



**LEBANON TREE ADVISORY BOARD
APRIL 3, 2023 - 5:30 PM
MEETING ROOM 2, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE**

-
- 1. Call to Order**
 - 2. Approval of Minutes**
 - A. March 6, 2023 Minutes
 - 3. Old Business**
 - A. Tree Ordinance
 - B. Review meeting with Cemetery Sexton
 - C. Review Urban Heat Islands Presentation
 - 4. New Business**
 - A. Tree Master Plan
 - B. Site Plan Review
 - 5. Other Business**
 - 6. Adjournment**

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to LebanonNH.gov/Live where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.

City of Lebanon Tree Ordinance - DRAFT

Purpose

To enhance the quality of life and the present and future health, safety, and welfare of all residents, to enhance property values, and to ensure proper planting and care of trees on public property, the City Council herein delegates the authority and responsibility for managing public trees, establishes practices governing the planting and care of trees on public property, and makes provision for the emergency removal of trees on private property under certain conditions.

Policy Statement

Urban and Street Trees are an important aspect of Lebanon's infrastructure, not mere decorations. Trees, and other greenspace, contribute significantly to the walkability of the city and the character of its neighborhoods. Trees are a critical tool in combating urban heat islands, as they cool their surroundings through transpiration, and provide shade; they will contribute to the health of our residents as extreme heat events become more common.

Trees provide environmental and economic benefits:

- reduce pollutants in the air and water
- provide wind breaks
- provide shelter and food for wildlife and pollinators
- enhance property values
- attract visitors for recreational activities

Goals

The following policies and guidelines focus on maintaining and enhancing Lebanon's valuable public and private trees so they remain a prominent part of the community's identity, culture, and history, while also providing shade, habitat, and beauty. This ordinance will improve care and management of single trees and tree populations in Lebanon. Increased tree density in "urban" Lebanon is our ultimate goal; we aim to attain 40% coverage, similar to that of New York City. This document lays out the benefits of a comprehensive tree-planting plan in identified heat islands, supporting tree planting in areas that directly involve pedestrians, especially vulnerable populations: sidewalks, streets with no sidewalks, bus stops, and parking lots. Saving and creating parks and green spaces in urban Lebanon, even while population increases, will preserve the health of our community.

Commented [1]: again, do we want to focus on street trees and trees in public spaces? that would not cover private parking lots, but site plan regulations do....

Commented [2]: To write a comprehensive "master plan" document, I think we should address private property owners, advise and educate them, even if we can't compel them.

Increased tree inventories ultimately increase the health of residents and visitors, mitigate heat islands and improve the function and health of our environment. Private property owners can find information to encourage planting and maintaining their trees.

Definitions

Arborist

An arborist is a licensed and ISA Certified tree expert.

ANSI standards

Tree industry best practices are kept current in the *ANSI Standard A300* most current edition

DBH, or Diameter at Breast Height

Method of taking a standard measurement of a tree. In inches, 4.5 ft above the ground.

Drip line

A vertical line running through the outermost portion of the outer branch tips of a tree and extending to the ground.

Heritage Tree

A tree with historical significance.

Nuisance Tree or Shrub

A nuisance tree or shrub is one that is considered invasive to the area, such as burning bush, or any tree or shrub whose natural life cycle creates a hazard due to its placement.

Protected Tree

A Protected Tree has been designated as valuable due to certain circumstances, such as trees with historical significance, trees over a certain trunk diameter, or native trees.

Public Tree

Public trees are defined as any tree or woody vegetation being rooted on land owned by the City of Lebanon, including trees on rights-of-way (?), public parks, cemeteries, and other public grounds.

Shade Tree

A tree which can provide shade at maturity. Leb Site Plan Regulations specify "a tree that can attain a height of more than 30 feet."

Street Tree

Any tree or woody vegetation planted within the City Right of Way, whose purpose is to provide greenery and shade along streets.

Setback Tree

Setback trees are defined as public trees planted on private property up to 20 feet from the edge of the right-of-way with the written consent of the property owner.

Tree Advisory Board

The City has previously established a Tree Advisory Board to facilitate the goals of this ordinance (<https://lebanonnh.gov/1531/Tree-Advisory-Board>).

Tree Warden

The City will strive to appoint a volunteer Tree Warden (reference here?) to facilitate the goals of this ordinance.

Urban Forest - Lebanon

All City land that is NOT designated “rural or “conservation” on the Master Plan’s future land use map. (Charlie 11/1)

Urban Forestry

Care and management of single trees and tree populations in urban settings for the purpose of improving the urban environment

Planting

Tree Species to be Planted.

All species planted by the city on public property, as **Street Trees** or in parks or other green spaces, shall be from the approved list for the City of Lebanon ([Appendix A](#)), a copy of which shall be maintained in the Planning Services Department. The planting of nonconforming species can be appealed to the Tree Warden.

Commented [3]: I'm thinking we would have a list for street trees (drought/salt/pollution tolerant) and public trees that would include species for more ideal conditions.

Planting Technique

The base of the City of Lebanon Tree Planting Requirements is the *ANSI A300 Part 6 Standard Practices for Planting and Transplanting*. The Department of Recreation, Arts, and Parks has written information covering best practices for planting and mulching.

Commented [4]: yes, a list would be good. but maybe not IN the ordinance. the ordinance could simply refer to 'the list'

All agents of the city shall be informed of the correct planting technique for trees and shrubs. Anyone planting on behalf of the City of Lebanon should first learn the difference between the root flare and the graft union. Trees shall be planted with the root flare left visible above the ground level.

Commented [5]: something along the lines of the example given in the mass doc: "The [Tree Advisory Board] will maintain an approved list of tree species for planting as public shade trees"

Mulching

If the City or its agents apply mulch around public trees in order to prevent damage from lawn equipment and/or to preserve moisture, they shall follow best practices: applying no more than 3" of mulch to the ground surface under the tree dripline, and taking care to prevent any mulch from touching the tree itself.

Watering

New trees and shrubs should be checked and watered every other day for the first two weeks, taking rain into account, and once a week for the next month. Water bags can be used as an alternative.

Commented [6]: Do we need to add language about watering best practices for tree establishment?

Street Tree Placement

Spacing of Street Trees shall be in accordance with the tree species size. No trees may be planted closer together than the following: **Small Trees, 30 feet; Medium Trees, 40 feet; and Large Trees, 50 feet;** except in special plantings designed or approved by a landscape architect.

Commented [7]: Yes

Commented [8]: are there best practices that could be cited?

Commented [9]: dover document uses 25' as max for a 'small tree'

Distance from Curb and Sidewalk.

The distance trees may be planted from curbs, edges of roads and sidewalks will be in accordance with the tree species size. No trees may be planted closer to any curb or sidewalk than the following: Small Trees, 2 feet; Medium Trees, 3 feet; and Large Trees, 4 feet. The Department of Public Works has established additional setbacks based on speed limits. (list here)

Commented [10]: I think we need to analyze these setbacks. A small tree with a broad reach (say crabapple) would certainly grow into the lanes of travel.

Distance from Street Corners and Fire Hydrants.

No Street Tree shall be planted closer than 30 feet of any street corner measured from the point of nearest intersecting curbs or edges of roads. No Street Tree shall be planted closer than 10 feet of any fire hydrant. Exceptions may be granted only by approval of the City Tree Warden, after the Tree Warden's consultation with the Department of Public Works and the Tree Advisory Board as appropriate.

Commented [11]: DPW mentioned 8' minimum setback from curb. I think we need to clarify if that is based on speed limits or across the board. We might need to create a list for them.

Commented [12]: i agree

Commented [13]: The street trees won't have that setback though.

Commented [14]: can someone remind me where this comes from?

Commented [15]: Plan to talk to cemetery sexton about standards they use.

Commented [16]: and update SPR e.g., is 12" diameter for showing existing trees too high and require more shading areas (drives, roadway, near building etc.

Commented [17]: not sure what this means

Commented [18]: could we separate out the utilities - water, sewer, electric? Or does this just mean electric here?

Sight Distance

Add reference to Site Plan Regulations requirement...

Utilities

No Street Trees other than those species listed as small trees (30' and under) may be planted under or within 10 lateral feet of any overhead utility wire. Medium and large trees shall be planted one-half the listed canopy diameter from any overhead utility line. Small trees shall be planted at least 5 feet, medium trees at least 10 feet, and large trees at least 15 feet from any underground utility line. Refer to (Appendix A) for overhead utilities recommendations.

Tree Pit Size

Where required for street trees, contained tree pits shall offer the soil volume equal to the mature size listed in Appendix A at a depth of 2 feet. Connected tree pits are allowed and subject to spacing guidelines in Appendix A. Exceptions will need to be signed in writing by the Tree Warden.

Other Considerations

Abutting property context i.e., don't plant immediately in front of the most important features of a building, like its main entrance and/or in a high traffic area that would result in a bottleneck or reduced accessibility (e.g., not at the narrowest section of streetscape/sidewalk).

Commented [19]:
<https://dirt.asla.org/2021/02/08/street-trees-are-important-but-need-to-be-well-sited/>

Maintenance

Public Tree Care

The City shall have the right to plant, prune, maintain and remove trees, plants and shrubs within the lines of all streets, alleys, avenues, lanes, squares and public grounds, as may be necessary to insure public safety or to preserve or enhance the symmetry and beauty of such public grounds. The City Tree Board may remove or cause or order to be removed, any tree or

part thereof which is in an unsafe condition or which by reason of its nature is injurious to sewers, electric power lines, gas lines, water lines, or other public improvements, or is affected with any injurious fungus, insect or other pest.

The City shall have the right to prune any tree or shrub on private property when it interferes with the proper spread of light along the street from a street light or interferes with visibility of any traffic control device or sign, or impedes pedestrian traffic on sidewalks or interferes with winter sidewalk clearing by plow.

Tree Topping

It shall be unlawful as a normal practice for any person, firm, or city department to top any Street Tree, Park Tree, or other tree on public property. Topping is defined as the severe cutting back of limbs to stubs larger than three inches in diameter within the tree's crown to such a degree so as to remove the normal canopy and disfigure the tree. Trees severely damaged by storms or other causes, or certain trees under utility wires or other obstructions where other pruning practices are impractical may be exempted from this ordinance at the determination of the City Tree Board.

Cutting/trimming of limbs

No person may cut or trim any publicly owned trees without the permission of the tree board or Tree Warden.

Removal

Any tree that falls into the City right of way from private property shall have those parts on public land removed by DPW. The remainder of the tree is the responsibility of the owner.

The City shall have the right to cause the removal of any dead or diseased trees on private property within the city, when such trees constitute a hazard to life and property, or harbor insects or disease which constitute a potential threat to other trees within the city. The City Tree Board will notify in writing the owners of such trees. Removal shall be done by said owners at their own expense within sixty days after the date of service of notice. In the event of failure of owners to comply with such provisions, the City shall have the authority to remove such trees and charge the cost of removal on the owners property tax notice.

Inventory Maintenance

An ongoing tree inventory of species, size (DBH), location and condition, shall be created and kept up to date within City software, so that maintenance schedules can be created, and trees vulnerable to new disease threats can be monitored quickly. Tree inventories will aid in identifying heat islands - areas with significantly fewer trees.

Training

All volunteers/personnel with a role in the design, installation and maintenance of street trees shall be provided with training which at minimum comprises the planting instructions contained

Commented [20]: I see language about topping and nuisance trees but not about cutting/trimming of limbs etc. in general--as in limitations or prohibitions of such activity other than by the City/assigned warden for street trees/trees in ROW. In other words, clarify not just what the City can/can't do but what others can/can't do. Might be worth looking at MA's laws
<https://www.mass.gov/doc/protecting-our-community-trees/download>

Commented [21]: Added heading for us to populate

Commented [22]: Sounds like this should be at the City's expense, not Owner.

Commented [23]: Check if DPW does this already.

in this ordinance, to be provided by AJ Dupere and associates (or a local tree professional if that is not possible) on a yearly basis, or more often if required by staff hiring.

Nuisance Tree Removal

Any **invasive species on the list**, see Appendix A (which is to be maintained by the tree warden and/or the tree advisory board), that is found on city property shall be considered for removal. Proper disposal procedures shall be followed for plants whose cuttings can still propagate. For example, freshly cut burning bush or knotweed may not be put in the yard waste stream of the City landfill.

Any healthy tree or shrub can be brought before the Tree Warden or Tree Board if a resident considers it a nuisance and wants to request its removal. The default result shall be to retain the tree unless the complainant can persuade them of the extent of the nuisance (ex. acorns on the skate park).

Setback Trees

A setback tree program shall be created and funded, wherein The Tree Advisory Board shall look for opportunities to encourage planting on private property where trees and shrubs would provide shade and cooling to public streets and sidewalks, in locations where street trees are not possible. The TAB shall, through a partnership with a non-profit, be able to offer funding or labor/maintenance to private property owners to encourage participation. The property owners may be required to commit to maintenance for a certain length of time. Details of this program and its agreements shall be recorded in a document outside of this ordinance.

General Provisions

Public Accountability

It shall be a violation of the provisions of this ordinance for any person to abuse, mutilate, or destroy any tree on public property or to attach any wire, rope (except for supporting a broken tree or young sapling), sign, poster, or allow any gaseous, liquid, or solid substance which is harmful to such trees to come in contact with their roots, trunks, or leaves.

Construction in Vicinity of City Trees.

Based on https://www.cityofportsmouth.com/sites/default/files/2020-09/TreeProtectionPlan_0.pdf

Any construction within **10 lateral feet** of Public Trees requires consultation with the City Tree Warden who may provide specific written recommendations for additional protection of trees, based on **American National Standards Institute – A300** or the current version available at the Planning Department.

Commented [24]: Do we want to add a section about the process for removals i.e. public posting (10 day window) for any public tree?

Commented [25]: i think this is a good idea. it enables public oversight of tree removal decisions being made by the city.

Commented [26]: Add reference to list <https://www.agriculture.nh.gov/divisions/plant-industry/trees-shrubs-vines.htm>. Add exception if it is in a highly maintained location (Colburn Park/Parking Lot)?

Commented [27]: No exceptions offered, IMO, but probably we say somewhere that anything in this ordinance can be brought to the tree warden to ask for waiver.

Commented [28]: OK. I guess "shall be considered for removal" implies there is a discussion anyway. When I first read this I thought it was saying the City would need to cut down every Norway maple in Colburn Park.

Commented [29]: ok i see what you mean.

Commented [30]: Should this be based on dripline of tree or better enforced as a set number?

Commented [31]: I think a proportion is better than a set number.

Commented [32]: interesting. not familiar with this. seems like we need to buy it to read it?

Arborist and Bond

Before securing a contract with the City for arboricultural services, a contractor must have possession of liability insurance in the minimum amounts of \$1,000,000 aggregate, general liability per occurrence indemnifying the City or any person injured or damage resulting from the pursuit of such endeavors as herein described. All tree work performed on Public Trees must conform to the most recent ANSI A300 Standards.

Any licensed arborist paid for consultation with the Department of Public Works has authority equal to the city **Tree Warden** as described in this ordinance, in the event that the Tree Warden position is unoccupied. Any licensed arborist who volunteers their services to the City via the DPW or the Department of Recreation, Arts and Parks can be given the authority to make similar decisions as described. Trail rangers and forest wardens engaged by the city to maintain forested areas of Lebanon are not required to consult with the Tree Warden, but are welcome to.

Commented [33]: Is there a way to limit personal liability for the Tree Warden in the ordinance language? That could be a big hindrance to a volunteer or part time position.

Commented [34]: We can get language from Paul or other city person where this has precedent.

Penalties

Any person violating any provision of this ordinance shall be subject to a fine of **\$50.00** for each offense; and a separate offense shall be deemed committed on each day on which a violation occurs or continues.

Commented [35]: I made this \$50 instead of \$500, based on the leniency of the City historically, and because a multi-day offense will add up quickly.

Severability

If any section, paragraph or part of this by-law is for any reason declared invalid or unconstitutional by any court, every other section, paragraph and part shall continue in full force.

Short list of Tree Ordinance References

An awesome guide, even if it's from out of state:

- <https://www.mass.gov/doc/tree-bylaw-and-ordinance-guide/download>

A how-to from the Arbor Day Organization:

- <https://www.arborday.org/trees/bulletins/coordinators/resources/pdfs/009.pdf>

Out-of-state or generic examples:

- <https://www.portland.gov/code/11>
- <https://www.arborday.org/programs/treecityusa/graphics/sample-tree-ordinance.pdf>
- San Francisco Guidelines for Planting Street Trees (Reiskin, Edward D. "Regulating The Planting, Maintenance, Or Removal Of Trees And Landscape Material On Public Sidewalk Areas And Superceding." Department of Public Works, City & County of San Francisco, CA: 2010.) <https://nacto.org/references/san-francisco-department-of-public-works-2/>

Some examples from NH/New England:

- https://www.somersworth.com/sites/g/files/vyhli1226/f/uploads/chapter_33-tree_ordinance.pdf
- [Lawrence, MA Green Streets Program](#)
- Portsmouth NH:
 - https://www.cityofportsmouth.com/sites/default/files/2020-09/TreeProtectionPlan_0.pdf
 - <https://www.cityofportsmouth.com/sites/default/files/2019-03/City%20of%20Portsmouth%20Tree%20Planting%20Requirements%202017.pdf>
 - https://www.cityofportsmouth.com/sites/default/files/2020-01/Tree%20Planting%20Detail_0.pdf

Commented [36]: check out the nutrition label and cross-section "benefits" images <https://www.pewtrusts.org/-/media/assets/external-sites/health-impact-project/gwl-green-streets-hia-report-final-with-appendices.pdf>

Other Notes:

<https://lebanonnh.gov/DocumentCenter/View/2084/2017-02-07-Complete-Streets-Policy-PDF->
measure of success: number of street trees planted

checking Zoning Ordinance, Subdivision Regulations, and Site Plan Review Regulations

Perhaps register for <https://livingarchitectureacademy.com/p/street-trees-and-community-wellbeing>

City of Lebanon Policy Statement on Design and Construction Standards for Streetscapes (June 27, 2012)

<https://www.arborday.org/trees/bulletins/coordinators/resources/pdfs/009.pdf> :

"there should be an appended *standards and specifications document*. This presents detailed guidelines for arboricultural practices such as planting and pruning, tree care, removal, landscaping, contracting, and similar activities that are important in any community forestry program. It is recommended that the standards and specifications section be a separate but companion part of a municipal ordinance. This is because including such a large amount of detail directly in the ordinance itself is cumbersome and difficult to change."

Setback Trees on private property

from <https://www.mass.gov/doc/tree-by-law-and-ordinance-guide/download>

One of the above references advises that the Tree List be kept as a separate document from the ordinance, so that it can more easily be kept current. Find the updated content for these lists at [Where to plant next](#)

APPENDIX A

See <https://lebanonnh.gov/DocumentCenter/View/877/Site-Plan-Regulations-PDF> page 44. These aren't arranged by size yet.

Commented [37]: once this is complete, update SPR

Shade Trees for Dusty, Salty Locations

Acer ginnala	Amur maple
Crataegus spp.	Hawthorne
Gleditsia triacanthos	Honey locust
Tilia cordata	'Greenspire' Greenspire linden
Tilia cordata	Littleleaf linden

Commented [38]: This species has invasive tendencies

Evergreen Trees for Dusty, Salty Locations

Pinus nigra	Austrian pine
Pinus resinosa	Red pine
Pinus sylvestris	Scotch pine

Shrubs for Dusty, Salty Locations

Caragan arborescens	Siberian peashrub
Forsythia spp.	Forsythia
Ilex verticillata	Winterberry
Potentilla spp.	Potentilla
Rosa rugosa	Rugosa rose
Spirea nipponica var.	'Snowmound' & 'van Houttei' spirea
Syringa	Dwarf Korean lilac
Syringa patula	'Miss Kim' lilac
Syringa vulgaris	Common lilac

Native plant species are preferred.

See list at UNH Cooperative Extension
https://extension.unh.edu/sites/default/files/migrated_unmanaged_files/Resource000980_Rep1106.pdf

Invasive exotic plants cannot be used to satisfy landscaping requirements. Such exotic plants include, but are not limited to, the following species:

Acer plantanoides	Norway maple
Aedopodium podagraria	Bishopsweed, goutweed
Ailanthus altissima	Tree-of-heaven
Ampelopsis brevipedunculata	Porcelain berry
Berberis thunbergii	Japanese barberry

Berberis vulgaris	European (or common) barberry
Celastrus orbiculatus	Asian bittersweet
Coronilla varia	Crown vetch
Cytisus scoparius	Scotch broom
Elaeagnus angustifolia	Russian olive
Elaeagnus umbellata	Autumn olive
Euonymus alata	Burning bush
Euonymus fortunei	Climbing euonymus, wintercreeper
Hedera helix	English ivy
Lonicera japonica	Japanese honeysuckle
Lonicera maackii	Amur honeysuckle
Lonicera morrowii	Morrow's honeysuckle
Lythrum salicaria	Purple loosestrife
Phragmites	Common reed
Rhamnus cathartica	Common buckthorn, tallhedge
Rhamnus frangula	European buckthorn
Rosa multiflora	Multiflora rose, baby rose

Planting Criteria/Master Plan

- 1) Shade critical pedestrian connections (x% of route goal?)
 - a) Shade bus stops
 - b) Shade around main centers and arterials (need to define)
 - c) Shade routes to schools
- 2) Provide shade/beauty for parks, playgrounds, and sports fields (x% goal or create a shaded area @ each facility?).
 - a) Colburn & Other Parks - Rec Department
 - b) Playgrounds/Sports Fields - Rec Department + Schools
 - c) Advocate for Cemeteries?
- 3) Plant Trees to Shade hardscapes/increase overall canopy cover in urban Lebanon to (x%?)
 - a) Site Plan Regulations
 - i) Updates to language
 - ii) Review assistance to planning board – decide on best vehicle moving forward.
 - iii) Enforcement mechanisms
 - iv) Shade parking lot pavement.
 - b) City Development & Streetscape Projects
 - i) Review/input/advocate
 - ii) Advocate for trees as part of green infrastructure (stormwater mgmt.)
 - c) Landowners
 - i) Education/Outreach on planting goals
 - ii) Set up Green Streets Planting Program (matching funds or something)
 - iii) Advocate for specific projects and help coordinate resources.
- 4) Maintain the trees we already have for public benefit
 - a) Treatments for insect disease
 - b) Pruning/Removals for safety and tree health
 - c) Inventory for understanding and management
 - d) Education on tree environmental services
 - e) Enforcement of Site Plan requirements in perpetuity
- 5) Riparian Plantings
 - a) Are riparian buffers part of our charge or better via conservation commission efforts?

Location	date added	rationale
Lebanon Towers, Hanover St, Lebanon	9-12-2022	site owned by Lebanon Housing
Lucky's Corner, Lebanon	9-18-22	pavement, no trees, prominent
Rte 120 behind Omer& Bob's etc.	9-18-22	Unappealing entrance to the City
Miracle Mile.	9-18-22	Unappealing entrance to the City
Main St, West Lebanon	9-18-22	Improve urban experience
The parking lots behind city hall	9-22-22	a lot of heat here
The parking lot at LHS	9-22-22	trees
Front of Split Ball lawn on Miracle Mile	9-22-22	big, open space, not public
Short cut between Target and Penny's	9-22-22	draw pedestrians to cross over
Parking lot in front of Pennys	9-22-22	replaced with a park (ha, ha)
School Street Cemetery	03-06-23	deemed "dangerous"
Sacred Heart Cemetery	03-06-23	along street
Mt. Lebanon cemetery	03-21-23	cemeteries are hot spots
Greenwood cemetery	03-21-23	cemeteries are hot spots
The connection btw MRG & Rail Trail	3/7/23	
Route 4 - walk from Dairy Twirl to Fire Hal	3/7/23	High volume pedestrian traffic
Sidewalk corner in front of Carter House	3/18/23	just enough room for a big tree
Corner of Lucky's parking lot on Campbell	3/18/23	See #3
Lebanon School Grounds	3/19/23	planted when built. Lost a few in
Parkhurst St at Senior Center	3/19/23	
Bus stop in front of Auto Zone on miracle n	3/21/2023	the street has a new shelter
Romano Circle	3/21/2023	Leb Housing Authority
Bus stop northbound heater road/old etna	3/21/2023	hospital

steps so far

March 2023 Update: At last meeting, Ditha planned to contact property recently, and would love a tree but is worried about the sight lines

Perhaps trees are in proposal to improve Main Street.

possible green space in the future

who should we talk to? sau?

And they have some nice large shade trees already.

Being discussed as part of TIF re-development.

potentially impacted by new round-about design @ disfunction junction.

Setback Criteria		
Minimum* Distance from:	Setback Distance	Notes
center of tree to curb	2'6"	This would allow tree planting in a 5' median strip.
edge of State Highway	?	Reference link to guidelines
clearance height of limbs in lane of travel	14'	Average for large delivery trucks
clearance height of limbs in sidewalks	9'	limbs out of reach of overhanging
edge of Scenic Roads	1'	Must be into roadway? Check ordinance
Fire hydrants	5'	
Driveways	5'	consider 8' for commercial/alleyways?
Utility poles	15'	This should vary by height of tree species
Underground water/sewer pipes	5'	
another street tree	20'-30'	we want overlapping canopy
street intersections (sight distance)	TBD	to look at different situations around Lebanon to see

*minimum recommended distances are adequate for most situations but should not replace the opinions of professionals

Soil Volume

shade trees	500-1000 SQ FT	2 CU FT of soil per 1 SQ FT of Crown Projection
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References

https://nacto.org/docs/usdg/street_trees_and_intersection_safety_macdonald.pdf

sional engineers, arborists or landscape architects.

<http://www.hort.cornell.edu/uhi/research/articles/JArb17%286%29.pdf><https://www.deeproot.com/blog/b>

[log-entries/how-much-soil-do-you-need-to-grow-a-big-tree-2/](#)

Common Name	Botanical Name	Cold Hardiness Zone	Native to New England
Hackberry	<i>Celtis occidentalis</i>	3	Y
Thornless Honeylocust	<i>Gleditsia triacanthos</i> var. <i>inermis</i>	4	Y
Kentucky Coffeetree	<i>Gymnocladus dioica</i> 'Espresso'	4	Y
Serviceberry	<i>Amelanchier canadensis</i>	3	Y
Sycamore	<i>Platanus occidentalis</i>	4	Y
London Planetree	<i>Platanus x acerifolia</i>	5	
Yellowwood	<i>Cladrastis kentukea</i>	4	Y
American Linden	<i>Tilia americana</i>	4	Y
Little Leaf Linden	<i>Tilia cordata</i>	3	
Crabapple	<i>Malus</i> spp.	4	
Hawthorn	<i>Crataegus</i> spp.	4	Some
Bur Oak	<i>Quercus macrocarpa</i>	3	Y
Swamp White Oak	<i>Quercus bicolor</i>	4	Y
Red Oak	<i>Quercus rubra</i>	3	Y
Pin Oak	<i>Quercus palustris</i>	4	Y
Ginkgo	<i>Ginkgo biloba</i>	4	
Blackgum	<i>Nyssa sylvatica</i>	4	Y
Elm	<i>Ulmus americana</i> 'Valley Forge'	4	Y
Silver Maple*	<i>Acer saccharinum</i>	3	Y
Red Maple	<i>Acer rubrum</i>	3	Y
Sugar Maple	<i>Acer saccharum</i>	3	Y
American Hornbeam	<i>Carpinus caroliniana</i>	3	Y
Yellow Birch	<i>Betula alleghaniensis</i>	3	Y
River Birch	<i>Betula nigra</i>	4	Y
Tulip Poplar	<i>Liriodendron tulipifera</i>	4	Y
Paper Birch	<i>Betula papyrifera</i>	2	
Redbud	<i>Cercis canadensis</i> 'MN Strain'	5	Y
Cornelian Cherry	<i>Cornus mas</i>	5	
Japanese Tree Lilac**	<i>Syringa reticulata</i>	3	
Japanese Zelkova	<i>Zelkova serrata</i>	5	
Gray Birch	<i>Betula populifolia</i>	3	Y
Catalpa	<i>Catalpa speciosa</i>	4	
Callery Pear**	<i>Pyrus calleryana</i>	5	
Black Willow	<i>Salix nigra</i>	4	Y

*Maples species are currently over abundant in Lebanon. Planted should be limited to encourage species diversity.

**Has exhibited invasive seeding tendencies and is listed as invasive in some places. Do not plant anywhere.

Tree (<30'	Tree	Wildlif	Notes
	Y	Y	
	Y		overplanted, but not in Lebanon.
	Y		messy
Y	Y	Y	Some drought tolerance.
			Not as tolerant of drought as London Plane.
	Y		
		Y	
	Y	Y	
Y	Y	Y	trees
Y	Y	Y	crabapples.
		Y	Can be difficult to transplant.
		Y	
	Y	Y	
	Y	Y	problem as a street tree.
	Y		Tough tree. Use fruitless Male varieties as fruit is very odorous
	Y	Y	Tough tree. Great fall color. Somewhat difficult to transplant.
	Y		(DED). Should not be widely planted as they still are succumbing
		Y	For large spaces only.
		Y	
		Y	
Y			
			Commonly multi-stem. 'Heritage' is a common cultivar.
		Y	
Y			to broken branches.
Y	Y		
Y	Y		Tough tree.
	Y		Tough tree. Similar arching form to Elm
			be weak wooded.
		Y	
	Y		Tough tree. Use cultivars with strong branch angles.
		Y	with invasive roots.

versity and resilience from pests. Overplanting of Elms on American streets led to drastic change
near natural areas.

Prohibited Species

Common Name

Norway maple
Bishopsweed, goutweed
Tree-of-heaven
Porcelain berry
Japanese barberry
European (or common) barberry
Asian bittersweet
Crown vetch
Scotch broom
Russian olive
Autumn olive
Burning bush
Wintercreeper
English ivy
Japanese honeysuckle
Amur honeysuckle
Morrow's honeysuckle
Purple loosestrife
Common reed
Common buckthorn
European buckthorn
Multiflora rose

Botanical Name

Acer plantanoides
Aedopodium podagraria
Ailanthus altissima
Ampelopsis brevipedunculata
Berberis thunbergii
Berberis vulgaris
Celastrus orbiculatus
Coronilla varia
Cytisus scoparius
Elaeagnus angustifolia
Elaeagnus umbellata
Euonymus alata
Euonymus fortunei
Hedera helix
Lonicera japonica
Lonicera maackii
Lonicera morrowii
Lythrum salicaria
Phragmites
Rhamnus cathartica
Rhamnus frangula
Rosa multiflora