Tree Health Assessment Report

Dickerman Playground

Somerville Parks Tree Health Program

IFB #23-26

Prepared by Alden Johnson, MCA, ISA, TRAQ

Feb 3, 2023

Overview:

Dickerman Playground is a recreation-focused neighborhood park with a playground, horseshoe court and winding paths on two terraced levels. It is home to 11 young-mature deciduous trees of a variety of species. A large section of the park is shaded by a huge Mature oak growing from adjacent private property.

General tree health

The most prevalent species in the park are Katsura and Honeylocust. The Katursa in the upper level are growing in compacted soil and have shallow surface roots that are being damaged by mowers and traffic, whereas the trees in the lower level playground area are restricted to smaller beds and will be challenged for root area. There is some canopy decline and extensive deadwood evident in Honeylocust #40241, as well as in the large oak that overhangs the upper level. The trees in the park are largely young-maturing that have good overall vigor despite a challenging urban site. Limited root area and compacted soil due to foot traffic are the main stress factors these trees.

Soil Health

Trees within the lower section of the park are largely restricted to small mulched planting beds with medium-compacted soil, with the exception of the trees along the central median: these trees along with the 3 Katsura in the upper level are growing in heavily compacted soil due to high traffic areas. Soil tests taken throughout the park yielded dark-colored sandy loam with some organic matter in the top 3-4" with pale colored sandy-gravel beginning at 4-8". Soil does not stick together. No odor noted. For the Katsuras in the upper level I recommend airspading the soil around the root flares, adding compost and mulch rings to improve soil condition, limit soil compaction, weed growth and mower damage. Inspect for girdling roots and prune as necessary. I also recommend subsurface liquid biostimulant injections on these trees to encourage root health by adding organic matter, increasing moisture absorption and retention, nutrient uptake and soil vitality. Soil sample has been sent to lab for further analysis to be included in final report.

Pests and Diseases

None noted at time of report.

Removal Needs:

Several small volunteer saplings (maple, walnut, cherry) growing out of the hedgerow close to the retaining wall dividing the park should be removed.

Pruning needs

Mature and maturing Honeylocust, Sugar Maple, Katsura and other ornamental trees along the pathways and play areas should be pruned provide 8-10' off the walkways and playing surface, as well as 3-4 off fences, lights, and structures. Canopy clean to remove dead and broken branches, and declining sections 2" and larger. Prune to make select structural cuts to encourage

dominant central leader and strongly attached lateral scaffolding branches. Large private oak overhanging the park should be pruned to remove large deadwood over the park. There is also significant deadwood and decline in the portion of the oak over private property that is outside the scope of work here.

Other correction of adverse conditions

Our Level 1 TRAQ assessment of all the trees in this park results in a "low" risk rating, with the exception of the large Oak over the park which has a "moderate" risk rating due to the amount of deadwood on the park. I anticipate after pruning deadwood the risk rating will be low over the park.

2023 Priorities:

- -Pruning: Canopy cleaning, raising, improving structure
- -Volunteer tree removal
- -Air excavation and root pruning for young trees along central pathway
- -Soil improvement and amendment for young trees along central pathway

Future priorities:

- Continued improvement of soil conditions

Dickerman Tree Map

Site ID	Species	DBH	Park	TRAQ	Recommendations	Pruning units	Pruning cost
40084	honeylocust: thornless (Gleditsia triacanthos inermis)	10.1	DICKERMAN PLGD	Low	Prune to remove deadwood 2" and larger. Raise 4-6' off signs, structures, 8' off ground.	[redacted]	[redacted]
40087	honeylocust: thornless (Gleditsia triacanthos inermis)	12.8	DICKERMAN PLGD	Low	Some decline. Prune to remove deadwood 2" and larger. Raise 4-6' off signs, structures, 8' off ground, 14' off street.	[redacted]	[redacted]
40107	maple: sugar (Acer saccharum)	8.2	DICKERMAN PLGD	Low	Prune to remove deadwood 2" and larger. Raise 4-6' off signs, structures, 8' off ground.biostim 1 hrs	[redacted]	[redacted]
40228	katsuratree (Cercidiphyllum japonicum)	7.6	DICKERMAN PLGD	Low	Mower damage to roots. Prune to improve structure. Raise 8' off ground. 1 hrs + root prune +Airspade +mulch, biostim	[redacted]	[redacted]
40241	honeylocust: thornless (Gleditsia triacanthos inermis)	12.1	DICKERMAN PLGD	Low	Some decline. Prune to remove deadwood 2" and larger. Raise 4-6' off signs, structures, 8' off ground, 14' off street.	[redacted]	[redacted]
40250	honeylocust: thornless (Gleditsia triacanthos inermis)	12.4	DICKERMAN PLGD	Low	Prune to remove deadwood 2" and larger. Raise 4-6' off signs, structures, 8' off ground, 14' off street.	[redacted]	[redacted]
40253	honeylocust: thornless (Gleditsia triacanthos inermis)	9.2	DICKERMAN PLGD	Low	Prune to remove deadwood 2" and larger. Raise 4-6' off signs, structures, 8' off ground.	[redacted]	[redacted]
40080	Japanese pagodatree (Styphnolobium japonicum)	7.8	DICKERMAN PLGD	Low	Prune to remove deadwood 2" and larger. Raise 4-6' off signs, structures, 8' off ground. Biostim.	[redacted]	[redacted]

40096	katsuratree (Cercidiphyllum japonicum)	5.8	DICKERMAN PLGD	Low	Prune to improve structure. Raise 8' off ground. 1 hrs aispade, root prune. Mulch. Biostim		[redacted]
40208	katsuratree (Cercidiphyllum japonicum)	1.1	DICKERMAN PLGD	Low	Yttp +mulch, airpspade. Biostim		[redacted]
40219	katsuratree (Cercidiphyllum japonicum)	9.2	DICKERMAN PLGD	Low	Mower damage to roots. Prune to improve structure. Raise 8' off ground. 1 hrs + root prune +Airspade +mulch. Biostim		[redacted]
	cherry volunteer,	2			remove		[redacted]
	red maple, walnut vplunteers in hedge	3, 1			remove		[redacted]
	Large oak overhaning playground from uphill neighbor			Mod	Prune to remove deadwood 2" and larger over the park only. 7 hrs		[redacted]
	Total pruning				1 crew 1 day	[redacted]	[redacted]
	Root pruning				3 trees		[redacted]
	Permits						[redacted]
	Removals				3 volunteers		[redacted]
	Airspade				150' sq		[redacted]
	Compost				150' Sq		[redacted]
	Biostim				600 sq		[redacted]
	Mulch				4 trees		[redacted]
					Before and After reports		[redacted]
							[redacted]

Accredited Tree Care by Certified Arborists

Malik Drayton
City of Somerville
93 Highland Ave
Somerville, MA 02145

Home:
Mobile:
Office: 617-625-6600
e-mail: Cmiller@Somervillema.gov
Alt e-mail: Jhoward@somervillema.gov

February 17, 2023
Proposal #: 66578

Job Site: 25
Malik Drayton
IFB 23-26 Parks Tree Health Program
Dickerman Playground
Somerville, MA 02143

Phone:
Email:
Alt Phone:

Tree and Shrub Care Recommendations on 2/17/2023

Description of Services

- ***Work Plan for Dickerman Playground. Pruning/Removal March 9 2023. Soil Work April 2023.***

Park will need to be closed from 7AM- 4PM Thursday March 9 and Monday, April 17. We will schedule detail and post permits as needed on public streets.

- **Pruning on Young-Mature deciduous shade trees throughout the park. individual tree specs listed on the attached spreadsheet.** [redacted]
Structural Pruning - Selective pruning to improve branch architecture; select, develop and maintain strong, properly spaced scaffold branches by reducing or removing interfering, overextended, defective and poorly attached limbs as specified
Canopy Cleaning - Selective pruning to remove declining, dead and broken branches as specified
Canopy Raising - Selective pruning to provide and envelope of clearance of walkways, roadways, utilities, structures, as specified.

[redacted]

- **(3) 2-3" diameter Volunteer trees in the middle hedgrow (Walnut, Maple, Cherry)** [redacted]
Tree Removal - Take down and cut stump low to grade as equipment allows, dispose of brush, logs and chipped debris generated from removal operations.

[redacted]

This proposal is valid for 45 days, assuming there are no changes to the site (driveway, plantings, buildings etc. remain unchanged).
All work performed in accordance with ANSI A300 Standards.

Payment due upon completion of work. 1 ½% per month, 18% per year on unpaid balances.

Massachusetts Arborists Association

- **Katsura trees:** [redacted]
  Root Pruning: prune visible girdling roots smaller than 2" in diameter, etc.

[redacted]

- **Katsura Trees** [redacted]
  Root Crown Excavation - Utilize air excavation tools to decompact root zone, remove soil, organic matter and mulch to expose root flare; inspect and evaluate area for girdling roots, decay, etc.

[redacted]

- **Katsura Trees:** [redacted]
  Compost addition - mix compost into top layer of air excavated soil.

[redacted]

- **Katsura Trees** [redacted]
  Bio-stimulant Application - Early season. Treat soils within the critical root zone (typically within the dripline) with an organic liquid blend of humic acids, kelp extract and natural compounds to enhance soil structure, microbial activity and nutrient availability.

[redacted]

- **Katsura Trees** [redacted]

  Mulch: Add mulch rings

[redacted]

- **Posting No Parking Permits.** [redacted]

[redacted]

- **Debris Disposal:** Costs include removal and disposal of brush, logs and chipped debris generated from tree care operations.

[redacted]

This proposal is valid for 45 days, assuming there are no changes to the site (driveway, plantings, buildings etc. remain unchanged).
All work performed in accordance with ANSI A300 Standards.

Payment due upon completion of work. 1 ½% per month, 18% per year on unpaid balances.

Massachusetts Arborists Association

Thank you for considering Barrett Tree Service East, Inc. Sincerely,

Alden Johnson
Certified Arborist

This proposal is valid for 45 days, assuming there are no changes to the site (driveway, plantings, buildings etc. remain unchanged).
All work performed in accordance with ANSI A300 Standards.

Payment due upon completion of work. 1 ½% per month, 18% per year on unpaid balances.

Massachusetts Arborists Association

Soil and Plant Nutrient Testing Laboratory
203 Paige Laboratory
161 Holdsworth Way
University of Massachusetts
Amherst, MA 01003
Phone: (413) 545-2311
e-mail: soiltest@umass.edu
website: soiltest.umass.edu

Soil Test Report

Prepared For:

Sonia Vivas
Barrett Tree Service East Inc
340 Middlesex Ave
Medford, MA 02155

svivas@barretttreeeast.com
617-616-5281

Sample Information:

Sample ID: H8138

Order Number: 64152
Lab Number: S230221-108
Area Sampled:
Received: 2/21/2023
Reported: 3/3/2023

Results

Analysis	*Value Found*	*Optimum Range*
Soil pH (1:1, H2O)	5.9	
Modified Morgan extractable, ppm		
Macronutrients		
Phosphorus (P)	2.5	4-14
Potassium (K)	124	100-160
Calcium (Ca)	1230	1000-1500
Magnesium (Mg)	125	50-120
Sulfur (S)	12.2	>10
Micronutrients *		
Boron (B)	0.1	0.1-0.5
Manganese (Mn)	5.8	1.1-6.3
Zinc (Zn)	14.4	1.0-7.6
Copper (Cu)	0.3	0.3-0.6
Iron (Fe)	13.6	2.7-9.4
Aluminum (Al)	74	<75
Lead (Pb)	7.1	<22

Analysis	*Value Found*	*Optimum Range*
Cation Exch. Capacity, meq/100g	13.8	
Exch. Acidity, meq/100g	6.4	
Base Saturation, %		
Calcium Base Saturation	44	50-80
Magnesium Base Saturation	7	10-30
Potassium Base Saturation	2	2.0-7.0
Scoop Density, g/cc	0.89	
Optional tests		
Soil Organic Matter (LOI), %	5.8	

* *Micronutrient deficiencies rarely occur in New England soils; therefore, an Optimum Range has never been defined. Values provided represent the normal range found in soils and are for reference only.*

Soil Test Interpretation

Nutrient	Very Low	Low	Optimum	Above Optimum
Phosphorus (P):				
Potassium (K):				
Calcium (Ca):				
Magnesium (Mg):				

Soil and Plant Nutrient Testing Laboratory
203 Paige Laboratory
161 Holdsworth Way
University of Massachusetts
Amherst, MA 01003
Phone: (413) 545-2311
e-mail: soiltest@umass.edu
website: soiltest.umass.edu

Recommendations for Deciduous Trees, Shrubs & Vines-Maintenance

Limestone (Target pH of 6.0)	Nitrogen, N	Phosphorus, P2O5	Potassium, K2O
	lbs / 100 sq ft		
0	.1 - .2	0.25	0.1

Comments:

*To supply Nitrogen, apply EITHER 1 - 1.5 lbs. Dried Blood (12-0-0) OR 0.2 - 0.4 lbs. Urea (45-0-0) per 100 square feet. Application should be split between early spring and mid-June.
*To supply Phosphorus, apply EITHER 2.1 lbs. Bone Meal (4-12-0) OR 0.6 lb. Triple Phosphate (0-45-0) per 100 square feet.
*To supply Potassium, apply 0.2 lbs. Potash (0-0-60) per 100 square feet.
-For instructions on converting nutrient recommendations to fertilizer applications in home gardens and landscapes, see Reference "Step-by-Step Fertilizer Guide for Home Grounds and Gardening" (listed below).
-The lead level in this soil is less than 22 ppm, which falls below the listed optimum level. However, many variables affect this result, and safety thresholds vary by location and soil use. There is still a potential risk of lead exposure for soils used for growing food or as play areas for children. Our Total Sorbed Metals test provides an accurate measurement of soil lead. For more information about lead levels in soil, see the fact sheet entitled "Soil Lead: Testing, Interpretation, & Recommendations," listed under General References at the end of this report. ATTN: The Total Sorbed Metals Test is currently unavailable. We apologize for any inconvenience.

References:

Home Lawn and Garden Information	http://ag.umass.edu/resources/home-lawn-garden
Step-by-Step Fertilizer Guide for Home Grounds and Gardening	https://ag.umass.edu/SPNTL-4

General References:

Interpreting Your Soil Test Results	http://soiltest.umass.edu/fact-sheets/interpreting-your-soil-test-results
Soil Lead: Testing, Interpretation & Recommendations	http://ag.umass.edu/soil-plant-nutrient-testing-laboratory/fact-sheets/soil-lead-fact-sheet
For current information and order forms, please visit	http://soiltest.umass.edu/
UMass Extension Nutrient Management	http://ag.umass.edu/agriculture-resources/nutrient-management