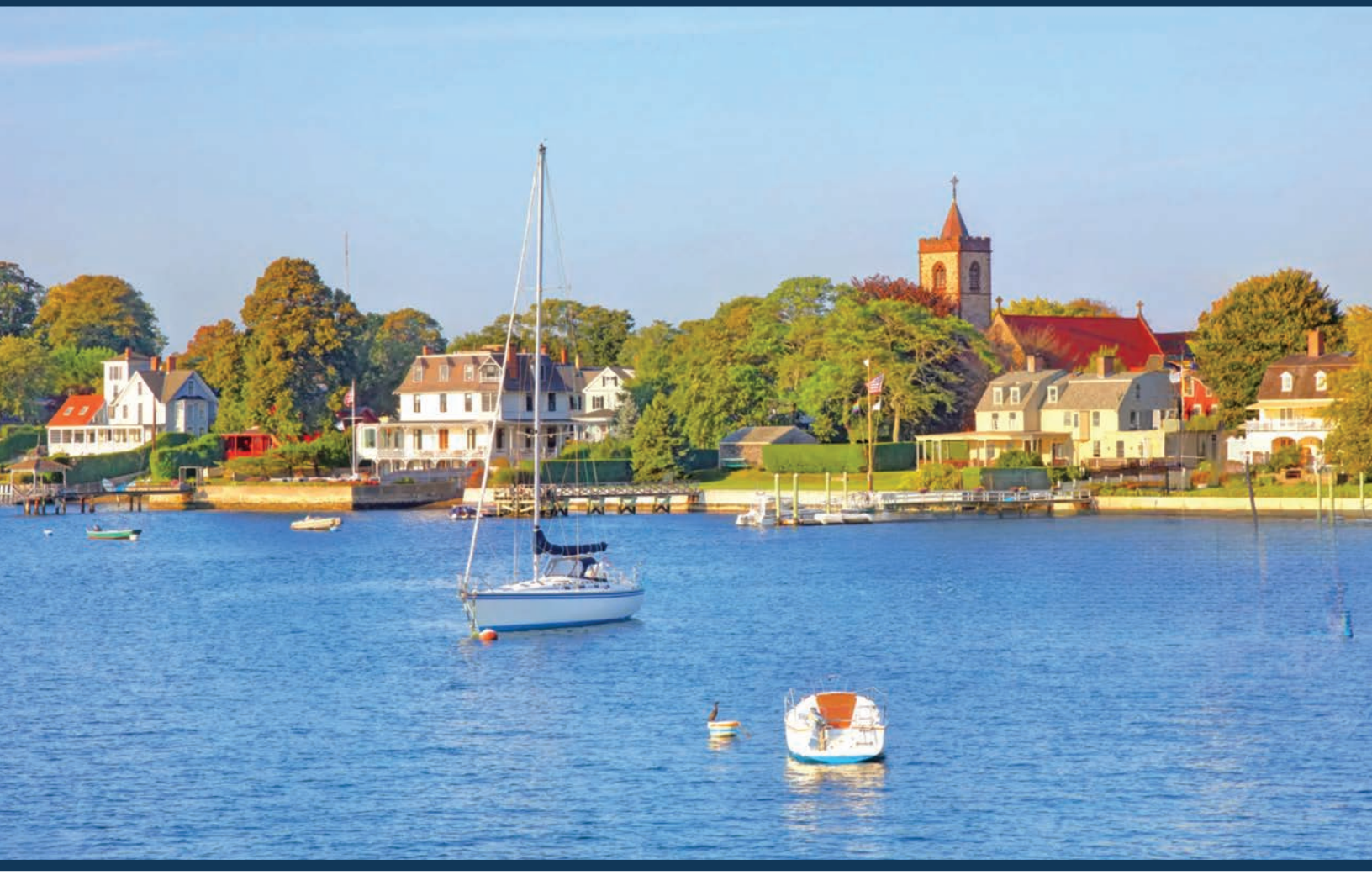
The CITY OF NEWPORT
Rhode Island

Newport RHODE ISLAND

Strategic Tree Canopy Plan



Plan by the Green Infrastructure Center Inc. for the City of Newport, Rhode Island

The CITY OF NEWPORT
Rhode Island

City of Newport, Rhode Island
cityofnewport.com

APRIL 2026

Green Infrastructure Center
gicinc.org

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Prepared by the Green Infrastructure Center Inc.
Publication Date: APRIL 2026

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Executive Summary

The urban forest is a critical asset for healthy, resilient, and sustainable cities. Trees provide benefits that directly support public health by cleaning the air and filtering and reducing stormwater runoff, reducing urban temperatures, and fostering greater economic development. However, these benefits are at risk because tree canopy cover is declining across many U.S. localities. This Strategic Tree Canopy Plan provides data and strategies for maintaining and restoring tree canopy in Newport.

This plan is the culmination of a one-year planning process that included workshops and strategic planning sessions led by the Green Infrastructure Center Inc. (GIC) with city staff and community partners. The public was engaged in this process through outreach events, a community open house and community interviews. The extent of urban forest cover was determined by analyzing aerial imagery to map the City's land cover. Open space was evaluated to determine the Potential Planting Area where future trees might be planted, along with assessments of the environmental and social benefits the City's trees provide. Strategies for retaining, protecting, and restoring tree canopy coverage were created.

City Goal: The City of Newport currently has 19% tree canopy coverage city-wide. The City plans to increase their canopy cover from 19% to 21% over the next 10 years. New tree planting will be needed to replace trees lost from pests, storms, landowner removals, additional development, or old age and to grow the canopy.

Newport Canopy Goal: Increase tree canopy to 21% over the next 10 years.

Five Strategies to Achieve This Goal

1. Improve capacity for the City to plan and respond to urban forestry needs.
2. Target community engagement and education to private property owners.
3. Expand tree canopy cover with a focus on the North End.
4. Strengthen processes, plans, and policies to promote resiliency & preserve existing natural assets.
5. A standalone Forestry budget or line item within the Division of Parks, Grounds, and Forestry to help ensure a long-term commitment to the urban forest.

How Trees Benefit the City

Tree canopy provides benefits such as cleaner air, urban cooling, stormwater capture, wildlife habitat, and natural beauty. This plan quantifies and identifies strategies to increase these benefits.

Air Quality

Trees sequester carbon and clean the air of particulate matter and ground-level ozone. Each year Newport's trees remove:

- 3,641 metric tons of carbon
- 17,781 lbs. of ground-level ozone (O_3)
- 3,472 lbs. of airborne particulate matter

Urban Cooling

Excessive pavement and lack of shade create urban heat islands. Newport's trees counter urban heating by shading hot areas. Tree canopy cover lowers surface temperatures and cools the city.

Stormwater Uptake

Trees capture rainfall and filter pollutants. During a ten-year/ 24-hour rainfall event (5.03 inches) the city's trees:

- soak up 6.7 million gallons of water
- reduce runoff pollution loads for nitrogen by 3%, phosphorus by 3%, and sediment by 4%

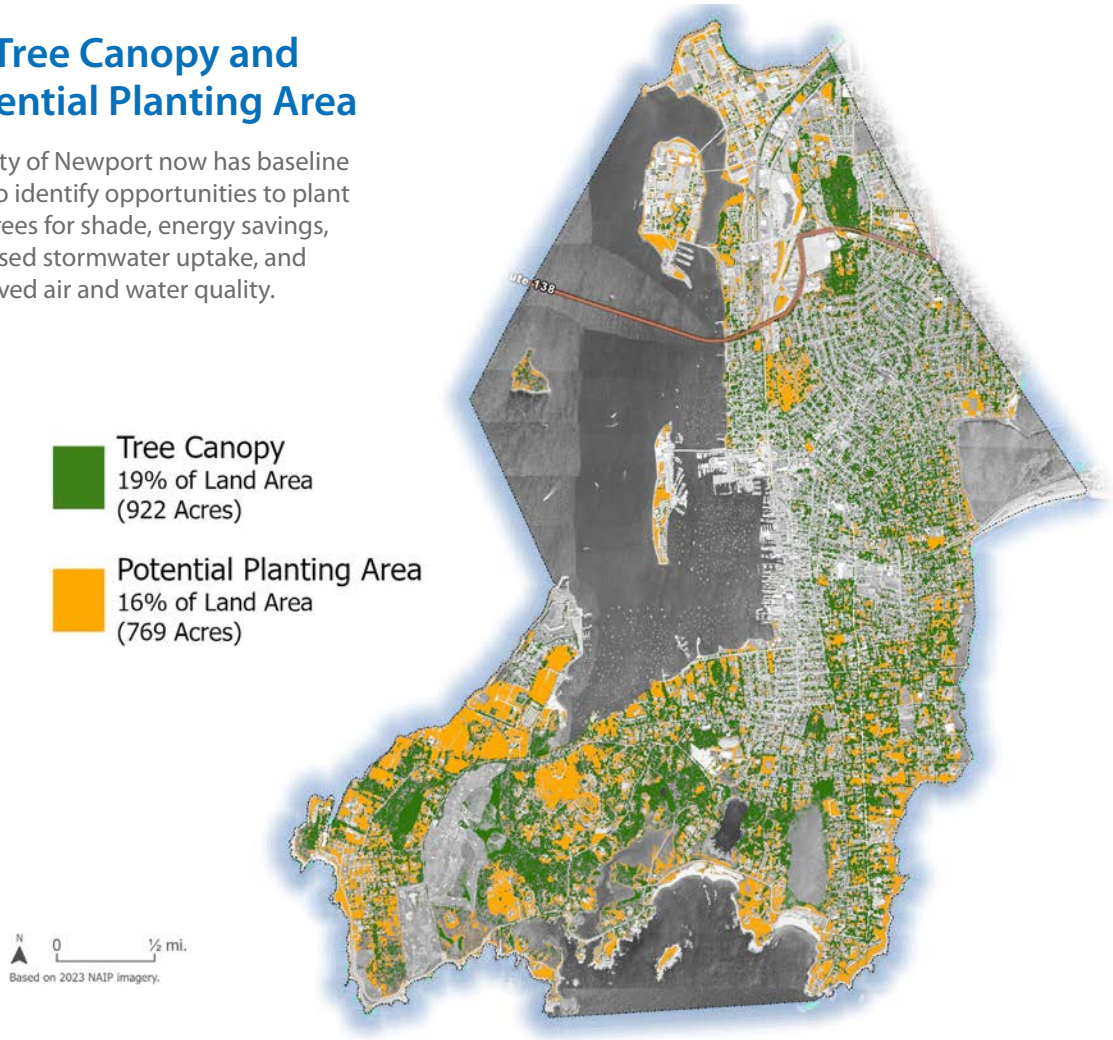
Canopy Goals

Newport's goal is to expand tree canopy coverage from 19% to 21% over the next 10 years. This goal requires planting trees on both public and private property:

- 6,777 Small Trees
- 7,329 Large Trees

Tree Canopy and Potential Planting Area

The City of Newport now has baseline data to identify opportunities to plant new trees for shade, energy savings, increased stormwater uptake, and improved air and water quality.



Introduction

The area now known as Newport was originally inhabited by the Native peoples, who lived along the coastal waters of the Narragansett Bay and relied on its rich marine and estuarine resources. Newport was later settled by English colonists in 1639, who were drawn to the area's sheltered harbor, fertile soils, and access to the sea. The city's natural setting quickly established Newport as a center for maritime trade, shipbuilding, and fishing, shaping the community's economy and cultural identity for centuries.

During the 18th and 19th centuries, Newport rose to prominence as both a bustling seaport and later a celebrated summer resort. Wealthy industrialists of the Gilded Age built grand estates with expansive gardens and tree-lined avenues, contributing to the city's unique blend of architectural and landscape heritage. Yet, as Newport grew, its natural systems were altered. Shoreline development, urban expansion, and deforestation reduced the extent of the city's original tree cover, while storms and coastal flooding posed ongoing challenges to the built and natural environment.

Today, Newport's location on Aquidneck Island highlights both its environmental strengths and vulnerabilities. The city's harbor, parks, and green spaces provide ecological, cultural, and economic value, yet rising seas, stronger

Dedicated in September of 1927, the Murray Judicial Complex sits at the heart of Washington Square.

FAST FACTS

Newport

Total City Area: 11.4 sq. miles

Land Area: 7.5 sq. miles

Open Water: 280 acres

Wetlands & Marshes: 192 acres

Streams: 2.5 miles

Total Tree Canopy: 922 acres

Potential Planting Area: 785 acres

Impervious Surfaces: 1,759 acres

Population: 25,029 people*

74.1% Non-Hispanic Whites,
10.5% Hispanic or Latino,
6.7% Black/African Americans,
2.7% Asian

(U.S. Census 2023 estimate)

storms, and urban pressures threaten these assets. Restoring and expanding Newport's tree canopy is a vital step in strengthening resilience, protecting water quality, reducing heat impacts, and preserving the historic beauty for which Newport is renowned. By caring for its urban forest, Newport can continue its tradition of balancing human prosperity with the natural environment that has sustained it for generations.

This *Strategic Tree Canopy Plan* supports the City's 2017 Comprehensive Plan, amended in 2021 and 2024, and encourages innovative growth and development while conserving natural assets through the preservation and expansion of the city's tree canopy. This plan calls for the increase of trees in underserved areas to address urban heat islands, stormwater runoff, and erosion in alignment with the City's Comprehensive Plan objectives.

Tree Benefits

Trees benefit communities ecologically, economically, and socially. Some of the many benefits include:

- Cleaner air and water
- Enhanced natural beauty
- Bird and wildlife habitat
- Reduced city heat
- Reduced levels of crime
- Reduced traffic accidents
- Increased revenues from sales and property taxes
- Lower vacancy rates
- Improved mental health and focus
- Improved metabolic function
- Increased access to outdoor fitness opportunities

Large canopy trees provide greater benefits than smaller trees. The USDA Forest Service found that in 2025 dollars, a large tree is worth $7,411 in annual benefits while a small tree is worth just $450 (Center for Urban Forest Research and Southern Center for Urban Forestry Research & Information 2006).

Trees Are Green Infrastructure

Trees and other vegetation serve as Newport's "green infrastructure." Just as localities manage grey infrastructure (roads, sidewalks, bridges, and pipes), they should also manage vegetation as infrastructure. Trees support a vibrant, safe, and healthy community while adding to its historic character. They enhance sustainability by filtering stormwater and reducing runoff, cooling streets, cleaning the air, capturing carbon emissions, and increasing property values.

Gray vs Green. Image at left shows an example of city gray infrastructure including buildings and roads. Classified high-resolution satellite imagery (at right) adds city green infrastructure data layer (trees and other vegetation). The green infrastructure provides cleaner air, water, energy savings and natural beauty.

Reducing Stormwater Runoff and Filtering Pollutants

Trees protect communities from problems associated with stormwater runoff. As forested land is converted to impervious surfaces (e.g. roads, buildings, and parking), urban stormwater runoff increases, resulting in excess stormwater runoff which can cause temperature spikes in receiving waters, increased pollution of surface and ground waters, and greater potential for flooding.

Trees reduce nitrogen, phosphorus, and sediment in stormwater by filtering runoff of these pollutants. Increased loads of nutrients in stormwater runoff reduce oxygen in surface water, causing harm to fish and other aquatic life. Nitrogen and phosphorus can cause harmful algal blooms, while sediment can clog fish gills, smother aquatic life, and necessitate additional dredging of canals and waterways. As tree cover is lost and impervious areas expand, excessive urban runoff of these harmful pollutants greatly increases. Newport is located within two subareas of the Narragansett Watershed; the Lower East Passage Sub-watershed and the Coastal Aquidneck Sub-watershed. The presence of trees means fewer pollutants will enter these the Narragansett Bay.

Trees filter and clean stormwater runoff before it enters surface waters, ensuring healthy rivers and creeks for recreation and habitat.

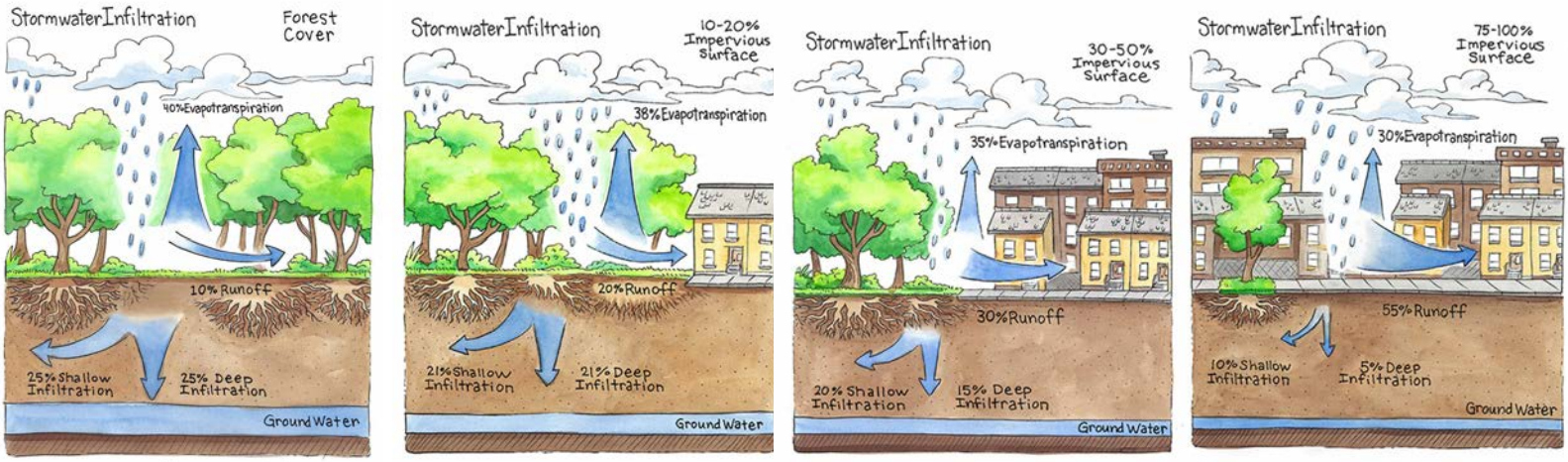
Excess impervious areas cause hotter temperatures and increased runoff. This parking lot could be retrofitted to add more trees, bioswales, and pervious surfaces that allow water to seep into the ground.

The average annual precipitation in Newport is 44.2 inches (National Weather Service 2026). Much of this runoff flows into a municipal separate storm sewer system (MS4), transporting surface pollutants from the land to local waterways. Large, paved areas contribute significant volumes to this runoff. While stormwater ponds and other best management practices (BMPs) are designed to mimic natural land cover by detaining rainfall release and filtering runoff, they do not fully replicate pre-development hydrology. In addition, older parts of Newport may lack updated stormwater management practices required for new developments, so not all runoff is captured or treated before it flows into open waterways.

Since trees filter stormwater and reduce overall flows, planting or conserving trees is a natural, cost-effective way to mitigate stormwater. Each tree plays an important role in stormwater management. Based on the GIC's review of canopy rainfall interception studies, a typical street tree's crown can intercept between 760 and 4,000 gallons of water per year, depending on the tree's species and age.

The Japanese maple tree at this home provides stormwater management benefits for this home and the surrounding watershed.

Water Infiltration Rates with Development



Stormwater runoff increases as land is developed. Graphic adapted by GIC. Data Source: U.S. EPA Watershed Academy 2025.

Riparian buffers prevent stream erosion and reduce the risk of flooding.

Buffering Storms and Flooding

Another benefit of conserving trees and forests is buffering against storms and reducing losses from flooding. According to the U.S. Environmental Protection Agency (EPA), excessive stormwater causes increased flooding, property damage, and public safety hazards. The EPA recommends ways to use trees to manage stormwater in its book *Stormwater to Street Trees*. Link: https://www.epa.gov/sites/default/files/2015-11/documents/stormwater2streettrees.pdf

Retaining trees and forests along streams prevents erosion and provides key habitat for fish, birds, animals, and people, too. A community can categorize their trees as "green infrastructure" to help justify spending money on city trees because they function as natural infrastructure by reducing standing water, preventing erosion, serving as windbreaks, and shading areas to reduce excessive temperatures.

In some cases, FEMA has reimbursed communities for lost tree cover when those trees were part of identified infrastructure, such as when a stream restoration project was damaged by a hurricane and the community had already identified the planted trees as infrastructure. To qualify, trees must be inventoried, have records of maintenance, and be specifically utilized for stormwater management, buffers, or other "green infrastructure" functions. Trees should also be recognized as infrastructure in policy documents such as the Comprehensive Plan, the Capital Improvement Plan (CIP), and even the City's tree ordinances.

Improving Air Quality, Public Health, and Economic Values

Trees Clean the Air

Higher tree canopy cover is correlated with better air quality. Trees reduce ground-level ozone (O_3) while filtering out fine particulate matter, which can damage lungs and lead to respiratory distress and conditions such as asthma. In fact, well-treed neighborhoods have lower rates of respiratory illness (Rao et al. 2014). Trees capture such greenhouse gases as sulfur dioxide and carbon dioxide. These gases contribute to a warming planet and are associated with health problems from excessive heat. Trees also sequester carbon by storing it as wood, preventing its release into the atmosphere and mitigating the impact of climate change.

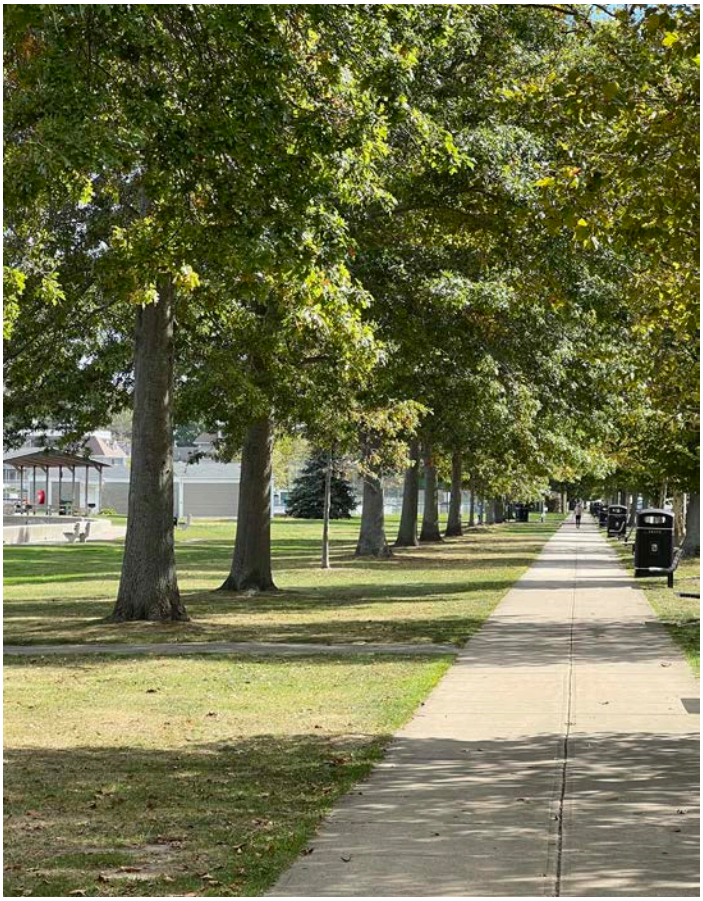
Trees Cool the City

Tree shade provides an important refuge for children and the elderly during hot summers. Excessive heat can lead to heat stress, especially affecting infants and children up to four years of age, and people 65 years of age and older, or people with obesity or other health issues (Centers for Disease Control and Prevention 2024).

Tree canopy shades streets, sidewalks, parking lots, and homes, making urban locations cooler and more pleasant for outdoor activities, such as hiking, gardening and playing in city parks. Multiple studies have found significant cooling (2-7°F) and energy savings from shade trees in cities (McPherson et al. 1997, Akbari et al. 2001). Individual trees can transpire hundreds of liters of water per day, creating a cooling effect equivalent to the energy needed to power two average household central air-conditioning units (Ellison et al. 2017). Proper tree placement can reduce summer air conditioning costs by up to 35% (Arbor Day Foundation 2025). Pavement shaded by trees has a longer lifespan than pavement in full sun, reducing maintenance costs associated with roadways and sidewalks (McPherson and Muchnick 2005).

Trees improve Walkability

Trees result in people walking more and walking farther. The cooler temperatures, aesthetics, and traffic calming effect increase a community's walkability, which is a priority of the City of Newport. When trees are not present on a street, people perceive distances to be longer, hotter, and less pleasant, making pedestrians less inclined to walk than if streets are well-treed (Tilt, Unfried, and Roca 2007).



The City's trees reduce temperatures during hot summers through evapotranspiration and by casting shade.

Well-treed sidewalks encourage people to walk and shop.

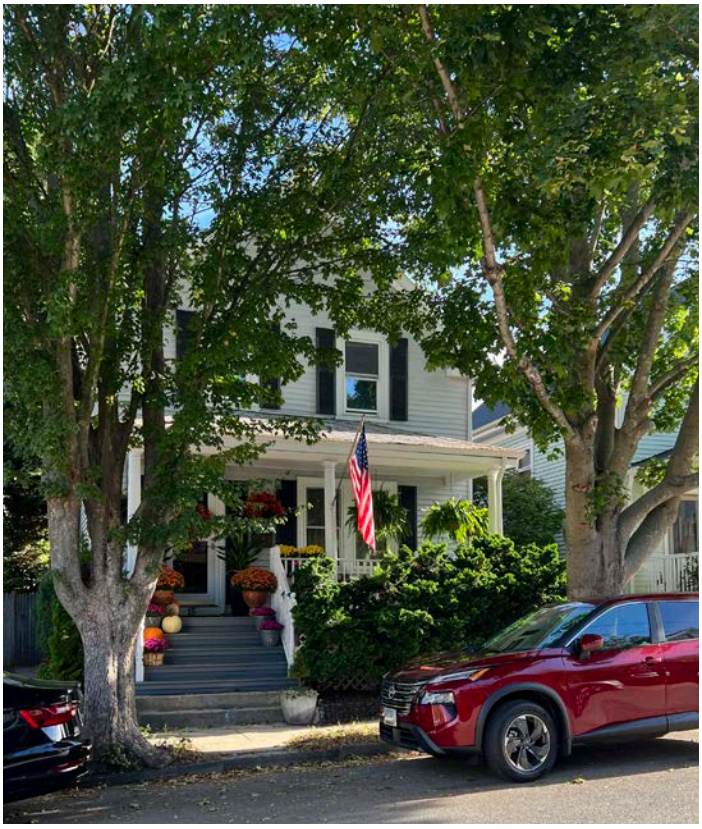
Exposure to green spaces for 20 minutes a day can improve cognitive function.

Trees Improve Cognitive Function

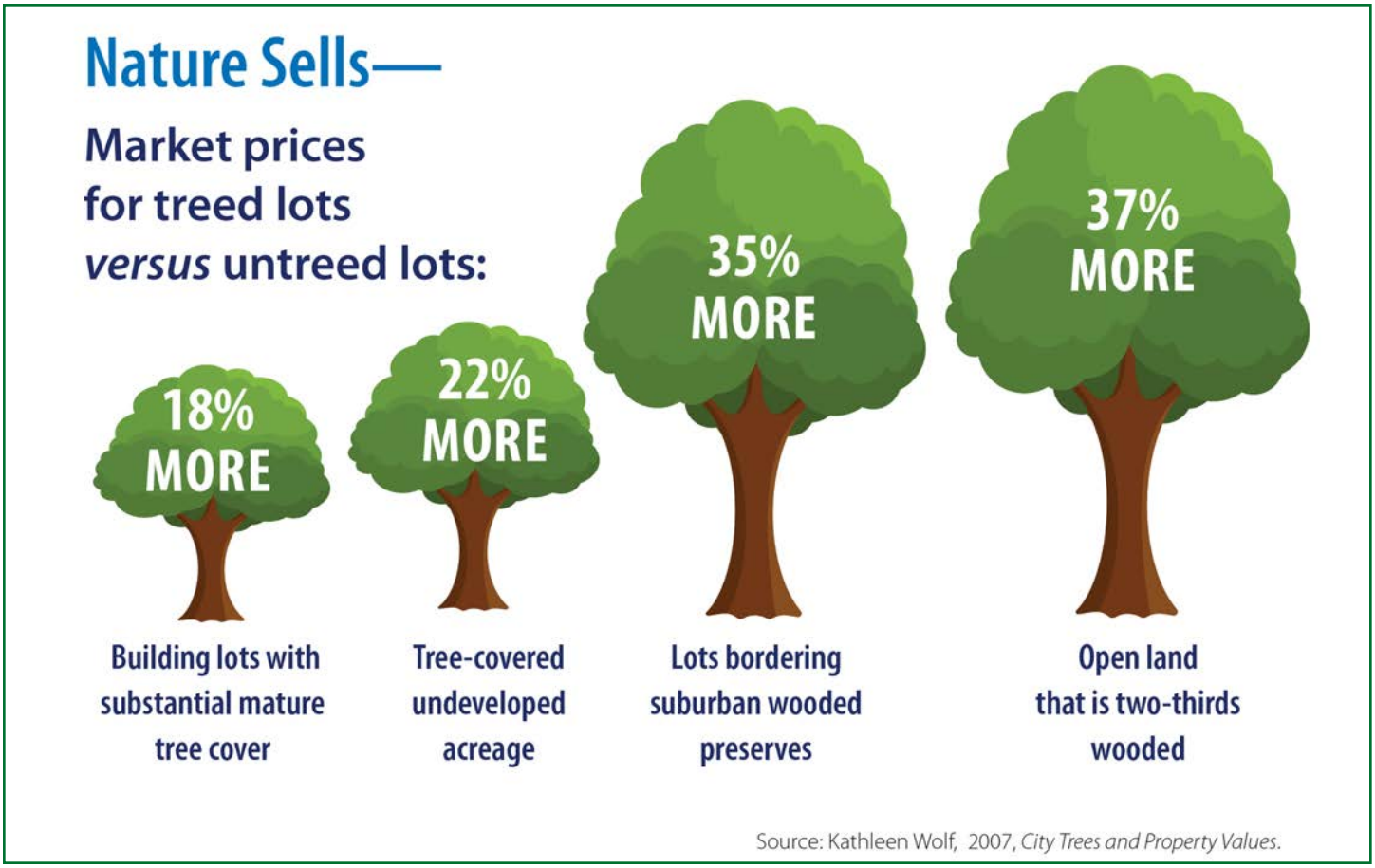
Exposure to green spaces such as parks or treed landscapes for just 20 minutes a day can significantly improve cognitive function, emphasizing the need for green spaces around schools to allow children to learn to their best ability. Children with Attention Deficit Hyperactivity Disorder (ADHD) benefit from exposure to green spaces. Children who regularly play in green spaces have milder symptoms of ADHD (Faber Taylor and Kuo 2011).

Trees Increase Property Values

Developments that include green space or natural areas in their plans sell homes faster and for higher profits than those that take the more traditional approach of building over an entire area without conserving natural space (Benedict and McMahon 2006). Individual trees and forested open spaces make lots more valuable. Trees on developed lots add about 18% to property assessments and real estate value. (Wolf 2007). *See the Nature Sells graphic, below.*



Home buyers will pay more for homes with mature trees.



Trees Pay Us Back

As the City of Newport considers the cost of planting and caring for more trees, it's important to note that "every dollar invested in planting a tree results in an average return on investment of $2.25" (Endreny 2018). In fact, even a newly planted tree will immediately begin to provide benefits. So, while the City will need to expend more funds to increase and maintain its canopy coverage, those trees will more than pay their way. This includes increases in property values, and thus property tax revenue, the rejuvenation of business districts, tourism revenue. Tees also make the city more attractive to new businesses. For example, people were seen to shop longer and spend more in tree-lined commercial shopping districts, which benefits the city through increased sales revenues (Wolf 2007).

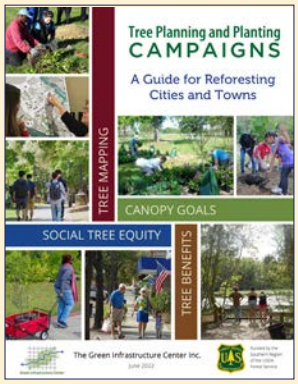
Planting trees should not be seen in isolation, but as part of a wider cycle of urban renewal and growth, in which trees spur development and raise incomes, business sales and that 'feel-good factor', which can, in turn, lead to a desire for more trees, parks and outdoor leisure facilities. Trees help turn a downward spiral into an upward spiral, as part of a city's renewed sense of pride and prosperity.

Trees provide shade and make shopping districts more walkable.

Preventing "Green Gentrification"

Gentrification is a reasonable concern when it comes to community planting projects in lower-income neighborhoods. The concern is that beautifying a neighborhood with numerous shade trees, adding street medians with more trees, planting trees in front yards, and having more parks and other open spaces nearby will raise property values and make houses unaffordable, spur landlords to raise rents, and result in property tax increases. This is a legitimate concern and warrants a comprehensive approach that minimizes the negative consequences of green gentrification through policies that encourage residents to stay in their homes while enjoying the many benefits of trees and green space, such as cleaner air, cooler summers, less flooding, lower energy costs, and general social well-being.

To learn more about how to prevent "green gentrification", see the GIC's *Tree Campaign Guide* https://gicinc.org/books/tree-planning-and-planting-campaigns/.



Instead of holding back on greening projects, cities should address the sources of affordability problems. One example would be an agreement with landlords not to raise rents within five years of a planting project; another would be to engage the community housing and development staff in providing more affordable housing. The City of Greenville, South Carolina, for example, spent a decade and millions of dollars purchasing land around a future park development, Unity Park, that was to be built on city-owned land in historically black neighborhoods that experienced discrimination and disinvestment. The City created a housing fund to build one thousand affordable housing units around the new park, allowing low-income residents to remain in the adjacent neighborhoods and reduce the risk of gentrification. The desire for more affordable housing in the area surrounding the park was an idea driven by local residents and community activists during the planning of the park.

Tree Canopy Analysis Methods

The tree canopy analysis was performed to map current tree canopy, quantify the ecosystem services these trees provide, map potential planting areas, and estimate potential future canopy based on plantable areas. These new tree canopy data can be used to analyze urban cooling, walkability, and street tree plantings; or to inform area plans, urban forestry planning, and the City's Comprehensive Plan updates.

Satellite imagery from the National Agricultural Imagery Program (NAIP) distributed by the USDA Farm Service Agency was classified to determine the types and extent of different land covers in Newport. The land cover map was created at 1-meter resolution using NAIP imagery from 2023. LiDAR[1] (light detection and ranging) data were used to determine height, which allows the GIS analyst to separate bushes from trees and other vegetation. This distinction of tree/non-tree vegetation is very important when modeling tree benefits, since the modeled pollution-removal benefits are based on trees, and do not necessarily translate to smaller, non-woody vegetation. In addition, various vector data were used where possible (e.g. sidewalks, driveways, and other impervious surfaces). The tree canopy was mapped at 91% accuracy, with an overall land cover accuracy of 90%.

[1] LiDAR is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the top of the vegetation, compared to the underlying surface of the Earth. The farther the laser beam travels, the shorter the vegetation.

Determining Plantable Acreage

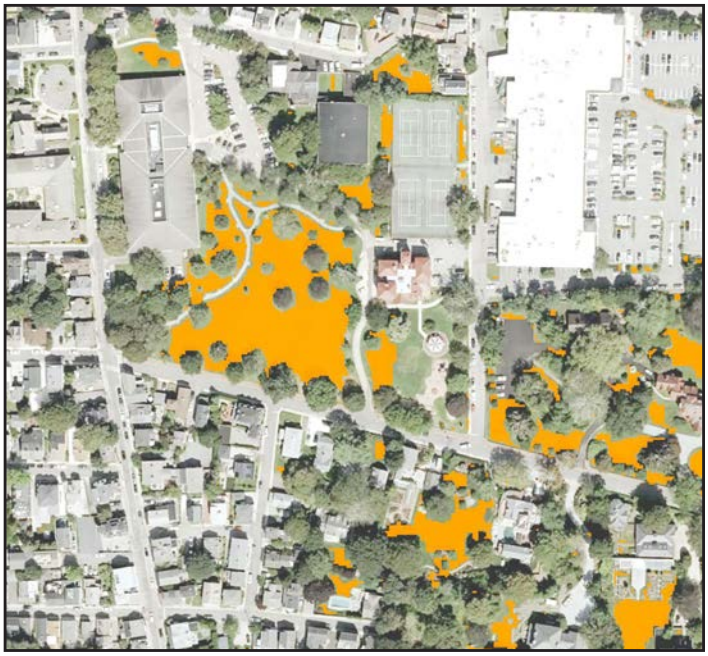
Potential Planting Areas (PPA)

In urban areas, a realistic goal for expanding urban canopy depends on an accurate assessment of the total plantable open area. A *Potential Planting Area* (PPA) map estimates areas where it may be feasible to plant trees. The PPA is estimated by selecting land cover types that have space available for planting trees and accounts for the overlap of canopy (canopy that is intermingled or a large canopy tree that partially covers an understory tree).

Of the nine land cover types mapped, only pervious and bare earth were considered for the PPA. However, some paved areas could be removed or reduced, soils conditioned and then used to plant new trees. For example, a parking lot could be redesigned in order to accommodate more tree canopy to absorb and clean stormwater runoff and provide shade for cars.

Eligible planting areas are also limited by their proximity to features that interfere with a tree's natural growth (such as buildings) or where a tree might affect the feature, such as power lines, street signs, or road junctions. The GIC buffers potential planting areas to exclude trees from these features. City staff, members of the tree canopy advisory committee and the GIC reviewed the draft PPA map, removing playing fields, cemeteries, and other land uses where trees would not be appropriate. The resulting PPA represents the maximum potential places trees can be planted and grow to full size.

NAIP Aerial Image



Potential Planting Area (PPA)

Despite the city being 36% impervious, there are still opportunities to plant more trees such as at Miantonomi Memorial Park *(left)* or in residential backyards (*right*).

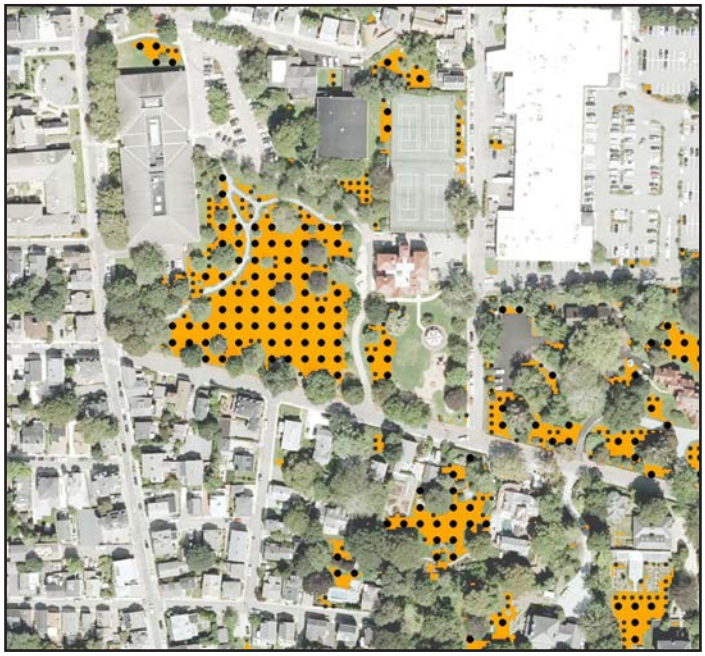
Based on an analysis of existing pervious surfaces, 16% of the City's land area, or 785 acres, could be planted with additional trees. The GIC recommends that no more than half the available PPA, 8% or 393 acres, is realistic to plant, since many other uses, such as vegetable gardens or swimming pools, require full sun.

Potential Planting Spots (PPS)

Potential Planting Spots (PPS) are created from the PPA. A GIS modeling process is applied to select spots where a tree can be planted, depending on the desired mature size. For this analysis, expected canopy spreads of 20ft. and 40ft. diameter for individual mature trees were used, with priority given to 40 ft. diameter trees, since larger trees provide more benefits.

Potential Canopy Area (PCA)

The Potential Canopy Area (PCA) is created from the PPS. Once the PPS are selected, the buffer around each point is created to represent the mature canopy spread. For this analysis, that buffer radius is either 10ft. or 20ft., which represents a 20ft. or 40ft. diameter canopy. These individual tree canopies are then merged to form a *Potential Canopy Area*.



Potential Planting Spots (PPS)

Potential Canopy Area (PCA)

Tree Canopy Maps and Findings

The *Tree Canopy Analysis* has been used to plan Newport's target tree canopy goal and will act as a benchmark to gauge the future status of the city's tree canopy. An ArcGIS geodatabase with digital shape files produced during the study has been provided to the City of Newport.

In addition, the City received tree canopy statistics for the following areas:

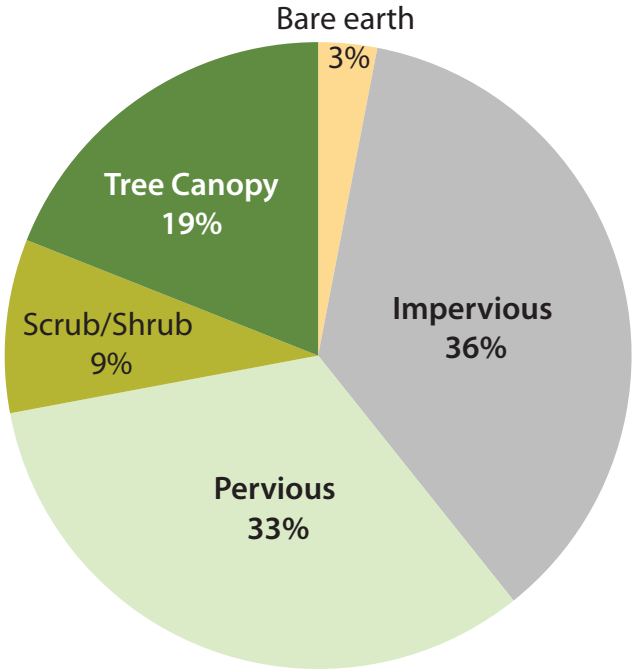
- Parcels
- Streets
- Zoning
- Schools
- Parks
- Neighborhoods

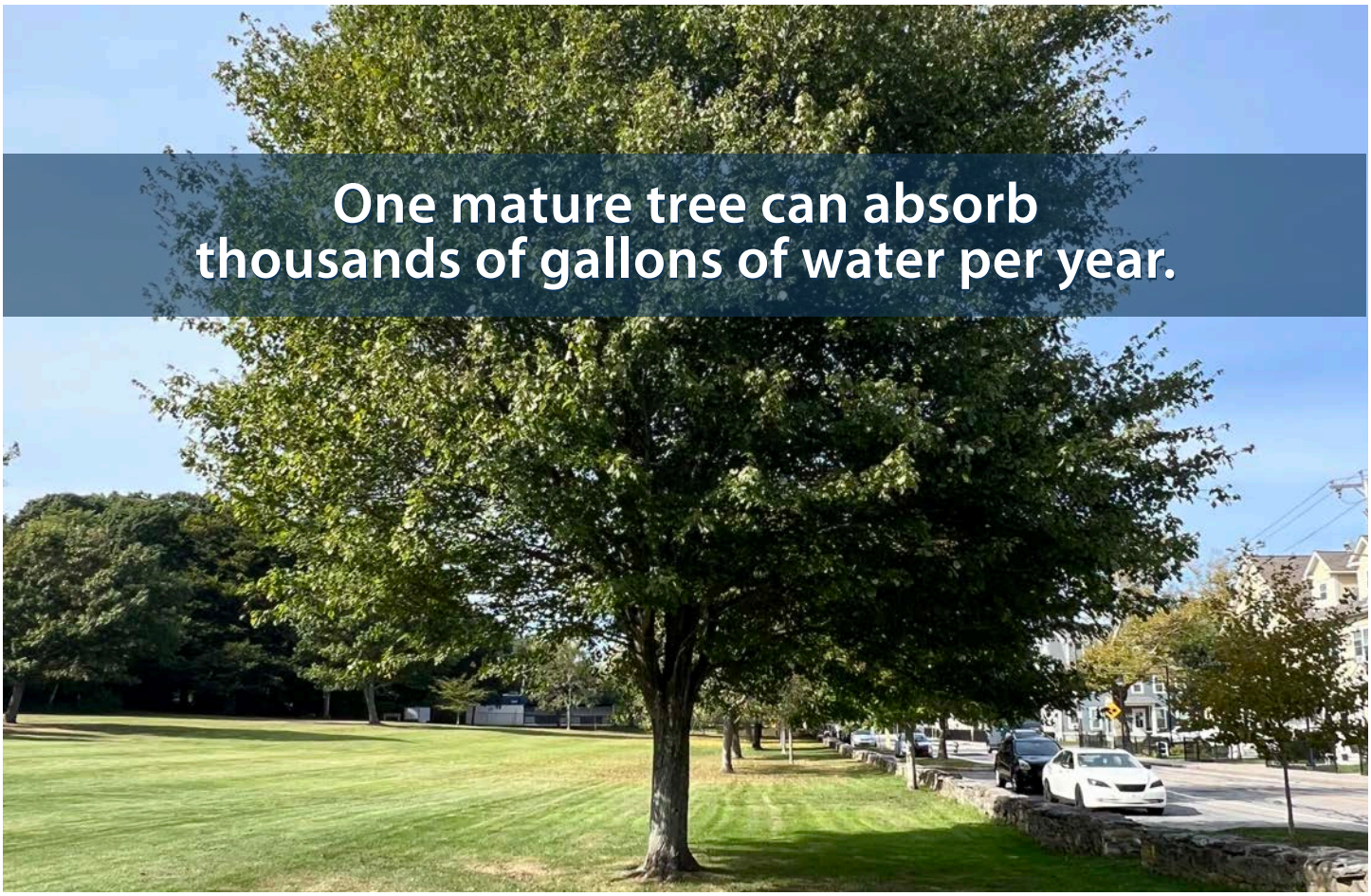
The *Tree Canopy Analysis* can inform tree planting decisions to meet many goals, and can inform tree planting decisions to meet many goals, such as walkability, greenhouse gas emission reduction, energy savings, urban heat reduction, and economic revitalization.

The following pages contain Newport's *Tree Canopy Analysis* Maps.

Newport Landcover

The City of Newport's tree canopy is 19%.





Map of City Land Cover

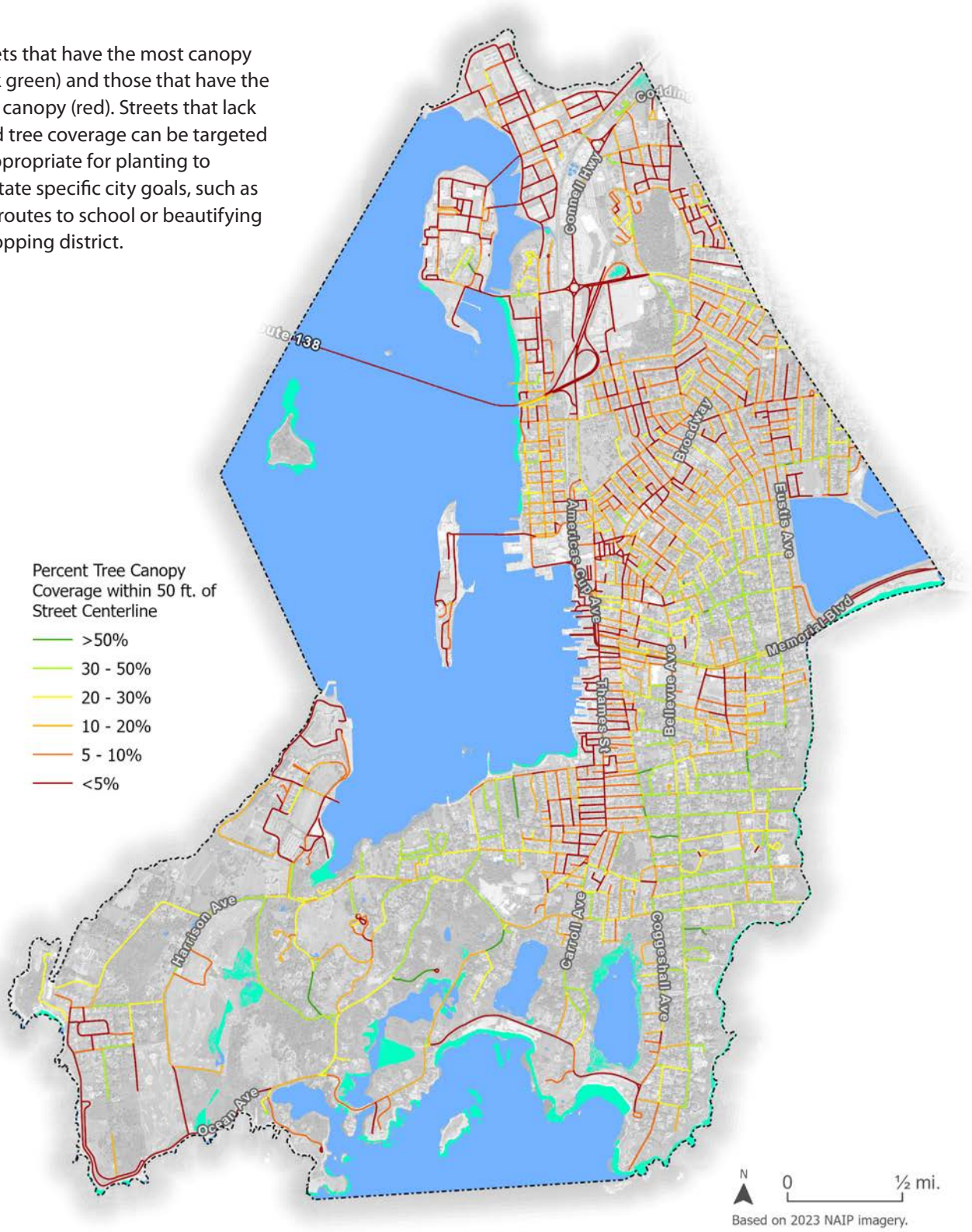
GIC classified 9 land cover types for the City of Newport from 2023 NAIP aerial imagery.

Map of Tree Canopy and Potential Planting Areas

Existing tree canopy (green) and potential planting area (orange) were determined based on land cover data and input from the City of Newport. Potential planting areas (PPA) depict areas where it may be possible to plant trees. All sites would need to be confirmed in the field prior to planting. The map shows PPA on both private and public lands.

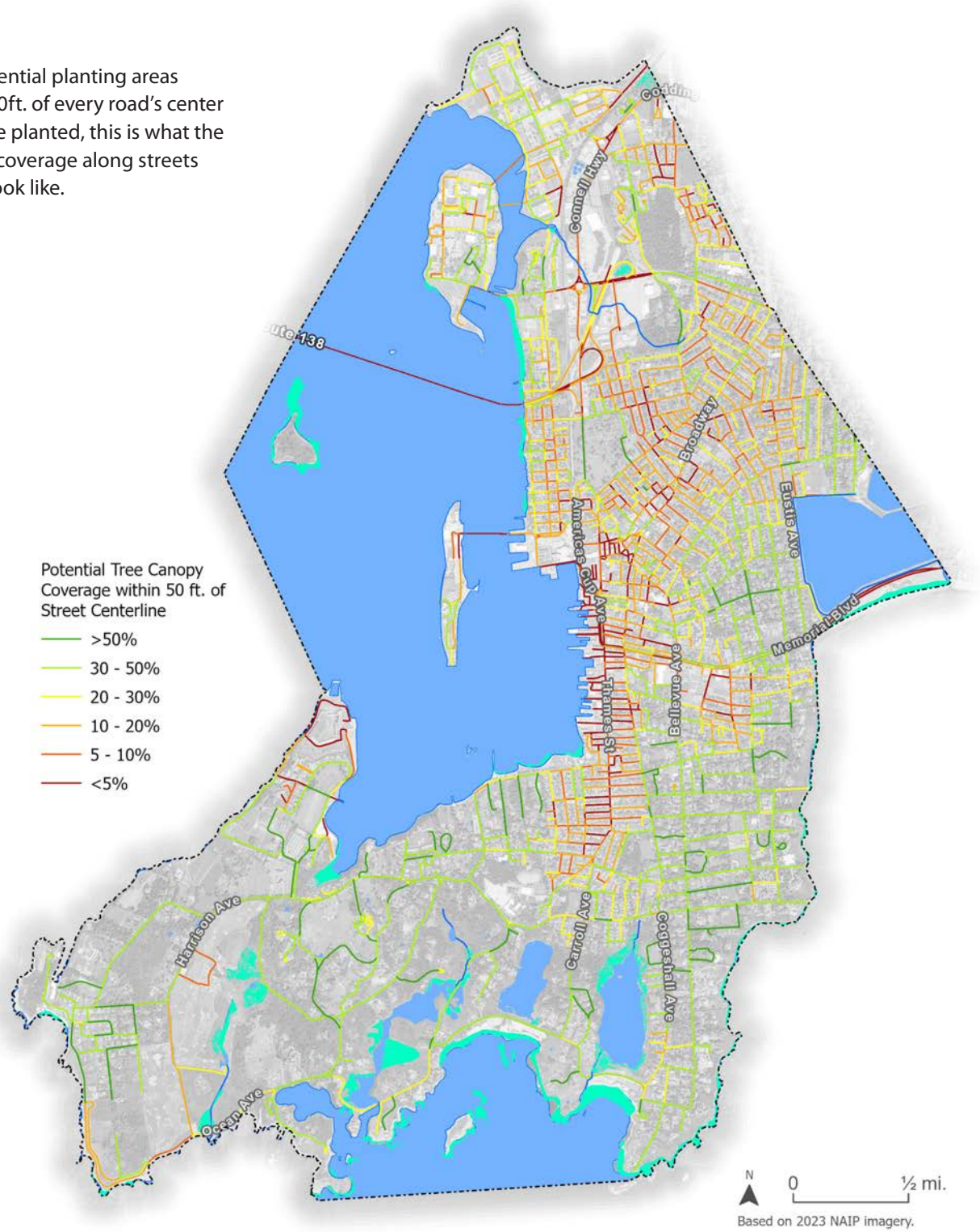
Map of Existing Tree Canopy Coverage Along Streets

Streets that have the most canopy (dark green) and those that have the least canopy (red). Streets that lack good tree coverage can be targeted as appropriate for planting to facilitate specific city goals, such as safe routes to school or beautifying a shopping district.



Map of Potential Tree Canopy Coverage Along Streets

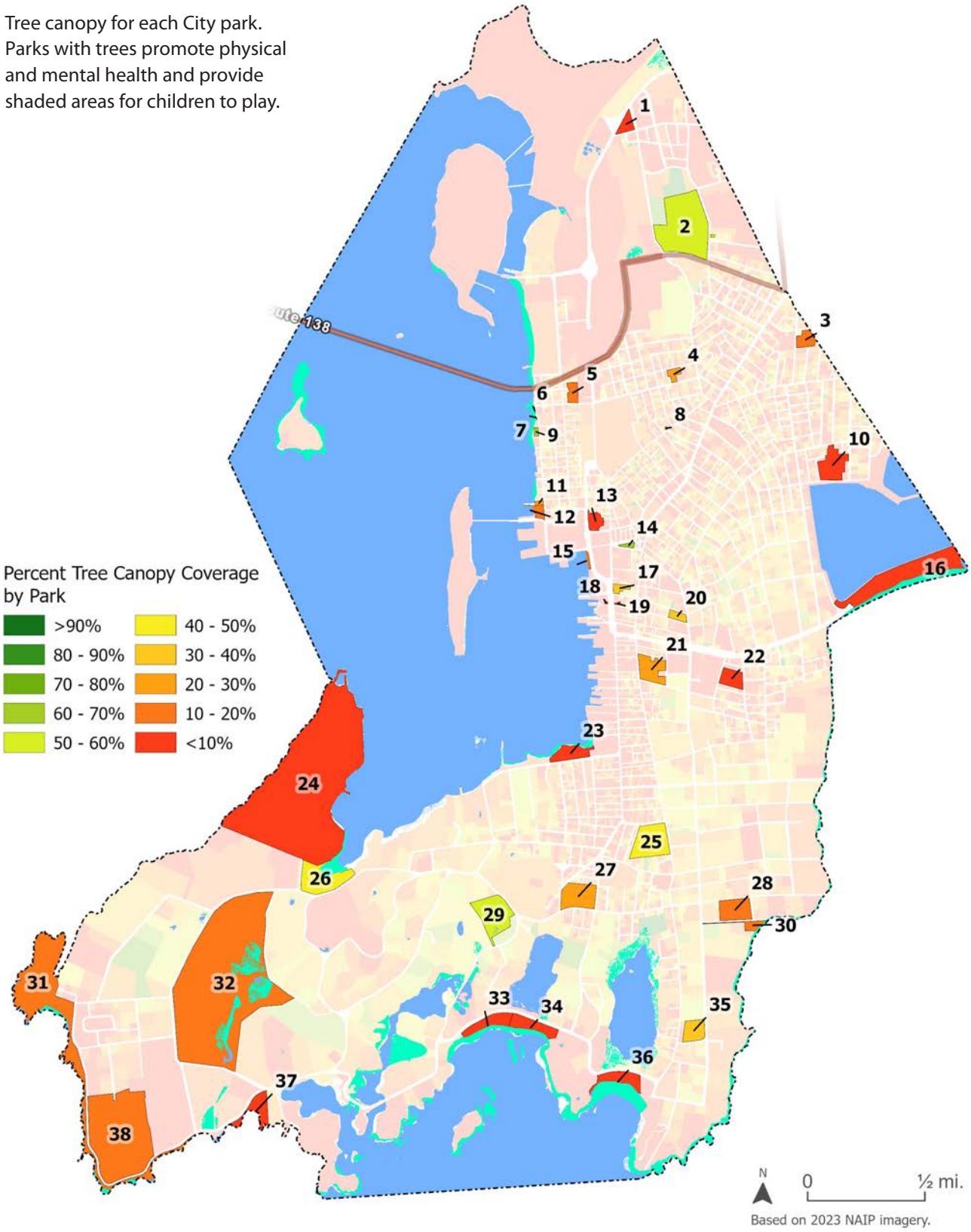
If all potential planting areas within 50ft. of every road's center line were planted, this is what the canopy coverage along streets would look like.



Disclaimer: *This map is based on Potential Planting Areas (PPA) within 50 ft of the Right-of-Way. As such, it identifies unconstrained planting sites based on the best available GIS data, meaning that existing underground tree wells or narrow landscape strips (under 6 ft) are not included in this analysis. As with the overall PPA map, it does not account for utilities, and all locations must be field verified. There may be more or less available street tree planting opportunities than are depicted on the map.*

Map of Tree Canopy Coverage by Park

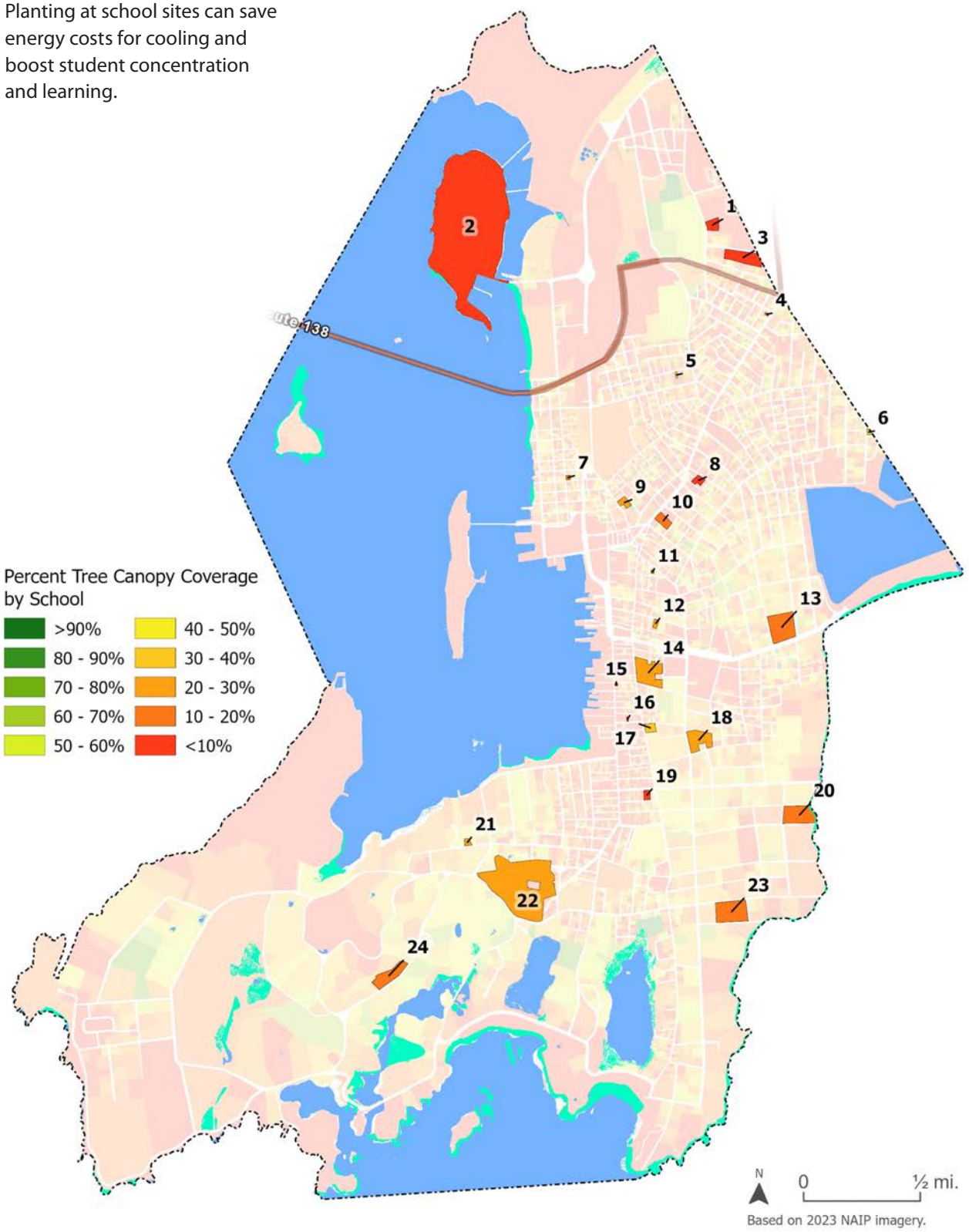
Tree canopy for each City park. Parks with trees promote physical and mental health and provide shaded areas for children to play.



Map Code	Park Name	Current canopy percent	Potential canopy percent	Small trees to plant	Large trees to plant	Total trees to be planted
1	Michaud Field	3%	25%	31	19	50
2	Miantonomi Park	57%	67%	180	106	286
3	Cottrell Field	11%	19%	10	7	17
4	Coggeshall Park	25%	33%	17	1	18
5	Hunter Park	16%	74%	31	64	95
6	John J. Martin's Memorial Park (A)	0%	0%	0	0	0
7	John J Martin's Memorial Park (B)	74%	74%	0	0	0
8	Equality Park	59%	59%	0	0	0
9	Battery Park	61%	87%	6	6	12
10	J Paul Braga Jr Memorial Field	6%	65%	80	233	313
11	Hunter House	20%	54%	8	5	13
12	Storer Park	20%	69%	39	30	69
13	Cardines Field	5%	8%	6	2	8
14	Eisenhower Park	61%	76%	10	3	13
15	Perotti Park	14%	40%	16	2	18
16	The Beach In Ri	0%	0%	0	2	2
17	Queen Anne Square	37%	61%	34	6	40
18	12 Meter Charters	0%	0%	0	0	0
19	Ryan Family Amusements	1%	1%	0	0	0
20	Touro Park	37%	79%	33	25	58
21	Aquidneck Park	20%	48%	68	78	146
22	Freebody Park	1%	1%	0	0	0
23	King Park Beach	4%	30%	47	55	102
24	Fort Adams State Park	7%	40%	936	2317	3253
25	Morton Park	41%	59%	109	80	189
26	Brenton Cove	45%	54%	54	37	91
27	Murphy Field	21%	66%	100	188	288
28	Marines Beach	13%	70%	78	208	286
29	Ballard Park	58%	70%	57	64	121
30	The Cove	15%	71%	20	50	70
31	Collins Beach	19%	48%	395	370	765
32	Newport Country Club	16%	16%	5	3	8
33	Hazard Beach	0%	34%	86	73	159
34	Gooseberry Beach	2%	19%	47	34	81
35	Rovensky Park	32%	84%	103	110	213
36	Bailey Beach	0%	5%	12	10	22
37	Kings Beach	7%	34%	77	51	128
38	Brenton Point State Park	12%	43%	781	819	1600

Map of Tree Canopy Coverage by School

Planting at school sites can save energy costs for cooling and boost student concentration and learning.

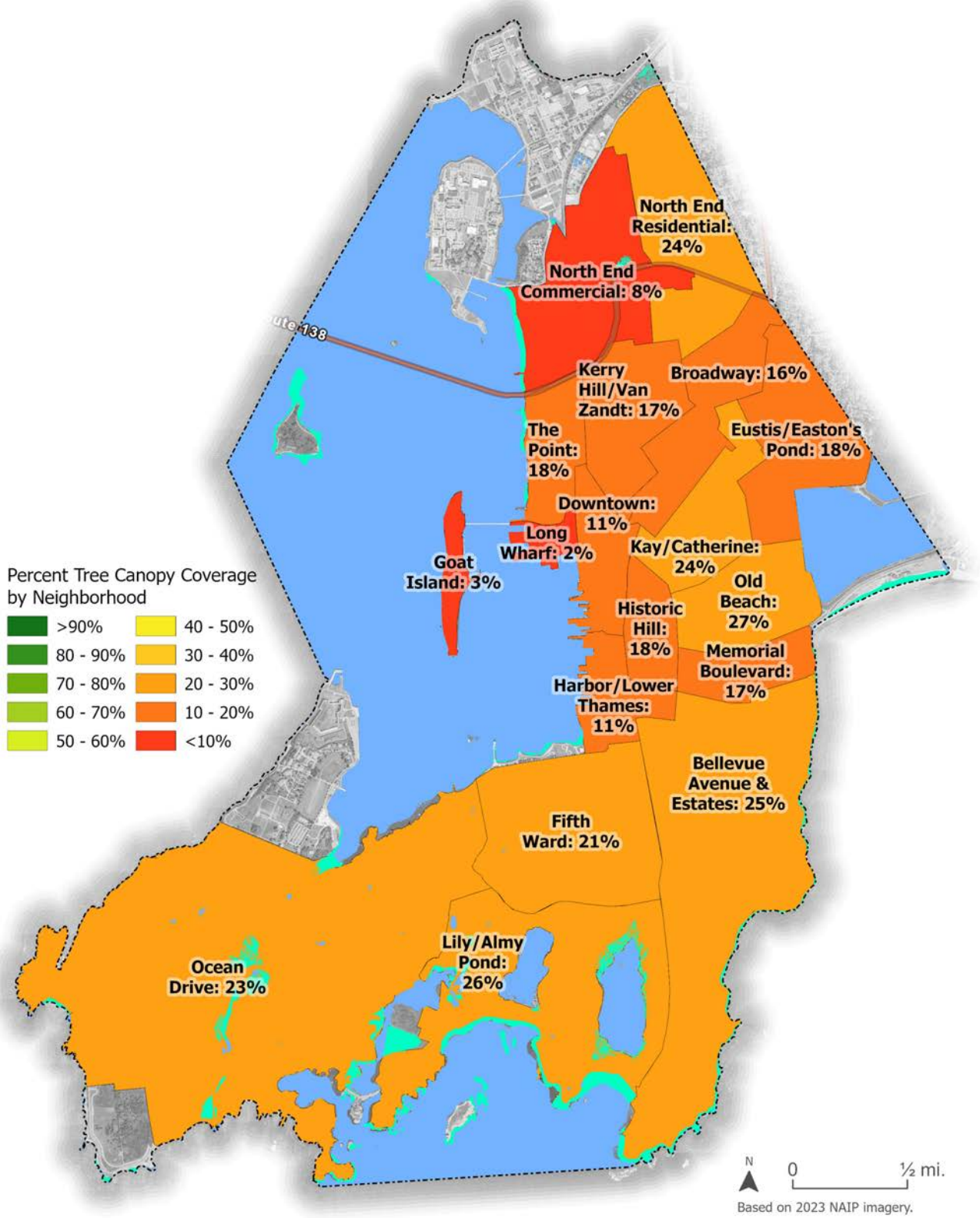


Map Code	Park Name	Ownership	Current canopy percent	Potential canopy percent	Total trees to be planted
1	James L Maher School	City of Newport	6%	30%	28
2	United States Naval War College	Federal	5%	32%	2116
3	Doctor M H Sullivan School	City of ewport	5%	27%	93
4	Sheffield School	Private	19%	19%	0
5	Coggeshall School	City of Newport	56%	61%	1
6	Aquidneck Island Christian Academy	Private	37%	68%	10
7	Callender School	Private	13%	13%	0
8	Cranston-Calvert School	Private	4%	5%	2
9	Mumford School	Private	28%	33%	8
10	Frank E Thompson Middle School	City of Newport	11%	16%	10
11	Trinity School House (historical)	Private	72%	72%	0
12	Sea Rangers Nursery School	Private	28%	51%	6
13	Saint Michaels Country Day School	Private	12%	54%	227
14	Garretson Memorial Day Nursery	City of Newport	20%	46%	141
15	International Yacht Restoration School	Private	1%	1%	0
16	The Poplar School	Private	4%	4%	0
17	Lenthal School	Private	35%	49%	18
18	De La Salle Academy	Private	22%	43%	81
19	Carey School	Private	4%	7%	0
20	Salve Regina University	Private	15%	41%	136
21	William J Underwood School	Private	29%	38%	5
22	William S. Rogers High School	City of Newport	24%	40%	478
23	Hatch School	Private	13%	70%	276
24	Saint Joseph of Cluny Sisters School	Private	11%	52%	138

William S. Rogers High School has potential space for 478 new trees to be planted.

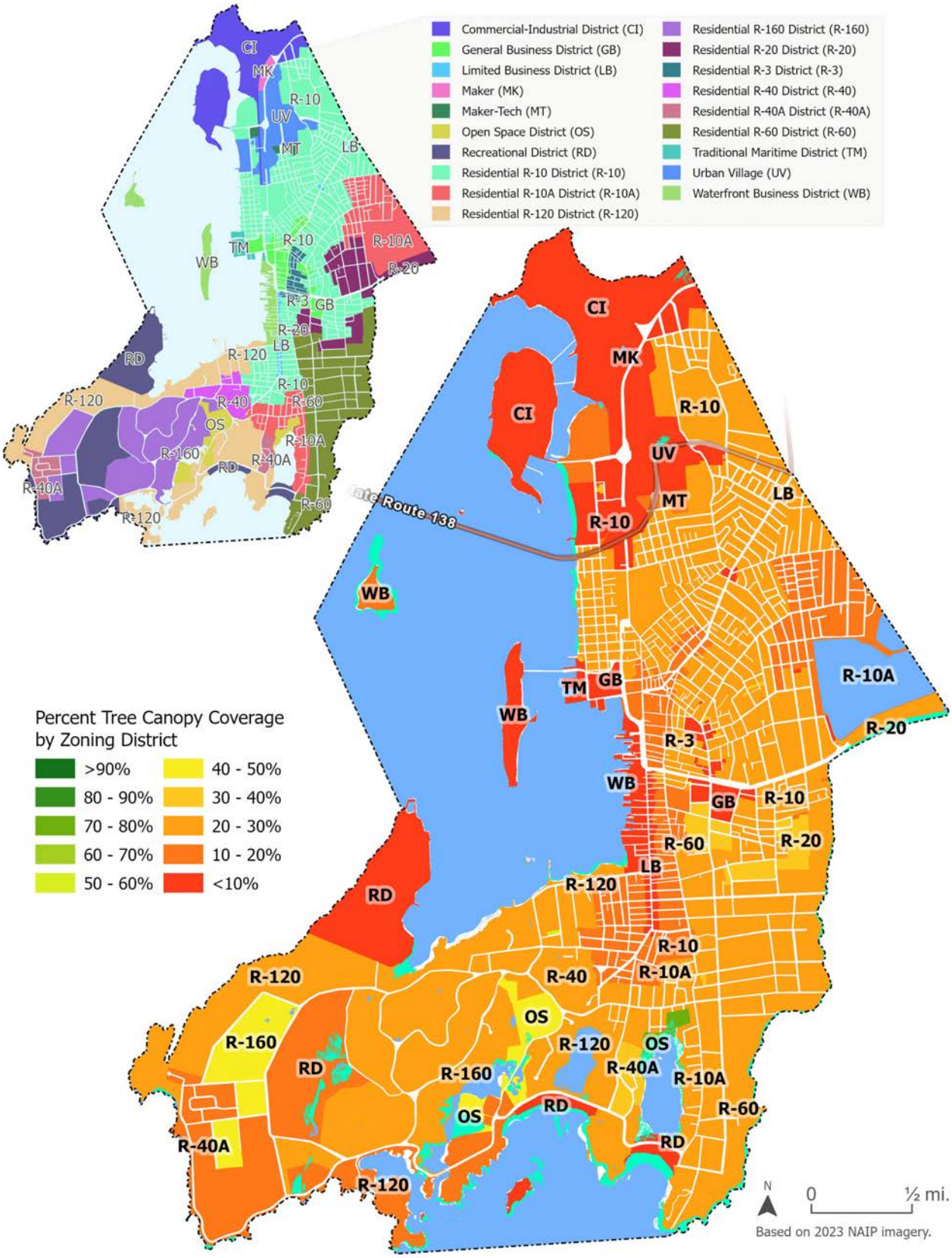
Map of Tree Canopy Coverage by Neighborhood

Tree canopy data at the neighborhood level can support neighborhood-scale advocacy and engagement to grow the tree canopy cover.



Map of Tree Canopy Coverage by Zoning Class

Tree canopy data by zoning class can inform the city's landscaping ordinance.



Calculating Environmental Benefits

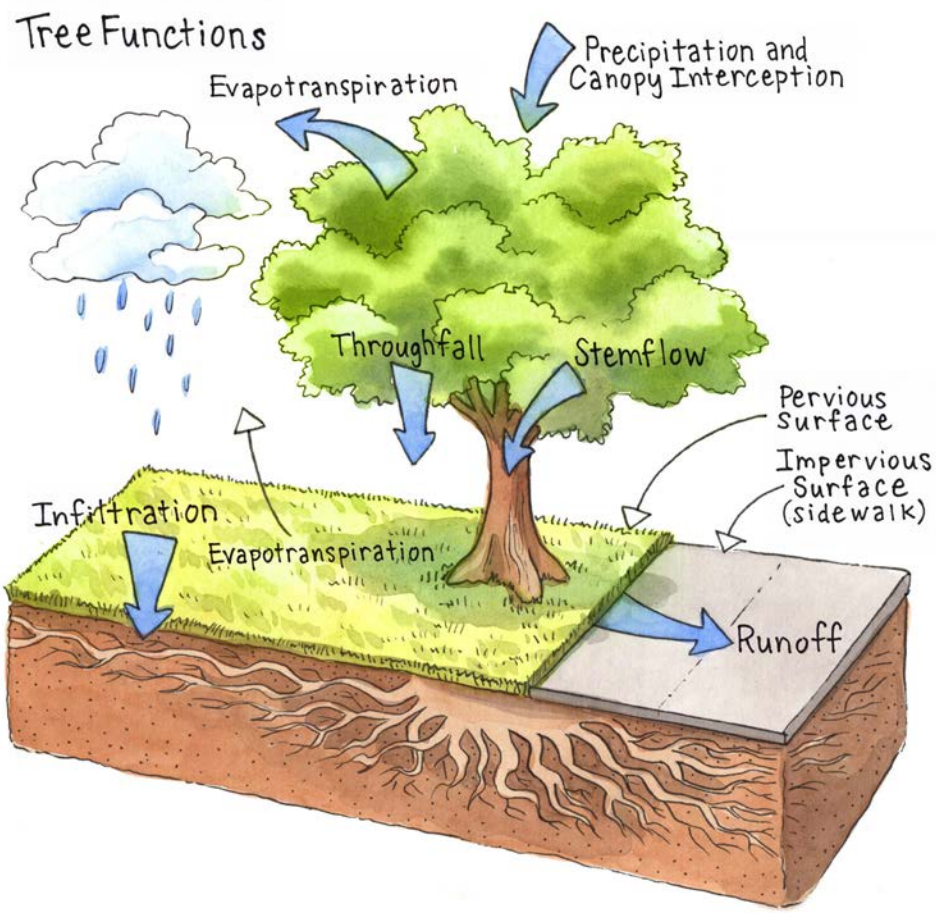
Stormwater Uptake

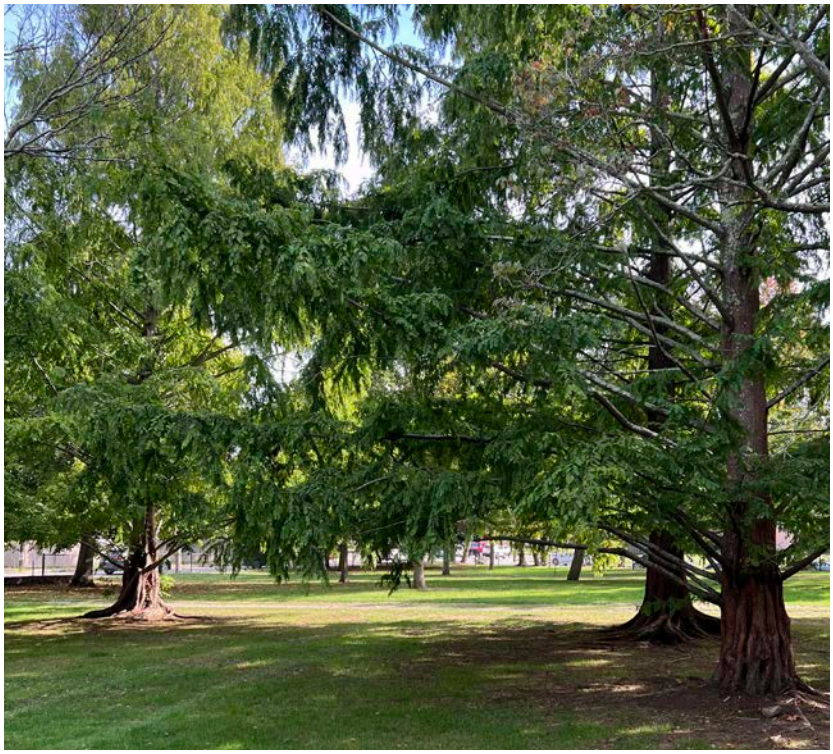
Trees and forests are the best land cover for taking up urban stormwater and are recognized as such by forestry scientists and civil engineers (Kuehler 2017, 2016). Tree canopy stormwater interception varies from 100% at the beginning of a rainfall event to about 3% at maximum rain intensity (Xiao et al. 2000).

Trees help capture and filter stormwater runoff. The Trees and Stormwater (TSW) Tool, developed by the GIC, estimates the stormwater interception, infiltration, and runoff of different land cover types. This methodology uses a modified version of the "curve number" approach, originally developed by the Natural Resources Conservation Service (NRCS), which factors in impacts of hydrologic soil groups, land cover types, hydrologic condition, and design/management practices that impact runoff. The modified TR55 curve numbers (CN) provided by GIC include a factor for canopy interception. This approach allows for more detailed assessments of stormwater uptake based on the landscape conditions of the City's forests. It distinguishes whether the trees are within a forest, a lawn setting, a forested wetland, or over pavement, such as streets or sidewalks. This is because the conditions and the soils in which the tree is living affect the amount of water the tree can intercept. For more about this methodology, please visit: https://gicinc.org/projects/resiliency/trees-and-stormwater/

The GIC used its TSW Tool to model stormwater and pollution reductions by the City of Newport's tree canopy. The model shows that, during a 10-year/24-hour rainfall event (5.03 inches), trees take up 6.7 million gallons of runoff, or about 9 Olympic swimming pools of water. Newport's trees capture:

- 2,560 nitrogen lbs. annually
- 107 phosphorus lbs. annually
- 265 sediment tons annually





Lawn trees in a park soak up more stormwater than trees over pavement.

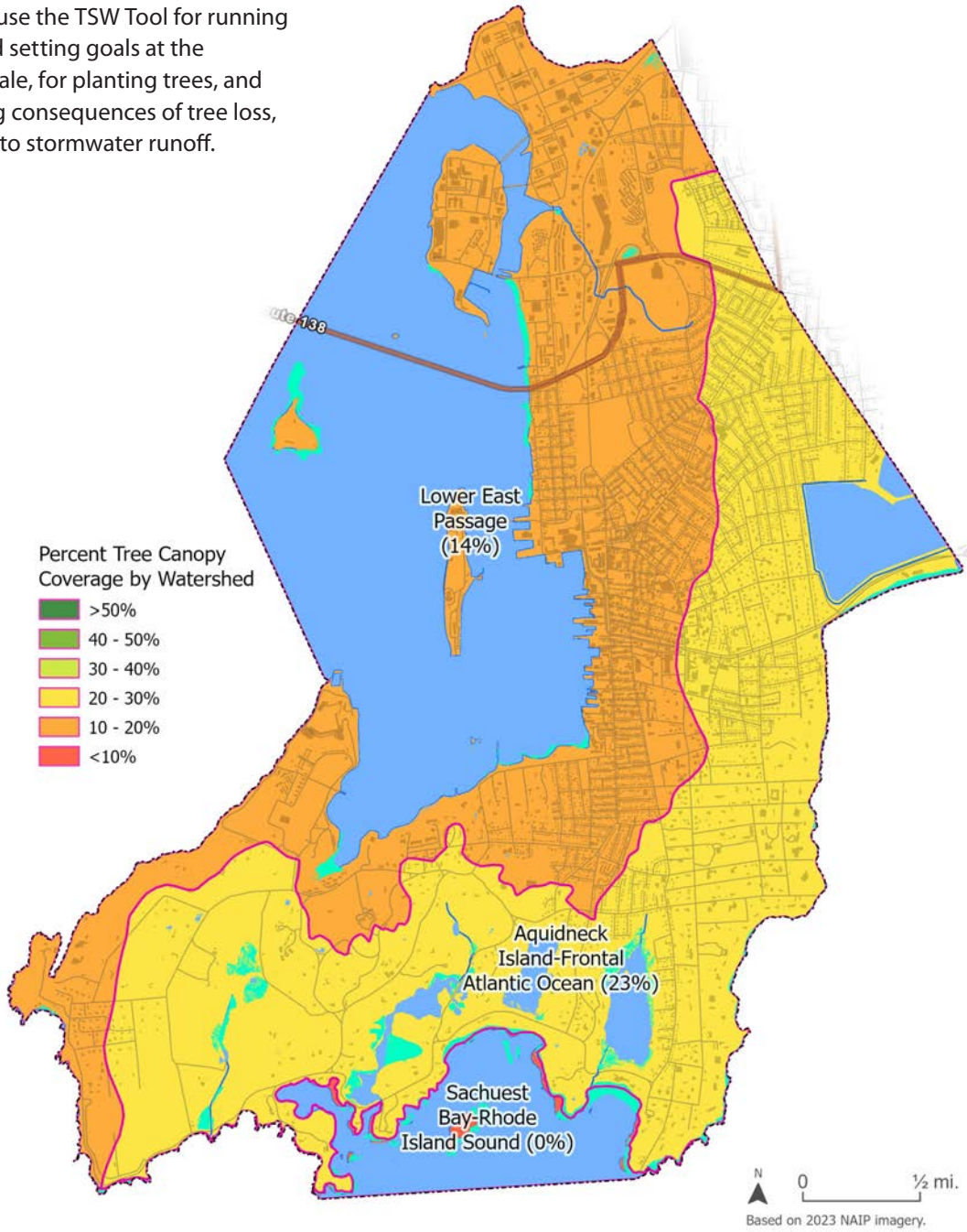
The TSW Tool takes into account the interaction of land cover and hydrologic soil conditions within each watershed. The TSW Tool can also be used to run 'what-if' scenarios, specifically losses of tree canopy from development or storm damage, or increases in tree canopy from additional tree planting.

Tree Canopy Coverage by Watershed

The conditions under and around a tree, such as the size of its planting box, the amount and type of open space, surface soils, drainage, and root spread affect the infiltration of water. The TSW Tool uses plantable open spaces to determine how many more trees could be planted and how much additional nitrogen, phosphorus, and sediment pollutants new trees and their surrounding soils could absorb.

Map of Tree Canopy by Watersheds

The City can use the TSW Tool for running scenarios and setting goals at the watershed scale, for planting trees, and for evaluating consequences of tree loss, as it pertains to stormwater runoff.



Name: Newport, Rhode Island, USA* | **Urban Tree Canopy Stormwater Model** | **version December 13, 2024**

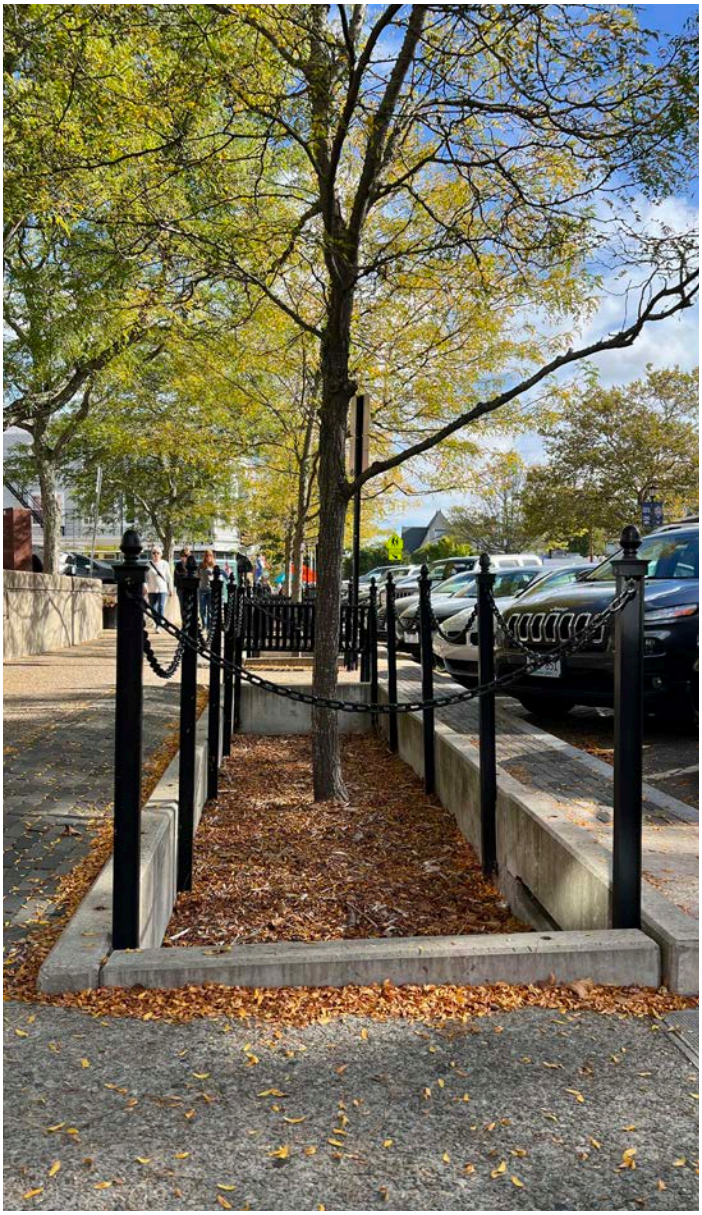
The Green Infrastructure Urban Tree Canopy Stormwater Model estimates stormwater runoff yields for current and potential land cover. The methodology is based upon the NRCS TR-55 method for small urban watersheds. It is used to provide better estimates using GIC's high-resolution land cover and modeling of potential canopy area.

				million gallons											
	TOTALS	19%	36%	4.1	-	-	19%								
	Statistics by Drainage Basin (current settings)							Variable							Variable
	Area	Current Tree Cover	Current Impervious Cover	Tree H20 Capture	Increased H2O w/xx% tree loss	Added H2O Capture w/xx% PCA	Adjusted Tree Cover from loss and gain scenarios	Pick an Event	Pick a loss scenario		Converted Land			Canopy Added	Enter % canopy to add
		%		million gallons			%	Event	% UTC loss	% FOS Loss	% Imperv	Max TC Possible	Maximum Potential Added Canopy Area	% Canopy Added	% of PCA achieved
1	Aquidneck Island-Frontal Atlantic Ocean	23.4%	26.8%	2.9	-	-	23%	1 yr / 24 hour	0%	0%	0%	45.8%	22.5%	0.0%	0%
2	Lower East Passage	14.4%	47.0%	1.2	-	-	14%	1 yr / 24 hour	0%	0%	0%	36.6%	22.2%	0.0%	0%
3	Sachuest Bay-Rhode Island Sound	0.4%	72.4%	0.0	-	-	0%	1 yr / 24 hour	0%	0%	0%	20.9%	20.5%	0.0%	0%

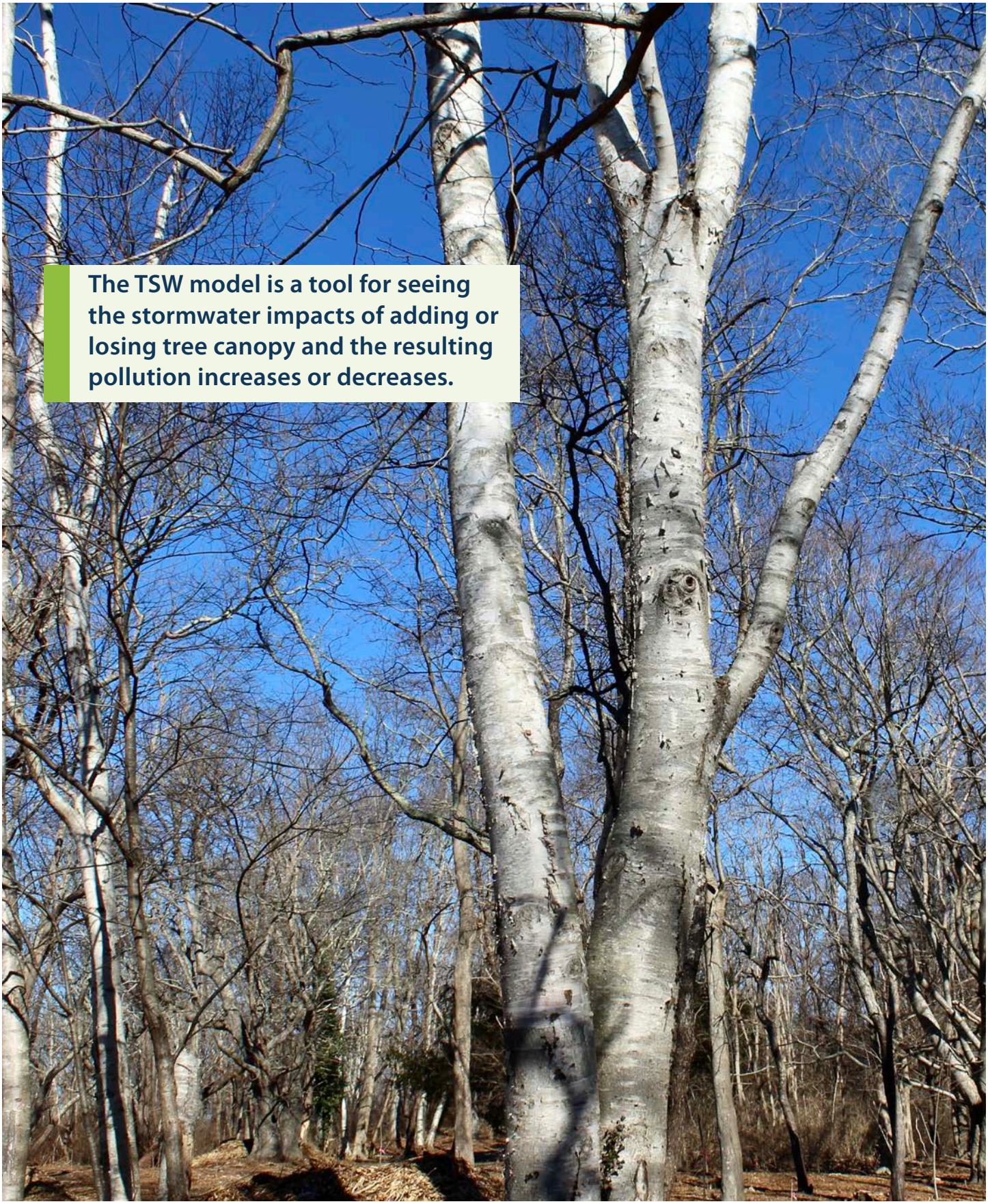
The TSW Tool allows the City to model water uptake by the existing canopy and impacts from changes, whether positive (adding trees) or negative (removing trees).

Removal of mature trees and existing forest results in the greatest increase in stormwater runoff. As more land is developed, the City of Newport should maximize tree conservation and encourage new tree plantings to maintain surface water quality and groundwater recharge. The maps on page 34-35 use soil types and tree cover to show the areas where it is most important to retain trees for stormwater uptake and areas where tree planting will have the most benefits for stormwater uptake.

Small spaces for tree roots leads to unhealthy trees and less stormwater infiltration



The city should continue to integrate space for trees and other low impact development practices

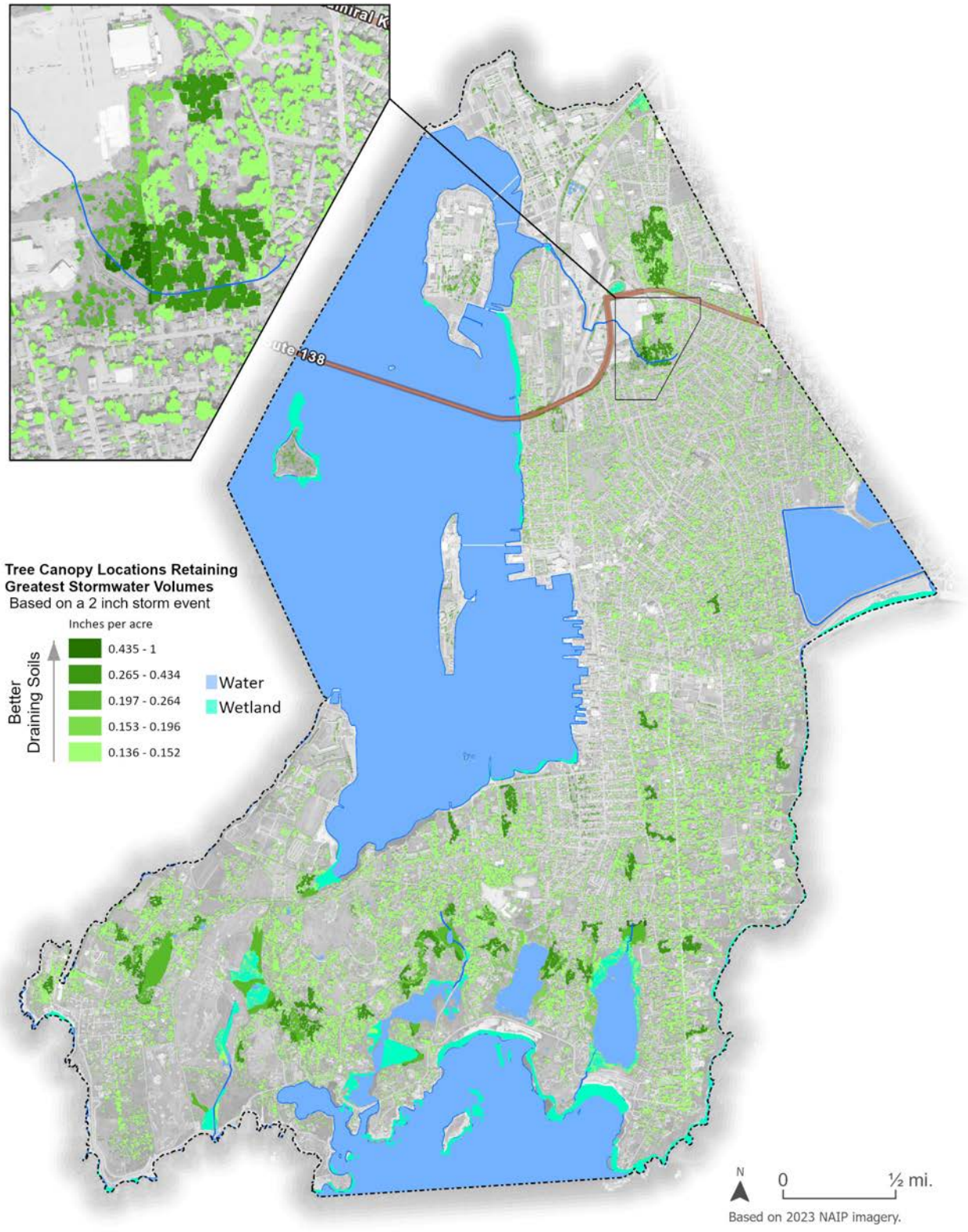


The TSW model is a tool for seeing the stormwater impacts of adding or losing tree canopy and the resulting pollution increases or decreases.

Miantonomi Memorial Park, a 30-acre historic park, sits on the highest point in the city and contains woodlands, trails, and other public amenities. This forested acreage is the best land cover type for stormwater uptake.

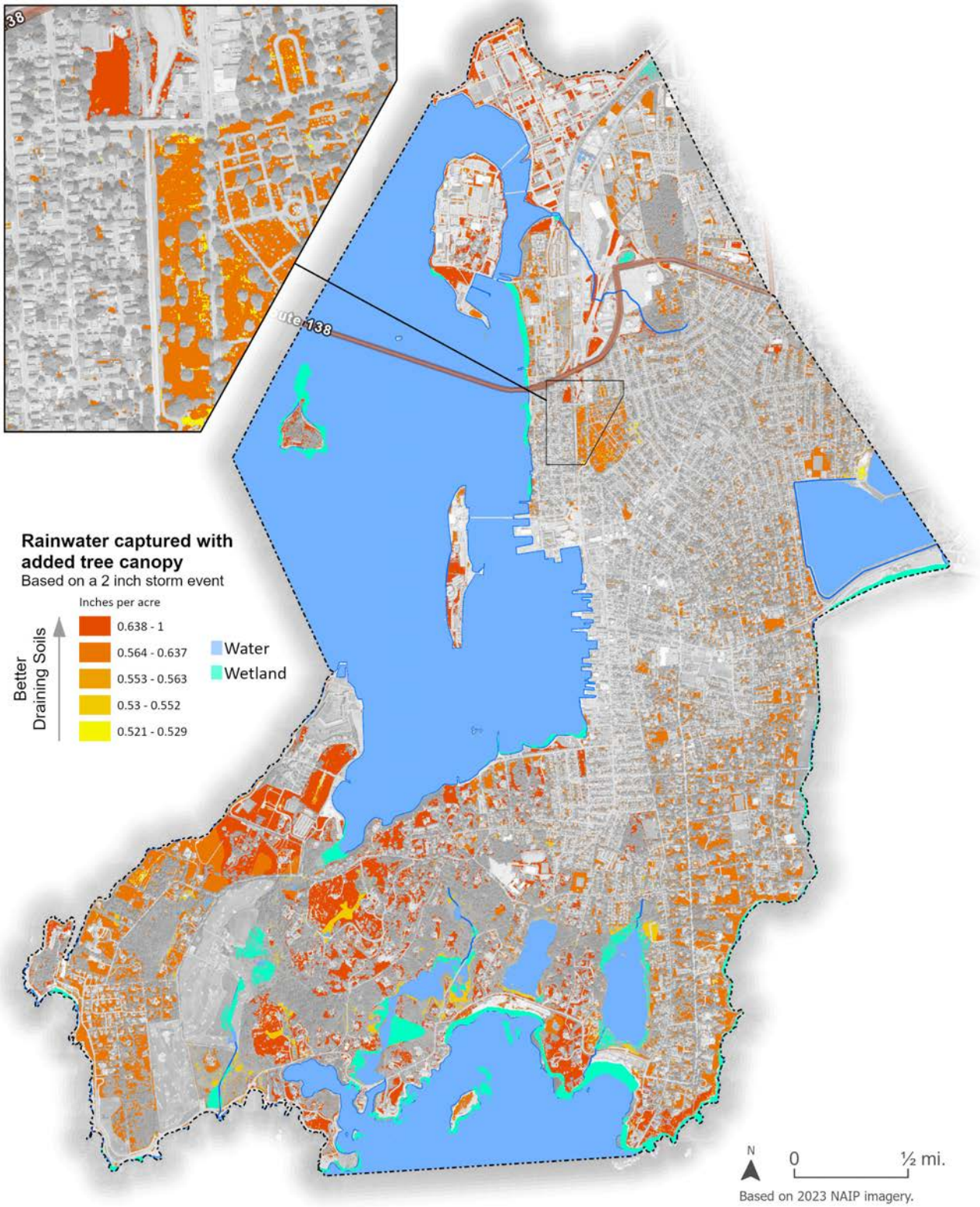
Map of Best Tree Canopy to Save for Stormwater Infiltration

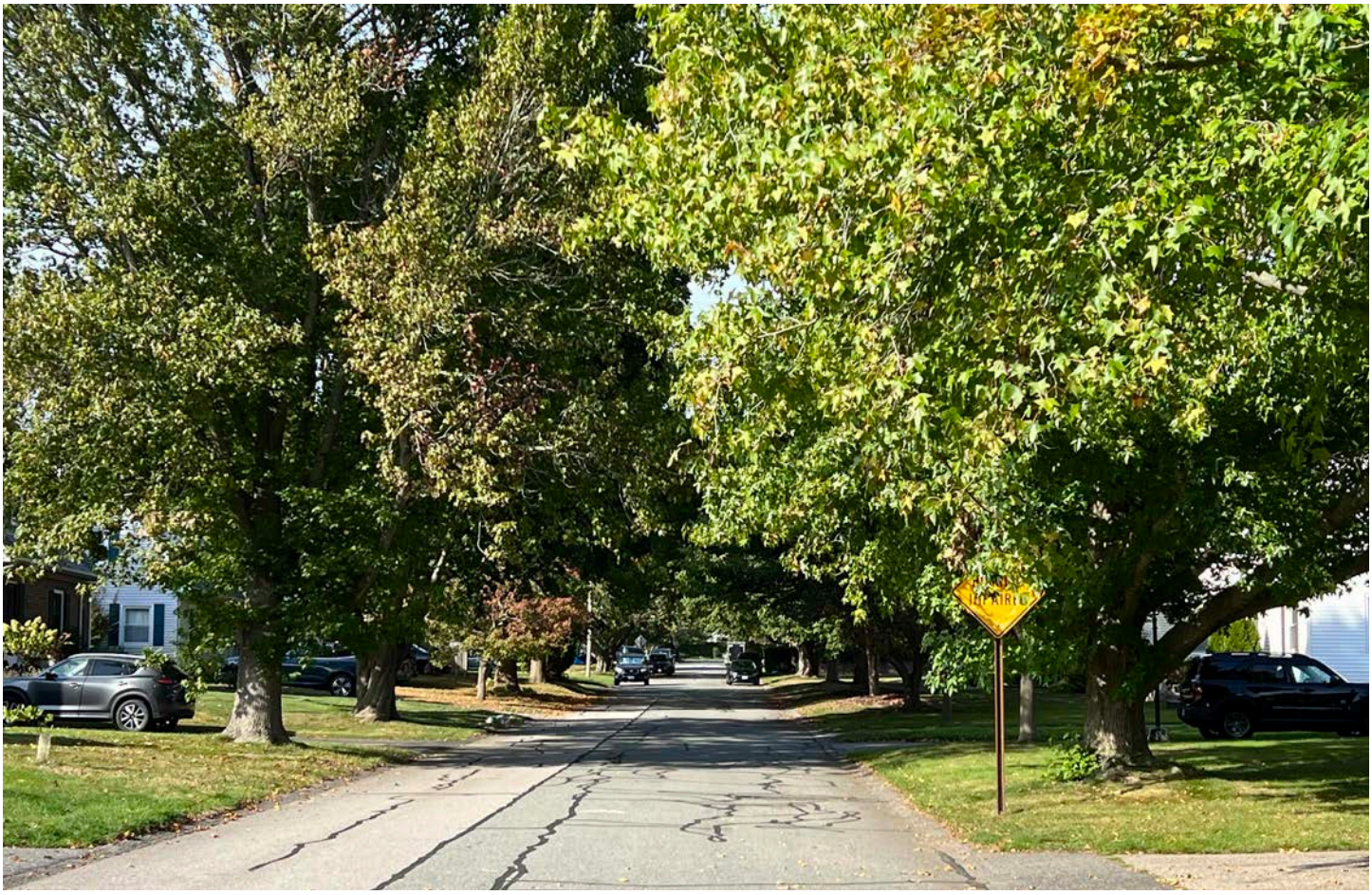
The TSW Tool was applied to map the locations where tree conservation will result in the greatest amount of stormwater capture and infiltration (dark green).



Map of Best Tree Planting Locations for Stormwater Infiltration

The TSW Tool was applied to map locations where planting trees will result in the greatest amount of stormwater capture and infiltration (red).





Well-treed neighborhoods have cleaner air and lower rates of asthma.

Air Quality

Air pollution removal values were calculated by applying the pollution removal values for each acre of tree cover from the i-Tree model. i-Tree is a peer-reviewed software suite from the USDA Forest Service that provides urban and rural forestry assessment tools.

Trees mitigate climate change by storing carbon in their tissue and sequestering atmospheric carbon from carbon dioxide (CO_2) in new tree growth. Current trees in the city are storing 37,792 metric tons of carbon that will be released back into the atmosphere when these trees die. Trees also capture particulate matter, ground-level ozone (O_3), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) from the air, resulting in better air quality and healthier neighborhoods.

Investments in canopy at the neighborhood level can improve the respiratory health of residents.

Air pollution and greenhouse gases removed annually by trees in Newport						
CO (carbon monoxide)	**NO_2** (nitrogen dioxide)	**O_3** (ozone)	**PM_{10}** (particulate matter 10 microns)	**$PM_{2.5}$** (particulate matter 2.5 microns)	**SO_2** (sulphur dioxide)	**C Seq** (carbon sequestered)
189 lbs	**1,072 lbs**	**17,781 lbs**	**2,865 lbs**	**607 lbs**	**2,000 lbs**	**3,641 metric tons**

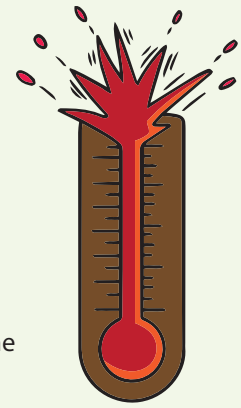
Urban Heat and Equity

Urban heat is a growing concern as extreme heat continues to increase in Rhode Island with the changing climate. In Newport, the number of days above 100˚F is projected to rise from the historic average of 0 per year to 26 per year by the year 2070. To reduce temperatures, the city can plant trees to cool the landscape. Inequities in the distribution of tree canopy and opportunities to correct them can be identified through tree canopy data, surface temperature data, and U.S. Census data that provides race and income statistics.

What is Tree Equity?

Tree equity ensures all communities have access to the benefits that trees provide. Areas that have been under-resourced, having fewer trees and more heat than the rest of the city, are the focus of tree-planting efforts.

How much hotter is your hometown now than when you were born?



This interactive online tool allows a user to put in their hometown and birthdate to see how their hometown has changed since then and how much hotter it may get. The tool provides the average number of days over 90°F.

https://www.nytimes.com/interactive/2018/08/30/climate/how-much-hotter-is-your-hometown.html

Extreme Heat

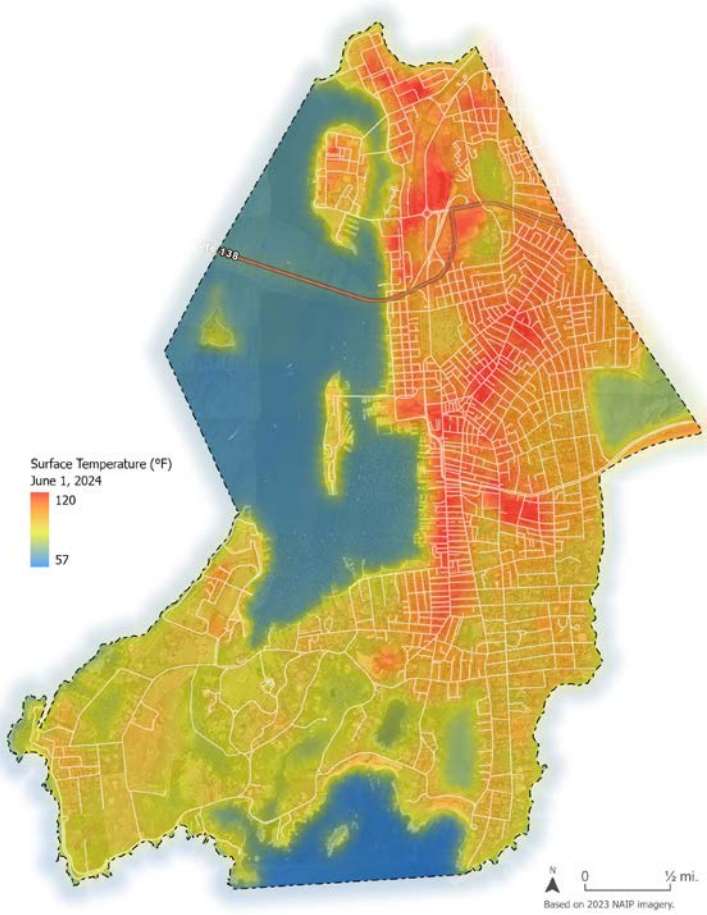
Average days per year temperatures over 100˚F

In this table "bold action" refers to reductions in greenhouse gases through energy conservation. It does not consider the effects of planting more trees. Source: Union of Concerned Scientists. *2019, Killer Heat Interactive Tool.*

Where we are now	Where we are currently headed		If bold action is taken
Historically 1971-2000	Midcentury 2036-2065	Late Century 2070-2099	Extreme heat limited to
0 days	**9** days	**26** days	**5** days

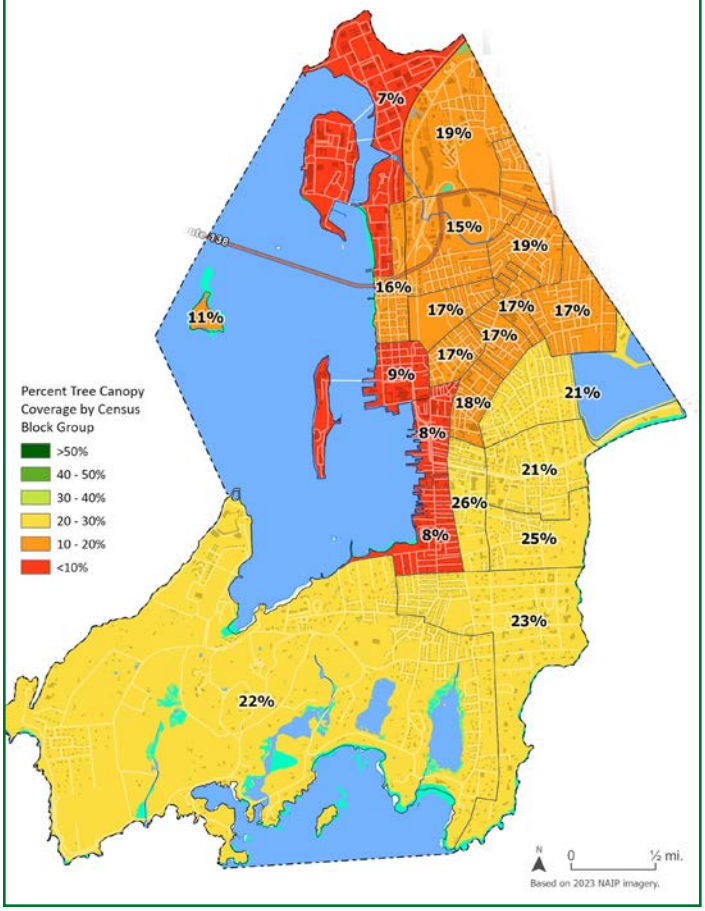
Map of Surface Temperature

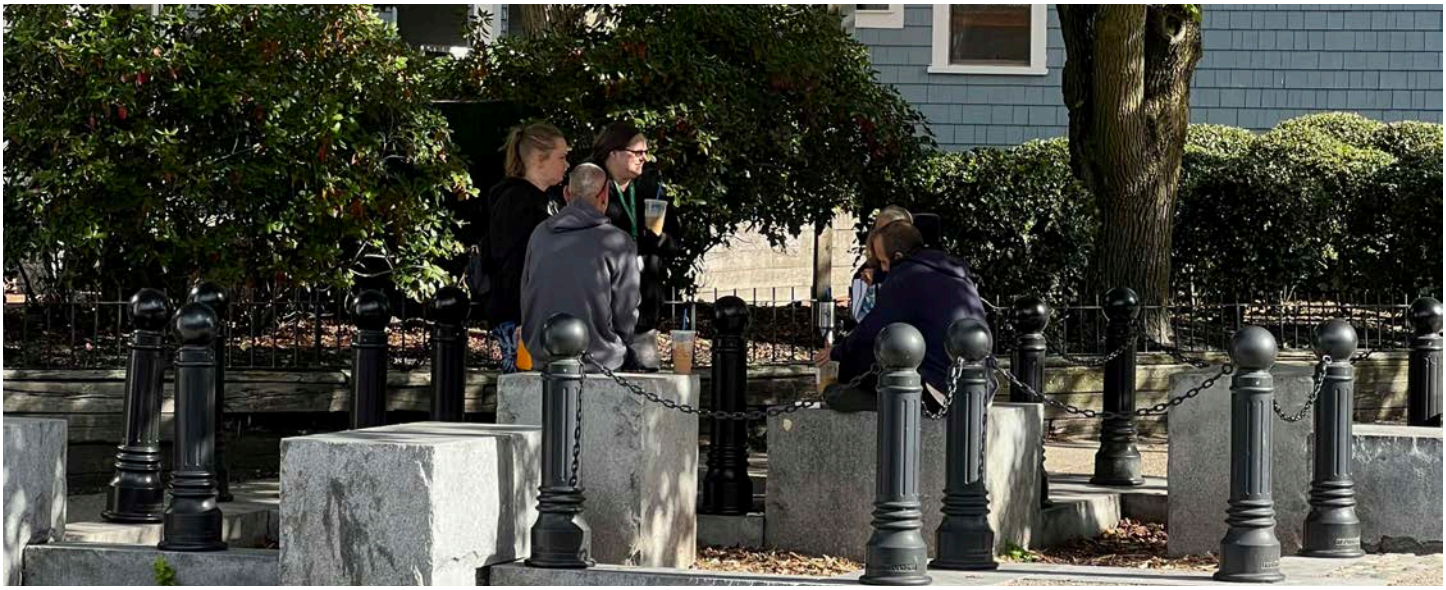
The surface temperature map captures the hottest to coolest places in the city on a typical summer day.



Map of Tree Canopy Coverage by Census Block Group

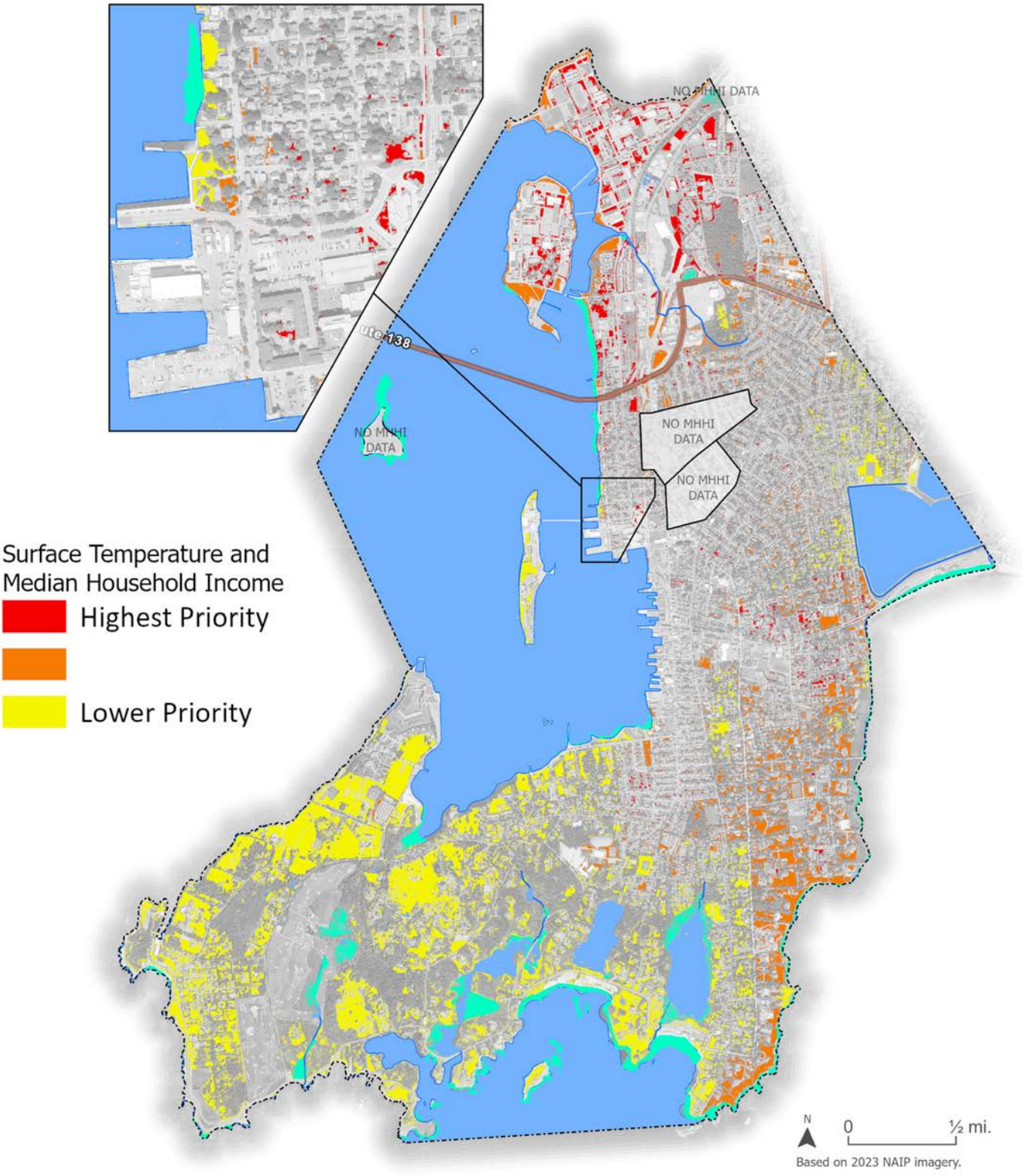
Tree canopy cover percentages by Census Block Group. By combining U.S. Census and tree canopy data, the city of Newport can identify equity-based tree planting opportunities.





Map of Heat and Income Priority Tree Planting Locations

This map uses surface temperature data and median household income data to prioritize potential tree planting areas.



Planning and Engagement Process

The City of Newport and the GIC partnered in a twelve-month effort to create this Strategic Tree Canopy Plan. Advisory committees made up of representatives from City staff and local community partners met to discuss priorities. They engaged in a series of nine workshops from the summer of 2024 to the summer of 2025 to evaluate tree canopy cover, determine plantable areas, set a canopy goal and evaluate policies and practices that support tree canopy cover. In the Spring of 2025, the GIC attended community events and held an open house. GIC continues to engage with City staff, and local partners, to coordinate next steps.

Maps beginning on page 20 show the results of the Tree Canopy Analysis. An assessment of the ecosystem services provided by city trees included:

- A stormwater analysis
- A surface temperature map
- An air quality analysis

Results of these analyses are found on pages 18-35. They were then used to identify opportunities to maximize benefits from future tree planting and retention. In addition, GIC staff conducted a code and ordinances audit to evaluate the impact of City policies and ordinances on trees, tree care, and tree protection. The audit, developed by GIC and used across the U.S., shows which policies contribute to a healthy tree cover and which lead to excessive imperviousness and less green space. Results of the audit were used to inform the final tree canopy cover strategies.

Advisory Committee

During the planning process, a Technical Advisory Committee known as "The Newport Tree Canopy Advisory Committee or TCAC" was created and consisted of City staff across multiple departments, the City Tree and Open Space Commission and local partners. This committee included representatives from the following departments: Resilience & Sustainability, Public Services, Utilities, and Planning & Development. Local partners on the committee included representatives from the Newport Tree Conservancy, the Eastern Rhode Island Conservation District, and the Aquidneck Island Land Trust. Committee members attended workshops and check-ins throughout the planning process and assisted with event organization, information gathering, and a public open house event. The TCAC reviewed the maps, data, and community input to develop the Strategic Tree Canopy Plan goals and strategies for a healthier Newport.

Community Partners

Throughout the planning process, the City and the GIC met with key community partners to discuss current initiatives and opportunities to work together for a healthier, greener city. Community partners provided support with stewardship, plantings, funding, and outreach. Community partner organizations included:

- Newport Tree Conservancy
- Aquidneck Island Land Trust
- Newport Health Equity Zone

Photo credit: NTC

The Newport Tree Conservancy is a key community partner that supports tree planting efforts in Newport and participated in the development of this plan.

Public Engagement

Community input and feedback are foundational to the Strategic Tree Canopy Plan. In addition to the planning work undertaken by the advisory committee, this planning process included opportunities for public learning, engagement, and feedback.

On April 10, 2025, GIC co-hosted an open house with the City of Newport at Innovate Newport, which included tabling by two partners (Newport Tree Conservancy and Aquidneck Island Land Trust). The speaking portion included opening remarks from the City of Newport Tree Warden, the Executive Director of Newport Tree Conservancy, and the Chair of the City Tree and Open Space Commission. A presentation from the GIC staff introduced the project. The Newport Tree Canopy Advisory Committee members were assigned map stations where members of the public were encouraged to engage in interactive activities by marking up tree canopy maps, pinpointing ecosystem services, and identifying potential planting areas. The open house was the result of a collaboration between GIC and the Newport Tree Canopy Advisory Committee.

The public open house included a mix of information sharing, discussion, and opportunities for feedback.

Summary of Community Findings

During the twelve-month planning process, the City and GIC staff participated in the following public outreach events: Newport Tree Canopy Advisory Committee meeting, Open House, and the Newport HEZ's Creativity Lab, where community members voted on strategies for the City's tree canopy. An online survey was promoted through the City of Newport and was up for 6 weeks in the Spring of 2025. We recorded a total of 47 responses from community members.

Community Participation — Top 5 Favorite Strategies

The strategies below reflect the combined responses from all survey respondents (online, open house, and outreach events).

Question: Pick your 5 favorite strategies for Newport's Tree Canopy.

This question referred to the proposed strategies identified by the Tree Advisory Committee and shared during the online survey, at outreach events and the open house. The **top five most voted strategies** (with number 5 being a tie between two different strategies) were:

1. **Adopt and achieve tree canopy coverage goals for each neighborhood and include them in the next Comprehensive plan update.** *(40 votes)*
2. **Target community engagement and education to private property owners. Utilize data on the benefits of trees, such as lower utility bills and reduced flooding.** *(31 votes)*
3. **Develop and adopt an impervious surface ordinance and a landscaping ordinance that regulate additions or alternatives to impervious surfaces and require no net increase in runoff.** *(30 vote s)*
4. **Formalize the relationship between City public services and the Newport Tree Conservancy.** *(28 votes)*
5. **Preserve as much existing vegetation & mature trees as possible through development, planning, and review projects; carve out a standalone forestry budget or line item to help ensure a long-term commitment to the urban forest.** *(24 votes each)*

Canopy Goal and Implementation Strategies

Recent national data show urban and suburban tree canopy cover is trending downwards at a rate of **175,000 acres lost per year** – approximately 36 million trees lost annually (Nowack and Greenfield 2012). Trees are lost due to development, disease, storms, and old age. Newport is no exception. Given projected development projects, Newport may lose up to 2% of its tree canopy cover. Fortunately, this loss can be managed to maintain the existing canopy at 19%. This plan not only outlines strategies to maintain the existing canopy but also increase it to 21%.

Canopy Goal

This goal accounts for development projects planned by 2025. Beyond 2025, preserving overall city canopy coverage requires replacing trees that are lost. Achieving this goal requires a coordinated effort by both the city and private property owners. Since city-owned land makes up about 12% of the total land area, the city is committed to replanting 12% of any annual tree loss. The remaining 74% will be replanted on private property by residents, businesses, and developers, and 14% will be replanted by federal and state partners who own and manage land in the city. Estimating annual tree loss at 650 trees, the city will plant approximately 170 trees per year on city-owned land and will engage with private and public landowners and businesses through outreach, education, and tree giveaways to encourage the planting of over 1,040 trees per year on private property and nearly 200 trees per year on federal and state property.

Citizens of Newport recognized that their urban forest was aging and in need of care, so in 1987, the Newport Tree Society was founded. In 1991, Newport adopted a tree ordinance and in 1992 hired a professional Tree Warden. The tree ordinance established the City of Newport Tree Commission, charged with advising the administration and establishing policy to preserve and protect public trees. The commission's mission was later expanded to include

City of Newport Goal—
Expand tree canopy coverage from 19% to 21% over the next 10 years

Estimating annual tree loss at 650 trees, the city will plant approximately 170 trees per year on city-owned land and will engage with private and public landowners and businesses through outreach, education, and tree giveaways to encourage the planting of over 1,040 trees per year on private property and nearly 200 trees per year on federal and state property.

Newly planted trees along Farewell Street help meet the goal of planting 1,400 trees annually on City-owned land.

stewardship of parks and open space, which is why it is now called the Tree and Open Space Commission. Today, the Tree Society is known as the Newport Tree Conservancy (NTC). This urban forest non-governmental organization is actively in partnership with the City of Newport to assist with the planting and maintenance of public and private trees. NTC is also educating Newport residents on how to plant and maintain trees and the benefits of doing so. One of NTC's programs is the Heritage Tree Center, dedicated to preserving the historic trees of cultural and natural significance in Newport, propagating the next generation of heritage trees for the City.

The tree canopy goal and objectives for Newport's urban forest are on the following pages. These, and other practices, will provide long-term care, protection, and best planting practices for the urban forest, and will ensure that investments in City trees pay dividends by reducing stormwater runoff, cleaning the air and water, lowering energy bills, raising property values, and providing natural beauty long into the future.

Many streets and public properties, such as this newly renovated high school, open lot, and private yard, have room for more trees to add shade, beauty, and improve air quality

Strategies

Goal: Increase tree canopy cover from 19% to 21% over the next 10 years.

1 Objective 1: Integrate existing data and relevant management planning documents to develop an urban forest management plan.

Newport originally had a roadside vegetation management plan, which was later updated with the Davey tree inventory data and the Newport Tree Conservancy's strategic plan. The city does not currently have an urban forestry management plan. Such a plan provides a five-year action plan for managing the urban forest rather than being reactionary. This can also ensure more equitable services.

Responsible Parties: Public Services, Department of Resilience and Sustainability, Tree and Open Space Commission

Timeline: 1-2 years

2 Objective 2: Target community engagement and education to private property owners. Utilize data on the benefits of trees, such as lower utility bills and reduced flooding.

GIC analyzed land cover data at the parcel level to identify optimal tree-planting locations for reducing heat and flooding on private properties. The data analysis includes information such as which parcels have room for one or more trees. This information can be used to develop a targeted outreach campaign to educate landowners and plant trees on properties that have the most capacity to absorb stormwater and reduce urban heat.

Responsible parties: Public Services, Department of Resilience and Sustainability, Tree and Open Space Commission

Potential Partners: Newport Health Equity Zone, Aquidneck Island Land Trust, Newport Tree Conservancy

Timeline: 6 months-1 year

Trees lower utility costs by reducing heating and cooling needs, while also managing stormwater to help prevent flooding.

3 Objective 3: Develop and adopt an impervious surface ordinance and a landscaping ordinance that regulate additions or alternatives to impervious surfaces and require no net increase in runoff.

Over one-third of the city's land area is comprised of impervious surfaces (e.g., concrete, buildings, pavement). Impervious surfaces prevent water from soaking into the ground, exacerbating flooding and degrading water quality. This strategy would encourage the city to adopt policies that prohibit private property owners from adding additional impervious surface to their parcel and would include requirements to offset any impervious surface additions (e.g., driveways, garages, patios, etc.) with pervious surface (e.g., grass/turf, shrubs, trees, low impact development (LID) practices, etc.).

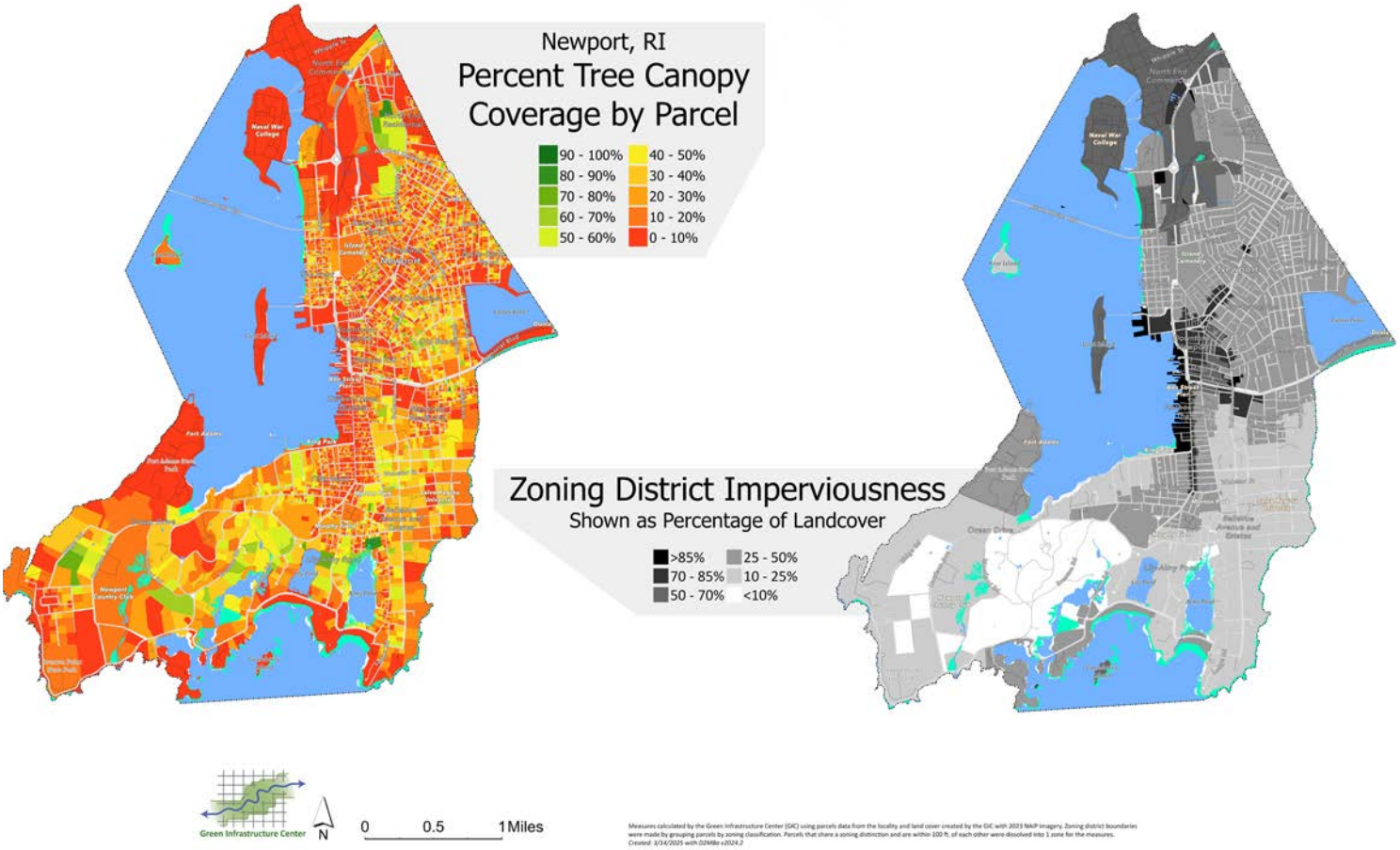
Responsible party: Department of Resilience and Sustainability, Tree and Open Space Commission

Potential Partners: Aquidneck Island Land Trust

Timeline: 1-2 years

Impervious surfaces like roads and rooftops prevent water from soaking into the ground, increasing stormwater runoff, flooding risks, and pollution in local waterways.

The former Newport Grand Casino site spans more than 23 acres, the majority of which is covered by impervious surfaces.



4 Objective 4: Establish tree canopy coverage goals for each neighborhood and include them in the next Comprehensive plan update; engage neighborhood associations.

Newport is composed of many diverse neighborhoods. Not all neighborhoods have equal access to tree canopy cover and its many benefits. Adopting neighborhood canopy goals will ensure that tree canopy growth is equitable, with more tree canopy and forestry resources allocated to low canopy neighborhoods that experience more severe heat and flooding.

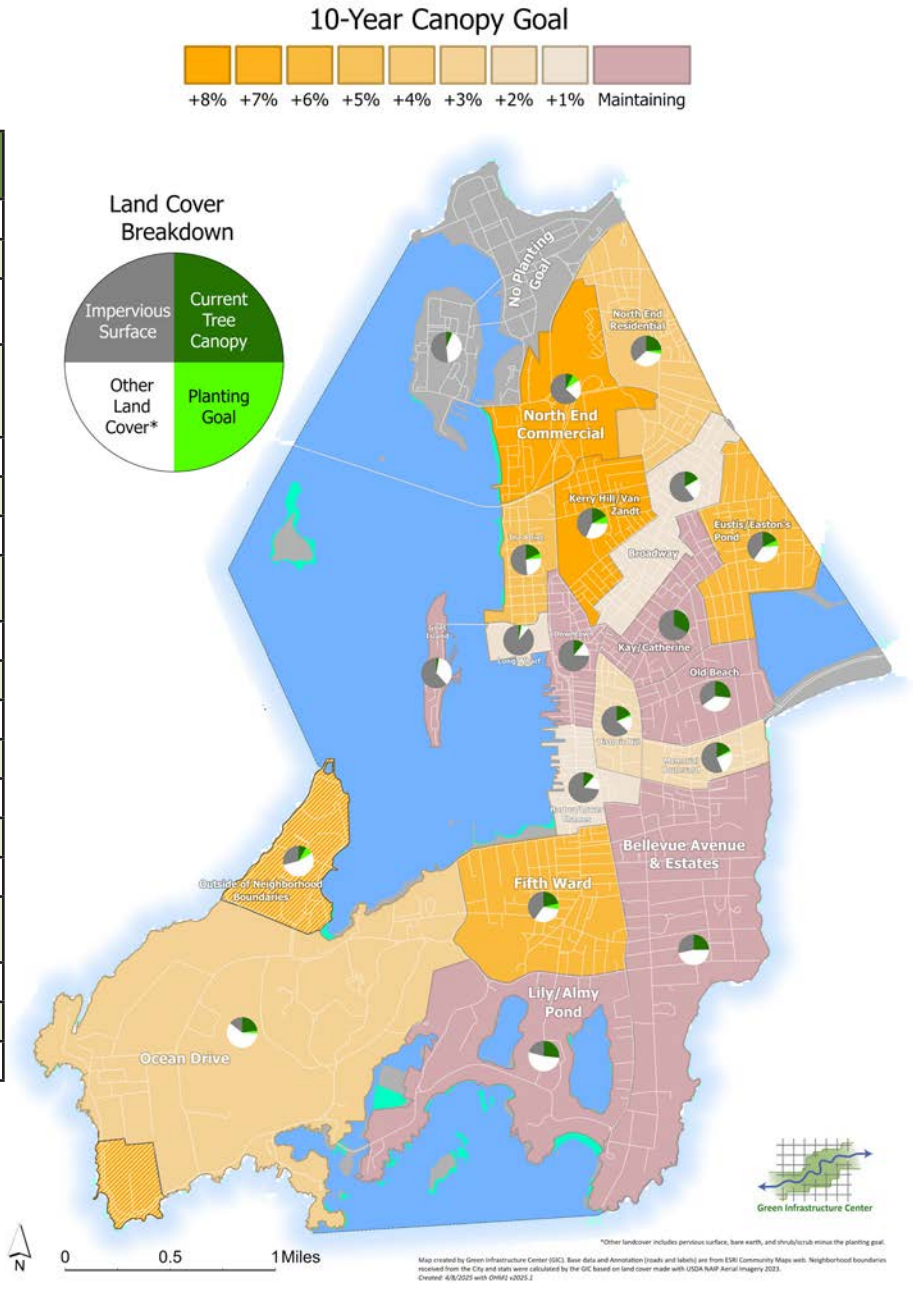
Responsible party: Department of Resilience and Sustainability, Tree and Open Space Commission

Potential Partners: Newport Tree Conservancy

Timeline: 6 months

Neighborhoods with low canopy underscores the need for equitable canopy goals to reduce heat, manage stormwater, and direct resources where they are needed most.

Neighborhood	Canopy goal	Percent increase	Trees to plant
Ocean Drive	26%	3%	4,251
Fifth Ward	27%	6%	1,855
North End Commercial	16%	8%	1,701
Outside of Neighborhood Boundaries	16%	8%	1,254
Eustis/Easton's Pond	24%	6%	1,220
North End Residential	28%	4%	1,168
Kerry Hill/Van Zandt	25%	8%	1,079
Bellevue Avenue & Estates	25%	0%	1,048
Lily/Almy Pond	26%	0%	686
The Point	23%	5%	451
Broadway	17%	1%	288
Old Beach	27%	0%	265
Memorial Boulevard	19%	2%	235
Kay/Catherine	24%	0%	226
Historic Hill	19%	2%	182
Harbor/Lower Thames	12%	1%	115
Downtown	11%	0%	90
Long Wharf	4%	1%	35
Goat Island	3%	0%	7



5 Objective 5: Optimize the preservation of existing trees and vegetation by implementing zoning ordinances and land development or subdivision regulations that guide project planning, development, and review processes.

According to the 2024 comprehensive plan, the City of Newport's land uses are well established. Mature trees offer greater benefits than newly planted trees, making them essential to preserve, especially during incremental redevelopment of parcels. This strategy supports policies that protect and preserve existing trees on the few remaining undeveloped properties in the city. This strategy also enables the city to adopt policies and procedures that maximize opportunities to protect existing trees during development, including redevelopment projects.

Responsible party: Planning & Development, Department of Resilience and Sustainability, City Council, Department of Public Services, City Council, Planning Commission

Potential Partners: Newport Tree and Open Space Commission, Department of Utilities

Timeline: Ongoing

The City and its partners can use data from the tree inventory and canopy data to develop a management plan that provides routine maintenance to city trees.

6 Objective 6: Carve out a standalone Forestry budget or line item within the Division of Parks, Grounds, and Forestry to help ensure a long-term commitment to the urban forest.

The City's current Tree Warden also serves as the City's Superintendent of Parks, Grounds, and Forestry. This person must oversee more than just trees. They have a significant influence over how much funding is allocated to each of these areas, including Parks, Grounds, and Forestry. Fortunately, the current staff member filling this role is a certified arborist with a strong passion for urban forestry. However, the budget provides no guarantee of long-term funding to plant and maintain the city's trees; this is at the discretion of the staff member currently in that role. If that staff member is more focused on grounds maintenance, they could, in theory, allocate most of the budget to grounds and very little to forestry. A standalone forestry budget would ensure that city funds are designated for planting and maintaining the city's urban trees, regardless of the special interests of staff members.

Responsible party: City Administration, City Clerk, Finance Department, Public Services, and City Council

Potential Partners: Newport Tree Conservancy, Newport Tree and Open Space Commission

Timeline: 1 year

Establishing a standalone forestry budget would secure consistent funding for planting and maintaining the city's trees, protecting this vital resource beyond individual leadership.

7 Objective 7: Formalize the relationship between City public services and the Newport Tree Conservancy.

The Newport Tree Conservancy (NTC) is a long-standing partner in urban forestry. The nonprofit plants and maintains hundreds of trees throughout the city each year. They also provide public education and outreach, and help expand the tree canopy onto private property for the collective benefit. There is currently no formal agreement between the City and the Newport Tree Conservancy that recognizes the long-standing partnership and the value that the organization brings to the City. An MOU or similar agreement could include designating a portion of the City's budget to support NTC's operations and outline how NTC and the City will collaborate to maximize their impact.

Responsible party: Public Services, Department of Resilience and Sustainability, Tree and Open Space Commission

Potential Partners: Newport Tree Conservancy, Aquidneck Island Land Trust

Timeline: 1 year

NEWPORT TREE CONSERVANCY

Photo credit: NTC

An MOU with the Newport Tree Conservancy would formalize its vital role in planting, maintaining, and educating about Newport's urban forest while securing funding and strengthening collaboration to expand the city's tree canopy.

8 Objective 8: Strengthen partnerships with local, state, and federal agencies and institutions.

Approximately 16% of Newport's land area is owned by the Federal government, the State of Rhode Island, or other large landholders. Strengthening ties with these agencies and partners will help coordinate planting efforts and help the city reach its canopy goal.

Responsible party: Department of Resilience and Sustainability, Tree and Open Space Commission, the Newport Naval Base, RI Department of Environmental Management, and RI Department of Transportation

Potential Partners: Public services, Newport Health Equity Zone, Aquidneck Island Land Trust, Ocean Hour Farm, The Preservation Society of Newport County, Salve Regina University, Newport Tree Conservancy

Timeline: Ongoing

Jiawangkun | Dreamstime.com

Fort Adams State Park's 105-acre landscape presents significant opportunities to enhance Newport's tree canopy.

9 Objective 9: Create a working group with the Navy to increase canopy coverage and reduce imperviousness.

The United States Navy owns a significant portion of Newport's land area. This area has less than 10% tree canopy cover, and over half of the land area is covered in impervious surfaces (e.g., concrete, buildings, pavement) that don't absorb water, contributing to flooding and making heat more severe. Creating a working group with the Navy could lead to collaboratively working towards reducing flooding and heat in the city's northern end.

Responsible party: Department of Resilience and Sustainability, Tree and Open Space Commission, the Newport Naval Base

Potential Partners: Newport Health Equity Zone, Newport Tree Conservancy, Aquidneck Island Land Trust,

Timeline: 1 year

Photo Credt: U.S. Navy Photo by Jaima Fogg

Founders Hall, Naval War College, Newport

The U.S. Navy owns much of Newport's land, where tree canopy covers less than 10% and impervious surfaces dominate.

Photo credit: https://usnwc.edu/About/Naval-Station-Newport

10 Objective 10: Identify and use historical data and photos to document changes in Newport's environment over time. Use this data to inform policies and for storytelling.

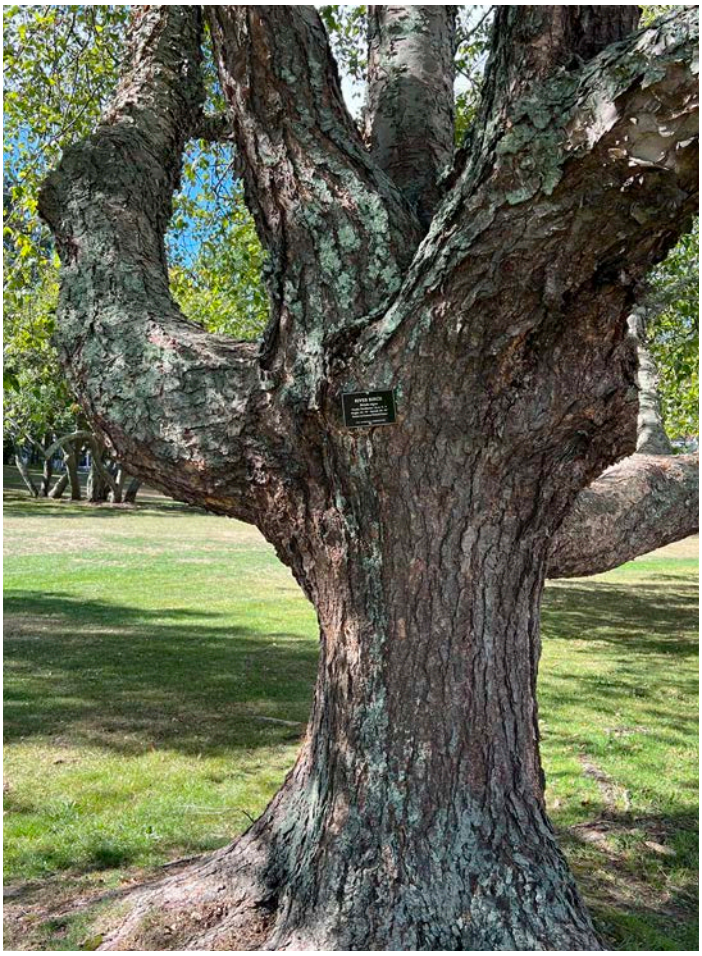
Tracking canopy and land cover changes over time provides invaluable insight into patterns. For instance, an analysis of tree canopy cover loss could reveal that the majority of the loss is attributed to a few small landowners, and a targeted strategy to increase tree canopy cover in those areas could help the city continue to work towards achieving its canopy goals.

Responsible party: Department of Resilience and Sustainability, Tree and Open Space Commission, Historic District Commission, Public Services

Potential Partners: Newport Historical Society, Preservation Society of Newport County, Newport Tree Conservancy

Timeline: 2-3 years

This declining tree highlights the value of tracking canopy loss, enabling the City to target areas for replanting and strategically grow its tree cover.



Historical tree data and photos documenting changes in Newport's trees provides valuable insight into patterns of tree loss and can inform policies.

Conclusion

Newport has new data and strategies in this plan to guide the management of its urban forest. Implementing these strategies will ensure that current and future residents enjoy the continued benefits of trees and a healthy, sustainable, and beautiful city for all.

This plan is a living document that is intended to be integrated into ongoing staff work plans, annual budgets, grant proposals, and partnerships with outside agencies. It is recommended that an implementation committee or Tree Board meet at least quarterly to document the plan's progress and adapt its strategies as needed.

Appendixes

Appendix A: Funding Opportunities

For tree campaigns to be successful, there must be dedicated funds. These funds can come from a variety of sources, including federal, state, local, and private resources. Examples of these opportunities are listed below.

NewportFed Charitable Foundation

https://newportfedfoundation.org/

- Established in 2006, it provides grants to non-profit organizations focused on health, community development, and education.

Rhode Island Division of Agriculture and Forest Environment

https://dem.ri.gov/natural-resources-bureau/agriculture-and-forest-environment/forest-environment/urban-and-community

- Tree Equity RI Grant Program
- Urban and Community Forestry Grant Program
- Community Design Assistance

Rhode Island Infrastructure Bank

https://www.riib.org/solutions/programs/climate-resilience

- Municipal Resilience Program
- Stormwater Project Accelerator

Rhode Island Foundation

https://rifoundation.org

- Donations to a public entity must be held in a trust or endowment

Rhode Island Commerce

https://commerceri.com/main-street-ri-streetscape-improvement-fund

- Main Street Rhode Island Streetscape Improvement Fund

Arbor Day Foundation

https://www.arborday.org

- Distributes various tree planting grants aimed to increase tree canopy in communities or aid communities recovering from natural disasters in restoring their urban forest.

Appendix B: References

Akbari, Hashem, Melvin Pomerantz, and Haider Taha. 2001 "Cool Surfaces and Shade Trees to Reduce Energy Use And Improve Air Quality in Urban Areas." *Solar energy*, 70, (3): 295-310.
https://www.sciencedirect.com/science/article/abs/pii/S0038092X0000089X?via%3Dihub

Arbor Day Foundation. 2025. "How to Plant Trees to Conserve Energy for Summer Shade." Accessed March 17th, 2025.
https://www.arborday.org/tree-resources/summer-shade

Benedict, Mark A., and Edward T. McMahon. 2006. *Green Infrastructure: Linking Landscapes and Communities*. Island Press.

Centers for Disease Control and Prevention. 2024. "Heat and Older Adults." Accessed March 17th, 2025.
https://www.cdc.gov/heat-health/risk-factors/heat-and-older-adults-aged-65.html

Center for Urban Forest Research and Southern Center for Urban Forestry Research & Information. 2006. "The Large Tree Argument." Accessed March 17th, 2025.
https://ctufc.org/wp-content/uploads/2018/03/The-Large-Tree-Argument.pdf

Ellison, David, Cindy E. Morris, Bruno Locatelli, Douglas Sheil, Jane Cohen, Daniel Murdiyarso, Victoria Gutierrez et al. 2017. "Trees, forests and water: Cool insights for a Hot world." *Global Environmental Change* 43: 51-61.
https://www.sciencedirect.com/science/article/pii/S0959378017300134?via%3Dihub

Endreny, Theodore A. 2018. "Strategically Growing the Urban Forest Will Improve Our World." *Nature Communications* 9 (1160).
https://doi.org/10.1038/s41467-018-03622-0

Faber Taylor, Andrea, and Frances E. Kuo. 2011. "Could Exposure to Everyday Green Spaces Help Treat ADHD? Evidence from Children's Play Settings." *Applied Psychology: Health and Well Being* 3 (3): 281-303.
https://iaap-journals.onlinelibrary.wiley.com/doi/10.1111/j.1758-0854.2011.01052.x

Kuehler, Eric, Jon Hathaway, and Andrew Tirpak. 2017. "Quantifying the Benefits of Urban Forest Systems as a Component of the Green Infrastructure Stormwater Treatment Network." *Ecohydrology* 10 (3).

McPherson, E. Gregory, and Jules Muchnick. 2005. "Effect of Street Tree Shade on Asphalt Concrete Pavement Performance." *Journal of Arboriculture* 31 (6): 303-310.

McPherson, E. Gregory, David Nowak, Gordon Heisler, Sue Grimmond, Catherine Souch, Rich Grant, and Rowan Rowntree. 1997. "Quantifying Urban Forest Structure, Function, And Value: The Chicago Urban Forest Climate Project."
Urban ecosystems 1 (1): 49-61.

National Weather Service. 2025. "NWS Climate Information." Accessed July 3rd, 2025.
https://www.weather.gov/wrh/Climate

Nowak, David J., and Eric J. Greenfield. 2012. "Tree and Impervious Cover Change in U.S. Cities." *Urban Forestry & Urban Greening* 11: 21-30. http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1239&context=usdafsfacpub

Popovich, Nadia, Blacki Migliozzi, Rumsey Taylor, Josh Williams and Derek Watkins. 2018. "How Much Hotter Is Your Hometown Than When You Were Born?" *New York Times*.
https://www.nytimes.com/interactive/2018/08/30/climate/how-much-hotter-is-your-hometown.html

Rao, Meenakshi, Linda A. George, Todd N. Rosenstiel, Vivek Shandas, and Alexis Dinno. 2014. "Assessing the Relationship among Urban Trees, Nitrogen Dioxide, and Respiratory Health." *Environmental Pollution* 194: 96–104.
https://www.sciencedirect.com/science/article/abs/pii/S0269749114003030

Tilt, Jenna H., Thomas M. Unfried, and Belen Roca. 2007. "Using Objective and Subjective Measures of Neighborhood Greenness and Accessible Destinations for Understanding Walking Trips and BMI in Seattle, Washington" *American Journal of Health Promotion* 21 (4): 371-379. https://journals.sagepub.com/doi/10.4278/0890-1171-21.4s.371

Union of Concerned Scientists. 2019, Killer Heat Interactive Tool. Accessed March 17th, 2025. https://www.ucsusa.org/resources/killer-heat-interactive-tool

U.S. Environmental Protection Agency, 2013. "Stormwater to Street Trees." Accessed March 17th, 2025. https://www.epa.gov/sites/production/files/2015-11/documents/stormwater2streettrees.pdf

U.S. EPA Watershed Academy. "Growth and Water Resources," Slide 10, Development and Runoff Graphic. Accessed March 17th, 2025. https://cfpub.epa.gov/watertrain/moduleFrame.cfm?parent_object_id=170

Wolf, Kathleen L. 2007. "City Trees and Property Values." *Arborist News* 16 (4): 34-36.

Xiao, Qingfu, E. Gregory McPherson, Susan L. Ustin, Mark E. Grismer, and James R. Simpson. 2000. "Winter Rainfall Interception by Two Mature Open-Grown Trees in Davis, California" *Hydrological Processes* 14 (4): 763-784