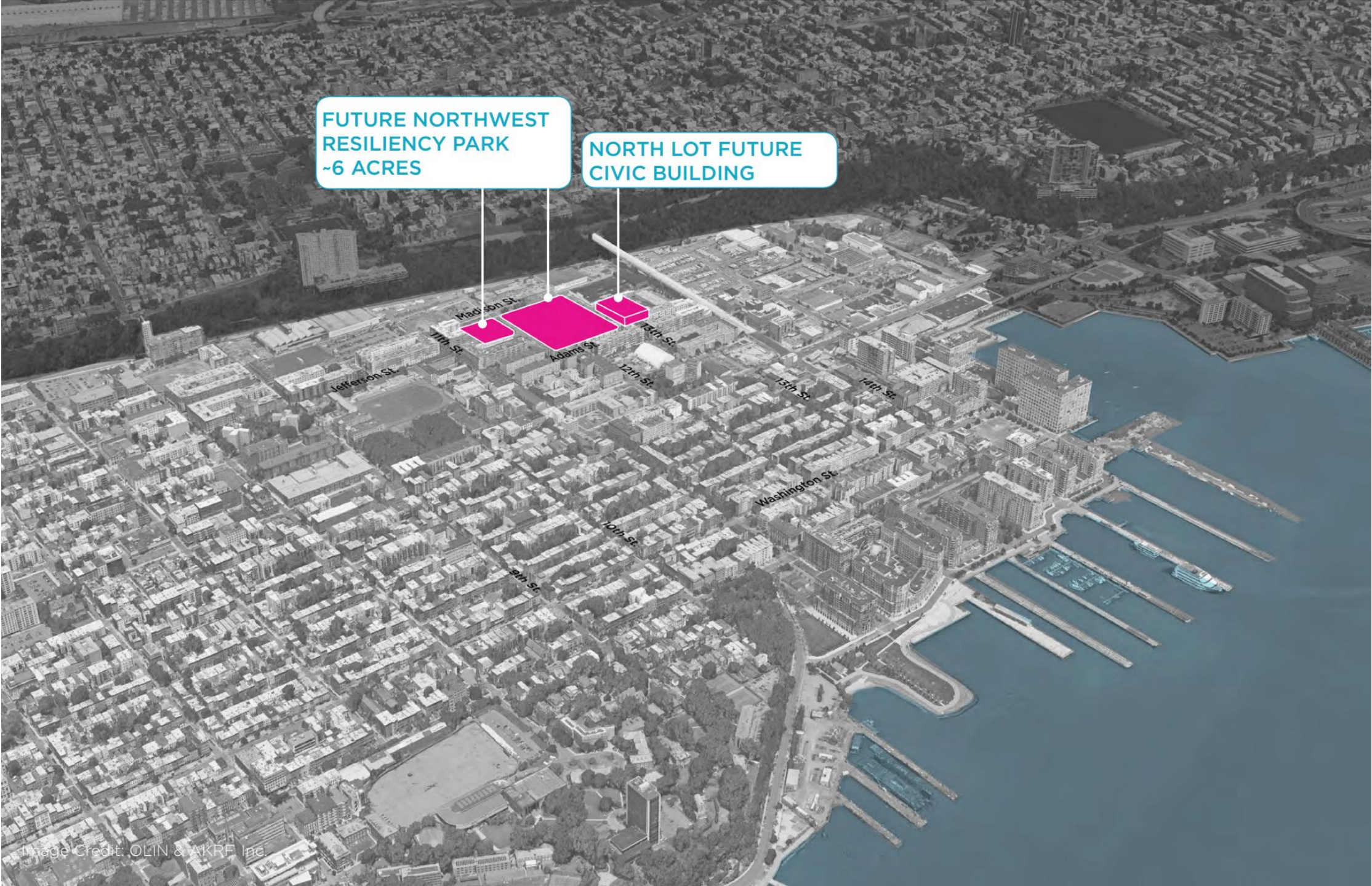
2015



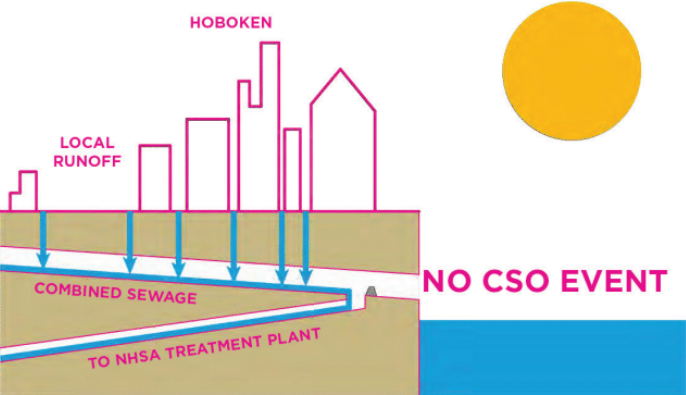
Figure 1.2.7 (2015 aerial image)
Source: New Jersey Geographical Information Network

**FUTURE NORTHWEST
RESILIENCY PARK
~6 ACRES**

**NORTH LOT FUTURE
CIVIC BUILDING**

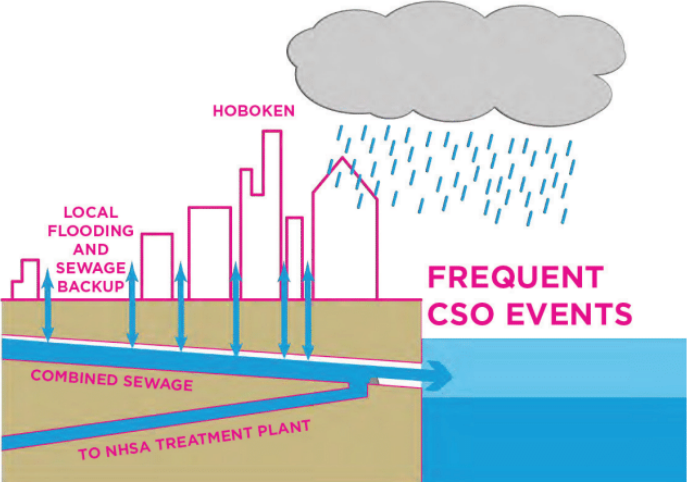


DRY WEATHER CONDITIONS

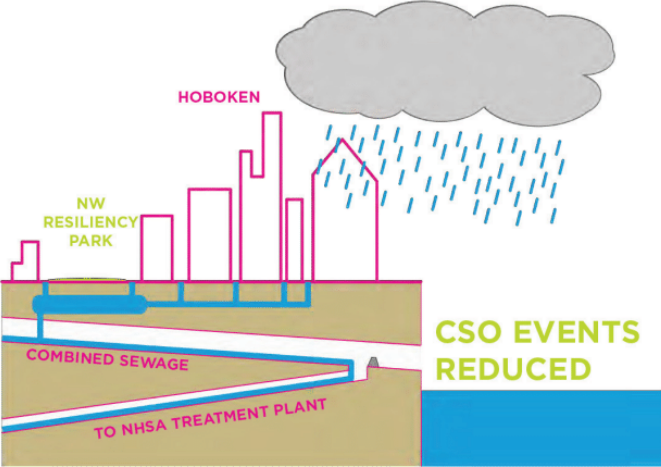


IN DRY WEATHER COMBINED SEWAGE IS CONVEYED TO THE NHTA TREATMENT PLANT BEFORE DISCHARGE.

WET WEATHER CONDITIONS



IN WET WEATHER COMBINED SEWAGE OVERFLOWS DIRECTLY TO THE HUDSON RIVER AND FLOODS LOCAL NEIGHBORHOODS.



ONE MILLION GALLONS OF STORAGE AT NORTHWEST RESILIENCY PARK WILL HELP REDUCE COMBINED SEWAGE OVERFLOWS AND LOCAL FLOODING.

Image Credit: AKRF, Inc.

COMBINED SEWER SYSTEM AND FLOODING



LOCAL STREET FLOODING



COMBINED SEWER OVERFLOWS

STORMWATER MANAGEMENT STRATEGIES



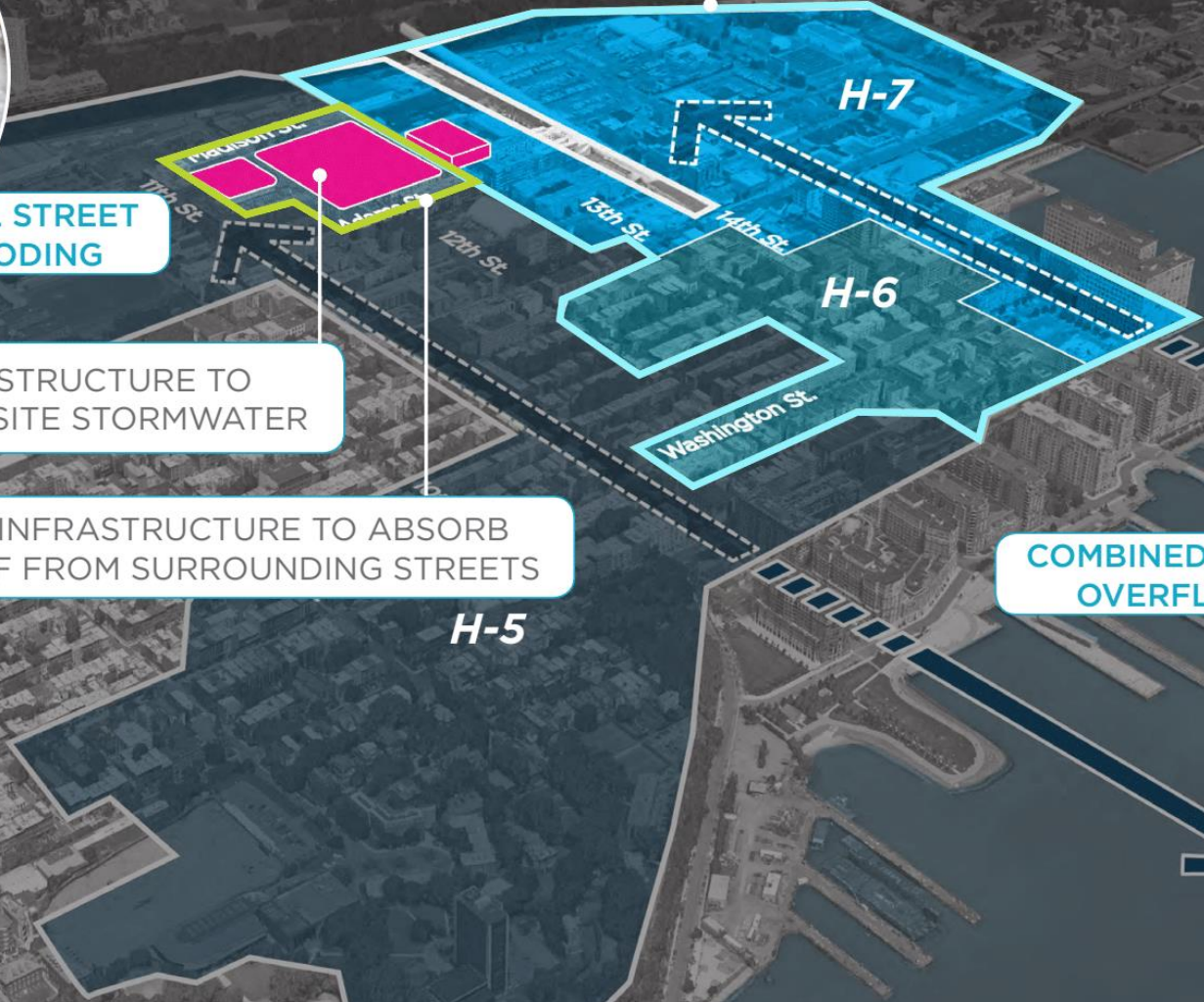
LOCAL STREET FLOODING

SUBSURFACE STORAGE FOR AT LEAST 1 MILLION GALLONS TO RELIEVE SEWER SYSTEM

GREEN INFRASTRUCTURE TO MANAGE ON-SITE STORMWATER

GREEN INFRASTRUCTURE TO ABSORB RUNOFF FROM SURROUNDING STREETS

COMBINED SEWER OVERFLOWS



Social Infrastructure Planning



NORTH BERGEN TOWNSHIP

UNION CITY

WEBB HAWKEN TOWNSHIP

JERSEY CITY

HUDSON RIVER

LEGEND

- Parks
- Project Site
- Municipal Boundary

Source: U.S. Census Bureau, 2010 Census

0 75 150 300 450 Feet

N
W



Image Credit: OLIN

- RESIDENTIAL (MINOR STREET LEVEL RETAIL)
- RETAIL
- COMMERCIAL
- INDUSTRIAL USE
- CIVIC
- INDOOR RECREATION
- PARK
- PSE&G



- WESTERN EDGE REDEVELOPMENT PLAN
- RESIDENTIAL (MINOR STREET LEVEL RETAIL)
- RETAIL
- COMMERCIAL
- MIXED USE
- INDUSTRIAL USE
- CIVIC
- PSE&G
- INDOOR RECREATION
- PARK
- FUTURE PARK
- FUTURE TBD

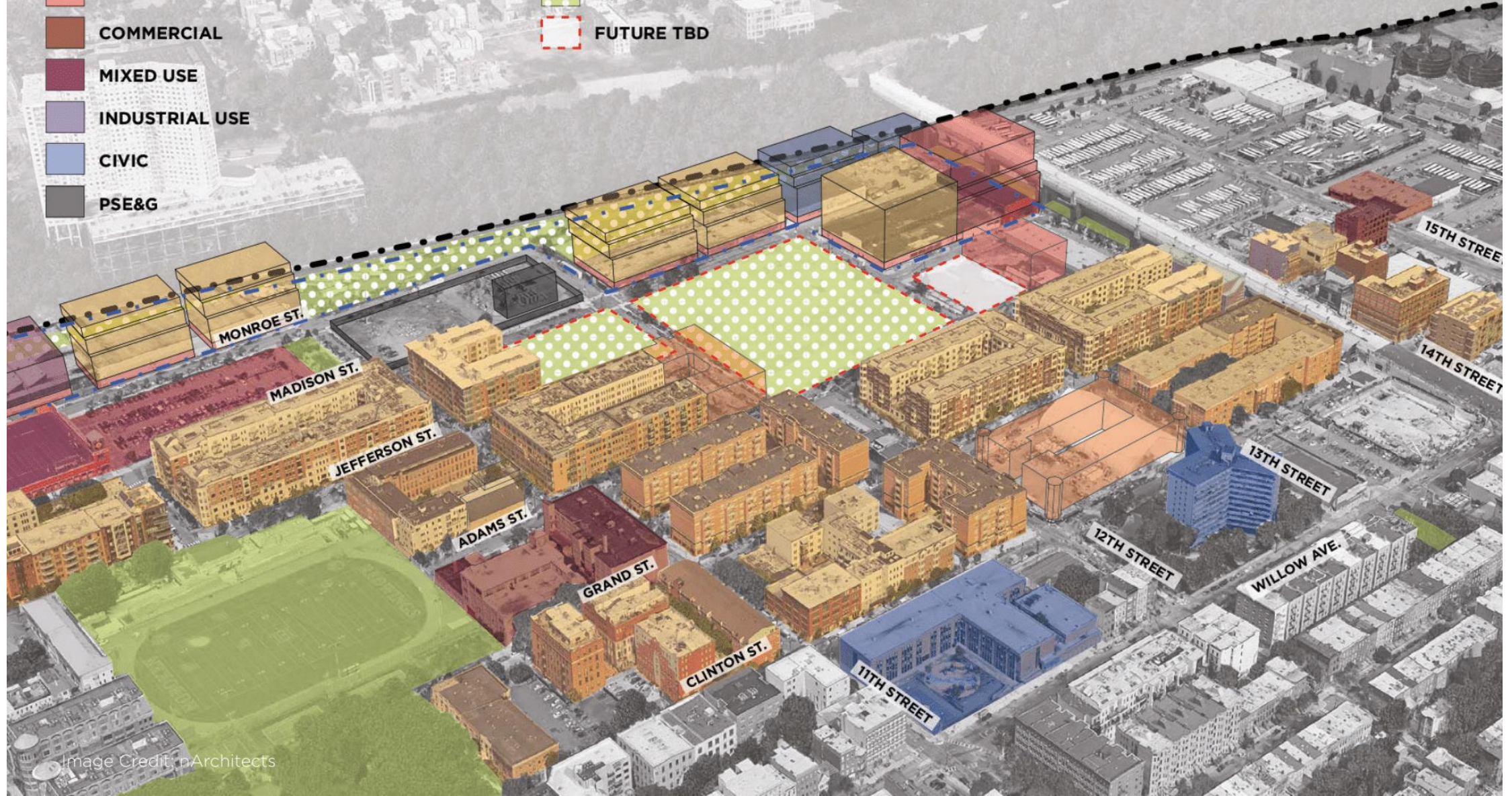






Image Credit: OLIN



Image Credit: AKRF, Inc.

ONLINE SURVEY

WHAT FEATURES WOULD YOU LIKE TO SEE IN YOUR PARK?

BASIC AMENITIES



TREES
727



BATHROOMS
712



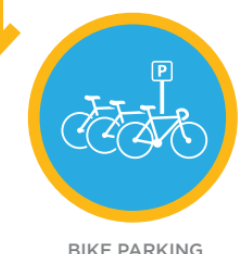
SHADE STRUCTURES
659



DRINKING FOUNTAINS
545



SEATING
533



BIKE PARKING
475



FOOD/CAFE
510



SWIMMING POOL
501



LIGHTING
477



NATIVE PLANTS
424



FLEXIBLE EVENT SPACE
415



SPRAY/ FOUNTAIN WATER FEATURE
409



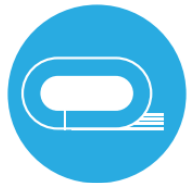
COMMUNITY GARDENS
400



ATHLETIC FIELDS
389



PLAY AREAS
382



MULTI USE TRACK
370



PICNIC/GRILL AREAS
367



TRAILS
362



FITNESS STATIONS
358



PASSIVE SPACE
332



DOG PARK
293



MINI GOLF
295



COMMUNITY CENTER
260



GAMES
237



ROCK/NET CLIMBING
224



SURFACE/ WADING WATER FEATURE
207



BIKE RENTAL
194



ENVIRONMENTAL EDUCATION
157



CAR PARKING
132

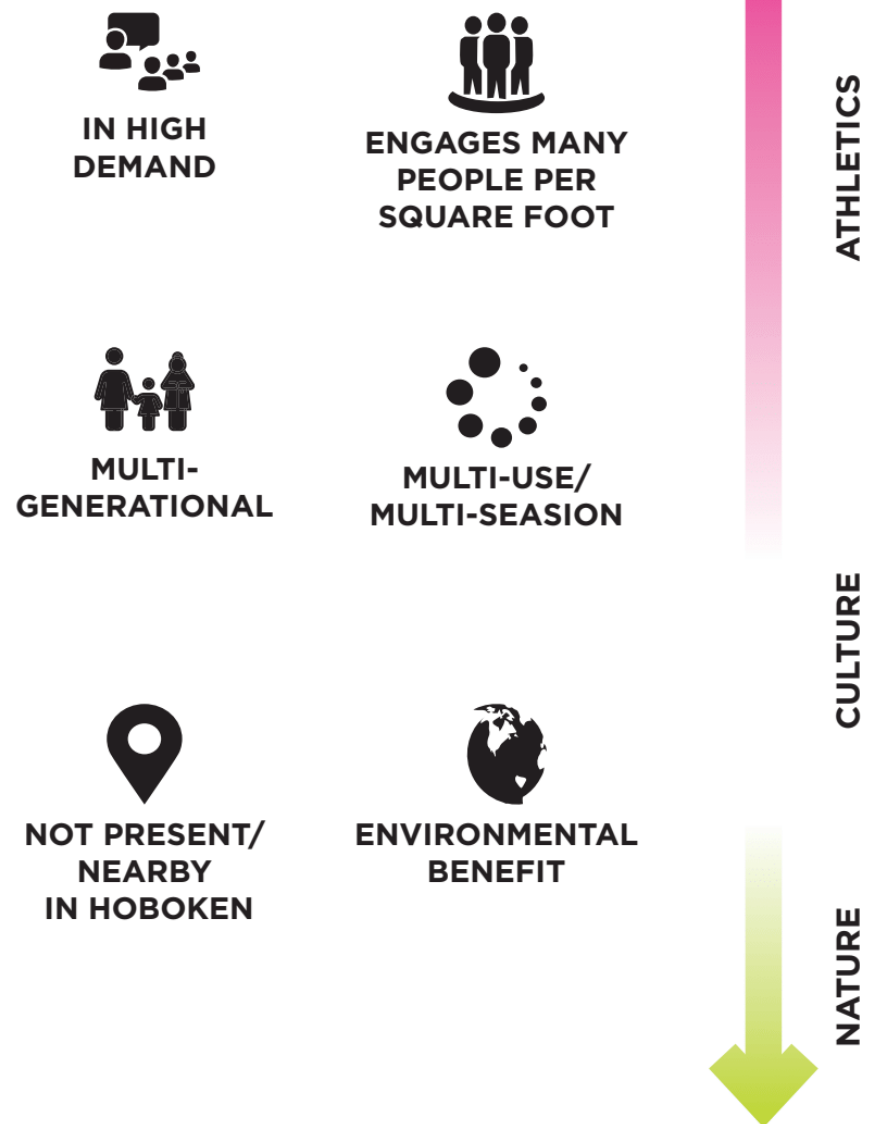


BLEACHERS
77

LOW DEMAND



EVALUATING FEATURES



ATHLETICS

CULTURE

NATURE

	IN HIGH DEMAND	ENGAGES MANY PEOPLE PER SQUARE FOOT	MULTI-GENERATIONAL	MULTI-USE/MULTI-SEASON	NOT PRESENT/NEARBY IN HOBOKEN	ENVIRONMENTAL BENEFIT
TENNIS	+++	++	+++	+	+++	
SOCCER	+++	+	+	+	+	
BASKETBALL	++	++	+	+	+	
BASEBALL	++	+	++	+	++	
PICKLEBALL	+	+++	+++	+	+	
LACROSSE	+	+	+	+	+++	
VOLLEYBALL	+	+++	++	+	+++	
FOOTBALL	+	+	++	++	++	
MULTI-USE	+	+	+++	+++	++	
FITNESS STATIONS	++	+++	+++	++	+	
ROLLER/ICE HOCKEY	+	+	+++	++	+++	
SWIMMING POOL	+++	++	++	+	+++	
CAFE	+++	+++	+++	+++	++	
FLEXIBLE EVENT SPACE	+++	+++	+++	++	+	
WATER FEATURE	++	++	++	+	++	
PICNIC AREA	+++	+++	+++	+	+	
COMMUNITY GARDENS	++	+	+++	+	+++	++
DOG PARK	++	+	++	++	+	
ENVIRON. EDUCATION	+	+++	+++	+++	+	+++
URBAN NATURE AREAS	+++	++	+++	+	+++	+++
GARDENS	++	++	+++	+	++	+++
PLAY AREAS	++	++	+	++	+	
TRAILS	++	+++	+++	+++	+	++

Final Design & Flood Mitigation Strategies

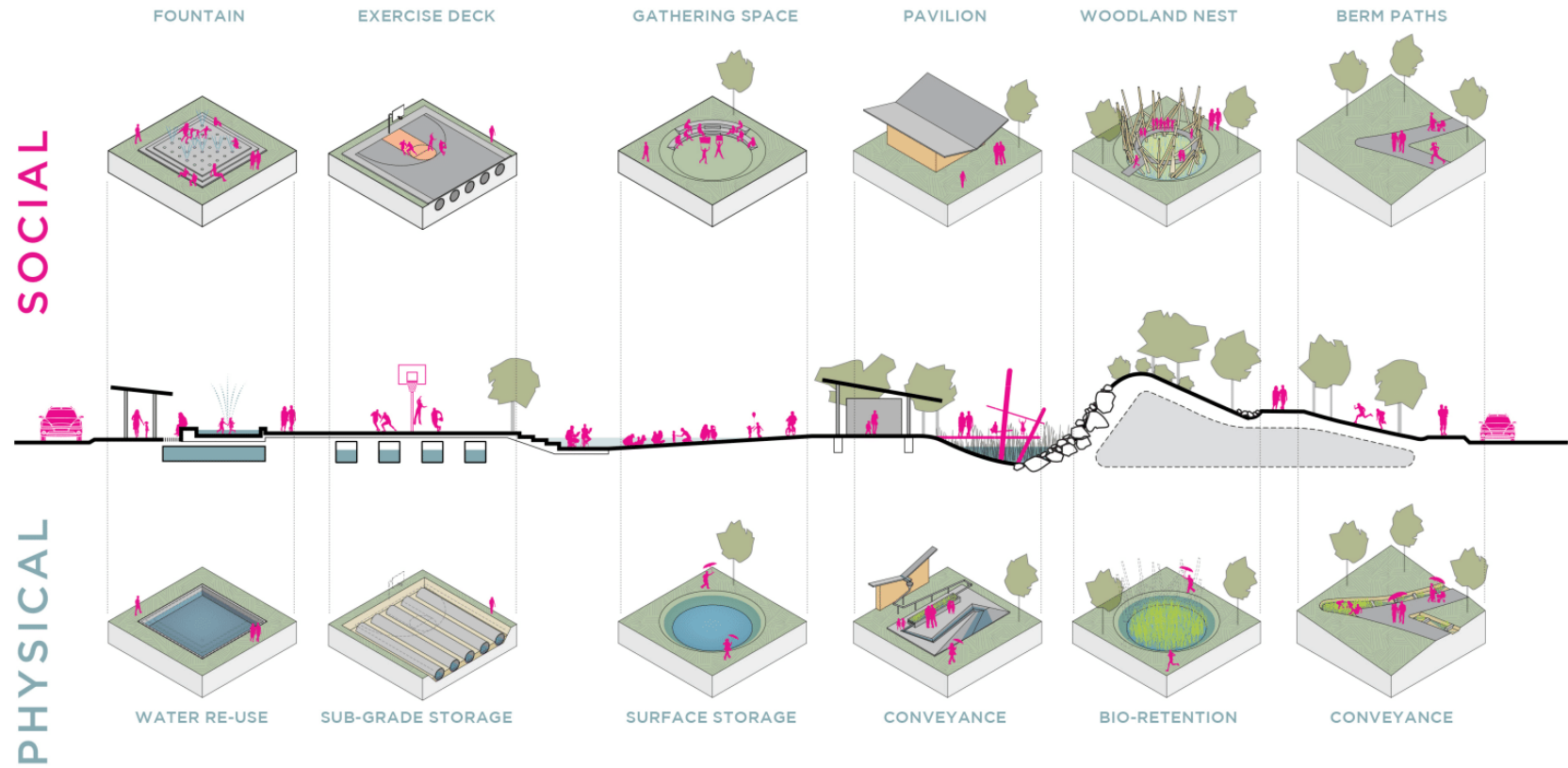
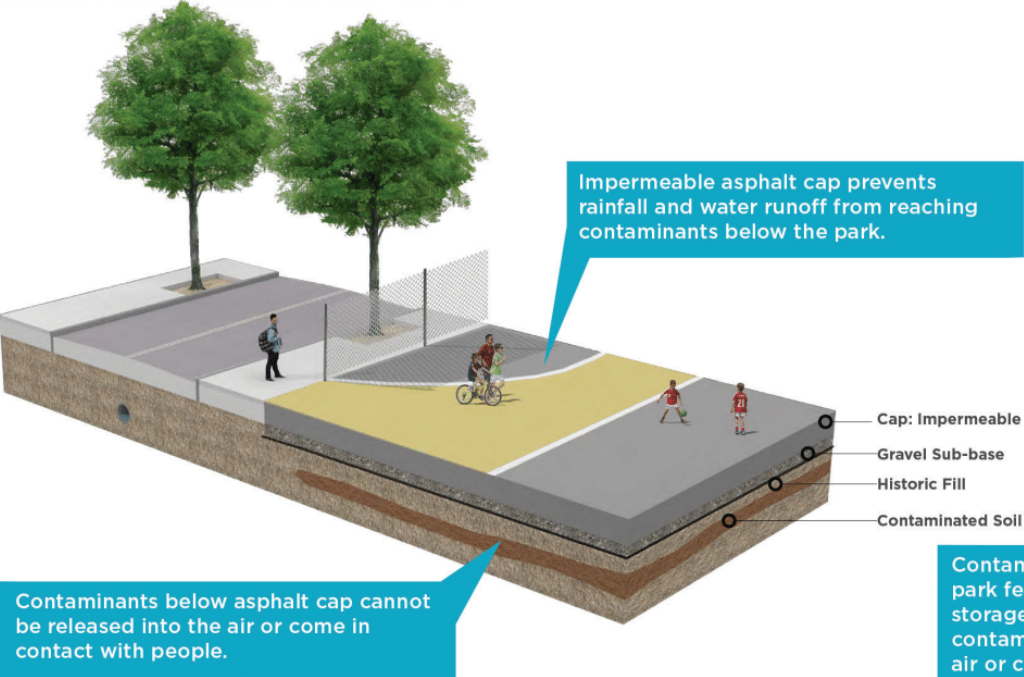


Image Credit: OLIN & AKRF

EXISTING ASPHALT CAP



CONSOLIDATION & VEGETATIVE CAP

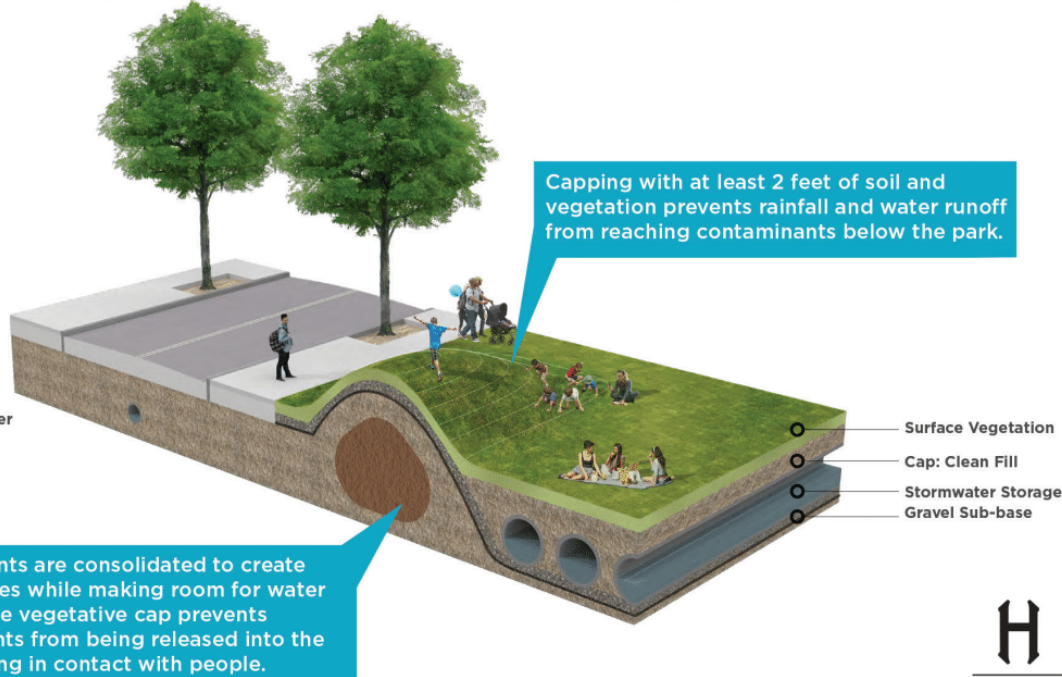
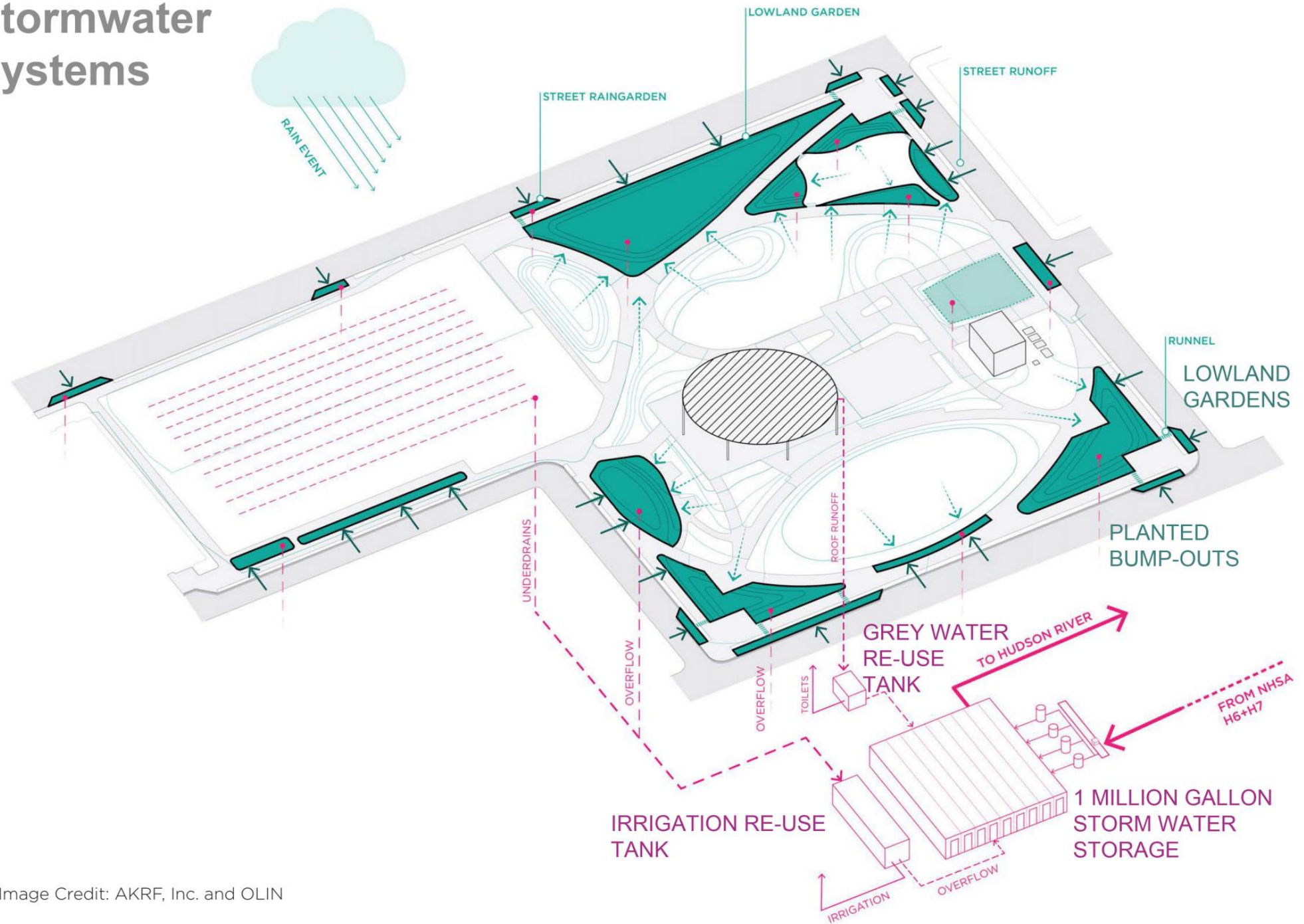


Image Credit: AKRF, Inc. & OLIN



Image Credit: OLIN

Stormwater Systems







 Denotes stormwater basins



Image Credit: Michael Baker International

Adams Street Entry Gardens



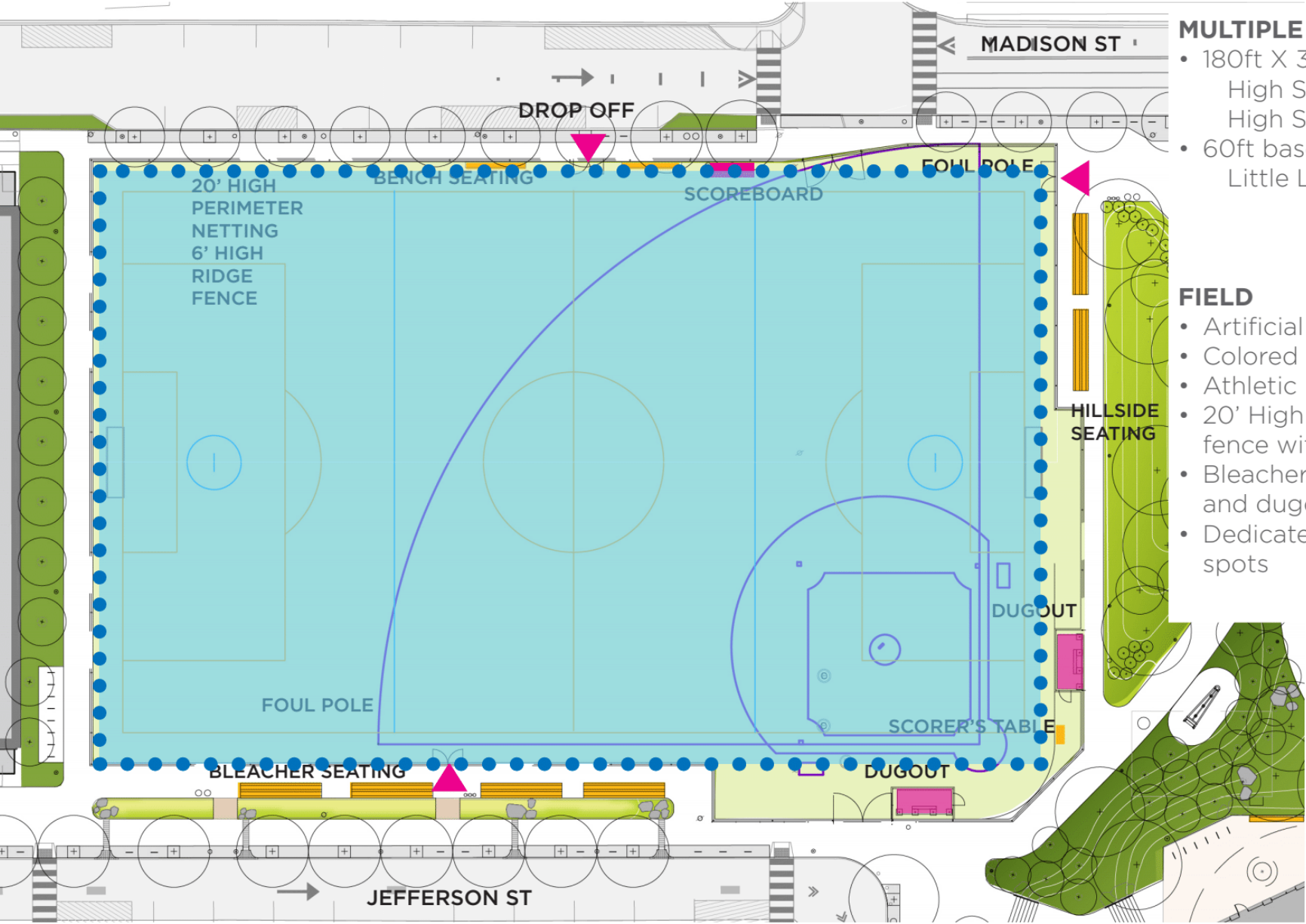
Adams Street Entry Gardens



Planting Bumpouts



Multi-Purpose Field



MULTIPLE SPORTS

- 180ft X 300ft (60yd X 100yd)
High School Soccer
High School Lacrosse
- 60ft baselines + 200ft outfield
Little League Baseball

FIELD

- Artificial Turf
- Colored striping for each sport
- Athletic Lighting
- 20' High Netting + 6' high rigid fence with gates
- Bleachers, moveable benches, and dugout shade structures
- Dedicated drop-off parking spots

Image Credit: OLIN



Image Credit: Michael Baker International

Multi-Purpose Field



Image Credit: City of Hoboken



Image Credit: City of Hoboken

Madison Gardens + Play Valley



Image Credit: OLIN

Play Valley



Play Valley



Image Credit: OLIN

Image Credit: OLIN



Image Credit: AKRF



Image Credit: AKRF



Image Credit: AKRF



Image Credit: AKRF



Image Credit: AKRF

Madison Gardens + Play Valley

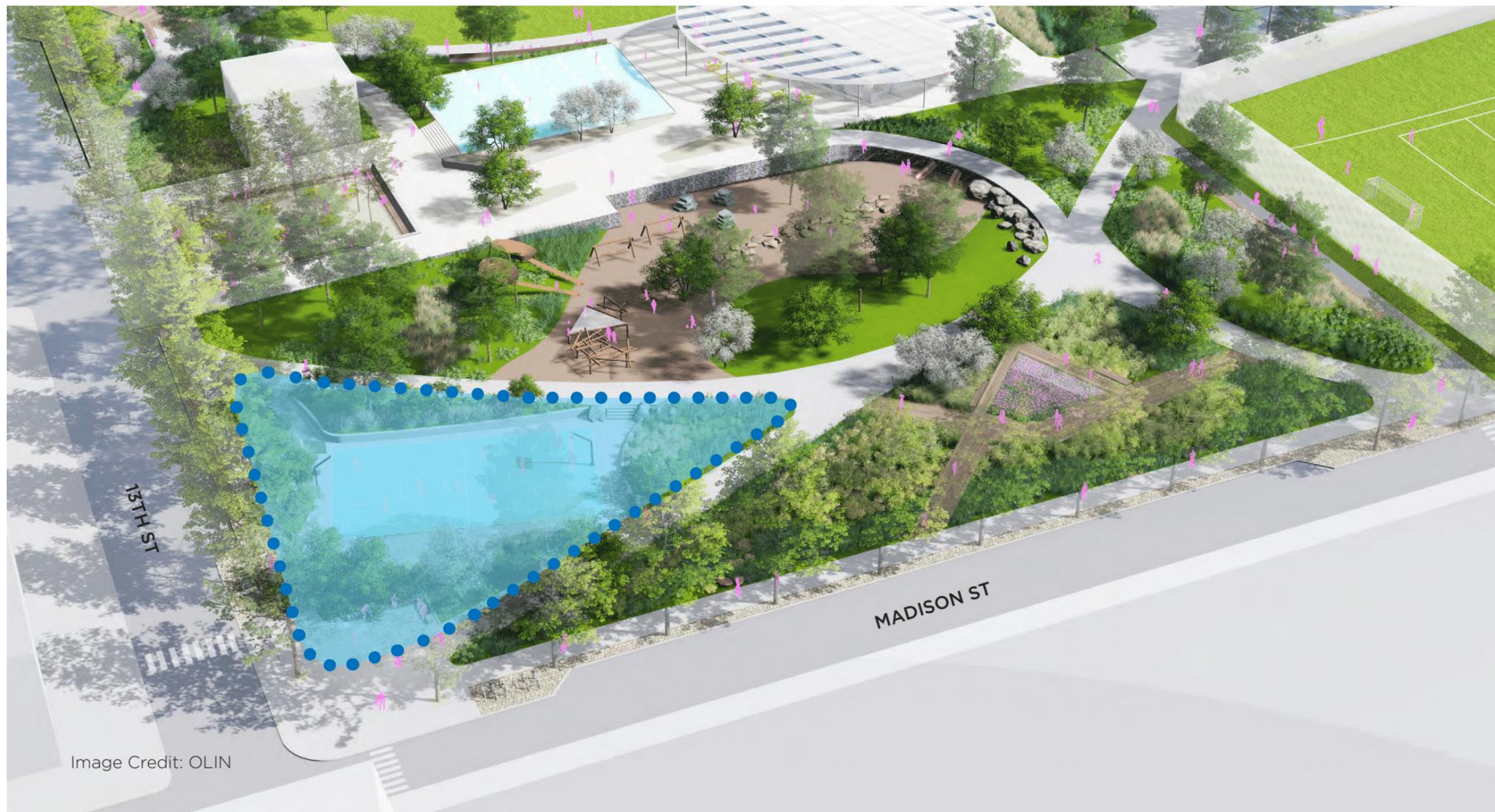


Image Credit: OLIN

Basketball Basin

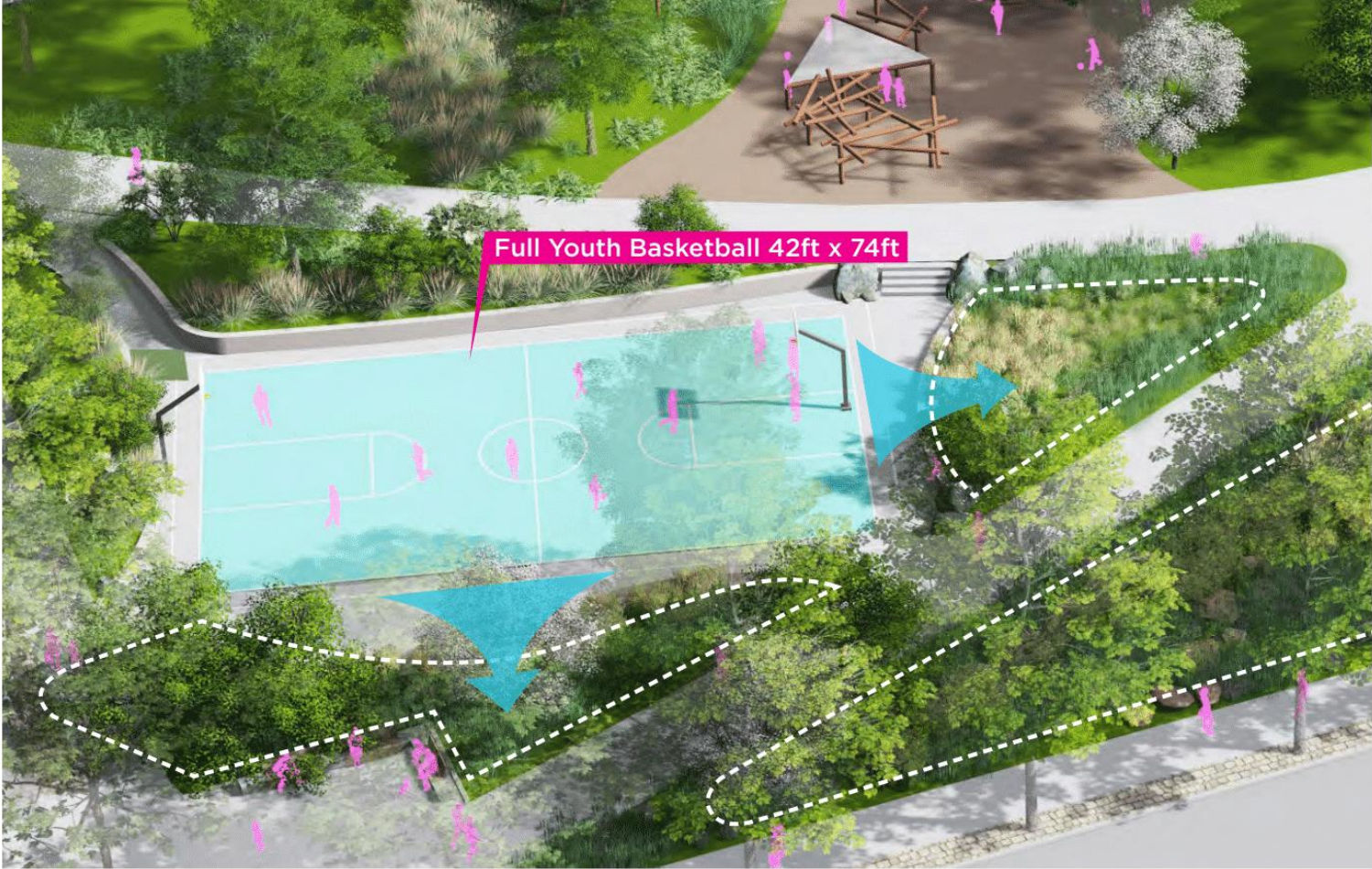
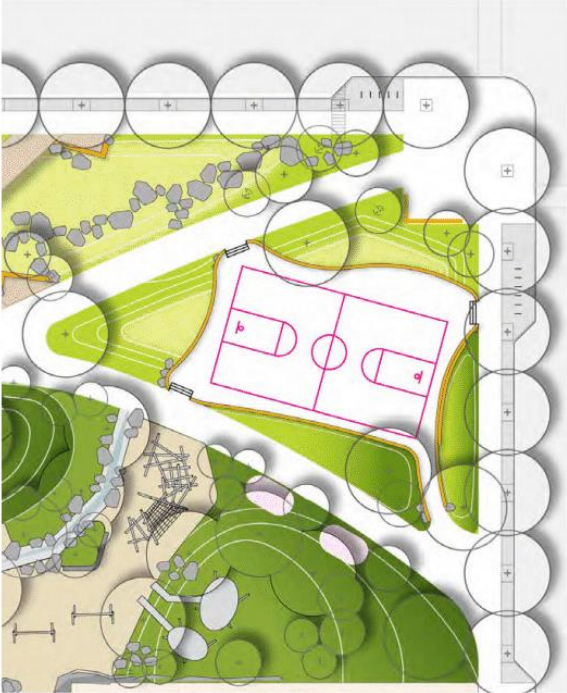




Image Credit: AKRF

Madison Gardens + Play Valley

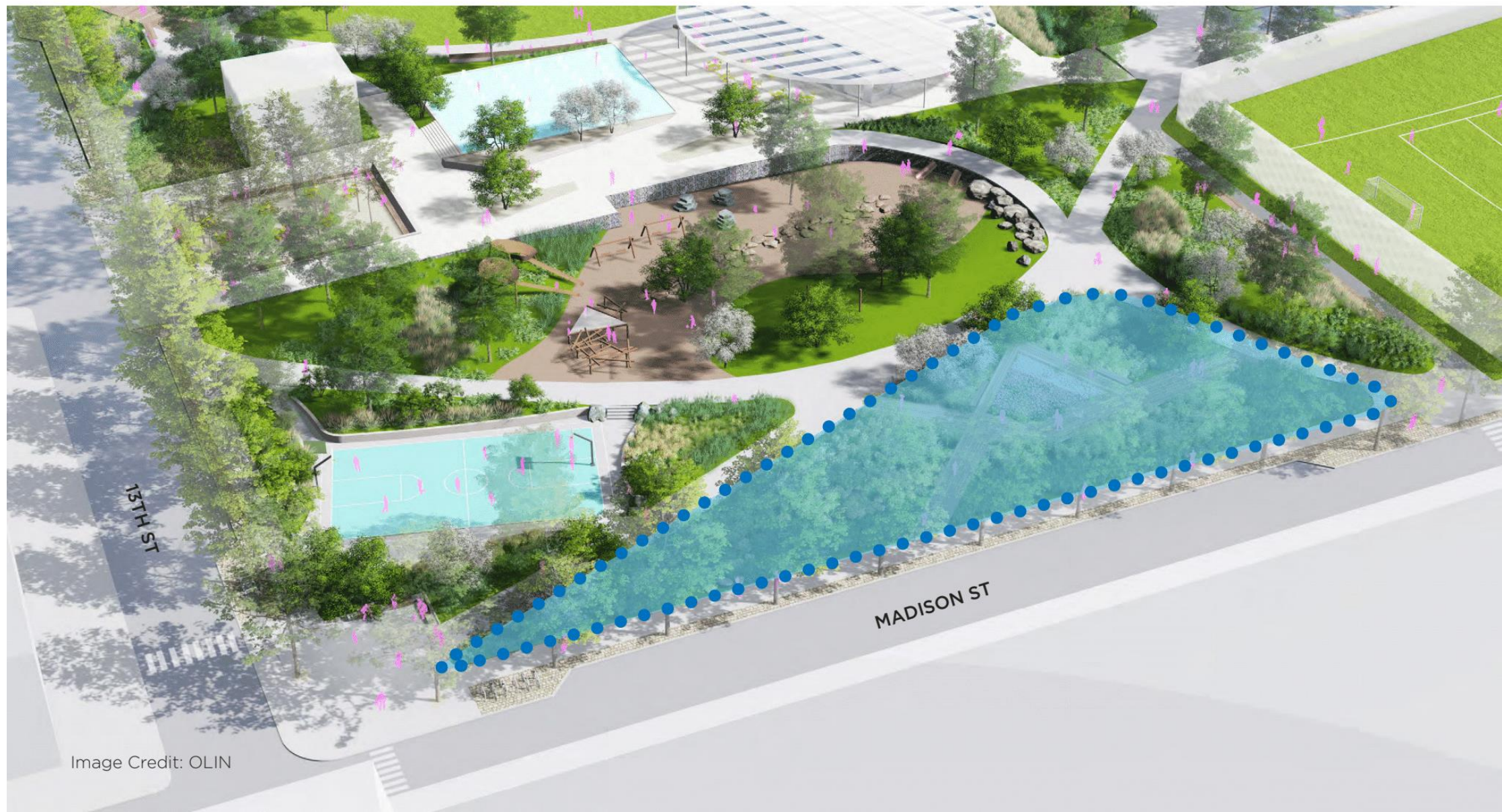


Image Credit: OLIN

Madison Lowland Garden

Concept Design



Image Credit: OLIN

Madison Garden + Learning Walk



Madison Garden + Learning Walk





Image Credit: AKRF



Image Credit: City of Hoboken

Terrace + Pavilion

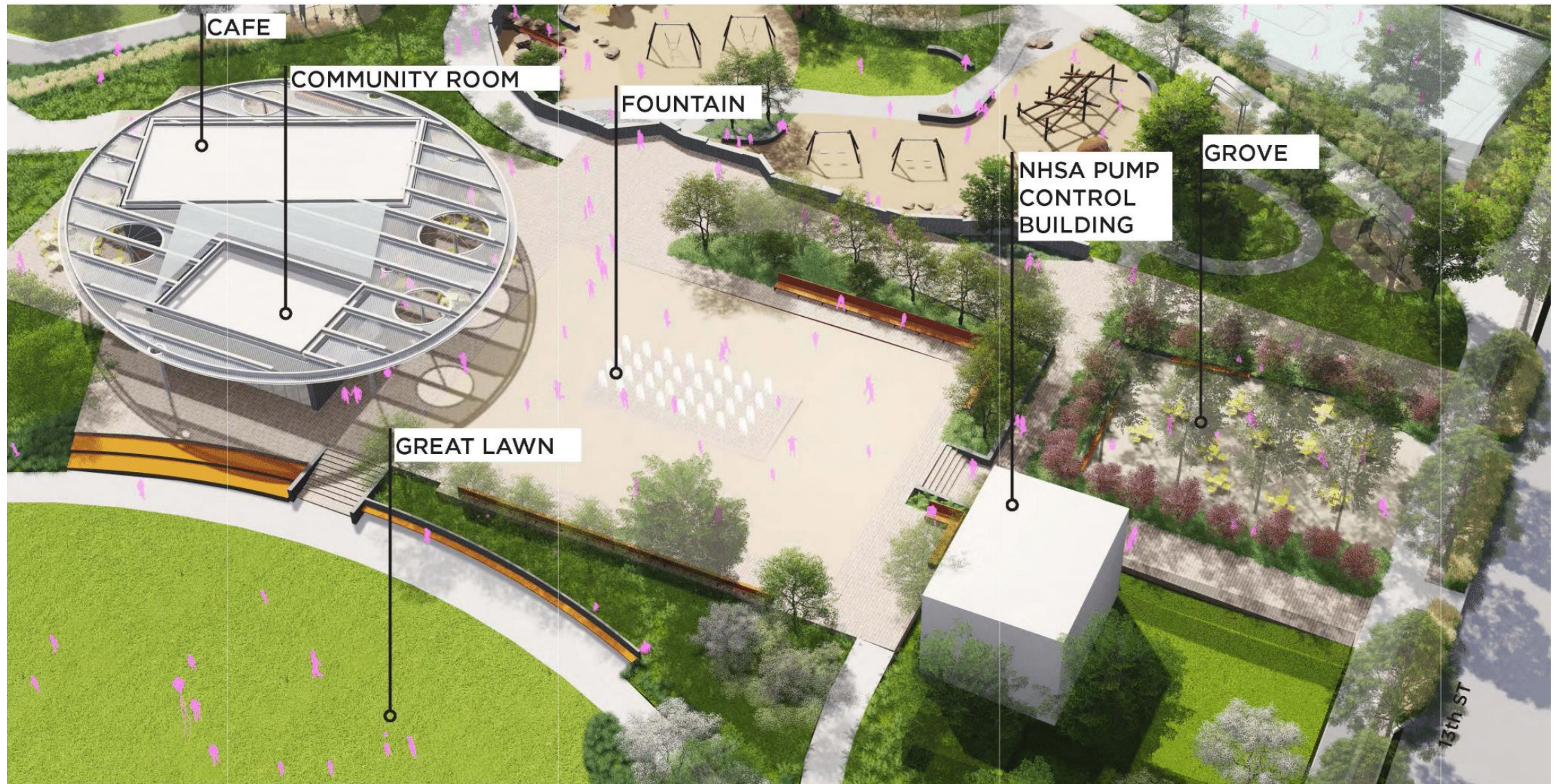




Image Credit: City of Hoboken



Image Credit: AKRF



Image Credit: AKRF



Image Credit: AKRF

Client:

City of Hoboken

Stakeholders:

New Jersey Infrastructure Bank (I-Bank)

Hudson County

New Jersey Department of Environmental Protection

North Hudson Sewerage Authority

Design Team

AKRF, Team Lead + Civil

OLIN, Landscape Architecture

nArchitects, Architecture

Silman, Structural

OLA, MEP

Tillett, Lighting Design

Studio Ludo, Playground Design

Lynch & Associates, Irrigation

Delta Fountains, Fountain Design

Excel Environmental, Environmental Remediation

Michael Baker International, Construction Management



Acknowledgements
NJ Brownfield Summit

June 12, 2024



Ed Confair, PE, PLA
Vice President, Landscape & Resiliency

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June 12, 2024

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How Redeveloped Brownfields Can
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Ed Confair
Vice President,
Landscape & Resiliency
AKRF, Inc.



William Kurzenberger, AICP
Planner III
Topology



John Evangelista
Deputy Director,
Groundwork Elizabeth



SUSTAINABLE BROWNFIELD REDEVELOPMENT + THE BROWNFIELD DEVELOPMENT AREA (BDA) INITIATIVE

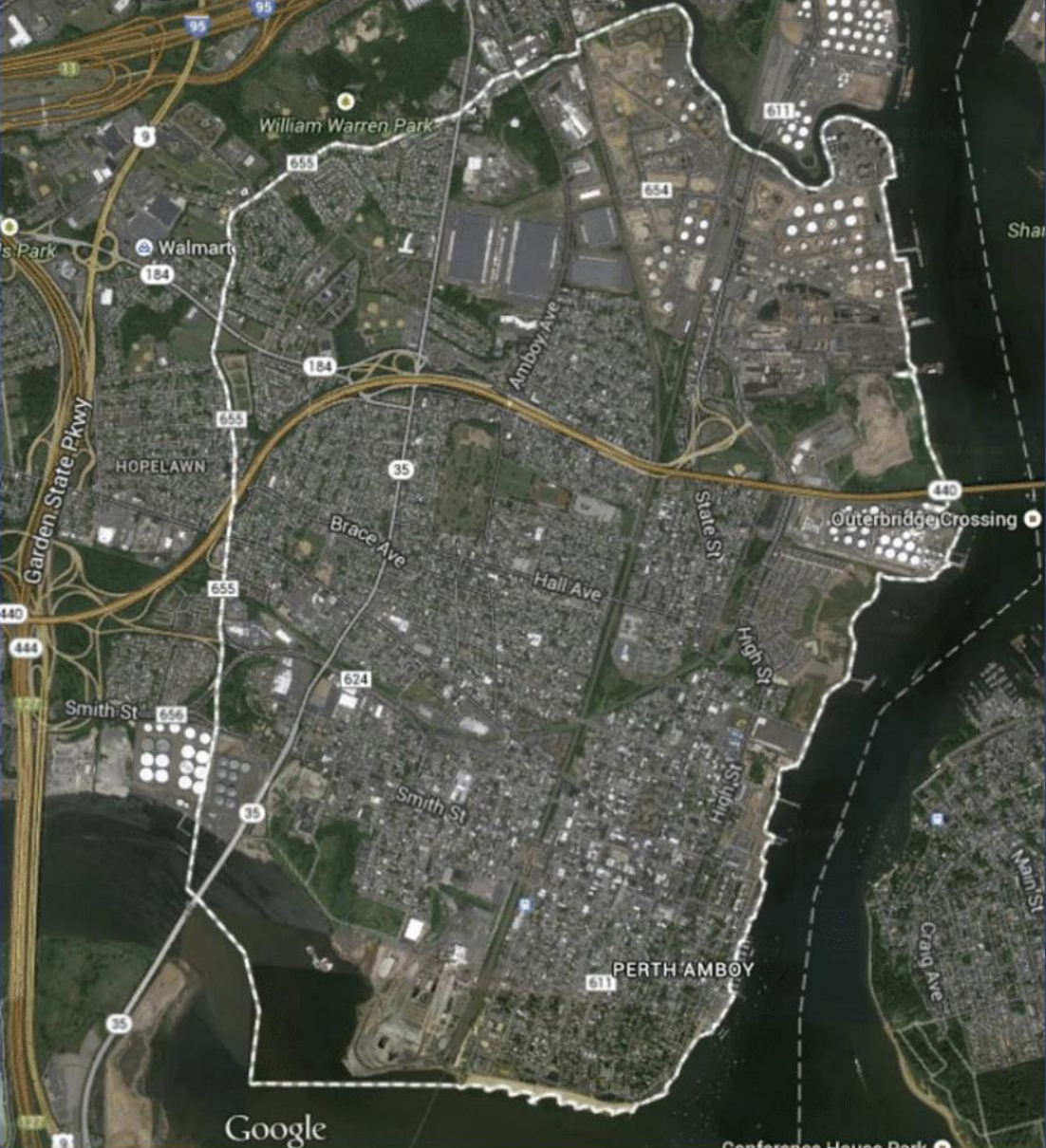
Perth Amboy Success Stories

NJ Brownfield Summit

Presented by William Kurzenberger, AICP – Redevelopment Planner, Topology

June 12, 2024

PERTH AMBOY AT A GLANCE



BROWNFIELDS + RESILIENCY CONTEXT

- Industrial Legacy
- Aging Infrastructure and Combined Sewer System



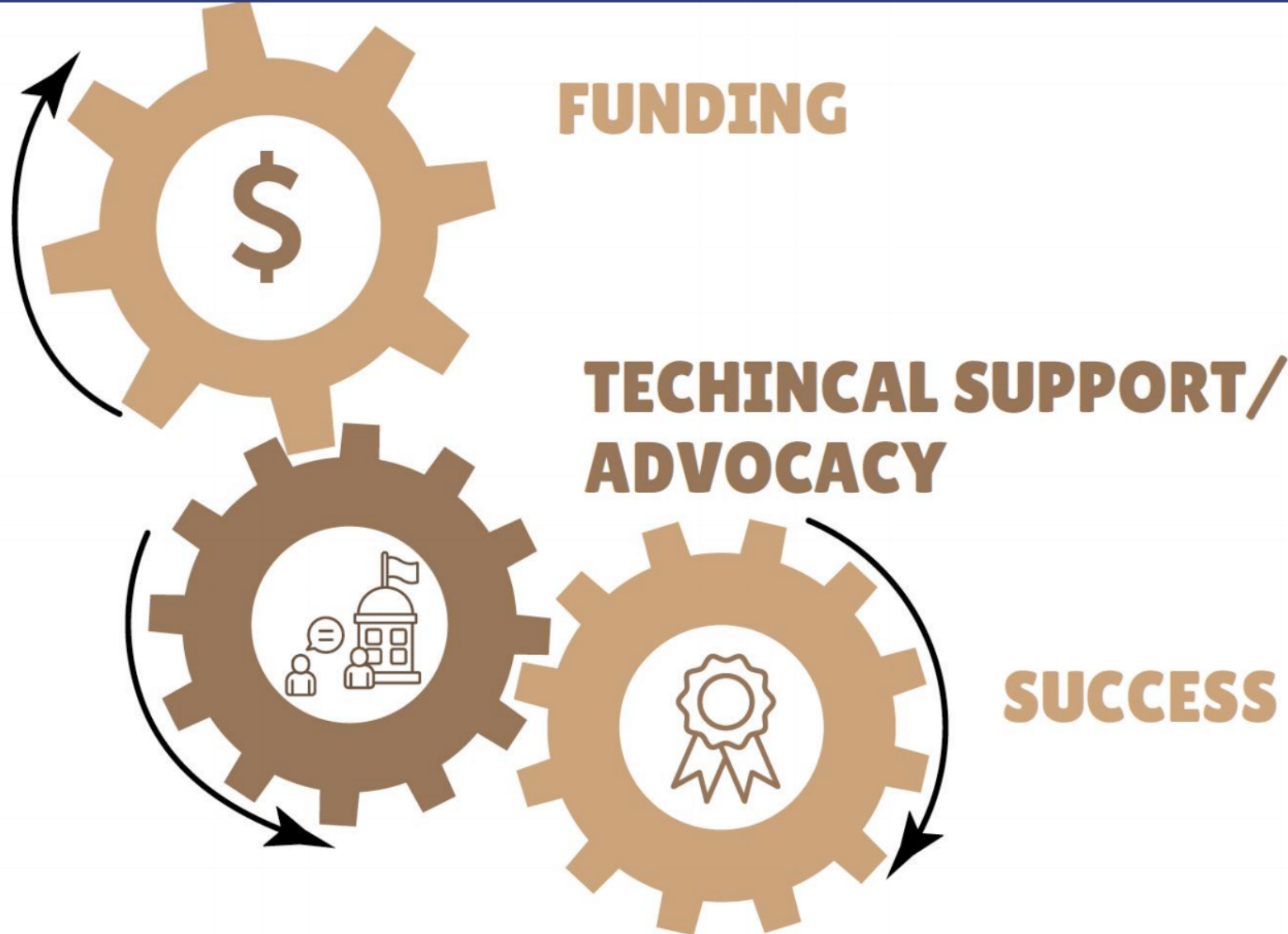
RARITAN COPPER WORKS.

REDEVELOPMENT SUCCESS

- 21 projects inclusive of over 300 acres of brownfields remediated or under remediation
- Over \$800 million of private investment and 2,000 jobs created
- Community benefits inclusive of recreational improvements, employment opportunities, affordable housing, improved connectivity, and robust stormwater management



BROWNFIELD DEVELOPMENT AREA INITIATIVE

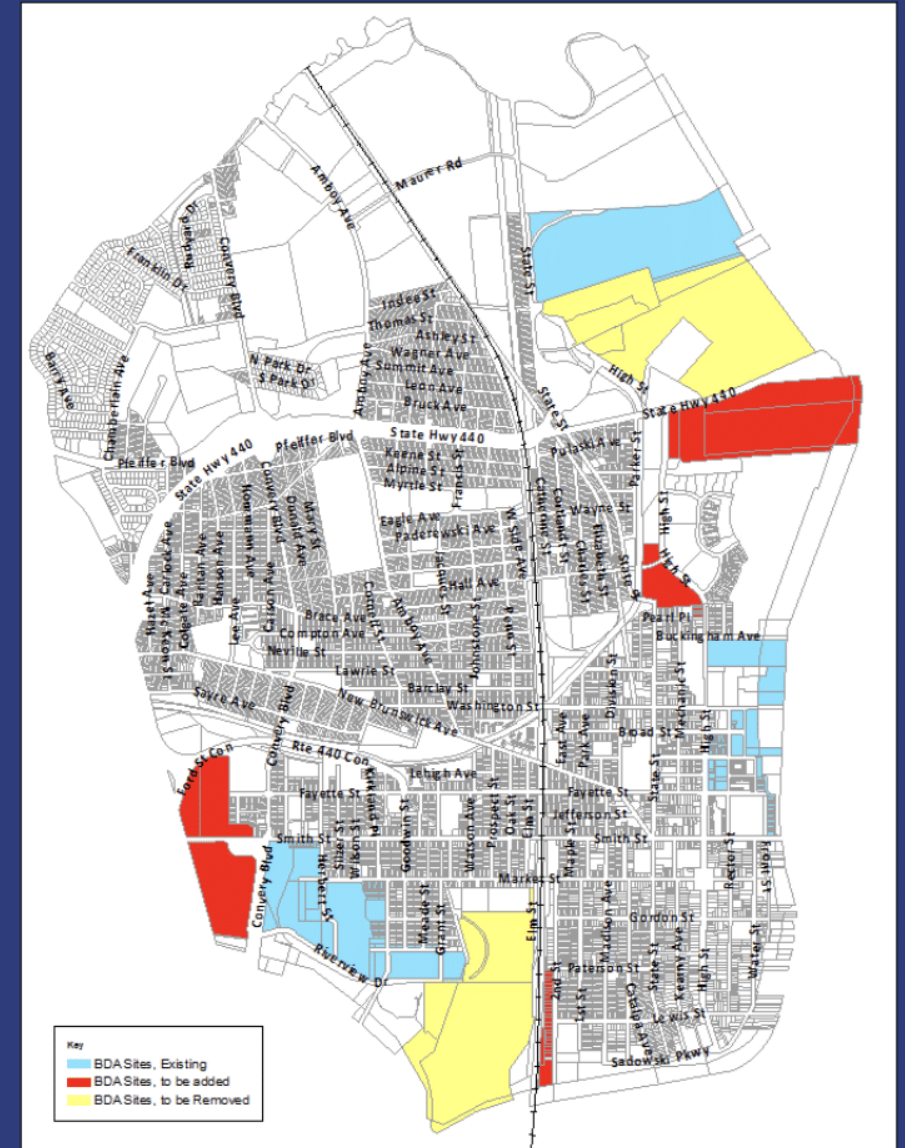


- Prioritized HDSRF funding allocations
- Sharing of regulatory lessons learned among developers
- Permitting coordination
- Coordination as needed with USEPA, NRD Trustees, Etc.

ROLE + VALUE OF THE BDA

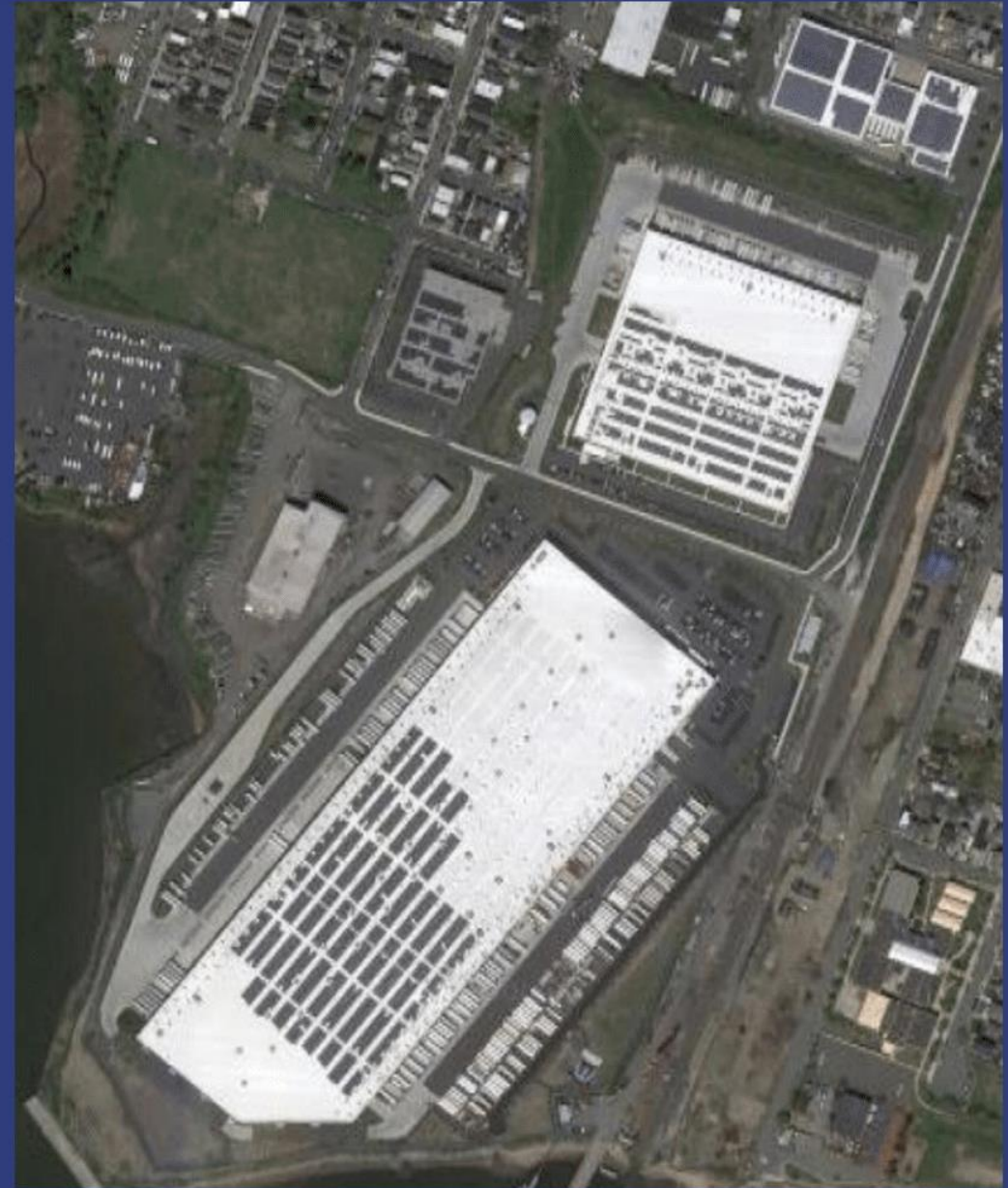
Perth Amboy's participation in the program has yielded several benefits:

- Expert guidance on remediation process
- Additional funding to leverage for projects
- Advocacy with State and Federal Agencies
- Expedited permitting reviews and approvals
- Brought invaluable project partners to the table



ELM STREET LOGISTICS CENTER

- 90 acres remediated
- 1 million SF distribution facility



ELM STREET LOGISTICS CENTER



- LEGEND**
- BIORETENTION BASINS
AREA = 2.0 Ac. (2.2% OF TRACT AREA)
 - POROUS PAVEMENT
AREA = 2.3 Ac. (2.5% OF TRACT AREA)
 - RAIN GARDENS
AREA = 0.25 AC. (0.3% OF TRACT AREA)

Eport I + II

- 150 acres remediated
- Over 2,256,000 SF distribution facilities



BORINQUNEER PARK

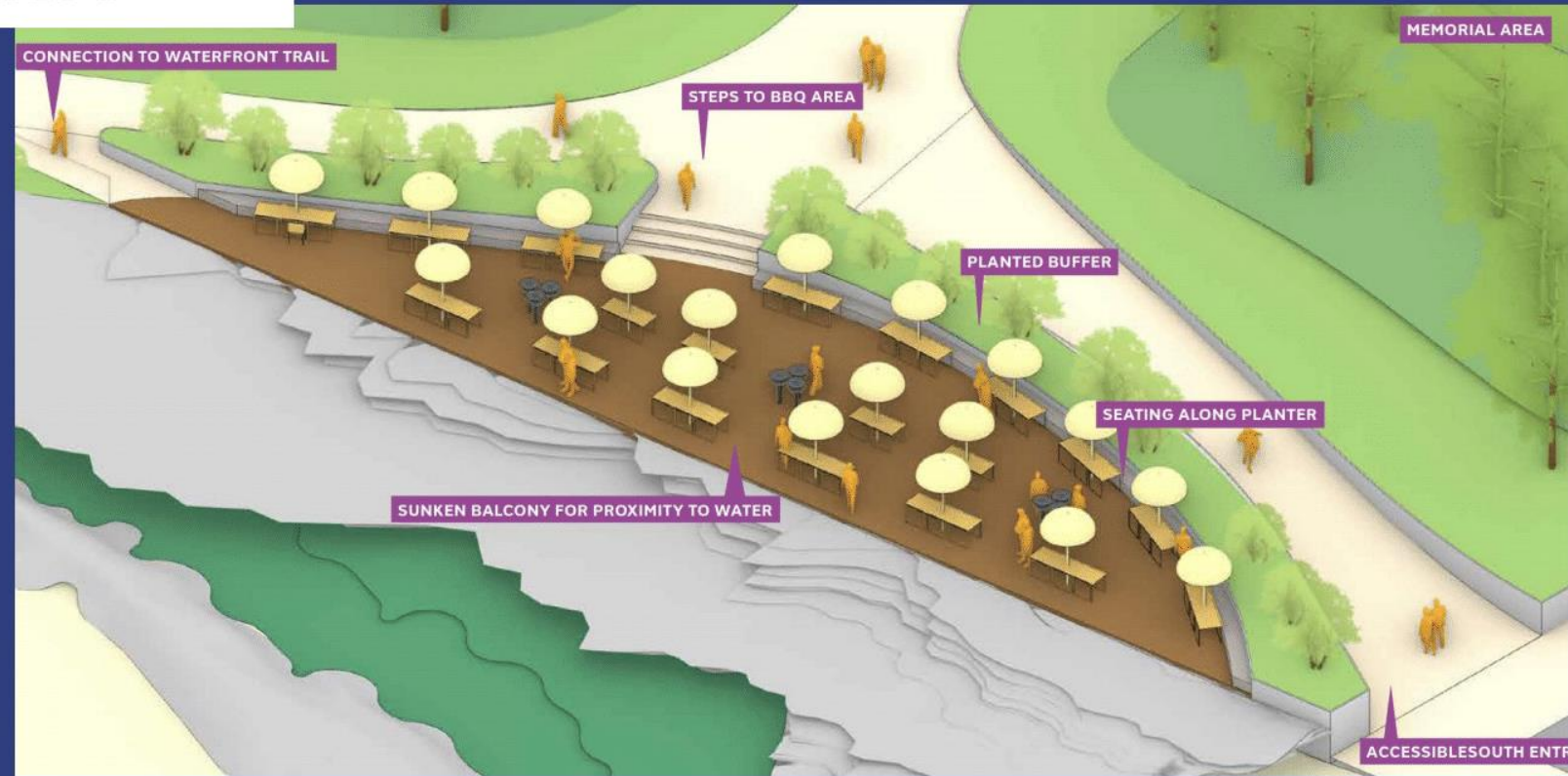


- Former metal scrap yard acquired for park development - 2003
- Park design outreach – 2015
- Park development funding awarded – 2017
- Park cleanup begins - 2018
- UXOs and pyrophoric soil uncovered – 2021
- USEPA assumed cleanup operations – 2022
- Redesign + remediation - ongoing

BORINQUENEER PARK

OVER 6 ACRES OF PUBLIC OPEN SPACE TO FEATURE:

- SPLASH PARK
- SKATE PARK
- BBQ STATIONS
- BASKETBALL COURTS
- BORINQUENEER MONUMENT
- FLEXIBLE PLAZA AND FIELD SPACE



LOCAL SUSTAINABILITY RESOURCES

- [Sustainable Jersey – Community Solar Guide](#)
- Rutgers Cooperative Extension Water Resources Program – Green Infrastructure Feasibility Study
- [Rutgers Cooperative Extension Water Resources Program – Impervious Coverage Assessment](#)

THANK YOU!

William Kurzenberger, AICP
w.kurzenberger@topology.is
973.318.4173
topology.is

**NEW
JERSEY
BROWNFIELD
SUMMIT**

**Success Stories:
How Redeveloped Brownfields Can
Make Your Community More Resilient**



Ed Confair

Vice President,
Landscape & Resiliency
AKRF, Inc.



William Kurzenberger, AICP

Planner III
Topology



John Evangelista

Deputy Director,
Groundwork Elizabeth

Success Stories: City of Elizabeth 'Micro Forests for Macro Solutions'

A Groundwork Elizabeth Initiative

Presented on June 12, 2024

by John Evangelista, Deputy Director Groundwork Elizabeth

GroundworkElizabeth.org



What is a Micro Forest?

An innovative and effective method of tree planting, micro forests increase carbon mitigation in urban areas, delivering exceptional air quality and biodiversity benefits. Micro forests are proven to be successful in restoring degraded lands worldwide.



Micro Forests become an oasis for biodiversity, heal the environment in many direct ways and help connect the local community back to nature.

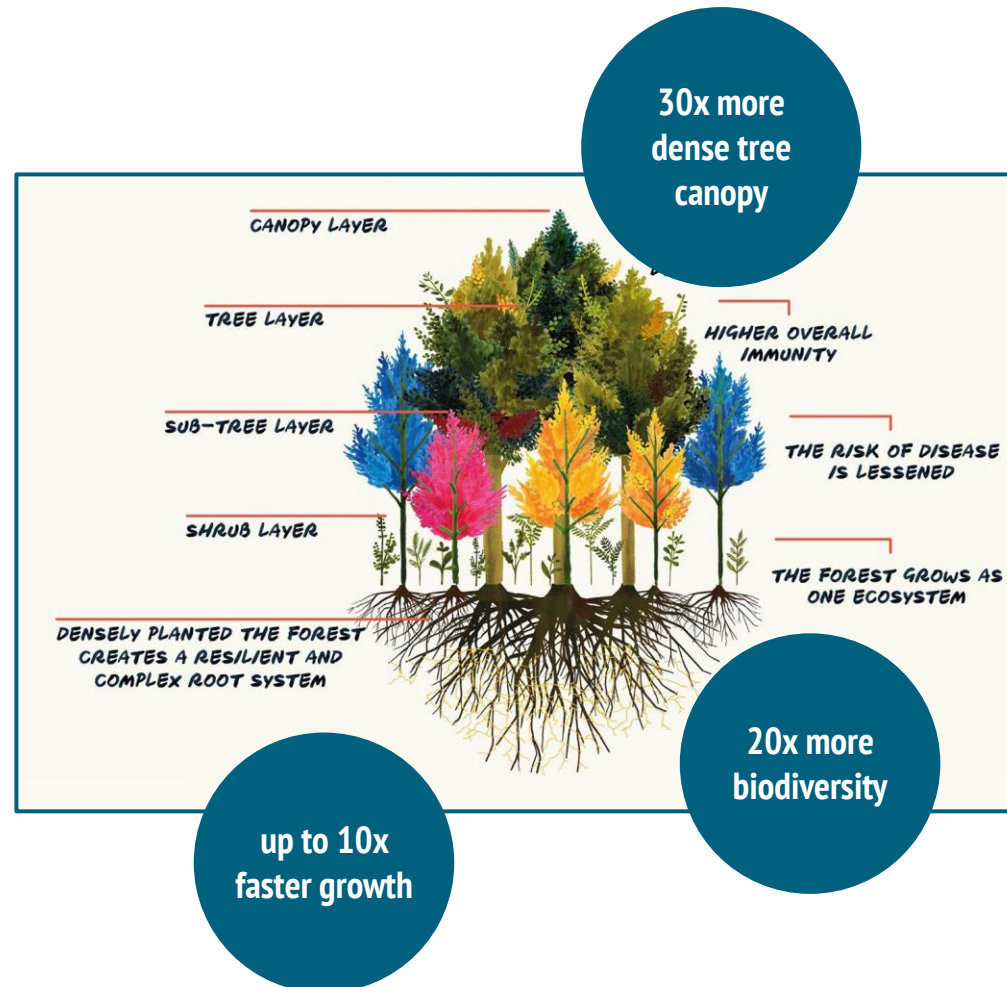


Micro Forests are grown using the basic principles of the Miyawaki Method of afforestation that prioritizes the natural development of forests using native species.

The Miyawaki Method

The abiding principle of the Miyawaki method is using species of trees that would occur naturally in that area and that can work together to create a dense and diverse multi-layered forest community.

This method of afforestation allows trees to be densely planted with native species, and, with the correct ground preparation, grow up to 8 times faster per annum than a conventionally grown tree, with a 90% success rate.





Carbon Capture

At four years of growth, 1 square meter of a Miyawaki forest can sequester 3 kilos of Co2 annually.

This is due to the dense canopy of native tree heights that is around 30 times more dense than conventional tree planting schemes.

Each species of tree added to a forest will increase its potential carbon capture by 6%.

This is due to the greater canopy cover and increased pollination aspects.

The fertile forest soil that we create as part of the process can maximise this carbon sequestration potential.

Carbon capture is calculated with help from our local university.



Oxygen/Air Quality

At four years of growth, 1 square meter of a Miyawaki forest is able to emit 4.85lbs of pure oxygen annually.

A Miyawaki forest will reduce particulate concentrations by up to 10% locally as well as absorb NOx.

We can calculate pollution capture by using software programs such as I-Trees.

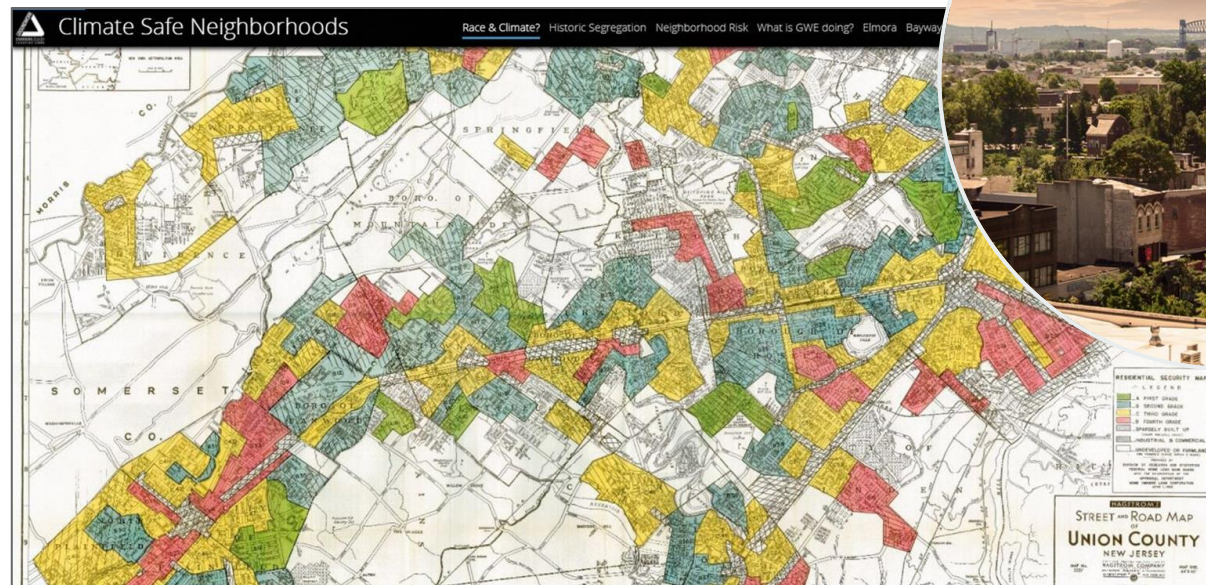


Biodiversity

At four years of growth, 2150 sq ft of a Miyawaki forest will provide an initial home for over 500 insect and animal species.

- Each species of native tree can eventually provide a haven for around 80 species of insect unique to that tree.
- As our micro forests contain a mix of up to 20 tree species, an eventual long-term home for over 1,600 species of insect is created by a 10 year old 200m² forest (this figure does not include the general insect species common to most trees and other organisms).
- Soil biodiversity is enriched as part of the forest creation process.

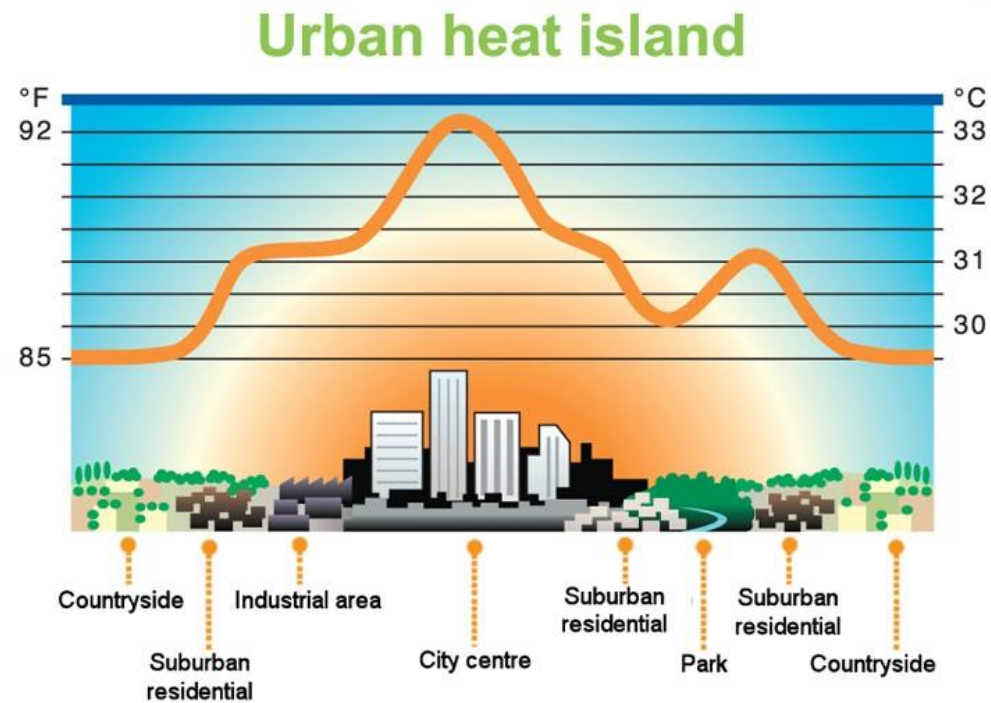
Micro Forests and the Restoration of Healthy Neighborhoods in Redlined Areas



Reducing Heat Island Effect

Localized reduced temperature differences up to 6 degrees are possible.

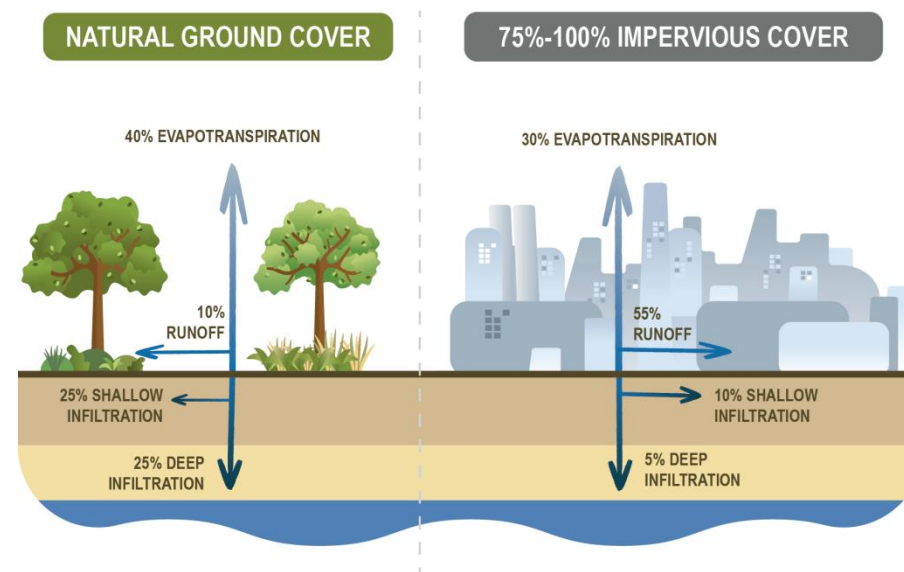
This is partly due to the micro forest's transpiration and shading effects.



Stormwater Runoff Control

During storm conditions, just 10.76 sq ft of micro forest is able to process up to 150 litres (1.5m³) of water run-off.

This is partly due to the fertile forest floor that acts as a sponge.



Noise Reduction

Due to the dense nature of micro forest plantings, localized noise reduction can be reduced by up to 30 times.

Noise and traffic 'breaks' can be created with forest growth.



Micro Forests for Macro Solutions Initiative



In 2021, New Jersey's first micro forest was planted by Groundwork Elizabeth working in partnership with the Housing Authority of the City of Elizabeth (HACE)

The planting used the Miyawaki method and was one of four that launched Groundwork Elizabeth's 'Micro Forests for Macro Solutions' initiative.

The project was made possible with support from The City of Elizabeth, Kean University, and the New Jersey Conservation Foundation with funding provided as part of a \$367,000 Climate Preparedness Land Restoration Grant from Groundwork USA.

**NEW
JERSEY
BROWNFIELD
SUMMIT**

Funding Your Brownfields Redevelopment Projects



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US EPA Region 2 Brownfields Program

June 2024



It is estimated that there are more than 450,000 brownfields in the United States.

BROWNFIELDS

A property where the expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.





**EPA Brownfields Program &
The Infrastructure
Investment and Jobs Act**

Historic \$1.5 B Investment in EPA's Brownfields Program

- President Biden signed the Infrastructure Investment and Jobs Act (IIJA) on November 15, 2021

- **\$1.5 Billion over 5 years** in addition to annual appropriations to EPA's Brownfields Program (FY22 – 26)
 - **\$1.2 B for projects authorized by CERCLA Section 104(k)**
 - Section 104(k), provides federal financial assistance authorities for brownfields revitalization, including grants for assessment, cleanup, multipurpose, job training and revolving loan funds.
 - Section 104(k) also provides statutory authority for Technical Assistance, Training and Research Projects including the Technical Assistance to Brownfields Communities (TAB) Program.
 - CERCLA Section 104(k) funding is competitive.

 - **\$300 M to carry out CERCLA Section 128(a)**
 - Referred to as "Section 128(a)" funding after the section of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), can be used to create new or to enhance existing State and Tribal environmental response programs.
 - CERCLA Section 128(a) funding is non-competitive.

The EPA Brownfields Process: A Roadmap to Redevelopment

THE BROWNFIELD PROCESS



COMMUNITY INVOLVEMENT

IDENTIFY SITE WITH REUSE POTENTIAL



PHASE I ASSESSMENT
ALL APPROPRIATE INQUIRY



ENTER STATE
VOLUNTARY CLEANUP
PROGRAM



CLEANUP PLAN
(ABCA)



SITE VISION
AND REUSE



PHASE II
ASSESSMENT



LEVERAGE
RESOURCES



CLEANUP
ACTIVITY



REDEVELOPMENT



EPA BROWNFIELD GRANTS AND RESOURCES

TARGETED BROWNFIELD ASSESSMENT—(T) ASSESSMENT—(A) CLEANUP—(C) REVOLVING LOAN FUND—(R) MULT-PURPOSE—(M)

EPA Brownfields
Grant Opportunities

Brownfield Assessment Grants

	ASSESSMENT
Applicant Eligibility	Government, Quasi Government, Regional Council, States, Tribes, and Non-profit
Amount of Funding Available	Community-wide Up to \$500,000 for a combination of hazardous substances AND petroleum (not to exceed \$200,000 for any one site) Assessment Coalition Up to \$1,000,000 Community-Wide Assessment for States and Tribes-NEW Up to \$2,000,000
Cost share Requirement	N/A
Period of Performance	4 years, 5 Years for States and Tribes
Common Eligible Grant Activities	inventory, characterize, assess, reuse planning, cleanup planning, and conduct community involvement

Brownfield Cleanup Grants

	CLEANUP
Applicant Eligibility	Government, Quasi Government, Regional Council, Tribe, Non-profit
Amount of Funding Available	One Site or Multiple sites •Up to \$500,000 / \$2,000,000 / \$5,000,000
Cost share Requirement*	20% cost share
Period of Performance	4 years
Common Eligible Grant Activities	cleanup activities, reuse planning, and community involvement

* **Cost share requirement waived when grant program is funded under the Infrastructure Investment and Jobs Act.**

Brownfield Revolving Loan Fund Grants

	REVOLVING LOAN FUND
Applicant Eligibility	Government, Quasi Government, Regional Council, Tribe, Non-profit
Amount of Funding Available	One Applicant <ul style="list-style-type: none">• Up to \$1,000,000 RLF Coalition <ul style="list-style-type: none">• Up to \$1,000,000
Cost share Requirement*	20% cost share
Period of Performance	5 years
Common Eligible Grant Activities	capitalize a RLF program; provide loans and sub-grants to carry out cleanup activities

* Cost share requirement waived when grant program is funded under the Infrastructure Investment and Jobs Act.

Brownfield Multipurpose Grants

	MULTIPURPOSE
Applicant Eligibility	Government, Quasi Government, Regional Council, Tribe, Non-profit
Amount of Funding Available	An applicant can apply for up to \$1,000,000 per grant Demonstrate how Funds will result in at least: <ul style="list-style-type: none">• one Phase II environmental site assessment;• one brownfield site cleanup; and• an overall plan for revitalization of one or more brownfield sites, if there is not already a plan in place.
Cost share Requirement*	\$40,000 cost share
Period of Performance	5 years
Common Eligible Grant Activities	inventory, characterize, assess, reuse planning, cleanup planning, and conduct community involvement cleanup activities, reuse planning, and community involvement

* **Cost share requirement waived when grant program is funded under the Infrastructure Investment and Jobs Act.**

Brownfield Job Training Grants

	JOB TRAINING
Applicant Eligibility	Government, Quasi Government, Regional Council, Tribe, Non-profit, Universities
Amount of Funding Available	Community-wide <ul style="list-style-type: none">• Up to \$500,000
Cost share Requirement	N/A
Period of Performance	5 years
Common Eligible Grant Activities	Eligible activities include training, recruitment, and screening of residents impacted by brownfields. Training may include: <ul style="list-style-type: none">• Occupational Safety and Health Administration (OSHA) 40-hour Hazardous Waste Operations and Emergency Response• Superfund and brownfields site-specific assessment and cleanup• Environmental health and chemical safety• Mold remediation, Lead and asbestos abatement• OSHA disaster site worker and emergency response• Leaking underground storage tank removal

CERCLA Section 128(a) State and Tribal Response Programs

- \$50 million grant program to establish and enhance state and tribal response programs.
- Funded with categorical State and Tribal Assistance Grant (STAG) appropriations.
- Cooperative agreements are awarded and administered by the EPA regional offices.





**EPA Brownfields Program
Technical Assistance
Resources**

Targeted Brownfields Assessments Program

- Helps states, tribes, and municipalities minimize the uncertainties of contamination often associated with Brownfields.
- Technical assistance is conducted by an EPA contractor on behalf of an eligible entity.
- Services include site assessments, cleanup options and cost estimates, and community outreach.
- Services rendered average \$100,000.
- Sites are selected on a rolling basis.

Technical Assistance Programs:

Land Revitalization Technical Assistance *Requests for Regional Projects*

EPA convenes annually (Q1) to review and discuss projects for the year.

- **If a community is interested in technical assistance, we recommend that they begin to have discussions with EPA as soon as possible for EPA to prepare for the annual requests in January.**
- Proposed projects need to clearly:
 - connect to one or more contaminated or potentially contaminated sites or area
 - advance the community's land revitalization goals in a meaningful way
 - include a scope of work and deliverables needed, realistic for the given timeframe & budget
- Up to \$30,000 per project.
- Project must be complete within 1 year.

Technical Assistance Programs: Land Revitalization Technical Assistance

- EPA brownfield Coordinators work with staff to identify and prioritize brownfield grantee, 128a and TBA recipients that need technical assistance to advance brownfield assessment, cleanup, and safe reuse.
- Contractor support will complement, not duplicate, the activities the grantee has committed to conduct using grant funding.
- Staff can propose several small projects or one large project, keeping to these totals:
 - ✓ \$300K/region for brownfields site design/market analysis / engagement TA
 - ✓ \$250K/region for brownfields funding/financing TA
- Projects must be completed within 1 year.

EPA Brownfields Grant Programs

Upcoming Solicitations

❖ **FY 2025 Job Training Grants**

❖ To be released in May 2024

❖ **Applications due August 2, 2024**

❖ **FY 2025 ARC Grants** - combined annual appropriation and Bipartisan Infrastructure Law funds

❖ RFA anticipated September 2024

❖ **FY 2025 CERCLA Section 128(a) State and Tribal Response Programs** - combined annual appropriation and Bipartisan Infrastructure Law funds

❖ RFF anticipated October 2024

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THANK YOU!!



Region 2 Brownfields Team!!!

**NEW
JERSEY
BROWNFIELD
SUMMIT**

Funding Your Brownfields Redevelopment Projects



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Brownfields Project Manager
U.S. EPA, Region 2

Griztko Erickson

Brownfields Project Officer &
GIS Lead
U.S. EPA, Region 2

Emily Perez

Environmental Specialist
NJ Department of
Environmental Protection

Funding Your Brownfields Redevelopment Projects

Hazardous Discharge Site Remediation Fund

June 12, 2024



Emily Perez

Environmental Specialist, Office of Brownfields and Community Revitalization



What is a Brownfield?

“...former or current commercial or industrial site that is currently vacant or underutilized and on which there has been, or there is suspected to have been, a discharge of a contaminant” (NJSA 58:10B-1)



What does OBCR do?



Landfill
Redevelopment
Program

Brownfield
Development
Area Program

Brownfield
Redevelopment
Incentive Program

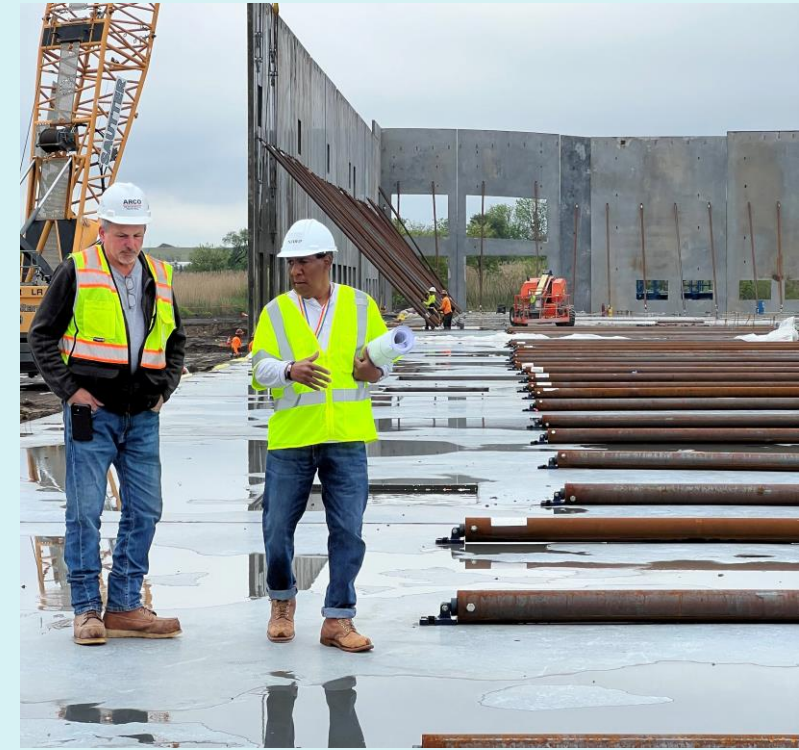
Hazardous
Discharge Site
Remediation Fund



The Brownfield Development Area Program

- **Dedicated Brownfield Development Area Manager**
- **Increased funding opportunities**
- **Streamlined Remediation Process**

Our office is currently accepting applications through July 31st!



What is The Hazardous Discharge Site Remediation Fund?



- The **Hazardous Discharge Site Remediation Fund (HDSRF)** is a grant & loan program that supports brownfield redevelopment by funding assessment, investigation, and remediation of brownfield sites in NJ.
- Administered through a partnership between NJDEP's Office of Brownfield & Community Revitalization (OBCR) and the NJEDA
- Funded through an annual constitutionally-dedicated portion of the NJ Corporate Business Tax

The History of HDSRF in New Jersey



1983

Environmental Cleanup Responsibility Act

- A regulatory process that facilitated the remediation of contaminated sites

1986

Financial Assistance for Remediation

- NJ sought to reduce the financial burden that was imposed on entities that were obligated to remediate contaminated sites that they had acquired.

1993

HDSRF Established

- The Financial Assistance became known as the Hazardous Discharge Site Remediation Fund in the Industrial Site Recovery Act

1998

Brownfield Act

- The Brownfield Site Recovery Act expanded the funds available for remediation in its inception and further through amendments

HDSRF - Eligibility




- Public Entities (Towns, Counties, Redevelopment Agencies) **that are authorized to exercise redevelopment powers pursuant to the Local Redevelopment & Housing Law (C.40A:12A-4)**
 - Largest variety of grants
- Private Entities (persons, etc.)
- Non-Profit Entities (501c3)

HDSRF – How to Apply



The **HDSRF** Application can be found in the [CSRR Forms Library](#)

The **HDSRF** application can be mailed to the Bureau of Case Assignment & Initial Notice (BCAIN) or can be submitted electronically to srp_submissions@dep.nj.gov.

	New Jersey Department of Environmental Protection Site Remediation and Waste Management Program	Date Stamp (For Department use only)
	HAZARDOUS DISCHARGE SITE REMEDIATION FUND – PART I <input type="checkbox"/> LSRP <input type="checkbox"/> Subsurface Evaluator (for UHOT cases only)	
Program Interest Name: _____ PI #: _____		
SECTION A. REQUESTED FUNDING TYPE AND AMOUNT <input type="checkbox"/> PLEASE CHECK HERE IF THIS IS A SUPPLEMENTAL REQUEST		
Public Entity		
<input type="checkbox"/> Brownfield Development Area Grant	\$	_____
<input type="checkbox"/> PA/SI/RI Grant	\$	_____
<input type="checkbox"/> 75% Recreation and Conservation Grant	\$	_____
<input type="checkbox"/> 75% Renewable Energy Grant	\$	_____
<input type="checkbox"/> 50% Affordable Housing Grant	\$	_____
<input type="checkbox"/> 25% Matching Grant Remedial Action Unrestricted Use	\$	_____
<input type="checkbox"/> Loan	\$	_____
Private Entity		
<input type="checkbox"/> 25% Matching Grant Remedial Action Unrestricted Use	\$	_____
<input type="checkbox"/> Loan	\$	_____
Non-Profit		
<input type="checkbox"/> PA/SI/RI Grant	\$	_____
SECTION B. APPLICANT INFORMATION		
Name: _____		
Address: _____		
City: _____	State: _____	
County: _____	Zip Code: _____	
Phone Number: _____	Ext: _____	Fax: _____
Email Address: _____		
Individual: Social Security Number: _____		
Businesses: Tax ID Number: _____	SIC: _____	NIAC: _____
SECTION C. CONTACT INFORMATION		

HDSRF – DEP Application Review



Review Focuses:

- Administrative completeness
- Scope of work & corresponding cost estimate (proposed)
 - OBCR approves the scope of work as it relates to the costs
 - Priority is that public funds are spent responsibly
- Municipal Resolution that authorizes application
- Site Control

After The DEPs review, the application is sent to the EDA for a financial review

HDSRF – Available Grants & Loans

Public Entities



PA/SI/RI Grant

- A **grant** for 100% of all eligible PA, SI and RI costs
- Capped at \$3 Million per applicant per year

Recreation/ Conservation Grant

- A **grant** for 75% of all eligible Remedial Action costs
- Property must be preserved for recreation and conservation purposes

Renewable Energy Grant

- A **grant** for 75% of all eligible Remedial Action costs
- Property must include renewable energy generation in its end use

Affordable Housing Grant

- A **grant** for up to 50% of all eligible Remedial Action costs
- Affordable housing must be in accordance with the NJ Fair Housing Act

HDSRF – Available Grants & Loans

Public Entities Continued



Brownfield Development Area Grant

- A **grant** for 100% of eligible PA/SI/RI and 75% of eligible RA costs
- Capped at \$5,000,000 per year

Remedial Action Unrestricted Use

- A **grant** for 25% of costs of the remediation for an unrestricted use remedial action
- Capped at \$250,000 per public entity

PA/SI/RI/RA Loan

- A **loan** for up to 100% of eligible PA/SI/RI/RA costs
- Capped at \$2 million per year

HDSRF – Available Grants & Loans

Private Entities



Remedial Action Unrestricted Use (soils) Grant

- A **grant** for 25% of eligible Remedial Action costs
- Up to \$250,000 per project
- Net worth less than \$2 million

PA/SI/RI/RA Loan

- A **loan** for 100% of all eligible PA/SI/RI/RA costs
- Up to \$500,000 per year

HDSRF – Available Grants & Loans

Non-Profit Entities



PA/SI/RI Grant

- A **grant** for 100% of eligible PA/SI/RI costs
- Applicant must be a non-profit organization as defined in section 501(c)(3) of the federal internal revenue code

Pilot Program since 2005

The Non-Profit Grant will be depleted during CY24. It can only be re-allocated and made permanent through a legislative change to the HDSRF statute. The most recent legislative changes were in 2021 and 2018

HDSRF – General Update



Status of the HDSRF: March 31st, 2024

Recommendations to Date: \$432,362,424

FY24 Uncommitted Balance: \$64,928,957

Recommendations CY24: \$6,257,598

HDSRF Coordinators



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Green, Sustainable and Resilient Remediation



What is Green, Sustainable and Resilient Remediation?



“...site-specific employment of products, processes, technologies, and procedures that mitigate contaminant risk to receptors while making decisions that are cognizant of balancing community goals, economic impacts, and environmental effects” (ITRC, 2011)



We are

*changing the
approach, not
moving the
goal posts*

Sustainability Considerations

1

Air Emissions

2

Material Use

3

Energy Emissions

4

Eco-System Impacts

5

Water Management

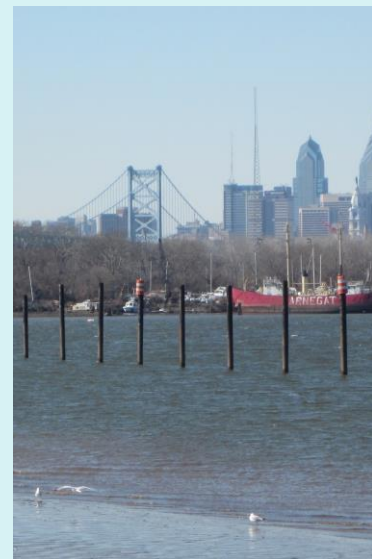
Harrison Avenue Landfill

A Case Study in Sustainable Remediation

Green and Sustainable Practices Employed:

- Utilization of recycled material
- Reuse of dredge materials (221,000 yd)
- Excavated materials were transported to a close location.
- Prioritizing local Eco-system
- Prioritizing residents by focusing on onsite stormwater management
- Sustainable practices saved \$5 million dollars
- Widespread Community Support

https://www.nj.gov/dep/srp/guidance/srra/gsr_remediation_guidance.pdf



Thank you!



Emily Perez

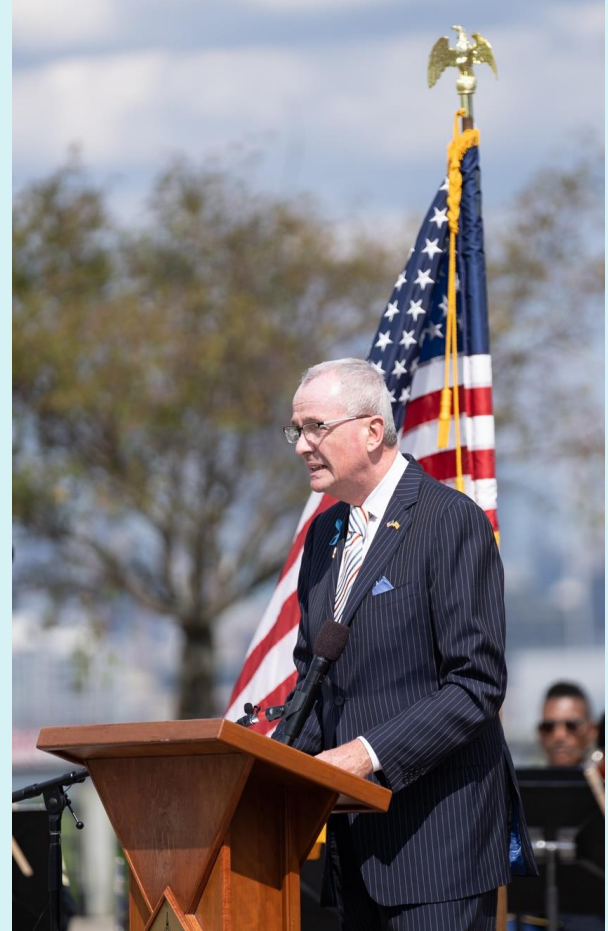
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Contaminated Site Remediation & Redevelopment (CSRR) - HDSRF



Questions?



Thank you!





NEW JERSEY BROWNFIELD SUMMIT

Building Resilient Futures From Brownfield Pasts

**Thank You for Joining Us Today and
for the support of our Summit
Panelists and Partners!**