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# Walnut St Park Work Plan

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## Somerville, MA

April 2021

Prepared for:

City of Somerville, MA  
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# Purpose

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In an effort to promote the health of existing trees within Walnut St. Park, all trees and soils within the park were assessed and the following maintenance recommendations are provided.

## Key Recommendations

- 1 Tree recommended for removal
- 9 Trees recommended for pruning (see Appendix III for pruning specifications)
- Mulching recommended for 10 trees
- Soil Amendments recommended for 4 trees

## Removals

Tree removal activities shall adhere to the following specifications:

1. ANSI Z-133 standards for tree worker safety will be followed.
2. Trees shall be removed safely and in parts as necessary.
3. The tree stump will be pulled out whenever possible. If the stump cannot be pulled out, it will be ground out to a depth of six (6) inches below the normal surface level including all surface roots. Immediately after grinding each stump, the grindings must be removed from the work area.
4. Backfill consisting of clean earthen soil, free from debris, shall be used to fill any cavities remaining after stump removal. Wood chips will NOT be used as backfill. Sufficient backfill shall be used to bring the cavity to grade. The backfill soil shall then be covered with a seeding mix approved by the City Urban Forester.
  - a. Planting and backfill soil shall be a natural, fertile, friable loam typical of cultivated topsoil of the locality, containing at least 10% and not more than 20% decayed organic matter (humus). Topsoil shall be free of sub-soil, stones greater than 1-¼ inches in diameter in the longest dimension, earth clods, sticks, stumps, clay lumps, roots, or other objectionable, extraneous matter or debris. Topsoil shall not be by test either excessively acid or alkaline nor contain toxic substances. Soil soluble salt content shall be less than 2 dS/m, and pH shall be between 5.5 and 6.5. Topsoil shall not be delivered or used for planting while in a frozen or muddy condition.
5. Any tree parts (branches, leaves, wood chips, grindings) shall be cleaned from adjacent sidewalks, lawns, streets, and gutters at the end of the work, or if the work spans multiple days, then at the end of each day.
6. All labor, supervision, equipment, materials, and supplies necessary for the execution of this work must shall provided for by the contractor at no additional cost to the City.
7. All debris disposals will be provided by the contractor at no additional cost to the City.

Tree #41399 is recommended for removal due to its poor condition. It is an approximately 8" *Malus* spp. (crabapple).



## Pruning

All pruning activities shall adhere to the following specifications:

1. All pruning work will conform to the latest revision of the American National Standards Institute (ANSI): Standard A300, developed by the Tree Care Industry Association.
2. Tree pruning work may include any or all of the following:
  - a. **Young Tree Training:** pruning of young trees to correct or eliminate weak, interfering, or objectionable branches to improve structure. These trees can be up to 20 feet tall and can be worked with a pole pruner by a person standing on the ground.
  - b. **Crown Cleaning:** selective removal of dead, dying, damaged, diseased, and broken branches from the tree crown. Shall include removal of all deadwood >2" diameter.
  - c. **Canopy Thinning:** selective removal of live branches to provide light or air penetration through the tree or to lighten the weight of the remaining branches.
  - d. **Clearance Pruning:** The heading back or removal of specific limbs to provide clearance from buildings, wires, lights, etc.
  - e. **Crown Raising:** selective removal of lower branches from a tree crown to provide clearance. Trees impeding vehicle or pedestrian traffic should be raised up at least 13 feet over streets and 8 feet over sidewalks. Tree obstructing control devices should be trimmed for adequate visibility.
  - f. **Structural Pruning:** pruning to develop strong tree structure. This includes maintaining a dominant leader by reducing the length or removing any competing leaders, suppressing growth on branches with bark inclusions, ensuring appropriate spacing of main branches along a dominant trunk, and keeping all branches less than one-half the trunk diameter.
  - g. **Aesthetic pruning:** selective removal of downward growing limbs, limbs growing backwards toward the trunk, and other limbs that are making the tree unsightly.
  - h. **Pruning of crossing or rubbing limbs.**
3. All pruning cuts shall be made as close as possible to the trunk or parent limb, without cutting into the branch collar or leaving a protruding stub. Bark at the edge of all pruning cuts should remain firmly attached. Sharp tools shall be used so that clean cuts will be made at all times.
4. All branches too large to support with one hand shall be pre-cut to avoid splitting or tearing of the bark. Where necessary, ropes or other equipment should be used to lower branches or stubs to the ground.
5. Treatment of cuts and wounds with wound dressing or paints is prohibited.
6. Equipment that will damage the bark and cambium layer shall NOT be used on or in the trees. For example, the use of climbing spurs (hooks or irons) is not an acceptable work practice for pruning operations on live trees.
7. All cut limbs shall be removed from the crown upon completion of the pruning. Clean-up of branches, logs, or any other debris resulting from any tree pruning shall be promptly and properly accomplished.
8. The work area shall be kept safe at all times until the clean-up operation is completed. Under no condition shall the accumulation of brush, branches, logs, or other debris be allowed upon a public property in such a manner as to result in public hazard.



The following trees are recommended for Structural Pruning, Crown Thinning and Crown Cleaning:

#41381 - 6" crabapple. Poor condition. This tree has become overgrown. Structural pruning will be needed to restore the tree to its optimal structure. Crown thinning is needed to increase air and light flow. Crown Cleaning will be needed to remove larger pieces of dead wood and improve the overall health of the tree.

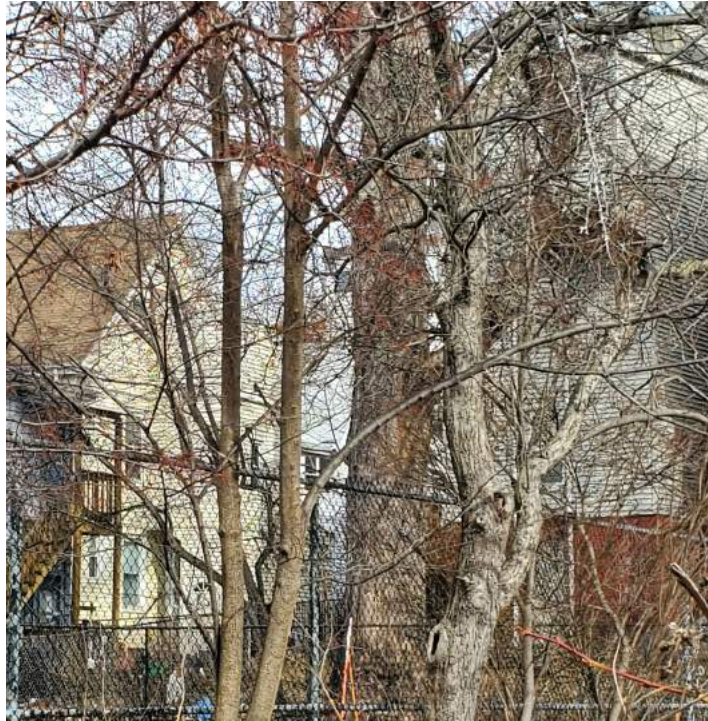


#41387 - 16" crabapple. Poor condition. This tree has become overgrown. Structural pruning will be needed to restore the tree to its optimal structure. Crown thinning is needed to increase air and light flow. Crown Cleaning will be needed to remove larger pieces of dead wood and improve the overall health of the tree.

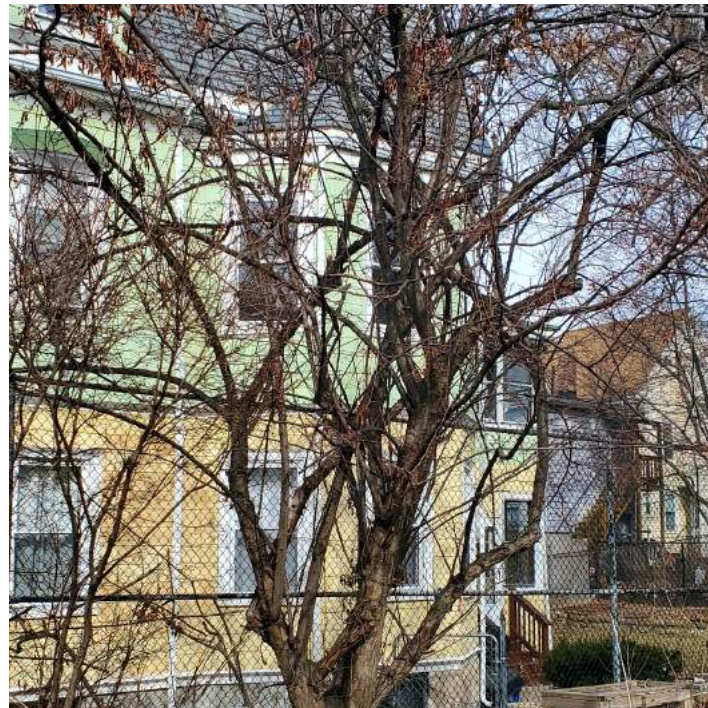




#41407 - 12" crabapple. Fair condition. This tree has become overgrown. Structural pruning will be needed to restore the tree to its optimal structure. Crown thinning is needed to increase air and light flow. Crown Cleaning will be needed to remove larger pieces of dead wood and improve the overall health of the tree.



#41428 - 13" crabapple. Poor condition. This tree has become overgrown. Structural pruning will be needed to restore the tree to its optimal structure. Crown thinning is needed to increase air and light flow. Crown Cleaning will be needed to remove larger pieces of dead wood and improve the overall health of the tree.



The following trees are recommended for Clearance Pruning:

#18275 - 14" London Planetree - Good condition. Limbs should be trimmed back from overhead lines. Limbs may be pruned from the opposite side of the tree to ensure the tree is not unbalanced as a result of Crown Reduction Pruning.



The following trees are recommended for Aesthetic Pruning:

#18290 - 6" London Planetree. Good condition

#18207 - 17" London Planetree. Good condition

#41445 - 20" London Planetree. Good condition

#41415 - 6" Elm. Good condition



## Mulching

Mulching is recommended for all trees in Walnut Park. Mulch shall be applied according to the following procedures:

1. Mulch shall be applied to trees for moisture retention in soil abatement of dust and weeds, and for nutrient enrichment of the soil.
2. Mulched area shall be six feet in diameter around the trunk of the tree unless otherwise specified by the City Urban Forester. A three inch layer of mulch (after settlement) will be applied around the tree, tapering towards the trunk. Mulch shall NOT come in contact with the trunk of the plant or the root flare. No mulch shall be placed within 2 to 3 inches of the trunk. "Volcano" mulching is strictly prohibited.
3. Mulch shall be high quality, premium course-grade bark mulch, 15 mm minimum length, consisting of clean organic plant material. Mulch shall conform to the following:
  - a. Must be uniform, natural wood color, without dyes, which shall not exhibit a noticeable degree of color change characteristic when wet.
  - b. Must not have an unpleasant odor.
  - c. Must be free of dirt, insects, disease, and extraneous debris that would be harmful to the trees being planted.
  - d. pH: between 4.0 and 8.0
  - e. Particle size: 100% passing through a 50 mm (2 inch) screen
  - f. Soluble salt content: less than 4.0 mmhos/cm

## Soil Recommendations

Two soil samples were taken at Walnut Park. One was taken in the garden area and one was taken from the tree pits on the street and the one tree pit in the park. The following recommendations are given:

1. The soil pH of the garden sample was determined to be 6.3. This pH is within desirable range and no pH correction is required. Phosphorus and Nitrogen levels were in the Good to Greater range and no fertilizer is recommended at this time. The texture of the garden sample was determined to be sandy clay loam.
2. The soil pH of the tree pit sample was determined to be 5.4 and is considered outside of the desirable range (too acidic). Soil aeration and the incorporation of dolomitic lime is recommended for the tree pits within Walnut Street Park. This will help correct soil pH by adding magnesium. Phosphorus and Nitrogen levels were in the Medium range and the addition of Arbor Green Pro fertilizer is recommended to maintain optimum levels of soil nutrients. The texture of the tree pit sample was determined to be sandy clay loam.

## **Park Closure, Traffic Management, and Sequence of Events**

Work will likely take one full day and will require the park to be closed during operations. Police detail will not be required for this work. However, pedestrian/bicycle traffic and parking will need to be restricted in front of the park during operations.

Tree removals and pruning will take place first. Once the tree work is complete, compacted soil will be aerated and soil amendments and fertilizer will be incorporated to the soil. Finally, mulch will be added to all trees.

## **Crew and Equipment**

Access to the park will be via Walnut St. and Giles Park. Work crew will consist of 3 individuals and will require the following heavy equipment:

- Bucket Truck
- Chipper

All wood material removed from trees will be chipped on site and removed. All effort will be made to protect city and playground infrastructure. All playground equipment will be protected with plywood and moving blankets to prevent damage.

## Maintenance Schedule

Tree Number	Species	DBH	Maintenance Recommendation	Priority
18275	London planetree	14	Crown Reduction Pruning	Medium
41387	crabapple	16	Structural Pruning	Low
41428	crabapple	13	Structural Pruning	Low
41407	crabapple	12	Structural Pruning	Low
18290	London planetree	10	Aesthetic Pruning	Low
18207	London planetree	17	Aesthetic Pruning	Low
41445	London planetree	20	Aesthetic Pruning	Low
41415	Elm	6	Aesthetic Pruning	Low
41399	crabapple	8	Removal	Low
189275	London planetree	14	Soil Aeration	Low
			Lime and Fertilizer soil amendments	Low
18920	London planetree	10	Soil Aeration	Low
			Lime and Fertilizer soil amendments	Low
18207	London planetree	17	Soil Aeration	Low
			Lime and Fertilizer soil amendments	Low
41445	London planetree	20	Soil Aeration	Low
			Lime and Fertilizer soil amendments	Low
10 Trees			Mulch	Low
			Posting of No Parking Signs	
				<b>Total:</b>



# APPENDIX I

## Tree Location Map



# APPENDIX II

## Soil Test Results

Garden Sample

### Turf and Ornamental Soil Analysis Report

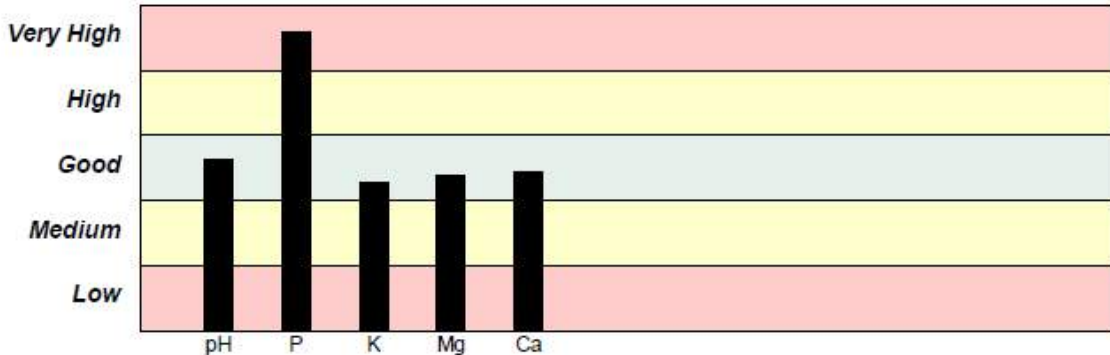
*Spectrum Analytic*  
 1087 Jamison Road NW  
 Washington Court House, OH 43160-8748  
 www.spectrumanalytic.com

**THE DAVEY TREE EXPERT CO-SOIL LAB**  
 PO BOX 5193  
 KENT, OH 44240

Prepared For
SOMMERVILLE-104550 SOMMERVILLE, MA

Sample Information			
Sample	169	Sampled	03-23-2021
Lab Number	G19925	Tested	03-26-2021

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	6.3	5.8-6.6	Clay	% 22	
Buffer pH	6.8		Sand	% 58	
Organic Matter	% 4.9		Silt	% 20	
CEC	10.5		Texture	Sandy Clay	Loam
K Saturation	% 3.6	2.0-4.0			
Mg Saturation	% 15.4	10-20			
Ca Saturation	% 58.2	50-70			
K/Mg Ratio	0.8				
Ca/Mg Ratio	7.4				
Phosphorus	m3-ppm 184	50-80			
Potassium	m3-ppm 176	150-240			
Magnesium	m3-ppm 221	170-310			
Calcium	m3-ppm 1636	1400-2000			



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)										
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn
21	Trees, Deciduous-Undefined	0	3.0	0.0	2.2	0.0						

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

**Trees, Deciduous-Undefined:** Limit N to 1 lb./1000 sq. ft. within dripline in year 1. Split N 50% early spring and 50% late summer. Fertilized area under tree starts 2 ft. from trunk, to 3 ft. outside of dripline. Adjust future fertilizer rates based on annual leaf analysis.

Tree Pit Sample

Turf and Ornamental Soil Analysis Report

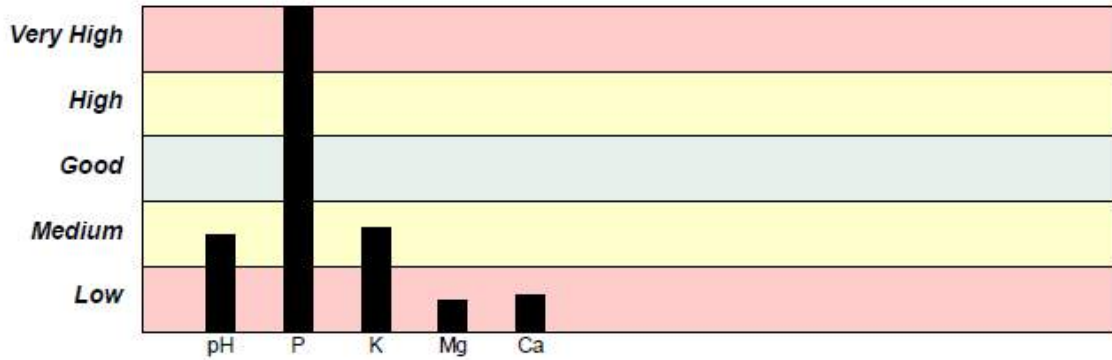
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Prepared For
SOMMERVILLE-104550 SOMMERVILLE, MA

Sample Information			
Sample	170	Sampled	03-23-2021
Lab Number	G19926	Tested	03-26-2021

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	5.4	5.8-6.6	Clay	% 22	
Buffer pH	6.5		Sand	% 70	
Organic Matter	% 2.5		Silt	% 8	
CEC	7.5		Texture	Sandy Clay	Loam
K Saturation	% 3.0	2.0-4.0			
Mg Saturation	% 3.5	10-20			
Ca Saturation	% 13.6	50-70			
K/Mg Ratio	2.9				
Ca/Mg Ratio	7.6				
Phosphorus	m3-ppm 255	50-80			
Potassium	m3-ppm 106	130-220			
Magnesium	m3-ppm 36	140-280			
Calcium	m3-ppm 272	900-1500			



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)										
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn
21	Trees, Deciduous-Undefined	108D	3.0	0.0	2.7	0.8						

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

**Trees, Deciduous-Undefined:** Limit N to 1 lb./1000 sq. ft. within dripline in year 1. Split N 50% early spring and 50% late summer. Fertilized area under tree starts 2 ft. from trunk, to 3 ft. outside of dripline. Adjust future fertilizer rates based on annual leaf analysis.



## APPENDIX III

### Tree Condition Definitions

**Condition:** Condition indicates the current state of a tree's health and structural soundness. As adapted from the Council of Tree and Landscape Appraiser's "Guide for Plant Appraisal", condition is determined through a visual evaluation of the roots, trunk, and scaffold branches, as well as branches, twigs, foliage and buds. The overall health of any given tree is essentially the sum of the condition for all of these woody and vegetative components. The Council's condition rating system returns a numerical value (1-4) that can then be characterized as "Dead", "Poor", "Fair", and "Good", respectively, as represented in i-Tree Streets v5. General characteristics of overall health are provided below; however, it is important to remember that these ratings account for the sum of a tree's parts. Also, condition may change at any time for any number of factors including exacerbation of known and unknown defects, introduction or advancement of insects and disease, environmental stress, and adverse site factors, among others.

#### **Good**

The tree has no major structural problems, no significant mechanical damage, no insect or disease issues of concern, and minimal to no signs of stress.

#### **Fair**

The tree may exhibit minor structural problems; mechanical damage that decreases the stability of a tree's roots, trunk, or scaffold branches; presence of and/or damage from harmful insects and diseases; and general signs of stress such as wilting or minor twig dieback.

#### **Poor**

The tree may have major structural defects, extensive wounds or decay (localized or widespread), mechanical damage that increases the likelihood of failure, significant crown dieback, and insect or disease issues that result in a noticeable decline in tree health.

#### **Dead**

Trees in this category are dead.