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FINAL SUMMARY REPORT

Town of Ellington, CT

PREPARED FOR :
ELLINGTON, CT

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AUGUST 2026

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REPORT SUMMARY

On June 3, 2026, ArborPro, Inc. began operations on a comprehensive GPS Tree Census for the Town of Ellington, CT. ArborPro assigned one arborist to perform the survey for a total of 4252 trees and 300 stumps. No vacancies were collected. The tree inventory collected is estimated to be valued at $25,977,518.00 and provides $1,281,176.70 annually in ecosystem benefits.

The purpose of this report is to summarize the findings of the tree census. ArborPro identified 80 distinct species. Top 3 species are Red Maple, Red Oak, and White Oak respectively. The urban forest is in good shape with 95% of the trees recorded with a Good or Fair condition rating and recommended Routine or Training Prune, needing minor pruning to ensure maximum life expectancy.

Total: 4552



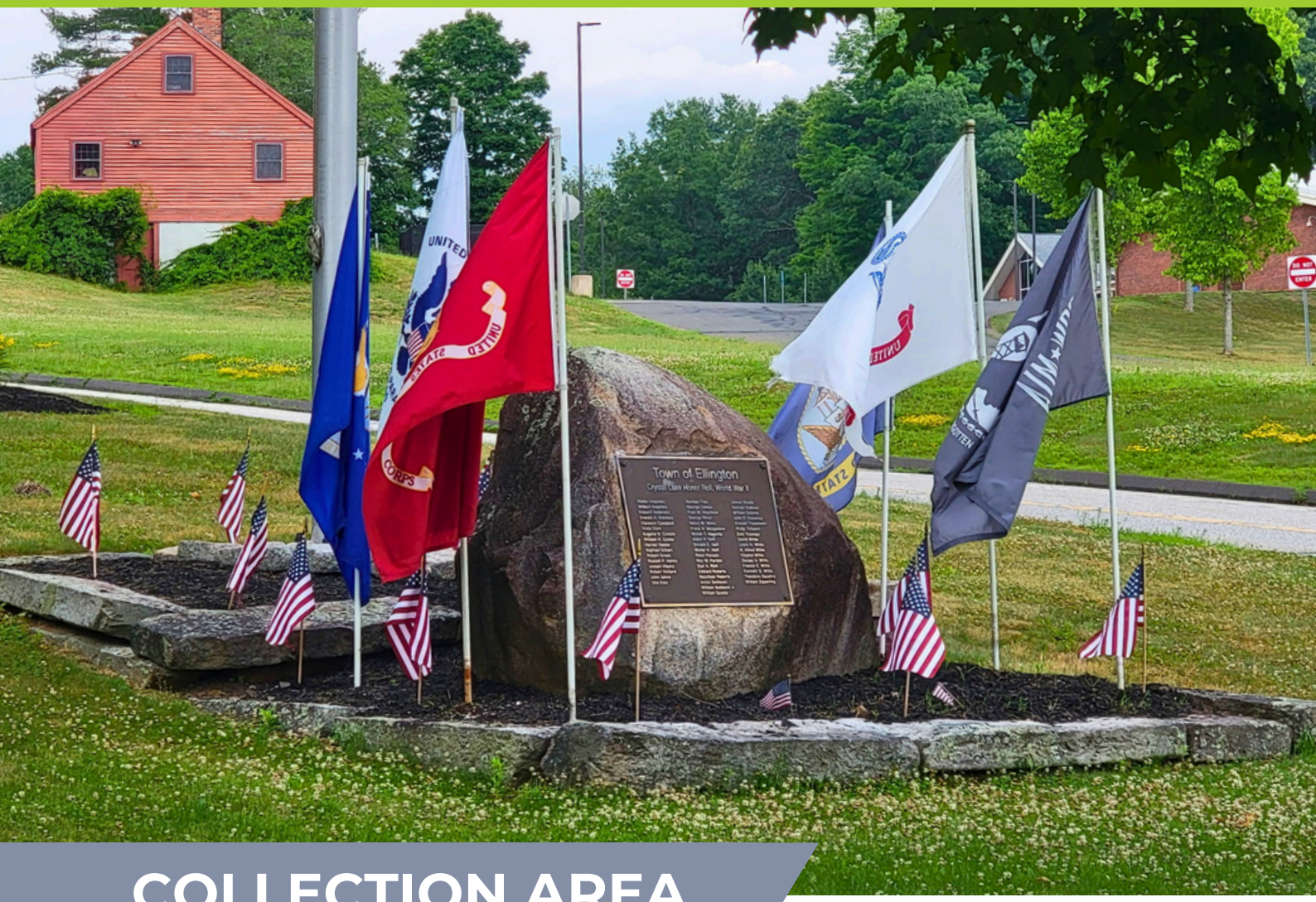
Trees:
4252



Stumps:
300



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COLLECTION AREA

The collection area was located within Town of Ellington boundary. Location type is distinguished between Street ROW and Median. The ArborPro Arborists conducted a 360° visual inspection of the site and the data, including GPS location, was recorded using the ArborPro Software. No harm was inflicted on the trees during the assessments. Any tree with limited access was visually estimated and assessed.

The closest parcel address was recorded, including property address number, property street name, on street name, and side of the property where the site is located. In the case where there was no clear property address, such as medians, fictitious addressing was assigned adhering to on street addressing progression. Presence of any primary overhead lines within interference distance from the tree trunk and branches were also identified. Hardscape damage was recorded if the concrete crack had a greater than 1 inch lift and was considered a trip and fall hazard. Safety clearance issues were also listed and considered into the recommended maintenance for the site.



COLLECTION METHODS

Two types of site types were collected: Tree and Stump. Tree sites have an active tree present that requires regular maintenance work. Stump sites indicate the tree is removed but the stump and roots are left behind. Level 2 risk assessment was conducted on all tree sites and has an assessment time frame of 3 years.

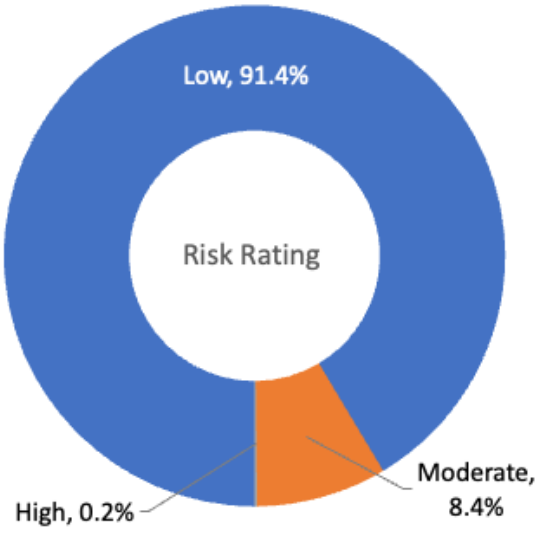
Tree species was determined based on a combination of leaf morphology, bud and flower formation and coloration, bark and seed appearance, and tree form. Both common and botanical name of species were recorded. The number of trunks, up to 9, and the diameter at breast height (DBH) was measured at 4.5 feet above the ground, prior to branch separation. If the tree had more than one trunk, the largest trunk DBH was recorded. Tree height was determined using forestry laser range finder and crown width was recorded.

The tree health condition was determined by assessing crown, trunk, and root health. Maintenance was recommended based on tree health and the functionality of the tree, such as for structural and/or aesthetic purposes. Other additional tree information was recorded under observation and notes.



INVENTORY SUMMARY

Risk Rating	Count	%
High	7	0.16%
Moderate	358	8.42%
Low	3887	91.42%
Grand Total	**4252**	**100%**



Observation	Count
Structural Defects	520
Pest or Disease Presence	235
Declining Health / Canopy Dieback	209
Significant Deadwood in Crown	90
Significant Decay or Cavity	47
Clearance / Infrastructure Conflict	45
Detrimental Past Pruning	45
Site Constraints / Poor Location	33
Mechanical or Physical Damage	12
Obsolete Support Systems	5
Total	**1241**

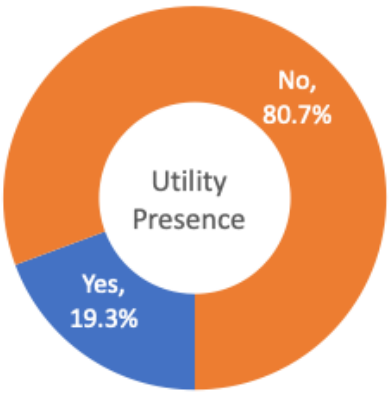
LOCATION



Clearance	Count	%
None	4541	99.76%
Vehicle	8	0.18%
Line of Sight	2	0.04%
Public (Building/Sign)	1	0.02%
Total	**4552**	**100%**

Growspace Type	Count	%
Unimproved	2801	61.53%
Curb and Gutter	1461	32.10%
Unmaintained	281	6.17%
Island	6	0.13%
Median	3	0.07%
Total	**4552**	**100%**

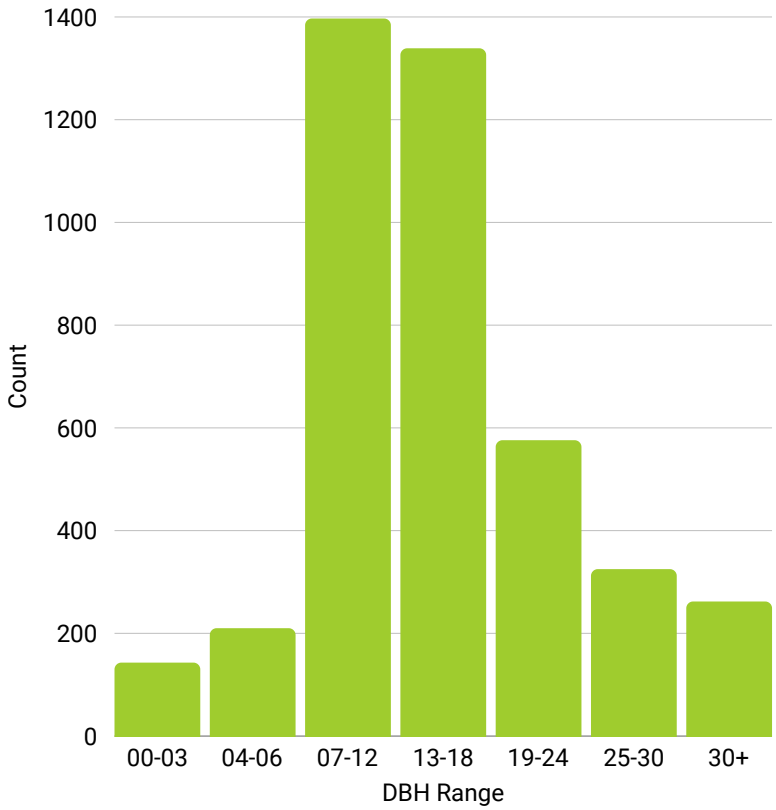
Location	Count	%
Median	9	0.20%
Street ROW	4543	99.80%
Total	**4552**	**100%**



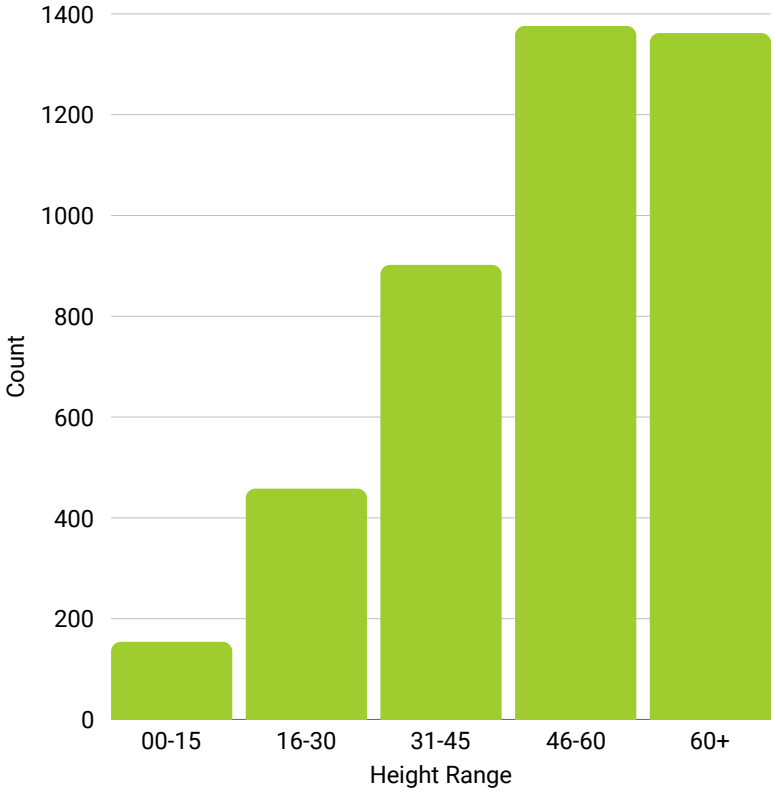


TREE ATTRIBUTES

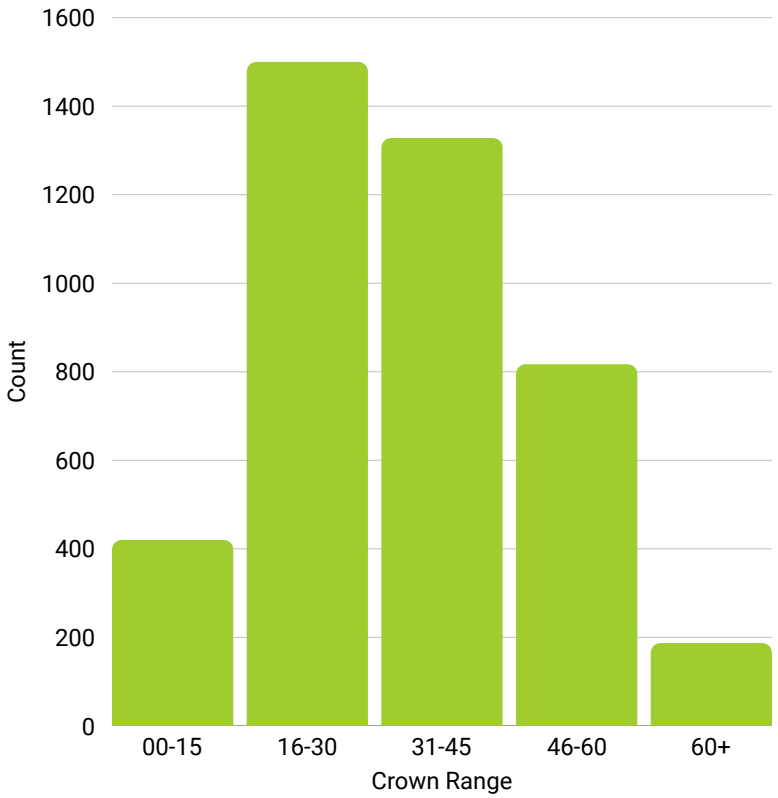
DBH Range	Count	Percentage
00-03	143	3.36%
04-06	210	4.94%
07-12	1397	32.86%
13-18	1339	31.49%
19-24	576	13.55%
25-30	325	7.64%
30+	262	6.16%
Grand Total	**4252**	**100.00%**



Height Range	Count	Percentage
00-15	154	3.62%
16-30	458	10.77%
31-45	902	21.21%
46-60	1376	32.36%
60+	1362	32.03%
Grand Total	**4252**	**100.00%**



Crown Range	Count	Percentage
00-15	420	9.88%
16-30	1500	35.28%
31-45	1328	31.23%
46-60	817	19.21%
60+	187	4.40%
Grand Total	**4252**	**100.00%**





TREE CONDITION

Good – The tree has no major structural problems; no significant damage from diseases or pests; no significant mechanical damage; a full, balanced crown, and normal twig condition and vigor for its species.

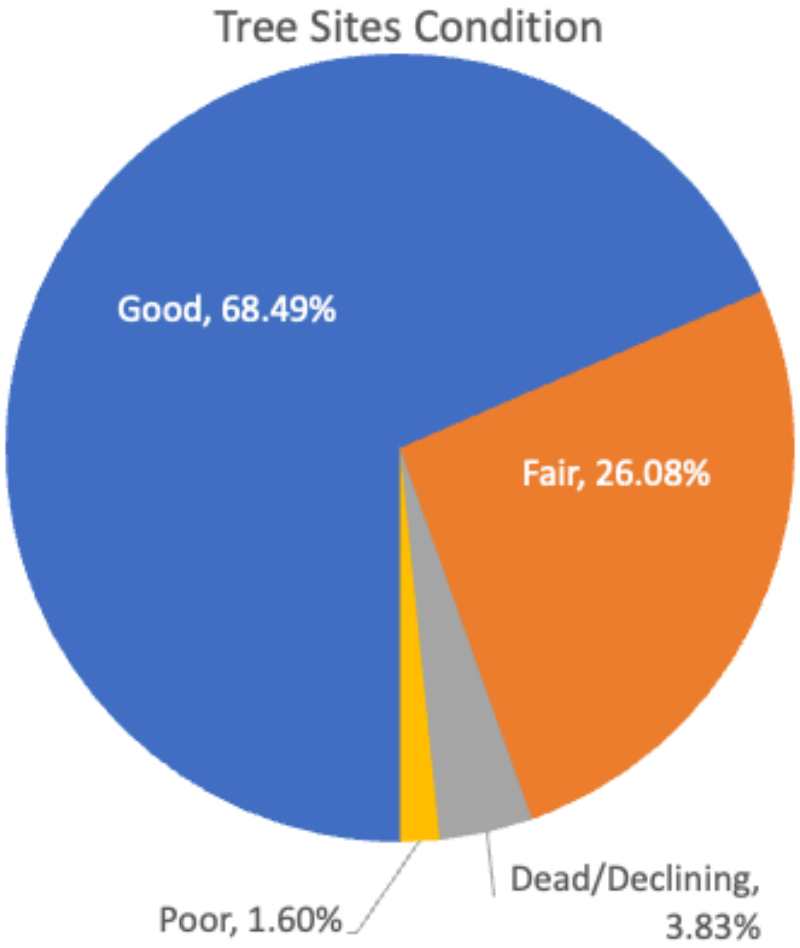
Fair – The tree may exhibit the following characteristics: minor structural problems and/or mechanical damage; significant damage from non-fatal or disfiguring diseases; minor crown imbalance or thin crown; minor structural imbalance; or stunted growth compared to adjacent trees.

Poor – The tree appears healthy, but may have structural defects. This classification also includes healthy trees that have unbalanced structures or have been topped. Trees in this category may also have severe mechanical damage, decay, severe crown dieback or poor vigor/failure to thrive.

Dead/Declining – Trees in advanced states of decline are not included. This category refers only to dead trees.

Stump - Tree has been removed, leaving only the stump.

Tree Condition	Count	%
Good	2912	63.97%
Fair	1109	24.36%
Poor	68	1.49%
Dead/ Declining	163	3.58%
Stump	300	6.59%
Grand Total	**4552**	**100%**



RECOMMENDED MAINTENANCE

Priority 1 Removal - Trees designated for removal due to defects that cannot be cost-effectively or practically treated. The majority of the trees in this category has a large percentage of dead crowns and poses an elevated level of risk for failure, including large dead and dying trees that are high liability risks.

Priority 2 Removal - Trees that should be removed but do not pose a liability as great as the Priority 1. This category would need attention as soon as Priority 1 trees are addressed.

Priority 1 Prune - Trees recommended for trimming to remove hazardous deadwood, hangers, or broken, dead, or diseased limbs greater than four inches in diameter. Hazards could pose potential dangers to persons or property but can be effectively pruned to safety.

Priority 2 Prune - Trees with dead, dying, diseased, or weakened branches between two and four inches in diameter and are potential safety hazards.

Priority 3 Removal - Tree with no immediate safety or structural risk but removal can improve resident satisfaction and enhance landscape appearance.

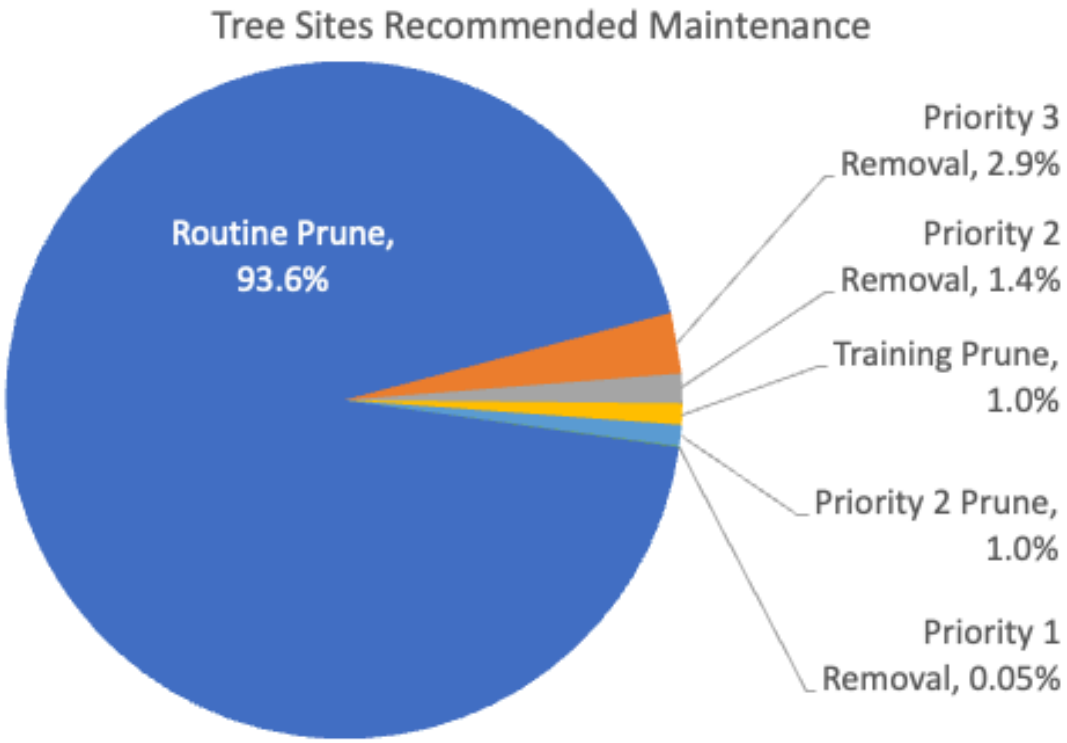
Stump Removal - This category indicates a stump that should be removed.

Routine Prune - Trees that require routine horticultural pruning to correct structural problems or growth patterns, which would eventually obstruct traffic or interfere with utility wires or buildings.

Training Prune - Young, large-growing trees that are still small must be pruned to correct or eliminate weak, interfering, or objectionable branches. Frequent maintenance during early growth can minimize future maintenance requirements and improve/prolong tree health.

Recommended Maintenance	Count	%
Priority 1 Removal	2	0.04%
Priority 2 Prune	43	0.94%
Priority 2 Removal	60	1.32%
Priority 3 Removal	123	2.70%
Routine Prune	3981	87.46%
Training Prune	43	0.94%
Stump Removal	300	6.59%
Total	**4552**	**100%**



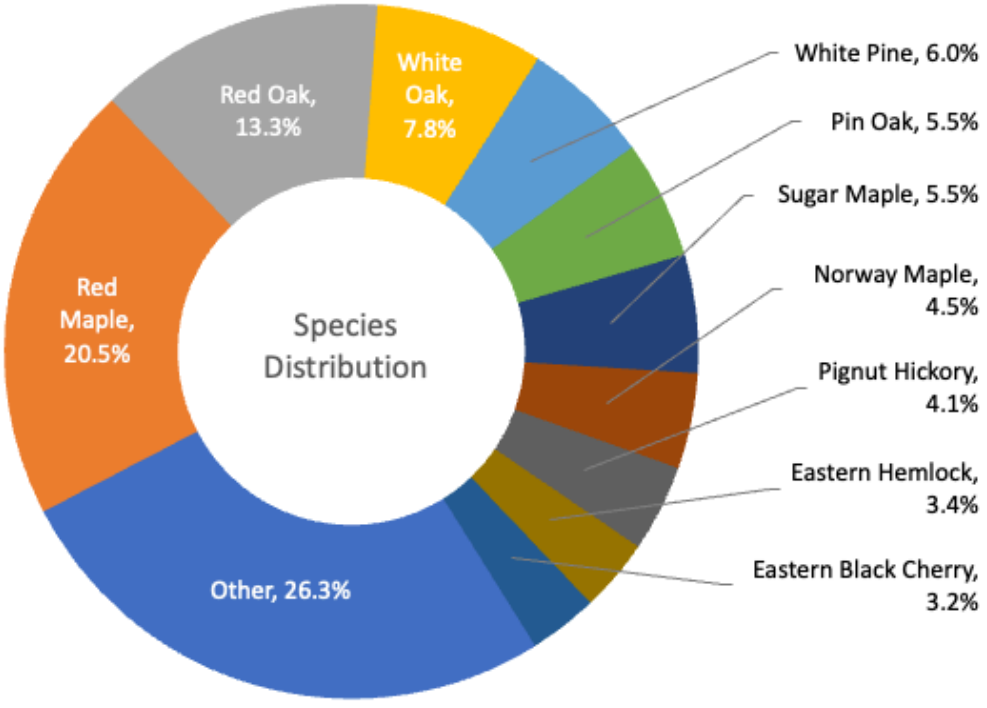

Tree Sites Recommended Maintenance
Routine Prune, 93.6%
Priority 3 Removal, 2.9%
Priority 2 Removal, 1.4%
Training Prune, 1.0%
Priority 2 Prune, 1.0%
Priority 1 Removal, 0.05%

SPECIES DISTRIBUTION

There are a total of 80 distinct species identified in the inventory. The top 10 most common species, displayed on the table below, represent nearly 74% of all tree sites. List of full species tree count can be found in Appendix A.

Top 10	Common Name	Count	%
1	Red Maple	860	20.49%
2	Red Oak	560	13.34%
3	White Oak	329	7.84%
4	White Pine	250	5.96%
5	Pin Oak	231	5.50%
6	Sugar Maple	231	5.50%
7	Norway Maple	187	4.46%
8	Pignut Hickory	170	4.05%
9	Eastern Hemlock	142	3.38%
10	Eastern Black Cherry	135	3.22%



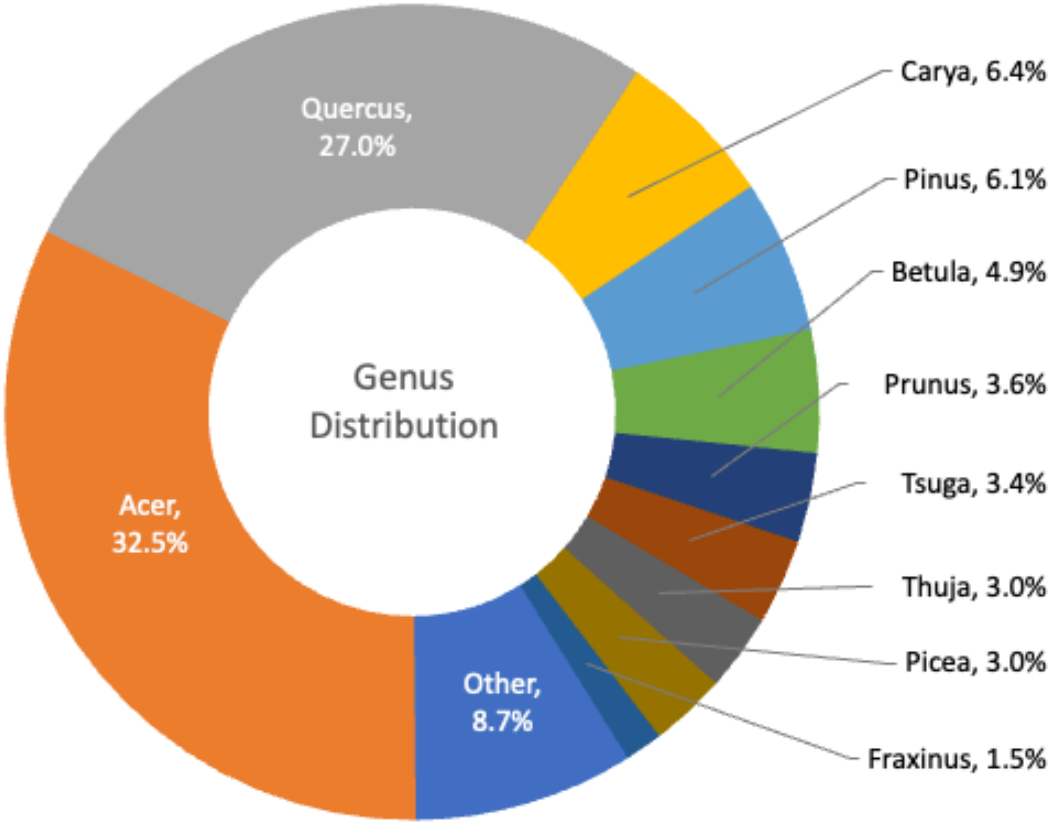


GENUS DISTRIBUTION

The 80 distinct species belong to 43 distinct genus. The top 10 most common genus, displayed on the table below, represent over 91% of all tree sites.

Top 10	Genus	Count	%
1	Acer	1362	32.45%
2	Quercus	1133	27.00%
3	Carya	267	6.36%
4	Pinus	255	6.08%
5	Betula	204	4.86%
6	Prunus	149	3.55%
7	Tsuga	142	3.38%
8	Thuja	128	3.05%
9	Picea	127	3.03%
10	Fraxinus	63	1.50%





POOR/CRITICAL CONDITION

A valuable assessment from a tree survey is the species composition of the trees that are dead or in poor/critical condition. The top 10 species and genus with the most trees in poor, critical, or dead condition are summarized in the tables to the right, order by percentage of poor condition trees to the total count of the species and genus. The full Species and Genus poor condition summary can be found in Appendix B and C respectively.



Top 10	Common Name	Poor/ Dead	Count	% in Poor Condition
1	Green Ash	7	60	11.67%
2	Sitka Spruce	3	30	10.00%
3	Eastern Hemlock	12	142	8.45%
4	Norway Spruce	4	54	7.41%
5	Eastern Black Cherry	3	135	2.22%
6	Sugar Maple	5	231	2.16%
7	Norway Maple	4	187	2.14%
8	Pin Oak	4	231	1.73%
9	Red Maple	12	860	1.40%
10	White Pine	3	250	1.20%

Top 10	Genus	Poor/ Dead	Count	% in Poor Condition
1	Fraxinus	7	63	11.11%
2	Tsuga	12	142	8.45%
3	Juniperus	2	27	7.41%
4	Picea	8	127	6.30%
5	Prunus	3	149	2.01%
6	Acer	21	1362	1.54%
7	Pinus	3	255	1.18%
8	Betula	2	204	0.98%
9	Quercus	6	1133	0.53%
10	Carya	1	267	0.37%

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ECOSYSTEM BENEFITS

Trees are an essential component for livable and sustainable communities by providing a wide variety of environmental, ecological, and social benefits. These benefits can be measured into economic value and offset the cost of tree maintenance.

Benefits of Trees:

- Temperature Regulation
  - Canopy cover provide shade and reduce deadly UV radiation
  - Lessen wind severity and destruction
  - Mitigate climate change effects by sequestering and storing carbon
  - Cool air by releasing water vapor

- Air Quality
  - Absorb and filter out harmful pollutants and particulates
  - Release oxygen and reduce ozone levels



- Soil Protection
  - Roots help stabilize and retain soil structure
  - Canopy reduces precipitation erosion
  - Absorb dangerous heavy metals leached into the soil
  - Assist nitrogen, phosphorus, and carbon cycling

- Water Regulation
  - Prevent localized flooding by improving storm water absorption
  - Promote natural water cycle
- Support ecosystem biodiversity by providing food and shelter
- Social Welfare
  - Boost mental mood, release stress, and improve concentration
  - Enhance landscape aesthetics by hiding unnatural structures
  - Reduce noise pollution
  - Provide recreational activities and areas

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The environmental, social, and financial benefits of trees are quantified into economic ($) value using the i-Tree forestry assessment tool with the information gathered in this tree census.

Species, DBH, and tree health are taken into consideration for annual benefits calculations. Tree location is also reviewed to have more accurate weather assessment, local energy costs breakdown, and appropriate tree growth projection.

Annual Economic Benefits:

Avoided Energy Emissions	$24.48
Air Pollution Removal	$588.98
Storm Water Mitigation	$943.44
Energy Use	$32,297.12
Carbon Dioxide Uptake	$1,247,322.68
Total Annual Benefits	**$1,281,176.70**

The urban forest surveyed in this inventory provides $1,281,176.70 in economic benefits annually.

Larger sized trees have greater canopy span and a more established root system. This allows better water and temperature regulation, absorb more air pollutants, provide greater quantity and quality of food and shelter to local biodiversity, and better soil structure. More established trees can therefore provide greater ecosystem benefits compared to newly planted saplings and yield more economic value. It is therefore important to maintain the health of larger trees and continually plant new trees for future replacement.

Trees with 30in DBH and larger provide the greatest amount of economic benefits annually at an average of $1,522.72 per tree.



DBH Range	Annual Benefits
00-03	$ 9.05
04-06	$ 19.66
07-12	$ 77.58
13-18	$ 204.91
19-24	$ 432.39
25-30	$ 753.81
30+	$ 1,522.72

TREE VALUE

Tree Value estimates the hypothetical cost required to replace a tree in its current size and condition and appraises the monetary value of a tree. It is calculated using the ISA tree appraisal trunk formula method and is dependent on species, DBH, and tree health.



The urban forest surveyed in this inventory is estimated to have a value of **$25,977,518.00.**

Larger sized trees are generally older and takes more time, energy, and monetary cost to grow to its size. Larger trees also provide more economic benefits, making them more valuable and costly to replace. Trees with greater than 30in DBH have an average value of $22,429.88 per tree.

Healthier trees also provide more ecosystem benefits compared to trees in poorer health. The increase in economic benefits, health maintenance cost, and time requirements give larger and healthier trees greater value. The average value for one tree in each DBH range and health condition is shown in the table below. Trees with 30in DBH and greater in good condition are the most valuable at $24,750.51 per tree.

Tree Value

	Tree Condition		
DBH Range	Good	Fair	Poor
00-03	$ 1,590.52	$ 1,580.30	$ 1,514.00
04-06	$ 1,922.99	$ 1,785.20	$ 1,640.75
07-12	$ 3,162.96	$ 2,643.49	$ 2,040.00
13-18	$ 5,485.48	$ 4,196.57	$ 2,861.65
19-24	$ 9,169.73	$ 6,651.22	$ 4,151.57
25-30	$ 14,161.63	$ 9,947.09	$ 5,851.50
30+	$ 24,750.51	$ 18,609.82	$ 10,596.25

EMERGING TECHNOLOGY

Drone Survey

ArborPro utilizes drones with Lidar sensors, geothermal technology, and multi-spectral imaging to capture topographic data, compile detailed aerial photography, and collect photogrammetry of the urban forest. Drone survey is able to survey inaccessible areas where conventional tree survey might not be feasible due to budget, topography, or time limitations. Aerial survey can also survey large scale areas with reduced field time and cost. The data can be used to render a 3D model of the urban forest and surroundings, appraise vegetation health index, and assess urban tree canopy cover. This is an amazing technology-driven solution for vast urban forest modeling and survey.



3D model of damage caused by Hurricane Helene in Asheville, NC.

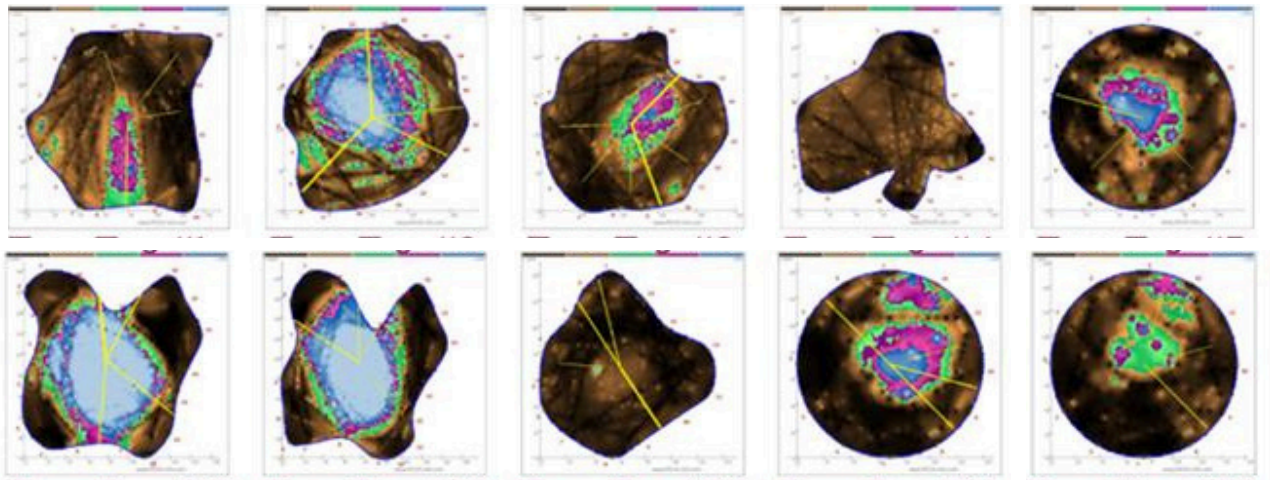
Aerial drone photogrammetry can be used to evaluate impacted vegetation health index.



3D model of a golf course generated with Lidar drone data. Visual representation that can be used to approximate measurements and generate 3D video for public domain.

Sonic Tomography

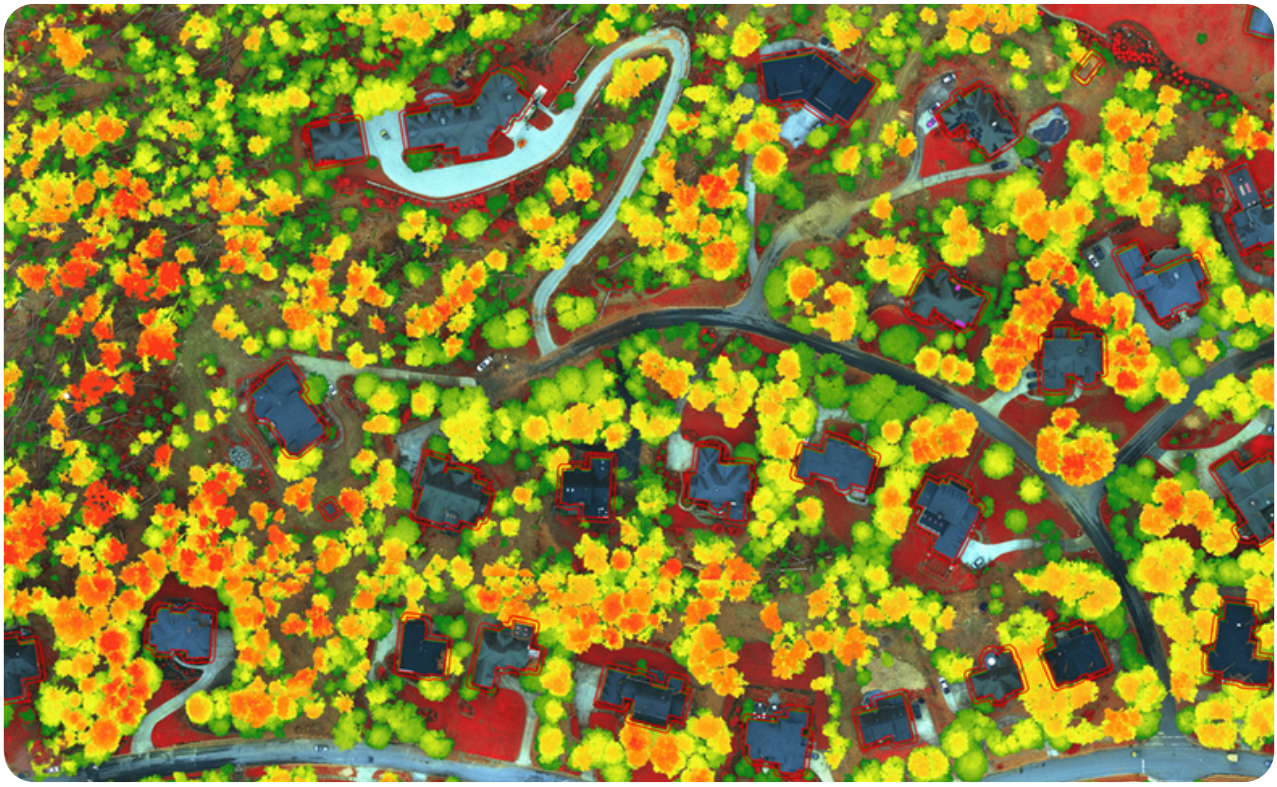
Sonic Tomography utilizes sound waves to detect trunk decay, allowing a MRI view of the tree trunk. The information allows our arborists to better analyze trunk structure stability, tree health, and tree risk assessment.



Sonic tomography readings for a few high risk trees in an Eucalyptus grove at UC Berkeley.

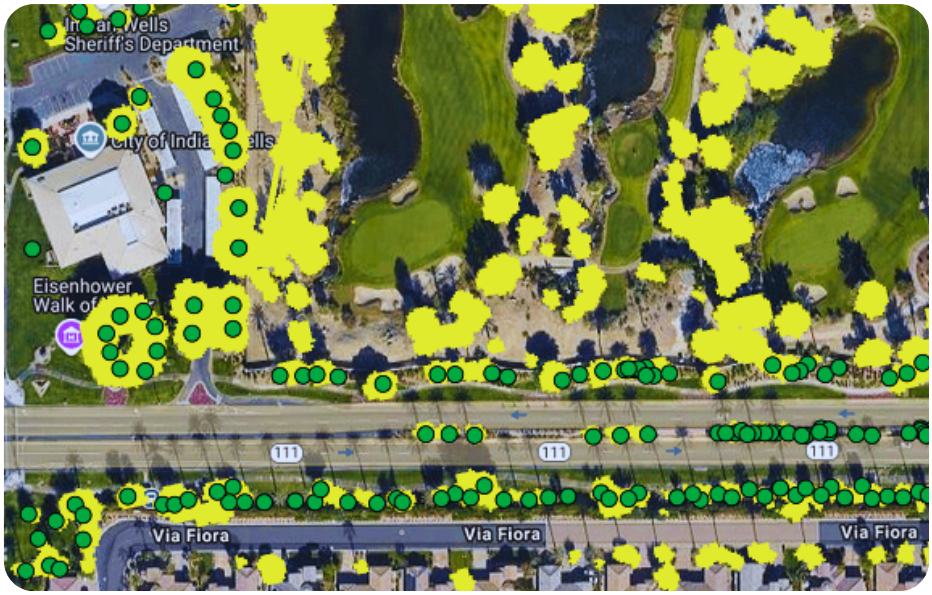
Canopy Assessment

Multi-spectral data obtained from top down drone imaging can be used to render a canopy visualization. Data represented can be changed based on specific data sets. Canopy assessment below shows color gradient representing height of vegetation. Parcel data, outlined in red, highlights building structures under the vegetation.

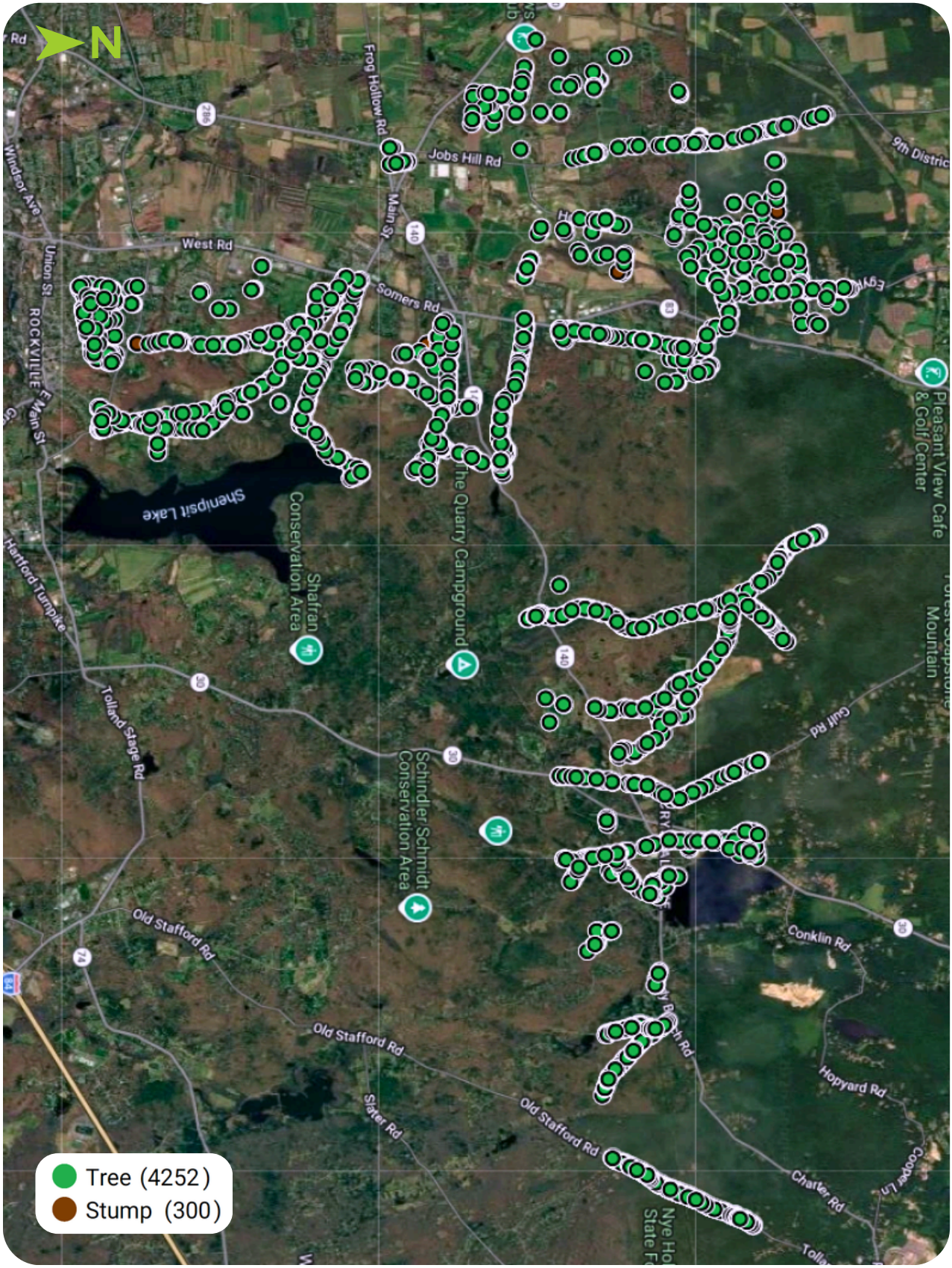


Canopy assessment can also be imported as a separate layer to view in combination with an inventory survey.

Right is an example of green tree inventory points with canopy visualized as yellow parcel.



FIELD MAP


N
Frog Hollow Rd
Jobs Hill Rd
Windsor Ave
Union St
ROCKVILLE E Main St
West Rd
Main St
Somers Rd
Shenipsit Lake
Hartford Turnpike
Shafran Conservation Area
The Quarry Campground
Pleasant View Cafe & Golf Center
Tolland Stage Rd
Schinder Schmidt Conservation Area
Old Stafford Rd
Old Stafford Rd
Old Stafford Rd
Slater Rd
Conklin Rd
Hopyard Rd
Chaffee Rd
Tree (4252)
Stump (300)

APPENDIX A

Botanical Name	Common Name	Count	Percentage
Acer rubrum	Red Maple	860	20.49%
Quercus rubra	Red Oak	560	13.34%
Quercus alba	White Oak	329	7.84%
Pinus strobus	White Pine	250	5.96%
Acer saccharum	Sugar Maple	231	5.50%
Quercus palustris	Pin Oak	231	5.50%
Acer platanoides	Norway Maple	187	4.46%
Carya glabra	Pignut Hickory	170	4.05%
Tsuga canadensis	Eastern Hemlock	142	3.38%
Prunus serotina	Eastern Black Cherry	135	3.22%
Thuja occidentalis	American Arborvitae	128	3.05%
Betula lenta	Sweet Birch	97	2.31%
Carya ovata	Shagbark Hickory	97	2.31%
Fraxinus pennsylvanica	Green Ash	60	1.43%
Picea abies	Norway Spruce	54	1.29%
Betula populifolia	Gray Birch	53	1.26%
Ulmus americana	American Elm	44	1.05%
Betula papyrifera	Paper Birch	40	0.95%
Robinia pseudoacacia	Black Locust	35	0.83%
Acer palmatum	Japanese Maple	32	0.76%
Populus deltoides	Cottonwood	32	0.76%
Picea sitchensis	Sitka Spruce	30	0.71%
Picea rubens	Red Spruce	29	0.69%
Acer platanoides 'Crimson King'	Crimson King Maple	27	0.64%
Ailanthus altissima	Tree of Heaven	27	0.64%
Juniperus virginiana	Eastern Red Cedar	27	0.64%
Malus domestica	Apple	27	0.64%
Acer saccharinum	Silver Maple	21	0.50%

Botanical Name	Common Name	Count	Percentage
Pyrus calleryana	Ornamental Pear	20	0.48%
Taxus baccata	English Yew	20	0.48%
Sassafras albidum	Sassafras	17	0.41%
Abies balsamea	Balsam Fir	14	0.33%
Betula nigra	River Birch	14	0.33%
Juglans nigra	Black Walnut	14	0.33%
Picea pungens f. glauca	Colorado Blue Spruce	14	0.33%
Cornus florida	Eastern Dogwood	11	0.26%
Cornus kousa	Kousa Dogwood	9	0.21%
Quercus montana	Basket Oak	9	0.21%
Malus sp/cv.	Crabapple	8	0.19%
Nyssa sylvatica	Black Gum / Tupelo	8	0.19%
Tilia cordata	Littleleaf Linden	7	0.17%
Prunus x yedoensis	Yoshino Cherry	6	0.14%
Morus alba	White Mulberry	5	0.12%
Pinus resinosa	Red Pine	4	0.10%
Prunus subhirtella 'Pendula'	Weeping Higan Cherry	4	0.10%
Tabebuia pallida	White Cedar	4	0.10%
Chamaecyparis thyoides	Atlantic White Cedar	3	0.07%
Fraxinus americana	White Ash	3	0.07%
Pseudotsuga menziesii	Douglas Fir	3	0.07%
Acer negundo	Box Elder	2	0.05%
Acer x freemanii	Freeman Maple	2	0.05%
Castanea mollissima	Chinese Chestnut	2	0.05%
Chamaecyparis pisifera	Sawara False Cypress	2	0.05%
Liriodendron tulipifera	Tulip Tree	2	0.05%
Magnolia stellata	Star Magnolia	2	0.05%
Platanus occidentalis	American Sycamore	2	0.05%

Botanical Name	Common Name	Count	Percentage
Prunus cerasifera	Purple-Leafed Plum	2	0.05%
Quercus imbricaria	Shingle Oak	2	0.05%
Quercus velutina	Black Oak	2	0.05%
Salix babylonica	Weeping Willow	2	0.05%
Sciadopitys verticillata	Japanese Umbrella Pine	2	0.05%
Syringa reticulata	Japanese Tree Lilac	2	0.05%
Taxus cuspidata	Japanese Yew	2	0.05%
Catalpa speciosa	Northern Catalpa	1	0.02%
Cercis canadensis	Eastern Redbud	1	0.02%
Cornus alternifolia	Alternate-Leaf Dogwood	1	0.02%
Cornus x rutgerensis 'Stellar Pink'	Stellar Pink Dogwood	1	0.02%
Elaeagnus umbellata	Autumn Olive	1	0.02%
Fagus sylvatica 'Atropunicea'	Purple Beech	1	0.02%
Ginkgo biloba	Maidenhair Tree	1	0.02%
Gleditsia triacanthos	Honey Locust	1	0.02%
Juglans ailantifolia x cinerea	Buart	1	0.02%
Koelreuteria paniculata	Goldenrain Tree	1	0.02%
Magnolia acuminata	Cucumber Magnolia	1	0.02%
Magnolia x soulangeana	Saucer Magnolia	1	0.02%
Oxydendrum arboreum	Sourwood	1	0.02%
Pinus nigra	Austrian Black Pine	1	0.02%
Prunus avium	Sweet Cherry	1	0.02%
Prunus persica	Peach	1	0.02%
Ulmus rubra	Slippery Elm	1	0.02%
Total		**4197**	

Note: 55 trees were unidentifiable and are excluded from the Species frequency summaries. Examples of such trees include snags, dead tree, unidentifiable species, mixed brush, and any tree that is identified to Genus classification.

APPENDIX B

Common Name	Poor/ Dead	Count	% in Poor Condition
Eastern Hemlock	12	142	8.45%
Red Maple	12	860	1.40%
Green Ash	7	60	11.67%
Sugar Maple	5	231	2.16%
Norway Spruce	4	54	7.41%
Norway Maple	4	187	2.14%
Pin Oak	4	231	1.73%
Sitka Spruce	3	30	10.00%
Eastern Black Cherry	3	135	2.22%
White Pine	3	250	1.20%

Common Name	Poor/ Dead	Count	% in Poor Condition
Eastern Red Cedar	2	27	7.41%
White Oak	2	329	0.61%
Atlantic White Cedar	1	3	33.33%
Red Spruce	1	29	3.45%
Cottonwood	1	32	3.13%
Paper Birch	1	40	2.50%
American Elm	1	44	2.27%
Sweet Birch	1	97	1.03%
Pignut Hickory	1	170	0.59%
Total	**68**		



APPENDIX C

Genus	Poor/ Dead	Count	% in Poor Condition
Acer	21	1362	1.54%
Tsuga	12	142	8.45%
Picea	8	127	6.30%
Fraxinus	7	63	11.11%
Quercus	6	1133	0.53%
Prunus	3	149	2.01%
Pinus	3	255	1.18%

Genus	Poor/ Dead	Count	% in Poor Condition
Juniperus	2	27	7.41%
Betula	2	204	0.98%
Chamaecyparis	1	5	20.00%
Populus	1	32	3.13%
Ulmus	1	45	2.22%
Carya	1	267	0.37%
Total	**68**		



QUESTIONS ?

If there are any project questions, feel free to contact:
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