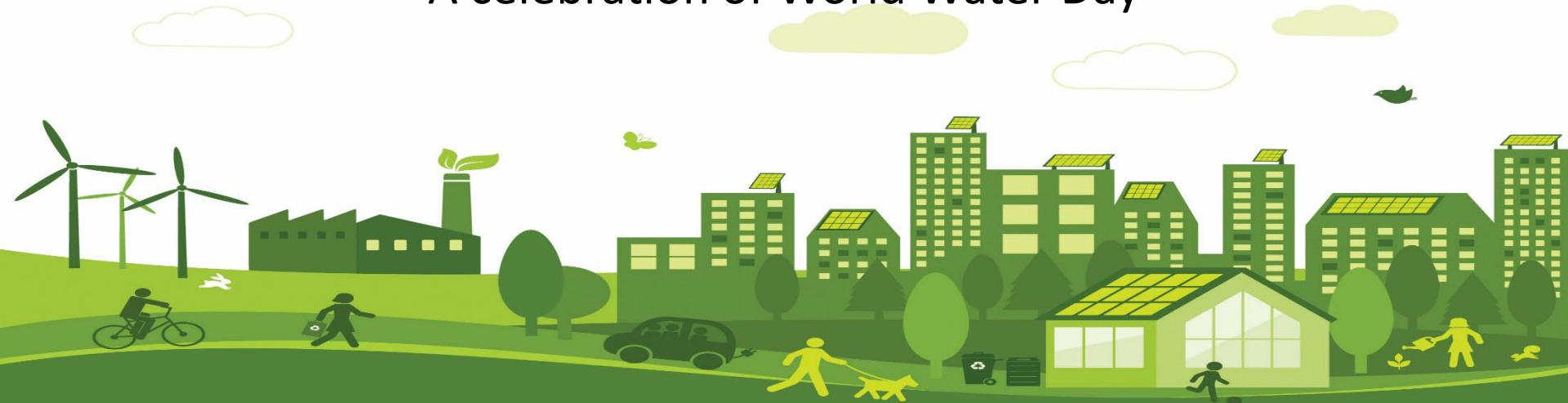




# A World of Difference: Green Infrastructure Resources for Your Town

A celebration of World Water Day





# Speakers



Anne Heasley  
Sustainable Jersey



Diane Schrauth  
New Jersey Future



Rosana Da Silva  
NY-NJ Harbor &  
Estuary Program



Jay Watson  
New Jersey  
Conservation  
Foundation





# Overview of Sustainable Jersey

---

- Free sustainability certification program for New Jersey municipalities

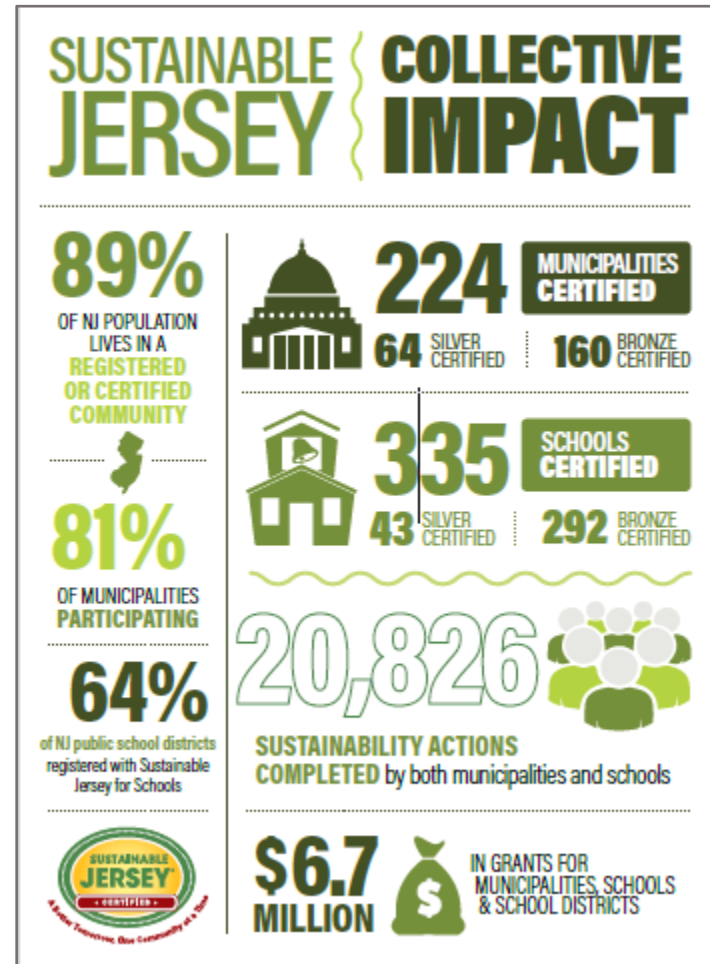


- **Our vision:** achieve a sustainable New Jersey, one community at a time
- **Our mission:** empower New Jersey communities to build a better world for future generations with the tools, training and financial incentives necessary to pursue critical sustainability initiatives



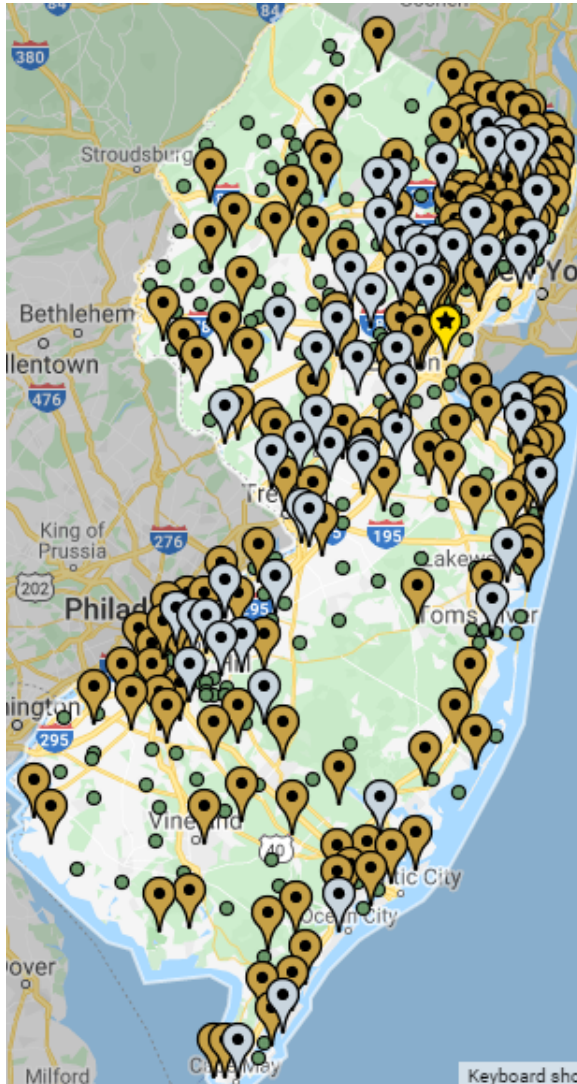
# A Framework for Action

- Coordinates priorities, resources, and policy among public and private state and local actors
- Develops **tools, resources,** and **guidance** to make progress
- Provides access to **grants** and **assistance**
- **Recognizes** accomplishments





# Program Participants



## Municipal Program

463 Participating

- 81% of NJ municipalities
- 210 Certified
  - 151 Bronze
  - 59 Silver
  - 1 Energy Gold Star (Woodbridge)



# Sustainable Jersey Actions



- Action purpose and points
- Why is it important?
- Who should be involved?
- How long will it take and what will it cost?
- What to do and how to do it?
- What to submit
- Spotlights
- Resources








# Water Goal

---



New Jersey's water system provides an adequate and affordable supply of clean and safe drinking water for everyone, while also safeguarding water sources to ensure sufficient quality and supply to support healthy ecosystems and biodiversity.





Municipal Dashboard

> Action Development

Priority & Prerequisite Actions

2021 Certification Cycle

✓ Gold Star Standards

Energy Gold

Health Gold

Water Gold

Program Updates

Search Participating Municipalities & Approved Actions

Resources

### Gold Star Standards

All certified municipalities are eligible to earn Gold Star recognition for reaching high levels of achievement in key dimensions of sustainability. Gold Star Standards establish the specific actions and levels of performance that support what we need to achieve as individual communities and as a state, as defined in the [2015 Sustainable State of the State Report](#). The award of a Gold Star indicates that a municipality is making an effective, fair and timely contribution to the collective achievement of our sustainability goals.

Gold Stars are awarded for individual dimensions of sustainability. Current Gold Star Standards in [Energy](#), [Health](#) and [Water](#).

↑ BACK TO TOP	EXPAND ALL	▼	COLLAPSE
Energy			
Health			
Water			



# Gold Star Standard in Water

Completing specific actions will help a municipality earn the gold star in water!

Learn more about Water Gold here:

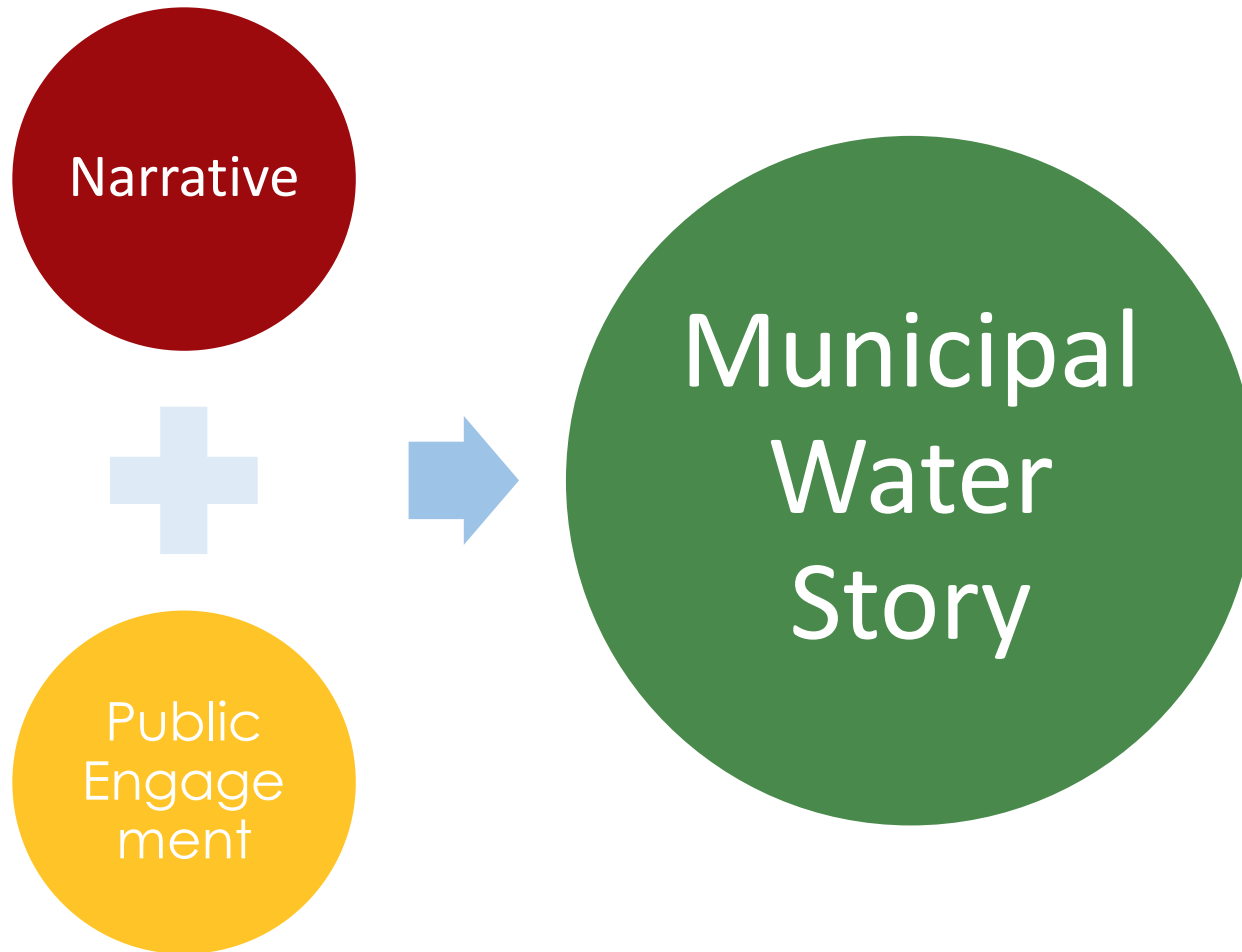
[bit.ly/SJWaterGold](https://bit.ly/SJWaterGold)





# Municipal Water Story

---





# Enhanced Stormwater Management Control Ordinance

Tier	Action	Points
1	Low impact techniques	5
2	Applicability; Retention and definition of Major Development	15
3	2 additional enhancements	25
4	4 additional enhancements	35





# Open Space Plan – Access to Water

## Open Space Plans

10 Points

### Why is it Important?

Who should lead and be involved with this action?

Timeframe

Project Costs and Resource Needs

What to do and how to do it ("How to")

What to submit to earn points for this action

Resubmission Requirements

Approved Action Expiration Date

Updated April 2021

The goal of this action is municipal Recreation Plan and its adoption local Master Plan. An Open Space as the Open Space Plan, OSP) shd Jersey Department of Environmen The Green Acres guidelines requir municipal OSRP if a town wishes to Incentive Program for enhanced c establishes open space goals and of existing and potential open spc well as conservation objectives ar provides a framework and directio for preservation, improvement and

In addition to addressing the 10 c [Acres Program – Open Space and Recreation Plan Guidelines](#), the OSRP needs to be completed or updated and adopted as part of the local Master Plan within the last 10 years.

### **Why is it Important?**



Visitors to Cooper's Point Waterfront Park take in the view of the Delaware River, the iconic Benjamin Franklin Bridge and the Philadelphia skyline. ©cousinv



# Drinking Water Actions

↑ BACK TO TOP	EXPAND ALL	COLLAPSE ALL
<b>Health &amp; Wellness</b>		
<u>Anti-Idling Education &amp; Enforcement Program</u>	10 Points	
<u>Building Healthier Communities</u>	5 Points	<small>* THIS ACTION HAS VARIABLE POINTS: 5, 10, 16, 20, 25 * COMPETITIVE FUNDING AVAILABLE</small>
<u>Health in All Policies Professional Development</u>	10 Points	
<u>Private Well Outreach and Testing</u>	10 Points	<small>* THIS ACTION HAS VARIABLE POINTS: 10, 16, 20, 25</small>
<u>Removing Lead in Drinking Water</u>	10 Points	<small>* THIS ACTION HAS VARIABLE POINTS: 10, 30, 40</small>
<u>Safe Routes to School</u>	10 Points	





# Green Infrastructure Planning and Implementation Actions

Rutgers | School of Environmental and Biological Sciences

Search Rutgers

## RUTGERS New Jersey Agricultural Experiment Station

### Water Resources Program

Search This Site

Go

HOME PAGE

About the Program

Staff

Projects & Programs

Recent Presentations

Water Pages

Fact Sheets

E-learning Tools

Useful Links



Our green infrastructure initiative in urban centers focuses on best management practices before it enters the combined sewer system.

## RUTGERS New Jersey Agricultural Experiment Station

### Water Resources Program

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Connect With Us



#### ABOUT US

Rutgers Cooperative Extension  
Water Resources Program

G.H. Cook Campus  
14 College Farm Road  
New Brunswick, NJ 08901

[www.water.rutgers.edu](http://www.water.rutgers.edu)

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#### Projects & Programs

<a href="#">Agricultural Watershed Planning &amp; Implementation</a>	<a href="#">Municipal/Community Training</a>
<a href="#">Green Infrastructure Program</a>	<a href="#">Rain Gardens &amp; Rain Barrels</a>
<a href="#">Keep the Rain from the Drain ~ Impervious Cover Reduction Program</a>	<a href="#">Watershed Planning &amp; Implementation</a>
<a href="#">Municipal Stormwater Management</a>	

##### Agricultural Watershed Planning & Implementation

- Watershed Restoration & Protection Plan for Assiscunk Creek, Burlington County, NJ
- Biofilter Wetland at Harrow Run, Water Quality Evaluation of Pollutant Removal Efficiency from a Tailwater Recovery System
- Watershed Restoration Plan for the Upper Cohansy River Watershed
- Upper Cohansy River Watershed Agricultural Mini-Grant Program
- Watershed Restoration Plan for the Upper Salem River Watershed
- Upper Salem River Watershed Agricultural Mini-Grant Program

[Top of Page](#)

##### Green Infrastructure Program

<http://www.water.rutgers.edu/Projects/Projects.htm>



# Gold Star Standard in Water



**Complete Four Pre-requisite Actions:** Two required Actions: Water Story and Environmental Resource Inventory as well as selection of a “high impact” and an additional action.

**Prepare Navigational Path:** as part of the Water Story action, in which municipality identifies water issues and corresponding actions to advance improvements in water in the years ahead.

**Water Gold Star Certification:** Apply on the Gold Star portion of the website – four completed actions; navigational path and reviewed during standard municipal certification cycle, if approved gold star awarded for 3 years.



# Municipal Water Story



FROM THE FOLKS AT TRICITYNEWS

SERVING ASBURY PARK • ALLENHURST • INTERLAKEN • LOCH ARBOUR • OCEAN GROVE • WANAMASSA



Concerns about drinking water quality
Areas of repetitive flooding after heavy rain
Concerns about water supply
Urban flooding and pollution due to combined sewer overflow
Impaired surface water quality
Equity Issues related to public access to water

## ASBURY PARK

### ASBURY GETS HELP TO WRITE ITS "WATER STORY"

Like 29  
Tweet

NEW JERSEY AMERICAN WATER PROVIDING GRANT FOR TECHNICAL ASSISTANCE FOR RESILIENCY AND SUSTAINABILITY

By Asbury Park Sun

Sustainable Jersey today announced that the City of Asbury Park was selected to receive technical assistance, funded by New Jersey American Water, to complete a new Sustainable Jersey Action: Municipal Water Story.

"At New Jersey American Water, we work to protect the viability, integrity and resiliency of water supplies and water and wastewater infrastructure in our service areas that are vulnerable to droughts, floods and extreme weather events," said Mark McDonough, president of New Jersey American Water. "This work will

ADVERTISE WITH US

SUGGEST A STORY







# Free Technical Assistance for Energy Projects: Apply for an EDF Fellow

Fellows help municipalities and school districts track and analyze energy usage and apply for New Jersey's Clean Energy Program and utility incentives!



## Join us for "Drop-in" Sessions!

- March 15<sup>th</sup> @ 8AM
- March 16<sup>th</sup> @ 6PM
- March 24<sup>th</sup> @ 3PM
- March 25<sup>th</sup> @ 11:30AM

Register or apply at:  
[bit.ly/SJEDFClimateCorps](https://bit.ly/SJEDFClimateCorps)

## Questions?

Contact Brandon Rothrock at  
[rothrocb@tcnj.edu](mailto:rothrocb@tcnj.edu)








# Sustainable Jersey Grants Program

- Provides funding and technical assistance opportunities for sustainability initiatives
- 2k green team grants and project grants of 10k and larger
- Since 2009, over \$6.5 million distributed to fund over 1,000 projects

## Annual Funding Cycles

CYCLE SPONSOR	PROJECT TYPE	SCHOOL OR MUNI	CYCLE ANNOUNCED	APPS DUE	FUNDING AWARDED
	Energy	Both	Late Aug	Late Oct	Mid-Jan
	General	School	Late Aug	Late Oct	Mid-Feb
	General	School Muni	Mid-Oct Mid-Nov	Mid-Mar Mid-Feb	Early Jun Early May

### MUNICIPAL GRANTS



### SCHOOL GRANTS





# Sustainable Jersey Grants Program



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An Exelon Company

Sustainable Communities Grant Program



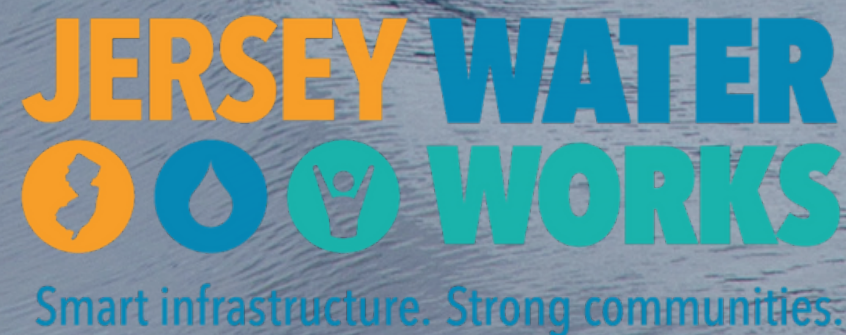
Anne Heasly  
Sustainable Jersey  
heaslya@tcnj.edu



# Jersey Water Works Green Infrastructure Resources for Municipalities

Rosana Da Silva

March 2022







# JERSEY WATERWORKS

A collaborative effort of many diverse organizations and individuals who embrace the common purpose of transforming New Jersey's water infrastructure.





# Green Infrastructure Committee

## COMMITTEE GOAL:

Communities employ green infrastructure in a way that maximizes community benefits including reduced flooding and improved water quality, local economies, community health and long-term resiliency.

## JWW COMMITTEE INITIATIVES AND WORK INCLUDE:



### Infrastructure Solutions

Policy recommendations, white papers, fact sheets, and reports.



### Water Communications

Customizable resources for communicating the value of upgrading our water infrastructure, including funding stormwater management.



### Community Engagement

The work Jersey Water Works and our members are doing to promote equitable water infrastructure solutions.





Rain Gardens with Native Plantings at Southwest Park in Hoboken, 2017. Source: Starr Whitehouse/City of Hoboken



- <https://www.jerseywaterworks.org/resources/unlocking-the-potential-of-the-green-acres-and-blue-acres-programs-to-support-green-infrastructure/>

## Open Space, Flood Protection, and Pollutant Trapping: Unlocking the Potential of the Green Acres and Blue Acres Programs to Support Green Infrastructure



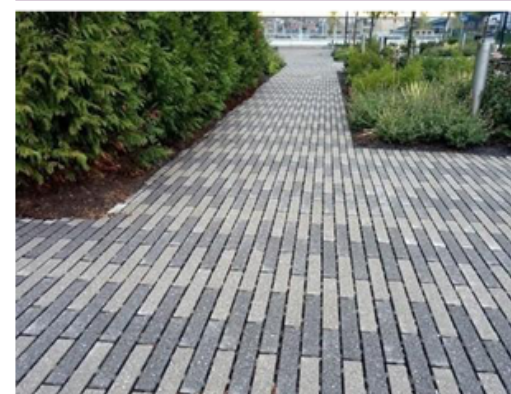
# Green Streets Resources

New Jersey  
Green  
Streets



Planning for Green Streets  
September 2021

New Jersey  
Green  
Streets



Funding Green Streets  
September 2021

New Jersey  
Green  
Streets



Case Studies  
August 2020



- <https://www.jerseywaterworks.org/resources/planning-green-streets/>
- <https://www.jerseywaterworks.org/resources/funding-green-streets/>
- <https://www.jerseywaterworks.org/resources/new-jersey-green-streets-case-studies/>





Stormwater utilities support the development of green infrastructure to manage stormwater, like this bioretention system in Somerset, NJ. Source: Maser Consulting, 2020.2018.

# Stormwater Utilities can Incentivize Green Infrastructure

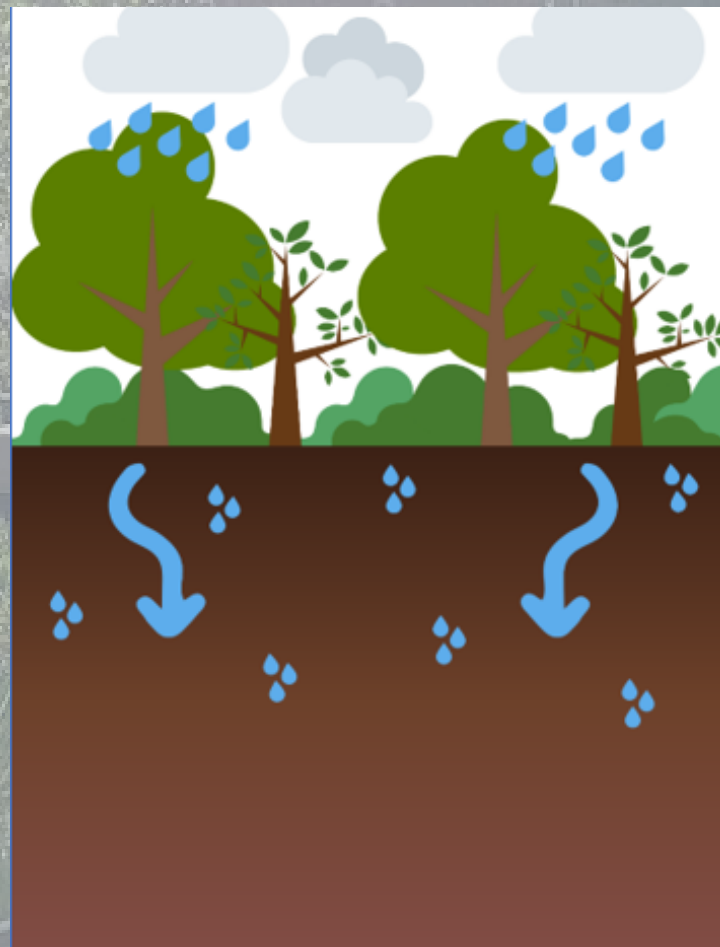
Issued by the Jersey Water Works Green Infrastructure Committee

**Date: October 2021**

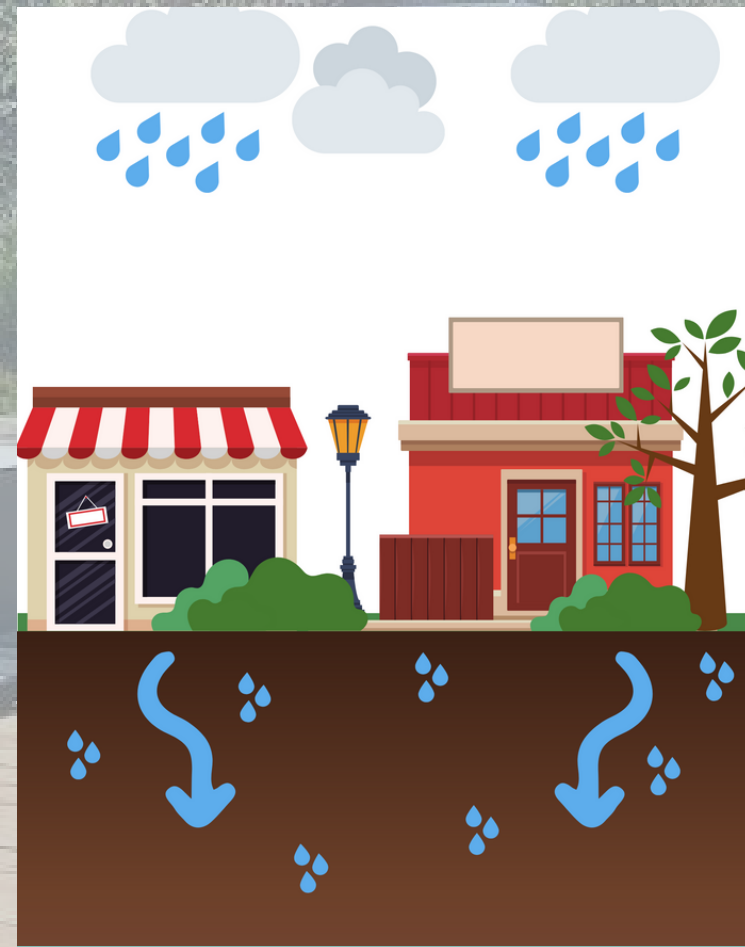
- <https://www.jerseywaterworks.org/resources/stormwater-utilities-can-incentivize-green-infrastructure/>



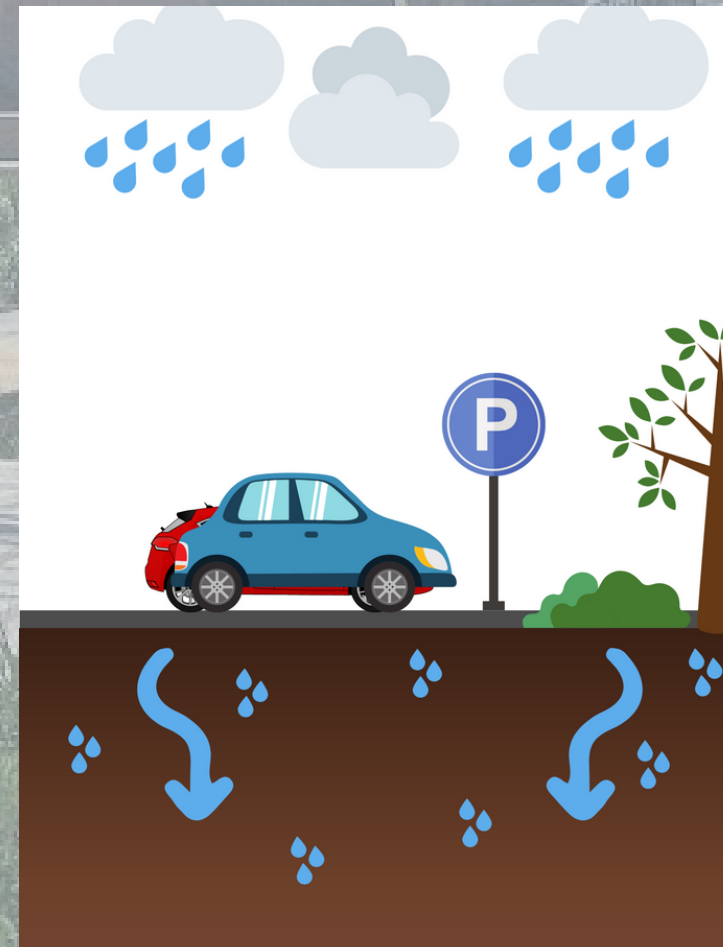
# Fact Sheets to Champion Green Infrastructure



**Green Infrastructure  
Champions Spotlight:  
Introduction to Green  
Infrastructure**



**Green Infrastructure  
Champions Spotlight:  
Environmental  
Commission Green Teams**



**Green Infrastructure  
Champions Spotlight:  
Transportation**



**Green Infrastructure  
Champions Spotlight:  
Schools**



**LINKS TO BE PUBLISHED**



# Green Infrastructure Champions Program

RUTGERS New Jersey Agricultural Experiment Station

Water Resources Program

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## Projects & Programs - Municipal/Community Training

*All classes for the 2022 training program will be offered via an online format.*

- **Registration is required.**
- **Register [HERE](https://forms.gle/25KooAZUsdSZefux7) starting December 1: <https://forms.gle/25KooAZUsdSZefux7>**
- **The fee will be \$10/class.**
- **Attendance at a minimum of five (5) classes is needed for certification.**

<a href="#">Introduction</a>	<a href="#">2019 Training Program</a>	<a href="#">2022 Training Program</a>
	<a href="#">2020 Training Program</a>	
	<a href="#">2021 Training Program</a>	
<a href="#">Resources</a>	<a href="#">2019 Green Infrastructure Champions</a>	<a href="#">Contacts</a>
	<a href="#">2020 Green Infrastructure Champions</a>	
	<a href="#">2021 Green Infrastructure Champions</a>	

## Green Infrastructure Champions Program

*This program is partially funded by the Rutgers New Jersey Agricultural Experiment Station, The Geraldine R. Dodge Foundation, NJ Sea Grant Consortium, and William Penn Foundation and is a collaboration of the Rutgers Cooperative Extension Water Resources Program and the Green Infrastructure Subcommittee of Jersey Water Works.*



<http://water.rutgers.edu/Projects/GreenInfrastructureChampions/GIC.html>



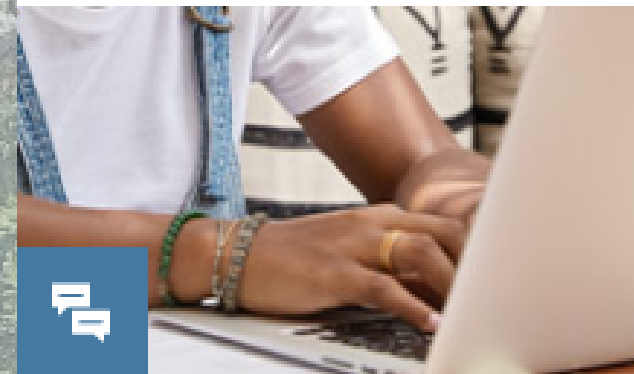
# Get Involved!

- Join Jersey Water Works as a member, visit <https://www.jerseywaterworks.org/get-involved/>
- Check out the GI Committee's work plans here: <https://www.jerseywaterworks.org/committees/green-infrastructure-committee/work-plans/>

## JERSEY WATER WORKS MEMBER BENEFITS



Join one or more committees to actively help advance the work of Jersey Water Works across the state.



Gain access to the Members communications portal for discussion, updates, news, and resources.



Receive a bi-weekly email with the latest updates, funding opportunities, news, and resources.



Be featured in the bi-monthly Jersey Water Works blog, website, and monthly e-newsletter.





# Thank you!

Rosana Da Silva  
[rosana@hudsonriver.org](mailto:rosana@hudsonriver.org)





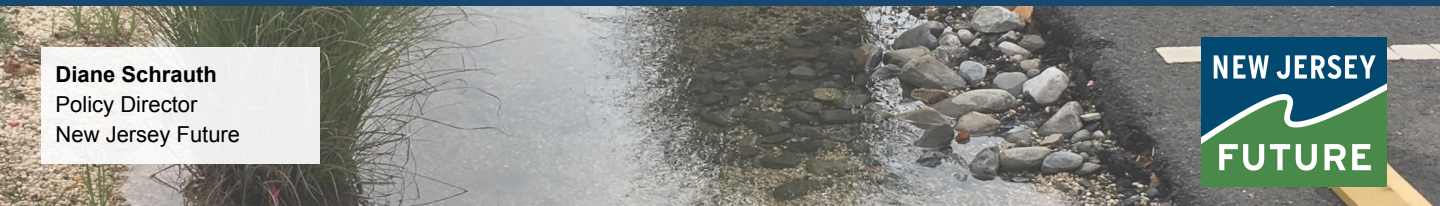


# Take Action With These Stormwater Resources

Stormwater: Tools to Help Municipalities Weather the Storm

March 22, 2022

**Diane Schrauth**  
Policy Director  
New Jersey Future





# Agenda

- **Background**
- **Green Infrastructure Municipal Toolkit**
- **Stormwater Utility Resource Center**
- **Questions**





## Agenda

- **Background**
  - Green Infrastructure Municipal Toolkit
  - Stormwater Utility Resource Center
  - Questions



**NEW JERSEY**  
**FUTURE**









## Agenda

- Background
- **Green Infrastructure Municipal Toolkit**
- Stormwater Utility Resource Center
- Questions





# NEW JERSEY GREEN INFRASTRUCTURE MUNICIPAL TOOLKIT



FROM STORMWATER  
TO CLEAN WATER

PREVENT  
POLLUTION

REDUCE  
FLOODING

IMPROVE YOUR  
COMMUNITY

INTRODUCING YOUR ONLINE, ONE-STOP  
GREEN INFRASTRUCTURE RESOURCE

[GIToolkit.NJFuture.org](http://GIToolkit.NJFuture.org)





**Check out our Green Infrastructure  
Toolkit!**



# FROM STORMWATER TO CLEAN WATER

Prevent pollution.  
Reduce flooding.  
Improve your community.

Stormwater runoff causes flooding and flushes contaminants into waterways. This contributes to 90 percent of New Jersey's rivers, streams and lakes being polluted. As a municipal leader, **you have the power to improve your community's response to water challenges and use green infrastructure to mitigate flooding and reduce water pollution.**

[GETTING STARTED →](#)



# Benefits of Green Infrastructure



## Economic

- Reduced construction costs and long-term cost savings for public and private development by reducing the quantity of pavement, curbs and gutters
- Less damage and lower cost impacts from localized flooding
- Higher property values through improved community aesthetics

[Read More](#)



## Environmental

- Keeps polluted water out of creeks, lakes, and rivers; improves water quality by filtering pollutants
- Increases groundwater and aquifer recharge
- Improves air quality through reduction in greenhouse gases

[Read More](#)



## Community/Public Health

- Meets the public's growing demand for sustainable communities
- Cooler air: reduced urban heat island effect through evaporation and tree canopy cover
- Dedicated open space provides opportunities for passive and active recreation

[Read More](#)



## What Can You Do?

### Plan

Whether your town is starting from scratch or looking to move to the next level with green infrastructure, smart planning is a must. Chart your course with guidance and tools found here.

[Learn More >](#)

### Implement

Green infrastructure isn't rocket science, but proper design, construction and maintenance – all essential to long-term success – requires a different approach. This section of the toolkit provides the tools needed and practical applications of implementing green infrastructure within your municipality.

[Learn More >](#)

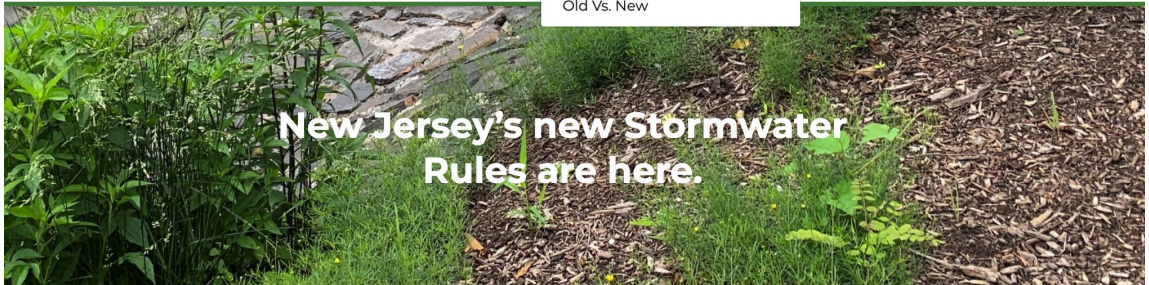
### Sustain

Like all infrastructure, green infrastructure requires monitoring and maintenance in order to function properly over the long term. This section of the toolkit will provide operations, maintenance, and monitoring guidance, as well as ways to alert and engage your community about the benefits of green infrastructure.

[Learn More >](#)



New Rules and Requirements  
Old Vs. New



**Green Infrastructure is now a requirement. What do municipalities need to know about NJ's amended stormwater rules?**



# Enhanced Model Stormwater Ordinance

- **Redefine the threshold for “major development.”**
- **Add a definition and requirements for “minor development.”**
- **Require stormwater management on redevelopment projects, not just new development.**
- **Require infiltration of a specific volume of stormwater onsite.**
- **Reduce “maximum contributory drainage areas.”**

A photograph of a flooded city street. The water is murky and reflects the surrounding environment. In the background, a large, multi-level blue steel truss bridge spans across the scene. To the left, there are trees and a building with a blue and white sign. To the right, there are more trees and a building with a red facade. The sky is overcast and grey. The text "Enhanced Model Stormwater Ordinance" is overlaid in the center of the image in a bold, dark blue font.

# **Enhanced Model Stormwater Ordinance**



# Funding

There are many programs and opportunities listed below, ranging from \$10,000 to \$5 million, that can help fund green infrastructure projects. Sorting by project type, funding type or eligible activities will narrow your search and make it easier to see and digest what's available.

**Project Type/Phase:** All Types ▾

- All Types
- Construction
- Planning
- Design
- Maintenance
- Other
- Implementation

**Funding Type:** All Types ▾

**Eligible Activities:** All Activities ▾

Showing **49** results

**U** **Environmental Protection Agency** **Project Type:** Construction

**U** **Small Grants** **Funding Type:** Federal

**Fu** ...0,000.

**Eligible Applicant and Activities**  
Eligible applicants include: Local & state governments, higher education institutions, public or private organization acting in

**Website:**  
<https://www.epa.gov/urbanwaters/urban-waters-small-grants>

# Funding

There are many programs and opportunities listed below, ranging from \$10,000 to \$5 million, that can help fund green infrastructure projects. Sorting by project type, funding type or eligible activities will narrow your search and make it easier to see and digest what's available.

<b>Project Type/Phase:</b> All Types ▾	<b>Funding Type:</b> All Types ▾ All Types Federal State Private	<b>Eligible Activities:</b> All Activities ▾
---	---	---

Showing 49 results

**United States Environmental Protection Agency**

**Urban Waters Small Grants**

**Project Type:** Construction  
**Funding Type:** Federal

**Funding Amount:** Up to \$60,000.

**Eligible Applicant and Activities**  
Eligible applicants include: Local & state governments, higher education institutions, public or private organization acting in

**Website:**  
<https://www.epa.gov/urbanwaters/urban-waters-small-grants>



# Funding

There are many programs and opportunities listed below, ranging from \$10,000 to \$5 million, that can help fund green infrastructure projects. Sorting by project type, funding type or eligible activities will narrow your search and make it easier to see and digest what's available.

## Project Type/Phase:

All Types ▾

## Funding Type:

All Types ▾

## Eligible Activities:

All Activities ▾

- All Activities
- Bicycle and Pedestrian Projects
- Capacity Building
- Capital Needs
- Coastal resiliency
- Community Priorities
- Conservation
- Construction
- Education

## United States Environmental Protection Agency

### Urban Waters Small Grants

**Funding Amount:** Up to \$60,000.

#### Eligible Applicant and Activities

Eligible applicants include: Local & state governments, higher education institutions, public or private organization acting in

#### Website:

<https://www.epa.gov/urbanwaters/urban-waters-small-grants>



Let us know how to reach you with new information and updates.  
All feedback welcome!

## Contact Us

**New Jersey Future**  
16 W. Lafayette St.  
Trenton, NJ 08608

[njfuture@njfuture.org](mailto:njfuture@njfuture.org)  
(609) 393-0008

### Follow Us



## Stay Informed.

### \* Full Name

### Title

### Affiliation

### \* Email Address

### Phone Number

### Ideas or Feedback





## Agenda

- Background
- Green Infrastructure Municipal Toolkit
- **Stormwater Utility Resource Center**
- Questions



Protect Public Health.  
Safeguard Your Community.  
Rest Easier When It Rains.



Why Stormwater Matters  
[Learn More >](#)



Why a Stormwater Utility?  
[Learn More >](#)



Establish a Stormwater Utility  
[Learn More >](#)

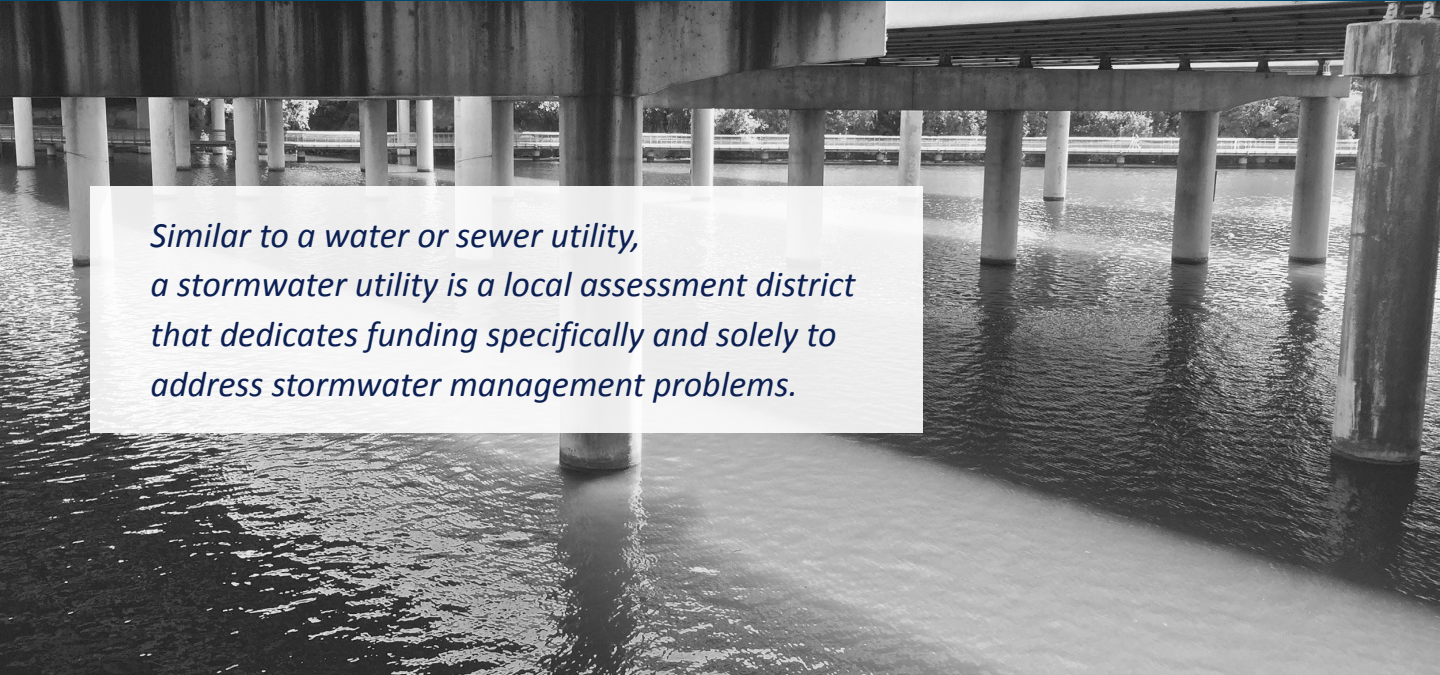




**NEW JERSEY  
STORMWATER  
UTILITY  
RESOURCE CENTER**

# What is a Stormwater Utility?

*Similar to a water or sewer utility, a stormwater utility is a local assessment district that dedicates funding specifically and solely to address stormwater management problems.*





# What is the purpose of the resource center?



To provide municipal and county officials and utilities with the tools to help them determine if a stormwater utility is right for their community.

# What is the purpose of the resource center?



To provide municipal and county officials and utilities with the tools to help them determine if a stormwater utility is right for their community.



To educate the public on stormwater utility basics.



# What is the purpose of the resource center?



To provide municipal and county officials and utilities with the tools to help them determine if a stormwater utility is right for their community.



To educate the public on stormwater utility basics.



To provide an ongoing repository for the latest information on stormwater utilities.

# Stormwater Utility Advisory Council

- Municipal Engineers
- Financial and Engineering Consultants
- Regional Authority Executive
- County Planner
- Borough Administrator
- Attorney
- Environmental Advocates
- NJDEP



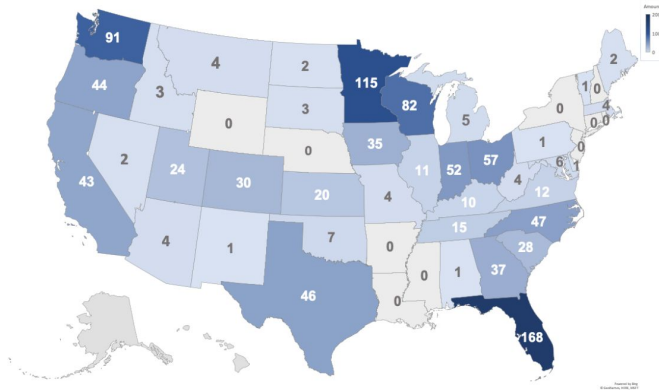


# Clean Stormwater & Flood Reduction Act

- New Jersey's law allows, but does not require, local governments to establish stormwater utilities.
- If established, stormwater utilities must collect fees based on the amount of stormwater a property generates.
- Utilities can be established by municipalities, counties, groups of municipalities, and sewerage and improvement authorities.
- Funds generated from the fees are dedicated solely to stormwater management and cannot be used for any other purposes.



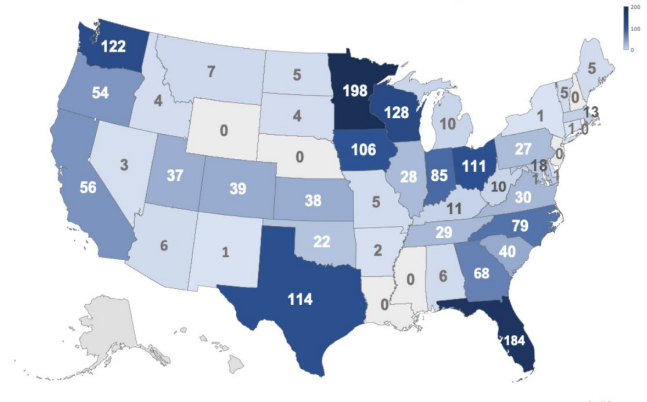
## Number of Stormwater Utilities by State 2009



As of 2009, 1,022 stormwater utilities had formed in the United States.

(Source: Western Kentucky University 2009 Stormwater Utility Survey)

## Number of Stormwater Utilities by State 2019



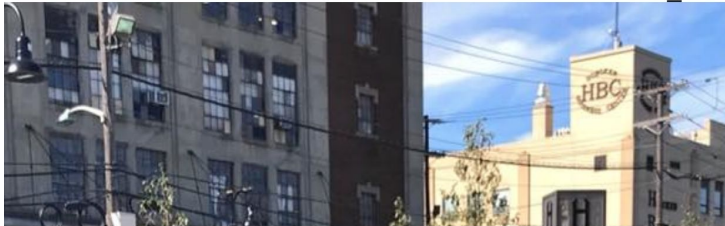
As of 2019, 1,716 stormwater utilities had formed in the United States.

(Source: Western Kentucky University 2009 Stormwater Utility Survey)





Home About Why Stormwater Matters Why a Stormwater Utility? Establish a Stormwater Utility Stay Informed **Resources**



## Stormwater Resources for Your Community

### Overviews

- ◆ New Jersey Future - Stormwater Utilities at a Glance
- ◆ New Jersey Future - Stormwater Utilities Fact Sheet
- ◆ New Jersey Future - Stormwater Utilities Steps For Local Implementation
- ◆ 2018 Stormwater Utility Survey, Black & Veatch Management Consulting, LLC
- ◆ New Jersey Department of Environmental Protection (NJDEP) Stormwater Utilities Guidance
- ◆ Western Kentucky University 2019 Stormwater Utilities Survey

# Resources

- Overviews
- Legal
- Financial
- Public Outreach
- Case Studies
- Mapping/Impervious Cover
- Climate/Flooding
- Water Environment Federation (WEF) Tables



NEW JERSEY  
**DEVELOPERS**  
Green Infrastructure  
GUIDE 2.0

Architect: Marchetto Higgins Stieve  
Photographer: Don Pearse





NEW  
JERSEY  
FUTURE

AMERICAN  
PLANNING  
ASSOCIATION  
NEW JERSEY



# PLANNING & REDEVELOPMENT CONFERENCE 2022

VIRTUAL / IN-PERSON  
JUNE 14-15 / JUNE 16

For more information, visit  
[www.njfuture.org/events/njprc22/](http://www.njfuture.org/events/njprc22/)

**THANK YOU!**

**Diane Schrauth**

Policy Director

[dschrauth@njfuture.org](mailto:dschrauth@njfuture.org)

609-393-0008

New Jersey Future

16 W. Lafayette St.

Trenton, NJ 08608

[www.njfuture.org](http://www.njfuture.org)





# Green Infrastructure


*Resources for your Town*

*March 22, 2022*

Jay Watson, Co-Executive Director  
New Jersey Conservation Foundation



# NJ Conservation Blueprint



**NEW JERSEY  
CONSERVATION  
BLUEPRINT**  
engage. protect. restore.

MAP

## Protecting New Jersey's Land and Legacy.

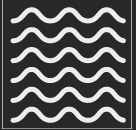






In New Jersey, the most densely populated state in the U.S., it is critically important to protect our healthy soils for growing food and the natural lands that safeguard our drinking water, clean our air, sustain wildlife and provide places for people to enjoy the outdoors.

NJ Conservation Blueprint is a data-driven, interactive mapping tool made possible through a partnership of The Nature Conservancy, Rowan University, and the New Jersey Conservation Foundation, together with a collective of 21 conservation-focused groups, both governmental and non-profits.

**POWER USER** ✕

**OPEN A MAP**

-   
**WATER QUALITY**
-   
**COMMUNITY OPEN SPACE**
-   
**AGRICULTURE**
-   
**ECOLOGICAL INTEGRITY**
-   
**CAMDEN CONSERVATION BLUEPRINT**



# GIS

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# NJ Blueprint MAP Options- Ecological Integrity



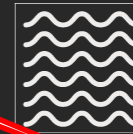
Click here

MAP

POWER USER



OPEN A MAP



WATER  
QUALITY



COMMUNITY  
OPEN SPACE



AGRICULTURE



ECOLOGICAL  
INTEGRITY



CAMDEN  
CONSERVATION  
BLUEPRINT

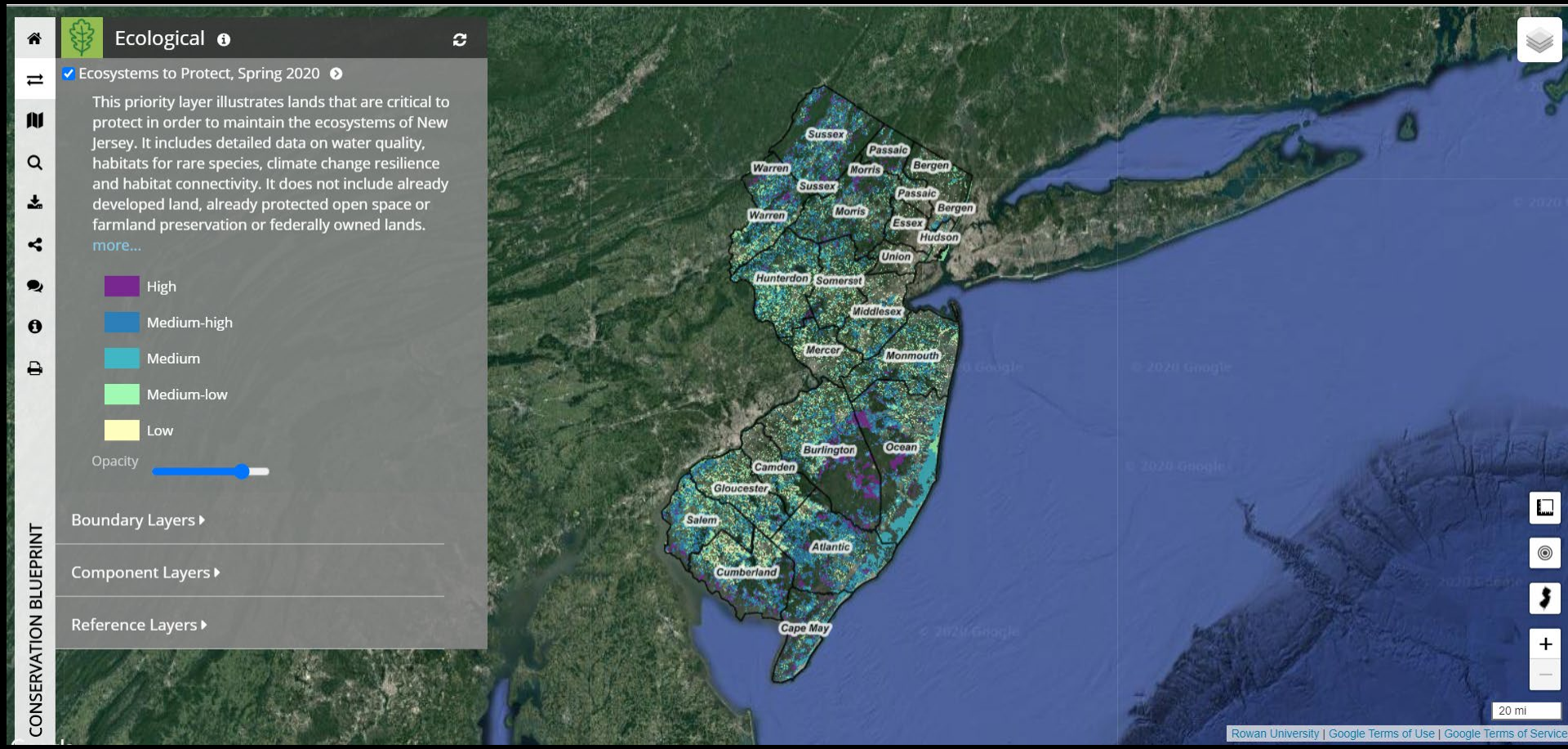
## Protecting New Jersey's Land and Legacy.

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# Statewide “Ecosystems to Protect” The Landing Page







# Ecological ⓘ




## Ecosystems to Protect, Spring 2020 ▶

This priority layer illustrates lands that are critical to protect in order to maintain the ecosystems of New Jersey. It includes detailed data on water quality, habitats for rare species, climate change resilience and habitat connectivity. It does not include already developed land, already protected open space or farmland preservation or federally owned lands.

[more...](#)

 High

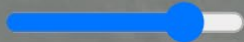
 Medium-high

 Medium

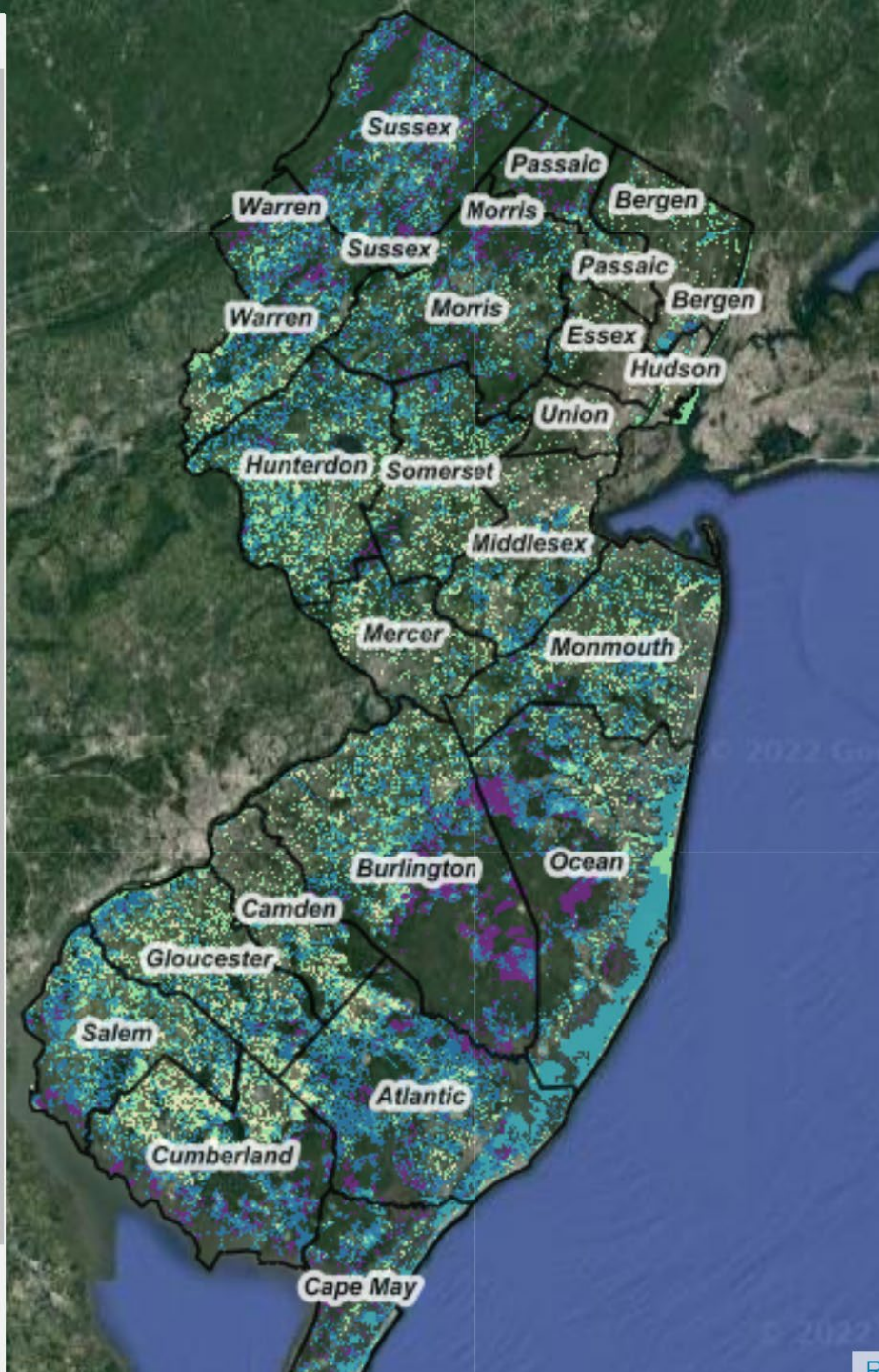
 Medium-low

 Low

Opacity



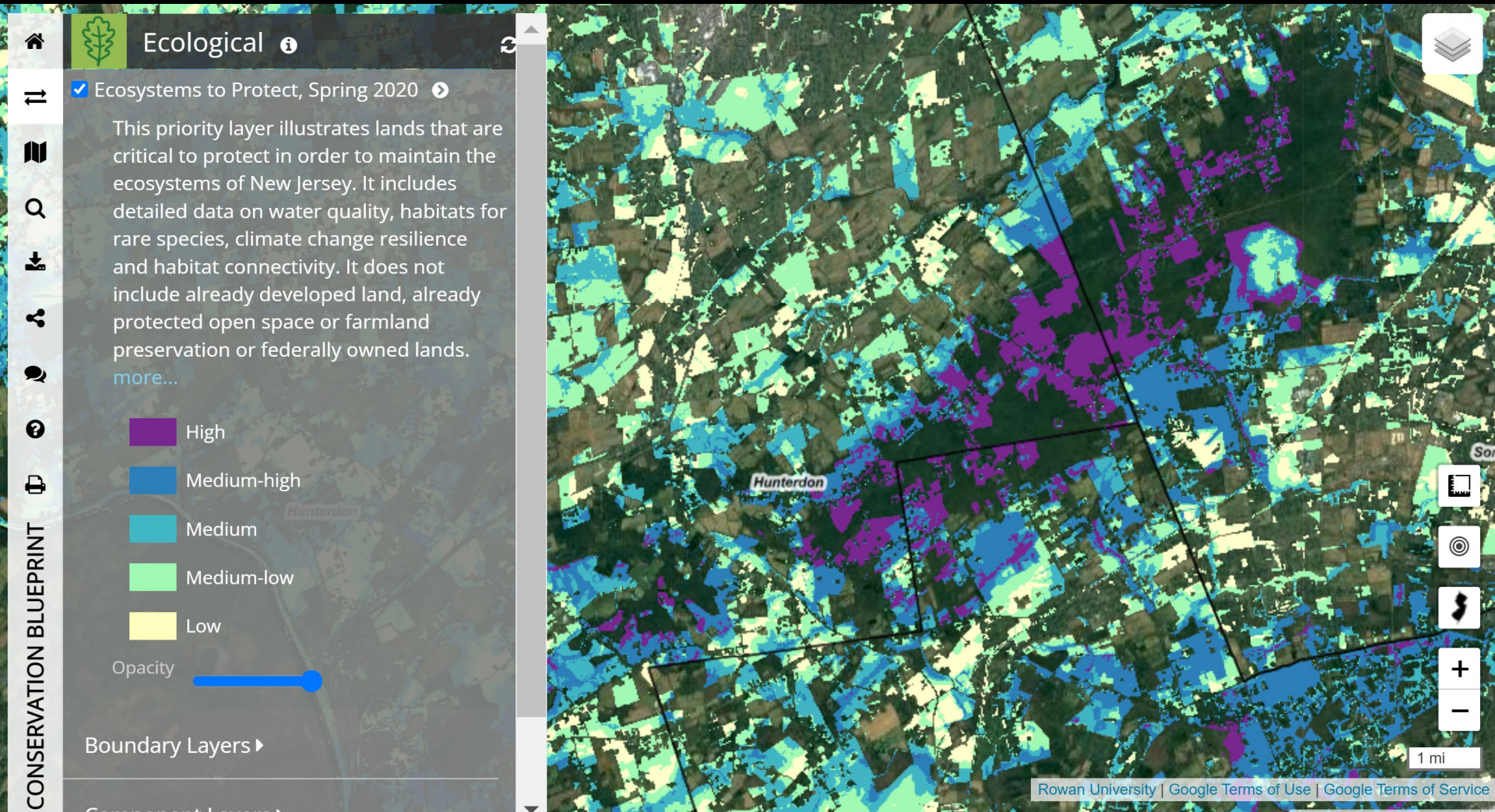
Boundary Layers ▶



CONSERVATION BLUEPRINT



# The Sourlands...





# Zoomed in to Sourlands Project Area

**Ecological** ⓘ

■ Ecosystems to Protect, Spring 2020 ▶

This priority layer illustrates lands that are critical to protect in order to maintain the ecosystems of New Jersey. It includes detailed data on water quality, habitats for rare species, climate change resilience and habitat connectivity. It does not include already developed land, already protected open space or farmland preservation or federally owned lands.  
[more...](#)

- High
- Medium-high
- Medium
- Medium-low
- Low

Opacity

Boundary Layers ▶

Hunterdon

1 mi

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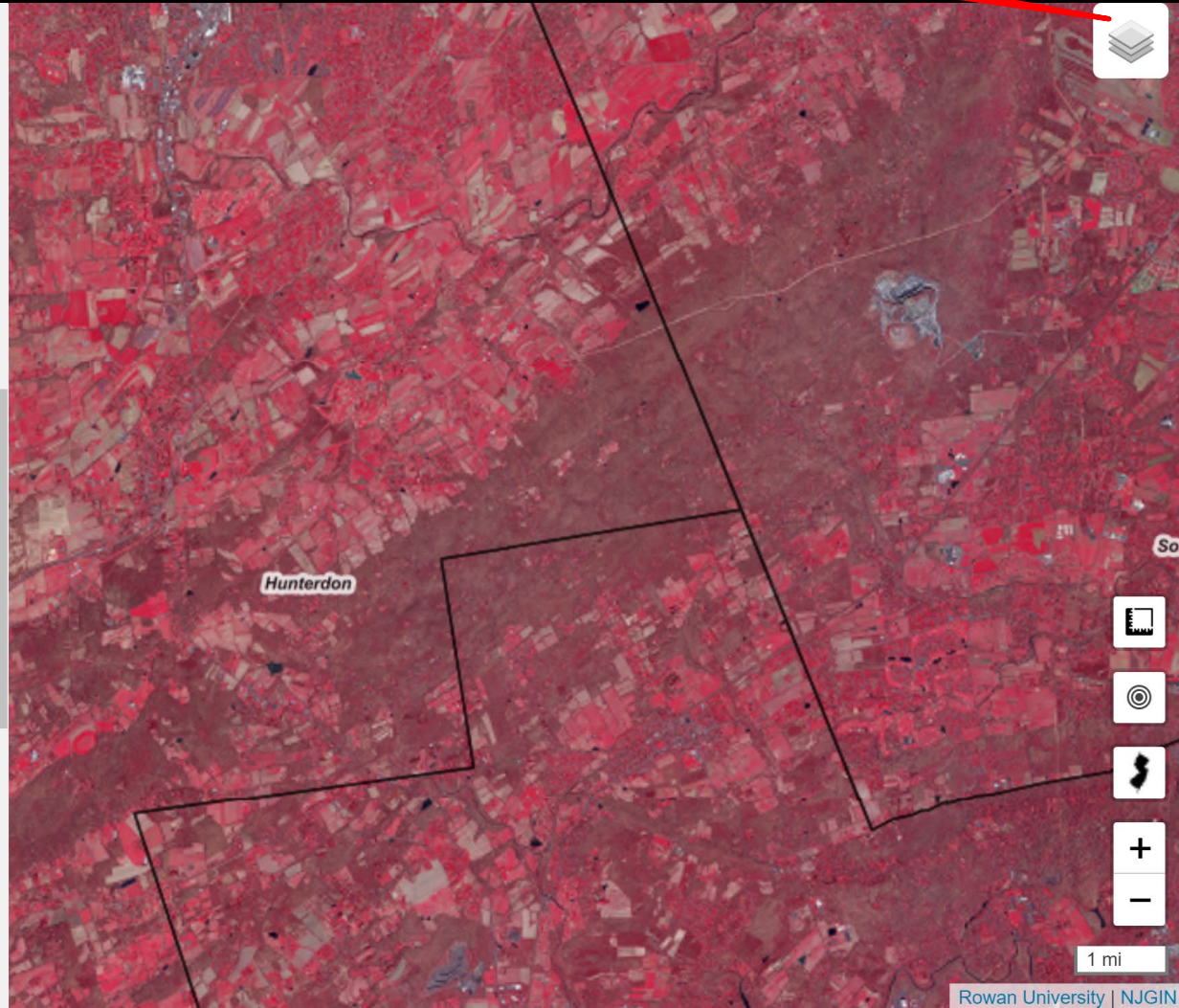


# Base maps – Google satellite, infrared, topo, historic...

Click here

Reference Layers ▾

- BETA Blueprint Open Space Composite ▾  
Combines Open Space, Farmland Preservation and Easement lands. Please note that this layer is under development and subject to change. [more...](#)  
 Open Space  
Opacity
- Overburdened Communities ▾
- Coastal Resilience ▾
- Priority Lands for Ecological Integrity, Spring 2018
- Priority Lands for Ecological Integrity, Spring 2016
- Priority Lands Mask ▾
- Remaining Unprotected Lands ▾
- Protected or Urbanized Lands Mask ▾





Click here

# Information layers

**Ecological** ⓘ

■ Ecosystems to Protect, Spring 2020 ▶

This priority layer illustrates lands that are critical to protect in order to maintain the ecosystems of New Jersey. It includes detailed data on water quality, habitats for rare species, climate change resilience and habitat connectivity. It does not include already developed land, already protected open space or farmland preservation or federally owned lands. [more...](#)

- High
- Medium-high
- Medium
- Medium-low
- Low

Opacity

Boundary Layers ▶

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# Component layers

**Component Layers** ▾

- Water Quality Resources ▶
  - Headwaters ▶
  - Groundwater Recharge ▶
  - Active River Areas ▶
  - Impervious Surface by NHD Catchment ▶
  - Wetlands ▶
- Habitats for Rare Species ▶
  - Landscape Project - # of Unique Species
  - Landscape Project - Rank ▶
  - Vernal Pool Buffers ▶
  - Natural Heritage Priority Sites ▶
  - NN - Imperiled Species Habitat Condition

**Climate Change Resilience** ▶

- Resilience ▶
- Marsh Migration Space ▶
- Concentrated Flow Areas ▶
- Habitat Connectivity ▶
  - CHANJ Stepping Stones ▶
  - CHANJ Corridors ▶
  - CHANJ Cores ▶
  - Forest Core Area Index ▶
  - Forest Core ▶
  - Habitat Connectivity (Cores & Connectors)
- Ecosystems to Protect – All Lands, Spring 2020



# Reference Layers

**CONSERVATION BLUEPRINT**

Reference Layers ▾

- BETA Blueprint Open Space Composite ▶
- Overburdened Communities ▶
- Coastal Resilience ▶
- Priority Lands for Ecological Integrity, Spring 2018 ▶
- Priority Lands for Ecological Integrity, Spring 2016 ▶
- Priority Lands Mask ▶
- Remaining Unprotected Lands ▶
- Protected or Urbanized Lands Mask ▶
- DRWI Clusters & Focus Areas ▶
- Pinelands Management Areas ▶
- Preserved Farmland ▶

**CONSERVATION BLUEPRINT**

- Highlands Planning and Preservation Areas
- Bobcat Alley ▶
- Sourland Region Boundary ▶
- Barnegat Bay WMA ▶
- Cape May Peninsula WMA ▶
- Watersheds ▶
- NJ Hydrography ▶
- C1 Streams ▶
- Landscape Project Version 3.3 ▶
- Vermeule's Forest Map ▶

Click here

# Information layers

**Ecological** ⓘ

■ Ecosystems to Protect, Spring 2020 ▶

This priority layer illustrates lands that are critical to protect in order to maintain the ecosystems of New Jersey. It includes detailed data on water quality, habitats for rare species, climate change resilience and habitat connectivity. It does not include already developed land, already protected open space or farmland preservation or federally owned lands. [more...](#)

High

Medium-high

Medium

Medium-low

Low

Opacity

Boundary Layers ▶

Hunterdon

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# Preserved Open Space

CONSERVATION BLUEPRINT

Reference Layers ▾

- BETA Blueprint Open Space Composite ▾  
Combines Open Space, Farmland Preservation and Easement lands. Please note that this layer is under development and subject to change. [more...](#)
- Open Space  
Opacity
- Overburdened Communities ▾
- Coastal Resilience ▾
- Priority Lands for Ecological Integrity, Spring 2018 ▾
- Priority Lands for Ecological Integrity, Spring 2016 ▾
- Priority Lands Mask ▾
- Remaining Unprotected Lands ▾
- Protected or Urbanized Lands Mask ▾
- DRWI Clusters & Focus Areas ▾
- Pinelands Management Areas ▾
- Preserved Farmland ▾
- Highlands Planning and Preservation Areas ▾
- Bobcat Alley ▾
- Sourland Region Boundary ▾
- Barnegat Bay WMA ▾
- Cape May Peninsula WMA ▾
- Watersheds ▾
- NJ Hydrography ▾
- C1 Streams ▾
- Landscape Project Version 3.3 ▾
- Vermeule's Forest Map ▾



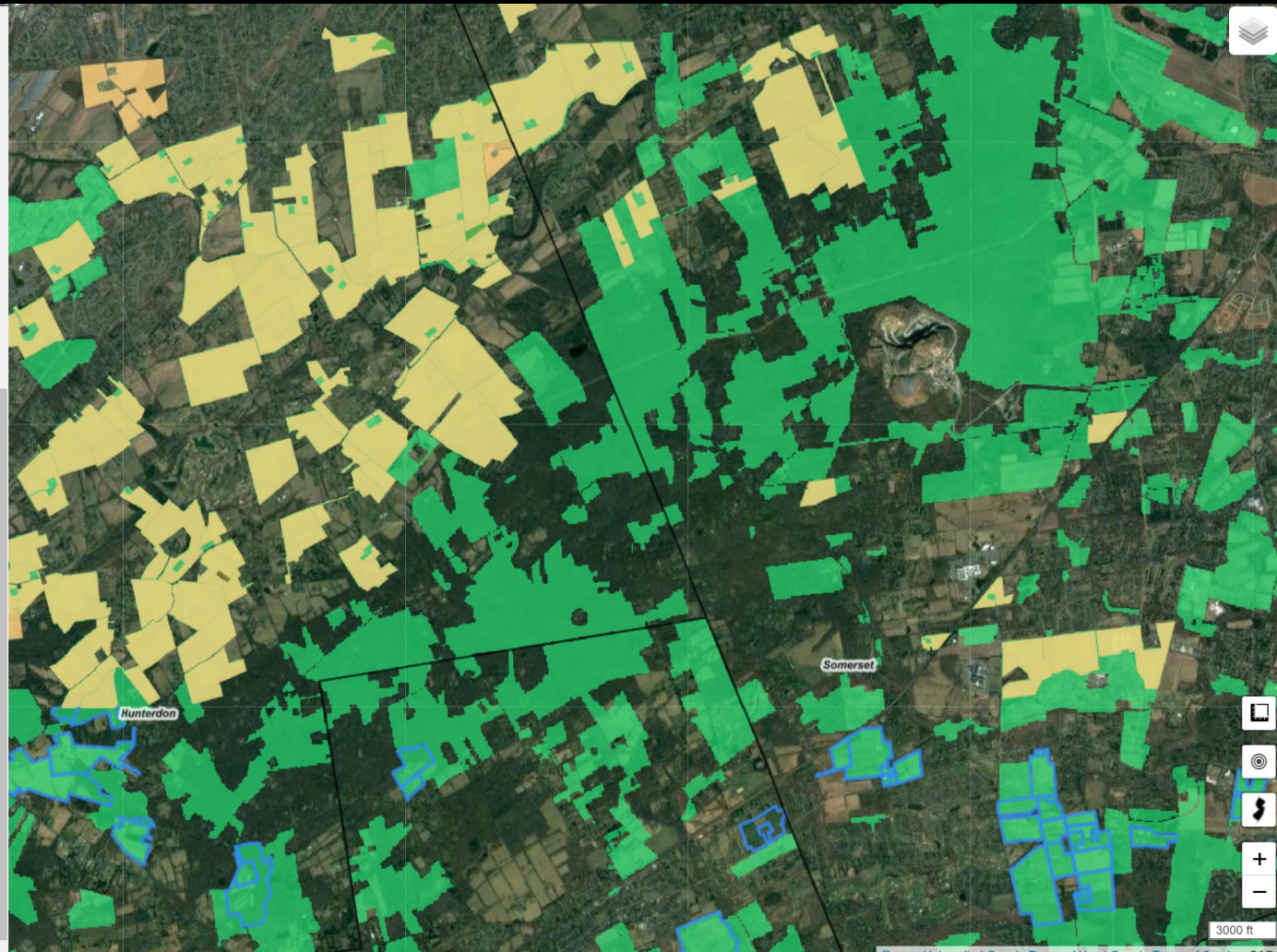


# Preserved Open Space & Farmland

CONSERVATION BLUEPRINT

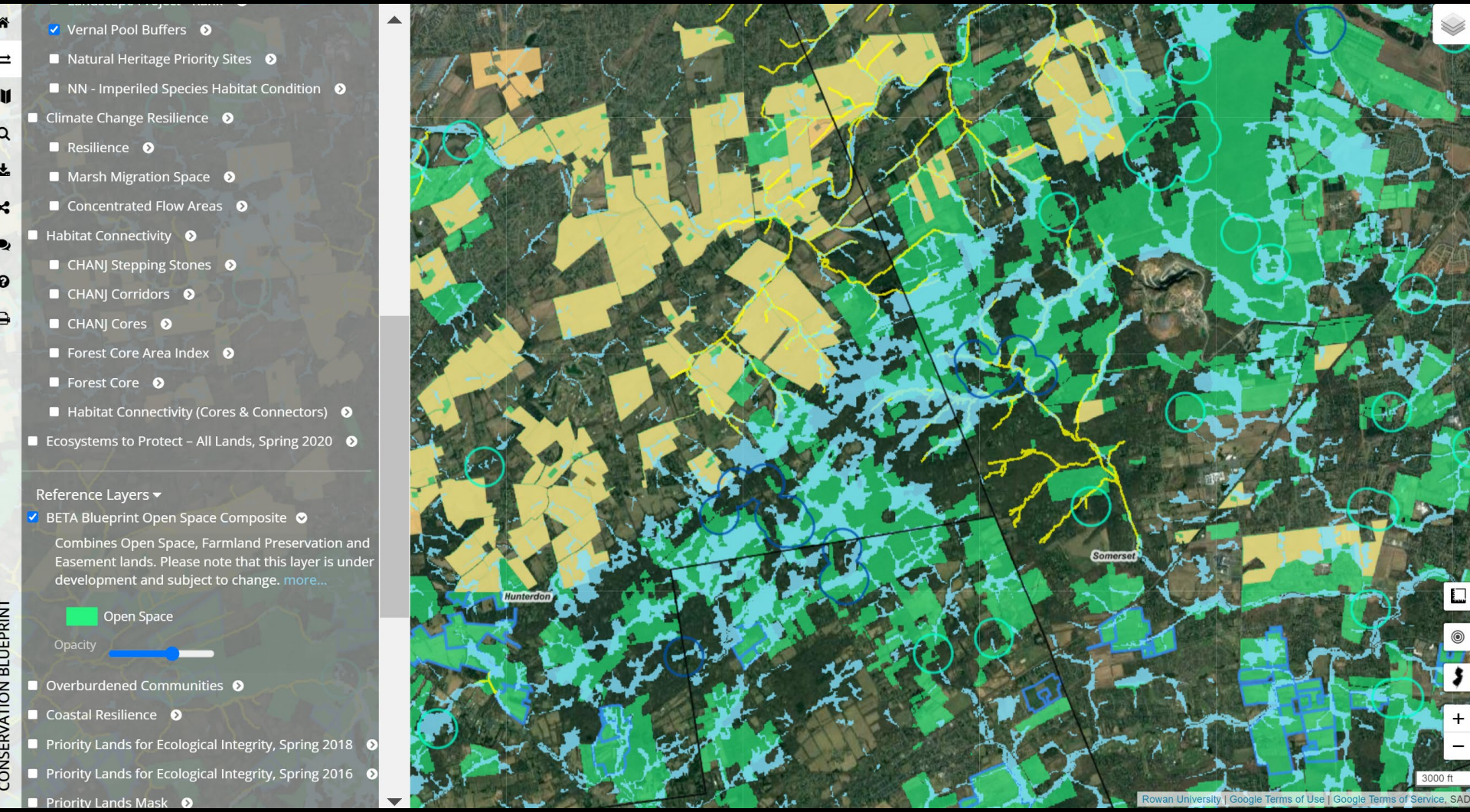
Reference Layers ▾

- BETA Blueprint Open Space Composite ▾  
Combines Open Space, Farmland Preservation and Easement lands. Please note that this layer is under development and subject to change. [more...](#)
- Open Space  
Opacity
- Overburdened Communities ▾
- Coastal Resilience ▾
- Priority Lands for Ecological Integrity, Spring 2018 ▾
- Priority Lands for Ecological Integrity, Spring 2016 ▾
- Priority Lands Mask ▾
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- C1 Streams ▾
- Landscape Project Version 3.3 ▾
- Vermeule's Forest Map ▾



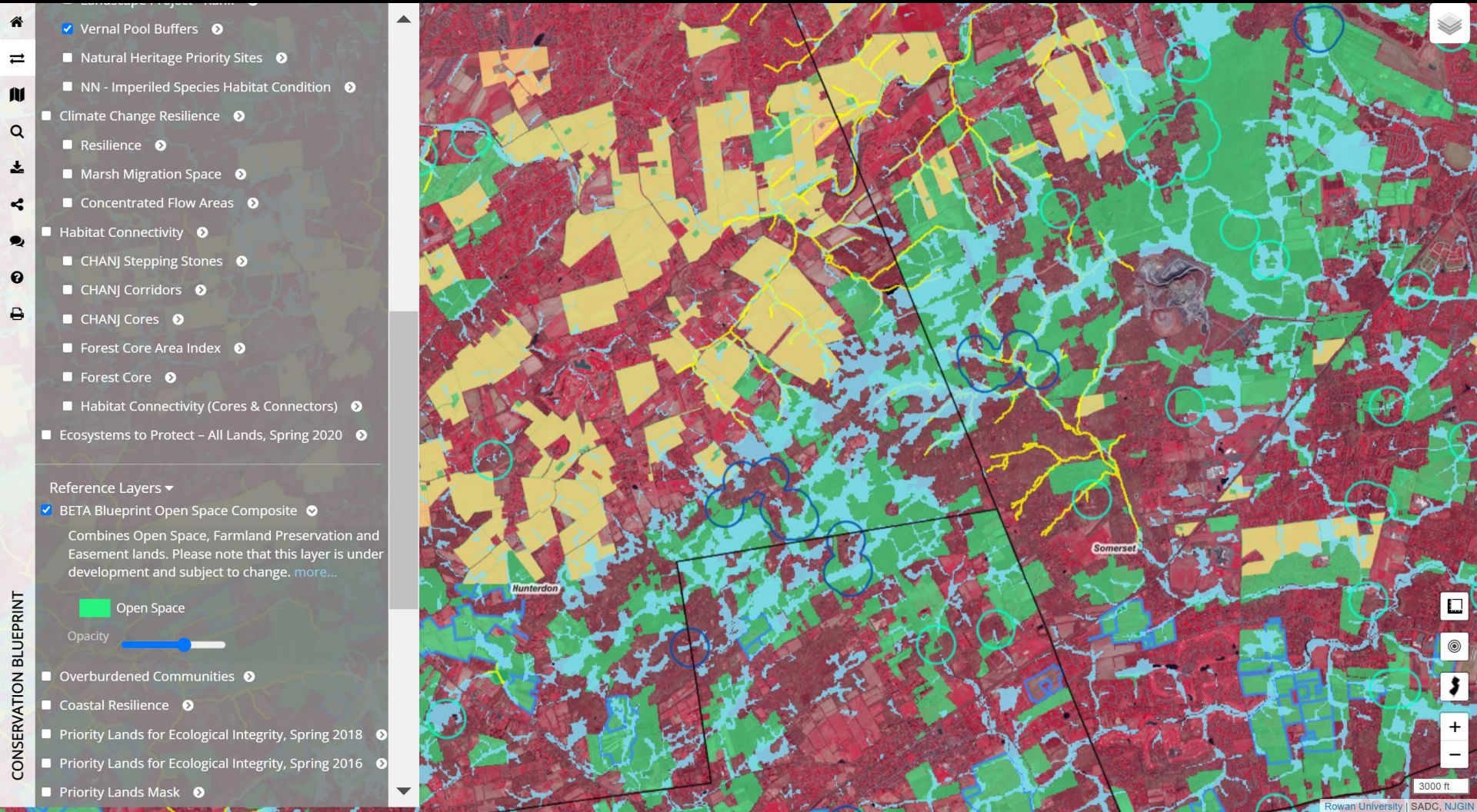
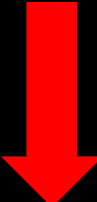


# Adding in C1 streams, wetlands vernal pool buffers



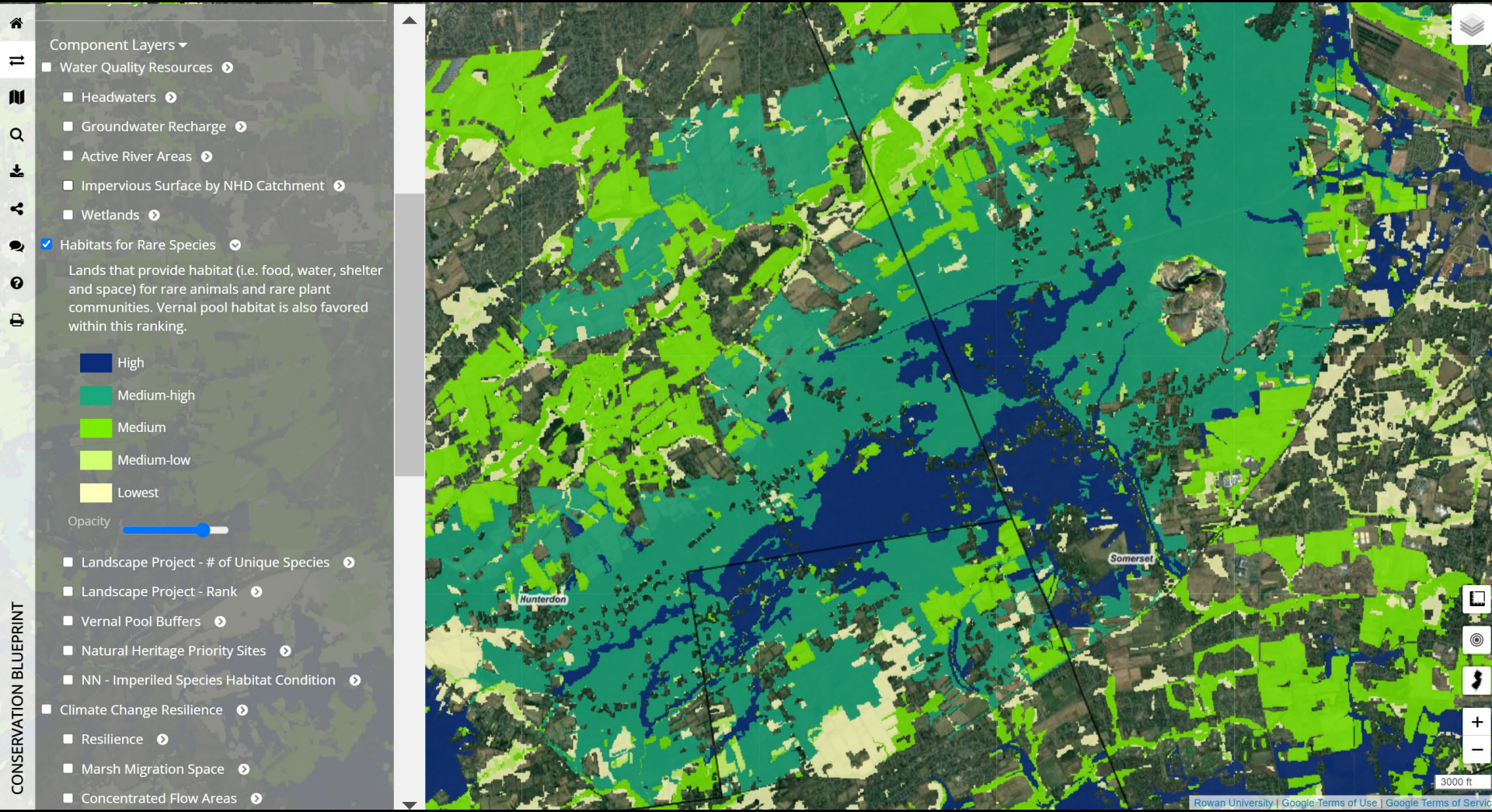


# Same area Infrared Base Map



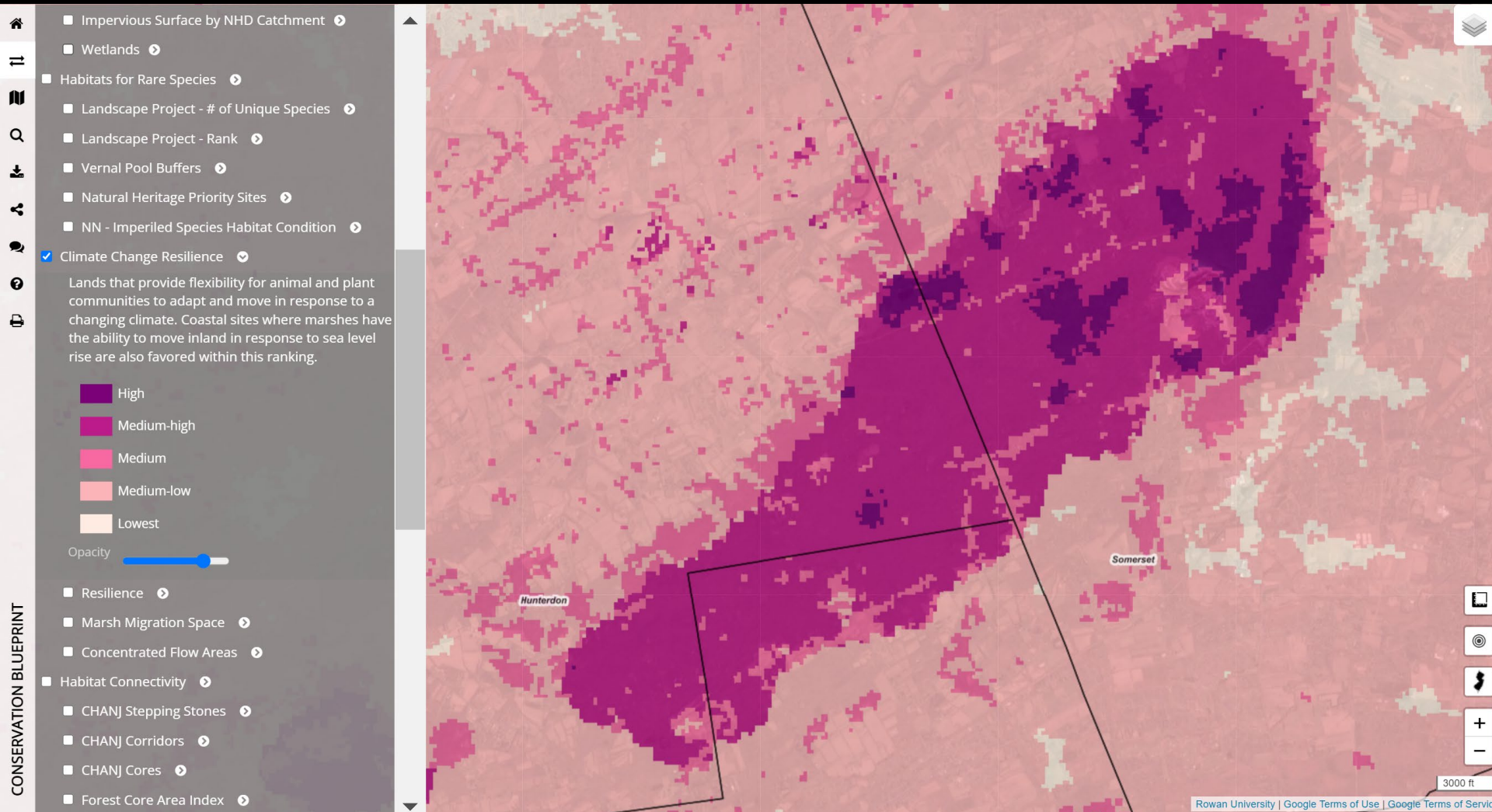


# Habitats for Rare Species Overlay



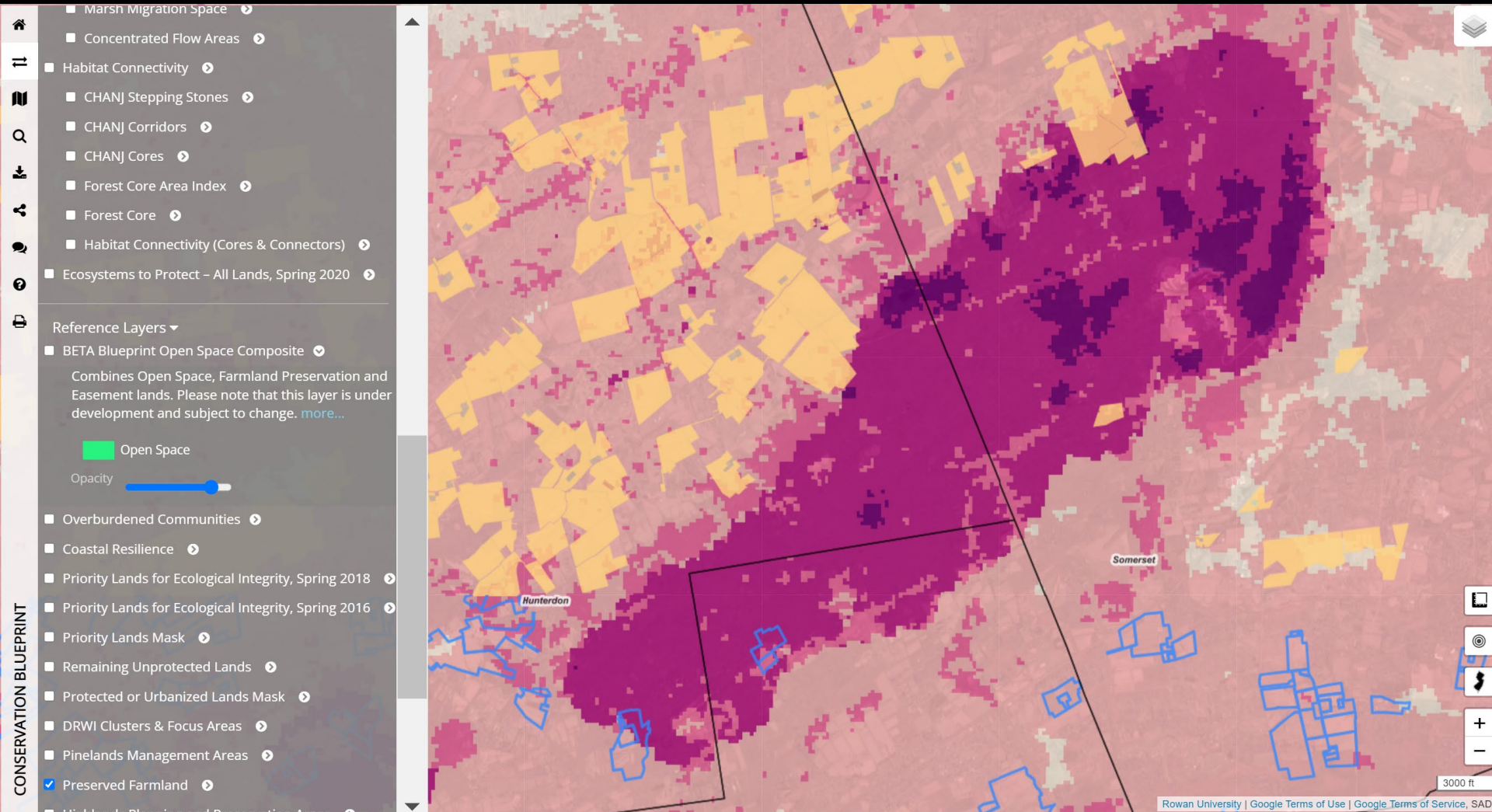


# Climate Change Resilience Sourlands!





# Climate Change Resilience Sourlands! Preserved Farmland

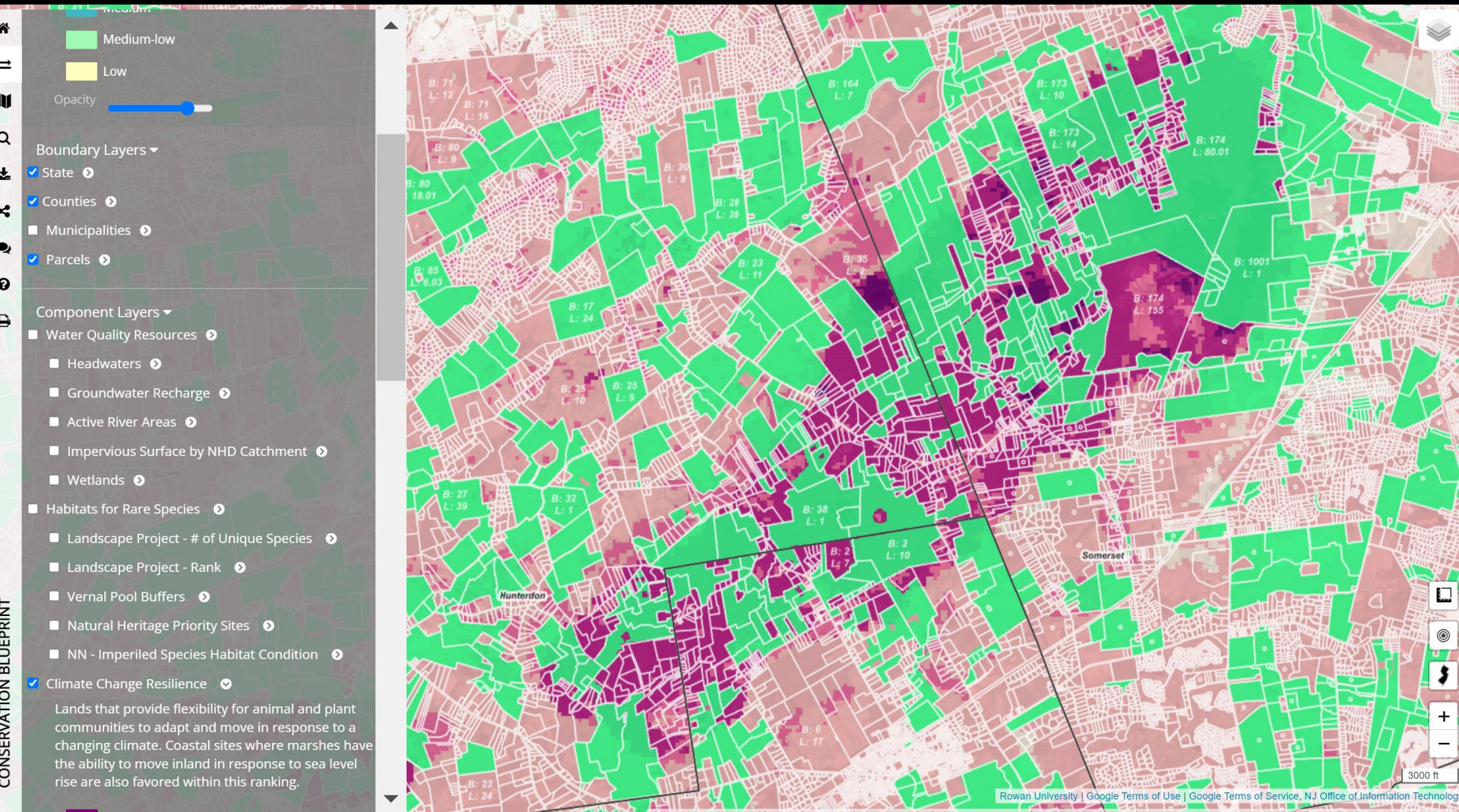


# Climate Change Resilience Sourlands! Preserved Open Space



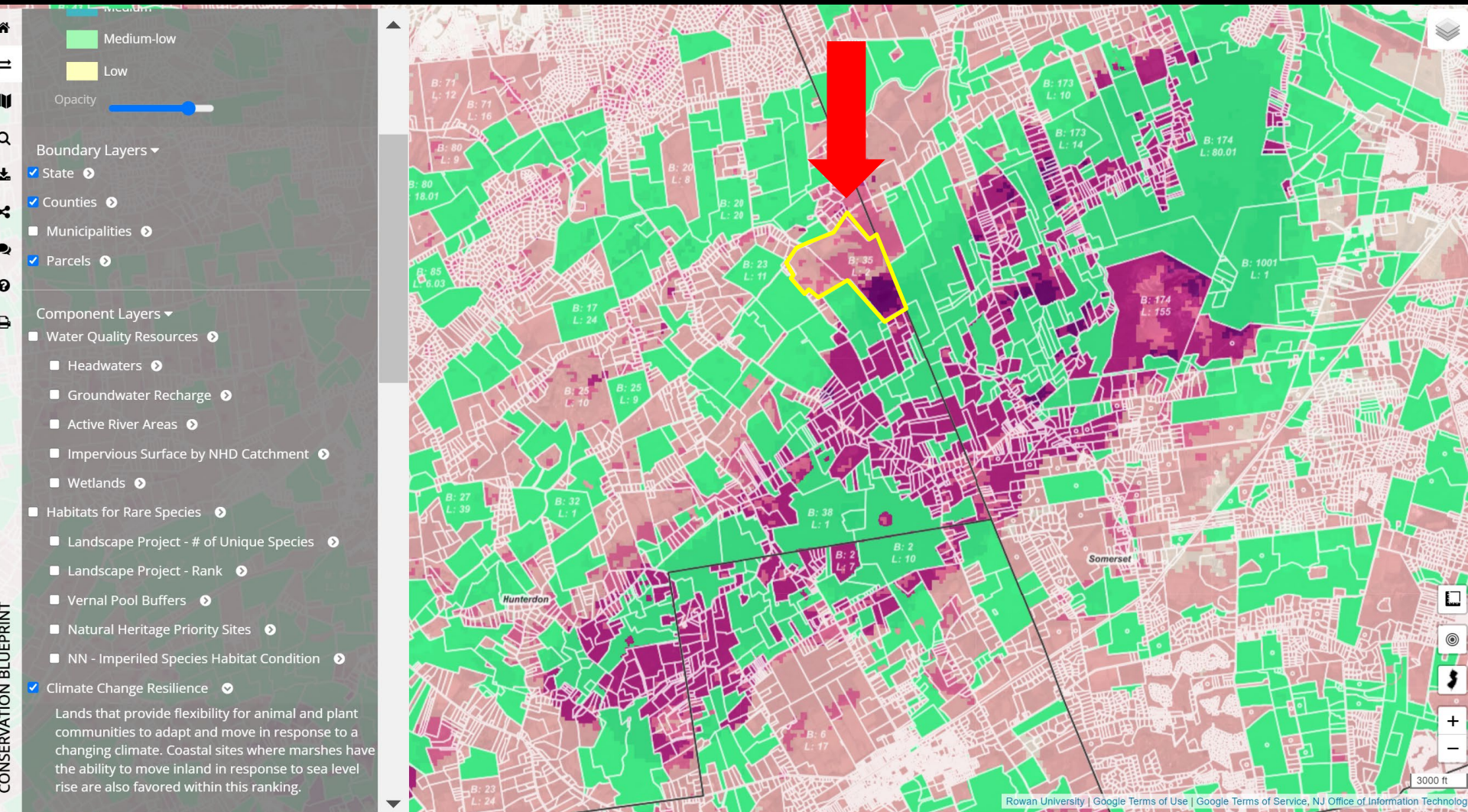


# Climate Change Resilience Sourlands! Parcel Maps!





# Climate Change Resilience Sourlands! Parcel Maps!





# Parcel Maps!

The screenshot displays the Parcel Explorer web application interface. The main map area shows an aerial view of a residential area with parcel boundaries overlaid in white. A specific parcel is highlighted with a blue border. The map includes labels for various parcels, such as "B: 21 L: 19", "B: 169 L: 5.05", "B: 171 L: 62.01", "B: 169 L: 4.03", "B: 169 L: 3", "B: 169 L: 5.02", "B: 171 L: 1", "B: 23 L: 11", "B: 35 L: 3", "B: 35 L: 2", "B: 35 L: 10", "B: 35 L: 10", "B: 35 L: 11", "B: 35 L: 13", "B: 35 L: 12", "B: 35 L: 63", "B: 35 L: 16", "B: 33 L: 15", "B: 34 L: 27", "B: 35 L: 10", "B: 35 L: 11", "B: 35 L: 12", "B: 35 L: 13", "B: 35 L: 10", "B: 35 L: 11", "B: 35 L: 12", "B: 35 L: 13", "B: 35 L: 10", "B: 35 L: 11", "B: 35 L: 12", "B: 35 L: 13".

The interface includes a sidebar menu on the left with the following items:

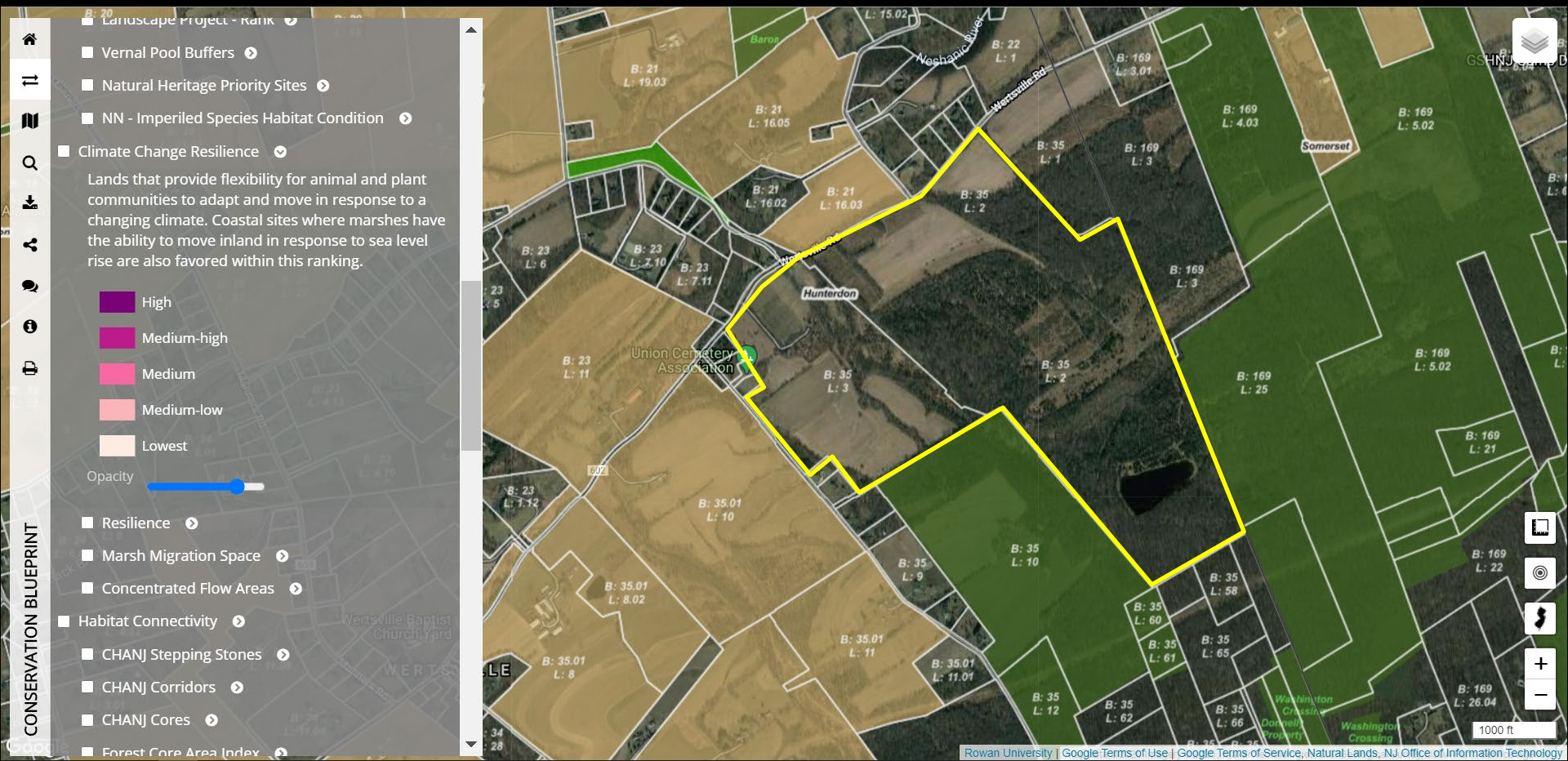
- Home
- Parcel Explorer
- Search
- Results
- Info
- 1008\_35\_2\_Q0229 (Download, Eye, Delete icons)
- East Amwell Twp Block: 35 Lot: 2 Qual:
- Q0229
- Tax Records
- Planning
- Open Space Preservation Status
- Farmland Preservation Status
- Measurements
- Impervious Surface (2015)
- Land Use/Cover 2015 - Detailed (Level 3)
- Land Use/Cover 2015 - General (Level 1)
- Farm Soil Classification
- HUC-11 Watersheds
- HUC-14 Watersheds
- Groundwater Recharge Rates
- Conservation Blueprint Models

The bottom right corner features a scale bar for 2000 ft and a "Parcel Opacity" slider.

At the bottom of the screen, the text reads: "Rowan University | Google Terms of Use | Google Terms of Service, NJ Office of Information Technology".



# Higgins / Wertsville Zoomed













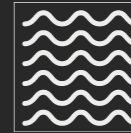
# Camden Conservation / Action Module



MAP

POWER USER

OPEN A MAP



WATER QUALITY



COMMUNITY OPEN SPACE



AGRICULTURE



ECOLOGICAL INTEGRITY



CAMDEN CONSERVATION BLUEPRINT

## Protecting New Jersey's Land and Legacy.

In New Jersey, the most densely populated state in the U.S., it is critically important to protect our healthy soils for growing food and the natural lands that safeguard our drinking water, clean our air, sustain wildlife and provide places for people to enjoy the outdoors.

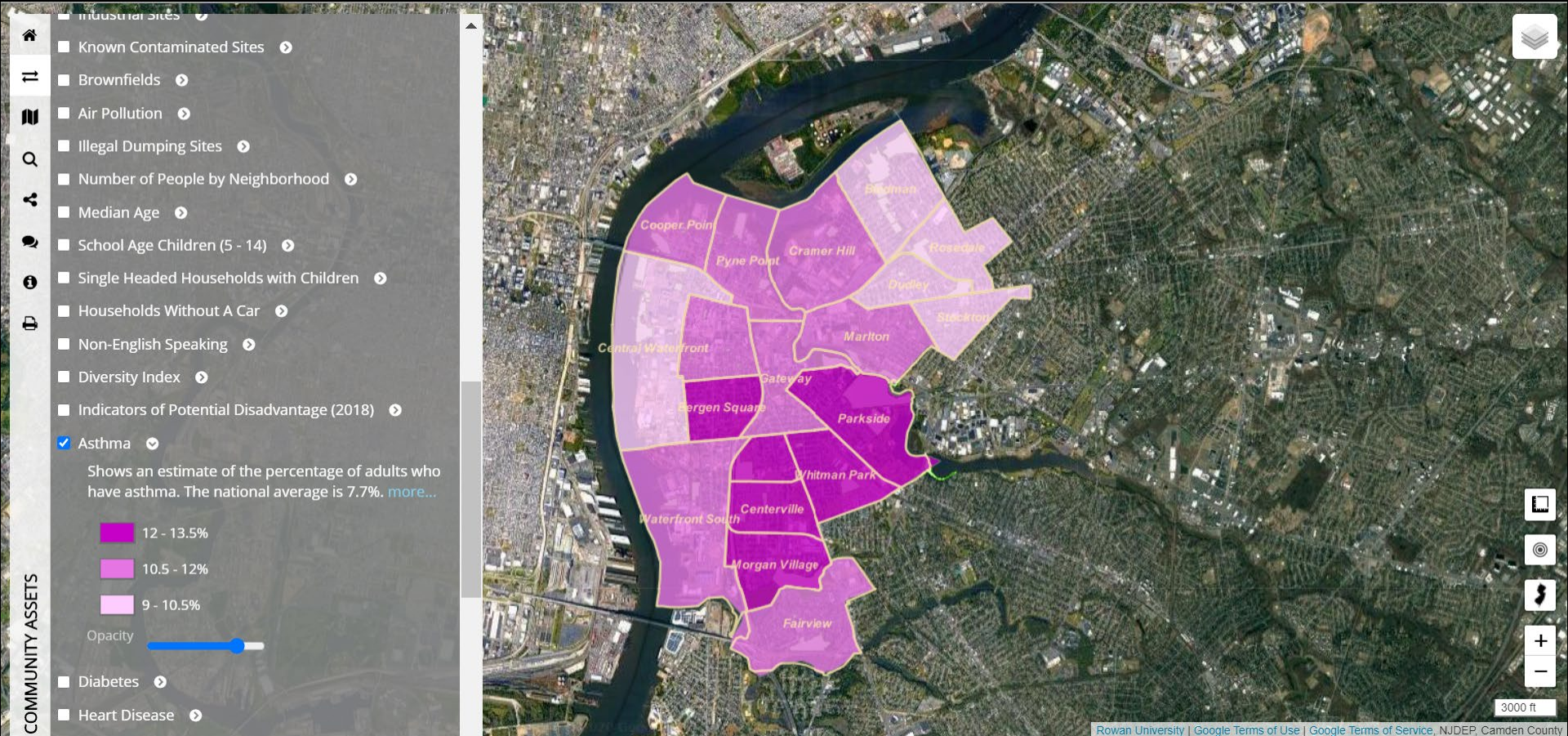
NJ Conservation Blueprint is a data-driven, interactive mapping tool made possible through a partnership of The Nature Conservancy, Rowan University, and the New Jersey Conservation Foundation, together with a collective of 21 conservation-focused groups, both governmental and non-profits.

# Camden Landing Page



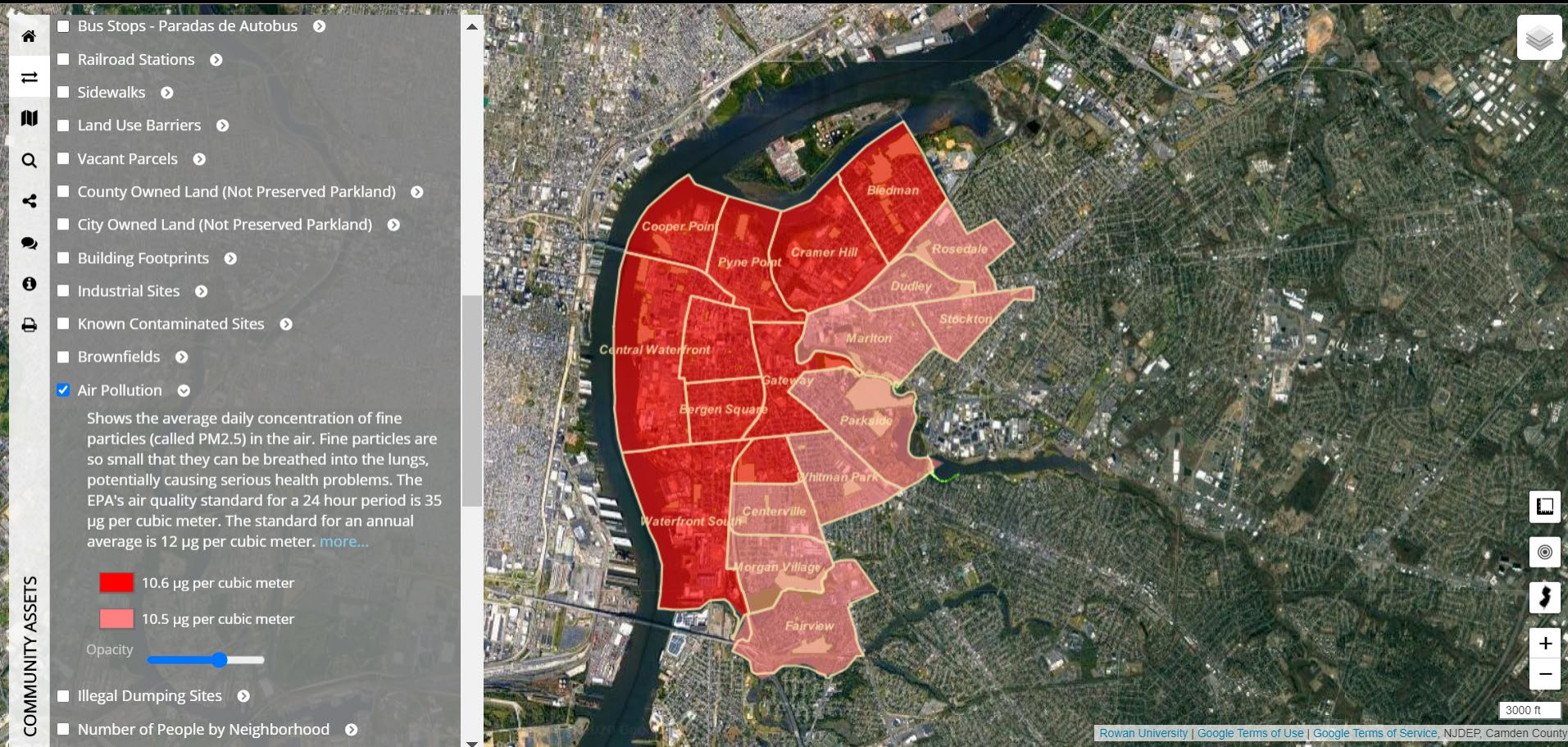


# Camden Asthma



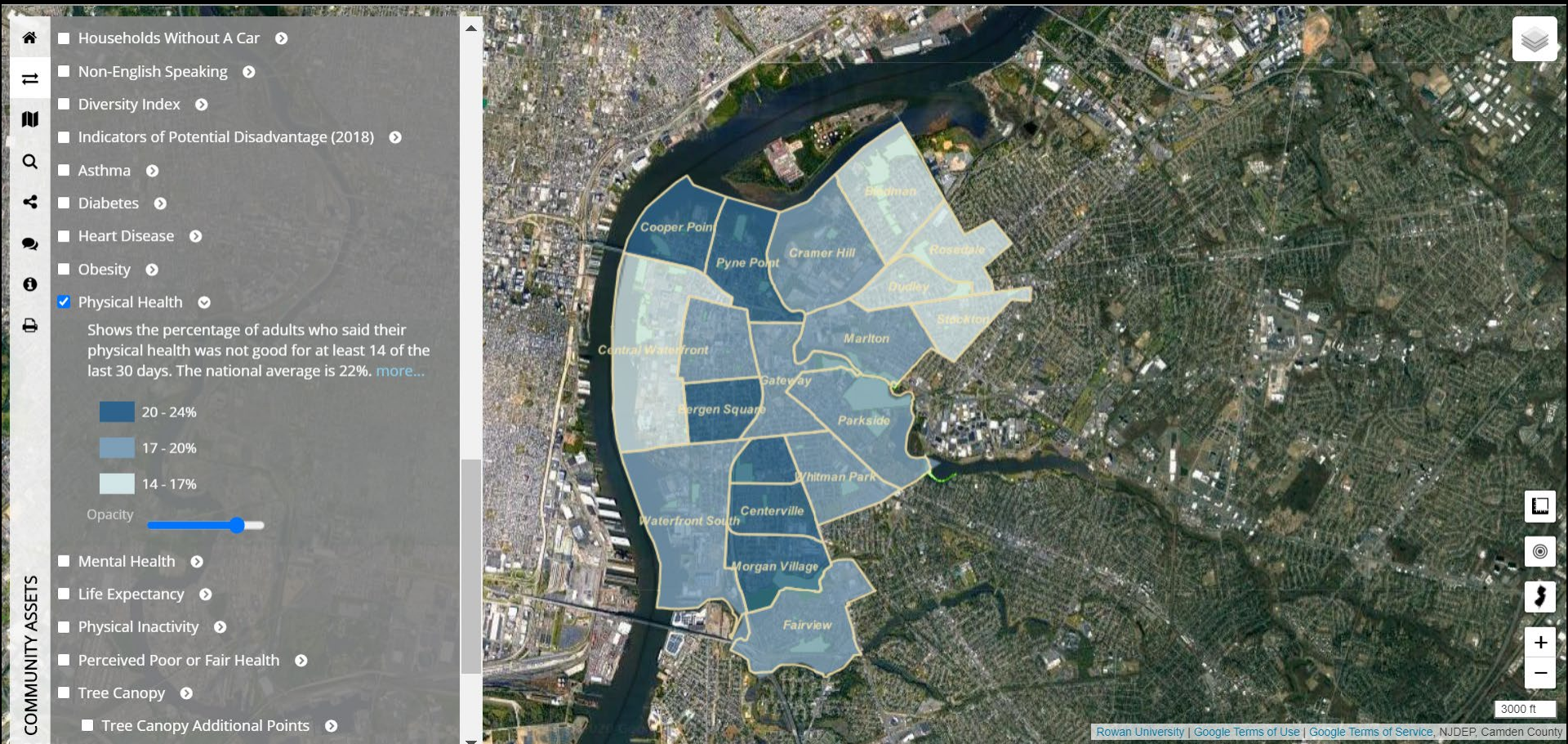


# Camden Air Pollution



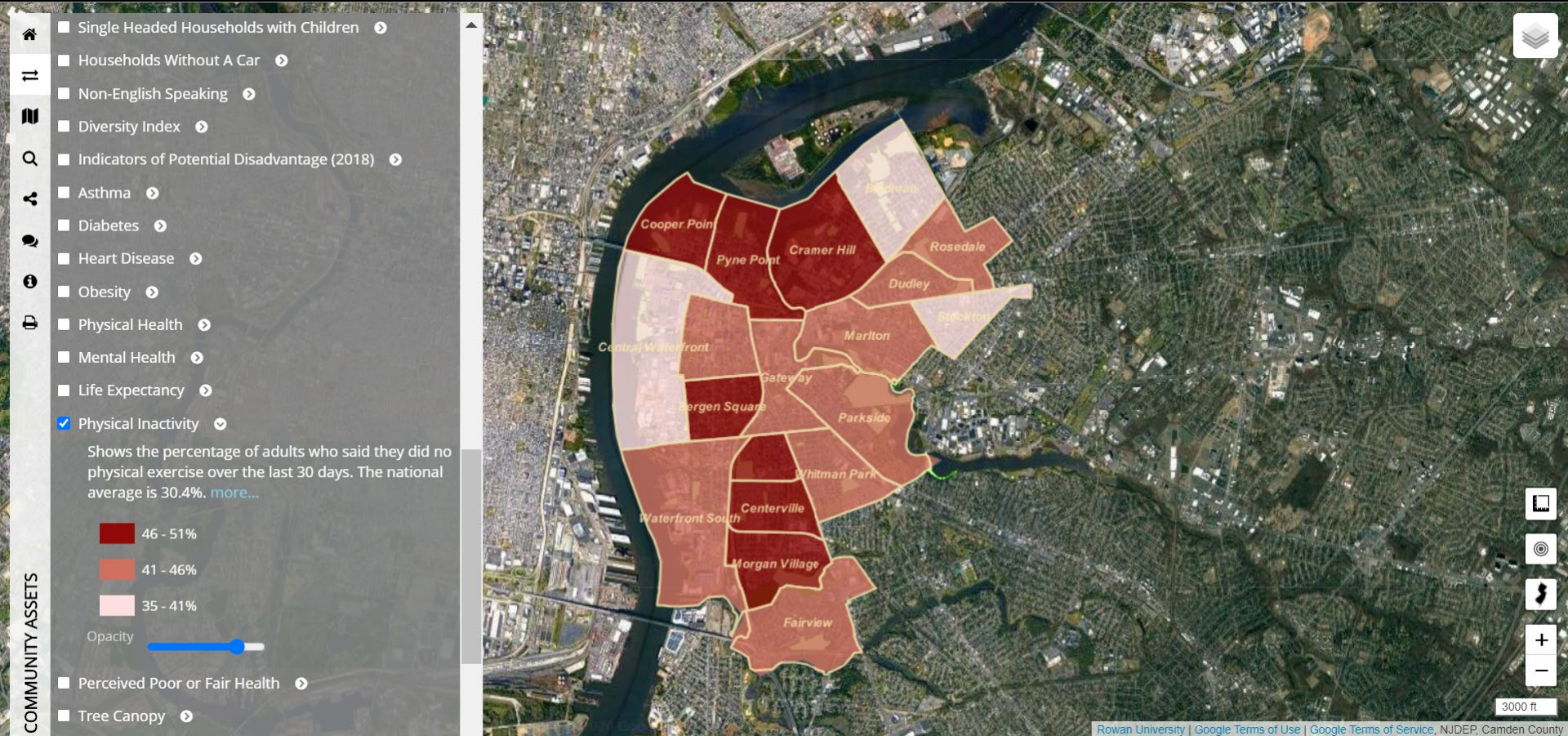


# Camden Physical Health



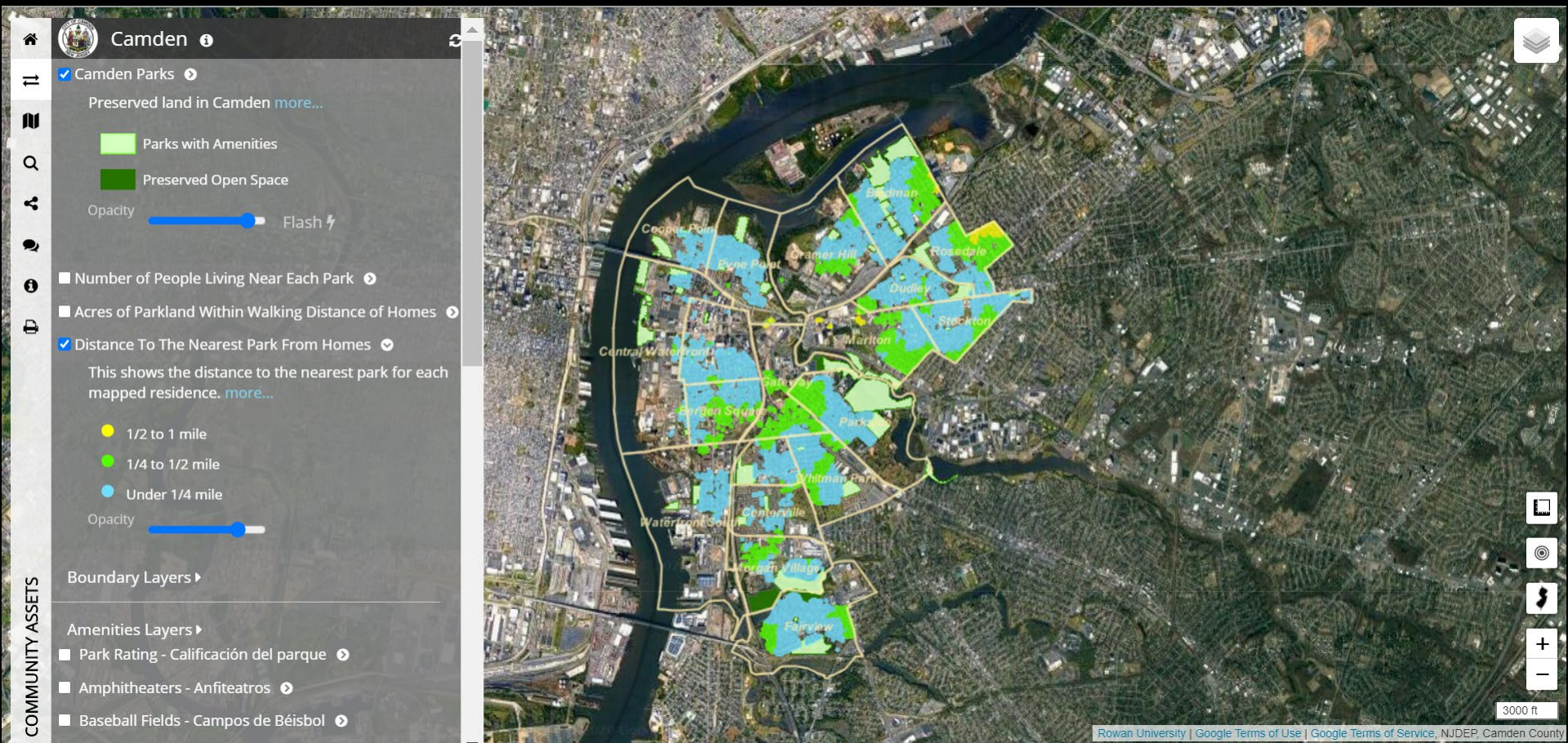


# Camden Physical Inactivity



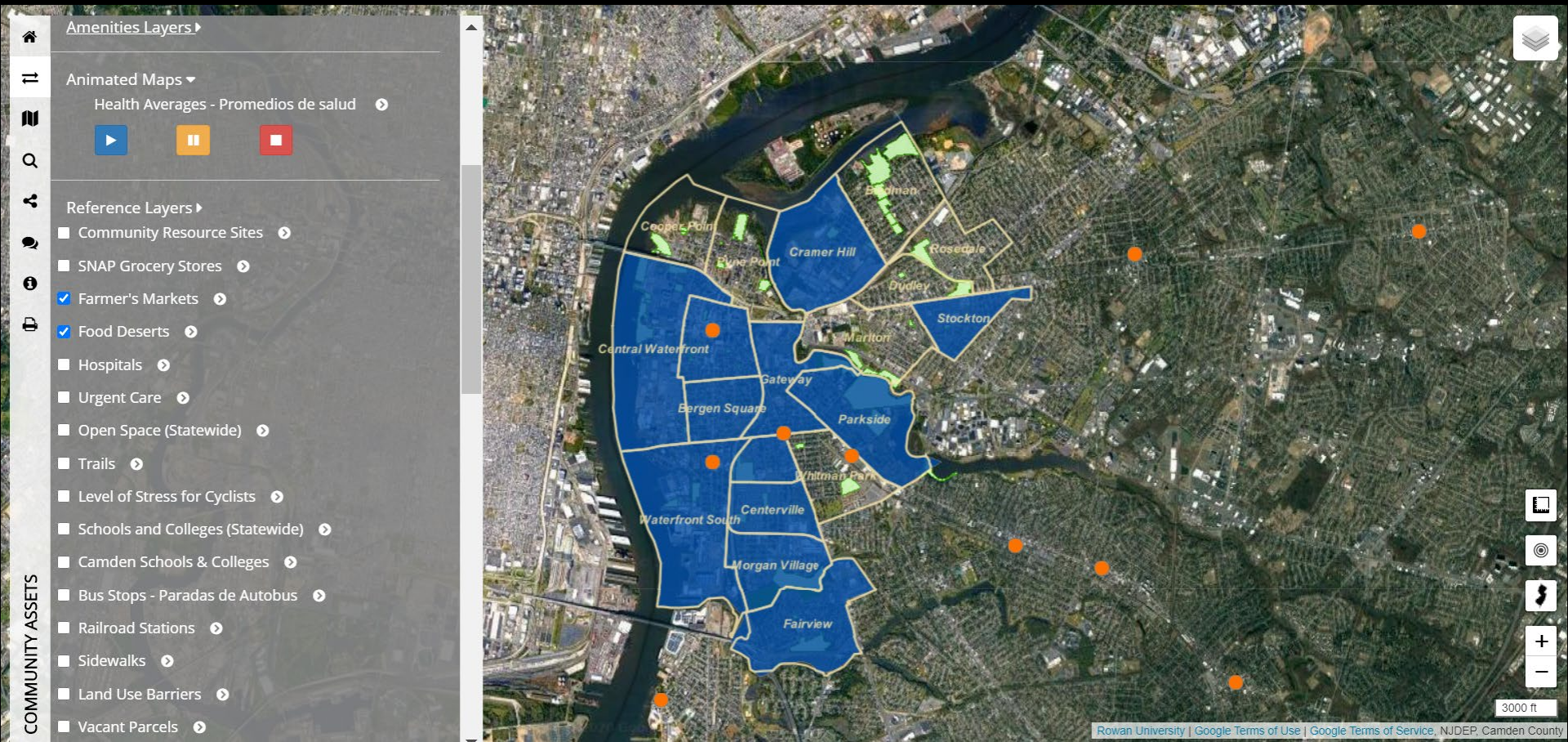


# Distance from Nearest Park – From Homes





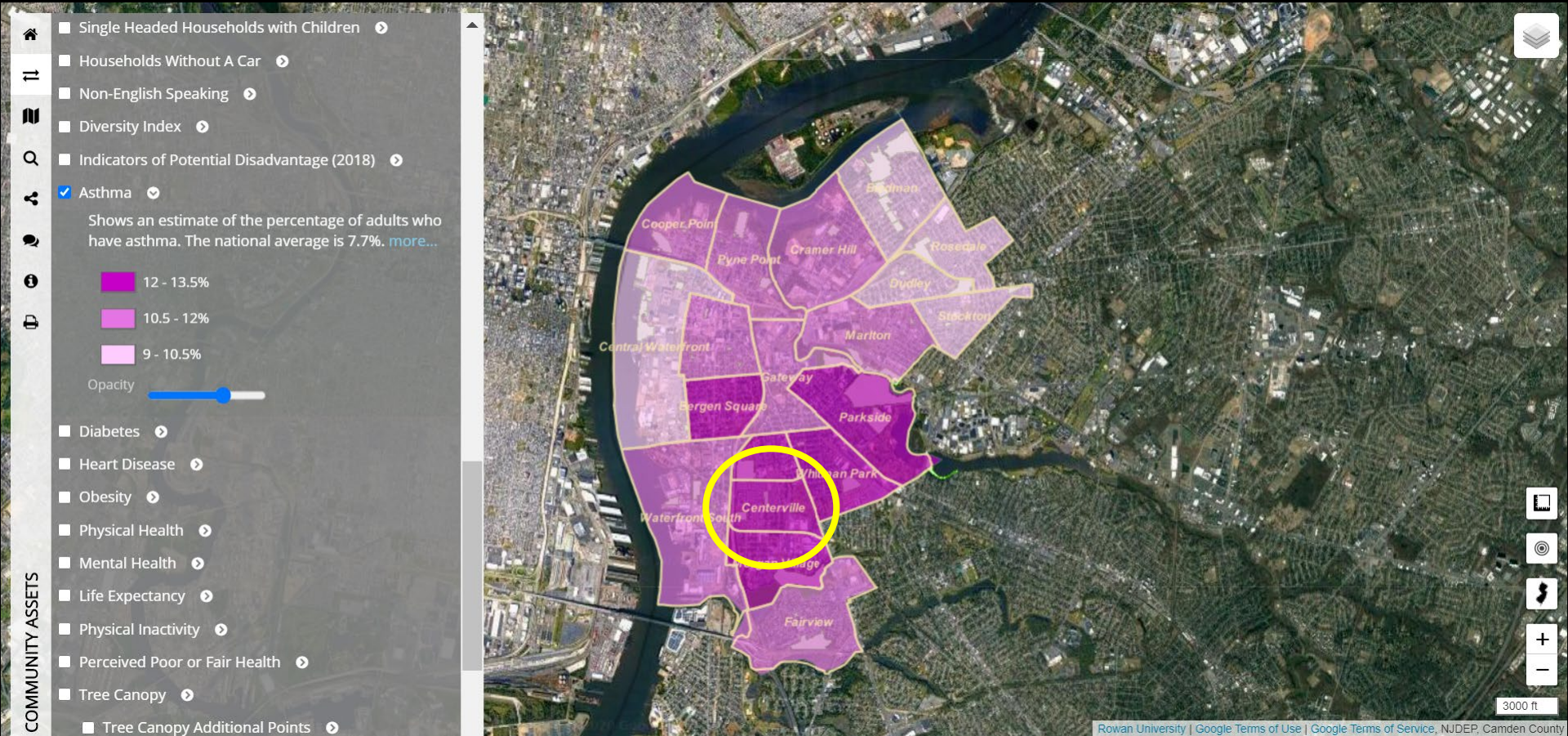
# Food Desserts / Farmers Markets





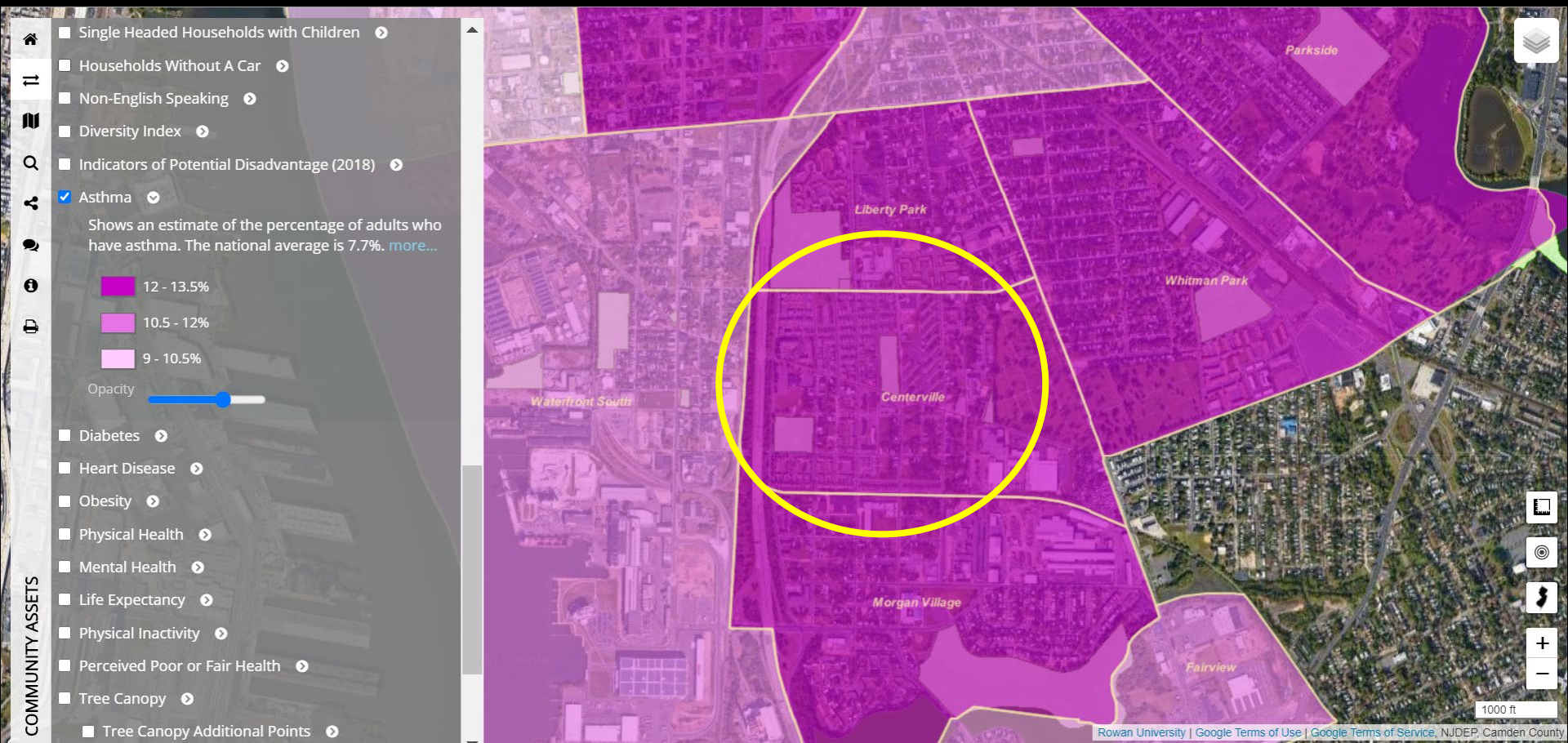
# Application Example

## Asthma Rates Citywide



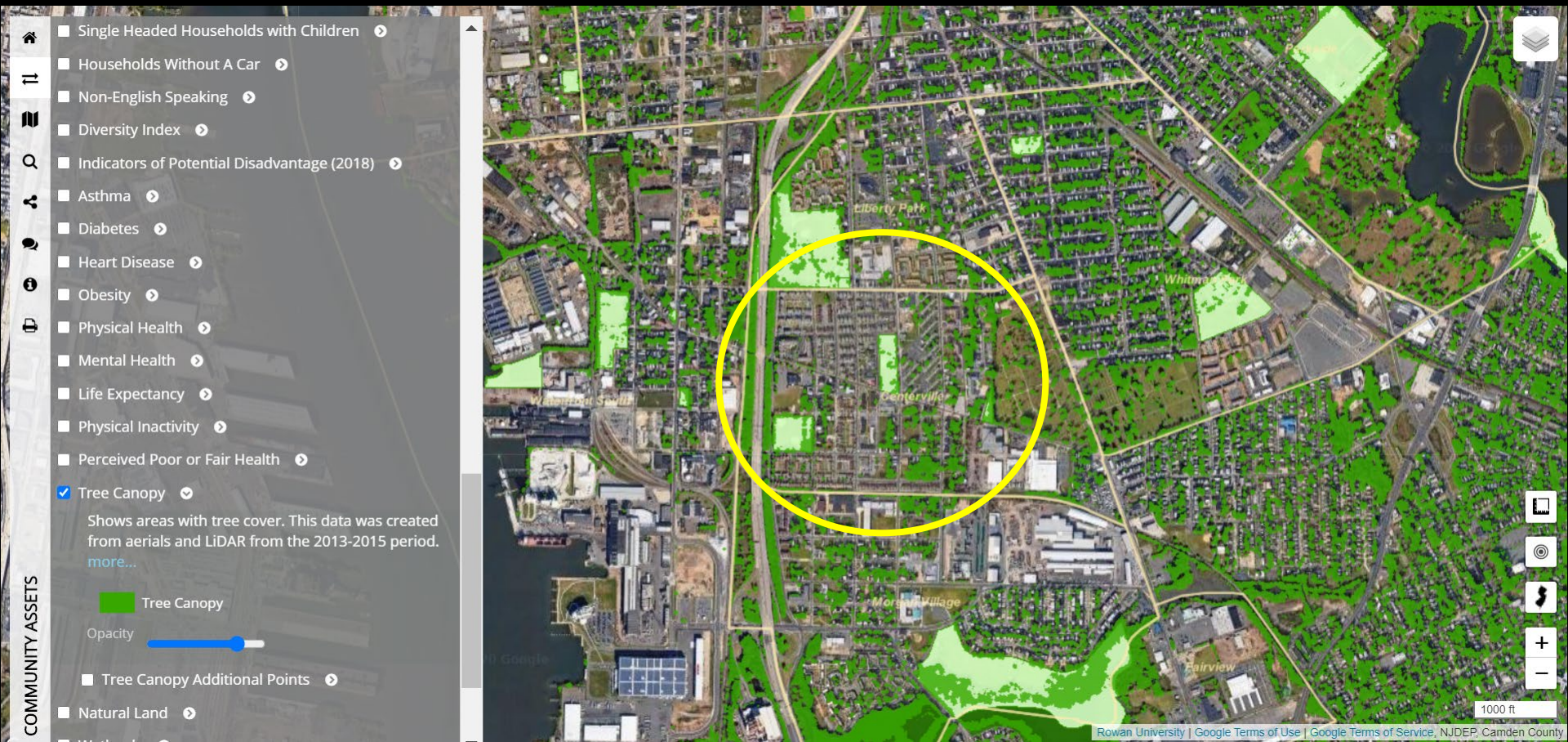


# Zoomed in Centerville Asthma Rates





# Zoomed in Centerville Tree Canopy






# Tree planting opportunity ???





# Trenton Green Infrastructure



**NEW JERSEY  
CONSERVATION  
BLUEPRINT**  
engage. protect. restore.

MAP

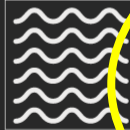




## Protecting New Jersey's Land and Legacy.

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POWER USER ✕

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-   
WATER QUALITY
-   
COMMUNITY OPEN SPACE
-   
AGRICULTURE
-   
ECOLOGICAL INTEGRITY
-   
CAMDEN CONSERVATION BLUEPRINT



# Community Green Space ⓘ



## Priority Lands for Community Green Space ⌵



Identifies lands that are important to protect the health of people—natural and agricultural lands close to people's residences, undeveloped lands in floodplains. [more...](#)



Highest Priority [14-19 pts]



High Priority [11-13 pts]



Medium Priority [8-10 pts]

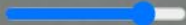


Priority [6-7 pts]



Important [4-5 pts]

Opacity

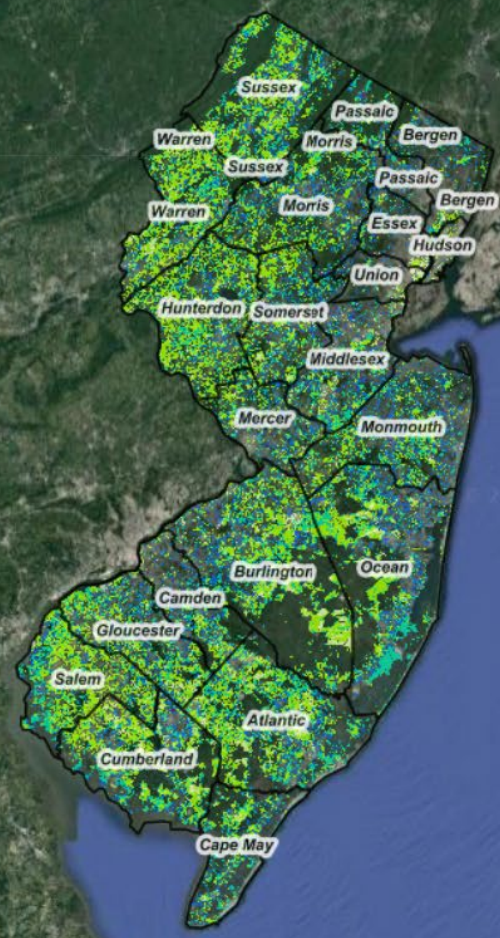


Boundary Layers ▶

Component Layers ▶

Animated Maps ▶

Reference Layers ▶



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## Community Green Space ?



### Priority Lands for Community Green Space ▶

Identifies lands that are important to protect the health of people—natural and agricultural lands close to people's residences, undeveloped lands in floodplains. [more...](#)

- Highest Priority [14-19 pts]
- High Priority [11-13 pts]
- Medium Priority [8-10 pts]
- Priority [6-7 pts]
- Important [4-5 pts]

Opacity

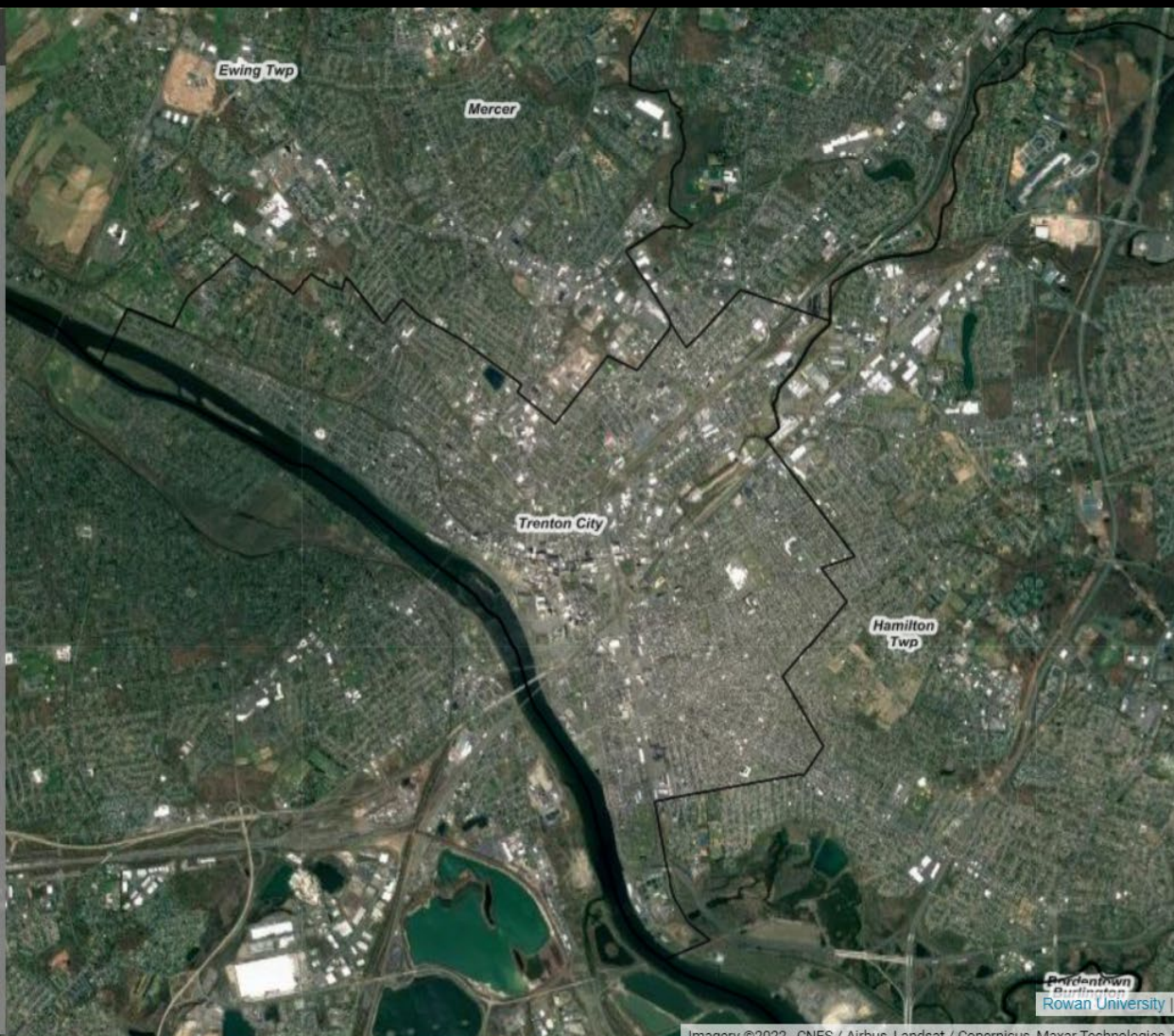
### Boundary Layers ▶

- State ▶
- Municipalities ▶
- Counties ▶
- Parcels ▶

### Component Layers ▶

### Animated Maps ▶

### Reference Layers ▶







Component Layers ▾

- Land Use Potential for Green Space ▶
- Tax Use Code Potential by Parcel for Green Space ▶
- Population Density Tiers ▶
- Flood/Water Corridor ▶
- Green Infrastructure Augmentation ▼
  - Land areas adjacent to existing Green Infrastructure (preserved open space, recreational lands, schools and trails). [...less](#)
  - 1 point assigned for land areas within 300 feet of each of the following:
    - \* Preserved Open Space
    - \* Recreational Lands
    - \* School Properties
  - 1 point assigned for land areas with 75 feet of an identified trail

Preserved and Urbanized Lands Mask ▶

Animated Maps ▾

Green Space Accessibility ▶








- Municipalities
- Counties
- Parcels


---

Component Layers

- Land Use Potential for Green Space
- Tax Use Code Potential by Parcel for Green Space
- Population Density Tiers
- Flood/Water Corridor

Represents waterway corridors that may provide natural linkages for open space infrastructure and provide benefits for potential flood mitigation. [more...](#)

-  3 points
-  2 points
-  1 point




Opacity 

- Green Infrastructure Augmentation
- Preserved and Urbanized Lands Mask

---

Animated Maps

- Green Space Accessibility





1 point

Opacity

- Green Infrastructure Augmentation >
- Preserved and Urbanized Lands Mask >

Animated Maps ▾

Green Space Accessibility >

Reference Layers ▾

- BETA Blueprint Open Space Composite >
- Overburdened Communities >
- Land Use 2015 (Anderson Use Codes) >
- Land Use 2012 (Anderson Use Codes) >
- Pinelands Management Areas >
- Parcel Mod IV Class Codes >
- DRWI Clusters & Focus Areas >
- Urban Census Tracts >
- Recreational and Athletic Fields >
- Highlands Planning and Preservation Areas >
- School Parcels >
- Residential Units >
- Residential Units (White) >

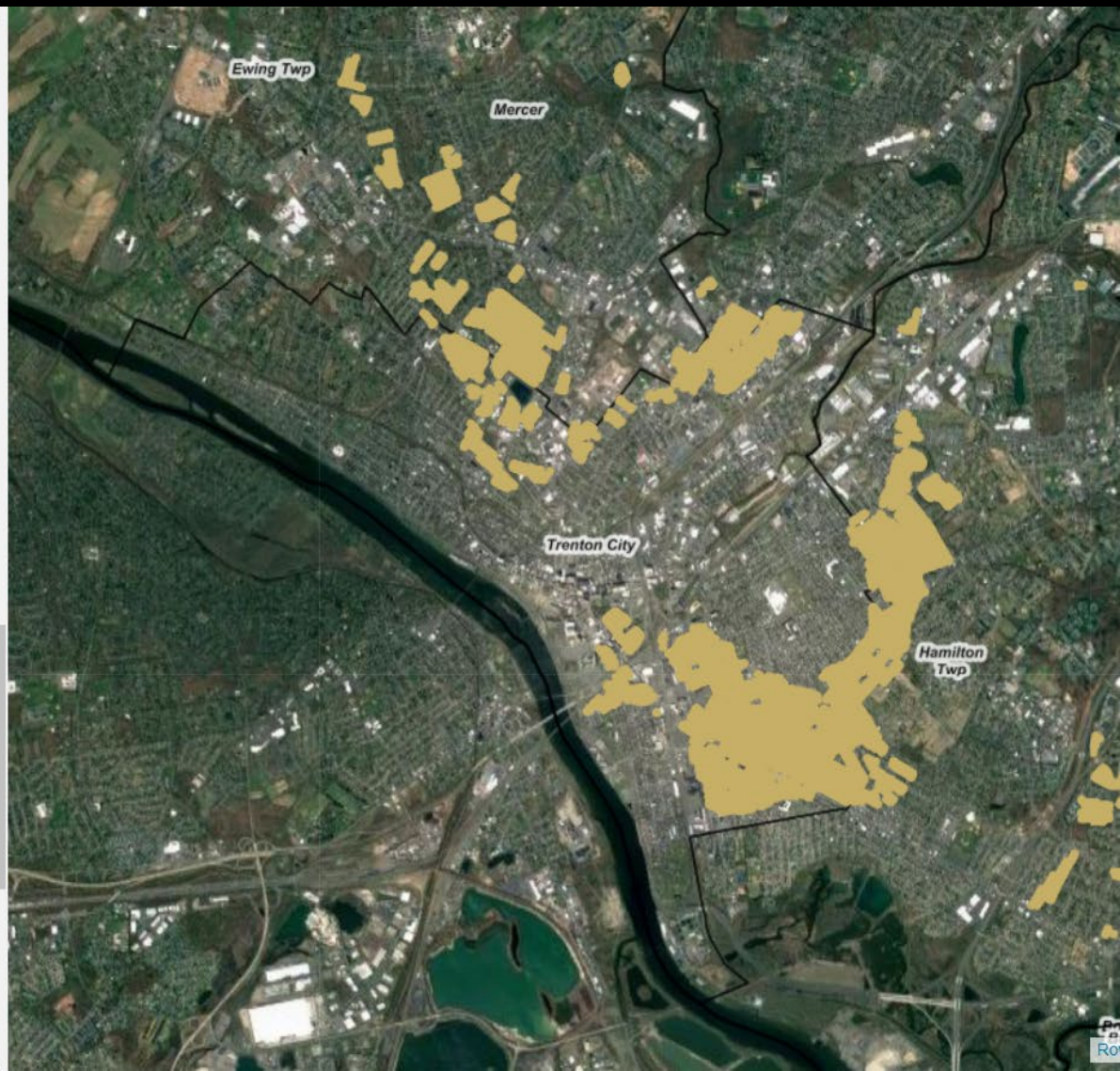
CONSERVATION BLUEPRINT







- Residential Units (White) ▶
- Residences Remote from Greenspace ▶
- Acres of Green Space within 1/2 mile ▶
- Urban Greenspace Desert ▼  
This layer identifies residences in population dense areas with less than 25 total acres of greenspace within a half mile walk.  
  - Residential Units
  - Opacity
- Archaeological Sites ▶
- Brownfields ▶
- County Road Sidewalks ▶
- Floodplains ▶
- Golf Courses ▶
- Historic Districts and Properties ▶
- Land Use Barriers ▶
- Median Age, Male / Female ▶
- Median Household Income ▶
- Natural Land ▶
- Non-highway Roads (Connectors) ▶
- Percent Non-White ▶
- Population Density by Block ▶
- Population Density by Tract ▶

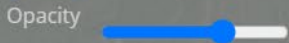




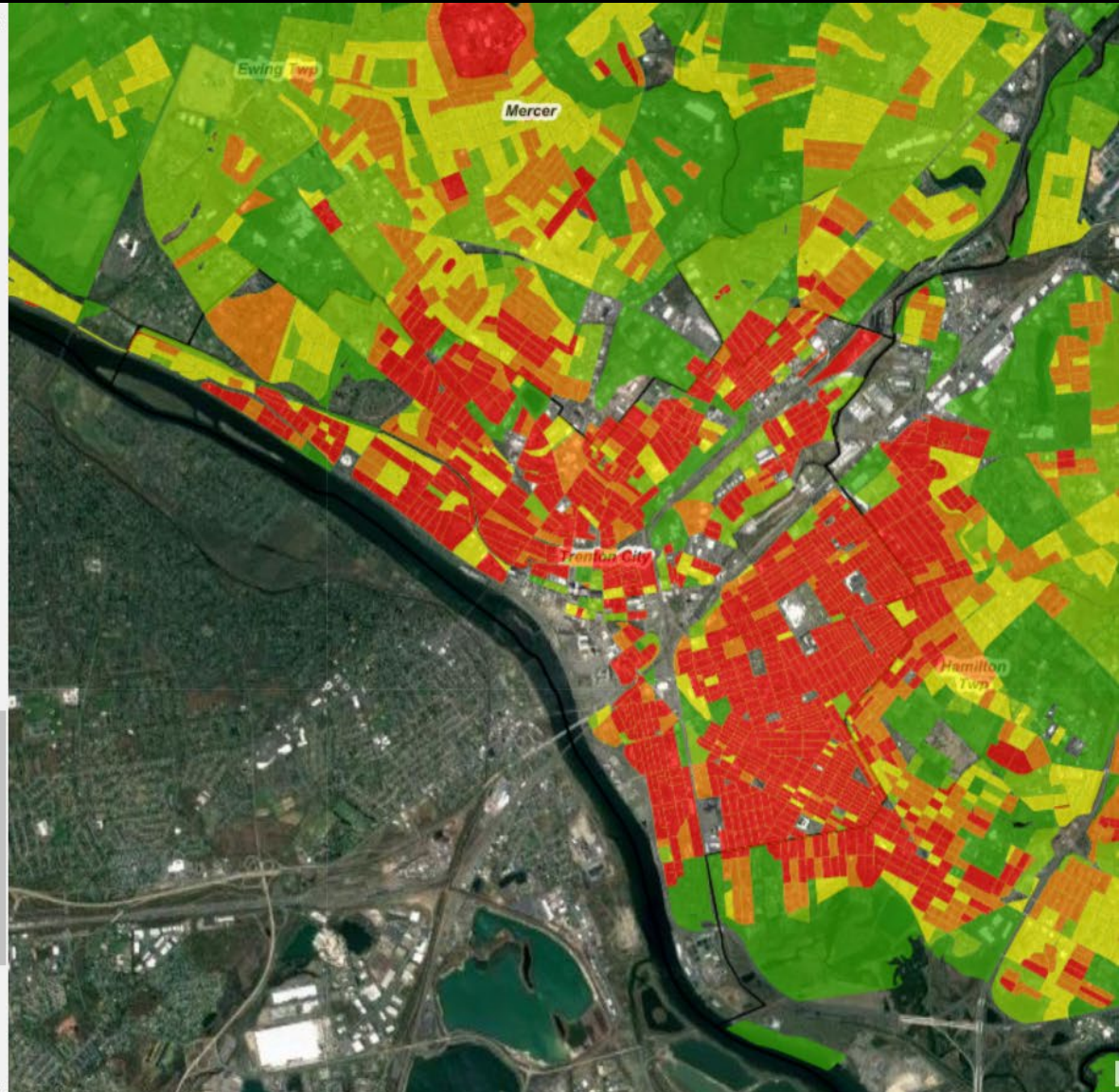


- Historic Districts and Properties
- Land Use Barriers
- Median Age, Male / Female
- Median Household Income
- Natural Land
- Non-highway Roads (Connectors)
- Percent Non-White
- Population Density by Block

This layer was created by joining the 2010 Census Bureau data to the block level TIGER/Line shapefiles for New Jersey. Total population was divided by the area in square miles of each block.



- Population Density by Tract
- Preserved Farmland
- Public Property Parcels
- Regional Railroads
- Regional Railroad Stations





# Treeequityscore.org



treeequityscore.org



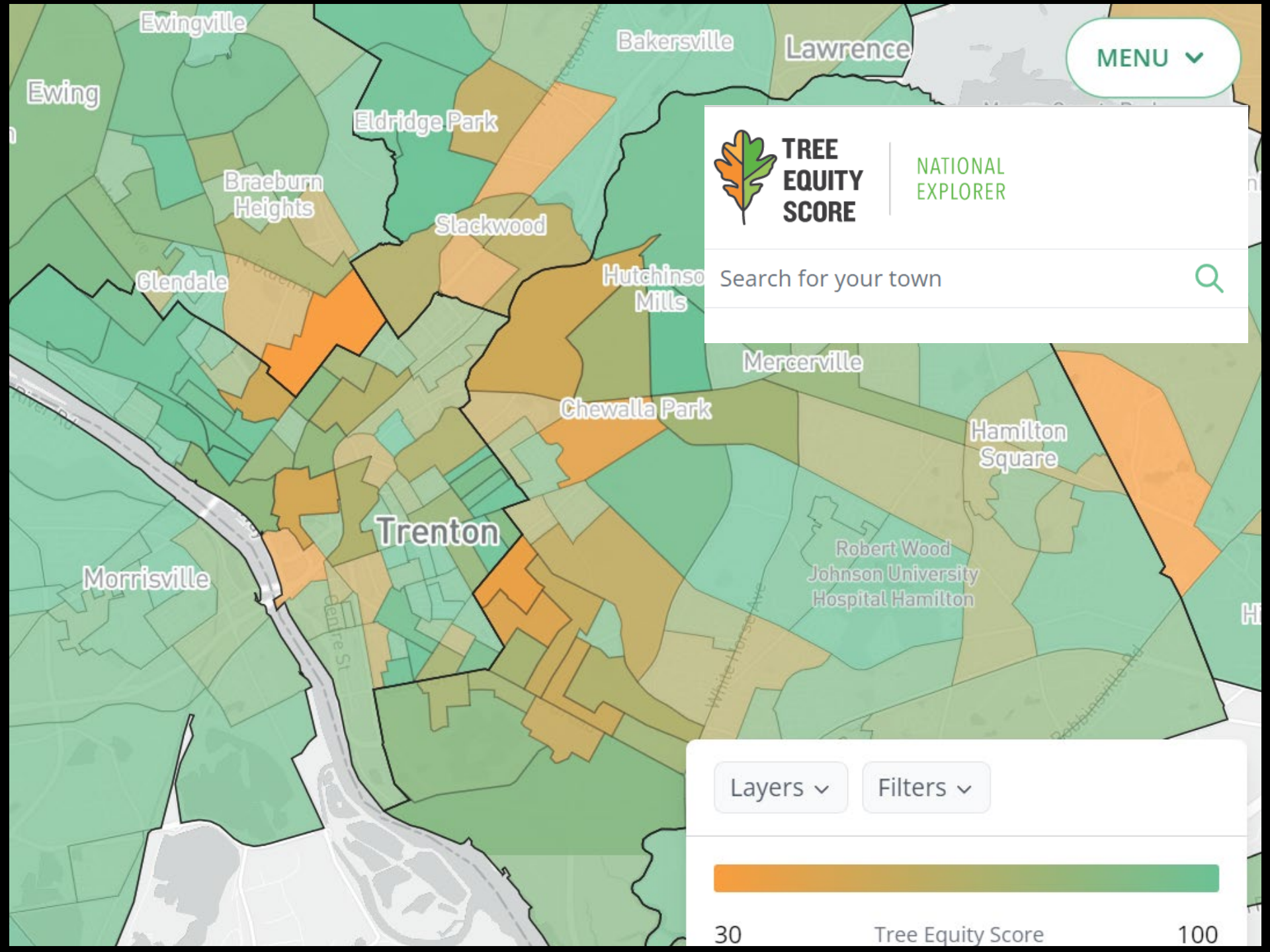
MENU ▾

MAP

Find your score and help create  
Tree Equity in cities and towns  
across America.

Search for your town TRENTON, NJ





MENU ▾



**TREE  
EQUITY  
SCORE**

NATIONAL  
EXPLORER

Search for your town

Layers ▾

Filters ▾

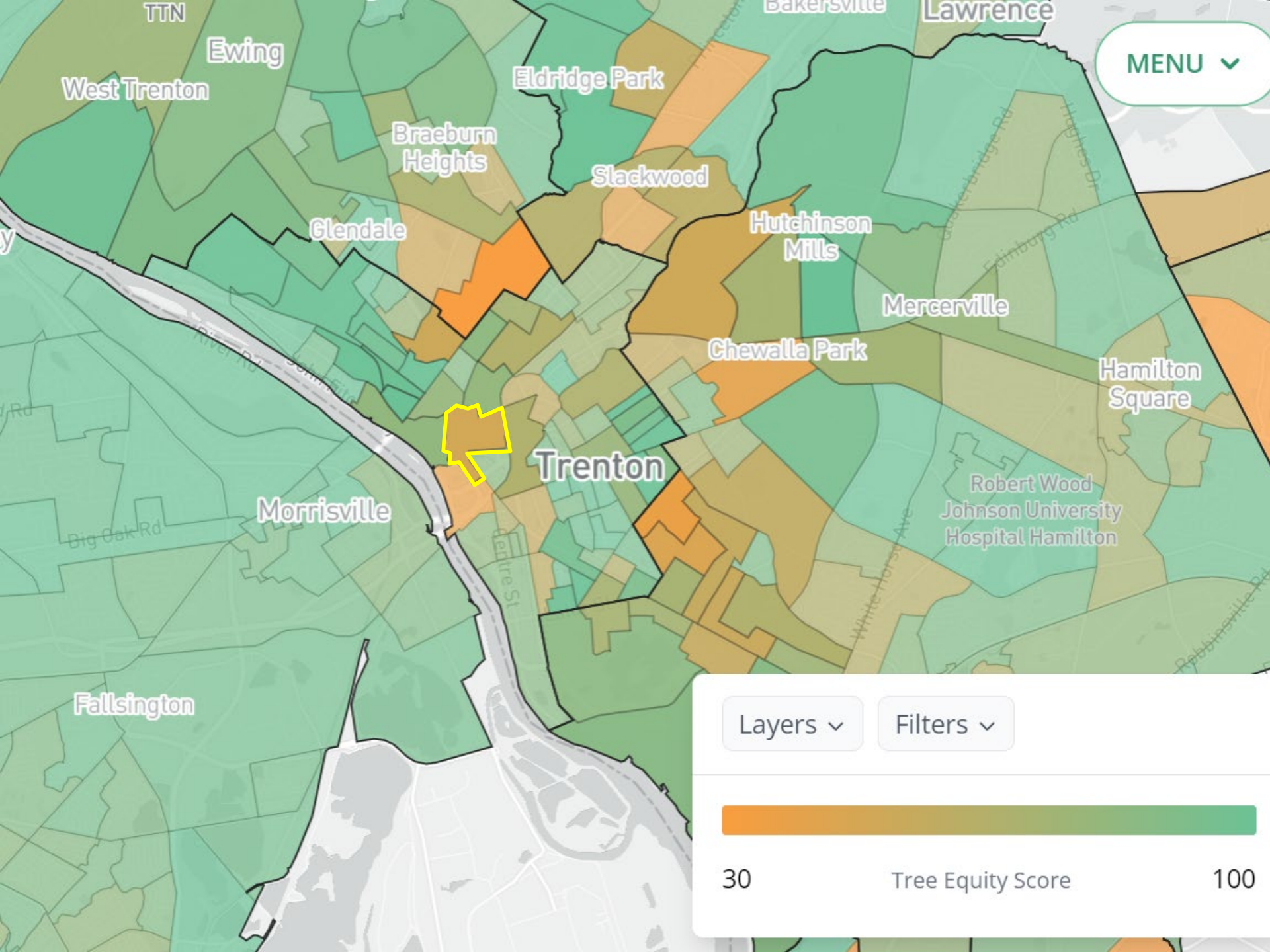


30

Tree Equity Score

100





MENU ▾

Layers ▾

Filters ▾



30

Tree Equity Score

100

# 49

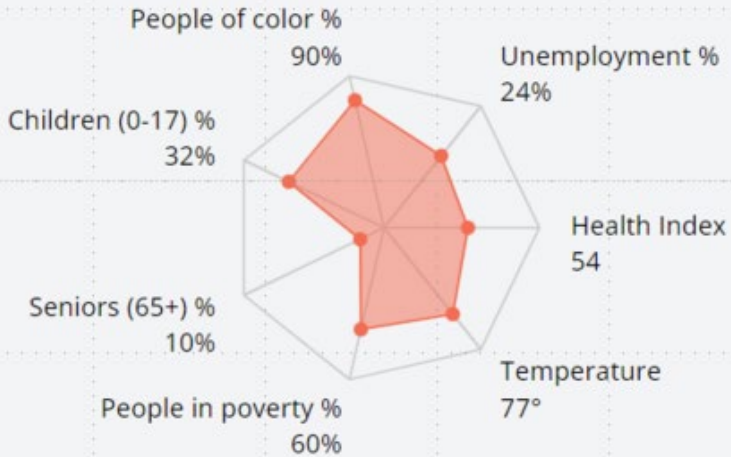
Tree Equity Score ?

RANK

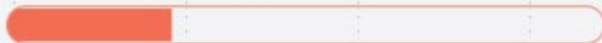
69th of 70 blockgroups in Trenton

### Score indicators

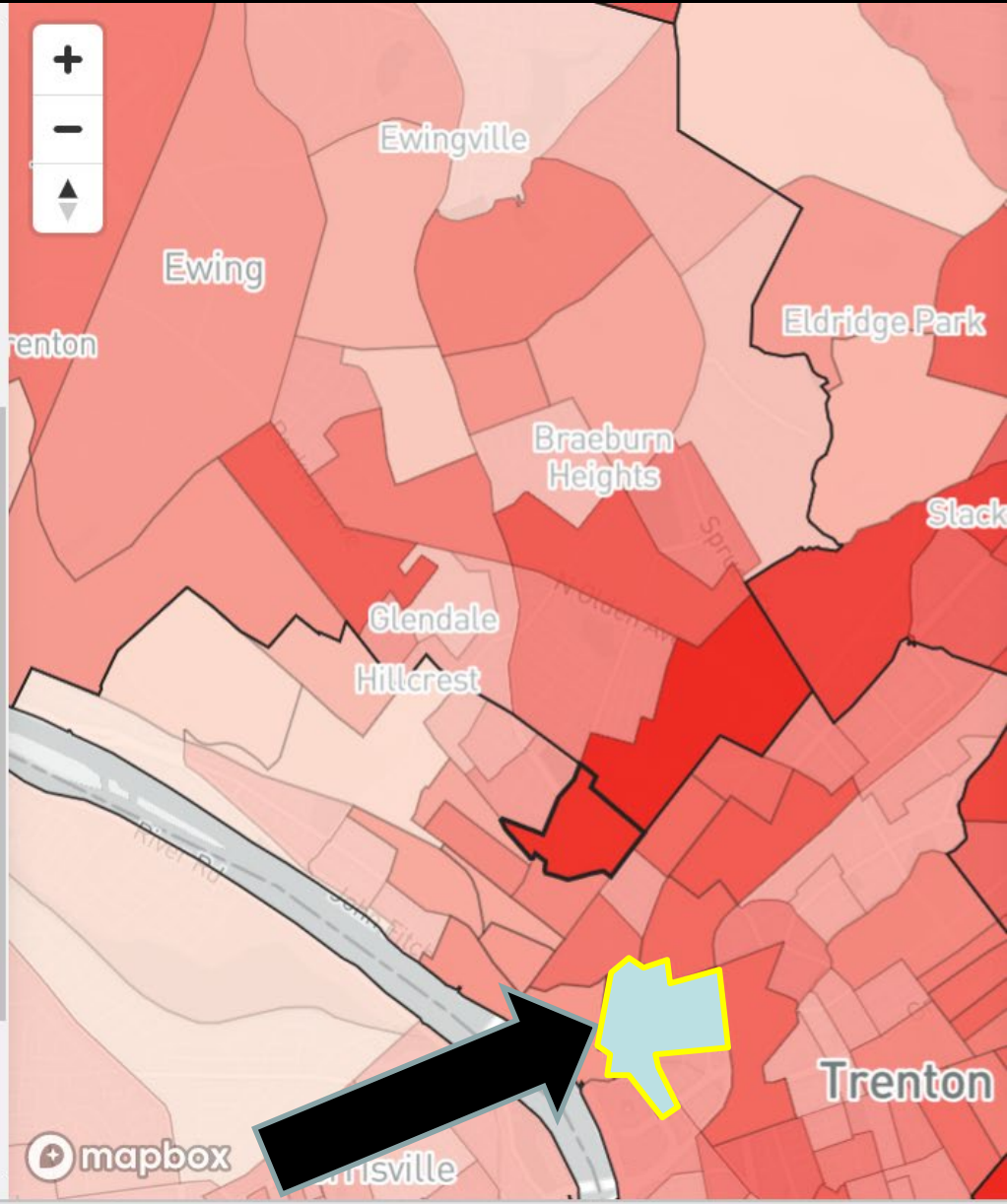
#### Priority index ?



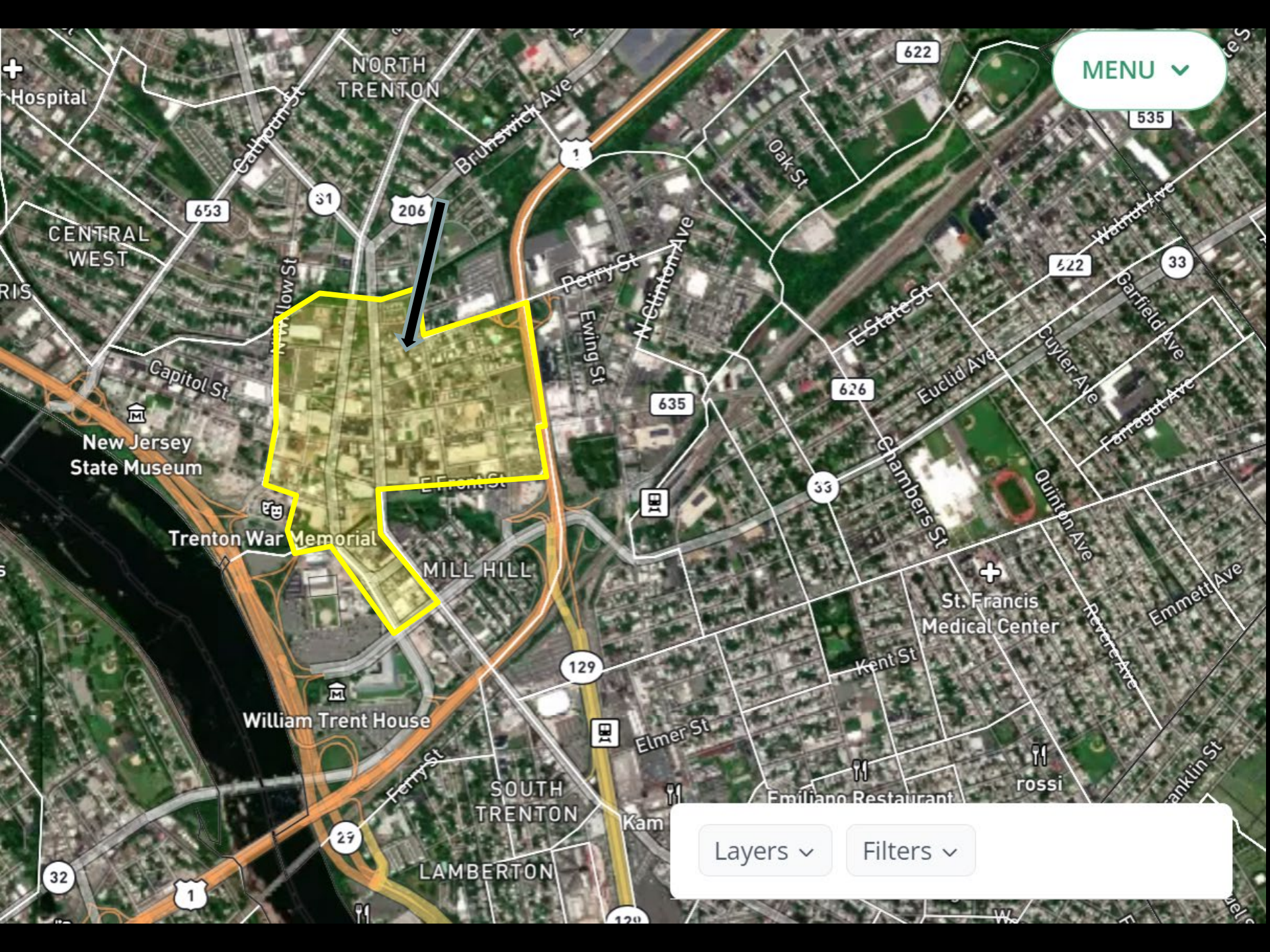
Canopy cover goal: 40%



Current canopy cover: 11%



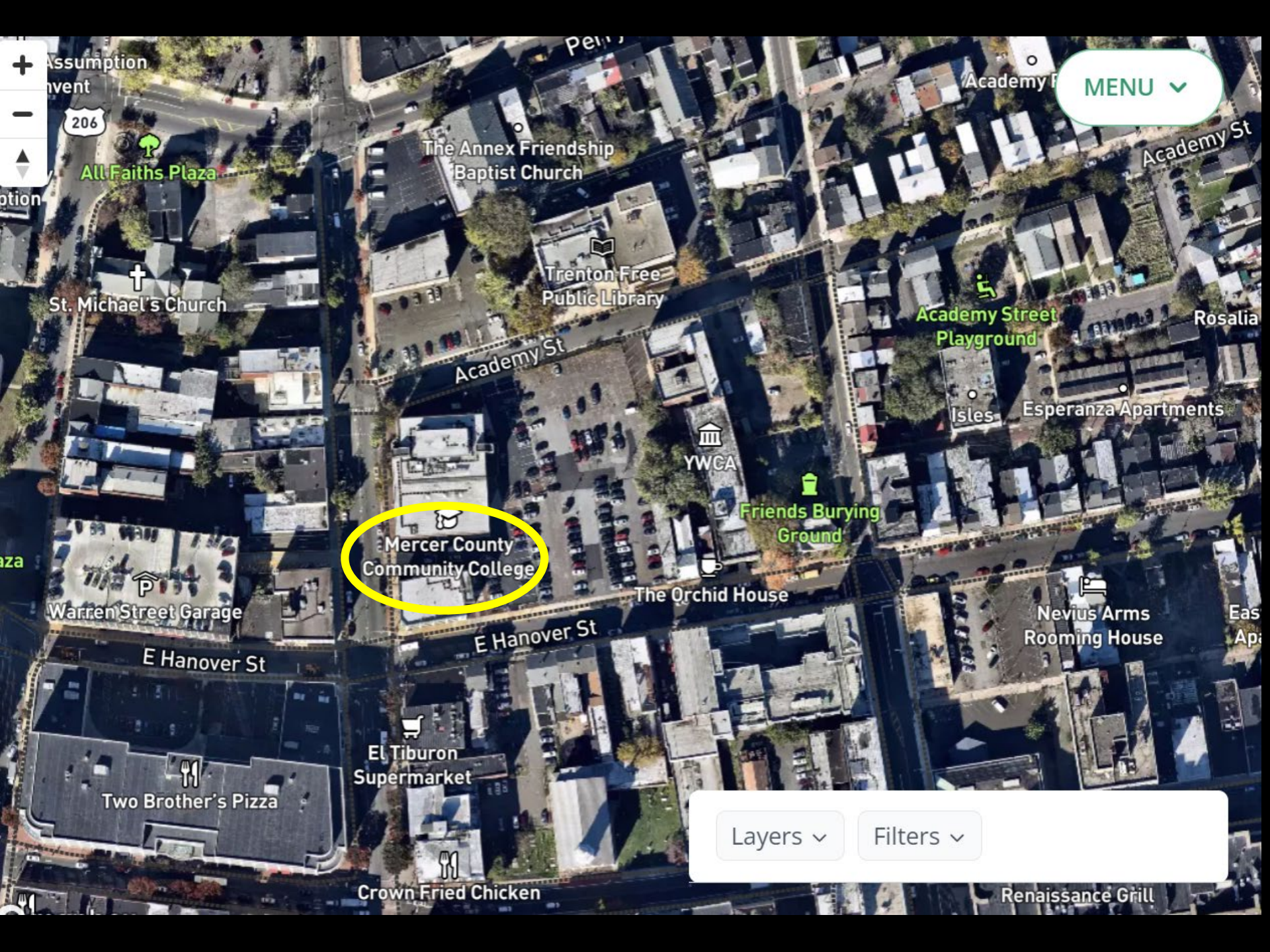




MENU ▾

Layers ▾ Filters ▾





MENU ▾

Mercer County  
Community College

Layers ▾

Filters ▾

Assumption  
Invent

206

All Faiths Plaza

St. Michael's Church

The Annex Friendship  
Baptist Church

Trenton Free  
Public Library

Academy St

Academy Street  
Playground

Rosalia

Esperanza Apartments

YWCA

Friends Burying  
Ground

Warren Street Garage

Mercer County  
Community College

The Orchid House

Nevius Arms  
Rooming House

E Hanover St

E Hanover St

El Tiburon  
Supermarket

Two Brother's Pizza

Crown Fried Chicken

Renaissance Grill



Trenton Battle Monument



North 25 Park

Cathedral of St. Mary  
of the Assumption



Trenton Free  
Public Library



Mercer County  
Community  
College  
James...



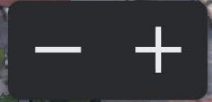
Daylight/Twilight  
Alternative High School



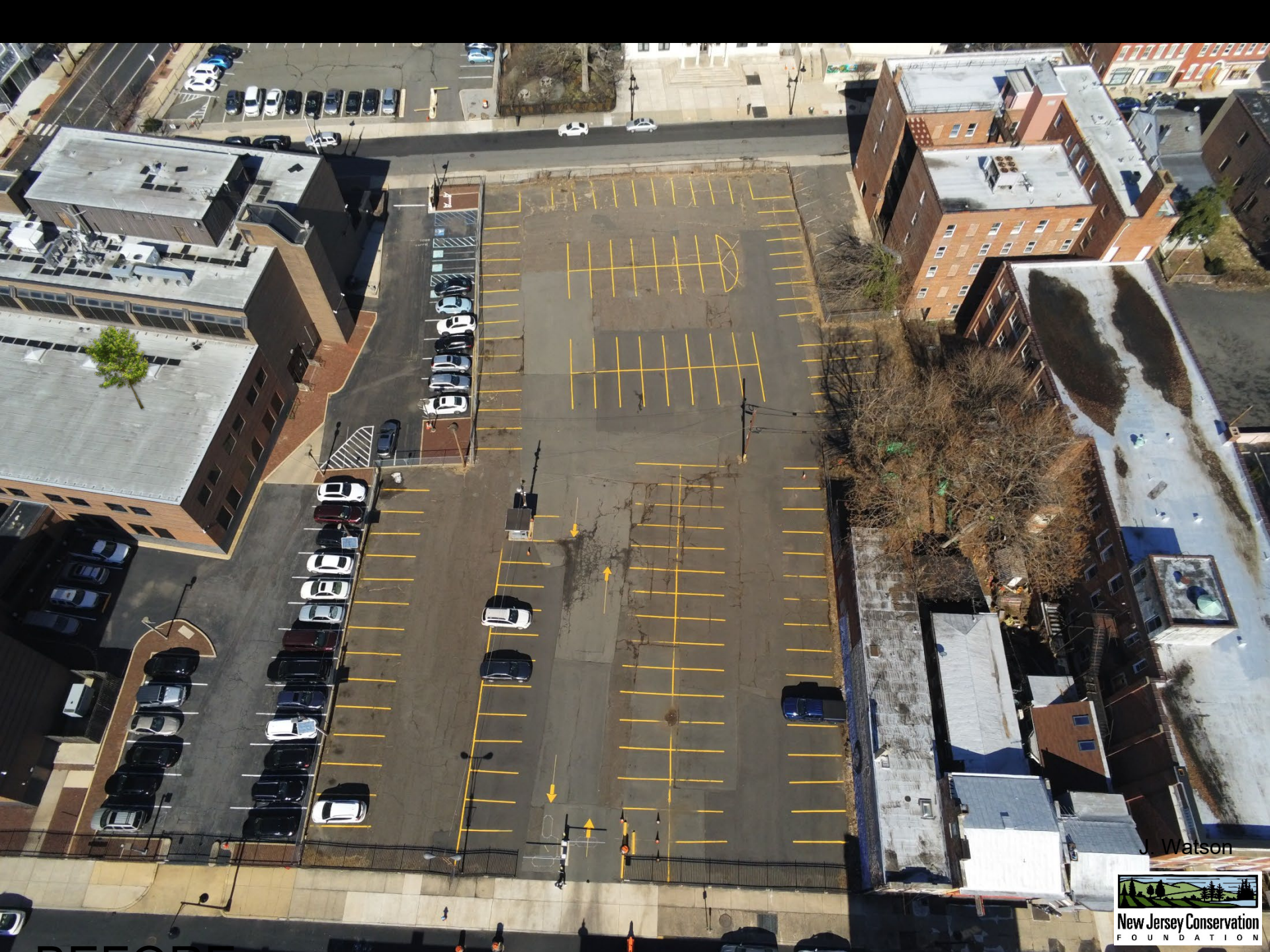
Project Area



2D







J. Watson







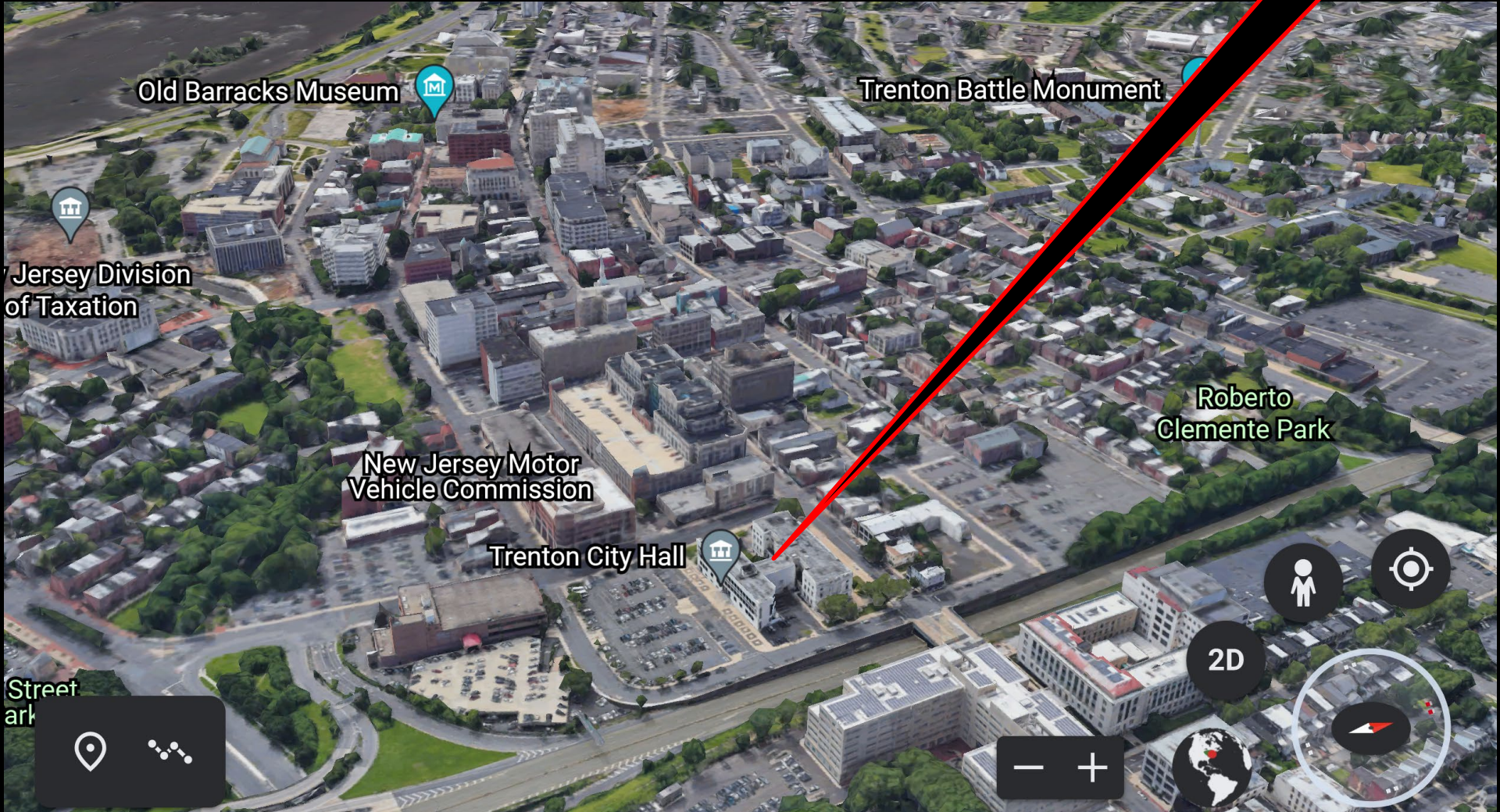
AFTER

J. Watson





Project Area



Old Barracks Museum

Trenton Battle Monument

New Jersey Division of Taxation

New Jersey Motor Vehicle Commission

Trenton City Hall

Roberto Clemente Park

Street  
park

2D

- +







BEFORE

J. Watson







AFTER

J. Watson







BEFORE



AFTER





**American Forests**  
1220 L Street NW  
Suite 750  
Washington, DC  
20005

[americanforests.org](http://americanforests.org)

# Urban Forest Stewardship

- Arboriculture Pre- Apprenticeship Curriculum
- 6 to 10 weeks at full time
- Paid apprenticeships!



## Program Objective

The objective of the Arboriculture Pre-Apprenticeship Curriculum is to train participants to attain the skills necessary to enter and complete an arboriculture apprenticeship or work in an entry-level position in arboriculture or a related field through instruction and experiential learning strategies. The curriculum outline includes work readiness skills, job-specific abilities and knowledge development.

## Arboriculture Skills

