



Street Tree Planting Standards

City of Buffalo



Department of Public Works, Parks and Streets
Division of Parks and Recreation

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Table of Contents

Foreword.....3

Standards and Spacing.....5

Planting Detail.....7

Permit Information.....8

City of Buffalo Tree Planting Specifications (03/11).....Appendix A

Approved Species List (03/11).....Appendix B

Foreword

Enacted in 1974 (and amended in 1997) Chapter 467 of Buffalo's City Code begins with:

"The Common Council determines that trees are an exquisite and valuable resource and that Buffalo's urban forest needs nurturance and the protection of the law."

Section 467.1 A states:

"Buffalo is aiming once again to become known as the "City of Trees," with beautiful, mature trees the norm in our city rather than the exception. For that reason, the preservation of existing tree assets and the early planting of new and/or additional trees on site is an important part of development."

The City of Buffalo has a number of variables that make the selection of trees critical and at times difficult. It is important to take into consideration the specific challenges of each proposed planting site when deciding exactly where and what to plant.

First and foremost among these variables is the local climate. Buffalo is in zone 5b of the USDA Plant Hardiness Zone Map, meaning that the average annual minimum temperature is -10 to -15 degrees Fahrenheit. The city's proximity to Lake Erie is beneficial from a temperature standpoint in that the Lake



Buffalo's climate brings significant snowfall and occasional ice storms, which can damage trees. Proper selection of tree species that can withstand such conditions is crucial.

helps to moderate temperature extremes in both winter and summer. But moisture from the lake also creates very high volumes of snow and at times ice in the winter. The weight of the snow and ice itself can cause significant structural damage to trees. Therefore, when choosing tree species for planting, it is important to choose species and varieties that characteristically have strong wood and branching patterns that do not result in narrow branch angles with included bark. Species that hold onto foliage late into the fall should also be avoided since snow and ice will accumulate on leaves causing tremendous loads.

A serious problem for trees that is created by the abundance of snow is the high volume of salt used each winter on Buffalo streets. Extremely high concentrations of salt accumulate adjacent to streets making a very difficult environment for trees to survive. It is very important to choose salt resistant species and varieties, depending on proximity to street and size of available growing space.

Many of Buffalo's streets have narrow tree lawns (the space between sidewalks and curbs). Other streets, particularly in commercial districts do not have tree lawns, but require cutouts in concrete sidewalks to create planting sites. These narrow, small soil volume sites will not accommodate large-growing trees. Large trees in inadequate spaces ultimately result in damage to both the adjacent hardscape and to the tree. Trees that are planted in concrete cutouts in sidewalks are also subject to higher soil pH conditions due to the gradual accumulation of concrete dust and alkaline runoff.

In addition to all of the climate and site-specific conditions that must be factored into the choice of street trees, species diversity must also be considered. Buffalo has two genera that are over-represented in Buffalo's urban forest. The genus *Acer* (maple) comprises nearly half (47%) of the street trees, and *Tilia* (linden) makes up 21% of the population. To avoid catastrophic losses of trees from a species-specific insect or disease (such as Dutch elm disease) it is important to diversify the urban forest.



Street trees surrounded by concrete and asphalt are subject to temperature extremes, toxic runoff, alkaline soils, salt sprays and compacted soils.

These factors make it impractical to exclusively select native species for street side plantings. In order to develop both a healthy and diverse urban forest, native species can and should be used when appropriate, but non-native trees must be considered as well.

In summary, when choosing tree species to plant along Buffalo streets, the following factors should be considered:

- Climate – Look for cold hardy varieties in exposed areas.
- Structure – Plant trees with strong wood and wide branch attachments that can accommodate heavy snow and ice loading. Avoid species with late leaf drop.
- Salt tolerance – Select trees that will survive salt concentrations in soil and salt spray.
- Limited space – Install trees that will fit into the available space when mature. Consider space for roots, crown spread, and crown height.
- pH – Remember that spaces surrounded by concrete can have elevated pH, and alkaline tolerant species may be needed.
- Species diversity – Limit species that are currently over-planted (maples and lindens), and avoid planting genera that are targets of severe insect pests (such as ash and Emerald Ash Borer).

Appendix B presents a list of approved street tree species for Buffalo and additional comments.

Standards and Spacing

A DPW TREE WORK PERMIT IS REQUIRED TO PLANT TREES WITHIN CITY RIGHT OF WAY

Spacing requirements for street trees (see spacing detail next page):

- 30' minimum spacing between trees.
- 15' minimum spacing from utility/light poles, fire hydrants, utility boxes.
- 45' minimum distance from corner with traffic signal present.
- 35' minimum distance from all other corners.
- 5' minimum distance from driveway curb cuts
- 3' minimum distance from underground utility lines, water access covers, etc.

Site requirements for street trees:

- Tree pits should have roughly 35 square feet of surface such as 6'x6', 5'x7' or 4'x8', unless structural soil is used under surrounding paved area.
- Structural soil is only to be used beneath paved surfaces, topsoil to be used inside lawn area or tree pits. (see City Spec Book for topsoil and structural soil specifications)
- No raised planters, trees to be planted at grade.
- Do not plant trees directly in front of building entrances.
- No tree grates to be installed inside tree pits.
- Plant only small ornamental or 'wire friendly' trees under overhead utility wires.

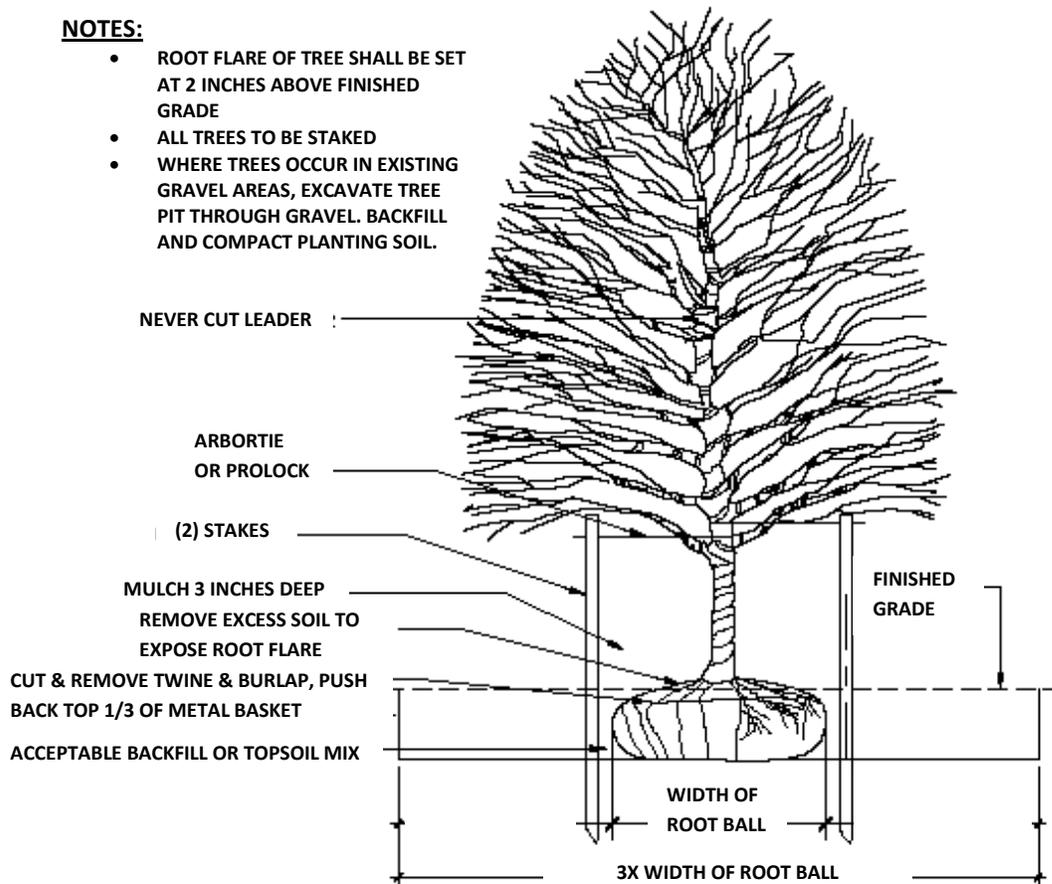
All trees planted must follow City of Buffalo Tree Planting Specifications (03/11):

- Street grade trees following "American Standard for Nursery Stock (ANSI Z60.1)".
- No damage to trunk or leaders.
- No girdling roots.
- Strong central leaders on trees (no co dominant stems or included bark)
- Caliper to be 2.5 – 3" for B&B trees, 1.75 – 2" for bare root trees.
- Minimum branching height to be 5.5 - 6' for shade trees, 4.5 – 5' for ornamental trees.
- No trees will be accepted with pruning wounds more than 25% of trunk diameter.
- Planting to take place while material is dormant during the spring (March 15th – May 31st) and fall (October 15th – December 31st) seasons.
- Stakes and ties to be removed after 1 year.
- Guarantee period to be minimally 18 months after date of acceptance for B&B trees.

Planting Detail

NOTES:

- ROOT FLARE OF TREE SHALL BE SET AT 2 INCHES ABOVE FINISHED GRADE
- ALL TREES TO BE STAKED
- WHERE TREES OCCUR IN EXISTING GRAVEL AREAS, EXCAVATE TREE PIT THROUGH GRAVEL. BACKFILL AND COMPACT PLANTING SOIL.



DECIDUOUS TREE PLANTING W/ STAKES

NTS

Permit Information

A Tree Work Permit is required to plant trees within City of Buffalo right of way. There is no fee to obtain permit. Please provide the following information to the Division of Parks and Recreation at least **30 days** before you plant:

- your contact information
- expected planting date
- proposed location(s), species and caliper
- contact information for landscape contractor expected to perform the work (must include City of Buffalo license number) or name of organization for volunteer community plantings

For more information regarding planting permit, design standards, spacing and species selection, please contact:

City of Buffalo
Division of Parks and Recreation
65 Niagara Square
Room 505 City Hall
Buffalo, New York 14202-3373

Phone: (716) 851 – 9670

Fax: (716) 851 - 5200

APPENDIX A

City of Buffalo Tree Planting Specifications (03/11)

APPENDIX B

City of Buffalo Approved Street Tree Planting List (03/11)