ARBORICULTURE SERVICES
URBAN FORESTRY SOLUTIONS

August 29, 2018

Town of Templeton
Attn: Pam Rogers, Town Administrator
381 Baldwin Road
Templeton, MA 01468

RE: Tree Risk Assessment Report: Common and Street Side Trees

Pam,

This report is a follow up to my inspection and risk assessment of trees in four areas of Templeton near the main common. Per our agreement and my May 4, 2018 proposal, it was determined that 19 large ash trees and one maple would be visually assessed for risk from the ground and, if conditions warranted, inspected further with specialized equipment designed to detect internal decay. This information is submitted in the following written report which contains the inventory data, aerial photographs of the site with tree locations marked, observations and recommendations for further action. In addition to the risk assessment, you have also requested that I attend a selectman's meeting to discuss the report and address questions or concerns regarding these trees. We have this scheduled for September 12th at 6:30 PM.

Thanks for the opportunity to assist the Town of Templeton with this project. Please don't hesitate to contact me if you have any questions or need additional services.

Best regards,

David Hawkins, Consulting Arborist
Urban Forestry Solutions, Inc.

David C. Hawkins – Consulting Arborist
Office/Fax: 413-253-4266 Mobile: 413-237-5106
Email: dhawkufs@comcast.net Web: www.ufstrees.com

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Introduction and Inventory Methods

Nineteen white ash (*Fraxinus americana*) and one Norway Maple (*Acer Plananoides*) were assessed for health and risk of failure in four areas of Templeton's center. These are the landscaped/lawn area between Boynton Street and Baldwinville Road (**Area 1**), town-owned common land abutting the Country Mischief Shop at 10 Baldwinville Road (**Area 2**), the main town common (**Area 3**) and the north driveway of the 10 Baldwinville Road (**Area 4**). The concern for these trees stems from their age, condition, importance in the community and history of past failures – especially in severe weather events that have occurred over the past several years.[1]

The 20 trees in this report were divided in sections according to the 4 areas, recorded on a data sheet, assessed for risk and located on an aerial image of for that area. Each section begins with the aerial image with the trees located and identified by a number (1-20). This is followed by an assessment, recommendations and one or more photographs of the tree.

A Level 2 and, in 3 cases, a Level 3 tree risk assessment was performed on all 20 trees. These levels are defined by the ANSI A300 (Part 9) – 2017 Tree Risk Assessment a. Tree Failure, and the International Society of Arboriculture Tree Risk Analysis - Best Management Practices and consider the severity of a defect, the likelihood of impacting a target and the consequences should the tree or any of its parts fail over the next 3 years.[2] The Level 2 assessment is done for each tree and involves a complete 360-degree visual assessment from the ground and sounding with a plastic mallet to detect possible decay. The Level 3 assessment was performed on three trees that 'sounded' hollow (Trees #1, #2 and #8) and involved wood resistance probes with a device designed to detect internal decay (Resistograph®).

The risk assessment data was divided into two categories: 1) trees with potential risk conditions that need maintenance such as pruning or installing support cables to reduce possible risk of failure in the future (little or no immediate risk and low risk), and 2) those trees identified as moderate to high risk of failure that could result in possible damage or

[1] This and most tree risk assessments are based on the likelihood of the tree failing in normal weather conditions for this region which include winds up to 40 MPH and occasional heavy snow and ice accumulation.

[2] Tree risk assessment protocol requires a time span be used to assess the likelihood of failure – usually 3 to 5 years.

injury. Of the 20 trees, 5 were identified with a moderate or high risk of all, or parts of the trees' failing (Tree #16 was determined an imminent risk and has since been removed). The remaining trees either had low or no risk and/or some maintenance needs such as pruning or support cable installation. The risk assessment data is shown below and on the next page followed by the site illustration and assessment for each section.

Tree Risk Assessment Data

Tree #	Species	DBH	Location	Target	Defective Part	Size of Defective Part	Defect	Risk Rating				Risk Mitigation
								Low	Moderate	High	Extreme	
AREA 1 - Baldwinville Street/Boynton Street Common Area												
1	White Ash	37	Front of library	Wires; Sidewalk	Branch	14	Decay; Cavity			X		Remove Tree
2	White Ash	36	80' south of #1. Next to Pole #144	Lawn; St. Light wire	Branch	15	Decay; Cavity		X			Remove Tree
3	White Ash	32	180' south of #2. Front of #17 Boynton	None	None							None
4	White Ash	31	50 South of #3. Next to Verizon pole # 164	Lawn	Branch	8	Dead wood (DW)	X				Prune Rem. E. Leader
5	White Ash	42	35' south of #4	Lawn	Branch	8	Decay	X				Prune; Cable
6	Norway Maple	32	Next to War Memorial	Road; Lawn	Branch; Leader	12	Decay; DW	X				Remove Tree
AREA 2 - County Mischief Common Area												
7	White Ash	28	Next to west edge of driveway	Driveway	Branch	4	DW	X				Prune; Monitor
8	White Ash	24	20' northwest of red outbuilding	Lawn; Out Bldg.	Branch; Leader	24	Cavity Decay; DW	X				Remove Tree
9	White Ash	31	Southern most tree in row of trees along Patriots Rd.	Lawn	Branch	5	DW	X				Prune
10	White Ash	21	35' northwest of Tree #9	None	None							Monitor
11	White Ash	24	Northwest of Tree #10. Next to Pole #104.5	Road	Branch	3	DW	X				Prune
12	White Ash	35	Northern most tree in row. Near property line	None	None							None
AREA 3 – Main Common Area												

Tree #	Species	DBH	Location	Target	Defective Part	Size of Defective Part	Defect	Risk Rating				Risk Mitigation
								Low	Moderate	High	Extreme	
13	White Ash	31	East edge of common, 20 west of notice board.	Lawn; Notice Board	Leader	14	DW	X				Prune or Remove Tree
14	White Ash	34	30' north of gazebo. 60' south of #13	Gazebo; Bench; Lawn	Branch; Leader	7/12	Decay; DW	X				Prune
15	White Ash	41	30' east of #14. Between sidewalk and road. At 'No Parkng' sign	Wires; Road	Leader; Tree	20/41	Cavity Decay; DW			X		Remove Tree
16	White Ash	34	At south edge of common. Next to Dudley Rd.	Wires; Road	Tree	34	Crack; Cavity; Decay				X	Remove Tree
17	White Ash	40	45' north of #16	None	None							
18	White Ash	26	20' west of #17	None	None							
AREA 4 - County Mischief North Drive												
19	White Ash	45	Right of driveway entrance	None	None							
20	White Ash	35	Left of drive. 90' south of #19	Road; Sidewalk	Leader; Tree	18/35	Crack; Cavity; Decay		X	X		Remove Tree

The remainder of the report is divided by sections with a site illustration and an assessment, recommendations and photographs of each tree. Trees on the site illustration highlighted with a red box are recommended removals.

Area 1: Baldwinville/Boynton Lawn Area

Tree #1: Opposite Library

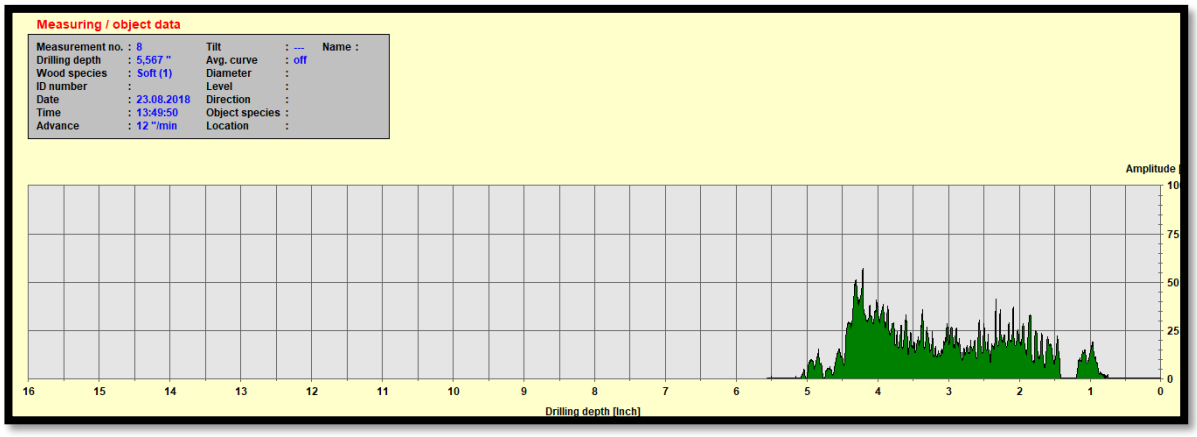
37-inch DBH[3] White Ash (*Fraxinus americana*).

Assessment: Appears healthy with little dieback and good foliage density and color. Major limb over the road and wires has some decay, and a cavity from and old branch break. Sounding the lower trunk with a plastic mallet came back with a hollow sound. 2 probes with a Resistograph confirmed no more than 5 inches of sound wood on the east and west sides of the trunk at 3 feet high (red line in photograph below).

The RS images below shows wood resistance as green with high resistance readings up to 4 inches deep. The sharp drop on the graph indicates decayed or absent wood. The numbers below the graph represent inches of probe depth.

Recommendations:

- Remove Tree



[3] DBH- Measurement of the trunk 4.5 feet above ground level or where it best represents the overall diameter of the lower trunk.

Tree #2: 80 feet south of Tree #1

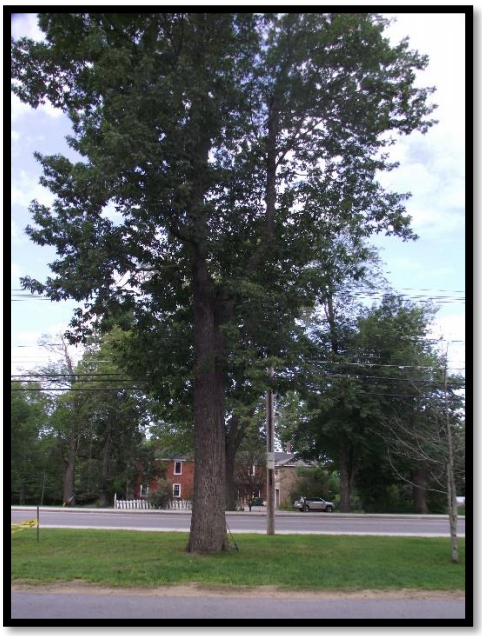
36-inch DBH White Ash (*Fraxinus americana*).

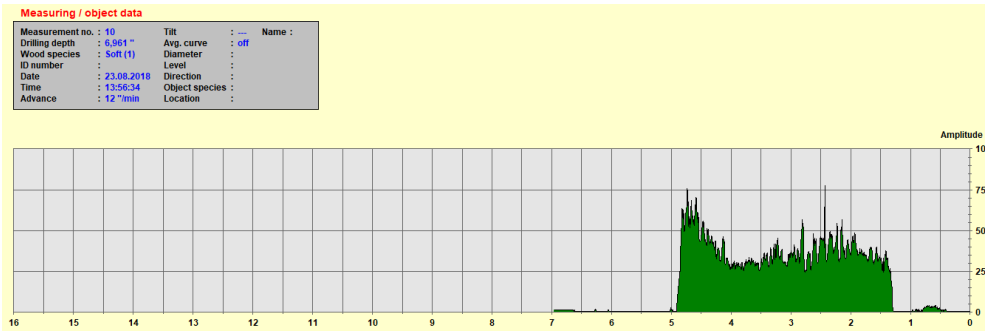
Assessment: Appears healthy with little dieback and good foliage density and color. Main leader to the north has significant decay and above a small (dead) tree, and the wires for the library street light. Sounding the lower trunk with a plastic mallet came back with a hollow sound.

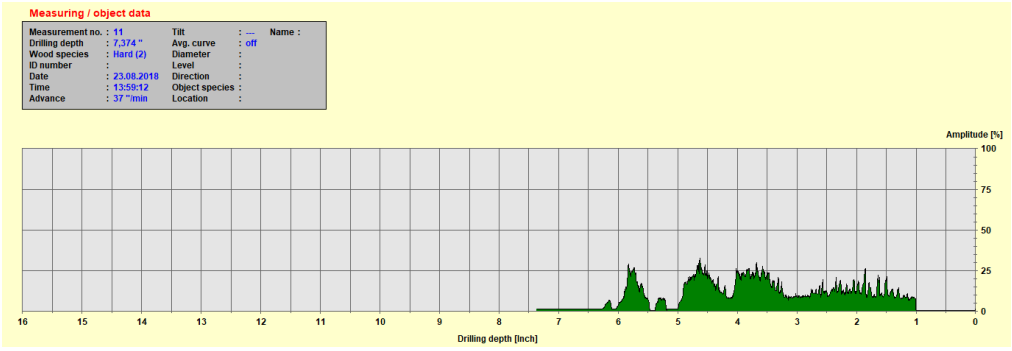
3 probes with a Resistograph showed low or no resistance at 5 to 6 inches deep (2 probes shown below).

Recommendations:

- Remove Tree





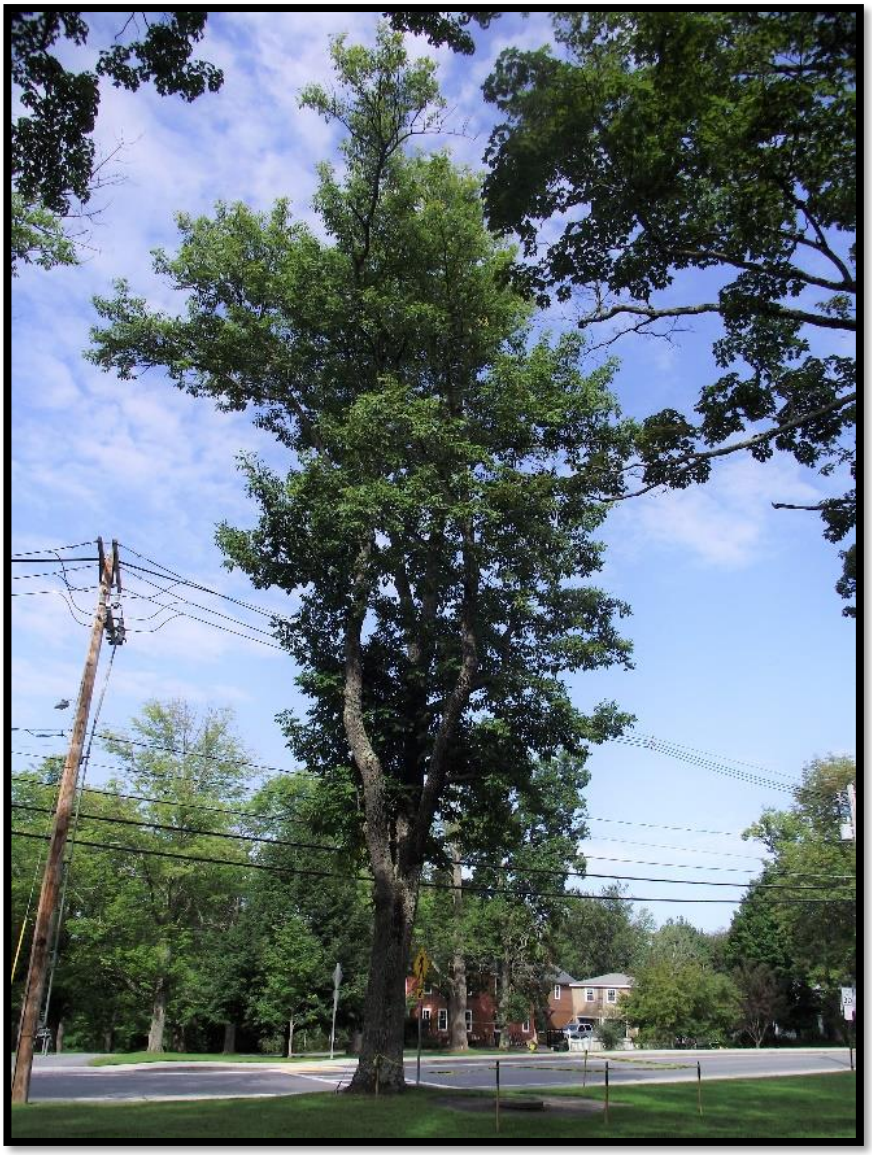


Tree #3: 190 feet south of Tree #2. In front of #17 Boynton

32-inch DBH White Ash (*Fraxinus americana*).

Assessment: Good condition with some small deadwood in the upper crown. No noticeable structural defects

Recommendations:
Prune deadwood if working on nearby trees



Tree #4: 150 feet south of Tree #3. Next to Verizon Pole #164

31-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair to good condition. Large burl at base of tree. Large deadwood up to 8 inches diameter. East leader mostly dead with wood pecker damage. Good new growth in lower crown; enough to sustain tree.

Recommendations:
Prune deadwood. Remove east leader (circled).

Tree #5: 35 feet south of Tree #4.

42-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair to good condition. Co-dominant leaders at 5 feet[4]. Pale foliage, heavy seed set with top dieback indicating tree is under stress. Decay on south leader near top. Leader could be compromised

Recommendations:
Prune end weight on south lead to reduce stress on decayed area (circled) and co-dom. branch attachment. Install support cable if feasible upon aerial inspection while pruning.

[4] Co-dominant leaders: Two or more main stems (or "leaders") that are about the same diameter and emerge from the same location on the main trunk. As the tree grows older, the stems remain similar in size without any single one becoming dominant. Often have 'V'-shaped branch attachments which are generally a weak point and more likely to fail.

Tree #6: Next to War Memorial.

Note: This tree is located on the Area 3 – Main Common Site Illustration (page 20)

42-inch DBH Norway Maple (*Acer platanoides*).

Assessment: Fair condition. Crown dieback, large deadwood and decay in main leaders (circled). Poor tree architecture with weak branch attachments.

Recommendations:
Remove.
Note: pruning deadwood and reducing crown to lessen chance of failure will leave the tree disfigured.

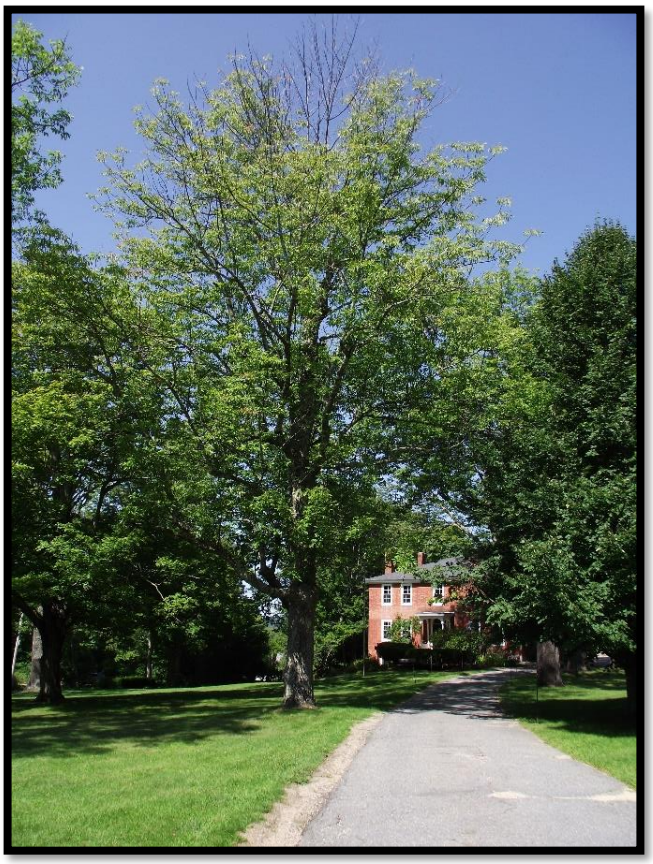
Area 2: Country Mischief Common

Tree #7: Next to County Mischief driveway – west side.

28-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair condition. Pale foliage, top dieback and small deadwood throughout crown. Tree is under stress. No major structural defects identified.

Recommendations:
Prune deadwood and monitor health.

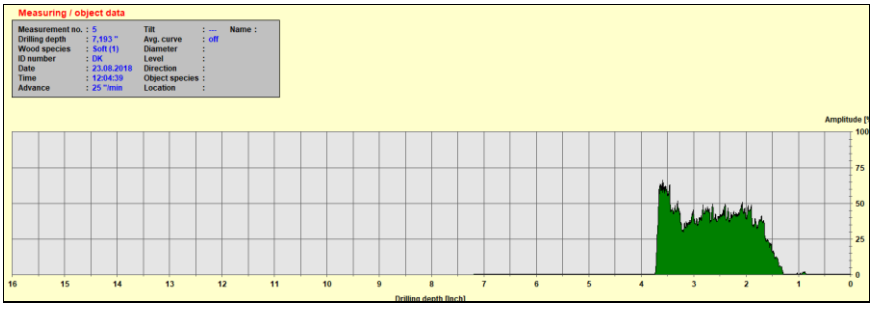


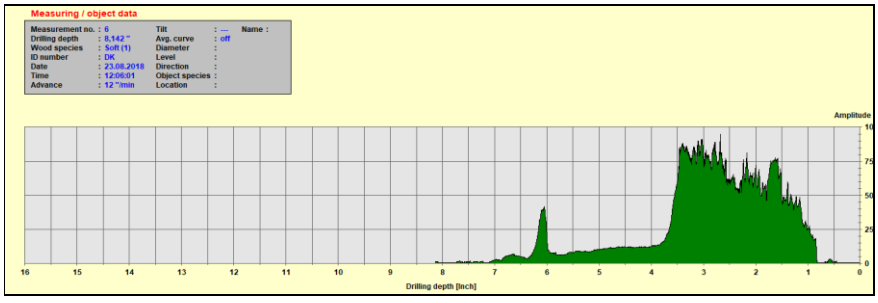
Tree #8: In lawn area 20 west of red outbuilding.

24-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair condition. Thin crown; top dieback. Decay fungus present on east side of main lead (circled). Sounding lower trunk indicated internal decay. Presence of fungus and 'hollow' sound may indicate significant decay in the lower trunk and crown.
RS reading indicate 3 to 4 inches of solid wood in probes sites at 3 – 4 feet high on trunk.

Recommendations:
Remove





Tree #9: 50 southwest of Tree #8. Southern-most tree in row of trees next to Patriot Road.

31-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair to good condition. Crown somewhat thin but has good foliage color. Some deadwood 8 inches diameter and less.

Recommendations:
Prune deadwood and monitor health.

Tree #10: 35 north of Tree #9.

21-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair condition. Crown thin with pale foliage. Some deadwood 3 inches diameter and less. Tree appears stress

Recommendations:
Prune deadwood and monitor health.

Tree #11: Next to Pole #104.5.

24-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair condition. Crown thin with pale foliage. Early fall color indicating tree is under stress. Some deadwood 3 inches diameter and less over lawn and road.

Recommendations:
Prune deadwood and monitor health.

Tree #12: Northern-most tree in row and next to Country Mischief property line

35-inch DBH White Ash (*Fraxinus americana*).

Assessment: Good to condition. Some deadwood less than 4 inches. No major structural defects identified.

Recommendations:
Prune any deadwood over road

Area 3 – Main Common

Tree #13: Northeast portion of common. Next to notice board on Petersham Road

31-inch DBH White Ash (*Fraxinus americana*).

Assessment: Poor to fair condition. Central leader and only remaining leader dead or dying. Deadwood 15 inches diameter and less. Remaining lower foliage is vigorous and may be enough to sustain the tree.

Recommendations:
Prune and monitor or consider removal. Pruning will result in an unbalance, disfigured tree.

Tree #14: 50 feet south of Tree #13 and 30 feet north of Gazebo

34-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair to good condition. Foliage good color with a little crown thinning. Deadwood throughout crown. Lead over gazebo heavy. North lower leader decayed near base. Periodic high use area.

Recommendations:
Prune all deadwood. Prune to reduce end weight from leader over gazebo and decayed north leader.

Tree #15: 30 feet east of Tree #14 between road and sidewalk. Next to 'No Parking' sign.

41-inch DBH White Ash (*Fraxinus americana*).

Assessment: Fair to good condition. Good foliage color. Large deadwood in upper crown over sidewalk. Open cavities on west side of trunk possibly from old pruning cuts or wounds. Large decayed area on lower trunk east (road) side. Trunk sounding did not reveal significant decay in lower trunk, but it's possible the mid and upper trunk may be hollow or decayed.
Considering it's location next to the road and wires, and the amount and severity of the defects identified, retaining this tree is risky.

Recommendations:
Remove

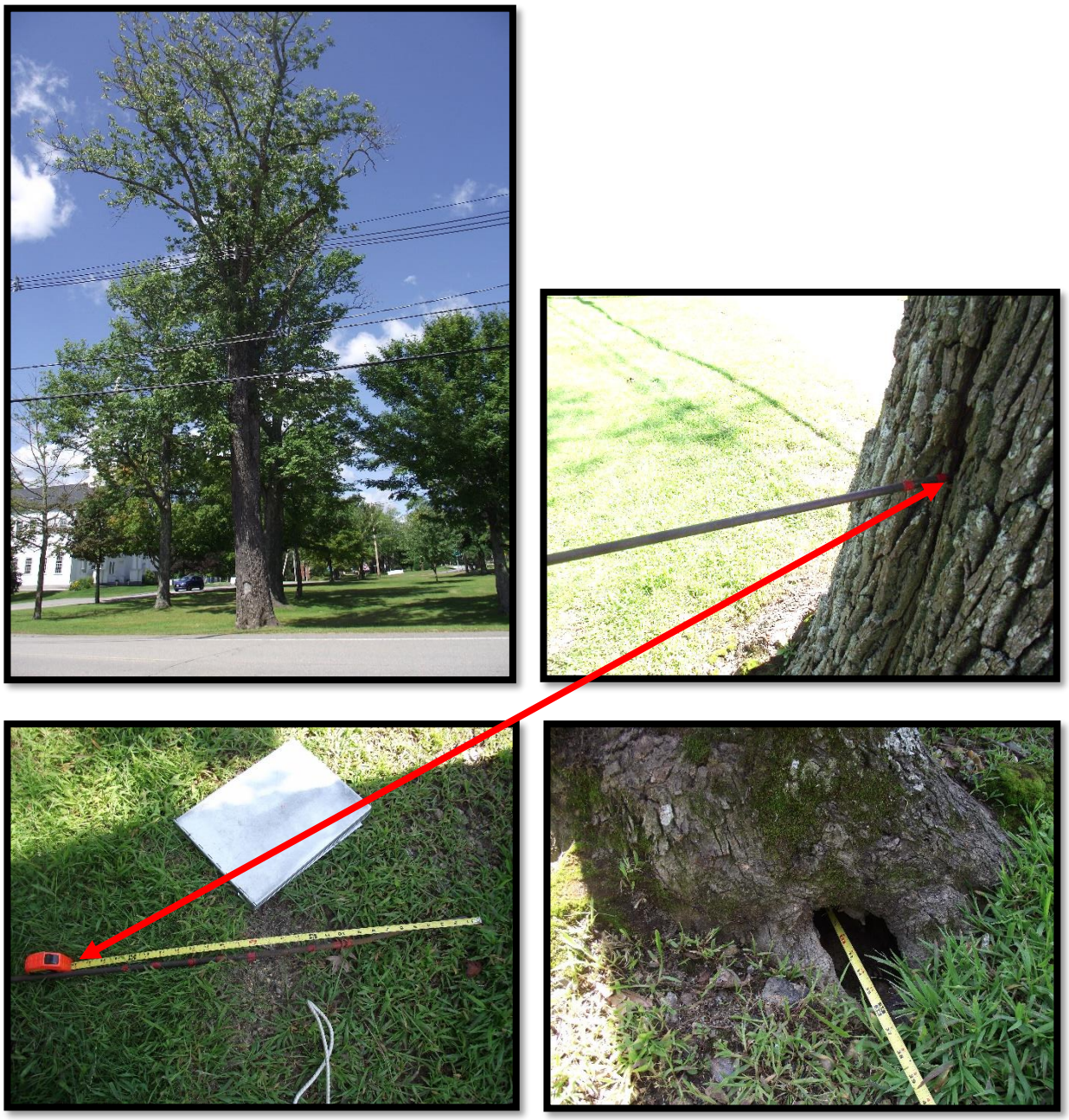
Tree #16: South edge of common next to Dudley Road

Note: this tree has since been removed

34-inch DBH White Ash (*Fraxinus americana*).

Assessment: Poor condition. Large deadwood, crown dieback present. Crown weight and lean towards road and wires. Significant trunk decay, open crack and cavities identified. Metal probe rod inserted to 20 inches as 4 feet on trunk and tape measure to 30 inches in basal cavity. No RS needed.

Recommendations:
Remove ASAP



Tree #17: 50 Northwest of Tree #16.

40-inch DBH White Ash (*Fraxinus americana*).

Assessment: Good condition. Some thinning and dieback. Deadwood less than 5 inches. Periodically a high use area

Recommendations:
Prune deadwood

Tree #18: 20 feet west of Tree #17.

26-inch DBH White Ash (*Fraxinus americana*).

Assessment: Good condition. Some thinning and dieback. Deadwood less than 3 inches. Periodically a high use area

Recommendations:
Prune deadwood

Area 4 Country Mischief North Driveway

Tree #19: North side of the north driveway for Country Mischief off Baldwinville Rd.

45-inch DBH White Ash (*Fraxinus americana*).

Assessment: Good condition. Some thinning, dieback and deadwood at the top. Large dead stub in lower middle of tree (circled)

Recommendations:
Prune deadwood and dead stub

Tree #20: South side of the north driveway for Country Mischief off Baldwinville Rd. 90 feet south of Tree #19

35-inch DBH White Ash (*Fraxinus americana*).

Assessment: Good condition. Some old wounds from storm damage. Possible decay in leader over the road. Weak branch union and possible decay on leader over the lawn. Lower trunk sounded hollow in a few areas, solid in others. Four Resistograph probes show 4 to 6 inches of sound wood surrounding a hollow center
Note: probed with Resistograph prior to September 12th meeting.

Recommendations:
Remove tree

General Maintenance Recommendations

Pruning

Pruning should be done by a Mass. or ISA certified arborist qualified and experienced on pruning – especially the end weight reduction pruning recommended for several trees
For stressed trees or trees on decline, pruning should be limited to deadwood only with care taken not to remove any interior live growth.
All pruning should conform to the American National Standard ANSI A300 (Part 1) – 2017 Pruning. Standard Practices.

Cabling

Installing support cables should be done by a Mass. or ISA certified arborist qualified and experienced with type of work. It should also conform to the American National Standard ANSI A300 (Part 3) – 2006 Supplemental Support Systems. Standard Practices.

All trees should be reassessed in 3 to 5 years for health and risk to the park's users

I would also recommend a similar assessment for other large and old town-owned street side and common land trees in high use areas.

Disclaimer

By the nature or their size, weight, miscellaneous structure issues, constant exposure to the weather and the elements, and susceptibility to insect's pest and decay organisms, trees always pose an inherent degree of risk of breakage or structural failure.

Recommendations made by Urban Forestry Solutions, Inc. are intended to minimize, reduce, or eliminate hazardous conditions associated with trees. However, there is not, and can never be, any guarantee or certainty that these recommendations will totally correct unsafe conditions or prevent future failure of a tree.

The recommendations carried out as stated should reduce the risk, but they cannot completely eliminate the risk (except when the tree is removed), especially in the event of future growth, further deterioration, subsequent insect attacks, extreme weather conditions, or other eternal factors such as lightning strikes vehicular damage, or other acts of God or man.

Certification

I certify the statements in this report are, to the best of my knowledge, true, accurate and represent my professional opinion.

Date: August 29, 2018

David C. Hawkins, Consulting Arborist

Certified Arborist: Mass. Arborists Association MCA#1425

International Society of Arboriculture
Board Certified Master Arborist ISA# NE-0541-B

Licensed Arborist: Rhode Island Department of
Environmental Management RI # 696

Member: American Society of Consulting Arborists

Member: The Tree Care Industry

Tree Risk Assessment Qualification (TRAQ)
International Society of Arboriculture March 2014

Mass. Tree Wardens and Foresters Assoc.
Executive Board; Secretary