Right Tree, Right Place
Planning a More Efficient and Resilient Urban Forest

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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?
Environmental Considerations

- Minimum Temperature (Hardiness Zone)
- Moisture
- Sun Exposure
- Pest Resistance
- Soil Requirements
- Pollution Tolerance
Calculate Soil Volume

Soil Volume = 120 cubic feet
Source: Casey Tree, Washington, DC

Soil Volume = 500 cubic feet
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 15-55%.

Arbor Day Foundation
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

40 feet height or less

25 feet height or less

20 ft

50 ft

Medium trees, such as: washington hawthorn and goldenraintree

Small trees, such as: redbud, dogwood, and crabapple
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.
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BASIC TREE SHAPES - SPRINGFIELD STREET TREE SELECTIONS

COLUMNAR

CONICAL

BROAD UPRIGHT

VASE SHAPED

BROAD SPREADING

BROAD OVAL

Image Credit: David V. Bloniarz, Ph.D.
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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

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Maintenance Requirements
Resources

Arborday Foundation
www.arborday.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/
Thank You! And Happy Planting!