

# City of Lafayette Inventory Summary Report

Lafayette, Indiana is a thriving city located in northwest Indiana. The City has created an attractive community and a great place to live, work, and play. The health of Lafayette, as with many communities, is closely related to the ability of the municipal government to supply its citizens with efficient services, safe public spaces, and properly maintained infrastructure. Trees are an integral component of the City's infrastructure and urban environment.

Managing natural resources in urban areas is challenging. For many communities, finding suitable space for trees among roads, buildings, sewers, utility, and gas lines is difficult. Frequently, a greater concern is providing adequate maintenance within budget constraints. A combination of organized leadership, coupled with comprehensive information about the City's public tree population, dedicated personnel, and effective public relations, will lead to a more beneficial urban forest and a successful urban forestry program.

Lafayette's City Forester has continued to play an instrumental role in advocating the benefits of a complete public tree inventory to better manage the City's public tree population. The purpose of an inventory is to study and evaluate the current condition and maintenance needs of public trees. Ultimately, a complete public tree inventory will establish a means of which Lafayette can efficiently and effectively plan, budget, and proactively manage the City's green infrastructure.

## **Phase Two of Public Tree Inventory**

Davey Resource Group completed Phase Two of Lafayette's public tree inventory in August, 2011 and recorded 5,023 trees, stumps, and planting sites. Tree data were collected including information on species composition, relative size, and health. The numbers in this section reflect trees inventoried in nine of Lafayette's neighborhoods: Columbian Park; Hedgewood; Highland Park; Monon; Ninth Street Hill; Oakland Triangle; St. Lawrence McAllister; Vinton; and Wallace Triangle.

The major findings for Phase Two include:

- ✿ There were 2,459 (49%) trees, 183 (4%) stumps, and 2,381 (47%) vacant planting spaces. Of the vacant planting sites, 882 (37%) were identified for large-growing trees, 253 (11%) were identified for medium-growing trees, and 1,246 (52%) were identified for small-growing trees.
- ✿ There were 81 species representing 46 genera. The genus maple (*Acer*) comprises 41% of the tree population, followed by ash (*Fraxinus*) 7%, apple (*Malus*) 6%, pear (*Pyrus*) 5%, juniper (*Juniperus*) 5%, and linden (*Tilia*) 4%.
- ✿ There were 177 ash inventoried. Of these, 3 trees were positively identified as being infested with emerald ash borer (*Agrilus planipennis* Fairmaire). There were also 6 trees that need further inspection because they were beginning to show possible symptoms of infestation.
- ✿ The majority (31%) of trees were 13 to 24 inches in diameter at breast height (DBH) and in Fair (67%) condition.
- ✿ The total maintenance requirements indicate that 211 (8%) trees were recommended for Removal, 1,515 (57%) trees were recommended for Large Tree Clean, 258 (10%) trees were recommended for Small Tree Clean, 475 (18%) trees were recommended for Young Tree Train, and 183 (7%) stumps require Stump Removal.
- ✿ Of the trees inventoried, 886 (36%) trees had a Low level of risk (Risk Rating of 3 or 4), 1,233 (50%) trees had a Moderate level of risk (Risk Rating of 5 or 6), 316 (13%) trees had a High level of risk (Risk Rating of 7 or 8), and 24 (1%) trees had a Severe level of risk (Risk Rating of 9 or 10).

## **Current Public Tree Inventory**

To date, Lafayette's inventory includes the majority of downtown neighborhood street trees. Combining information from Lafayette's Phase One and Phase Two inventories, the following provides a summary of Lafayette's inventoried public tree population:

- 🌳 Lafayette has a stocking level of 62% along city streets. Stocking level is the percentage of potential sites filled with trees. There are 6,265 trees, 384 stumps, and 3,432 vacant planting spaces.
- 🌳 Maple (35%), ash (12%), apple (6%), linden (6%), and pear (5%) are the City's top 5 inventoried street tree populations. Silver maple (*Acer saccharinum*) is the most populated species.
- 🌳 The inventoried tree population's size distribution is 31:30:27:12 (percentages of young: immature: maturing: mature trees). Young trees are 6 inches and less in DBH, immature trees are 7 to 12 inches DBH, maturing trees are 13 to 24 inches DBH, and mature trees are 25 inches and greater DBH.
- 🌳 Of the 6,265 inventoried trees, less than 1% are in Very Good condition, 12% are in Good condition, 66% are in Fair condition, 19% are in Poor condition, 3% are in Critical condition, and less than 1% are Dead.
- 🌳 Using environmental and economic benefit information (\$71.60 average annual benefit per tree) from the i-Tree Streets analysis conducted on the Phase One inventory, it is estimated that the current inventoried population of public trees provides the Lafayette community \$448,584 annually in the mitigation of stormwater, conservation of energy, air pollution improvement, and property value enhancement.

The inventory data have continued to provide comprehensive information about Lafayette's public tree resource. The Phase Two inventory has been provided digitally on the CD-ROM accompanied by this summary and has been uploaded to the City's existing TreeKeeper® website, Davey's online inventory management software. With the continuation of Lafayette's public tree inventory, the City has shown a strong commitment to building an efficient, effective, and successful urban forestry program.

## ***Frequency Reports***

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**Lafayette, IN**  
**Quantity Report: Condition**

<i>Condition</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
N/A	2564	51.05%
Fair	1659	33.03%
Poor	535	10.65%
Good	198	3.94%
Critical	45	0.90%
Dead	14	0.28%
Very Good	8	0.16%
<b>Grand Total</b>	<b>5023</b>	<b>100%</b>



**Lafayette, IN**  
**Quantity Report: Observations**

<i>Observations</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
None	3902	77.68%
Poor Structure	285	5.67%
Cavity or Decay	283	5.63%
Poor Root System	168	3.34%
Mechanical Damage	125	2.49%
Nutrient Deficiency	95	1.89%
Improperly Pruned	51	1.02%
Serious Decline	42	0.84%
Poor Location	32	0.64%
Pest Problem	24	0.48%
Improperly Installed	7	0.14%
Remove Hardware	6	0.12%
Grate or Guard	2	0.04%
Improperly Mulched	1	0.02%
<b>Grand Total</b>	<b>5023</b>	<b>100%</b>



<i>Primary Maintenance</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
Plant Tree	2381	47.40%
Large Tree Clean	1515	30.16%
Young Tree Train	475	9.46%
Small Tree Clean	258	5.14%
Removal	211	4.20%
Stump Removal	183	3.64%
<b>Grand Total</b>	<b>5023</b>	<b>100%</b>



**Lafayette, IN**  
**Quantity Report: Rating**

<i>Rating</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
N/A	2564	51.05%
4	837	16.66%
5	814	16.21%
6	419	8.34%
7	240	4.78%
8	76	1.51%
3	49	0.98%
9	21	0.42%
10	3	0.06%
<b>Grand Total</b>	<input type="text" value="5023"/>	<b>100%</b>



**Lafayette, IN**  
**Quantity Report: Botanical**

<i>Botanical</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
vacant site small (vacant site, small)	1246	24.81%
vacant site large (vacant site, large)	882	17.56%
Acer saccharinum (maple, silver)	388	7.72%
Acer rubrum (maple, red)	272	5.42%
vacant site medium (vacant site, medium)	253	5.04%
Acer saccharum (maple, sugar)	236	4.70%
stump (stump)	183	3.64%
Malus spp. (crabapple, flowering)	141	2.81%
Pyrus calleryana (pear, Callery)	131	2.61%
Fraxinus pennsylvanica (ash, green)	110	2.19%
Juniperus virginiana (redcedar, eastern)	109	2.17%
Acer platanoides (maple, Norway)	102	2.03%
Tilia cordata (linden, littleleaf)	85	1.69%
Gleditsia triacanthos inermis (honeylocust, thornless)	82	1.63%
Liriodendron tulipifera (tuliptree)	78	1.55%
Cercis canadensis (redbud, eastern)	70	1.39%
Fraxinus americana (ash, white)	66	1.31%
Ulmus pumila (elm, Siberian)	59	1.17%
Liquidambar styraciflua (sweetgum, American)	51	1.02%
Morus alba (mulberry, white)	31	0.62%
Thuja occidentalis (arborvitae, eastern)	27	0.54%
Prunus spp. (cherry/plum, spp.)	26	0.52%
Celtis occidentalis (hackberry, common)	23	0.46%
Quercus rubra (oak, northern red)	22	0.44%
Picea pungens (spruce, Colorado)	18	0.36%
Crataegus spp. (hawthorn, spp.)	15	0.30%
Catalpa speciosa (catalpa, northern)	15	0.30%
Abies fraseri (fir, fraser)	15	0.30%
Picea abies (spruce, Norway)	14	0.28%
Juglans nigra (walnut, black)	13	0.26%
Quercus palustris (oak, pin)	12	0.24%
Quercus alba (oak, white)	12	0.24%
Ginkgo biloba (ginkgo)	11	0.22%
Cornus florida (dogwood, flowering)	11	0.22%
Syringa reticulata (lilac, Japanese tree)	10	0.20%



<i>Botanical</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
Betula spp. (birch, spp.)	10	0.20%
Ailanthus altissima (tree of heaven)	10	0.20%
Tilia americana (linden, American)	9	0.18%
Platanus occidentalis (sycamore, American)	9	0.18%
Ulmus americana (elm, American)	8	0.16%
Robinia pseudoacacia (locust, black)	8	0.16%
Betula nigra (birch, river)	8	0.16%
Ulmus parvifolia (elm, Chinese)	7	0.14%
Sassafras albidum (sassafras)	7	0.14%
Acer nigrum (maple, black)	7	0.14%
Populus deltoides (cottonwood, eastern)	6	0.12%
Pinus strobus (pine, eastern white)	6	0.12%
Malus pumila (apple, common)	6	0.12%
Cladrastis kentukea (yellowwood)	6	0.12%
Tilia tomentosa (linden, silver)	5	0.10%
Cotinus coggygia (smoketree, American)	5	0.10%
Acer x freemanii (maple, Freeman)	5	0.10%
Prunus serotina (cherry, black)	4	0.08%
Prunus persica (peach, common)	4	0.08%
Acer tataricum ginnala (maple, Amur)	4	0.08%
Ulmus x (elm, hybrid)	3	0.06%
Salix matsudana (willow, corkscrew)	3	0.06%
Platanus x acerifolia (planetree, London)	3	0.06%
Pinus parviflora (pine, Japanese white)	3	0.06%
Pinus nigra (pine, Austrian)	3	0.06%
Magnolia x soulangiana (magnolia, saucer)	3	0.06%
Magnolia stellata (magnolia, star)	3	0.06%
Juniperus spp. (juniper, spp.)	3	0.06%
Amelanchier spp. (serviceberry, spp.)	3	0.06%
Acer palmatum (maple, Japanese)	3	0.06%
Salix nigra (willow, black)	2	0.04%
Quercus macrocarpa (oak, bur)	2	0.04%
Pyrus communis (pear, common)	2	0.04%
Picea glauca (spruce, white)	2	0.04%
Ostrya virginiana (hophornbeam, American)	2	0.04%
Maclura pomifera (osage-orange)	2	0.04%
Fagus grandifolia (beech, American)	2	0.04%
Diospyros virginiana (persimmon, common)	2	0.04%

<i>Botanical</i>	<i>Total</i>	<i>Percentage of Entire Population</i>
Castanea mollissima (chestnut, Chinese)	2	0.04%
Betula papyrifera (birch, paper)	2	0.04%
Ulmus rubra (elm, slippery)	1	0.02%
Sorbus aucuparia (mountainash, European)	1	0.02%
Sorbus americana (mountainash, American)	1	0.02%
Quercus muehlenbergii (oak, chinkapin)	1	0.02%
Quercus imbricaria (oak, shingle)	1	0.02%
Prunus x yedoensis (cherry, Yoshino)	1	0.02%
Prunus serrulata (cherry, Japanese flowering)	1	0.02%
Populus tremuloides (aspen, quaking)	1	0.02%
Populus grandidentata (aspen, bigtooth)	1	0.02%
Populus alba (poplar, white)	1	0.02%
Pinus sylvestris (pine, Scotch)	1	0.02%
Metasequoia glyptostroboides (dawn redwood)	1	0.02%
Magnolia acuminata (magnolia, cucumbertree)	1	0.02%
Koelreuteria paniculata (goldenraintree)	1	0.02%
Juglans regia (walnut, English)	1	0.02%
Fraxinus tomentosa (ash, pumpkin)	1	0.02%
Cornus kousa (dogwood, Kousa)	1	0.02%
Asimina triloba (pawpaw, common)	1	0.02%
Aesculus hippocastanum (horsechestnut)	1	0.02%
Abies balsamea (fir, balsam)	1	0.02%
<b>Grand Total</b>	5023	100%