

Amherst Tree Inventory Summary

The Town of Amherst, Massachusetts has commissioned a study to inventory and evaluate the current condition of its street trees. The purpose of an inventory is to study and evaluate the structure of a tree population, ultimately establishing a data set for effective planning and management for this valuable resource. This document is a summary of the findings from the second phase of Amherst's townwide inventory of all trees within the public right-of-way. A successful urban forestry program requires a combination of organized leadership, comprehensive information about the tree population, and dedicated personnel. The addition of data from this tree inventory will assist with the building of these values for the Town of Amherst.

Phase Two of the inventory was completed in May, 2012 with the additional assessment of 2,785 street trees within the town limits of Amherst. The project was originally bid for 2,778 trees, but seven additional sites were needed to complete a street that was in progress. Only trees greater than 6-inch DBH and growing in the public right-of-way were assessed. The early snowstorm from October, 2011 left many of Amherst's street trees with hanging limbs. Trees with observable storm damage such as dead hanging limbs were noted in the data.

The Phase Two survey areas were peripheral to the town center and surrounding downtown neighborhoods. The inventory focused on the northern and southern parts of town. The majority of areas remaining to be inventoried are concentrated in the southern portion of the town limits.

AMHERST INVENTORY

Davey Resource Group completed Phase Two of a GIS-based inventory of town-owned trees located within the public rights-of-way of Amherst, Massachusetts. Tree data have been collected and analyzed, providing information on species composition, condition, and maintenance actions, among others.

The major findings of Amherst's street tree inventory include the following:

- 🌳 Davey Resource Group inventoried 2,785 trees.
- 🌳 The inventory is comprised of 71 species representing 43 genera.
- 🌳 The genus *Acer* (maple) comprises 40.86 percent of this tree population; followed by *Picea* (spruce), 10.13 percent; *Quercus* (oak), 8.47 percent; *Ulmus* (elm), 5.10 percent; *Pinus* (pine), 5.06 percent; *Prunus* (cherry), 4.74 percent; *Fraxinus* (ash), 4.20 percent; *Tsuga* (hemlock), 3.16 percent; *Malus* (apple), 3.12 percent; and *Populus* (poplar), contributing 2.26 percent.
- 🌳 Small-sized trees (6-inch and less diameter at breast height [DBH]) represent 7.25 percent of the inventoried tree population. Medium-sized trees, which are 7- to 24-inch DBH, represent a dominant 81.4 percent of the total tree population, and 11.35 percent of the inventoried trees are large sized (25-inch and greater DBH).
- 🌳 There are 319 trees (11.45 percent) recommended for removal. Of these, 76 (2.73 percent) are rated at a High or Extremely High level of failure, 223 (8.01 percent) are rated at a moderate risk of failure, and 20 (0.72 percent) trees are rated as low risk.
- 🌳 There are 2,354 (84.52 percent) trees recommended for a Cleaning Prune, 319 (11.45 percent) are recommended for Removal, Reduction pruning is recommended for 56 (2.01 percent), 40 (1.44 percent) trees require a canopy raise, and 16 (0.57 percent) require ground level maintenance. Of the Cleaning Prunes, there are 39 (1.40 percent) with a High or Extremely High risk rating, 841 (30.2 percent) at a Moderate risk rating, and 1,474 (52.92 percent) trees with a Low risk rating.

The tree inventory provides comprehensive information about Amherst's public tree resource. The following frequency reports include tree data from the inventory. The reports illustrate the urban forest's species composition, genus and size distribution, and maintenance recommendations. With Phase Two of the inventory being complete, the Town of Amherst has shown a strong commitment to a successful urban forestry program.

Inventory Reports



Amherst, MA
Quantity Report: Diameter Class

<i>Diameter Class</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
7 - 12	1148	41.22%
13 - 18	738	26.50%
19 - 24	381	13.68%
4 - 6	202	7.25%
25 - 30	178	6.39%
31 - 36	74	2.66%
37 - 42	37	1.33%
43 +	27	0.97%
Grand Total	2785	100%



Amherst, MA
Quantity Report: Genus

<i>Genus</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
Acer	1138	40.86%
Picea	282	10.13%
Quercus	236	8.47%
Ulmus	142	5.10%
Pinus	141	5.06%
Prunus	132	4.74%
Fraxinus	117	4.20%
Tsuga	88	3.16%
Malus	87	3.12%
Populus	63	2.26%
Tilia	60	2.15%
Thuja	48	1.72%
Gleditsia	39	1.40%
Carya	34	1.22%
Juniperus	31	1.11%
Juglans	21	0.75%
Fagus	19	0.68%
Platanus	18	0.65%
Betula	18	0.65%
Robinia	13	0.47%
Catalpa	7	0.25%
Abies	5	0.18%
Taxus	4	0.14%
Salix	4	0.14%
Crataegus	4	0.14%
unknown	3	0.11%
Morus	3	0.11%
Castanea	3	0.11%
Amelanchier	3	0.11%
X	2	0.07%
Sorbus	2	0.07%
Phellodendron	2	0.07%
Liriodendron	2	0.07%
Larix	2	0.07%
Ginkgo	2	0.07%

<i>Genus</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
Cornus	2	0.07%
Zelkova	1	0.04%
Rhus	1	0.04%
Pyrus	1	0.04%
Metasequoia	1	0.04%
Liquidambar	1	0.04%
Elaeagnus	1	0.04%
Cercidiphyllum	1	0.04%
Aesculus	1	0.04%
Grand Total	2785	100%



Amherst, MA
Quantity Report: Maintenance

<i>Maintenance</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
Clean	2354	84.52%
Remove	319	11.45%
Reduce	56	2.01%
Raise	40	1.44%
Ground-level Maintenance	16	0.57%
Grand Total	2785	100%



Amherst, MA
Quantity Report: Botanical

<i>Botanical</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
Acer saccharum (maple, sugar)	486	17.45%
Acer platanoides (maple, Norway)	319	11.45%
Acer rubrum (maple, red)	275	9.87%
Picea abies (spruce, Norway)	162	5.82%
Ulmus americana (elm, American)	132	4.74%
Quercus rubra (oak, northern red)	128	4.60%
Pinus strobus (pine, eastern white)	128	4.60%
Prunus serotina (cherry, black)	109	3.91%
Picea pungens (spruce, Colorado)	100	3.59%
Fraxinus pennsylvanica (ash, green)	90	3.23%
Quercus palustris (oak, pin)	89	3.20%
Tsuga canadensis (hemlock, eastern)	88	3.16%
Malus spp. (crabapple, flowering)	87	3.12%
Tilia cordata (linden, littleleaf)	53	1.90%
Acer saccharinum (maple, silver)	52	1.87%
Thuja occidentalis (arborvitae, eastern)	48	1.72%
Populus deltoides (cottonwood, eastern)	46	1.65%
Gleditsia triacanthos inermis (honeylocust, thornless)	39	1.40%
Juniperus virginiana (redcedar, eastern)	31	1.11%
Fraxinus americana (ash, white)	27	0.97%
Carya ovata (hickory, shagbark)	27	0.97%
Picea glauca (spruce, white)	20	0.72%
Fagus grandifolia (beech, American)	19	0.68%
Populus tremuloides (aspen, quaking)	16	0.57%
Prunus serrulata (cherry, Japanese flowering)	15	0.54%
Quercus alba (oak, white)	14	0.50%
Robinia pseudoacacia (locust, black)	13	0.47%
Betula populifolia (birch, gray)	12	0.43%
Juglans cinerea (butternut)	11	0.39%
Ulmus pumila (elm, Siberian)	10	0.36%
Platanus occidentalis (sycamore, American)	10	0.36%
Juglans nigra (walnut, black)	10	0.36%
Prunus spp. (cherry/plum, spp.)	8	0.29%
Platanus x acerifolia (planetree, London)	8	0.29%
Pinus resinosa (pine, red)	8	0.29%

<i>Botanical</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
Tilia americana (linden, American)	7	0.25%
Catalpa speciosa (catalpa, northern)	7	0.25%
Carya glabra (hickory, pignut)	7	0.25%
Pinus sylvestris (pine, Scotch)	5	0.18%
Betula nigra (birch, river)	5	0.18%
Taxus spp. (yew, spp.)	4	0.14%
Crataegus spp. (hawthorn, spp.)	4	0.14%
Abies balsamea (fir, balsam)	4	0.14%
unknown tree (unknown tree)	3	0.11%
Quercus bicolor (oak, swamp white)	3	0.11%
Morus alba (mulberry, white)	3	0.11%
Castanea mollissima (chestnut, Chinese)	3	0.11%
Amelanchier canadensis (serviceberry, shadblow)	3	0.11%
Acer palmatum (maple, Japanese)	3	0.11%
X Cupressocyparis leylandii (cypress, Leyland)	2	0.07%
Sorbus americana (mountainash, American)	2	0.07%
Salix nigra (willow, black)	2	0.07%
Salix babylonica (willow, weeping)	2	0.07%
Quercus velutina (oak, black)	2	0.07%
Phellodendron amurense (Amur corktree)	2	0.07%
Liriodendron tulipifera (tuliptree)	2	0.07%
Larix decidua (larch, European)	2	0.07%
Ginkgo biloba (ginkgo)	2	0.07%
Cornus florida (dogwood, flowering)	2	0.07%
Acer negundo (boxelder)	2	0.07%
Zelkova serrata (zelkova, Japanese)	1	0.04%
Rhus typhina (sumac, staghorn)	1	0.04%
Pyrus calleryana (pear, Callery)	1	0.04%
Populus alba (poplar, white)	1	0.04%
Metasequoia glyptostroboides (dawn redwood)	1	0.04%
Liquidambar styraciflua (sweetgum, American)	1	0.04%
Elaeagnus angustifolia (Russian-olive)	1	0.04%
Cercidiphyllum japonicum (katsuratree)	1	0.04%
Betula papyrifera (birch, paper)	1	0.04%
Aesculus hippocastanum (horsechestnut)	1	0.04%
Acer tataricum ginnala (maple, Amur)	1	0.04%
Abies concolor (fir, white)	1	0.04%
Grand Total	2785	100%