





Right Tree, Right Place

Planning a More Efficient and Resilient Urban Forest

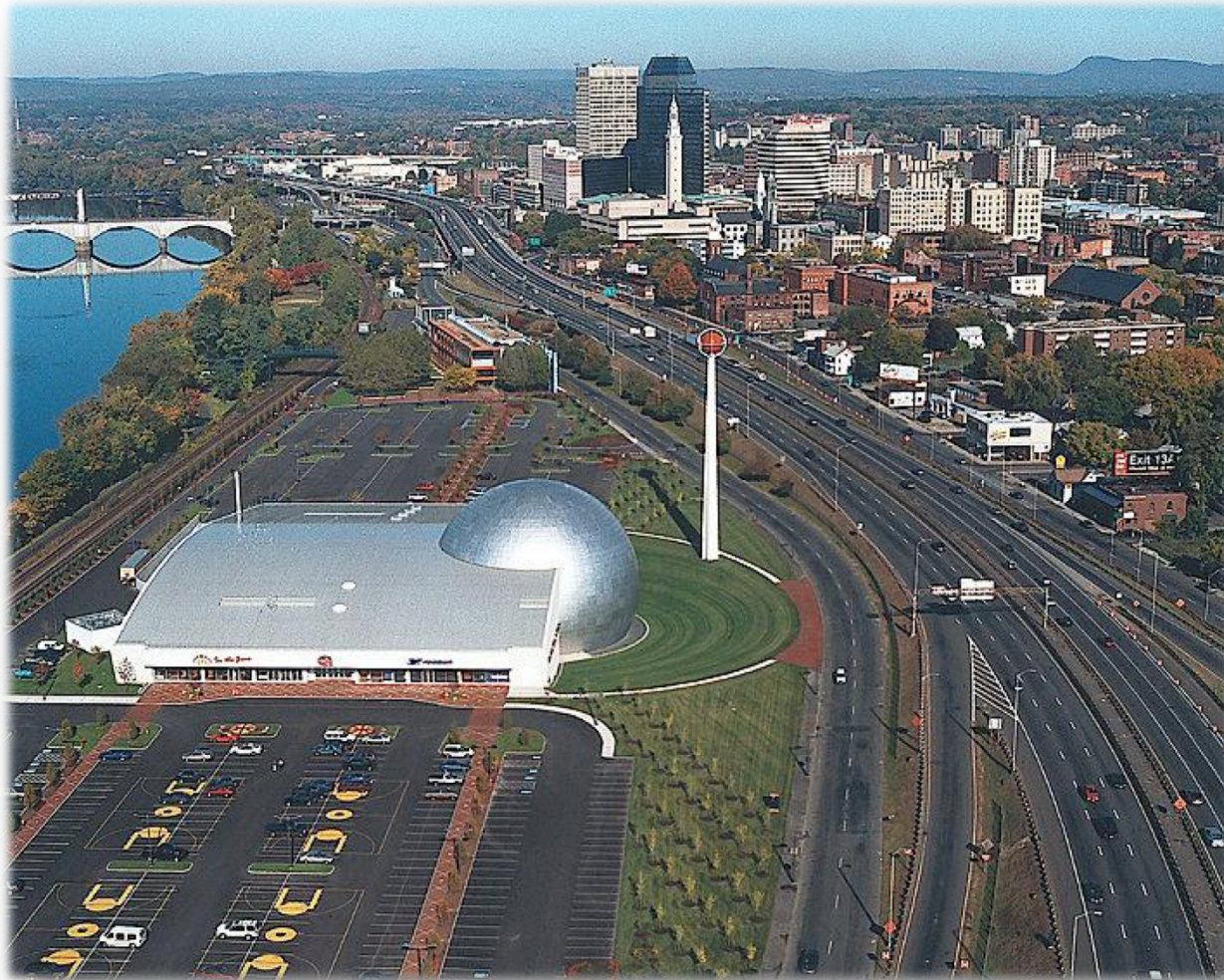


Alexander Sherman
Assistant City Forester
Springfield, MA
November 20, 2014





What is the Urban Forest?



Urban Forest Ecosystem

- Human Population
- Built Environment
- Public Trees
- Private Trees
- Open Space
- Public and Private Forested Parcels
- Urban Wildlife
- Water Resources/ Wetlands
- Air/ Atmosphere
- Exotic Tree Pests and Diseases



How can we balance all of these competing interests and provide the best opportunity for the trees?





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Urban Growing Conditions

- Generally unfavorable to plant growth
 - Soil compaction
 - Poor soil organic matter and plant nutrients
 - pH variability
 - Limited growing space
 - Poor water infiltration
 - Air pollution
 - Low soil oxygen
 - Limited sunlight
 - Hotter and drier conditions
 - Conflicts with gray infrastructure

Which tree to choose?



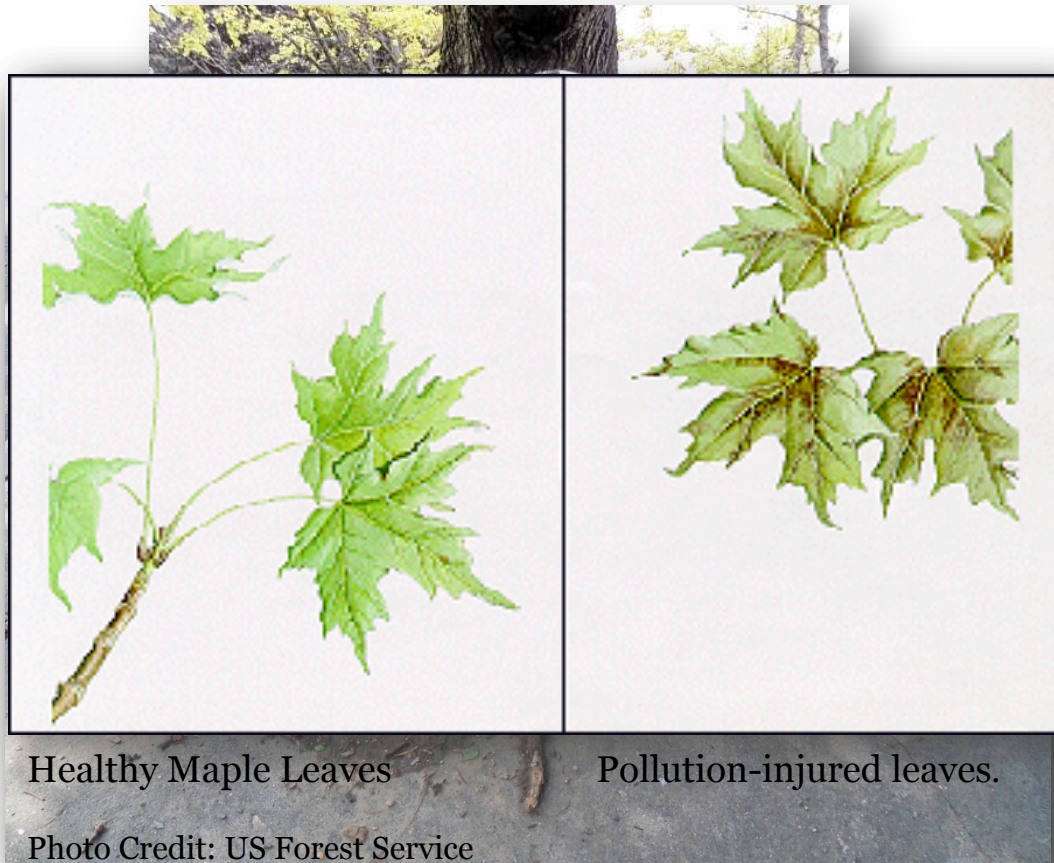


Photo credit: Bangor Daily News

Environmental Considerations

Minimum Temperature
(Hardiness Zone)

Moisture

Sun Exposure

Pest Resistance

Soil Requirements

Pollution Tolerance

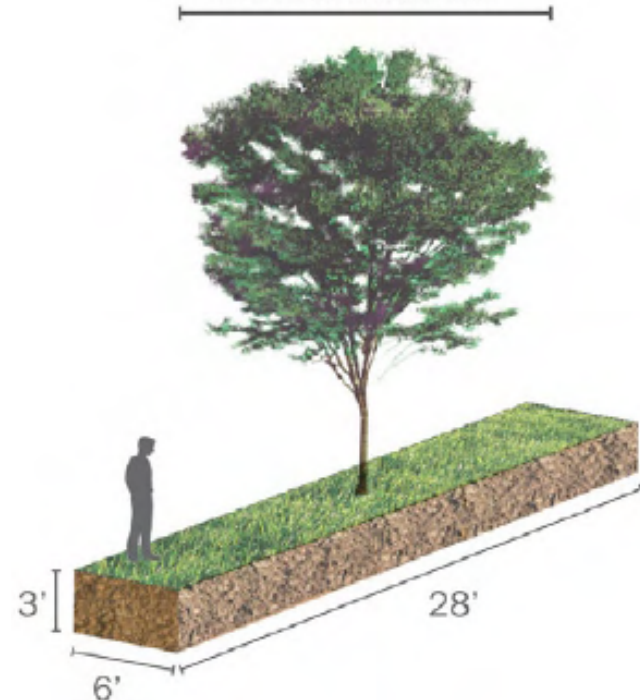
Calculate Soil Volume

estimated crown spread =
10 feet diameter



Soil Volume = 120 cubic feet

estimated crown spread =
21 feet diameter



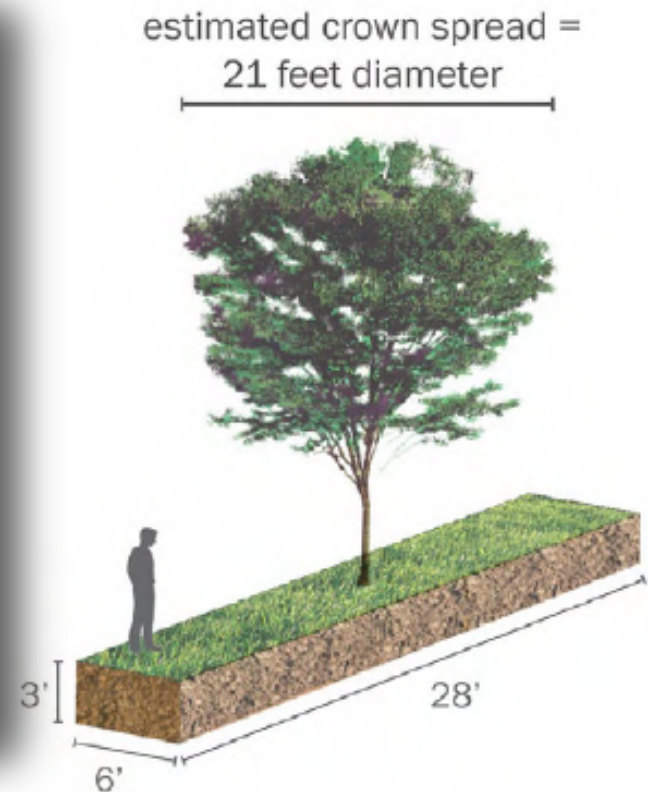
Soil Volume = 500 cubic feet

Source: Casey Tree, Washington, DC

Calculate Soil Volume



Source: Casey Tree, Washington, DC



Soil Volume = 500 cubic feet











Tree Considerations

- The Tree's Purpose
- Size and Location
- Crown and Shape
- Native Trees For Native Conditions
- Urban Tolerance
- Site Compatibility
- Maintenance Requirements

TREES around your home can increase its value up to 15% or more. The trees you plant remove CO₂ from the air, produce oxygen and give songbirds a home. Trees provide many other benefits:

A WINDBREAK
can lower heating
bills 10-20%.

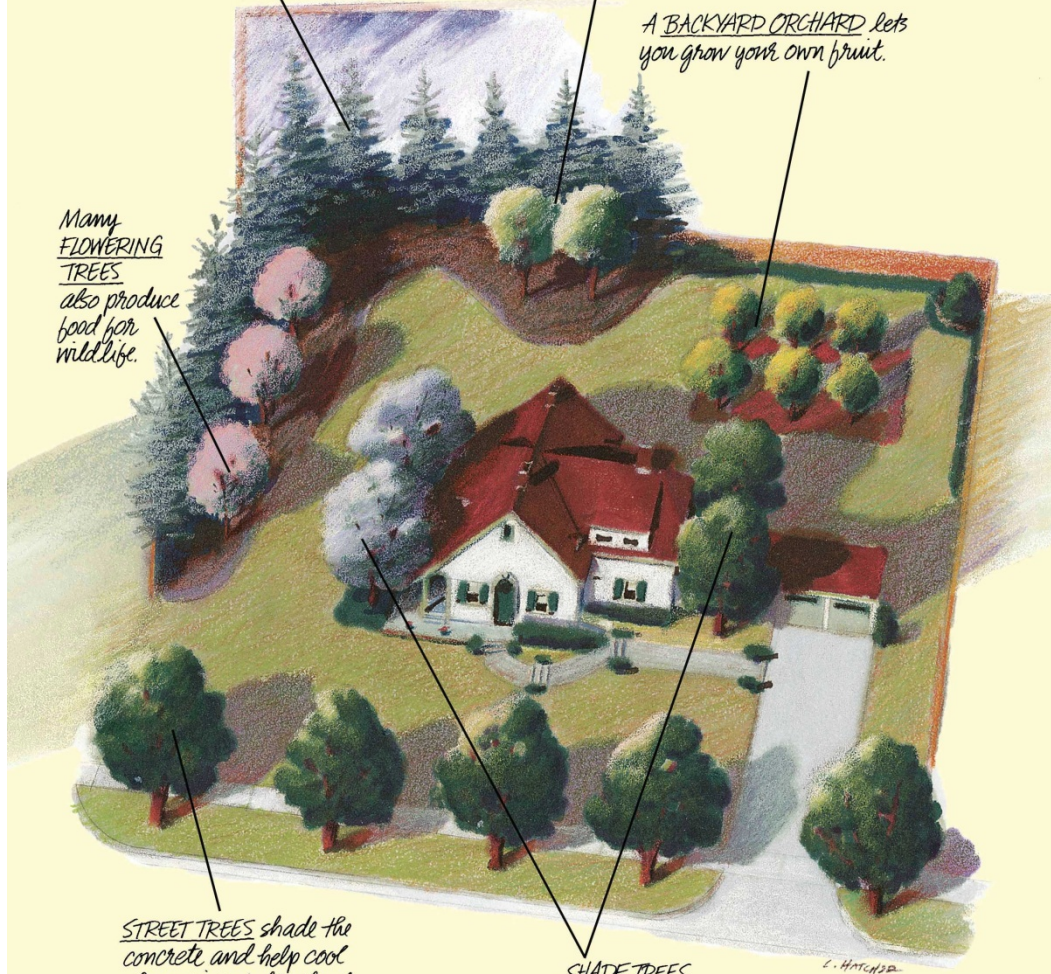
NUT TREES can be incorporated
into windbreaks or serve as
shade trees.

A BACKYARD ORCHARD lets
you grow your own fruit.

Many
FLOWERING
TREES
also produce
food for
wildlife.

STREET TREES shade the
concrete and help cool
the entire neighborhood.

SHADE TREES
planted east
and west of
your home can
cut cooling
costs 15-35%.





Tree Considerations

The Tree's Purpose

Size and Location

Crown and Shape

Native Trees For Native
Conditions

Urban Tolerance

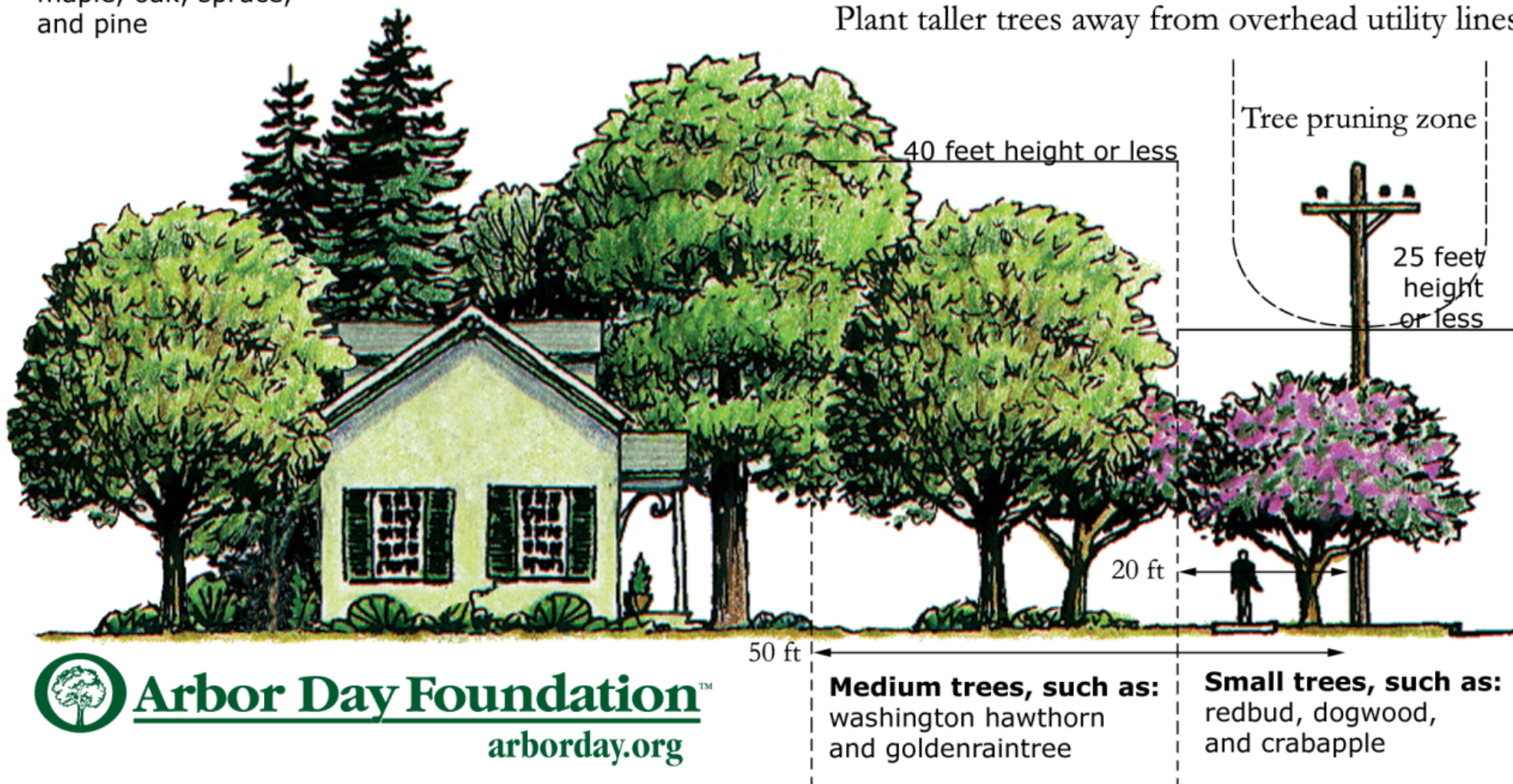
Site Compatibility

Maintenance
Requirements

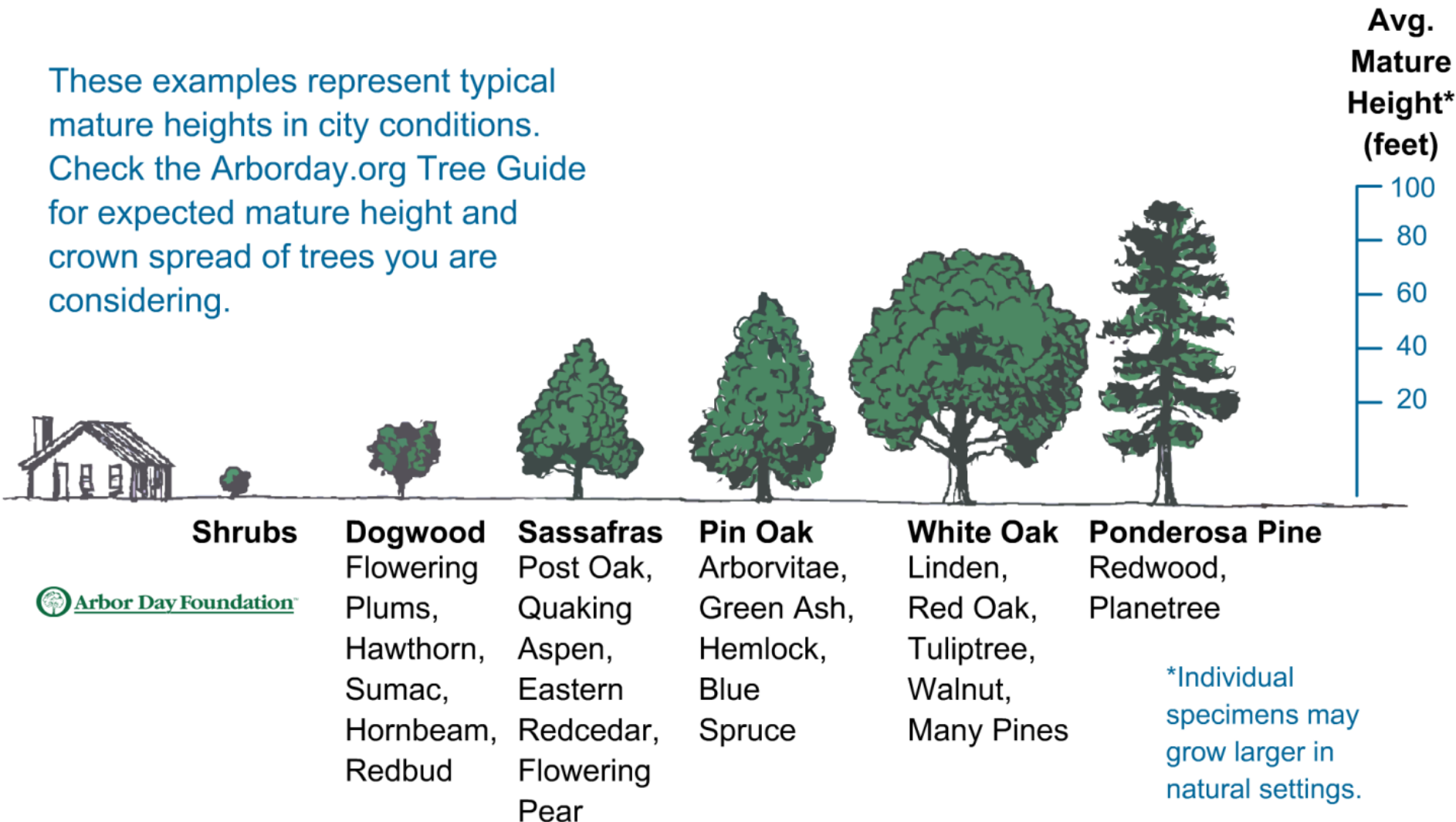
Tall trees, such as:
maple, oak, spruce,
and pine

Plant the right tree in the right place

Plant taller trees away from overhead utility lines



These examples represent typical mature heights in city conditions. Check the Arborday.org Tree Guide for expected mature height and crown spread of trees you are considering.





Tree Considerations

The Tree's Purpose

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BASIC TREE SHAPES - SPRINGFIELD STREET TREE SELECTIONS



COLUMNAR



CONICAL



BROAD UPRIGHT



VASE SHAPED



BROAD SPREADING



BROAD OVAL



Tree Considerations

The Tree's Purpose

Size and Location

Crown and Shape

**Native Trees For Native
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LOCATION SELECTION CRITERIA

MINIMUM DISTANCE STANDARDS

- At least 10 feet from driveways, fire hydrants and wheelchair ramps
- No closer than 5 feet behind or 10 feet in front of signs
- At least 5 feet from underground utility lines
- At least 10 feet from streetlights; further for larger stature trees
- At least 15 feet from storm sewer inlets
- At least 30 feet from intersections
- Keep adequate distance from existing vegetation on abutting property
- Trees that grow taller than 30 feet should not be planted under utility lines
- Tree with large spreading crowns should not be planted near traffic intersections

SETBACK PLANTINGS

- Trees may be planted no more than 20 feet from the edge of the property line



Tree Considerations

The Tree's Purpose

Size and Location

Crown and Shape

**Native Trees For
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Resources

Arborday Foundation

www.arbroday.org

Casey Trees

www.caseytrees.org

Cornell Urban Horticulture Institute

www.hort.cornell.edu/uhi/

Schmidt Nurseries UtiliTrees™

www.jschmidt.com/utilitrees/

Urban Natural Resources Institute

www.unri.org

For a copy of this presentation:

www.unri.org/research-documents/



SPRINGFIELD



est. 1898

FORESTRY



*Thank You!
And Happy Planting!*