Newport City Public Tree Inventory Report

Prepared for the City of Newport by the
Vermont Urban & Community Forestry Program
October 2016

FORESTS, PARKS & RECREATION VERMONT

UNIVERSITY OF VERMONT EXTENSION
CULTIVATING HEALTHY COMMUNITIES

PLANT LIVE GROW
VERMONT URBAN & COMMUNITY FORESTRY PROGRAM

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

VT ANR GIS

Acknowledgements

This report was developed by Vermont Urban & Community Forestry Program (VT UCF) staff based on field work conducted by VT UCF staff and staff from the Vermont Department of Forests, Parks, & Recreation (VT FPR) for the City of Newport, Vermont in August 2016. We would like to thank the primary local contact for this project, Andrew Cappello, Director of Newport City's Department of Parks & Recreation. Special thanks to Tess Greaves, Jared Nunery, Emily Meacham, and Scott Machinist with VT FPR assisting with on-the-ground data collection in Newport City. This report was made possible with funding from the USDA Forest Service.

About the Vermont Urban & Community Forestry Program

The field of forestry management is not confined to the natural areas and forests of Vermont, but extends to the populated urban and rural spaces where trees play important roles. The trees in public parks, along roadsides, on town greens, and in municipal forests compose our urban and community forests and merit careful stewardship. VT UCF is a collaborative effort between the Vermont Department of Forests, Parks, & Recreation, the University of Vermont (UVM) Extension, and the USDA Forest Service. The program provides technical and financial assistance as well as educational programs and resources for the management of trees and forests in and around Vermont communities. The mission of VT UCF is ***to lead citizens, businesses, and governments in understanding the value of urban and community forests and promote civic responsibility for and participation in the stewardship of these resources for this and future generations***. Since 1991, the program has been guided by a small staff and a twenty-member advisory council. The council meets quarterly to share information and advise the program; its members come from various professional associations, non-profits, educational institutions, municipal tree boards and committees, and state agencies.

The trees in our communities offer a wide variety of environmental, social, and economic benefits to the surrounding community, including but not limited to: stormwater mitigation, carbon dioxide (CO_2) sequestration, air quality improvement, shade, wildlife habitat, and aesthetic value. VT UCF seeks to maximize these benefits by working with state and municipal officials, as well as dedicated volunteers and local organizations, to steward the urban forest's ecological integrity and diversity. VT UCF's programming and support reaches 100 Vermont communities annually. More information about VT UCF can be found at www.vtcommunityforestry.org.

VT UCF provides technical, financial, and educational services to VT communities to promote and support vibrant urban and community forests statewide.

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Executive Summary

The goal of the Newport City public tree inventory was to accurately locate and assess City-owned trees within the public right-of-way (ROW) on streets in the concentrated downtown and in select parks and public spaces to support tracking tree conditions, plantings, and removals. The information collected in the inventory and presented in this report provides decision makers and residents with a better understanding of the composition, condition, and benefits of Newport City's public tree population and will facilitate planning for tree maintenance and future tree planting using a map-based tree inventory tool.

This project was initiated in the spring of 2016, was coordinated with and approved by Andrew Cappello, Newport City's Director of Parks & Recreation. VT UFC and VT FPR staff completed an inventory of **268 trees** located within the public ROW of **15 streets**, in **3 parks**, and at the **Municipal Offices** building. The data collected in the inventory were checked for quality, analyzed, and interpreted by VT UCF staff. This report was prepared in October 2016. It presents the results of the inventory and provides a basic assessment of the trees and urban canopy cover in Newport City.

Local government, town boards and committees, conservation agencies, and private landowners all play an important role in monitoring and maintaining urban forests. Public trees provide a number of benefits to a community, including reducing stormwater runoff, reducing air pollution, providing shade, sequestering carbon dioxide (CO_2), enhancing property values, and improving the aesthetics of the community. The 268 public trees that were inventoried provide an estimated **$21,205 in benefits annually** to the residents and businesses of Newport City. In addition to the public trees inventoried, an aerial tree canopy assessment was completed for the overall land area assessed in the inventory – encompassing both public and private land in the area covered by the public tree inventory (concentrated downtown and select parks) that indicated an existing tree canopy cover of **21%** and an estimated long-term **stored CO_2 value of $234,398.**

Summary of Findings

Forest Diversity

- Of the 268 public trees, there are 32 different species in 20 different genera.
- The five most common tree genera by number of trees are *Acer* (maple) at 34%, *Tilia* (linden) at 19%, *Gleditsia* (honeylocust) at 7%, *Picea* (spruce) at 6%, and *Betula* (birch) at 5%.
- *Acer* and *Fraxinus* species together represent 39% percent of Newport City's public trees. Invasive tree pests currently threaten both of these genera: the Asian long horned beetle (ALB) and the emerald ash borer (EAB), respectively.
- The five most common species are *Acer platanoides* (Norway maple) at 13%, *Tilia cordata* (littleaf linden) at 12%, *Acer rubrum* (red maple) at 8%, *Gleditsia triacanthos* (honeylocust) at 7%, and *Tillia americana* (linden, or basswood) at 6%.

Forest Structure

- Nearly two-thirds of the inventoried public trees (61%) have a diameter at breast height (DBH) measurement under 12", indicating a young tree population. One-quarter (26%) of Newport's public trees are 12-18" in diameter.
- The remaining size class distribution of inventoried trees is represented as follows: 18-24" (6%), 24-30" (6%), 30-36" (2%), 36-42" (1%), and 42+" (1%).

Forest Cover

- There is an existing urban tree canopy (UTC) cover of 21% in Newport City. This aerial analysis was done for the approximately .5 mi^2 covered in in the inventory, encompassing both public and private land.
- Trees could potentially cover an additional 46% of Newport City's land surface. These "possible UTC" areas include low-lying vegetation or grassland, agricultural fields, and impervious surfaces (e.g. parking lots, paved playgrounds, and the public ROW).

- The remaining 33% of Newport City's land area is buildings, streets, water, and other permanent features and is generally unsuited to UTC improvement.

Forest Health

- Approximately two-thirds (175, or 65%) of Newport City's inventoried trees were assessed as being in "Good" condition. Of the remaining trees, 68 (25%) were considered to be in "Fair" condition, 15 (6%) were in "Poor" condition and 10 (4%) are "Dead".
- 121 trees (45%) were assessed to be in need of monitoring by a Certified Arborist, the City's Tree Warden, or another qualified individual.

Summary of Recommendations

A healthy public tree population is contingent upon proper management, stewardship, and a municipality's commitment to understanding and maintaining its urban forest. A comprehensive public tree inventory is an important piece of a vibrant community tree program, along with other components described in the Discussion and Recommendations section of this report. Based on the results of the Newport City public tree inventory, our priority recommendations are:

- Remove the 10 dead trees identified in the public tree inventory.
- Promote longevity and integrity of the particularly young public tree population as they grow towards maturity by establishing a systematic and routine structural pruning program.
- Strive for an urban tree canopy cover percentage of 35-40% by working with private landowners, maintaining the integrity of existing large canopy shade trees, and prioritizing new tree plantings in continued urban development.

The Newport City public tree inventory was conducted by VT FPR and VT UCF staff in August 2016 and included all streets within concentrated downtown, 3 park areas, and the Municipal offices building.

Introduction

Project Description

In 2013 VT UCF received a multi-year grant from the USDA Forest Service to assist twenty priority communities in Vermont in moving their public tree programs forward. The project, *Care of the Urban Forest*, is an effort that aims to support these communities in three specific ways, by: (1) conducting a public tree inventory to assess urban forest structure, diversity, and health; (2) helping the community in the development of an urban forest management plan or strategic action plan, using information from the inventory; and (3) providing technical training for municipal employees and citizen volunteers to increase in-house capacity to manage and promote the proper care of public trees.

Newport City's Parks & Recreation Director, Andrew Cappello was approached by VT UCF staff about the opportunity to be a partner on the *Care of the Urban Forest* project to conduct a full public tree inventory that would be map-based and in an electronic format. The intent of the public tree inventory was to enable Newport City staff and leadership to better understand, steward, and manage public trees more efficiently and cost effectively. The specific goal of Newport City's public tree inventory was to accurately locate and assess City-owned trees within the public ROW on streets in the concentrated downtown and in select parks and public spaces to support tracking tree conditions, plantings, and removals into the future. The complete public tree inventory was conducted by 5 professionals over the course of approximately 6 hours in early August 2016 and will provide a foundation for future management decisions and regarding the urban forest. Additionally, benefits of tree canopy cover, such as the improvement of air and water quality and increased property value, will increase as the City is empowered and informed to manage and support a vibrant public tree population.

City Profile

The City of Newport is located in Orleans County, on the shores of Lake Memphremagog and just east of the Town of Newport. Located just south of the Canadian border in the Northeast Kingdom, Newport City is ranked 8th (of 9) in population amongst Vermont cities. Newport City covers a land area of approximately 6 square miles, and has a population of 4,589 people according to the 2010 U.S. Census. Founded in the late 18th century, Newport City was incorporated in 1918, formed from portions of the towns of Newport and Derby. Originally centered on the lumber industry and lake commerce, today Newport is a largely a tourism community, with specialty shops, restaurants, and many opportunities for recreation and sight-seeing.

Methodology

To plan for the public tree inventory, VT UCF staff coordinated with Andrew Cappello, Newport City Director of Parks & Recreation. All streets within the concentrated downtown, as well as 3 City park areas and the Municipal Offices building were chosen to be included in the inventory; in total, the inventoried land area was about .5 square mile, comprising the most densely populated area of Newport City. It was decided that along the streets, the inventory should only include trees growing in the grass strip between the street and the sidewalk, or, in the absence of a grass strip, 10 feet in from the curb. The list of streets that had trees planted in tree pits along the sidewalk is included in Appendix A and GIS maps of the inventoried trees are in Appendix E.

VT UCF has developed a tree inventory tool in collaboration with the VT Agency of Natural Resources' (ANR) GIS team. The map-based tool uses the free application *Collector for ArcGIS*, developed by Esri (information available here: http://doc.arcgis.com/en/collector/), for data collection and is linked to the publicly-accessible VT ANR Atlas online mapping tool. All inventory data collected on public trees in Newport City is available for viewing on ANR Atlas and instructions are found in Appendix D.

Importance of Inventory and Urban Forestry in Vermont

A public tree inventory establishes a record of the City-owned trees present in a municipality. An inventory can provide information about the species, size, health, maintenance needs, and location of each tree. This detailed information allows municipal leaders to estimate the numerous contributions and management requirements of the trees of which it is in charge. In the event of a disease outbreak or invasive insect infestation, data from an inventory may assist in monitoring and preventing spread, as well as supporting the response to the disease or infestation. An inventory can also help build public support for expanding urban forests and to guide future urban planning.

Urban trees improve the quality of life for Vermont communities in a variety of ways. The most readily apparent benefit is the aesthetic value that trees provide a street, home, or public space. Along with this beauty is the functional benefit of providing shade along the streets in the summertime and blocking wind to reduce heating costs in the wintertime. The presence of trees has been shown to positively affect property values and boosts foot traffic in commercial areas. Parks and tree-lined sidewalks promote physical activity by creating shaded, comfortable outdoor spaces. Many types of urban wildlife depend on trees as sources of food and shelter. Unseen environmental benefits of urban trees include improvements in air quality and temperature regulation through reduction of the heat island effect. Trees can mitigate noise pollution common in an urban environment and can clean and conserve water by controlling run-off. Additionally, urban forests create opportunities for environmental education, community engagement, and in some instances can be related to crime reduction. Trees are an integral part of the green infrastructure of a place and contribute to keeping our communities healthier and our everyday lives more fulfilling.

On a sunny day in early August 2016, VT UCF staff and VT FPR State Lands Foresters and staff walked along Newport City streets and in parks, recording specific data on the public trees. To ensure that only public trees were inventoried (as opposed to trees on private property) when on a street, the inventory team only inventoried trees planted in the grass strip between street and sidewalk, or, in the absence of a grass strip, 10 feet behind the sidewalk.

Each public tree identified was recorded into the *Collector for ArcGIS* application using an iPad, provided by VT UCF. The application is map-based and uses GPS and a base layer map to allow the user to input information about a tree, linking it to a particular geographic location. Data recorded for each public tree in Newport City included street or site name; overall condition; species; diameter class (using a measurement for diameter at breast height, or DBH); a recommendation for monitoring (yes/no); comments on tree condition; and the nearest house or building address. In most cases, a picture was also taken of each tree. A full list and description of the parameters used in data collection can be found in Table 1.

Staff from VT FPR collect data on trees at the Municipal Office building (left) and along the Waterfront (right).

The data were compiled and subsequently checked for quality, analyzed, and summarized using Microsoft Excel and QGIS, a free and open source geographic information system (www.qgis.org/en/site/). Data were also analyzed through i-Tree, a free software suite developed by the USDA Forest Service (www.itreetools.org). VT UCF staff used two applications in the i-Tree suite of tools to further assess Newport City's urban forest. i-Tree Streets uses sophisticated models to determine the monetary value and ecological benefits of trees. i-Tree Canopy uses aerial imagery and random point locations to produce an estimate of land cover of a defined area - including tree canopy cover - that encompasses both public and private property.

Table 1. Data collection parameters for the Newport City public tree inventory

Data Parameters	Description
Site ID	Street name or property name.
Species	Common name. Include in comments box if not listed.
Tree Condition	● *Good:* full canopy (75-100%), no dieback of branches over 2" in diameter, no significant defects, minimal mechanical damage ● *Fair:* thinning canopy (50-75%), medium to low new growth, significant mechanical damage, obvious defects/insects/disease, foliage off-color and/or sparse ● *Poor:* declining (25-50%), visible dead branches over 2" in diameter, significant dieback, severe mechanical damage or decay (over 40% of stem affected) ● *Dead:* no signs of life, bark peeling; scratch test on twigs for signs of life (green) ● *Vacant:* potential spot for a tree within the public ROW. Add "small", "medium", or "large" in the comments box - Small= max 30' at maturity, presence of overhead wires, minimum planting space 4' x 4' - Medium= 30-50' at maturity, green belts over 6' wide, no overhead wires - Large= 50'+ at maturity, parks and open space
Diameter (DBH)	Diameter taken at 4.5' above ground in classes of 0-3", 3-6", 6-12", 12-18", 18-24", 24-36", 36-42", 42"+. If on slope, uphill side measured. If abnormal growth, measured above or below growth. If multi-stemmed, each stem's DBH is squared, all squares summed, and the square root taken; indicate "multi-stemmed" in comments box.
Monitor	Yes: any one visible defect is affecting >40% of the tree, the tree poses a hazard to people/infrastructure/cars, the trunk or branches are growing into utility wires, the tree is dead or in poor condition, or the tree is an ash tree showing evidence of woodpecker flecking, blonding, epicormic branching/water sprouts, and/or suspicious exit holes No: no major defects, tree in good or fair condition
Comments	Notes, elaborate on any existing conditions; max 255 characters.
House Number	Corresponding house address, numerical field. If a corner lot house is on a different street, enter house number and write "House located on X Street; corner tree" in comments box.
Collection Date/Time	Date and time.
Photo	Photo of full tree. Additional photos of any significant defects.

Inventory Results

Urban Forest Diversity

Of 268 trees inventoried within the public ROW or on City-owned land, there are a total of 32 different species in 20 different genera. The five most common tree genera, *Acer* (maple), *Tilia* (linden), *Gleditsia* (honeylocust), *Picea* (spruce), and *Betula* (birch) make up 71% of Newport City's urban forest (Figure 1). The five most common species are *Acer platanoides* (Norway maple) at 13%, *Tilia cordata* (littleleaf linden) at 12%, *Acer rubrum* (red maple) at 8%, *Gleditsia triacanthos* (honeylocust) at 7%, and *Tilia americana* (basswood/linden) at 6% (Figure 2). Complete species and genera lists can be found in Appendix B.

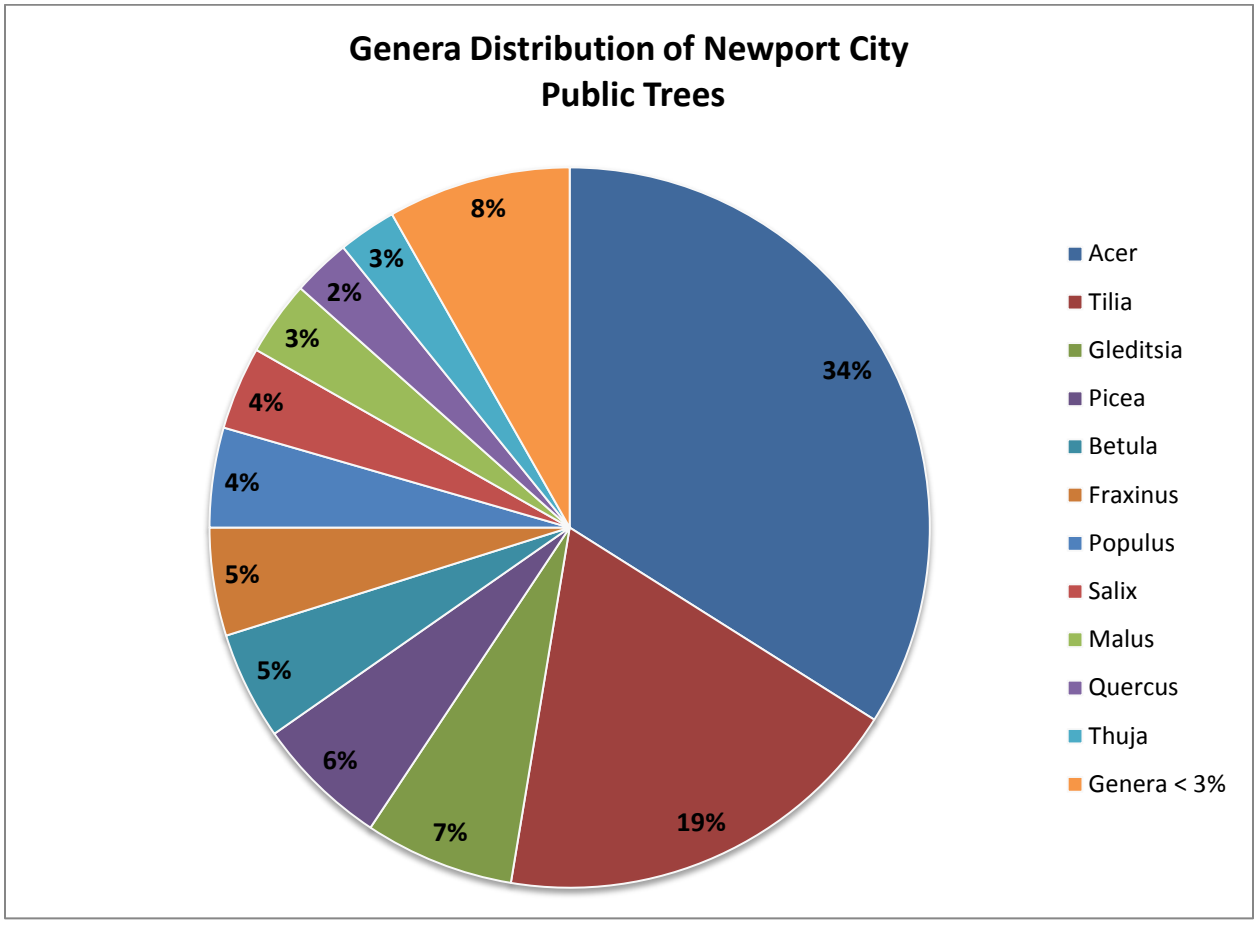


Figure 1. Tree genera of the public tree population in Newport City.

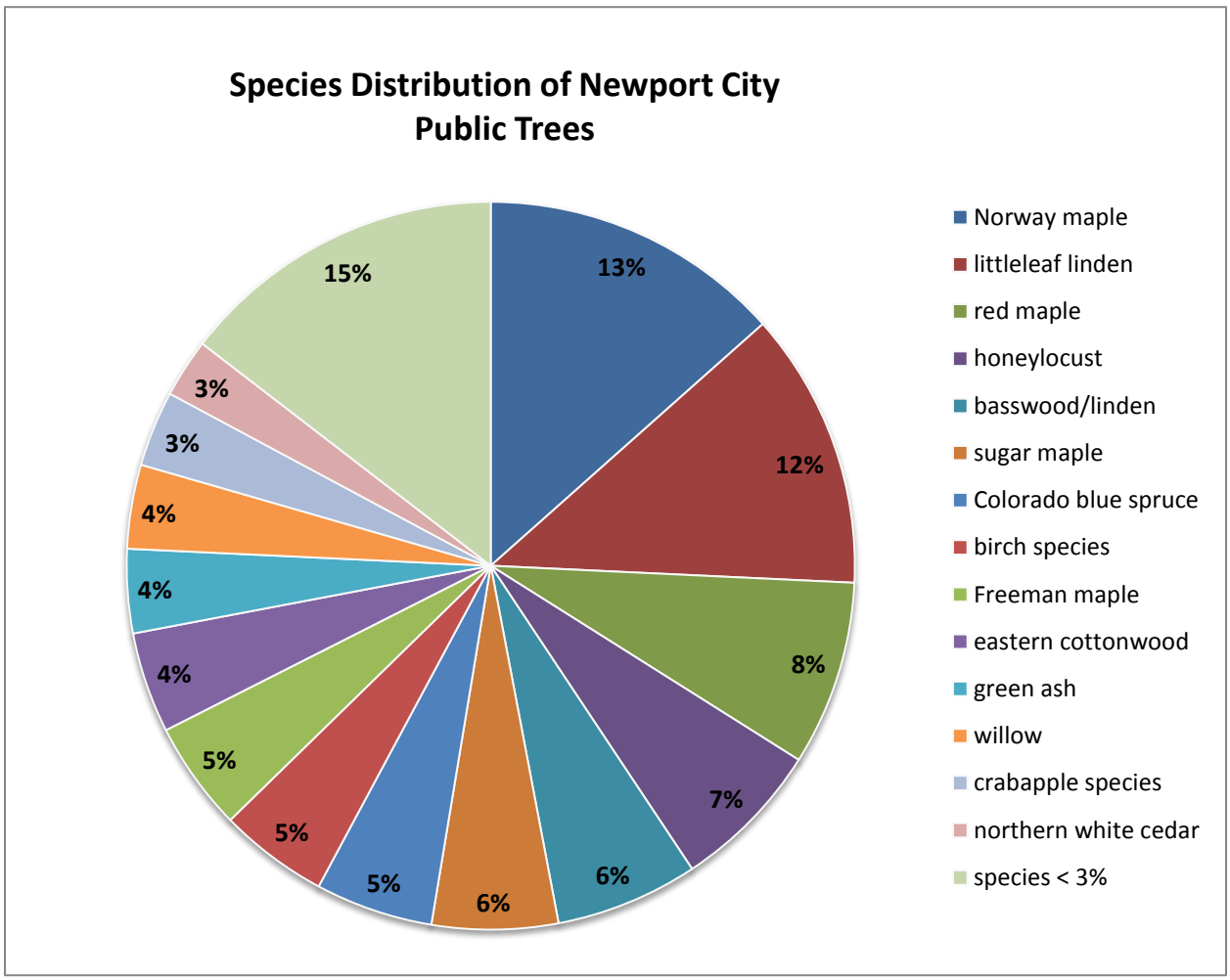


Figure 2. Tree species of the public tree population in Newport City.

Urban Forest Structure

In descending order by percent size class, the diameter distribution represented by Newport City's public trees is: 26% (70) at 12-18", 22% (60) at 6-12", 22% (58) at 3-6", 17% (45) at 0-3", 6% (16) at 24-30", 6% (15) at 18-24", 1% (1) at 30-36", .4% (1) at 36-42", and .4% (1) at 42+" (Figure 3). Thus, approximately 87% of inventoried public trees are between 0 and 18 inches. Since size class distribution can be correlated to age structure of the urban forest, it is clear that Newport City's public tree population is young and has not yet reached maturity. There are few large, mature shade trees in Newport City and those that do exist are for the most part clustered at Gardner Park. The largest tree in Newport City's public tree population is an eastern cottonwood on Pleasant Street, measuring over 60" in diameter.

The composition of genera and species within each of these size classes (Figure 4) indicates that species such as littleleaf linden, honeylocust, and Freeman maple are the youngest trees (likely planted as part of development projects), while species like eastern cottonwood represent the larger size classes; these trees in particular are clustered around the riparian edges of Gardner Park and are naturally-growing, not planted.

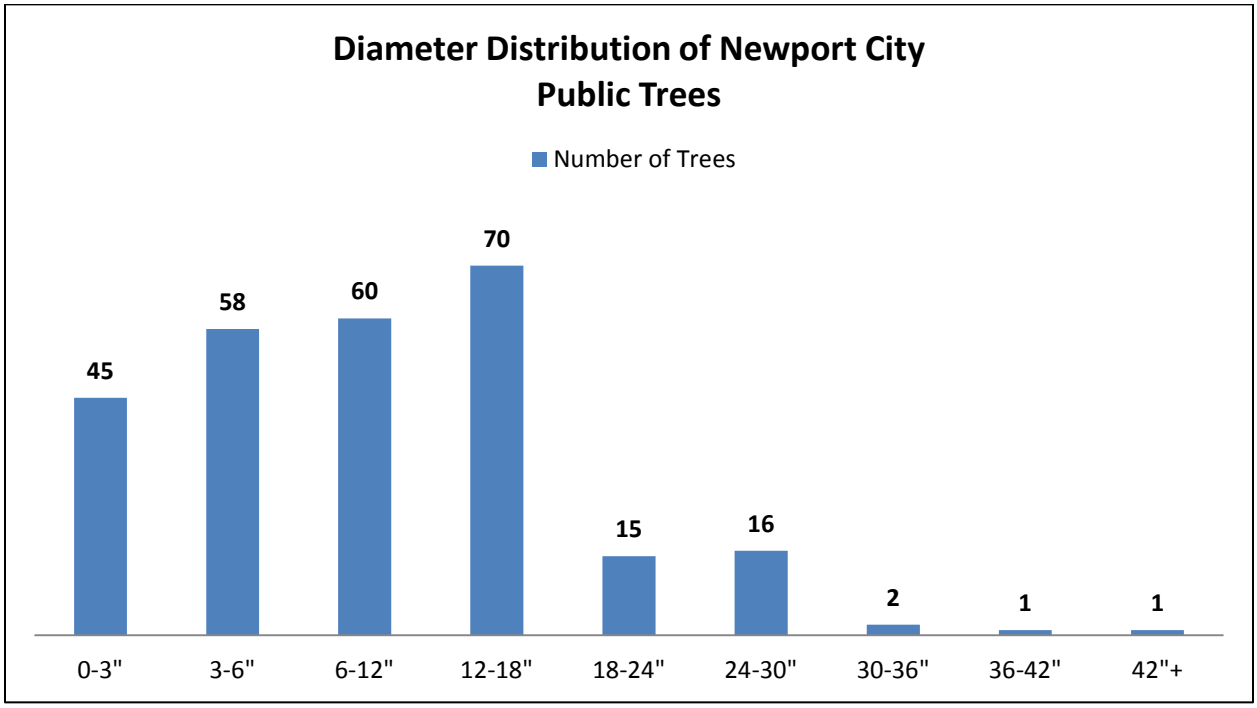


Figure 3. Percent of public trees represented in each diameter class (inches) in Newport City.

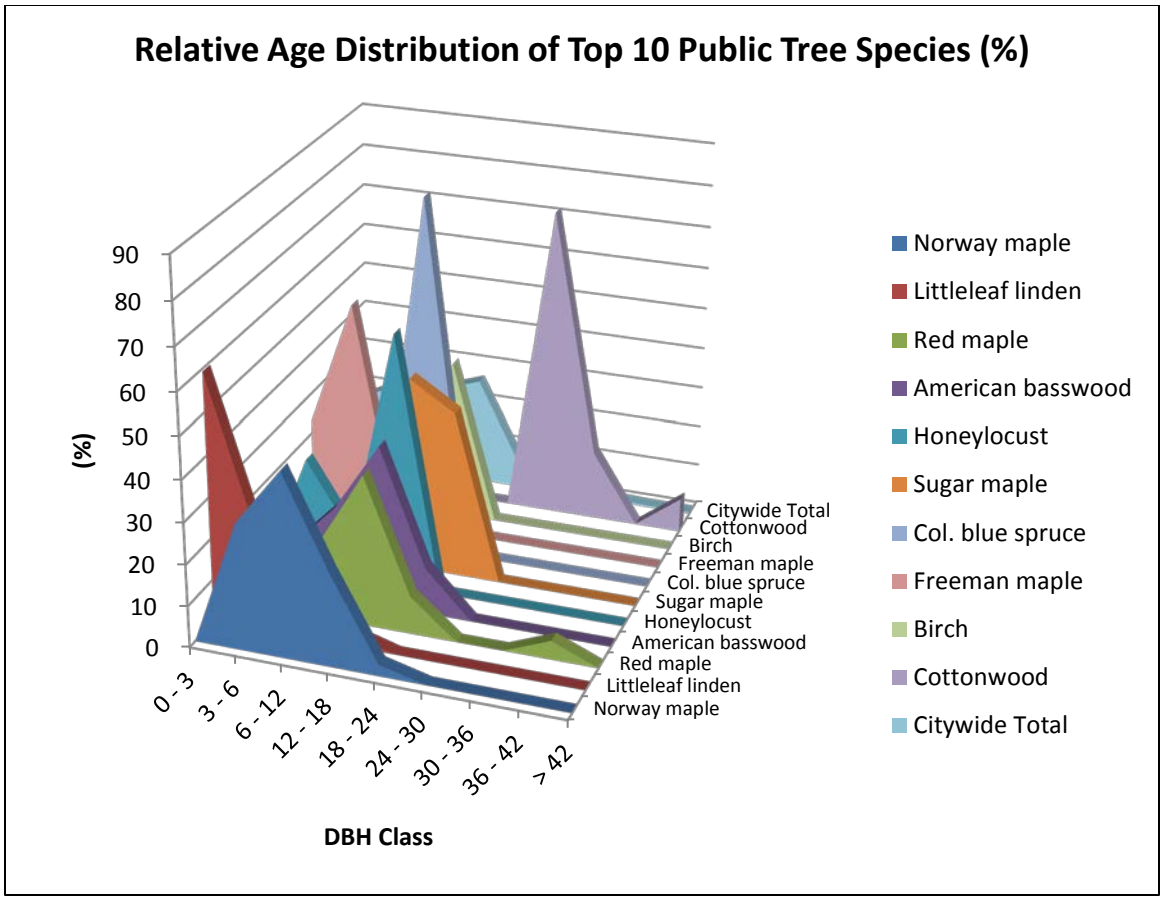


Figure 4. Diameter (and age) distribution of the ten most common species in Newport City's urban forest. Data from this figure were derived from i-Tree Streets urban canopy structure output.

Urban Forest Health

The majority (65% or 175) of Newport City's inventoried public trees were assessed as being in "Good" condition. Of the remaining trees, 68 (25%) are considered to be in "Fair" condition, 15 (6%) are in "Poor" condition, and 10 (4%) were found to be "Dead" (Figure 5). The 10 "Dead" trees are mostly small (all but 2 under 6" in diameter) and are located on Main Street (7) and Second Street (3). The majority of trees in "Poor" condition are located in Gardner Park, many of them large eastern cottonwoods that are growing naturally along the lake shores. Appendix E includes maps detailing the location of inventoried trees by condition.

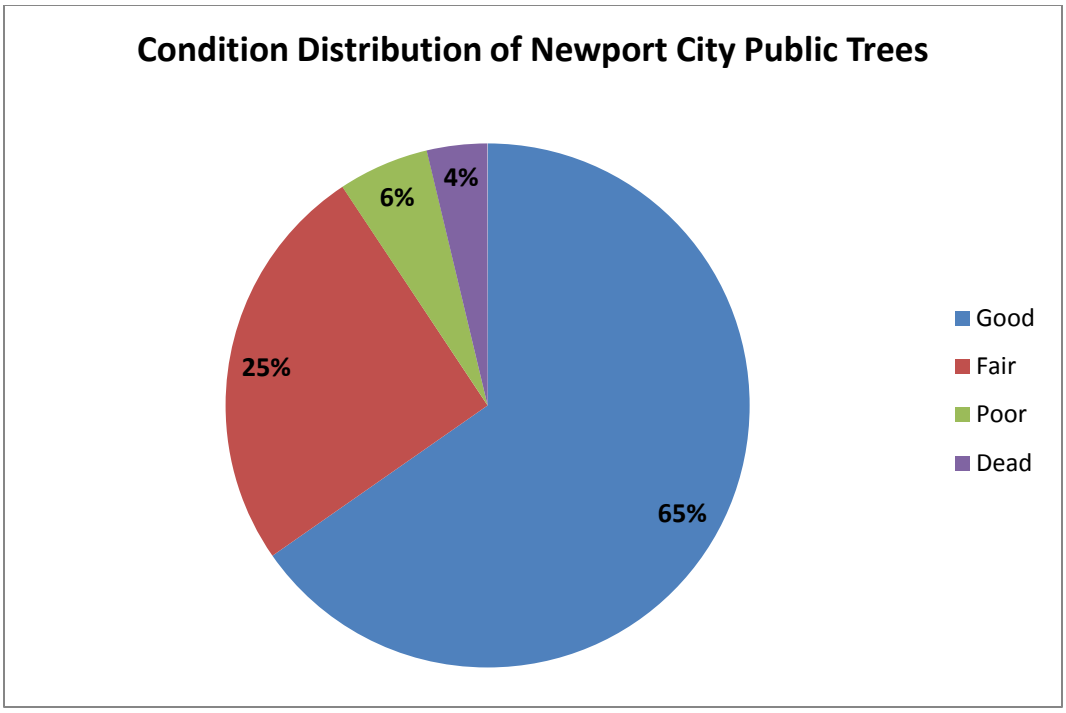


Figure 5. Percentage of Newport City's public trees in each condition class.

In conducting the inventory, VT UCF and VT FPR staff assessed 121 trees (45%) as in need of monitoring. These trees should be reassessed by a Certified Arborist, the Newport City Tree Warden, or another qualified individual in a timely matter. Trees that were flagged as in need of monitoring expressed one or more of the following conditions:

- The tree has a visible defect affecting >40% of the tree,
- The tree poses a hazard to people/infrastructure/cars,
- The tree is growing into utility wires,
- The tree is dead or in poor condition, or
- The tree is an ash (*Fraxinus*) and shows evidence of a sign or symptom of infestation by EAB (extensive woodpecker flecking, bark blonding, epicormic branching/water sprouts, and/or suspicious exit holes).

Although Newport City's public trees are generally healthy (65% assessed as in "Good' condition), proper maintenance and monitoring is required to promote the health, longevity, and benefits of Newport City's urban forest. Of note are the trees planted along Main Street in Newport City; nearly all of them were flagged as being in need of monitoring and many of them

are in “Poor” or “Dead” condition; the young trees were water stressed at the time of the inventory and many had dead or broken branches; these are issues that could be addressed through a maintenance program.

Economic Benefit and Ecosystem Services

The Newport City public tree inventory data were analyzed using i-Tree Streets software to determine the monetary value of the ecosystem services provided by the public trees. The 268 public trees provide a total of $21,205 in annual benefits by filtering air pollutants, mitigating stormwater runoff, sequestering carbon dioxide (CO_2), conserving energy, and increasing property values. On average, each public tree offers $79, or $4.62 per capita, annually in savings or services.

Figure 6 and Table 2 provide an overview of each ecosystem service provided by Newport City’s public trees. The full reports produced through the i-Tree Streets program for Newport City will be provided to the Parks & Recreation Director. It is important to recognize that the trees inventoried through this project are located on the approximately .5 square mile of land in the concentrated downtown and the City’s major public parks; expanding the inventory in Newport City’s 6 total square miles of land area would increase these figures dramatically. It is also noteworthy that larger (mature) and long-lived trees provide substantially more benefits than small and young trees. Regular maintenance and care are needed to provide for public tree health, longevity, and maximized urban forest benefits.

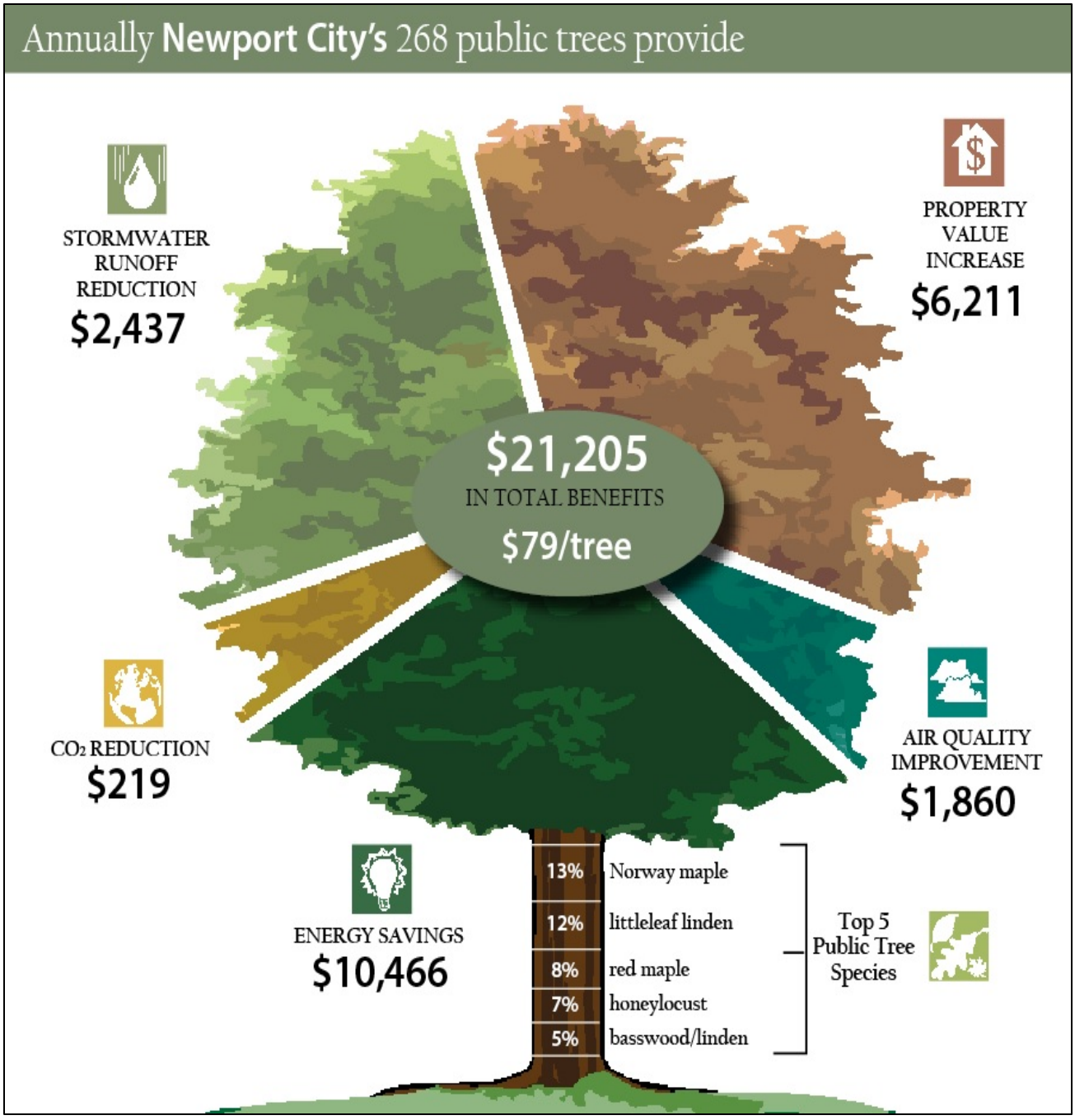


Figure 6. Summary of the benefits provided by Newport City's public trees inventoried through this project, according to the i-Tree Streets assessment. Tree graphic concept courtesy of City of New York Department of Parks & Recreation.

Table 2. Annual environmental and monetary benefits provided by Newport City's public trees.

Benefit Type	Benefit Description	Total Value of Trees Inventoried	Average Value/Tree
Energy conservation	Reduced natural gas use in winter and reduced electricity use for air conditioning in summer	$21,205	$79.12
Carbon dioxide	Annual reductions in atmospheric CO2 due to sequestration by trees and reduced emissions from power plants due to reduced energy use. The model accounts for CO2 released as trees die and decompose and CO2 released during the care and maintenance of trees.	$219	$.82
Air quality	Quantifies the air pollutants (O3, NO2, SO2, PM10) deposited on tree surfaces and reduced emissions from power plants (NO2, PM10, VOCs, SO2) due to reduced electricity use. Also reported are the potential negative effects of trees on air quality due to BVOC emissions.	$1,860	$6.94
Stormwater	Reductions in annual stormwater run-off due to rainfall interception by trees.	$2,438	$9.10
Aesthetic/other	Tangible and intangible benefits of trees reflected in increases in property values.	$6,221	$23.21
Stored carbon dioxide	Tallies all of the carbon dioxide stored in the urban forest over the life of the trees as a result of sequestration; *not an annual benefit but a cumulative benefit.	$1,846*	$6.89*

Saving the city an average of $10,466 annually in avoided heating and cooling costs, energy conservation is the most significant benefit provided by Newport City's urban forest (Figure 7). The greatest energy cost savings from the City's public trees is in the form of natural gas (versus electricity). Of all of Newport City's inventoried species, eastern cottonwood, willow, and American elm provide the greatest annual reduction in energy usage *per tree*. It is important to note that these values are derived from species, diameter class (inches), and condition class inventory data of each tree; the larger the tree canopy, the more energy benefits provided by the tree. To learn how to continue to benefit from the energy conservation potential of urban trees, refer to the Arbor Day Foundation's Trees and Energy Conservations webpage at www.arborday.org/trees/climatechange/summershade.cfm

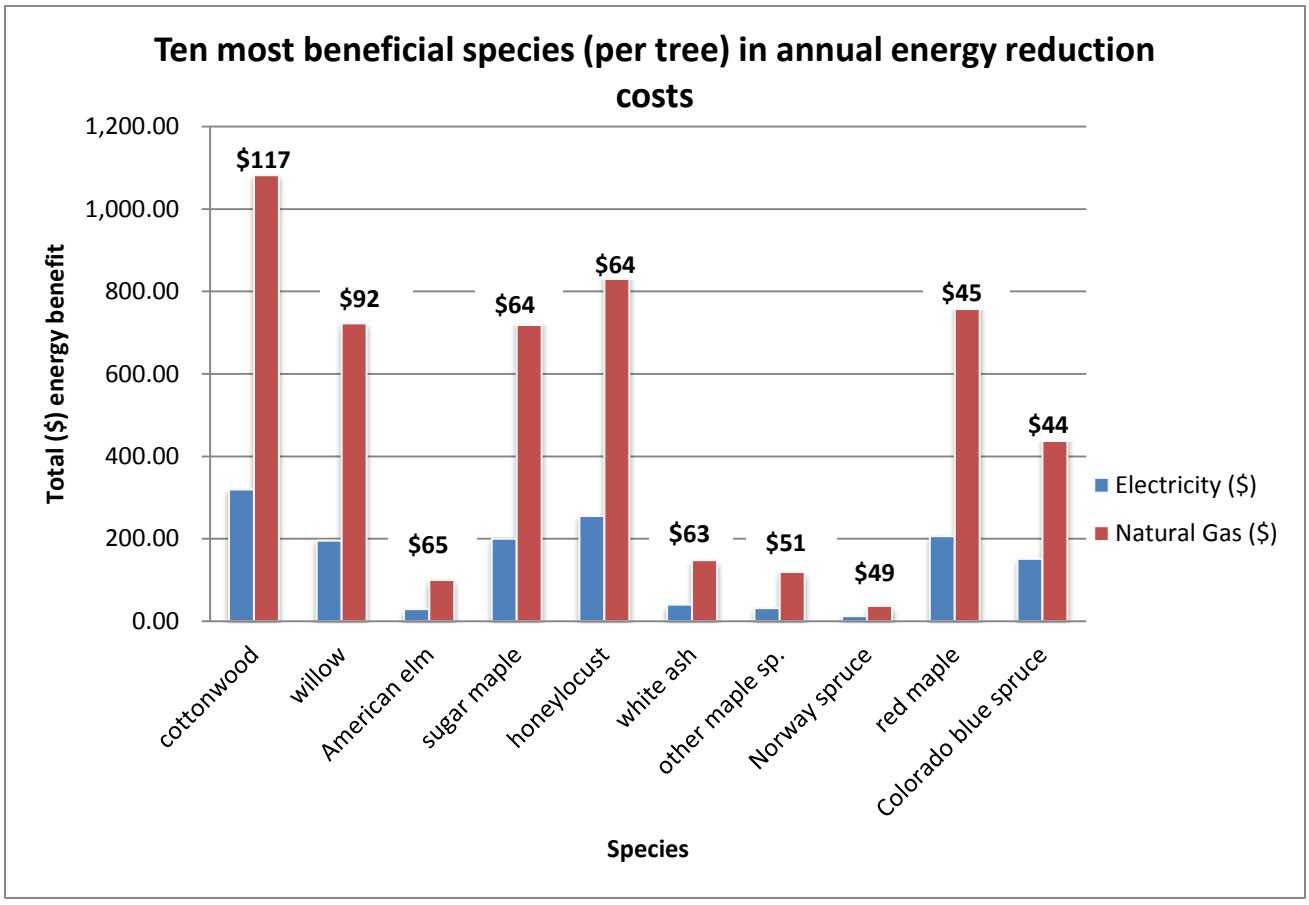


Figure 7. The average monetary value of the ten most beneficial species in annual energy cost reduction in Newport City's urban forest. The monetary values located above each species' bar represent the average annual energy reduction benefit ($) per tree. Monetary values were derived from tree species, diameter (inches), and condition inventory data through i-Tree Streets' urban canopy benefits output.

Newport City's Full Canopy Assessment

As a complement to the public tree inventory, VT UCF staff completed an urban tree canopy (UTC) assessment for the general area of encompassed by the public tree inventory effort in Newport City. VT UCF staff used i-Tree Canopy, a free, easy-to-use online application that allows users to assess total tree cover over an area based on randomly generated map points and user-defined land cover types. Like i-Tree Streets, this tool also assigns dollar values to the benefits associated with the overall tree canopy cover. The aim of this type of assessment is to help citizens and decision-makers better understand the existing and potential tree canopy in their community. Based on Newport City's i-Tree Canopy assessment, approximately 21% of the land area is currently occupied by tree canopy (Figures 8 and 9). In consideration of the other land cover types present, Newport's canopy cover could potentially increase by an additional 24% on open lands of low-lying vegetation. Currently 6% of the total area is occupied by buildings and 19% is water or wetlands, these types are not suitable for tree canopy enhancement. Approximately 22% is impervious surface (parking lots, playgrounds, roads and the ROW) and with strategic planning initiative, some of this could be converted to tree canopy. In total, there is currently potential to increase Newport City's overall tree canopy cover by 44%, though much of this land is privately-owned.

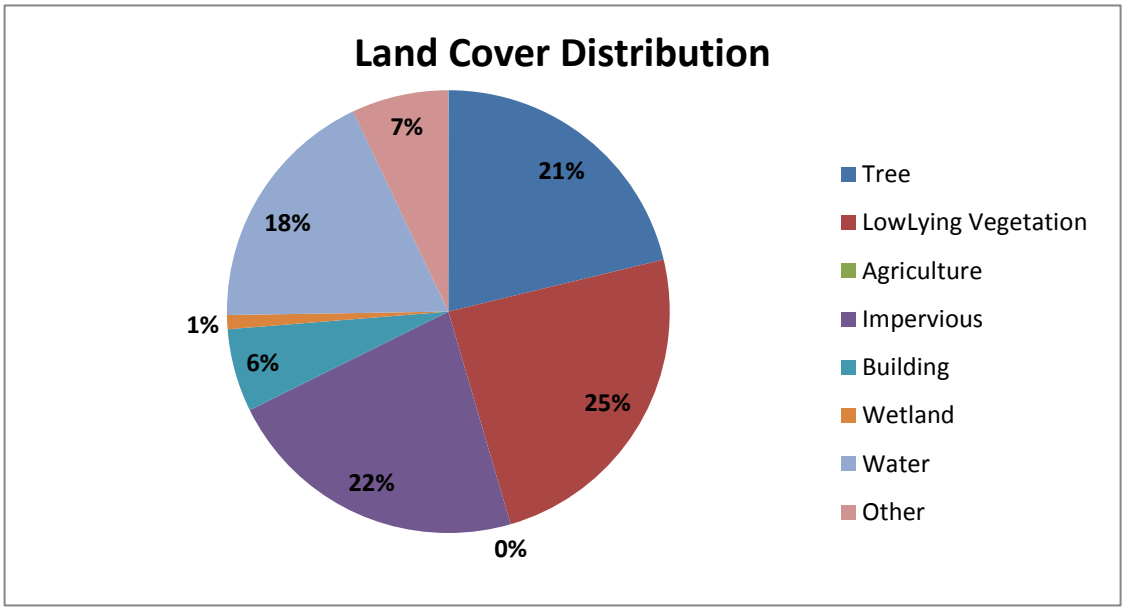
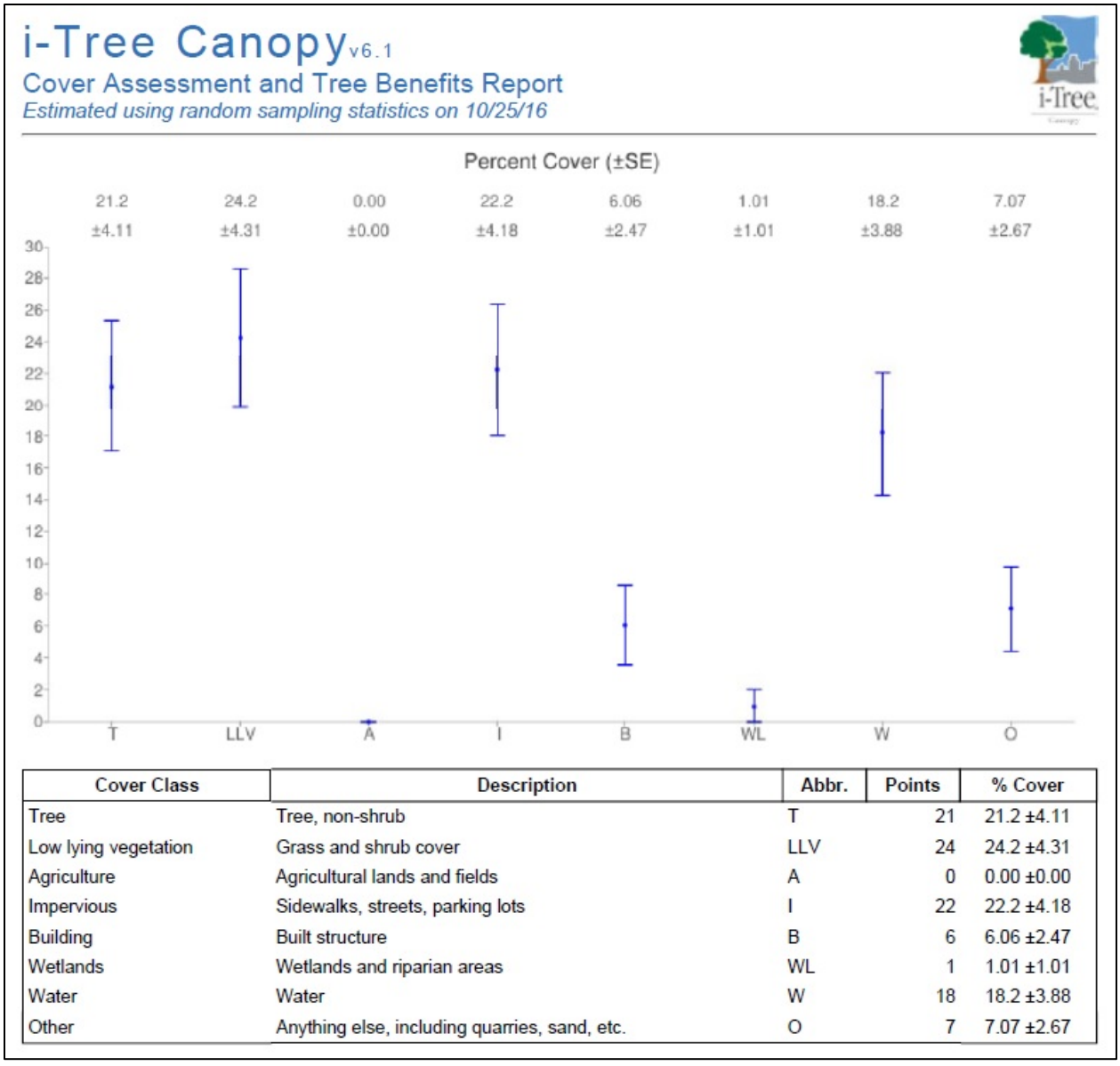


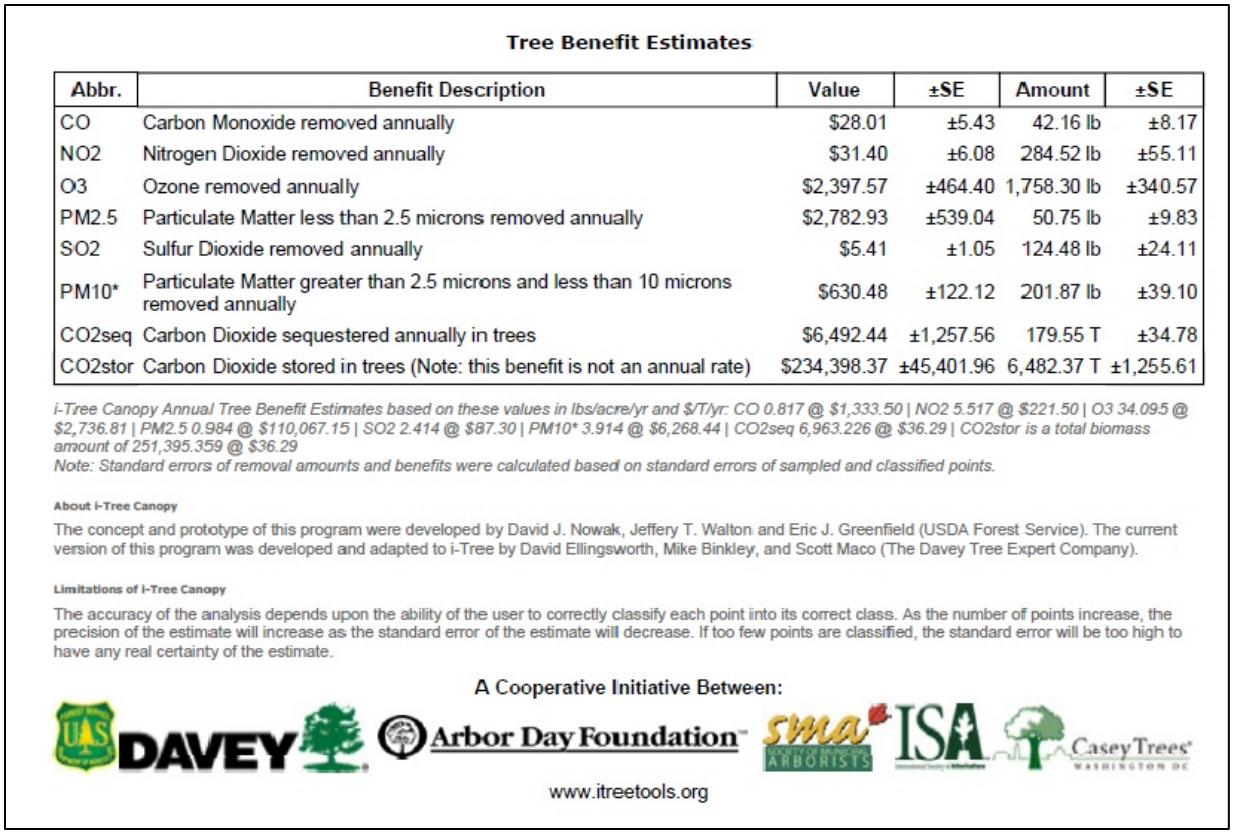
Figure 8. Land cover of Newport City (includes public and private land).



Cover Class	Description	Abbr.	Points	% Cover
Tree	Tree, non-shrub	T	21	21.2 ±4.11
Low lying vegetation	Grass and shrub cover	LLV	24	24.2 ±4.31
Agriculture	Agricultural lands and fields	A	0	0.00 ±0.00
Impervious	Sidewalks, streets, parking lots	I	22	22.2 ±4.18
Building	Built structure	B	6	6.06 ±2.47
Wetlands	Wetlands and riparian areas	WL	1	1.01 ±1.01
Water	Water	W	18	18.2 ±3.88
Other	Anything else, including quarries, sand, etc.	O	7	7.07 ±2.67

Figure 9. i-Tree Canopy assessment for the inventory area of Newport City including both public and private land. The above image shows the ground cover composition distribution.

Figure 10 compliments the i-Tree Streets analysis of the monetary value of benefits provided by Newport City's public trees by estimating the air quality benefits and corresponding monetary value of the full urban forest canopy (both public and private land). Of note is an estimated $234,398 in CO_2 storage and $6,492 in annual CO_2 sequestration value.



Tree Benefit Estimates

Abbr.	Benefit Description	Value	±SE	Amount	±SE
CO	Carbon Monoxide removed annually	$28.01	±5.43	42.16 lb	±8.17
NO2	Nitrogen Dioxide removed annually	$31.40	±6.08	284.52 lb	±55.11
O3	Ozone removed annually	$2,397.57	±464.40	1,758.30 lb	±340.57
PM2.5	Particulate Matter less than 2.5 microns removed annually	$2,782.93	±539.04	50.75 lb	±9.83
SO2	Sulfur Dioxide removed annually	$5.41	±1.05	124.48 lb	±24.11
PM10*	Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	$630.48	±122.12	201.87 lb	±39.10
CO2seq	Carbon Dioxide sequestered annually in trees	$6,492.44	±1,257.56	179.55 T	±34.78
CO2stor	Carbon Dioxide stored in trees (Note: this benefit is not an annual rate)	$234,398.37	±45,401.96	6,482.37 T	±1,255.61

i-Tree Canopy Annual Tree Benefit Estimates based on these values in lbs/acre/yr and $/T/yr: CO 0.817 @ $1,333.50 | NO2 5.517 @ $221.50 | O3 34.095 @ $2,736.81 | PM2.5 0.984 @ $110,067.15 | SO2 2.414 @ $87.30 | PM10 3.914 @ $6,268.44 | CO2seq 6,963.226 @ $36.29 | CO2stor is a total biomass amount of 251,395.359 @ $36.29*

Note: Standard errors of removal amounts and benefits were calculated based on standard errors of sampled and classified points.

About i-Tree Canopy

The concept and prototype of this program were developed by David J. Nowak, Jeffery T. Walton and Eric J. Greenfield (USDA Forest Service). The current version of this program was developed and adapted to i-Tree by David Ellingsworth, Mike Binkley, and Scott Maco (The Davey Tree Expert Company).

Limitations of i-Tree Canopy

The accuracy of the analysis depends upon the ability of the user to correctly classify each point into its correct class. As the number of points increase, the precision of the estimate will increase as the standard error of the estimate will decrease. If too few points are classified, the standard error will be too high to have any real certainty of the estimate.

A Cooperative Initiative Between:

www.itreetools.org

Figure 10. i-Tree Canopy assessment estimates of air quality benefits provided by public and private trees in the area of the Newport City public tree inventory.

Discussion and Recommendations

Newport City's Public Tree Program

Newport City's participation in the *Care of the Urban Forest* demonstrates that there is local interest in enhancing the municipality's public tree program. Newport City has both municipal staff and residents who are aware of the many benefits of public trees, and as the city continues to redevelop and reinvigorate its downtown, consideration of the urban forest will be important. The 2016 public tree inventory and this report lay a foundation for better understanding the management needs and value of Newport City's public trees, as well as the ways in which residents and City leadership can be engaged for tree stewardship.

Recommendations

We recommend that Newport City leadership and staff note the following considerations to continue to develop the public tree program:

- Work with VT UCF staff to develop an action plan based on the results of the inventory to prioritize goals and establish a timeline for Newport City's public tree program.
- Encourage the formation of a citizen tree committee or board to help coordinate and implement the City's tree program
- Ensure that those who are caring for Newport City's public trees are trained in best tree care practices. Public trees should be structurally pruned to promote long-term integrity, newly-planted trees should be irrigated to promote proper establishment, mulch should be applied properly, and mechanical and compaction damage should be minimized during any construction or regular maintenance activities.
- Advocate for an explicit annual maintenance budget for Newport City's trees; funds should be allocated not only for tree removals, but also for regular planting, maintenance, and monitoring of the public trees.
- Encourage citizens to participate in stewardship activities; particularly because of the trees in the *Acer* (maple) and *Fraxinus* (ash) genera, residents should be aware of the signs and symptoms of EAB and ALB and should be empowered to monitor for these invasive forest pests.
- Plan for the arrival of EAB by developing a community invasive forest pest preparedness plan, perhaps as a component of the overall plan for Newport City's public trees; this process will inform future planning efforts for other threats to the urban forest.
- Communicate the benefits of Newport City's public trees at local events and to local leadership, and encourage citizen participation in VT UCF educational programming, such as the *Stewardship of the Urban Landscape* course, winter webinar series, annual VT Arbor Day Conference, and *Forest Pest First Detector* trainings.
- Encourage businesses and residents to plant trees on their private property to increase diversity, overall urban tree canopy cover, and the benefits provided by trees to citizens of Newport City.

Urban Forest Diversity and Structure

An important best management practice in urban forestry is to maintain a diverse range of species. It is recommended that communities work towards a goal of no more than 20%

representation of a single genus (for example, *Acer*) in a tree population and no more than 10% of one species (for example, *Acer saccharum*). Resistance to disease and insect infestation is one of the many reasons that diversity of public trees is of paramount concern. A more diverse urban forest is more resistant to environmental stressors, and can therefore remain healthy and resilient in the face of change. Furthermore, maintaining greater diversity can prevent a rapid loss of tree canopy due to insect and disease issues.

In Newport City, 32 species and 20 genera are represented as public trees. One third (34%) of public trees inventoried is in the maple (*Acer*) genus, which is more than the recommended representation within the public tree population. Norway, red, and sugar maple comprise 13%, 8%, and 6% of the total tree population, respectively. Of note, Norway maple is the most prevalent individual species in Newport City but is now considered to be a non-native invasive species in Vermont. Although an aesthetically pleasing and hearty tree, Norway maple can spread into nearby forests and out-compete native species such as sugar maple. In fact, Vermont's Plant Quarantine Rule prohibits the movement, distribution, and sale of Norway maple, as well as other invasive plant species. Based on its size class distribution in Newport City, it is likely that

Components of a Managed, Vibrant, and Resilient Public Tree Program

A successful urban forestry program requires a combination of organized leadership, comprehensive information about the tree population, dedicated personnel, and effective public relations. We recommend the following components for successful urban forest management.

Public Policies: A tree ordinance or policy provides authority for conducting forestry programs, defining municipal responsibility for public and private trees, passing regulations and setting minimum standards for urban forestry management.

Leadership: Define who is responsible for the oversight of the urban forest, including formulating policies, advising, administration, management, representation and/or advocacy.

Partnerships: A well-managed urban forest takes the work of many. Seek strategic partnership to meet a shared vision. At a minimum the tree warden, a local advisory committee like a tree board or conservation commission and municipal staff (parks, roads, planning) should collaborate.

Responsibility: A clear understanding of which trees and areas will be managed is an important first step. Street trees, parks and village greens, cemeteries and schools are typical areas of municipal responsibility.

Assessment: A complete public tree inventory, including tree locations, species, condition, and management needs provides the necessary information to manage the resource. An inventory is the foundation to developing a strategic management plan.

Management Plan: A management plan provides a vision for the long-term management of the urban forest. It should include strategies, budgets, and responsibilities for meeting that vision.

Staffing: The care of urban forest requires a certain skill set that can be found in-house with professional staff or through consultants. Whether creating a staff position for a Certified Arborist or urban forester, or contracting with them on an as-needed basis, professional assistance will have some of the greatest and most immediate impacts on an urban forestry program.

Tree Canopy Goals: Consider a community's entire tree canopy to reduce loss and maximize gains over time by protecting undeveloped forest and impacts of land development, enhance the health condition and function of forests, and reforest through active replanting or allowing regeneration.

Norway maple has been planted in Newport City in recent years, as there are about a dozen in the 3-6" size class. Ash trees (*Fraxinus*) comprise just 5% of Newport City's public tree canopy. Both ash and maple trees are currently threatened by invasive tree pests; EAB and ALB, respectively. While neither of these pests has been discovered to-date in Vermont, the largest ALB infestation in North America is just over 50 miles to our south in Worcester, MA and with the discovery of EAB in New Hampshire in 2013, Vermont is now surrounded on all sides by states or provinces with isolated infestations of EAB. See Appendix F for a map detailing the location of all public ash trees in Newport City. Concentrations of Norway maple are located on Main Street, Coventry Street, and at Pomerleau Park. Red and Freeman (a cross between red and silver) maples are concentrated at Gardner Park. There are a number of green ash trees near the Newport City dock at the waterfront park.

Approximately 87% of the inventoried public trees are less than 18" in diameter, indicating a very young public tree population that has not yet reached maturity. The distribution of size classes within that 87% tells a story of recent plantings of honeylocusts, lindens, and Freeman maples in the ROW (primarily Main Street) in recent years, but not much planting along other city streets. Just 7% of Newport City's public trees are over 24' in diameter; these large, mature shade trees are concentrated at Gardner Park, thriving in large grassy areas, and are essential to preserve for their aesthetic, environmental, and cultural value. It is important to emphasize that mature shade trees provide significant benefits, but in order to reach maturity the maintenance of public trees must be a prioritized investment.

Recommendations:

We recommend that Newport City continues to develop its species and structural diversity by:

- Planting new species and increasing the number of lesser represented species in order to promote long-term health and resilience of individual trees and Newport City's overall public tree population. Refer to VT UCF's Tree Selection Guide at vtcommunityforestry.org/resources/tree-care/tree-selection.

- Due to the high number of existing maple (*Acer*) and linden *(Tilia)* trees in Newport City, we suggest prioritizing other species for future plantings.
- Existing ash (*Fraxinus*) trees should be regularly monitored for signs and symptoms of EAB and new ash trees should not be planted.
- As Newport City's young public trees mature, promote their health and integrity with a systematic structural pruning and maintenance cycle.

Urban Forest Health

Overall, Newport City appears to have a fairly healthy population of public trees. A dedicated tree care budget and established maintenance program (opposed to explicit funds only for the removal of trees) would bolster the support for the continued health of the urban forest. Approximately 35% (93) of Newport City's public trees are either considered to be in "Fair", "Poor", or "Dead" condition. There are high concentrations of "Fair" and "Poor" trees on Main Street and at Gardner Park. Almost half (121) of the inventoried trees were assessed to be in need of continued monitoring by a Certified Arborist, the Tree Warden, or another qualified individual. Many of these trees overlap with those designated as in "Fair", "Poor", or "Dead" condition and others were likely noted because of conflict with City infrastructure. See Appendix E for a map detailing the locations of trees in Newport City by condition and a separate map indicating the location of the 97 trees that require monitoring. Low soil volume and fertility, soil compaction, exposure to road salt spray, root damage, mechanical damage to the trunk or branches by weed whackers or snow plows, and improper pruning and planting are some of the contributing factors that may lead to decreased tree health in an urban setting. The full inventory data spreadsheet, with specific comments associated with the 121 trees requiring monitoring will be given to the Newport City Parks & Recreation Director.

Recommendations:

In order to ensure the long-term health and vibrancy of Newport City's public trees, we recommend the following activities:

- Develop a plan to remove – and replace, if appropriate – the 10 dead trees in Newport City; 7 of them are on Main Street and 3 are on Second Street.

- Prioritize the monitoring of the 121 trees that have been flagged for monitoring by a Certified Arborist or the Newport City Tree Warden.
- Establish a routine and systematic pruning cycle (multi-year) for all public trees to reduce the occurrence of branch failures due to poor structure, minimize conflicts with people and infrastructure, improve lines of sight, reduce storm damage, and protect public safety.
- Encourage a culture of continual monitoring and updating the tree inventory spreadsheet as necessary as regular tree management occurs in Newport City; consider assigning the responsibility of inventory database maintenance to one individual; VT UCF staff is available to assist in developing a tree management regime.

Assessment Tools

Using free and accessible i-Tree software developed by the USDA Forest Service, VT UCF staff was able to assess the benefits, value, and extent of Newport City's urban tree canopy. i-Tree Streets allowed us to determine the economic value of the ecosystem services provided by the 268 inventoried trees in Newport City. The City's forest generates about $21,205 annually through the benefits of air quality improvement, carbon storage, electricity and natural gas, aesthetics, and storm water control; on average, each tree offers approximately $79 in service or savings every year. The trees of Newport City provide services to the city in the following ways:

- **Aesthetics**: Trees can make an urban or suburban environment a more pleasant and satisfying place to live, work, and spend leisure time (Dwyer et al. 1991[1]). In economic terms, presence of – particularly mature - shade trees can significantly increase property value. There are also numerous health benefits associated with the mere presence of

[1] Dwyer, J.F., H. W. Schroeder, and P. H. Gobster. (1991). The significance of urban trees and forests: toward a deeper understanding of values. *Journal of Arboriculture,* 17: 276-284.

trees. For example, hospital patients with window views of trees have been shown to recover faster than patients without such views (Ulrich 1984[2]).

- **Air quality**: Trees improve air quality by removing air pollutants through their leaves, altering emissions from building energy use, and by lowering air temperature.
- **Energy use**: Trees influence thermal comfort and energy use by providing shade, transpiring moisture, and reducing wind speeds, mitigating the need for heating of buildings in the winter and cooling in the summer.
- **Stored carbon and sequestered carbon dioxide**: Trees store carbon in their tissues as they accumulate biomass over time; an estimated 770 million tons of carbon, valued at $14.3 billion, is stored in the public forests in the contiguous United States store 770 million tons of carbon, (Nowak and Crane 2002[3]). Trees also mitigate greenhouse gas emissions by sequestering carbon dioxide through the process of photosynthesis.
- **Storm water run-off**: Trees and soil improve water quality and reduce costs associated with stormwater treatment by retaining or slowing flow of precipitation.

Using a random sample method and based on assessing land cover types, i-Tree Canopy allowed us to measure the overall tree canopy cover within the boundaries of the inventory area, capturing both private and public tree canopy totals.

Recommendations

We recommend that Newport City leadership explore the results of the two i-Tree assessments detailed in this report and:

- Use the information generated through i-Tree Streets and i-Tree Canopy to promote the understanding of tree benefits and the investment in urban forest management and local stewardship.

[2] Ulrich, R.S. (1984). View through a window may influence recovery from surgery. *Science*, 224:420-421.

[3] Nowak, D.J.; D. E. Crane. (2002). Carbon storage and sequestration by urban trees in the USA. *Environmental Pollution* 116(3): 381-389.

- Use the i-Tree Canopy UTC and land cover assessment to inform and promote efforts towards an overall urban canopy cover of 35-40% (up from the current 22%). This might include outreach to private property owners to communicate tree benefits and encourage tree planting on their land.
- Explore the other free assessment tools in the i-Tree tools suite (www.itreetools.org).

Conclusion

Trees in our downtowns and densely populated landscapes contribute to environmental integrity, social cohesiveness, economic activity, cultural heritage, and overall well-being. This report is one component of an effort by Newport City municipal staff to understand, manage, and steward the city's public tree population. The recommendations outlined in this report are based on VT UCF staff's observations and data analysis combined with their experience and evaluation; they should be considered by Newport City leadership and the Newport City Tree Warden based on long-term vision and capacity. Looking ahead, Newport City should focus efforts on maintaining the quality of the mature urban trees, establishing a maintenance and pruning program for the young tree population, increasing its genera and species diversity, and increasing total urban canopy cover. With improved monitoring, regular maintenance, and an engaged and informed citizenry, the potential for a healthy, sustainable urban forest is attainable.

Appendices

Appendix A: Full Street and Site List of Newport City's Public Tree Inventory

Street or Site Name	Right-of-Way Measurement	Number of Trees Inventoried
BAYVIEW STREET	Curb to sidewalk or 10' behind curb if no greenstrip	0
CENTRAL STREET		13
COMPASS WAY		0
COTTAGE STREET		1
COURT SQUARE		0
COVENTRY STREET		7
EASTERN AVENUE		2
FIELD AVENUE		0
FYFE DRIVE		2
GARDNER PARK	All Planted and Landscape Trees	117
GATEWAY PARK/WATERFRONT		23
GOVERNOR DRIVE	Curb to sidewalk or 10' behind curb if no greenstrip	0
GREEN PLACE		0
POMERLEAU PARK	All Planted and Landscape Trees	19
MAIN STREET	Curb to sidewalk or 10' behind curb if no greenstrip	44
NEWPORT TOWN OFFICES & PARKING LOT	All Planted and Landscape Trees	19
PLEASANT STREET	Curb to sidewalk or 10' behind curb if no greenstrip	3
PROSPECT STREET		5
RAYMOND AVENUE		1
SCHOOL STREET		2
SECOND STREET		5
SEYMOUR LANE		2
SUMMER STREET		1
THIRD STREET		2
WHITE PLACE		0
TOTAL		**268**

Appendix B: Full Species and Genera List for Newport City's Public Trees

Common name	Scientific Name	Number of Trees	Percent of Total Population
Norway maple	*Acer platanoides*	36	13%
littleleaf linden	*Tillia cordata*	33	12%
red maple	*Acer rubrum*	22	8%
honeylocust	*Gleditsia triacanthos*	18	7%
American basswood/linden	*Tilia americana*	17	6%
sugar maple	*Acer saccharum*	15	6%
Colorado blue spruce	*Picea pungens*	14	5%
Birch species	*Betula sp.*	13	5%
Freeman maple	*Acer xfreemanii*	13	5%
eastern cottonwood	*Populus deltoides*	12	4%
green ash	*Fraxinus pennsylvanica*	10	4%
willow species	*Salix sp.*	10	4%
crabapple	*Malus sp.*	9	3%
northern white cedar	*Thuja occidentalis*	7	3%
Japanese tree lilac	*Syringa reticulata*	5	2%
bur oak	*Quercus macrocarpa*	4	1%
cherry species	*Prunus sp.*	4	1%
Maple species	*Acer sp.*	3	1%
Swamp white oak	*Quercus bicolor*	3	1%
white ash	*Fraxinus americana*	3	1%
American elm	*Ulmus americana*	2	1%
boxelder	*Acer negundo*	2	1%
larch/tamarack	*Larix laricina*	2	1%
pine	*Pinus sp.*	2	1%
serviceberry	*Amelanchier sp.*	2	1%
other deciduous species	*n/a*	1	.4%
other evergreen species	*n/a*	1	.4%
gingko	*Gingko biloba*	1	.4%
Norway spruce	*Picea abies*	1	.4%
pear	*Pyrus sp.*	1	.4%
red pine	*Pinus resinosa*	1	.4%
white spruce	*Picea glauca*	1	.4%

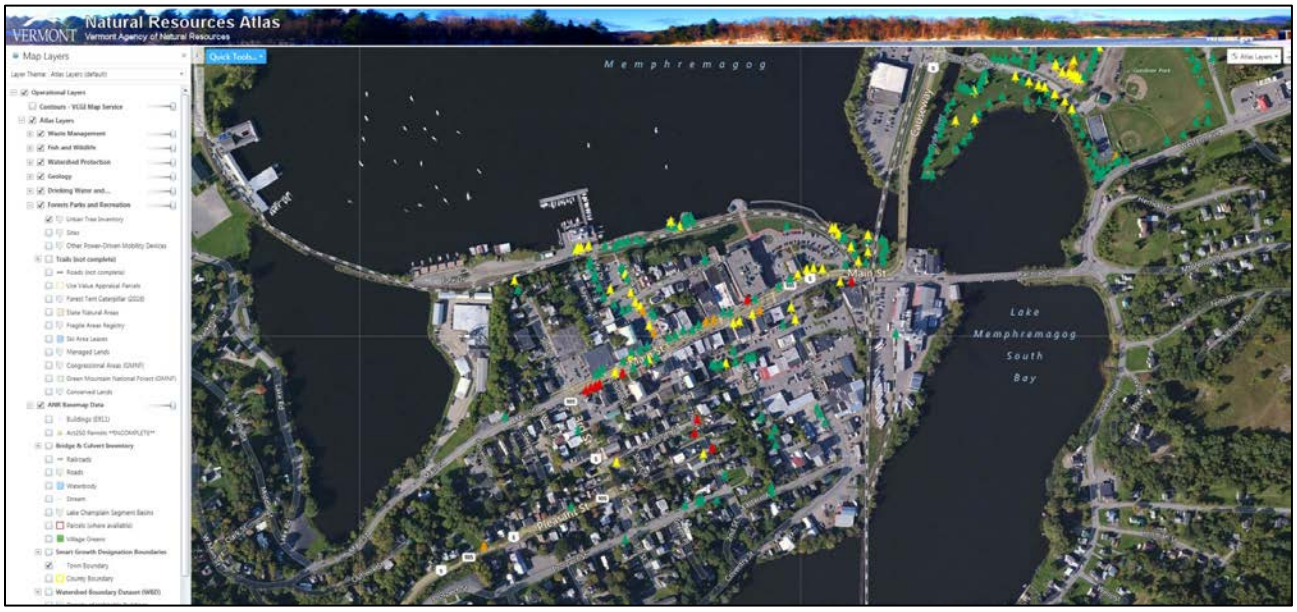
Appendix C: Leaf Area and Canopy Cover by Species Comprising Newport City's Urban Forest

Species	Number of Trees	% of Total Trees	Leaf Area (ft2)	% of Total Leaf Area	Canopy Cover (ft2)	% of Total Canopy Cover	Importance Value
Norway maple	36	13.43	29,612.95	6.31	15,835.05	10.14	9.96
Littleleaf linden	33	11.94	9,839.29	2.10	2,901.96	1.86	5.30
Red maple	22	8.21	47,105.24	10.04	13,802.23	8.84	9.03
American basswood	18	6.72	29,417.60	6.27	9,446.47	6.05	6.35
Honeylocust	18	6.72	40,851.44	8.71	17,385.22	11.14	8.85
Sugar maple	15	5.60	46,541.94	9.92	13,339.75	8.54	8.02
Col. blue spruce	14	5.22	21,426.32	4.57	8,940.29	5.73	5.17
Freeman maple	13	4.85	14,115.39	3.01	3,545.44	2.27	3.38
Birch	13	4.85	19,801.02	4.22	5,535.03	3.55	4.21
Cottonwood	12	4.48	108,433.33	23.12	28,476.18	18.24	15.28
Green ash	10	3.73	12,209.86	2.60	4,179.65	2.68	3.00
Willow	10	3.73	47,112.31	10.04	15,107.17	9.68	7.82
Apple	9	3.36	5,662.71	1.21	2,585.40	1.66	2.07
BEM OTHER	6	2.24	2,614.30	0.56	1,462.86	0.94	1.24
Japanese tree lilac	5	1.87	1,002.54	0.21	737.55	0.47	0.85
oak	4	1.49	933.98	0.20	242.86	0.16	0.62
Cherry plum	4	1.49	237.95	0.05	135.91	0.09	0.54
Swamp white oak	3	1.12	2,806.39	0.60	912.44	0.58	0.77
CEM OTHER	3	1.12	724.84	0.15	520.56	0.33	0.54
Maple	3	1.12	4,800.68	1.02	2,206.30	1.41	1.19
White ash	3	1.12	6,890.19	1.47	2,593.53	1.66	1.42
Serviceberry	2	0.75	934.31	0.20	603.99	0.39	0.44
CEL OTHER	2	0.75	2,624.20	0.56	1,049.08	0.67	0.66
Boxelder	2	0.75	477.69	0.10	267.67	0.17	0.34
American elm	2	0.75	7,523.46	1.60	2,437.13	1.56	1.30
Pine	2	0.75	1,835.61	0.39	664.87	0.43	0.52
Norway spruce	1	0.37	1,706.39	0.36	716.64	0.46	0.40
White spruce	1	0.37	917.81	0.20	332.44	0.21	0.26
Pear sp.	1	0.37	65.97	0.01	15.03	0.01	0.13
Ginkgo	1	0.37	23.23	0.00	8.02	0.01	0.13
BDM OTHER	1	0.37	795.10	0.17	136.74	0.09	0.21
Total	268	100.00	469,044.05	100.00	156,123.48	100.00	100.00

Appendix D: Instructions for Accessing Public Tree Data in ANR Atlas

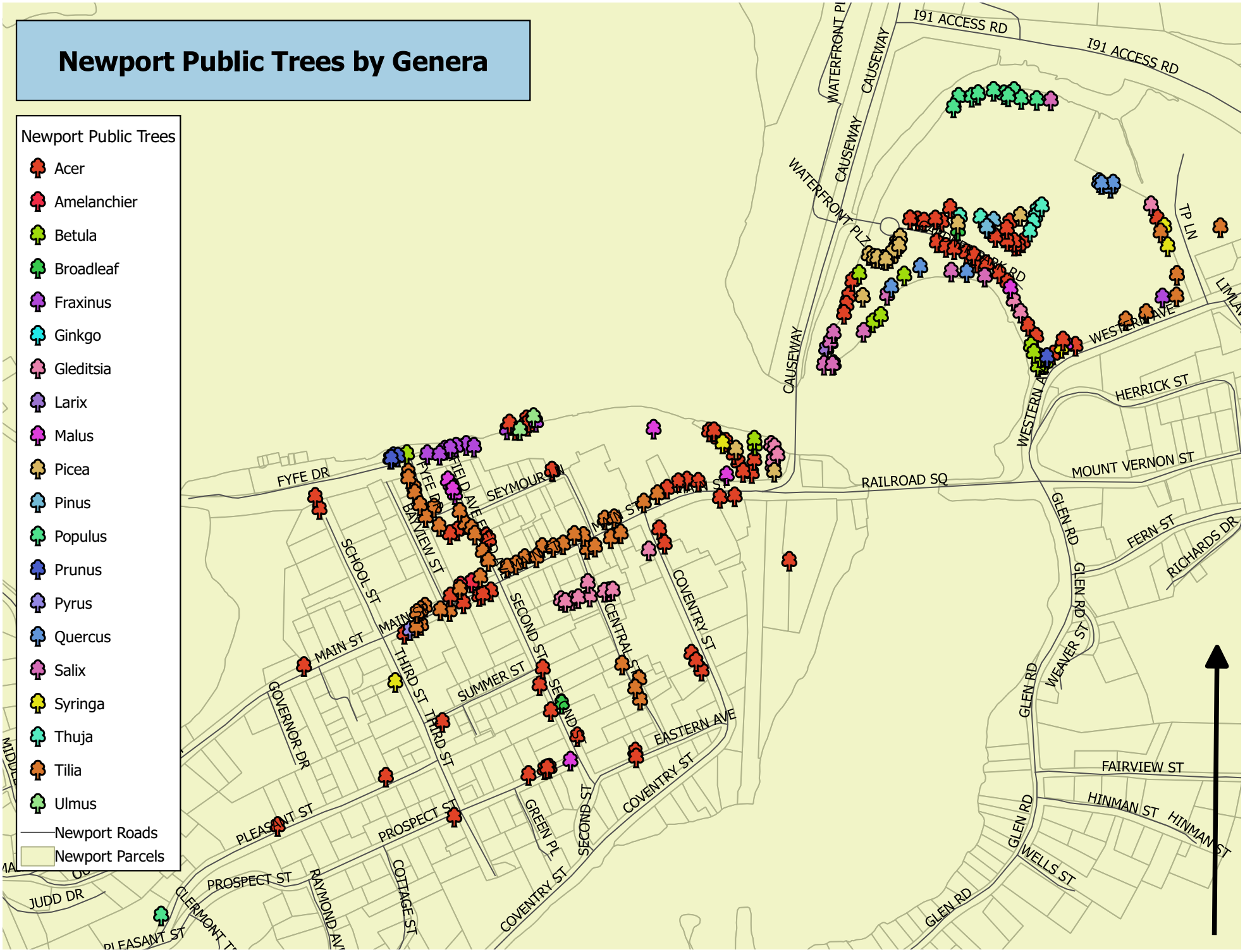
Anyone with Internet access can view all of Newport City inventoried public trees by using the Vermont Agency of Natural Resources' (ANR) Atlas mapping tool. Follow these simple steps:

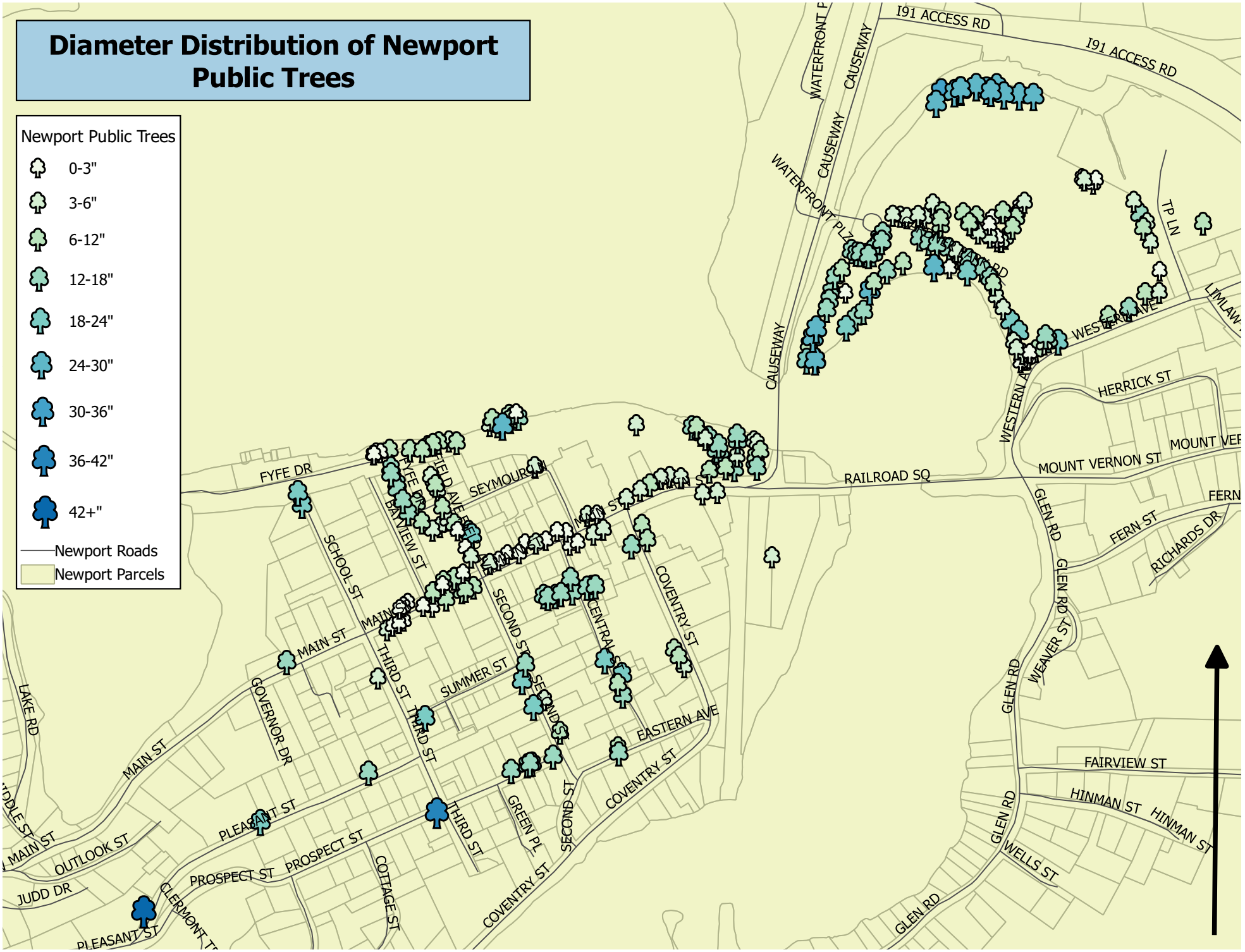
1. Set your web browser to http://anr.vermont.gov/maps/nr-atlas (or search "VT ANR Atlas").
2. Zoom in to Newport City using the +/- scale navigation tool in the upper left portion of the map (the tree data layer won't show up unless you are zoomed in to the city-level so that you can see the street names on the map).
3. In the information pane on the left of the screen switch to the "map layers" tab at the bottom.
4. Expand the "Forests, Parks, & Recreation" heading,
5. Click on the box to the left of "Urban Tree Inventory" to load public tree data (it might take a moment for the layer to load).
6. Once you see all the trees on the map, you can zoom in and right-click on any individual tree and click on "What's here"; when you do this, the left information pane will change to give you the basic details for that specific tree.
    - To access all of the information collected on that specific tree, click on the grey text title of the tree in the left pane and a new window will open with the inventory data.
    - In this new window there are three tabs: "Details" and "Attributes" display the same information in different formats and if a photo was taken of the tree, it will show up in the "Attachments" tab.

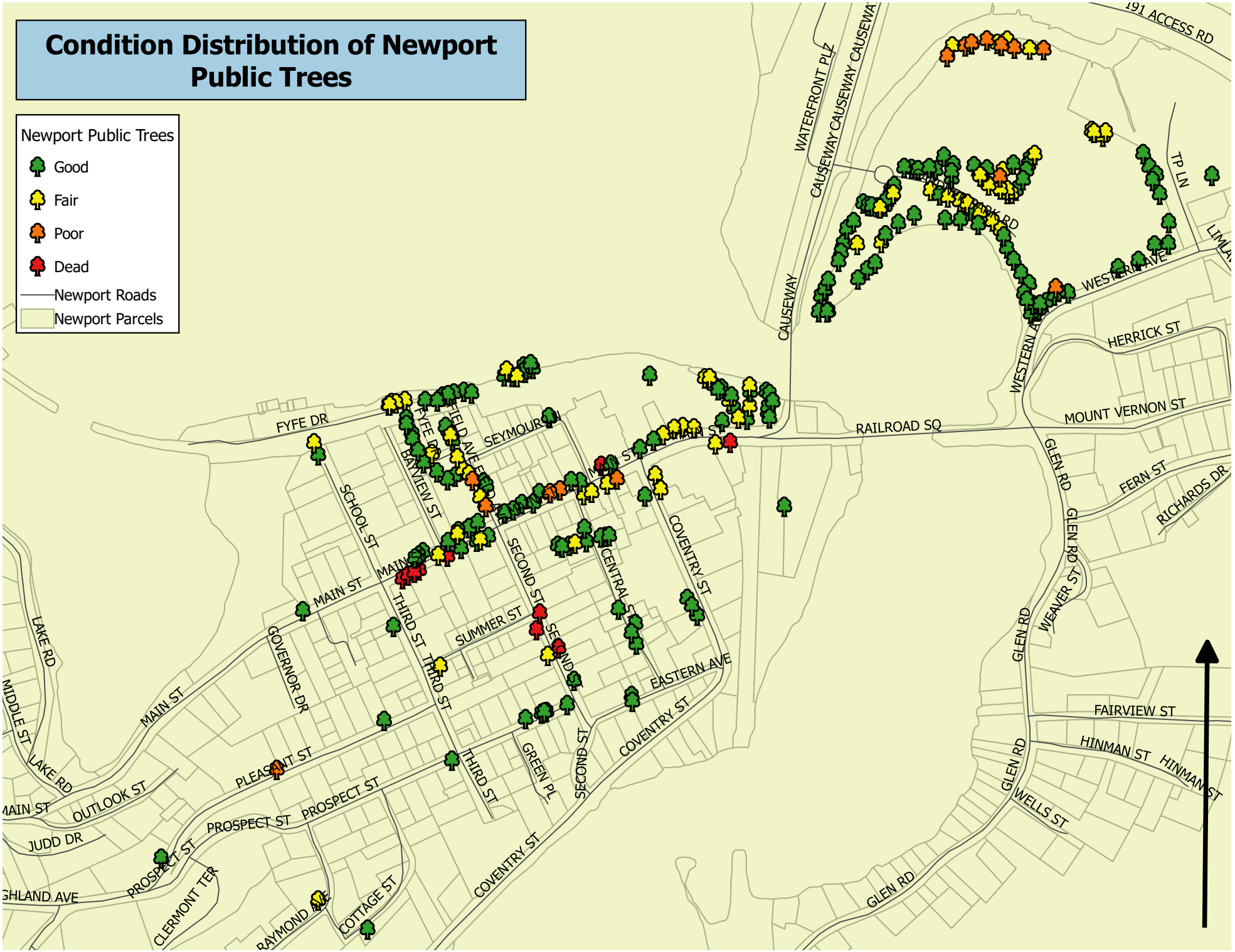


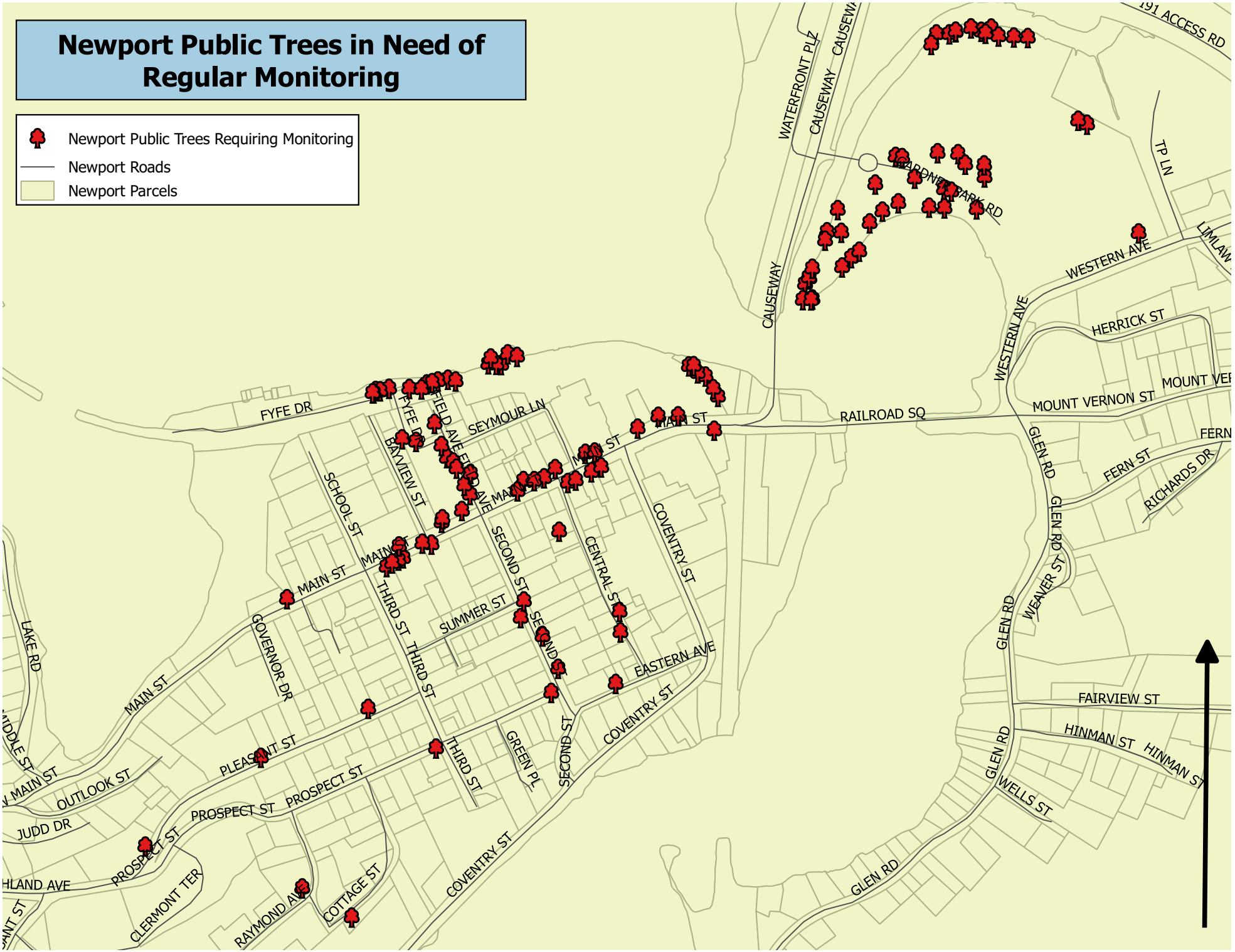
Appendix E: Maps

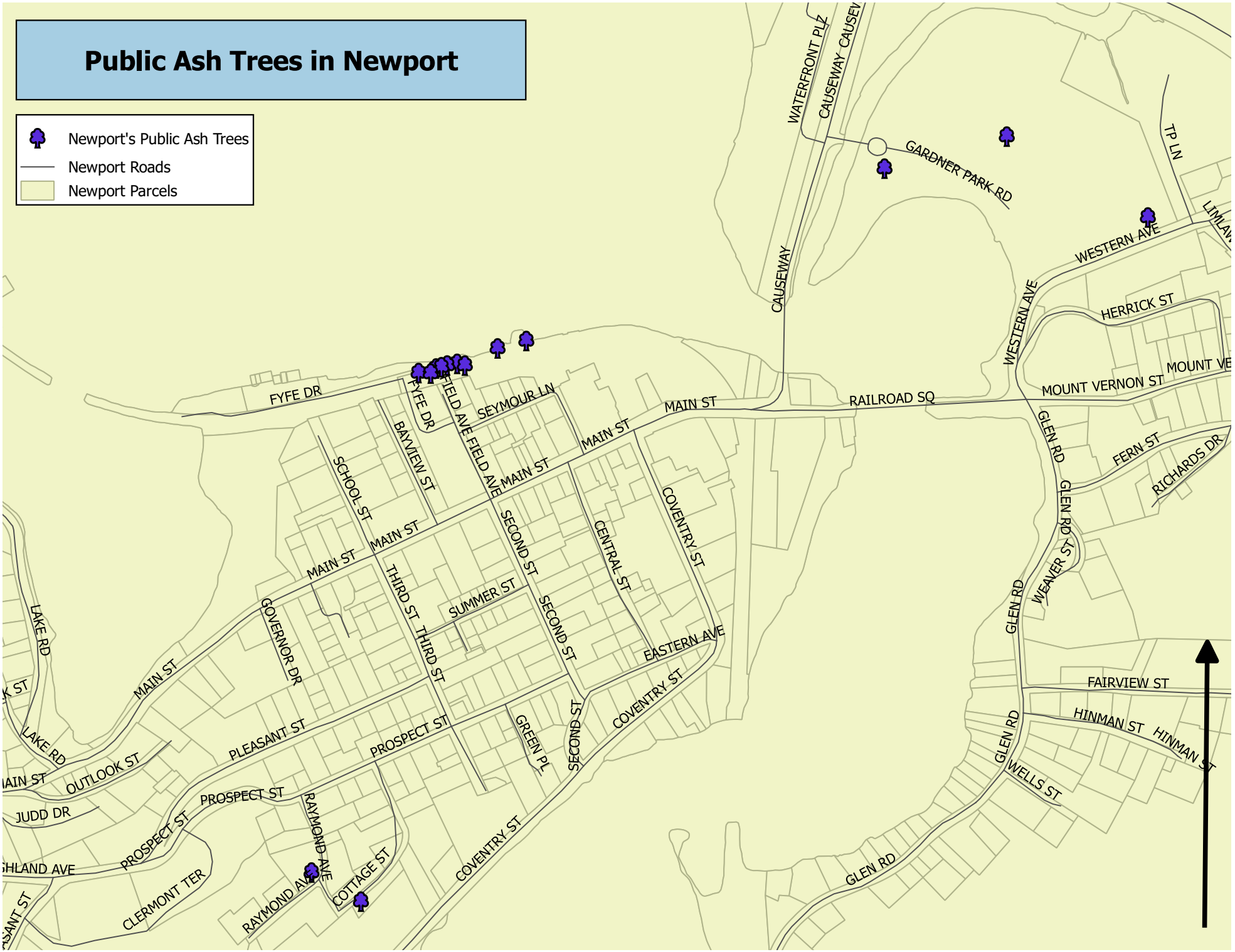
1. All Public Trees Inventoried in Newport City by Genera
2. All Public Trees Inventoried in Newport City by Diameter Class
3. All Public Trees Inventoried in Newport City by Condition Class
4. Public Trees in Need of Monitoring in Newport City
5. Newport City's Public Ash Trees


Newport Public Trees by Genera
Newport Public Trees
Acer
Amelanchier
Betula
Broadleaf
Fraxinus
Ginkgo
Gleditsia
Larix
Malus
Picea
Pinus
Populus
Prunus
Pyrus
Quercus
Salix
Syringa
Thuja
Tilia
Ulmus
Newport Roads
Newport Parcels
I91 ACCESS RD
WATERFRONT PL
CAUSEWAY
WATERFRONT PLZ
TP LN
WESTERN AVE
HERRICK ST
MOUNT VERNON ST
RAILROAD SQ
FYFE DR
SEYMOUR AV
MAIN ST
SCHOOL ST
BAYVIEW ST
FIELD AVE
GLEN RD
FERN ST
RICHARDS DR
WEAVER ST
SECOND ST
CENTRAL ST
COVENTRY ST
THIRD ST
SUMMER ST
GOVERNOR DR
EASTERN AVE
FAIRVIEW ST
HINMAN ST
PLEASANT ST
PROSPECT ST
GREEN PL
WELLS ST
JUDD DR
CLERMONT TER
RAYMOND AVE
COTTAGE ST


Diameter Distribution of Newport Public Trees
Newport Public Trees
0-3"
3-6"
6-12"
12-18"
18-24"
24-30"
30-36"
36-42"
42+"
Newport Roads
Newport Parcels
I91 ACCESS RD
WATERFRONT PLZ
CAUSEWAY
WATERFRONT DR
TP LN
WESTERN AVE
LIMLAW
HERRICK ST
MOUNT VERNON ST
RAILROAD SQ
FERN ST
RICHARDS DR
GLEN RD
WEAVER ST
FAIRVIEW ST
HINMAN ST
WELLS ST
FYFE DR
SEYMOUR ST
MAIN ST
BAYVIEW ST
SCHOOL ST
FIELD AVE
SECOND ST
CENTRAL ST
COVENTRY ST
EASTERN AVE
SUMMER ST
THIRD ST
GOVERNOR DR
LAKE RD
PLEASANT ST
PROSPECT ST
OUTLOOK ST
JUDD DR
CLERMONT TER
COTTAGE ST
GREEN PL


Condition Distribution of Newport Public Trees
Newport Public Trees
Good
Fair
Poor
Dead
Newport Roads
Newport Parcels
191 ACCESS RD
WATERFRONT PLZ
CAUSEWAY
CAUSEWAY
TP LN
WESTERN AVE
HERRICK ST
RAILROAD SQ
MOUNT VERNON ST
GLEN RD
FERN ST
RICHARDS DR
WEAVER ST
FAIRVIEW ST
HINMAN ST
WELLS ST
FYFE DR
SEYMOUR ST
MAIN ST
SCHOOL ST
BAYVIEW ST
FIELD AVE
SECOND ST
CENTRAL ST
COVENTRY ST
EASTERN AVE
THIRD ST
SUMMER ST
GOVERNOR DR
LAKE RD
MIDDLE ST
OUTLOOK ST
PLEASANT ST
PROSPECT ST
JUDD DR
CLERMONT TER
RAYMOND AVE
COTTAGE ST
GREEN PL


Newport Public Trees in Need of Regular Monitoring
Newport Public Trees Requiring Monitoring
Newport Roads
Newport Parcels
WATERFRONT PLZ
CAUSEWAY
CAUSEWAY
CAUSEWAY
191 ACCESS RD
GARDNER PARK RD
TP LN
WESTERN AVE
WESTERN AVE
HERRICK ST
MOUNT VERNON ST
RAILROAD SQ
MAIN ST
FYFE DR
SEYMOUR LN
FYFE DR
FIELD AVE
FIELD AVE
BAYVIEW ST
SCHOOL ST
MAIN ST
MAIN ST
MAIN ST
SECOND ST
CENTRAL ST
COVENTRY ST
GLEN RD
GLEN RD
FERN ST
RICHARDS DR
WEAVER ST
GLEN RD
MAIN ST
LAKE RD
GOVERNOR DR
SUMMER ST
THIRD ST
THIRD ST
SECOND ST
EASTERN AVE
COVENTRY ST
FAIRVIEW ST
HINMAN ST
HINMAN ST
GLEN RD
MAIN ST
OUTLOOK ST
PLEASANT ST
PROSPECT ST
PROSPECT ST
THIRD ST
GREEN PL
SECOND ST
COVENTRY ST
WELLS ST
JUDD DR
PROSPECT ST
CLERMONT TER
RAYMOND AVE
COTTAGE ST
COVENTRY ST
GLEN RD


Public Ash Trees in Newport
Newport's Public Ash Trees
Newport Roads
Newport Parcels
WATERFRONT PLZ
CAUSEWAY
GARDNER PARK RD
TP LN
WESTERN AVE
HERRICK ST
MOUNT VERNON ST
RAILROAD SQ
MAIN ST
FYFE DR
SEYMOUR LN
FIELD AVE
BAYVIEW ST
SCHOOL ST
SECOND ST
CENTRAL ST
COVENTRY ST
GLEN RD
FERN ST
RICHARDS DR
WEAVER ST
FAIRVIEW ST
HINMAN ST
WELLS ST
LAKE RD
GOVERNOR DR
THIRD ST
SUMMER ST
EASTERN AVE
PLEASANT ST
PROSPECT ST
OUTLOOK ST
JUDD DR
GREEN PL
RAYMOND AVE
COTTAGE ST
CLERMONT TER