

# CITY OF SOMERVILLE, MASSACHUSETTS Department of Procurement and Contracting Services KATJANA BALLANTYNE MAYOR

To:	All Parties on Record with the City of Somerville as Holding IFB #25-26 Somerville Parks Tree Health Program 2025
From:	Felisa Gárate, Procurement Analyst
Date:	11/15/2024
Re:	Revisions to the Unit Price Form and Technical Specifications
	Addendum No. 1 to IFB #25-26
	e acknowledge receipt of this Addendum by signing below and including this form in pid package. Failure to do so may subject the proposer to disqualification.
	E OF COMPANY / INDIVIDUAL:
CITY/	/STATE/ZIP:
TELE	CPHONE/FAX/EMAIL:
	ATURE OF AUTHORIZED INDIVIDUAL:
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	NOWLEDGEMENT OF ADDENDA:

#### TO ALL BIDDERS:

Bidders are hereby informed that Contract Documents for the above-mentioned contract are modified, corrected, and/or supplemented as follows and Addendum No. 1 becomes part of the Contract Documents.

This addendum revises the Unit Price Form, as well as the Technical Specifications. The revised Unit Price Form and Technical Specifications are provided below.

The tree diameters noted were incorrect, and a park property that was involved in a previous iteration of this program was incorrectly noted. For your convenience, changes are highlighted in yellow.

# Attachment 1

#### **Revised Unit Price Form**

# **Unit Price Form**

Please quote on the following items. Prices are to include delivery, the cost of fuel, the cost of supplies, the cost of labor and all other charges related to the services listed below. Prices are to remain the same for the entire contract period.

Performing Tree Health Assessments & Creating Work Plans				
	Quantity	Price per Park (\$)		
ARGENZIANO SCHOOL     PLAYGROUND	1 park			
2. BAILEY PARK	1 park			
3. CHUCKIE HARRIS PARK	1 park			
4. CORBETT-MCKENNA PARK	1 tree			
5. KENNEDY SCHOOLYARD	1 park			
6. LINCOLN PARK	1 park			
7. LOU ANN DAVID PARK	1 park			
8. NORTH STREET VETERANS PLGD	1 park			
9. QUINCY STREET PARK	1 park			
10. VETERANS MEMORIAL CEMETARY	1 park			
11. WEST BRANCH LIBRARY	1 park			
12. WINTER HILL COMMUNITY SCHOOL	1 park			
<b>Total Fee for Tree Health Assessments &amp;</b>	\$			
Work Plans (in figures):	Φ			
Total Fee for Tree Health Assessments & Work Plans (in words):	\$			

Execution of Work Plans						
	Type of Work	Approx. Quantity	Unit Price (\$)	Total Price (\$)		
1.	Young tree training (pruning of young trees up to 20 feet tall)	50 tree(s)	per tree			
2.	Large tree pruning (trees > 20 feet tall)	230 hour(s)	per hour			
3.	Bark Tracing	2 wound(s)	per wound			
4.	Cable Inspection	1 cable(s)	per cable			
5.	Cabling and/or Bracing (new installation)	1 tree(s)	per tree			
6.	Tree Removal (cutting to ground level): weed trees 2 inches diameter or less	5 tree(s)	per tree			
7.	Tree Removal, including stump removal (pulling out or grinding): trees up to 5 inches diameter	5 tree(s)	per tree			

8. Tree Removal, including stump removal (pulling out or grinding): trees 5 to 10	5 tree(s)	per tree	
inches diameter	0 1111(1)	F	
9. Tree Removal, including stump removal (pulling out or grinding): trees 10 to 20 inches diameter	4 tree(s)	per tree	
10. Tree Removal, including stump removal (pulling out or grinding): trees 20 to 30 inches diameter	2 tree(s)	per tree	
11. Tree Removal, including stump removal (pulling out or grinding): trees 30 to 40 inches diameter	0 tree(s)	per tree	
12. Stump Removal only (pulling out or grinding existing stump): stumps under 10 inches diameter	2 stump(s)	per stump	
13. Stump Removal only (pulling out or grinding existing stump): stumps 11 to 20 inches diameter	3 stump(s)	per stump	
14. Stump Removal only (pulling out or grinding existing stump): stumps 21 to 30 inches diameter	0 stump(s)	per stump	
15. Stump Removal only (pulling out or grinding existing stump): stumps 31 to 40 inches diameter	0 stump(s)	per stump	
16. Stump Removal only (pulling out or grinding existing stump): stumps 41 to 50 inches diameter	0 stump(s)	per stump	
17. Root pruning (for girdling roots)	40 tree(s)	per tree	
18. Soil aeration (ex. air spading)	3,000 square feet	per square foot	
19. Compost addition to soil	3,000 square feet	per square foot	
20. Amending soil with fertilizer (or other soil amendments)	20,000 square feet	per square foot	
21. Adding mulch rings (6' diameter)	70 tree(s)	per tree	
22. Application of foliar horticultural oil (tree size range 11 – 16 inches DBH	1 tree(s)	per tree	
23. Additional skilled arborist tree work	10 hour(s)	per hour	
24. Posting of No Parking Signs	10 park(s)	per park	
25. Application of preventative treatment for Beech Leaf Disease for approx. 15-inch diameter Beech Trees	2 tree(s)	per application	
Total Fee for Execution of Work Plans (in figures):	\$		
Total Fee for Execution of Work Plans (in words):	\$		

Creating and Delivering Final Reports				
	Quantity	Price per Park (\$)		
1. ARGENZIANO SCHOOL PLAYGROUND	1 park			
2. BAILEY PARK	1 park			
3. CHUCKIE HARRIS PARK	1 park			
4. CORBETT-MCKENNA PARK	1 tree			
5. KENNEDY SCHOOLYARD	1 park			
6. LINCOLN PARK	1 park			
7. LOU ANN DAVID PARK	1 park			
8. NORTH STREET VETERANS PLGD	1 park			
9. QUINCY STREET PARK	1 park			
10. VETERANS MEMORIAL CEMETARY	1 park			
11. WEST BRANCH LIBRARY	1 park			
12. WINTER HILL COMMUNITY SCHOOL	1 park			
Total Fee for Final Reports (in figures):	\$			
<b>Total Fee for Final Reports (in words):</b>	\$			

<b>Total Fee for 12-Month</b>	6
<b>Contract (in figures):</b>	5
<b>Total Fee for 12-Month</b>	6
<b>Contract (in words):</b>	\$

# **Attachment 2**

# **Revised Technical Specifications**

# Somerville Parks Tree Heath Program – Scope of Work and Technical Specifications

### I. Scope of Work

- A. Qualification / Credential Requirement
- B. Tree Health Assessment
- C. Work Plan
- D. Execution of Work Plan
- E. Contractor's Final Report

#### II. Tree Work Specifications

- A. Pruning Specifications
- B. Bark Tracing Specifications
- C. Tree Removal Specifications
- D. Integrated Pest Management
- E. Mulch Specifications
- F. Soil Decompaction Specifications
- G. Root Pruning Specifications
- H. Soil Amendment Specifications
- I. Cabling/ Bracing Specifications
- J. Weeding Specifications
- K. Pest Control Specifications
- L. Pavement removal

#### **III.** Work Procedures/ Execution

- A. Equipment
- B. Tree Locations
- C. Timeframe
- D. Directives
- E. Inspections
- F. Tree Damage
- G. Traffic Control
- H. Utility Agencies
- I. Permits and Licenses
- J. Safety
- K. Clean Up
- L. Damages
- M. Working Hours
- N. Subcontractors
- O. Discontinuance of Work
- P. Observance of Laws, Ordinances & Regulations
- Q. Supervision
- R. Contract Termination

#### **IV.** Samples & Submittals

- A. Overview
- B. Planting/backfill soil
- C. Planting Mulch
- D. Fertilizer and any other soil amendments
- E. Cabling and Bracing
- F. Personnel
- G. Work Plan

#### V. Standards

- A. Observation of the Work
- B. Pre-Construction Conference
- C. Quality Assurance
- D. General Personnel Requirements
- E. Equipment Requirements
- F. Requirements Regarding Private Property
- G. Work Scheduling and Hours
- H. General Standards
- I. Acceptance of Work
- J. Site Conditions

#### VI. Definitions

- A. General Definitions
- B. Arboricultural Terms

#### VII. Park Descriptions

# Somerville Parks Tree Health Program

# **Program Description**

In an effort to promote the health of the existing trees in the City of Somerville's park system, the City has established a park tree maintenance program. This program focuses on 1) assessing the health of park trees and making recommendations for their care, 2) creating park-specific tree maintenance work plans, 3) executing the work plans, and 4) generating a final report for each park with recommendations on future care and monitoring of its trees.

This Park tree maintenance contract will focus on the tree work at the following twelve (12) Somerville locations: Argenziano Playground, Bailey Park, Chuckie Harris Park, Corbett-McKenna Park, Kennedy Schoolyard, Lincoln Park, Lou Ann David Park, North Street Veterans Playground, Quincy Street Park, Veterans Memorial Cemetery, West Branch Library, Winter Hill Community School. We recommend that prospective bidders visit each of these parks in order to make a more accurate bid.

The execution of this contract requires specific expertise; therefore it is to be performed by a contractor that derives most of its annual income from Arboricultural work. Working with the City's Urban Forestry & Landscape Planner (City Urban Forester) as project manager, the contractor will assemble a team composed of qualified individuals. Qualified individuals include certified arborists and a qualified tree crew with the appropriate safety and equipment training.

# I. Scope of Work

#### A. Qualification / Credential Requirements

- 1. Arboriculture Credentials
  - a. For the purposes of this contract, a Certified Arborist is defined as an individual with one of the following credentials: Massachusetts Certified Arborist -or- International Society of Arboriculture Certified Arborist -or- American Society of Consulting Arborist Registered Consulting Arborist.
  - b. In addition, for specific activities, the Certified Arborist must also be qualified to assess risk, and is required to have and International Society of Arboriculture Tree Risk Assessment Qualification (TRAQ) or similar.
  - c. The required qualifications for the different activities encompassed by this contract are as follows:
    - i. Assessing the health of park trees and making recommendations for their care Certified Arborist & TRAQ
    - ii. Creating park-specific tree maintenance work plans Certified Arborist
    - iii. Supervisor on site while executing the work plan Certified Arborist

iv. Generating the final reports for the future care and monitoring of park trees – Certified Arborist.

#### 2. Chemical Applications

- a. Any person who is applying chemicals (fertilizer, pesticides, etc.) must have the required certifications and permissions from the appropriate licensing agency and in accordance with the Massachusetts Pesticide Law and Massachusetts Pesticide Control Act.
- 3. **Submittals**: Names and certification numbers of Arborist and TRAQ credentials must be submitted and approved by the City Urban Forester before any work occurs.

#### **B.** Tree Health Assessment

- 1. For each designated park, all trees throughout the park property shall be evaluated for:
  - a. general tree health,
  - b. pruning needs,
  - c. tree or stump removal,
  - d. pest treatment,
  - e. soil health, and
  - f. any other correction of adverse conditions pertinent to individual tree health.

Certified Arborist(s) with TRAQ qualification, as described in Section I. A. above, shall perform all tree evaluations. Soil health assessment will be performed at a site level (or sub-site level if conditions vary across the park) instead of on a tree-by-tree basis. Soil health assessment will include an analysis of soil compaction and soil nutrient levels.

- 2.As a starting point for the Tree Health Assessment, the Contractor will be given access to pertinent information in Somerville's tree inventory, including tree ID, species, size, location, primary maintenance need (described as either "Tree Clean", "Removal", "Stump Removal", or "Young Tree Train"), and tree risk rating. Some of this information can currently be accessed as a "guest" here: <a href="https://somervillema.treekeepersoftware.com/index.cfm">https://somervillema.treekeepersoftware.com/index.cfm</a>.
- 3. The Tree Health Assessments performed by the Contractor's Certified Arborist(s) shall be recorded in such a way that it is easy to link the assessments to the City's Tree Inventory, for example by using the tree ID from the inventory.

#### C. Work Plan

- 1.Based on the Tree Health Assessments, the contractor will create a Work Plan for each park with details about the location, size, species, condition and maintenance need for each individual tree on the park property. The Work Plan will detail all work recommended for each individual tree, including tree pruning, tree removal, pest management, soil amendments, and any other suggested tree remediation practices. The Work Plan will include a map of the trees on site, with Tree IDs matching the IDs in the City's Tree Inventory, whenever possible. The Work Plan will also include a price sheet detailing the per unit cost of work and the number of units for each item.
- 2. Work Plan must include, but need not be limited to, the following items:
  - a. Map of all trees on site with corresponding Tree ID numbers.
  - b. Specific descriptions of the tree and soil maintenance needs and associated costs.
  - c. Detailed sequence of work.
  - d. Detailed schedule of work, including the timing of any park closures.
  - e. Number and location of crews and equipment and manpower to be deployed.
  - f. Equipment routes, proposed location of stockpiles, and measures taken for the protection of park amenities.
  - g. Traffic, bicycle and pedestrian management.
  - h. Maintenance and continued operation of existing infrastructure.
- 3. Submittals: The Work Plans for ALL parks must be submitted to, and approved by, the City Urban Forester prior to the execution of any work in the Work Plans. In the case that the Work Plan exceeds the budget, the City Urban Forester will decide which items of work in the Work Plan will be completed. Work can begin 10 business days after the final Work Plan is submitted.

#### D. Execution of Work Plan

- 1. Work will be performed as detailed in the Work Plan and approved by City Urban Forester. Any modifications to the Work Plan made in the field must be approved by the City Urban Forester prior to the work being done.
- 2.All work to be performed will be carried out by qualified individuals. While work is being done, at least one Certified Arborist will be on site at all times to oversee the work and to ensure the work is performed according to best arboricultural practices. Names and certification numbers of Arborist

- credentials will be submitted and approved by the City Urban Forester before any work occurs.
- 3.All work will be performed in accordance with the Tree Work Specifications described below (*Section II. Tree Work Specifications*).
- 4.Contractor will provide schedule for all projects so that parks may be closed if necessary. Ample time must be given in order to make arrangements for park closures; therefore, all work must be scheduled with the City Urban Forester at least 10 business days before the commencement of work.
- 5. Work hours must be consistent with the City of Somerville's Noise Ordinance. For details see:

  <a href="http://www.nonoise.org/lawlib/cities/ordinances/Somerville,%20Massachusetts.pdf">http://www.nonoise.org/lawlib/cities/ordinances/Somerville,%20Massachusetts.pdf</a>.
- 6. The City Urban Forester must be contacted before 8:00 a.m. on mornings of each working day and told exact location and purpose of that day's work. The City Urban Forester will inspect the work at his/her discretion.
- 7. Contractor will track work performed as a work record in the Somerville Tree Inventory (<a href="https://somervillema.treekeepersoftware.com/index.cfm">https://somervillema.treekeepersoftware.com/index.cfm</a>). City Urban Forester will train Contractor how to input work records.

#### E. Contractor's Final Report

- 1. The Contractor will prepare a Final Report for each park based on the actual work performed.
- 2. Contractor's Final Report must specify:
  - a. Type(s) of work performed on each individual tree (i.e., removal, stump removal, type(s) of pruning, root pruning, pest management, soil amendments, mulch, etc.).
  - b. Include photos to document work completed.
  - c. Tree health monitoring recommendations for the next 1-2 years, minimum, with suggested timelines for monitoring and other recommended work.

3. **Submittals**: The Final Report will be sent to the City Urban Forester within three (3) business days after the work at the park is completed.

#### **II.** Tree Work Specifications

#### A. Pruning Specifications:

- 1.All pruning work will conform to 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. **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. Trees obstructing control devices (stop signs, yield signs, and traffic lights) should be trimmed to allow for adequate visibility.
  - e. **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.
  - f. **Aesthetic pruning**: selective removal of downward growing limbs, limbs growing backwards toward the trunk, and other limbs that are making the tree unsightly.
  - g. 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 precut to avoid splitting or tearing of the bark. Where necessary, ropes or other equipment should be used to lower large 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 a public hazard.

#### **B.** Bark Tracing Specifications:

- 1.Old injuries are to be inspected. Bark tracing shall be used on injuries that are not closing properly, where the bark appears loose or damaged and where the callus growth is not already completely established. Such tracing shall not penetrate the xylem (sapwood), and the margins shall be kept rounded.
- 2. Treatment of cuts and wounds with wound dressing or paints is prohibited.

#### C. Tree Removal Specifications:

- 1. The contractor will be required to follow the ANSI Z-133 Standards for tree worker safety. If a contractor is not aware of these standards then they are not qualified to perform work.
- 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. **Do not backfill with wood chips.** 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 1-1/4 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 be 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.

#### **D.** Integrated Pest Management:

- 1.Integrated Pest management needs are contingent on the results from the Tree Health Assessment and subject to approval by the City Urban Forester.
- 2.Pest management needs will be evaluated on a case-by-case basis and are dependent on:
  - a. type of host;
  - b. type of pest;

- c. severity of adverse impact on host specimen;
- d. severity of adverse impact on tree and pollinator community; and
- e. potential of spread throughout the tree community.

#### 3. Beech Leaf Disease preventative treatment

a. Assessment and Preventative Treatment of two (2) 15-inch diameter European beech tree at the West Branch Library. Treatment can be anything that boosts the immune response and vigor of a tree, such as Polyphosphite drenches, to anything that has been used to inhibit the growth cycle of the associated nematode, *Litylenchus crenatae mccannii*. Use most up to date recommendations for preventative treatment. Although BLD has not yet been positively identified in Somerville, it has been found in most neighboring communities. Specific treatment plan subject to approval by the City Urban Forester.

#### **E.** Mulch Specifications:

- 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. Apply a three-inch layer of mulch (after settlement) around trees, tapering towards the trunk. Mulch shall NOT come in contact with the trunk of the plant or the root flare. No mulch should be placed within 2 to 3 inches from the trunk. "Volcano" mulching is strictly prohibited.
- 3.Mulch shall be high quality, premium coarse-grade bark mulch, 15 mm minimum length, consisting of clean organic plant material. Mulch shall conform to the following:
  - a. Must be a 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 50mm (2 inch) screen.
  - f. Soluble salt content: less than 4.0 mmhos/cm.

#### F. Soil Decompaction Specifications

- 1. Heavily compacted soil may require decompaction to promote tree health. Particular consideration should be given to the soil within the critical root zone.
- 2. Soil decompaction shall be done is such a way to promote a healthy soil development without damaging roots.
- 3. Soil decompaction can be accomplished through soil aeration (ex. with an air spade) and the addition of compost. Additional decompaction methods may be appropriate under specific conditions, and will be considered by City Urban Forester.

#### **G.** Root Pruning Specifications

- 1.Pruning of girdling or circling roots that have the potential to become girdling may be considered. Only roots less than two (< 2) inches in diameter should be cut. Cutting larger roots is only possible after explicit approval from City Urban Forester.
- 2. The removal of any girdling root must be completed in a manner that will minimize injury to the trunk cambium located beneath the root.
  - a. First, excavate soil from around the girdling root, uncovering the entire length to be removed. Using a chisel or saw, cut the root at a point 6 12" out from the trunk. The final cut is made where the root attaches to the trunk. This prevents the root from being pulled violently away from the embedded area, causing extensive cambium injury if the root happens to be under tension. It is important to note that occasionally it is best to leave the girdled root where it is after it has been cut as the trunk and cambium would be damaged severely by gouging out the deeply embedded root. Detach and remove the root if it is not embedded very deeply or allow the root to decay away over time.
- 3.All root pruning shall be completed with sharp, clean tools.
- 4. Structural roots shall NEVER be pruned.

#### H. Soil Amendment Specifications

- 1.Contractor is required to collect and submit soil samples from each park to an independent lab (ex. University of Massachusetts Amherst Soil and Plant Nutrient Laboratory, or similar) in order to determine soil fertility (pH, organic matter content and available plant nutrients) and soil texture.
- 2.Soil sampling protocol shall follow the instructions from the lab. In most cases only one composite sample from each park will be needed. If the park topography or site conditions vary across the park in such a way as to influence the soil conditions, then samples from various locations should be collected and analyzed separately.
- 3. Types and amounts of soil amendments and additives should be determined from the laboratory results. Whenever suitable, organic materials should be used. Commonly used organic matter amendments include peat moss, ground bark, saw dust, compost, or manure. The benefits of these types of amendments will be maximized when the material is thoroughly mixed into the soil. When mixing in these amendments, Contractor shall take care not to damage any living tree roots.
- 4. Any nitrogen-based fertilizer shall be in slow-release or natural organic form. Slow-release fertilizer is defined as having more than 50% of the nitrogen in the water insoluble nitrogen form.
- 5.Calculate the appropriate amount of fertilizer or other soil amendment to apply to a given area based on the results of the soil test and the nutrient concentration of the material. Do not over apply fertilizer. City Urban Forester shall approve fertilizer/ soil amendment application plans.
- 6.Fertilizer and other soil amendments may be applied via liquid soil injection, drill hole, or radial trenching. Always take care not to damage roots during application. In rare circumstances foliar fertilization or tree trunk injection method will be considered, but only with approval by the City Urban Forester.
- 7. Fertilizer and other soil amendments shall comply with State and Federal Fertilizer Laws.

#### I. Cabling / Bracing Specifications

- 1.Installation of Supplemental Support Systems shall follow the guidelines in the ANSI A300 (Part 3) 2013 Supplemental Support Systems.
- 2.Use the appropriate cabling methodology based on the situation. Basic cabling methods include:
  - a. Direct: Direct cabling consists of a single ee between two tree parts, e.g., two limbs, two stems, or a trunk and a limb.
  - b. Triangular: Triangular cabling consists of connecting tree parts in combination of threes. This method is preferred when maximum support is required.
  - c. Box: Box cabling consists of connecting four or more tree parts in a closed series. This system should be used only when minimal direct support is needed.
  - d. Hub and Spoke: Hub and Spoke cabling consists of a center attachment (hub) with spans (spokes) of cable radiating to three or more leaders. Hub and Spoke cabling should only be used when other installation techniques cannot be installed.

#### 3.Inspections of Previously Installed Cables / Braces

- a. Some trees may already have tree support systems such as cables and/or braces installed. Contractor will perform a careful inspection of any existing support systems.
- b. Tree support systems shall be identified for replacement or repair if any of the following conditions are found:
  - i. The system has excessive wear, corrosion, or other types of degradation of the system.
  - ii. The tree has grown over the end of the steel cables or fabric slings.
  - iii. Anchors or terminations are either substandard due to tree growth or are no longer effective.
  - iv. Tree growth has resulted in the cable being too low in the canopy to be effective.
  - v. Excessive slack is found in the cable.

- vi. The cable is rubbing against any part of the tree.
- 4. Final cabling / bracing decisions are subject to the approval of the City Urban Forester.

#### J. Weeding Specifications

- 1. Weeds may need to be removed around trees to reduce competition and improve aesthetics of the site.
- 2.Only hand-weeding is allowed. No herbicides or other chemicals shall be used.
- 3. Weeding may include the removal volunteer trees less than 2 inches in diameter. Whenever possible, belowground portions of the volunteer trees shall be removed in addition to the aboveground portions. When the roots cannot be removed, the stems should be cut as close to the ground as possible.

#### **K.** Pest Control Specifications

- 1. Trees shall be observed for pests.
- 2. When necessary, samples of plant, insect, fungus, or other pests shall be sent to an independent laboratory for identification and treatment recommendations.
- 3. Treatment options for any pest shall be presented to City Urban Forester for approval. Pesticides and other chemicals shall not be used without explicit permission from City Urban Forester. Foliar application of diluted horticultural oil may be applied when appropriate to control an observed pest.

#### L. Pavement removal

- 1. Certain locations may require the removal of pavement surrounding the trunks of trees to allow for the expansion of planting holes. Pavement types may include bituminous concrete, cement, brick or stone, and other similar substances.
- 2.All areas where pavement will be removed will be marked in the field by white marking paint. Dimensions of each cut will be provided by the City

Urban Forester. All edges are to be cut with straight, clean cuts. Special care shall be taken to avoid cutting any surface roots under the pavement. Pavement may be cut using a saw, but only if the blade is shallower than the depth of the pavement, to avoid cutting any roots. Water shall be used during the saw cutting to reduce dust. Pavement shall be removed by hand. Heavy machinery shall NOT be used as it is likely to damage the tree trunks or roots.

- 3. The Contractors shall be responsible for the legal disposal of all excavated pavement off site, at the Contractor's expense.
- 4.All dust, debris and deposits (including any residue from wet-saw cutting) left behind from the cutting and excavating operation shall be cleaned up immediately and removed from the site following the installation of the tree. Dust, debris, and deposits shall NEVER be left in the newly created tree well.

#### III. Work Procedures / Execution

- **A. Equipment:** All bidders must have in their possession or available to them by formal agreement at the time of bidding all equipment and supplies which are necessary to perform the work as outlined in these specifications, including but not limited to: trucks, chippers, hand tools, etc. The City may inspect such equipment or agreements prior to the awarding of a contract.
- **B.** Tree Locations: Work is limited to trees located on City-owned property and property maintained by the City. Any tree removal work under this contract shall be assigned by the City Urban Forester. City Urban Forester will mark all trees to be removed in the field with orange paint, and will supply the Contractor with a list of the trees to be removed. Removal of other trees is NOT permitted without explicit written permission from City Urban Forester.
- C. Timeframe: Tree Health Assessments and should be performed during an appropriate season and should commence no later than thirty (30) days after the contract has been awarded. Work Plan activities may be performed during winter during appropriate weather conditions. The Contractor will be responsible for notifying the appropriate utility authority before removing or pruning trees growing in the utility wires. Contractor will be responsible for any damage to utilities during the removal or pruning process.
- **D. Directives:** Contractor consults with the City Urban Forester concerning details of scheduling of all work. Contractor shall have a competent person in charge of the

work at all times to whom the City may issue directives and who shall accept and act upon such directives, and who reads, speaks, and writes English competently. Failure for the supervisor to act on said directives shall be sufficient cause to give notice that the Contractor is in default of contract unless such directives would create potential personal injury or safety hazards.

- **E. Inspections:** The City Urban Forester shall be contacted before 8:00 a.m. on mornings of each working day and told exact location of that day's work. City staff will inspect work at their discretion. At least ten (10) calendar days in advance of the completion of this contract, Contractor shall provide written request for City Urban Forester to provide a final inspection.
- **F. Tree Damage:** Climbing irons, spurs, or spikes are NOT to be used on any trees except those marked for removal. Any tree damage caused by contractor is to be repaired immediately at no additional expense to the satisfaction of the City Urban Forester. Trees damaged beyond repair, as judged by the City Urban Forester, are to be removed at no expense to the City and replaced by one or more trees of size and species designated by the City Urban Forester at no additional expense to the City. If the replanting is not completed, the dollar value of such damaged trees, as determined by the City Urban Forester, shall be deducted from the monies owed the Contractor.
- **G. Traffic Control:** Traffic control is the responsibility of the Contractor and shall be accomplished in conformance with Federal, State, County, and Local highway construction codes.
  - 1. The Contractor must coordinate traffic control with the proper department(s) of the City of Somerville. Blocking of public streets shall not be permitted unless prior arrangements have been made with the City and is coordinated with the appropriate departments.
  - Contractor shall be solely responsible for pedestrian and vehicular safety and
    control within the work site and shall provide the necessary warning devices,
    barricades, high visibility flags, traffic cones, etc. and personnel needed to
    provide safety, protection, and warning to persons and vehicular traffic within
    the area.
- **H.** Utility Agencies: Contractor shall contact any and all appropriate utility companies any time assistance is needed to work safely around overhead or underground installations. The City will provide Contractor with a list of principal contacts and telephone numbers for public and private utility organizations. Tree trimming and removal operations may be conducted in areas where overhead electric, telephone,

and cable television facilities exist. The Contractor shall protect all utilities from damage, shall immediately contact the appropriate utility if damage should occur, and shall be responsible for all claims for damage due to Contractor operations. In conducting the operations of this contract, the Contractor shall make arrangements with the utility for removal of all necessary limbs and branches that may conflict with the necessary work or create a personal injury hazard. If the Contractor has properly contacted the utility in sufficient time to arrange for the required work by the utility, delays encountered by the Contractor in waiting for the utility to complete its work will not be the responsibility of the Contractor.

The Contractor shall comply with DIG SAFE LAW (G.I.C. 82, Sec 40), and follow all DIG SAFE requirements prior to any and all excavation work.

- I. Permits and Licenses: It shall be the responsibility of the Contractor to apply for and receive the appropriate permits from Department of Infrastructure and Asset Management and the Department of Traffic and Parking before the start of work. As directed by the City, the contractor shall assist in obtaining an MBTA License Agreement, if necessary, by providing any supportive materials and work plans as necessary to assist the City with the application.
  - The Contractor shall obtain a street and sidewalk occupancy permit from the
    Department of Infrastructure and Asset Management (Engineering Division)
    prior to any sidewalk or roadway obstruction. A copy of this permit must be
    available at the work site at all times. Fees for permits to obstruct the public way
    shall be waived.
    - Traffic management plans and work zones shall be in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) of the U.S. Department of Transportation.
  - 2. Contractor may be required to obtain Police Detail(s) to ensure public safety while the work is being done. Scheduling Police Details shall be the responsibility of the Contractor. Police details are to be paid by the Contractor, who will then be reimbursed by the City upon request and with proper documentation of the paid police detail expenses. The Contractor will not be paid any administrative or interest costs associated with police details. An allowance for police details is included in the bid price. Contractor shall pay police traffic detail bills within 14 days of receipt to avoid a 10% late payment surcharge. The City will not pay any late charges.
  - 3. To maintain access to the park and ensure appropriate vehicle parking or placement, the Contractor shall obtain "NO PARKING" signs from Somerville

Traffic and Parking located at 133 Holland Street, and post them a minimum of forty-eight (48) hours before work may begin. All signs must be clearly posted with the dates that work will be done and the reason for the temporary parking restriction (i.e., "tree pruning"). Parking may not be restricted for more than three business days, and not outside of the hours of 8:00 a.m.—7:00 p.m. The signs shall be placed in each location designated for tree service on any and all roadways prior to servicing the area. Signs shall be taped to trees, utility poles or city owned street signage. Both tape and sign shall be removed and disposed of by the Contractor immediately after work has been completed. Nails, tacks, wires or staples MAY NOT be used to attach signs to trees.

- 4. Road closures, if necessary, must be approved by the City of Somerville Traffic and Parking Department (telephone 617-666-3311 ext. 7900) not less than 48 hours prior to the commencement of work.
- **J. Safety:** Work conforms to the latest revision of American National Standard for Arboricultural Operations Safety Requirements, Z-133.1 Safety Standard.
- **K.** Clean Up: The work site shall be left equal to or cleaner than pre-work conditions, and clean-up procedures shall commence within two hours of pruning or removal activity. Tree parts dropped or lowered from trees are kept off of private property. It shall be the responsibility of the Contractor to remove and dispose in a proper and acceptable manner all logs, brush and debris resulting from the tree maintenance operations. Wood may be left for residents only at the explicit request of the City Urban Forester; any wood not taken must be disposed of by the Contractor.
- **L. Damages:** The Contractor shall use due caution when performing work. Any damages caused by the Contractor to any person or property, public or private, are the total responsibility of the Contractor and must be repaired or compensated for by the Contractor to the satisfaction of both injured party and the City at no cost to the City.
- **M. Working Hours:** The Contractor will schedule work between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday unless authorized by the City to do otherwise.
- **N. Subcontracts:** The Contractor will ONLY be allowed to subcontract work under this contract with explicit approval from the City.
- **O. Discontinuance of Work:** Any practice obviously hazardous as determined by the City shall be immediately discontinued by the Contractor upon receipt of either written or oral notice to discontinue such practice.

- P. Observance of Laws, Ordinances, and Regulations: The Contractor shall, at all times during the term of this contract, observe and abide by all Federal, State, and Local laws which in any way affect the conduct of the work and shall comply with all decrees and orders of courts and competent jurisdiction. The Contractor shall comply fully and completely with any and all applicable State and Federal statutes, rules, and regulations as they relate to hiring, wages, and other applicable conditions of employment.
- **Q. Supervision:** This contract will be under the direct supervision of the City or its authorized representatives. Any alteration or modifications of the work performed under this contract shall be made only in written agreement between the Contractor and the City-authorized representative (City Urban Forester or designee) and shall be made prior to commencement of the altered or modified work. No claims for extra work or materials shall be allowed unless covered by written agreement.
- **R.** Contract Termination: The City shall have the right to terminate a contract or a part thereof before the work is completed in the event:
  - 1. Previous unknown circumstances arise making it desirable in the public interest to void the contract:
  - 2. The Contractor is not adequately complying with the specifications;
  - **3.** Proper arboricultural techniques are not being followed after warning notification by the City or its authorized representatives;
  - **4.** The Contractor refuses, neglects, or fails to supply properly trained or skilled supervisory personnel and/or workers, or the proper equipment required for the work;
  - **5.** The Contractor in the judgment of the City is unnecessarily or willfully delaying the performance and completion of the work;
  - **6.** The Contractor refuses to proceed with work when directed by the City; or
  - 7. The Contractor abandons the work.

# IV. Samples & Submittals

**A. Overview:** Upon award of the contract and at least twenty (20) days prior to intended use, the Contractor shall provide the following samples and submittals to the City Urban Forester for approval. Label samples to indicate product, characteristics, and locations in the work. Samples will be reviewed for appearance only. Compliance with all other requirements is the exclusive responsibility of the Contractor. Delivered

materials shall closely match the approved samples. DO NOT order materials until City Urban Forester's approval of submittal has been obtained. Should the source of supply be changed within the course of the contract, the Contractor shall submit new samples or submittals for approval per the original submission.

- **B. Planting/ backfill soil:** At least 20 days prior to ordering materials, the Contractor shall submit to the City Urban Forester representative samples, certifications, manufacturer's literature and certified test results for proposed planting or backfill soil.
  - 1.Test results should include standard nutrient analysis, soil pH, soil textural analysis, organic matter content, and soluble salt content. These tests shall be performed by an accredited and independent laboratory and testing company.
- C. Planting Mulch: Prior to the Contractor ordering the organic coarse-grade bark mulch material, the Contractor shall submit to the City Urban Forester, at the Contractor's expense, a one- (1) cubic foot sample of the bark mulch material and the supplier's product specification data sheet.

The Contractor shall not order any delivery of the bark mulch material until the Contractor's sample has been inspected and approved by the City Urban Forester. If the City Urban Forester disapproves of the sample submitted by the Contractor, then the Contractor shall continue at no expense to the City, to obtain other sources of bark mulch material as specified until the Contractor's sample of such material, meets with the City Urban Forester's approval.

- **D.** Fertilizer and any other soil amendments: Submit manufacturer product data and literature (ex. cut sheet(s)) for any fertilizer or other soil amendment product that will be used in any of the parks. Product data shall include information about product composition and analysis.
- **E.** Cabling and Bracing: Submit manufacturer product data and literature, and a sample.
- **F. Personnel:** Names of Massachusetts Certified Arborist (MCA), or International Society of Arboriculture (ISA) certified arborist(s) that will be on site during all planting activities will be submitted and approved by the City Urban Forester before any tree health assessments or maintenance work are performed.
- **G. Work Plan:** created separately for each park, all of which shall be submitted a minimum of 10 business days prior to any scheduled maintenance activities. Plan should describe the methods, activities, materials and schedule to achieve tree maintenance. The review will be for the information of the City for an overall

understanding of the project sequence and site utilization. The contractor shall remain responsible for the adequacy and safety of the means, methods, and sequencing of construction. The plan shall include but not be limited to the following items:

- a. Map of all trees on site with corresponding Tree ID numbers.
- b. Specific descriptions of the tree and soil maintenance needs and associated costs.
- c. Detailed sequence of work.
- d. Detailed schedule of work, including the timing of any park closures.
- e. Number and location of crews and equipment and manpower to be deployed.
- f. Equipment routes, proposed location of stockpiles, and measures taken for the protection of park amenities.
- g. Traffic, bicycle and pedestrian management.
- h. Maintenance and continued operation of existing infrastructure.

#### V. Standards

#### A. Observation of the Work

- 1. The City Urban Forester may observe the work at any time. S/he may remove samples of materials for conformity to specifications. Rejected materials shall be immediately removed from the site and replaced at the Contractor's expense. The cost of testing materials not meeting specifications shall be paid by the Contractor.
- 2.The City Urban Forester shall be informed of the progress of the work so the various work activities may be observed. The City Urban Forester shall be afforded sufficient time to schedule visit to the site. Failure of the City Urban Forester to make field observations shall not relieve the Contractor from meeting all the requirements of this specification.

#### **B.** Pre-Construction Conference

1. Schedule a pre-construction meeting with the City Urban Forester and the Public Space and Urban Forestry Division at least five (5) business days before beginning any work (including Tree Health Assessments) to review any questions the Contractor may have regarding the work, administrative procedures during construction, and project work schedule.

#### C. Quality Assurance

1.A Massachusetts Certified Arborist (MCA) or International Society of Arboriculture Certified Arborist (ISA) will carry out the tree assessment and maintenance work plan. This/these person(s) will be at the work site for all maintenance operations. Names and certification number(s) of MCA, ISA, or equivalent arborist certification will be submitted and approved by the City Urban Forester before any maintenance occurs.

#### **D.** General Personnel Requirements:

- 1.Horticulturally skilled workers, trained and experienced in accepted nursery and arboriculture practices shall perform the work. The work shall be done in a workmanlike manner under the supervision of a qualified planting supervisor demonstrating a background in landscape operations. It is required that the planting supervisor be a Massachusetts Certified Arborist, ISA Certified Arborist, or equivalent pending the City Urban Forester's approval and as defined in Section I.A.1.
- 2.Each worker shall be trained in worker safety, and in compliance with current OSHA and ANSI standards.
- 3.In the event that the Contractor and/or his/her employees are found to be in violation of applicable safety requirements, the Contractor will be so notified by the City Urban Forester, who may order that work be stopped until any and all such violations are corrected.
- 4. The City expects that all employees of the Contractor will interact with the public in a polite and professional manner. If the Contractor or his/her employees are not able to answer a question or satisfy a resident request, then the Contractor shall promptly refer the resident to the City Urban Forester and contact the City Urban Forester right away to report the nature of the resident's inquiry.

#### E. Equipment Requirements

- 1. The equipment used for tree pruning, removal, and other tree maintenance shall be of sufficient type, capacity and quantity to safely and efficiently perform the work as specified in this document.
- 2. The Contractor shall not allow any operator to leave any vehicles/equipment unattended with the motor running.

#### F. Requirements Regarding Private Property

- 1. The normal access to a job site shall be along public roadways. Contractor shall not place equipment and/or personnel on private property.
- 2.If the Contractor causes any damage to private property in connection with work performed under this contract, the Contractor will be required to deal directly with private citizens with respect to repairing and/or replacing the damaged objects. A report in writing concerning such damage and action taken to correct the damages shall be given to the City Urban Forester.
- 3. The Contractor shall respond to the City Urban Forester within 24 hours in regards to all complaints of damage to private property alleged to have been caused by work performed by the Contractor. In case of the Contractor causing such damage, the Contractor shall be required to make arrangements with the homeowner or business to remedy the damage. The Contractor shall make or effectuate any such repairs with in thirty (30) days of the date of the damage, or within such additional times as agreed in writing between the Contractor and homeowner or business owner.

#### G. Work Scheduling and Hours

- 1. Prior to the commencement of work the Contractor shall meet with the City Urban Forester and provide a written schedule for the completion of work. Any changes to the schedule must be submitted to the City Urban Forester in writing for approval.
- 2. The Contractor shall begin work upon receipt of written and/or verbal orders to begin such work, and the work, once begun, shall be continuously carried forward with a force of persons adequate to complete the work in a continuous, uninterrupted, reasonable and expeditious manner, except in the case of inclement and unseasonable weather conditions. In the event the City Urban Forester determines that the Contractor has not begun work on orders to do so, or that the work, once begun, has been abandoned without authority, then the City Urban Forester shall give the Contractor seventy-two (72) hours' notice (Sunday excepted) to begin work, or resume work in case of abandonment. Failure of the Contractor to act within this specified time shall be deemed a breach of this contract and the Contractor shall be held liable for any damage or expense arising from such breach of contract.

3. The work crew(s) will report daily to the City Urban Forester when they start and when they finish work for the day. Completed work locations are to be emailed or called in on a daily basis to the City Urban Forester.

#### H. General Standards

- 1. The Contractor's work shall be done in a workmanlike manner and performance thereof and all materials and facilities furnished by him/her shall be to the satisfaction of the City Urban Forester.
- 2. Any unexpected obstructions at the site that interfere with the maintenance operation will be communicated to the City Urban Forester to determine a solution before the work occurs. The Contractor will not be compensated for any adjustments not approved by the City Urban Forester.
- 3.All work areas shall be kept in such a manner so as to cause as little inconvenience as possible to the general public and adjacent property owners. When it is necessary to close pedestrian walks, vehicular traffic lanes, or private access roads and drives, the Contractor shall provide personnel, barricades, warning signs, cones, flags or other means required by governing rules and ordinances, along with notifying the affected property owner or resident. Driveways are not to be blocked with debris at any time.
- 4.Contractor shall make no excavation in any public way or utility easement unless at least seventy-two (72) hours, exclusive of Saturdays, Sundays and legal holidays, before the proposed excavation is to be made, s/he has given notice in writing by registered mail if deemed necessary by the Contract Supervisor, of the proposed excavation to such public utility companies as supply gas, electricity and telephone service in the City, to such private companies as supply cable television service in the City and also to the City of Somerville Water Department. Such notice shall set forth the name of the street and a reasonably accurate description of the location in which the excavation is to be made. The Contractor shall comply with DIG SAFE LAW (M.G.L. Chapter 82, Sec 40).

#### I. Acceptance of Work

1.Once the Contractor completes the maintenance work for all trees according to the specifications herein and as determined by the Work Plan, the City Urban Forester will observe all work for Final Acceptance upon written

request of the Contractor. The request shall be received at least ten (10) calendar days before the anticipated date of the observation.

- 2. Final Acceptance by the City Urban Forester will be given only when all the requirements of the work under this specification and the agreed upon Work Plan(s) have been met.
- 3. The City Urban Forester will provide the Contractor with written acknowledgment of the date of Final Acceptance.

#### J. Site Conditions

- 1.It is the responsibility of the Contractor to be aware of all surface and subsurface conditions, and to notify the City Urban Forester, in writing, of any circumstances that may negatively impact the health of the trees. Do not proceed with work until unsatisfactory conditions have been corrected.
- 2. Should subsurface drainage or soil conditions be encountered which would be detrimental to growth or survival of plant material, the Contractor shall notify the City Urban Forester in writing, stating the conditions.
- 3.Actual pruning shall be performed during those periods when weather and soil conditions are suitable in accordance with locally accepted arboriculture practices.

#### VI. Definitions

#### A. General Definitions:

City: City of Somerville, Massachusetts

**City Urban Forester**: The City's representative that will administer the technical aspects of this Parks Tree Pruning & Cyclical Maintenance Contract. The City Urban Forester for this contract is the Urban Forestry & Landscape Planner or his/her designee.

**Contractor**: Tree Work Entity evaluating client needs and subsequently performing work. Such Tree Work Entity earns the majority of its annual revenue by performing Arboricultural work, including pruning, removing or maintaining trees or shrubbery.

**Qualified Individuals**: Any individual from the Tree Work Entity meeting the Qualification/Credentials requirements as specified.

**Specified**: Means as "specified" in this invitation for bid.

#### **B.** Arboricultural Terms:

Whenever used in any of the Contract Documents, the terms shall be defined as in the "Glossary of Arboricultural Terms," the "Glossary of Best Management Practices" by American National Standards Institute (ANSI), or as herein defined.

**Aesthetic pruning**: selective removal of downward growing limbs, limbs growing backwards toward the trunk, and other limbs that are making the tree unsightly.

**Air excavator/ soil aerator**: A device that directs a jet of highly compressed air to excavate soil and which is used to avoid or minimize damage to tree roots or underground structures such as pipes and wires.

**Beech Leaf Disease**: Beech leaf disease (BLD) affects and kills both native and ornamental beech tree species. It is associated with a nematode, *Litylenchus crenatae mccannii*.

**Caliper:** The measure of a plant's trunk diameter. Caliper measurement of the trunk shall be taken six inches above the ground up to and including four-inch caliper size. If the caliper at six inches above the ground exceeds four inches, the caliper should be measured at 12 inches above the ground. Caliper will be measured to the nearest ½ inch.

Certified Arborist: An individual who has passed and currently maintains an arborist certification with the International Society of Arboriculture, the Massachusetts Arborist Association, or an equivalent organization. Arborist certification shall require continuing education units (CEU's) in order to maintain certification.

**Codominant Stems:** Forked branches nearly the same size in diameter arising from a common junction and lacking a normal branch union.

**Contract Supervisor:** The individual or designated representative responsible for ensuring the requirements of this contract are adhered to.

**Critical Root Zone (CRZ):** Area of soil around a tree where the minimum amount of roots considered critical to the structural stability or health of the tree are located.

**Canopy Thinning:** In pruning, the selective removal of live branches to provide light or air penetration through the tree or to lighten the weight of the remaining branches.

**Crown Cleaning:** In pruning, the selective removal of dead, dying, damaged, diseased, and broken branches from the tree crown.

**Crown Raising:** In pruning, the selective removal of lower branches from a tree crown to provide clearance.

**DBH:** diameter of the trunk at breast height, measured at 4.5 feet above the ground.

**Final Acceptance:** The date when the City accepts that the maintenance work in this specification is complete.

**Girdling Root:** Girdling roots are lateral roots that emerge at or slightly below the soil surface and cut into at least one side of the main trunk. Includes any root more than ½ inch diameter currently touching the trunk, or with the potential to touch the trunk, above the root collar approximately tangent to the trunk circumference or circling the trunk. Roots shall be considered as stem girdling that have, or are likely to have in the future, root to trunk bark contact.

**Integrated Pest Management (IPM)**: is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment.

**Loam:** Soil texture classification based on a certain ratio of sand, silt, and clay. Considered ideal for plant growth.

**Maintenance:** Actions that preserve the health of plants and as defined in this specification.

**Pruning:** Removing branches (or occasionally roots) from a tree or other plant using approved practices to achieve a specified objective.

**Root Collar** (a.k.a. root crown, root flare, trunk flare, flare): The region at the base of the trunk where the majority of the structural roots join the plant stem, usually at or near ground level.

**Root Pruning:** 1) Pruning of girdling or circling roots that have the potential to become girdling. 2) In tree conservation and preservation, the process of cutting roots at the line of a planned excavation to percent tearing and splintering of remaining roots. 3) In tree disease management, severing tree roots to prevent disease transmission through root grafts.

**Structural Root:** One of the largest roots emerging from the root collar.

**Soil Compaction:** Compression of the soil, often as a result of vehicle or heavy-equipment traffic, or high pedestrian areas, that breaks down soil aggregates and reduces soil volume and total spore space, especially macropore space.

**Soil Texture:** Relative fineness or coarseness of a soil due to particle size (sand, silt, and clay).

**Specifications:** Detailed plans, requirements, and statements of particular procedures and/or standards used to define and guide work.

Specimen: An individual tree.

**Stem:** The trunk of the tree.

**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.

**Tree Risk Assessment:** A systematic process used to identify, analyze, and evaluate tree risk.

**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.

# VII. Park Descriptions

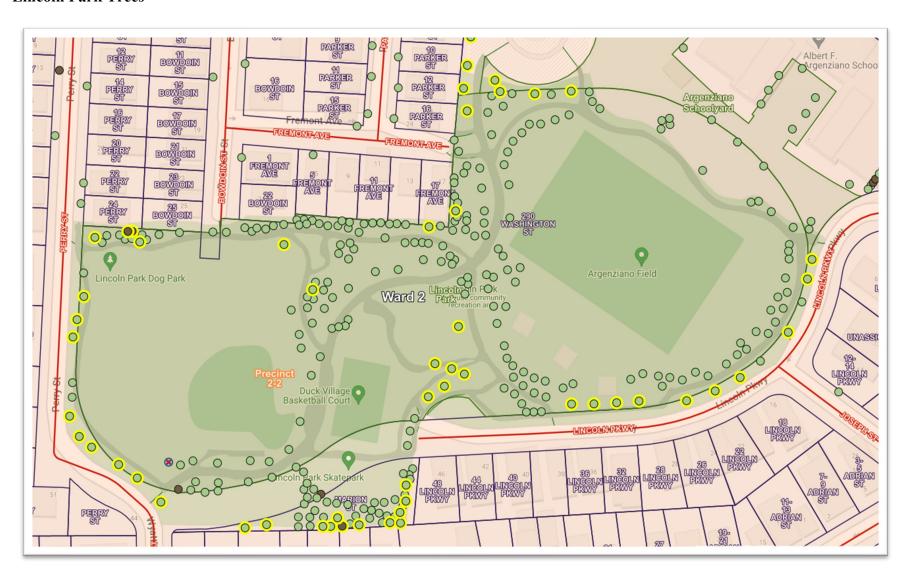
Park Name	Location	Number of Trees (Approx.)	<b>Expected Conditions</b>	Site Considerations*
ARGENZIANO SCHOOL	290 Washington Street, Somerville, MA	31	Active schoolyard and playground	Schoolyard and Playground with safety surfaces. Work cannot commence while
PLAYGROUND				school is in session.
BAILEY PARK	70 Belmont Street, Somerville, MA	14	Pocket Park with pathways, and benches.	Lawn areas
CHUCKIE HARRIS PARK	15 Cross Street East, Somerville, MA	20	Playground with tables, benches and water spray.	Water infrastructure. People experiencing homelessness.
CORBETT- MCKENNA PARK	42 Munroe Street, Somerville, MA	8	Basketball, playground, benches.	Safety surfaces, court surfaces, tree grates
KENNEDY SCHOOLYARD	75 Elm Street, Somerville, MA	32	Active schoolyard and playground with basketball courts	Schoolyard and Playground with safety surfaces. Work cannot commence while school is in session
LINCOLN PARK	290 Washington Street, Somerville, MA	294	Large, very active park. Community Garden, and playground safety surfaces, Dog Park, Soft Ball fields, Skate Park, Basketball courts. Argenziano school adjacent.	Park has a large amount of young trees, which are outside the scope of this project. 57 trees identified that require maintenance. Community Garden may require access.
LOU ANN DAVID PARK	1060 Broadway, Somerville, MA	14	Passive park with basketball courts adjacent. Privately owned Public Space adjacent.	Benches, trees, tight small areas, highly used and trafficked
NORTH STREET VETERANS PLGD	20 North Street, Somerville, MA	13	Active Playground	Playground with safety surfaces
QUINCY STREET PARK	14 Quincy Street, Somerville, MA	17	Passive park	Boardwalk pathways in poor condition throughout the park; use and access of heavy equipment may be restricted or not be a viable option.

VETERANS	1325 Broadway,	22	Cemetery, Restricted Access	Cemetery, restricted access and
MEMORIAL	Somerville, MA		and equipment usage	equipment usage
CEMETARY				
	40 College Avenue,	8	Library property	One tree in need of cable inspection and
	Somerville, MA			adjustments. Tight areas, highly
				trafficked streets and sidewalks.
				Assessment and Treatment of two (2)
WEST BRANCH				15-Inch Diameter Beech Tree for Beech
LIBRARY				Leaf disease (BLD)
	115 Sycamore Street,	25	Schoolyard and Playground	Schoolyard and Playground with safety
WINTER HILL	Somerville, MA		with safety surfaces.	surfaces. Work can commence while
COMMUNITY				school is in session. No students inside
SCHOOL				building.

<sup>\*</sup>In addition to the site-specific site considerations listed, please note the following considerations which apply to all parks:

- Trucks shall never be driven over poured-in-place (rubber safety surface).
- Equipment shall not be driven over any grass surfaces without using truck mats or other appropriate weight distribution devices.

#### **Lincoln Park Trees**



# **Lou Ann David Trees**

