

Town of Harvard

Minutes Elm Commission Meeting; March, 8 2020 at 7:30 PM; location at Hildreth House

Attendees: JC Ferguson, Mario Cardenas and Bill Calderwood

Potential Actions / Discussion:

1. Review elm fungicide injection past and present plan (June injection estimate is \$4,089 with an option for an additional basal drench treatment for \$500). As S4 was removed in 2019, the elm injection cost for 2020 is actually \$3,609 (9, 17, 25, 40, S7 and S8). The Forestry budget will pay for the injections and the Harvard Tree Fund (HTF) will pay for the basal drench treatment (26, S7 and S8).
2. Review estimates for old elm pruning to take place in March. One quote was \$4,340 for 4 trees and another quote was \$3,000 for 9 trees. It was agreed by all that with proper supervision, the lower cost quote was the right way to go. Bill walked all 9 trees with both contractors and the lower cost quote from H. M. Flagg will be complete by the end of March. HTF will be the source of payment. H.M Flagg is in the vendor system. Bill asked for the latest proof of insurance.
3. Review soil sample results from 2019, determine amount of lime needed for each location and see if DPW can order, store and distribute lime. Three samples were obtained and analyzed by Matt Shields (no charge for data in separate attached file). The front of the library, the Little Common and the main Common need lime (pelletized-- 40 pounds per 1000sf once this year and a repeat application in the fall or 2021 spring). The Little Common was found to have high levels of sodium (road salt on Fairbank?). Bill will discuss with Tim Kihart and Tim Bragan. Any lime or fertilization is planned to be paid for by the HTF gift fund.
4. Review logistics behind removing the Phair Elm (#3) and moving the "Phair rock memorial" next to the replacement Princeton Elm on the same Common. Want to get permission from stakeholders to have Phair rock memorial be installed so that it is flush to the ground—expect to move rock prior to tree removal with volunteers / DPW. JC plans to take #3 down, but Bill will verify who stakeholders are and get input from them in regards to moving the Phair rock memorial prior to removing #3. JC will coordinate removal of #3 and stump grinding. Bill will coordinate management of the Phair memorial stone. The memorial may need a footing for longevity so DPW heavy equipment might be very helpful to dig a hole and establish a new footing.
5. Based on above planned expenditures, determine sources of funding (Forestry budget vs HTF). See above
6. Likely will need to replace the white oak already re-planted near the "big rock"—suggest scarlet red oak as new replacement. This should be a no charge item. The first grade tree plantings will be delayed until after the elementary school construction is complete.
7. Tom Garfield good to go for tree watering this season? Tom has signed up for another season (thanks!).
8. Discuss funding vs budget for June 2020 –June 2021 from Forestry Budget (more pruning of old Elms- - #44 will need a lane closure on 110 near the Catholic church). With tree take downs needing to increase over time (roadside safety, MGL87, lack of funding in the past and heat / drought stress), the Tree Warden has requested and the Elm Commission supports a 10% increase to the Forestry budget each year.

Soil Analysis Report - Specialist Copy

Bartlett Tree Research Laboratories
Elm Commission

Bartlett Arborist: Matthew Shields
Plant Species: Elm, American
Location/ELM ID: Front of Library #25
Fertilization Goal: Maintain Vitality

Harvard Town Hall
13 Ayer Road
Harvard, Massachusetts 01451

Sample ID: 335380
Date: 10-Apr-19
Waypoint: 19-099-1038

Results

	#/1000 sq. ft.		#/1000 sq. ft.		
Nitrogen (ENR)	3.9		Iron (Fe)	5.6	High
Phosphorous (P)	2.02	High	Manganese (Mn)	0.7	* Low
Potassium (K)	1.6	* Very Low	Copper (Cu)	0.04	Medium
Magnesium (Mg)	3.8	* Medium	Zinc (Zn)	0.1	High
Calcium (Ca)	61.1	High	Boron (B)	0.01	* Low
Sodium (Na)	0.9	Very Low			
Soil pH	5.8	Acceptable	Ideal pH range for Elm, American: 5.5 to 8.0		
Soil Organic Matter (OM)	7.3	High	Nutrient Retention Capacity	9.3	High

Recommendations

Fertilization Area: 1000 sq.ft or 93 sq. m. - Mix in 30 gallons or 113 liters of water Soil inject 1 Quart per site

Prescription Fertilization		cc/ml	cups	quarts	gallons	grams	pounds
Nitrogen	Nitro 30 Nitroform						
Phosphorus	Liquid Phosphorus						
Potassium	Potassium Sulfate	494.5	2.1			817.2	1.8
		741.7	3.1				
Gypsum	pelletized						
Lime	pelletized OK powdered						
Sulfur	pelletized powdered						
Magnesium Sulfate	Epsom salt	2.8 L	11.7	2.9		3.2 Kg	7.0
Iron chelate	gallons pounds						
Manganese chelate	gallons pounds	2.3 L 1.0 L	9.6 4.4	2.4 1.1		720.0	1.5

Conventional Fertilization

Boost Granular	8.5 L		8.9	2.2	7.7 Kg	17.0
Boost Natural Granular	9.2 L		9.8	2.4	6.2 Kg	13.0
Boost	125.0 L			33.0		

Comments:

Mulch and/or incorporate organic matter/biochar as needed.
Treat boron deficiency with up to 1/3 lb Borax per 1000 sq. ft.

* indicates a deficiency ** indicates a potential toxicity

Soil Analysis Report - Specialist Copy

Bartlett Tree Research Laboratories
Elm Commission

Bartlett Arborist: Matthew Shields
Plant Species: Elm, American
Location/ELM ID: On Common, South of Church
Fertilization Goal: Maintain Vitality

Harvard Town Hall
13 Ayer Road
Harvard, Massachusetts 01451

Sample ID: 335374
Date: 10-Apr-19
Waypoint: 19-099-1038

Results

	#/1000 sq. ft.		#/1000 sq. ft.
Nitrogen (ENR)	3.5	Iron (Fe)	5.6 High
Phosphorous (P)	4.9 Very High	Manganese (Mn)	0.1 * Very Low
Potassium (K)	1.05 * Very Low	Copper (Cu)	0.05 Medium
Magnesium (Mg)	3.1 * Medium	Zinc (Zn)	0.1 High
Calcium (Ca)	23.1 * Low	Boron (B)	0.004 * Very Low
Sodium (Na)	1.8 Low		
Soil pH	5.0 Too Acidic	Ideal pH range for Elm, American:	5.5 to 8.0
Soil Organic Matter (OM)	6.4 High	Nutrient Retention Capacity	5.6 Medium

Recommendations

Fertilization Area: 1000 sq.ft or 93 sq. m. - Mix in 30 gallons or 113 liters of water Soil inject 1 Quart per site

Prescription Fertilization		cc/ml	cups	quarts	gallons	grams	pounds
Nitrogen	Nitro 30 Nitroform						
Phosphorus	Liquid Phosphorus						
Potassium	Potassium Sulfate	329.6	1.4			544.8	1.2
		494.5	2.1				
Gypsum	pelletized						
Lime	pelletized	53.3 L			14.1	90.0 Kg	187.5
	powdered	35.5 L			9.4	60.0 Kg	125.0
Sulfur	pelletized						
	powdered						
Magnesium Sulfate	Epsom salt						
Iron chelate	gallons						
	pounds						
Manganese chelate	gallons	1.9 L	8.0	2.0			
	pounds	1.0 L	4.4	1.1		720.0	1.5
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<u>Conventional Fertilization</u>							
Boost Granular		8.5 L		8.9	2.2	7.7 Kg	17.0
Boost Natural Granular		9.2 L		9.8	2.4	6.2 Kg	13.0
Boost		125.0 L			33.0		

Comments:

Mulch and/or incorporate organic matter/biochar as needed.
Treat boron deficiency with up to 1/3 lb Borax per 1000 sq. ft.

***Limestone Maximum Rate for a single application to soil surface is 100 lbs for powdered or for pelletized lime, with Root Invigoration apply up to 150 lbs.

in 80-90 lb^{total} / 1000 sf ^{over} for 2 years

* indicates a deficiency ** indicates a potential toxicity

∴ 40 lb/1000 sf
in 2020 and then again 2021

All deciduous trees
(not evergreens)

Soil Analysis Report - Specialist Copy

Bartlett Tree Research Laboratories
Elm Commission

Bartlett Arborist: Matthew Shields
Plant Species: Elm, American
Location/ELM ID: Center of Little
Common near Honeylocust
Fertilization Goal: Maintain Vitality

Harvard Town Hall
13 Ayer Road
Harvard, Massachusetts 01451

Sample ID: 335377
Date: 10-Apr-19
Waypoint: 19-099-1038

Results

	#/1000 sq. ft.		#/1000 sq. ft.		
Nitrogen (ENR)	2.5		Iron (Fe)	4.1	Medium
Phosphorous (P)	2.2	High	Manganese (Mn)	0.4	* Very Low
Potassium (K)	1.6	* Very Low	Copper (Cu)	0.05	Medium
Magnesium (Mg)	1.9	* Low	Zinc (Zn)	0.1	High
Calcium (Ca)	14.8	* Medium	Boron (B)	0.004	* Very Low
Sodium (Na)	3.7	High			

Soil pH 5.6 Acceptable

Ideal pH range for Elm, American: 5.5 to 8.0

Soil Organic Matter (OM) 4.2 Medium

Nutrient Retention Capacity 3.1 Low

Recommendations

Fertilization Area: 500 sq.ft or 47 sq. m. - Mix in 20 gallons or 76 liters of water Soil inject 1 Quart per site

		cc/ml	cups	quarts	gallons	grams	pounds
Prescription Fertilization							
Nitrogen	Nitro 30	662.4	2.8				
	Nitroform	954.4	4.0	1.0		590.2	1.3
Phosphorus	Liquid Phosphorus						
Potassium	Potassium Sulfate	164.8	0.7			272.4	0.6
		247.2	1.0				
Gypsum	pelletized	5.5 L	23.4	5.9	1.5	7.2 Kg	15.0
Lime	pelletized						
	powdered						
Sulfur	pelletized						
	powdered						
Magnesium Sulfate	Epsom salt	1.4 L	5.8	1.5		1.6 Kg	3.5
Iron chelate	gallons						
	pounds						
Manganese chelate	gallons	947.3	4.0	1.0			
	pounds	516.8	2.2			360.0	0.8

Conventional Fertilization

Boost Granular	4.2 L	17.9	4.5	1.1	3.9 Kg	8.5
Boost Natural Granular	8.9 L		9.4	2.3	6.0 Kg	12.5
Boost	62.5 L			16.5		

Comments:

Mulch and/or incorporate organic matter/biochar.

Near toxic level of sodium. See Bartlett Best Management Practices: Soil and Root Management for treatment program.

Treat boron deficiency with up to 1/3 lb Borax per 1000 sq. ft.

* indicates a deficiency ** indicates a potential toxicity