



To: Programs & Services Committee
From: Councilors Malakie & Norton
Date: August 5, 2022
RE: Explanation of Tree Ordinance items

In this week's docket you will find three items related to strengthening Newton's current tree ordinance:

- 1) A docket item (#411-22) offered by Councilors Malakie, Norton, Leary, Ryan, Wright, Lucas, Humphrey, Bowman, Markiewicz, Oliver, Downs, Laredo, and Grossman
- 2) Language for a docket item offered by Mayor Fuller
- 3) Language for a temporary moratorium on tree removal (#405-22, separate from item #1 above) offered by Councilors Malakie, Norton, Lucas, Humphrey, and Oliver

Attached to this memo:

- 4) A two-page document titled, "Newton Needs a Revision to its Tree Ordinance: Here's Why," with links to the pertinent scientific data behind the Council's ordinance.
- 5) Draft: Tree Removal "Moratorium"
- 6) A letter from Quinton Zondervan who led the Cambridge City Council's successful 2021 effort to enact tree protection reforms.

Why a New Tree Ordinance?

Newton is losing tree canopy.

- Newton by 2014 had lost half the street trees it had in 1970.
- Over 70% of remaining street trees are in "fair" or "poor" condition (Open Space and Recreation Plan, 2020-2027 Update, Ch. 4, pp. 59-60).

Inequity in tree canopy distribution.

- Parts of Newton score only 46 (out of 100) on tree equity. We need to plant 52,333 new trees for all of Newton's villages to score at least 75 (American Forests.org, <https://www.treeequityscore.org/reports/place/newton-ma/>).
- This map shows which areas of the city score worse:
 - <https://www.treeequityscore.org/map/#11/42.3254/-71.2136>

Health/Ecological Benefits of Trees.

- Climate change means more heat, more air and water pollution, more flooding
- Trees cool the air, clean the air, improve water quality into the Charles, mitigate flooding, serve as habitat for birds/animals, and lower energy bills
- Mature trees are much better at sequestering carbon than saplings
- Humans gain mental health benefits from being near trees

Too Easy to Destroy Healthy Trees

- Current lax rules around tree removal do not take into account the science based public benefits of trees, nor the harm to the public and the environment in destroying them
- We have some level of protection for public trees, but very little for trees on private property

We appreciate Mayor Fuller expressing her agreement with us that the current tree ordinance needs strengthening, by virtue of her recently docketed item. The one filed by councilors goes further, however, and contains crucial provisions to protect our tree canopy. We look forward to the discussion in your committee.

Docket #405-22 & #411-22

Newton Needs a Revision to its Tree Ordinance: Here's Why

Over last 50 years, Newton has lost 50% of its street tree canopy ([Open Space and Recreation Plan, 2020-2027, Ch 4.](#), p. 60).¹ This loss is attributed to disease, gas leaks, storm damage, and removal for development. The loss of trees on private lots is at least as great, but the city does not keep data on private-land tree loss. However, we know developers often clear cut lots, even residential lots on residential streets, to expedite movement of equipment. The short window of construction should be measured against the thirty years it takes for a tree to reach maturity.

Even with Urban Forestry's current tree planting, Newton continues to lose approximately 1,000 street trees per year.

- In 2014, the Newton City Council enacted a Tree Preservation Ordinance (A-38) to protect mature trees and replace removal of healthy trees, but it has proven insufficient.
- Right now, there are no protections on trees smaller than 8" in diameter (DBH), and on the many exempt lots in the city, there are no protections for any trees. There are also no protections for any trees due to damage caused by activities on abutting lots. For larger trees on non-exempt lots, a fee can be paid into Newton's tree fund or trees with an equivalent number of caliper inches may be planted. But a young tree and mature tree do not provide equal ecosystem benefits (Marc Welch, public presentation, April 21, 2022).²
 - A mature tree sequesters 2600 lbs of carbon vs. a young tree's 60 lbs.
 - A mature tree conserves 1300 kWh per year, a young tree, 150 kWh per year
 - A young tree uses more water for early growth than it saves in stormwater drainage for the first 3 years after planting

Loss of mature trees has critical effects on the climate and public health.

- Mature trees provide [significant carbon capture and energy savings](#)³
- Provide [stormwater mitigation and prevent flooding](#)⁴
- Save money on asphalt resurfacing, street with 20% shade saves the city 60% on resurfacing costs over 30 years ([Center for Urban Forest Research](#), p. 3)⁵
- Clean the air of pollutants
- Prevent heat islands
- Slow vehicular traffic and act as a sound barrier
- Protect against topsoil erosion
- Beautify neighborhoods and increase property values

Newton needs to take action.

Such drastic reductions in Newton's tree canopy mean even more stringent rollbacks in

¹ <https://www.newtonma.gov/home/showpublisheddocument/72128/637616961801770000>

² https://youtu.be/MWUNFXxSK_w; see especially 31:15 – 33:40.

³ <https://www.fs.usda.gov/ccrc/topics/urban-forests>

⁴ <https://www.cdc.gov/climateandhealth/effects/default.htm>

⁵ https://www.fs.fed.us/psw/topics/urban_forestry/products/cufr_673_WhyShadeStreets_10-06.pdf

greenhouse gas emissions will be necessary to achieve the carbon neutrality agreed on in [the City's Climate Action Plan](#), despite ongoing tree planting (pp. 40, 47, 64, 67, 68).⁶

- Climate change constitutes a public-health emergency, [according to the American Medical Association, the American Public Health Association, and over 70 major medical organizations](#).⁷
- Climate impacts public health via air pollution; allergens; diseases carried by mosquitos, ticks, and rodents; temperature; flooding; and more (according to [the CDC](#)).⁸
- The window to prevent global warming from exceeding 1.5 degrees Celsius closes in 2030 ([IPCC report](#)).⁹
- We need to *save* mature trees in our urban canopy because they provide [significant carbon capture and energy savings](#)¹⁰
 - Planting new trees is inadequate because it takes decades for new trees to provide the same ecosystem services.
 - See the 10-minute presentation (starting at 24:02) by Newton City Forester Marc Welch in this 2022 [webinar on Trees as a Public Good](#).¹¹

These public-health and climate effects are environmental justice issues, even in Newton.

Compare [Tree Equity Scores](#)¹² for different parts of Newton:

- Nonantum: 53/100
- Newtonville: 59/100
- Auburndale, Newton Upper Falls & Newton Corner: 76/100
- Waban & Chestnut Hill: 100/100

How does the ordinance need to change?

- A protected tree's width at breast height (DBH) must be 6" instead of 8".
- There need to be no lots exempted from tree protection.
- There need to be protections for trees abutting lots with damaging activities (such as demolition or construction).
- Protections must be enacted for appropriate species of replacement trees to be planted with oversight of first three years' growth.
- Appeals for removal of healthy mature trees must be restricted to reasonable safety and wellbeing provisions.
- There must be better guidelines to retain perimeter trees during construction.
- Replacement, whether planting new trees or paying a compensation fee, should reflect the current science showing the need for a higher ratio of replacement inches and showing the expensive energy, infrastructure, public health and other costs to the City.

⁶ <https://www.newtonma.gov/home/showpublisheddocument/39649/637335412898900000>

⁷ <https://climatehealthaction.org/cta/climate-health-equity-policy/>

⁸ <https://www.cdc.gov/climateandhealth/effects/default.htm>

⁹ <https://www.climaterealityproject.org/blog/2030-or-bust-5-key-takeaways-ipcc-report>

¹⁰ <https://www.fs.usda.gov/ccrc/topics/urban-forests>

¹¹ https://youtu.be/MWUNFXxSK_w

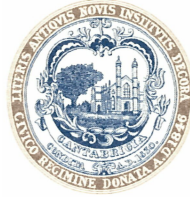
¹² <https://treeequityscore.org/>

DRAFT: Tree Removal “Moratorium”

INSERT after Sec. 21-90 the following section:

Sec. 21-91 Temporary Limitation of Tree Removals

- (a) Effective [date], no tree having a diameter of six (6) inches or greater shall be removed on land identified in Sec. 21-82(a) nor on any exempt lot for a period of one year unless sooner repealed or amended by the City Council. This limitation shall not apply to tree removal permits issued prior to its effective date, nor to removal of any tree determined by the tree warden to be dead, diseased, in danger of falling, dangerously close to existing structures, causing disruption of public utility service, causing drainage problems or passage problems upon rights-of-way, or posing a threat to pedestrian or vehicular safety. Documentation shall be provided by a Certified Arborist utilizing industry-approved Risk Tree Evaluation method along with any additional forms or documentation required by the Tree Warden. The procedures of Sec. 21-84 shall apply to emergency removal of hazardous trees.
- (b) Regulations for projects with special permits remain in effect.
- (c) Any violation of the provisions of Sec. 21-91 (a) shall be subject to the penalties set forth in Sec. 21-89 and shall be subject to the provisions of Sec. 21-85 and Sec. 21-86.



#405-22/411-22

CAMBRIDGE CITY COUNCIL

Quinton Y. Zondervan
City Councillor

To the Honorable, the City Council of Newton:

As you consider updating your tree protection ordinance, I offer you some of my thoughts, having helped successfully lead such an effort in Cambridge, in the hope that you find this information helpful.

Starting in 2016, community members determined that our tree canopy in Cambridge was shrinking. Street trees, particularly newly planted saplings, were being visibly impacted by what was then a severe drought. At the same time, people were noticing lots of trees being cut down on private properties. Cambridge already had a tree protection ordinance in place at that time, which regulated large projects, but it did not prevent any trees from being cut down. It only required developers of large projects to replace trees that were removed, or pay into a tree replacement fund.

In early 2019 the problem became so dire that the Council amended the ordinance to require a permit for the removal of any tree over 8" in diameter (outside of large projects) and that no such permits would be issued, except in emergency situations, for the next year, to give the Council time to make permanent modifications to the ordinance. A key consideration in creating this so-called temporary "moratorium" on tree cutting is that we did not want to create a situation where people would start cutting down trees in anticipation of future restrictions.

The regulations for large projects remained in effect, and so the moratorium did not interfere with approved or planned large developments in the city. Of course in 2020 the COVID pandemic hit and we ended up extending the moratorium twice, and adopting more permanent amendments to the ordinance in 2021. During that time the Urban Forest Master Plan was completed, which also helped inform the final ordinance, as well as tree planting and management practices overall.

Trees are essential infrastructure and I wish you much success in your efforts to protect them for the health and safety of your residents.

Sincerely,

Quinton Zondervan
Cambridge City Councillor