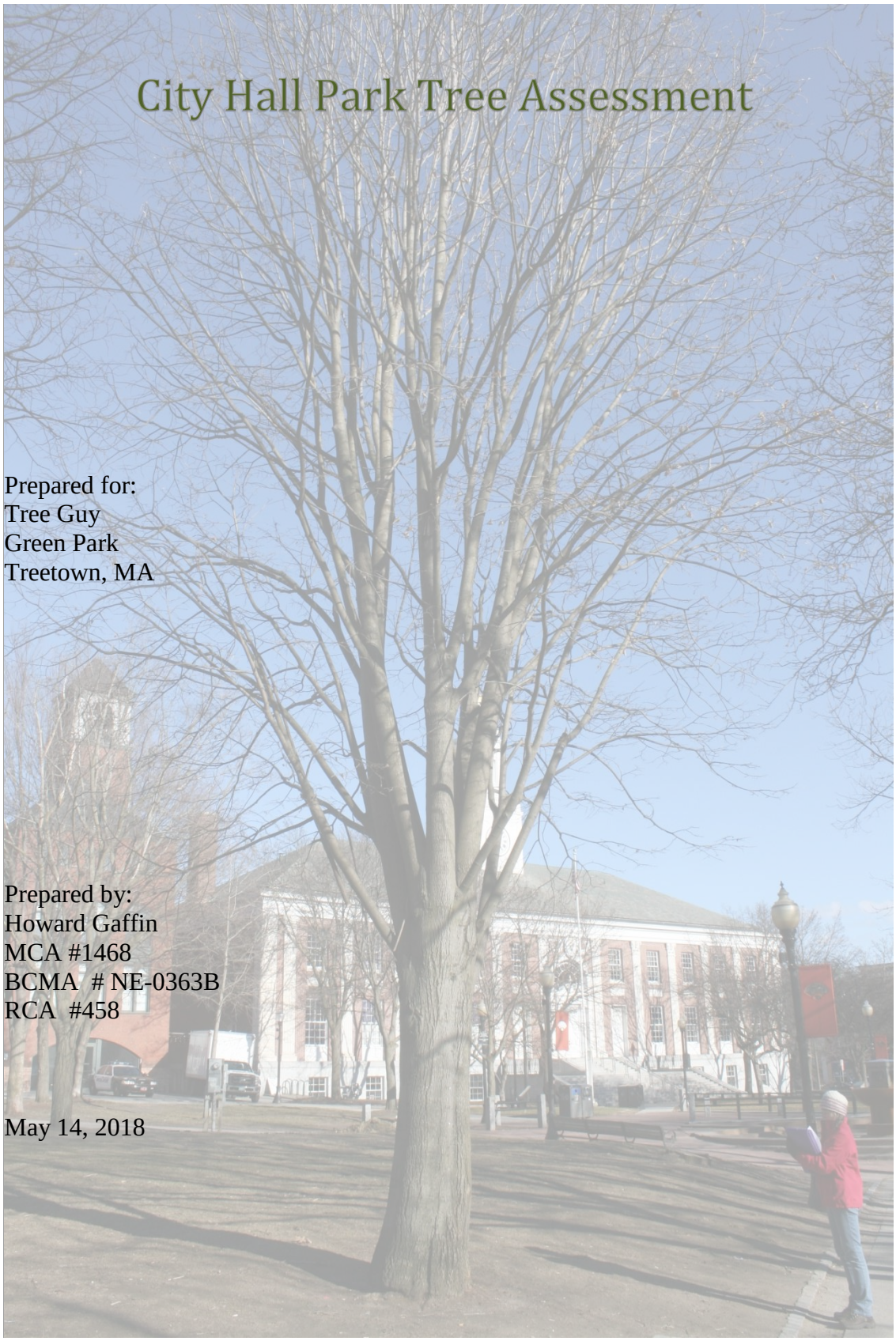
City Hall Park Tree Assessment



Prepared for:
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Green Park
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Summary

I was asked to assess the current condition and future prospects of trees located in a heavily used urban park. All suffer from the same ailments, most notably soil compaction and poor structure. Many may be preserved with prompt treatment and continued aftercare, but costs, space limitations, and promise of aftercare would be limiting factors.

Introduction

Background

I was contacted by Mr. Tree Guy regarding trees located in City Hall Park, Treetown, MA. Recent renovation plans for the park have raised controversy over the proposed removal of many existing trees. I was contracted to provide an unbiased assessment of the subject trees.

Assignment

After speaking with Mr. Guy and reviewing documents provided, I agreed to:

- Conduct a visual assessment of documented trees in the park
- Record observations, document with imagery.
- Provide a written report including assessments and management options

Purpose and Use

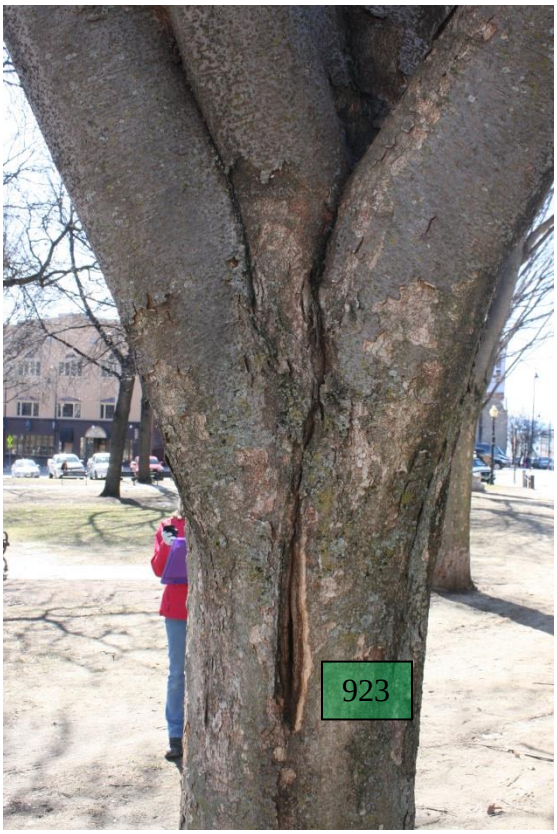
Provide information and management options regarding trees at City Hall Park to be removed or impacted by proposed new construction.

Observations

I arrived at the site on April 5, 2018. The park is located in a vibrant, downtown area adjacent to city hall. Originally established in the late 1700's, the park has changed forms a number of times. Originally a circular park, a major reconfiguration took place in the late 1970's, when I believe the majority of the current trees were planted. The park is the downtown areas' only open public space and is heavily utilized.
The site is fairly flat, and is bordered by 3 main roads and City Hall. Two main walkways cross the park, intersecting at a water feature. The soil is heavily compacted in areas around root zones as expected. Exposed surface roots abound. The compaction appears heaviest near the walkways, but exists throughout the park.
Fourteen different species were identified, most chosen for their ability to tolerate difficult sites. Two Horse-chestnuts, two Sugar maples, and one Norway maple have been removed since my site visit.
Tree numbers correlate to the site map on page 36.

Zelkova

A vase shaped tree with interesting exfoliating bark, the Zelkova was once thought to be the replacement for the American elm. The tree tolerates wind and drought conditions and moderate pollution. Weak, closely spaced scaffold[1] attachments and included bark[2] are a common problem, but the unions seem to hold up remarkably well.
The Zelkovas in the park are in the same age range. They all display varying degrees of the same issues. Root flares[3] are not evident. Girdling roots[4] and surface roots are abound, and poor crown structures are common.



Zelkovas growing along College St. show typical form for the species. Tree 923 shows exceptionally bad form with an open seam along the trunk.

[1] Scaffolds – Permanent or structural branches
[2] Included bark – Bark that becomes imbedded in a crotch (union) between branch and trunk or co-dominant stems; causes a weak structure between union between
[3] Root flare – Transition zone from trunk to where trunk expands to structural roots.
[4] Girdling roots – Roots that encircle all or part of a tree or other roots that constricts vascular flow.

All the Zelkovas exhibited some degree of poor root crown formations, girdling roots and soil compaction.

Crabapple

Long used as an ornamental, hundreds of varieties of crabapple have been introduced over time. Usually in the 15 to 25’ height range, they come in a variety of forms and flowering in hues from white to red. They prefer consistently moist, well-drained soil, but can withstand occasional periods of drought.
Disease is a big issue with certain cultivars, and some varieties can produce large amounts of fruit litter.

Tree 924 stands at the Park entry at the eastern end from College St

Silver Linden

The Silver linden features a pyramidal habit, and lustrous, two-toned leaves that turn yellow in autumn. The small yellowish flowers are quite fragrant and a narcotic to pollinators. Japanese beetles can be a problem, as well as aphids secreting a sticky residue precluding sooty mold.
Two of these trees recently failed and have been removed. The remaining three experience similar issues including compaction, poor structure and poor crown health.

Tree 908 exhibits poor crown form and attachments, as well as an open seam along the trunk.

Tree 914 exhibits poor crown structure, trunk wounding, and signs of severe root girdling.

Littleleaf Linden

An excellent tree for landscape use, Little leaf linden has a pyramidal form and is quite pollution tolerant. It is not as tolerant of drought or soil saturation as most of the other species here, but does quite well in most urban situations. Bees are attracted to the fragrant flowers. Aphids and Japanese beetles are a problem, but rarely serious.
The three Littleleafs in the park appear to be doing fairly well. All suffer from compaction and root issues, yet the twigs and buds in the crowns appear healthy. All have varying degrees of sooty mold[5] on the trunk and branch bark. Trees 8 and 13 exhibit some minor structural issues that may be remedied with pruning.

Left: Trees 915 (in the foreground) and 916 show decent forms. Tree 8 has a slight lean to the north. Right: Tree 916 has an oversized lateral limb (arrow) that should be reduced.

[5] Sooty mold - A type of plant mold that grows in the honeydew or secretion of many common plant pests such as aphids or scale. Control by managing insects.

Both trees 915 and 916 exhibit problems with large girdling roots.

Tree 909 has a large lateral root associated with wounding running up the trunk.

Honey Locust

This species can withstand a wide variety of soil conditions from occasionally saturated to extremely dry. The foliage is delicate and airy, allowing a filtered light through the canopy. Overuse in the landscape has encouraged a variety of insect problems such as spider mite, borers and cankers.
Three Honey locust trees were noted in the park. Compaction of course is an issue, though most exhibited good root crowns[6], trunks and crown structure. The bud set seemed small, and generally stunted. Tree 16 exhibited a fair amount of deadwood in the crown.

Tree 12266 shows good form, but compaction and root crown defects have stunted growth.

[6] Root crown – Area where the main roots join the plant stem, usually at or near the ground surface

Tree 910 has good root crown structure and a strong trunk. The lower lateral limb is oversized and should be reduced (arrow). Crown is stunted, soil compaction is evident.

Tree 956 has fairly healthy crown with good structure, excepting the lower lateral that should be reduced (arrow). There are some root issues, but the root crown and trunk are solid.

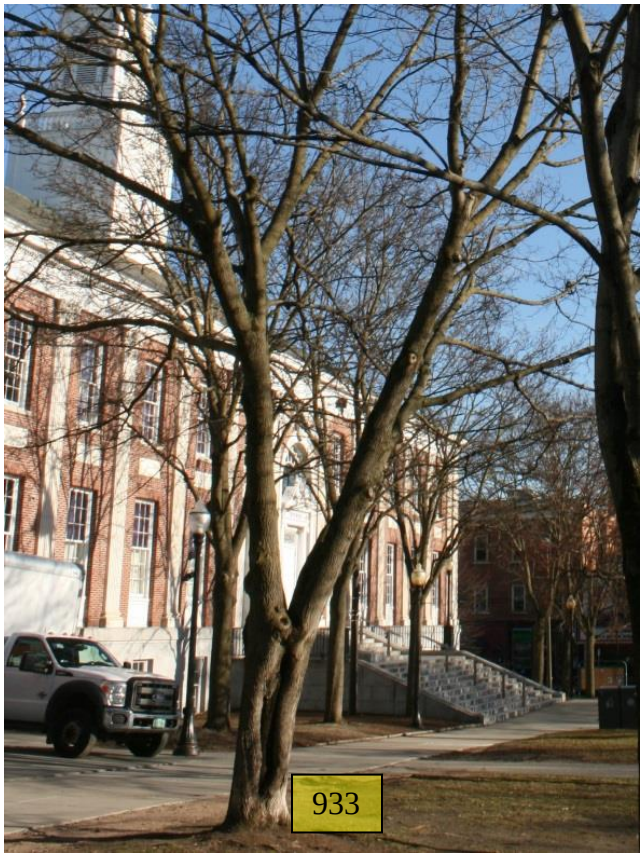
Hackberry

Hackberry is known for its ability to withstand a variety of soils and dry, windy environments. It has a pyramidal form when young, becoming more vase-shaped with age.
The lone Hackberry is a more recent addition to the park. An oversized lateral limb arises from a fairly good root crown and trunk. While experiencing the same stresses as the other trees, it appears to be doing well.

The Hackberry (#936) is doing well, but the oversized lateral limb (arrow) with included bark should be reduced to prevent future problems.

Norway Maple

A hardy introduced tree, Norway maple is now considered to be overused in the landscape, and invasive in some states. One of the first to leaf out and last to hold onto its yellow foliage, the shallow roots and thick shade make it difficult to grow anything underneath. Girdling roots are a common issue, and any nearby hardscape may be uplifted.
Six of the seven Norway maples in the park are located in front of City Hall. All are in almost identical condition. One (979) has been removed since my site visit. Compaction, girdling roots, poor or non-existent root flares, damage to the trunk, poor crown structure, poor bud set and crown die-back are all prevalent in each tree.



Tree 933 has a good root crown, but a large defect in the trunk and poor bud set make this another border line prospect.

Tree 939 is a good representation of the Norway maples in front of City Hall. These trees may possibly be salvaged, but not likely worth the effort.

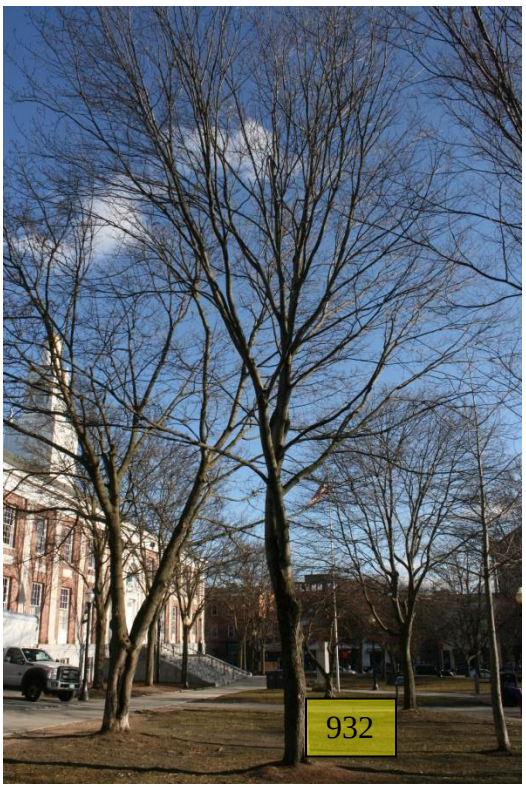
Sugar Maple

A handsome native, this tree is iconic in the state. Classic oval form and brilliant fall color make this a fine specimen for parks, golf courses or other areas that can allow for root space. It is not as tolerant of salt and pollution as other maples, making it a questionable choice for urban environments.
Of the eight I inspected while at the park, two (961 and 962) have since been removed. All the remaining Sugar maples are in the same declining spiral. Compaction, wounding and poor structure are all taking their toll.

Upper left: Tree 928 struggles mightily in a small soil pit. Upper right: Tree 964, the best looking of a sorry lot. Bottom: No root flare is evident on the north side.

Red Maple

Red maple is a native tree, hybridized into various cultivars. They can abide a variety of soils, but prefer slightly acidic, moist conditions. Somewhat tolerant of urban pollutants, it may be a good choice for suburban lawns or parks, but not particularly hardy in an urban environment.
The two Red maples in the park exhibit the same site conditions as the others. Poor root crowns, surface roots, multiple trunk and pruning wounds result in poor crown density and bud set.



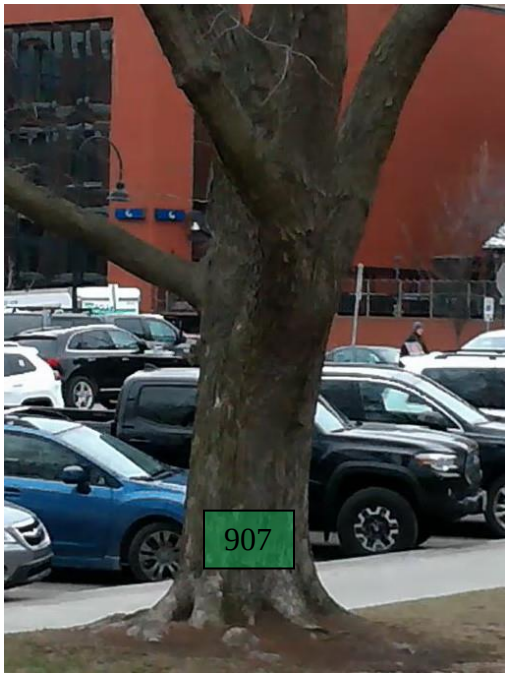
A mass of fibrous roots arise around the trunk of Tree 932. Large old wounds indicate decay cavities in trunk. Poor branch structure, included bark (arrow) and a weak crown make this tree a border line tree for preservation.

Tree 929 exhibits a fair crown structure and bud set. A wound in the trunk shows fair woundwood[7] response. A reduction of the oversized lateral limb (arrow) is recommended. Compaction and girdling roots are of course an issue.

[7] Woundwood – Lignified, differentiated tissues produced on woody plants as a response to wounding

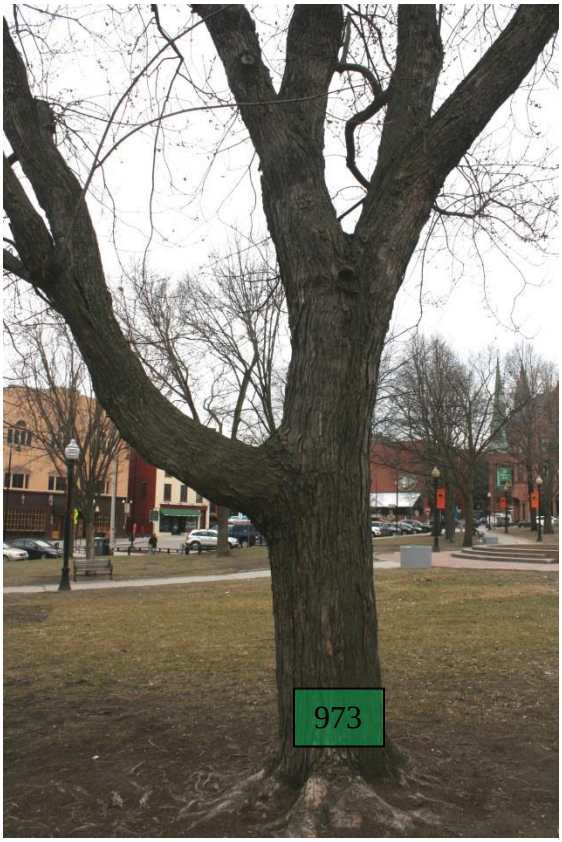
Silver Maple

Silver Maple is another native often used when fast growing trees are required and poor soil conditions limit species choices. These qualities come with liabilities that include crowns prone to storm damage and invasive root systems. They are also sensitive to high ph and roadside salts.
The three Silver maples growing here are indicative of the above description. They are clearly doing the best of all the other species. All exhibit good root crowns, solid trunks and decent crown structure. Ongoing pruning has left the crowns in good condition. Little deadwood or dieback was observed.



Silver maple 907

Silver maple 955



Silver maple 973 is one of the healthier specimens in the park. A reduction pruning on the large lateral limb (arrow) would be advised.

Ginkgo

Patience is required with the Ginkgo. This slow growing tree dates back to ancient times. Its form and leaf are unique along with a spectacular fall color. It prefers sandy, moderately moist soils, but can grow in almost any conditions, tolerating heat salt and air pollution.
The lone Ginkgo in the park is suffering the same humiliations as the other trees, including a large wound at the trunk base. Despite it all, the tree still exhibits good form and a fair bud set.

Red Oak

Red oak is a handsome native tree, fast growing for oak species and remarkably tolerant of urban conditions. It is fairly insect and disease free and can tolerate prolonged periods of drought.
Three Red oaks grace the park. All experience the same compaction and root issues. Tree 28 is in the poorest condition, exhibiting crown die-back and poor branch structure

Above: A vehicle parked directly over the "Critical Root Zone[8] *(CRZ) of tree 912 exemplifies the primary problem in the park; Compacted soil. Bottom left: Tree 951. Bottom right: Tree 957 displays a good root crown, but has a one-sided upper crown with a lean to the west.*

[8] Critical Root Zone - Soil area around a tree where the roots are located and provide stability and a significant uptake of moisture.

Green Ash

Heavily planted because of its adaptability, once established it can withstand heat, drought, salt wind and infertile soils. Pyramidal when young, it often develops a rather unruly structure and can be susceptible to storm breakage. Emerald Ash Borer is a serious threat and has been found in Caledonia, Washington and Orange County as of March, 2018.
Compaction and root issues challenge the two Green Ash trees growing adjacent to each other. The trunks are solid, and both show fair woundwood formation on old pruning cuts. Crown density and foliage are fair.

Tree 949

Tree #950

Elm

Many cultivars of American Elms have been introduced to try and match the magnificence of the disease riddled original. The vase shaped habit and fast growth are ideal for many landscape situations. They can withstand a variety of soil conditions, but are subject to many insect and disease pathogens.
Growing in compacted soil, this lone Elm has a good root crown and solid trunk. The scaffold structure is fair. V- shaped multiple stem attachments with included bark arise from the trunk. The bud set and crown structure are good.

Tree 970 has a nice full crown, but displays typical structural defects (arrow) found on Elms.

Discussion

Years of use and abuse have left the park trees in dire straits. Even though the species here were chosen for high tolerances of urban stress, there is only so much abuse that can be endured before decline is inevitable.
The most influential limiting factor for tree growth and survival is the soil. Limited soil abundance, quality, severe compaction and existing hardscape make it a tough go here. With a major reconfiguration of the park forthcoming, a careful evaluation of the existing trees regarding their current and future prospects is prudent. A list of the trees and their chances for prosperity are provided, along with management considerations. Trees to be preserved must be provided a Tree Protection Zone (TPZ), the size of which is related to

species, size, and condition. To be realistic about recovery, the TPZ must be respected. There is no point in compromise if resources are to be devoted to preservation. Trees are very slow to react to environmental changes. They cannot run away, and must develop a different survival strategy. Any rejuvenation treatments will take time to reflect a response.
The trees here have been routinely pruned, and I did not note any moderate or high risk situations involving the crowns. Any future pruning should be limited to crown cleaning for the time being, leaving as much photosynthetic area as possible.
Any attempt at preservation at this point would require a fair amount of investment. Root crown excavations, root pruning, soil de-compaction and amending and establishment of a tree protection zone would all be advocated. The establishment of TPZs will impact site use and space availability.

Conclusions

With immediate intervention and continuity of care many of the trees may be preserved, but preservation demands, costs, and conflicts with site use may be prohibitive. Consider removing border-line preservation candidates and replace with large, suitable replacement trees that can be given the space and formative care needed to produce a safe, quality specimen providing benefits for years to come.

Management Considerations

Root Zone

- A qualified arborist (State, ISA, or TCIA certified) shall be present during any excavation activities.
- Perform a root crown excavation using hand tools and an air spade.
- Determine if and where any girdling roots or root-girdling roots may be cut.
- Cuts shall be made with a sharp, medium to fine toothed saw, lopping shears, or sharp chisel
- Loosen compacted soil within the designated Tree Protection Zone with an air-spade. Soil should be moistened before air-spading operations
- Incorporate compost material into the area of loosened topsoil.
- Cover area with a 3-4” layer of mulch, preferably wood chips.
- Create a tree protection zone a **minimum** of 1 foot for every inch of tree diameter.
- Monitor for soil moisture and supply water as needed.

Above: Removal of a girdling root (left image) and a root girdling root.

Red maple roots exposed after de-compaction with an air-spade.

Crown

- A qualified arborist (State, ISA, or TCIA certified) shall be present during any pruning treatments.
- Perform a crown cleaning; removal of dead, diseased and broken limbs
- Leave as much photosynthetic parts as possible. DO NOT prune any interior growth.
- Perform a reduction pruning on oversized lateral scaffolds competing with the main crown
- Monitor for any disease or insect issues and treat as needed.

Pruning Guidelines

- All work shall be done in accordance with ANSI Z133 safety standards and ANSI A300 pruning standards.
- An aerial lift device capable of reaching the tops of these trees shall be employed when crown reductions are recommended.
- Perform crown cleaning and reduction pruning as needed. Pruning can be done anytime, but is best avoided in the fall, until a killing frost has occurred.
- Reduction cuts shall be the smallest possible to achieve the objective, and no larger than 3 inches in diameter. The cuts shall be made back to a viable branch no less than one third the diameter of the cut. Some defects may be noted which would warrant a larger cut. This may include dead, broken, and diseased parts.
- No more than 10% of the live crown volume shall be removed at one time.
- Pruning shall be done by a qualified individual with the experience and patience required for this type of project.
- All cuts should be made with a sharp handsaw, unless large pruning cuts are required on defective parts of the tree.
- Reduction pruning can continue over several years depending on tree response to initial treatment. One to two year intervals should be observed for recovery time. Further reduction may be possible if lower canopy responds favorably.

Tree Protection Zone Requirements

- Protective fencing shall be installed to protect the trees from human activity. All protective fencing shall be in place immediately after any soil remediation's take place.
- Fencing for tree protection may be determined by park designers, but should be constructed as to keep the public from entering
- A 3-4" layer of wood chips shall be placed over the protection zone.
- The TPZ shall be protected from any construction activities and run-off with hay bales or equivalent materials.
- Where trees to be protected fall within areas where construction traffic must pass, additional tree protection shall be provided by implementing the following measures:
    - Roots shall be completely covered within the drip line of any such trees with a 6" mulch layer and planking of sufficient length and thickness to allow construction equipment of all types to pass over without disrupting or compacting the ground surface.
    - The trunk and bark of such trees shall also be protected by adequately wrapping the trunk with sufficient thickness of burlap or rags over which 1 inch thick softwood cleats shall be securely tied. Nails shall not be driven into trees.
- A qualified arborist (State, ISA, or TCIA certified) shall be present during any excavation activities near the TPZ.
    - Roots one inch or larger in diameter shall be first exposed carefully by hand and/or air-spade, then cut before digging takes place. Cuts shall be made with a sharp, medium to fine toothed saw or lopping shears.
    - Backfill with a loam/compost mix. Cover area with a 3-4" layer of mulch, preferably wood chips.
- No storage or placement of materials intended for use in construction or waste materials accumulated due to excavation or demolition shall be placed within the fenced area.
- No equipment shall be cleaned or other liquids, including, without limitation, paint, oil, solvents, asphalt, concrete, mortar or similar materials deposited or allowed to flow into the critical root zone of a protected tree.
- No signs, wires or other attachments, other than those of a protective nature, shall be attached to any protected tree.
- No vehicular and/or construction equipment traffic or parking shall take place within the fenced area.
- No grade changes shall be allowed within the limits of the critical root zone of any protected tree unless adequate protective construction methods are approved in advance.
- No heavy equipment, including but not limited to trucks, tractors, trailers, bulldozers, bobcat tractors, trenchers, compressors, and hoists, shall be allowed inside the fence line without prior approval.

Tree Preservation List

Green – Good candidate **~ Yellow –** Poor-Fair candidate **~ Red –** Remove
Numbers correspond to Site map on page 36.
DBH refers to Diameter at Breast height, or 4.5 inch

#	Species	DBH	Notes
917	Zelkova	20	Compacted soil, poor root flare, girdling roots. Included bark, multi-stem attachments. Fair bud set. Minimal die-back.
918	Zelkova	17	Compacted soil, poor root flare, girdling roots. Included bark, multi- stem attachments. Fair bud set. Minimal die-back. Slightly one-sided crown.
922	Zelkova	19	Compacted soil, poor root flare, girdling roots on north side. Included bark, multi-stem attachments. Fair bud set. Minimal die-back.
923	Zelkova	19	Compacted soil, girdling roots, no root flare. Included bark, multi-stem attachments. Open seam on NE scaffold. Fair bud set. Minimal die-back.
924	Crabapple		Not assessed
908	Silver Linden	18	Compacted soil. Good root flare. Active seam along north and south side of trunk. Poor, multi-stem branch structure. Included bark. Poor bud set.
915	Little leaf Linden	22	Compacted soil, twisted, girdling roots. Active seam from base to approx. 20’ up trunk. Sooty mold on bark, trunk. Good crown structure, bud set.
916	Little leaf Linden	22	Compacted soil, girdling roots, surface roots. Approx. 10 degree lean to north. Oversized lateral limb to south. Fair crown structure. Good bud set. Little limb die-back. Sooty mold.
112266	Honey Locust	18	Compact soil. Poor root flare, flat on west side. Surface roots. Solid trunk. Good crown structure. Fair bud set. Stunted growth.
925	Horse Chestnut	18	REMOVED
934	Horse Chestnut	20	REMOVED
936	Hackberry	10	Compact soil. Good root crown. Solid trunk. Large, oversized lateral to west, some splitting at union. Good crown, bud set.
909	Little leaf Linden	26	Compacted soil. Fair root crown. Large root growing laterally connected to seam running 18’ up the trunk. Co-dominant scaffold. Sooty mold on trunk and limb bark. Good crown and bud set.
979	Norway Maple	17	REMOVED
#	Species	DBH	Notes

914	Silver Linden	23	Compact soil. Girdling root on north side. Open seam on west side of trunk. Poor structure, multi-stemmed with included bark. One-sided crown. Fair bud set.
910	Honey Locust	16	Compact soil. Solid root crown and buttress roots. Co-dominant stems at 8'. Some dead wood in crown. Twig and bud growth stunted.
926	Sugar Maple	18	Severe compaction. Girdling roots, flattened trunk on north side. Damaged surface roots. Severe die-back in crown.
931	Zelkova	16	Compaction. Girdling roots to the north-east. Exposed surface roots. Fair crown structure for species. Fair bud set.
932	Red Maple	15	Compaction. Large fibrous root mass on surface near trunk. Good root crown. Open cavities along trunk from large old wounds. Moderate die-back, poor bud set in crown
933	Norway Maple	21	Compaction. Large wound in trunk. Trunk divides into co-dominant v-shaped stems with open seams at 7'. Poor-fair bud set.
907	Silver Maple	30	Compacted soil. Some fibrous surface roots. Good root crown. Solid trunk arises to multi-stemmed crown. Good branch attachments. Well-formed crown
911	Silver Linden		Severely compacted. Girdling roots. Flattened area in trunk. Poor crown structure. Included bark.
978	Norway Maple	17	Compact soil. Girdling roots. Co-dominant stems at 20'. Large seam on east side of trunk. Recent wounding. Poor bud set, die back in upper crown
930	Gingko	8	Compacted soil. Surface roots. 50% of trunk wounded at base. Remaining trunk good. Good crown structure, fair bud set.
912	Red Oak	17	Compacted soil. Large girdling root to east. Flattened area to west. Solid trunk divides into v-shaped co-dominants at 18'. Old pruning wounds show fair closure. Weak, thin crown, bud set.
928	Sugar Maple	10	Limited, compact soil. Wounds on trunk. Poor structure. Severe crown die-back.
929	Red Maple	14	Compaction. Girdling roots. Surface roots. Wound in trunk at 3' with fair closure. 3 co-dominant stems arise from trunk at 10'. Fair-good scaffold limb structure. Fair bud set.
949	Green Ash	17	Compacted soil. Girdling roots. Mechanical wounding at trunk base. Good trunk. Good woundwood formation. Co-dominant stems at 18'. Fair crown, bud set.
950	Green Ash	22	Compaction. Girdling roots. Good root crown, solid trunk. Good woundwood formation. 3 major scaffolds arise 15' from base. Fair-good crown, bud set.
951	Red Oak	20	Compaction. Girdling surface roots. Flattened area on trunk to north. Strong trunk. 3 major scaffold limbs at 15'. Fair branch attachments. Good woundwood formation. Fair bud set. Sooty mold noted on trunk and limb bark.
#	**Species**	**DBH**	**Notes**

941	Crabapple		Not assessed.
937	Norway Maple	18	Compact soil. Girdling roots. Surface roots. Good trunk. Poorly structured, multi-scaffold attachments. Weak, sparse crown. Weak bud set.
938	Norway Maple	17	Compact soil. Girdling roots. Surface roots. Good trunk. Poorly structured, multi-scaffold attachments. Weak, sparse crown. Weak bud set.
939	Norway Maple	16	Compact soil. Girdling roots. Surface roots. Large wound on east side of trunk. Poorly structured, multi-scaffold attachments. Weak, sparse crown. Weak bud set.
955	Silver Maple	?	Somewhat less compacted soil. Good root crown. Solid trunk arises to 3 major scaffold limbs with good attachment. Good crown structure, bud set and density.
952	Zelkova	11	Compact soil. No evident root flare. Solid trunk. Multi-stemmed. Included bark. Die-back in crown. Poor to fair bud set.
4944	Crabapple		Not assessed.
942	Crabapple		Not assessed.
945	Crabapple		Not assessed.
976	Crabapple		Not assessed.
975	Crabapple		Not assessed.
965	Crabapple		Not assessed.
973	Silver Maple	25	Compacted soil. Good root crown. Solid trunk divides into 3 major scaffolds Good branching attachment. Good bud set.
953	Zelkova	11	Compaction. Fair root crown, flat area on west side. Strong trunk. Fair crown structure for species. Some die-back. Weak bud set.
956	Honey Locust	17	Compacted soil. Some girdling roots. Flat side on trunk to west. Large lateral limb at 8'. Good branch structure and attachment. Good bud set.
954	Zelkova	11	Compacted roots. Fibrous surface roots. No visible root flare. Oversized lower lateral limb with poor attachment. Fair bud set.
957	Red Oak	19	Compacted soil. Surface roots. Good root crown. Strong trunk, slight lean to west. Good branch structure and attachments. Good wound closure. Fair bud set.
958	Zelkova	15	Compact soil. Good root crown. Multi-stemmed. Included bark. Oversized lower scaffolds. Fair crown structure, fair bud set.
959	Sugar Maple	16	Compaction. Poor root crown, flat sides to west and north. Poor crown structure. Co-dominant scaffolds with included bark at 20'. Sooty mold. Small, sparse bud set.
#	**Species**	**DBH**	**Notes**

960	Sugar Maple	16	Compact soil. Poor root crown. Wounded surface roots. Upper crown in severe decline
962	Sugar Maple	18	REMOVED
961	Sugar Maple	14	REMOVED
970	Elm	16	Compaction. Some girdling roots. Good root crown, buttress roots. Solid trunk. Poor-fair crown structure. Included bark. Good bud set.
963	Sugar Maple	14	Severe decline
964	Sugar Maple	21	Compaction. Girdling roots. Damaged surface roots. Solid trunk. Fair crown structure. Deadwood, tip die- back in crown. Small, sparse bud set.
977	Norway Maple	17	Compact soil. Girdling roots. Surface roots. Good trunk. Poorly structured, multi-scaffold attachments. Weak, sparse crown. Weak bud set.

Report Synopsis A

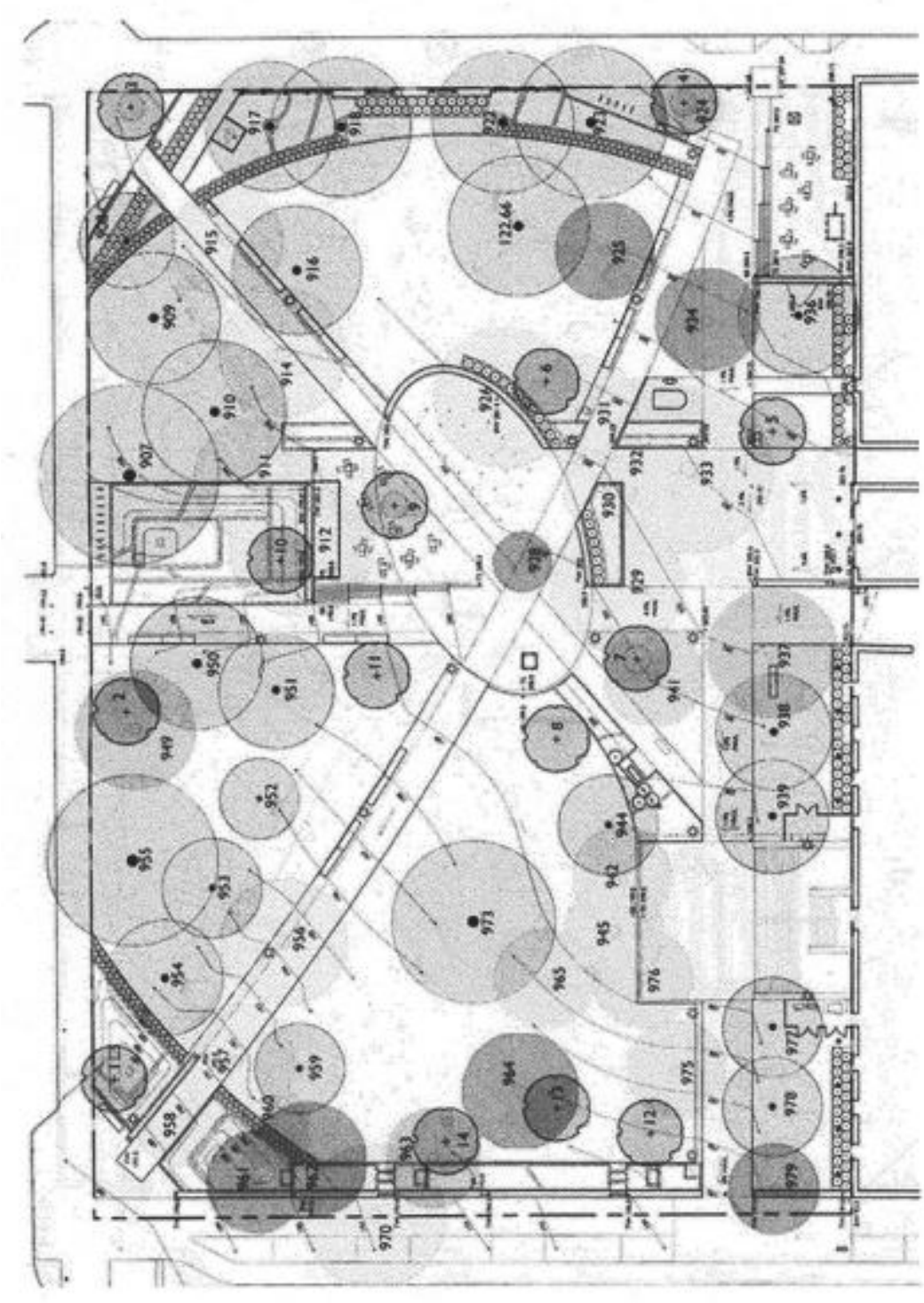
Species	#	% of Trees	ID #	Good	Poor - Fair	Remove	Removed
Zelkova	9	16	917, 918, 922, 923, 931, 952, 953, 954, 958	917, 918, 922, 923, 958	931, 952, 953, 954		
Crabapple	8	14	924, 941, 942, 944, 945, 965, 975, 976	NA	NA	NA	NA
Silver Linden	3	5	908, 911, 914		908, 914	911	
Littleleaf Linden	3	5	909, 915, 916,	909, 915, 916			
Honey Locust	3	5	910, 956, 12266	910, 956, 12266			
Hackberry	1	.7	936	936			
Norway Maple	7	12.5	933, 937, 938, 939, 977, 978, 979		933, 937, 938, 939, 977, 978		979
Sugar Maple	8	14	926, 928, 959, 960, 961, 962, 963, 964			926, 928, 959, 960, 963, 964	961, 962

Red Maple	2	1	929, 932		929, 932		
Silver Maple	3	5	907, 955, 973	907, 955, 973			
Ginkgo	1	.7	930	930			
Red Oak	3	5	912, 951, 957	912, 951, 957			
Green Ash	2	1	949, 950		949, 950		
Elm	1	.7	970	970			
Horse Chestnut	2	1	925, 934				925, 934

Report Synopsis B

Trees Listed	**56**
Not Assessed (Crabapples)	**8** – 924, 941, 942, 944, 945, 965, 975, 976
Good preservation candidates	**21** - 907, 909, 910, 912, 915, 916, 917, 918, 922, 923, 930, 936, 951, 955, 953, 956, 957, 958, 970, 973, 12266
Poor-Fair preservation candidates	**15** - 908, 914, 929, 931, 932, 933, 937, 938 , 939, 949, 950, 952, 954, 977, 978
Recommended for Removal	**7** - 911, 926, 928, 959, 960, 963, 964,
Trees Removed	**5** – 925, 934, 961, 962, 979

Site Map



Site Map provided by City planners

Assumptions and Limiting Conditions

1 Any legal description provided to the consultant / appraiser is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters of legal character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2 It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other government regulations.

3 Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant / appraiser can neither guarantee nor be responsible for accuracy of information provided by others.

4 The consultant / appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

5 Loss or alteration of any part of this report invalidates the entire report.

6 Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior written or verbal consent of the consultant / appraiser.

7 Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant / appraiser--particularly as to value conclusions, identity of the consultant / appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant / appraiser as stated in his qualification.

Certificate of Performance

I, Howard Gaffin, certify that:
I have personally inspected the tree(s) on the property referred to in this report and have stated my findings accurately. The extent of the evaluation and/or appraisal is in the attached report.
I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no bias with respect to the parties involved.
The analysis, opinions and conclusions stated herein are my own and are based on current scientific procedures and facts.
My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.
My analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.
No one provided significant professional assistance to the consultant, except as indicated within the report.

I further certify that I hold the following credentials:

- Registered Consulting Arborist #458
- Board Certified Master Arborist #NE-0363B
- Massachusetts Arborist Association Certified Arborist#1468
- ISA Qualified Tree Risk Assessor

I have been involved with the practice of arboriculture for over 30 years.

Signed 

Date 5/14/2018