
RIVERTON STREET TREE MASTER PLAN

INTRODUCTION:

Riverton can greatly benefit from a concerted effort to develop the City's community forest through the adoption of a street tree ordinance and street tree master plan.

It is the rare exception to find any trees in the City that have been planted alongside roadways in the planting strip. In the few areas where street trees do exist, flowering pear, maple, flowering plum, and flowering crabapple have been utilized. However, often these trees have been improperly staked, weed whacked and not mulched, so that the trees are competing with the grass for water and nutrients. In some cases, naturalized stands of Poplar, Siberian Elm, and Black Locust also exist.

Most roads currently are without curb and gutter. Where planting strips are located, many have been left unplanted and are weedy, or if planted, only with grass. Existing planting strips vary from 2' in width to 7'. Particularly along Redwood road near the commercial area, strips are only 2' wide. Newer areas with planting strips are generally 5.5 – 6'. To further complicate things almost every street has overhead power lines on at least one side if not both, at a height of approximately 25'. Newer subdivisions appear to be burying power lines underground.

PURPOSE:

The intention of the *Riverton Street Tree Ordinance* and the *Riverton Street Tree Master Plan* is to promote the establishment of Riverton's community forest and to provide protection to this valuable resource once it is established.

The Ordinance states that street tree planting on City property must conform to the *Riverton Street Tree Master Plan*. The Master Plan gives specific guidance on the appropriate selection and planting of street trees.

The Street Tree Ordinance designates that all new developments are required to abide by the Street Tree Master Plan. Many of the areas outlined here such as tree species, spacing, etc. are not required for citizens to follow who are not planting along streets designated on the Street Tree Map. However, this Master Plan has taken into consideration the special climate of Riverton as well

as the issues surrounding street trees. The elements outlined here were set which best address these issues and potentially could provide for a longer life of street trees.

GOALS & OBJECTIVES:

This Plan is intended to provide a straight-forward, yet bold approach for the provision of street trees within Riverton. The increased use of street trees will enhance Riverton's visual and spatial attractiveness and will encourage pedestrian use of streets by providing a buffer and separation to street traffic and while providing shade and cleaner air. The establishment of street trees in a bold approach such as has been outlined here, establishes an identity for the City, separating it from the rest of the valley. It also assists residents and visitors in identifying their location within the City and identifying major roads.

The Plan gives specific guidance on the appropriate selection and planting of street trees, and insures that tree care and replacement costs are minimized by avoiding inappropriate trees that may not survive or which may damage sidewalks, curbs, etc.

STYLES OF PLANTINGS:

Formal- Plantings which form or support a geometric pattern. Formal plantings generally rely on a single tree species for effect. If more than one species is used, the species are similar in size, form, color, and texture. Where possible, plantings are spaced an equal distance apart from one another. This form of planting is the predominant type utilized within Riverton, primarily due to spatial constraints.

Informal- Plantings which utilize a variety of species and sizes of trees which are spaced at irregular intervals from one another in planting strips that have a sizable area (typically a minimum of 15'). The width is necessary in order to create the effect.

CRITERIA FOR SELECTION OF SPECIES INCLUDED:

The intensity of the conditions street trees must endure and Riverton's unique climate and soils limit the variety of species which are recommended for street tree planting. To develop a list of recommended species, trees have been selected that BEST meet the following criteria.

- Durability- Adaptability to soils, environmental stress
- Beauty
- Length of Life (medium to long-life expectancy)
- Maintenance Considerations (low maintenance preferred)
- Pruning (high branching)

- Amount of Water (drought resistant)
- Pests (resistant to most diseases/insects)
- Litter (fruitless & strong-wooded)
- Effects on Infrastructure & Pavement
- Form- upright growth with branching pattern appropriate to the space available.
- Shading & Cooling Characteristics
- Safety- visibility through; no poisonous fruit, etc.

TREE SIZES:

Mature Tree Size (conforms to the spatial constraints, width of planting strip, power lines, etc.) Trees are separated into three size categories:

- 1- *Small*- Trees generally less than 25' tall. Useful in areas with limited space, especially in raised planters and in 4-6' wide medians.
- 2- *Medium*- Trees generally 25-40' tall. Useful in most areas.
- 3- *Large*- Trees generally 40' or taller. Large trees give emphasis and should be used wherever possible to soften the large expanses of pavement.

PLANTING LOCATIONS IDENTIFIED BY CATEGORY:

1. CLASS I – PLANTING STRIP OR MEDIAN LESS THAN 4' WIDE.

- For planting strips and medians less than 4' wide: *No trees allowed.*

The planting strip must be a minimum of 4' wide to be eligible for tree planting. Anything smaller jeopardizes the welfare of both the tree and the site.

2. CLASS II - PLANTING STRIP OR MEDIAN 4'- 6' WIDE:

- Planting strips 4-6' wide: *Medium* trees are allowed with mulch or turfgrass alternatives.
- Medians 4-6' wide: *Small* and *Medium* trees are allowed with mulch or turfgrass alternatives.

Turfgrass if used must be separated from the tree plantings.

Frequent and shallow irrigation of turfgrass tends to result in trees with poor health and unusually shallow root systems, and, because turfgrass robs water and nutrients otherwise available for trees; turfgrass is not recommended in this class of planting strip, but may be used if planted no closer than 2' from any tree trunk. Mulch may also be used alone. Mulch is effective at absorbing and distributing the weight of

foot and vehicular traffic, thereby reducing damage caused by soil compaction. Small varieties of trees which have lower branching characteristics or multi-trunked forms, may be used only in median areas or traffic islands where lower branching habit will not interfere with pedestrians, vehicles, or driver visibility. (No tree in any class is permitted to have branches which extend closer than eight (8) feet to the ground.)

3. CLASS III- PLANTING STRIP OR MEDIAN 6' WIDE AND LARGER:

For planting strips and medians 6' wide and larger: *Medium* and *Large* trees are allowed. Mulch around each tree (2' radius). This will limit the tree's exposure to damage from lawn maintenance equipment.

4. CLASS IV- PLANTERS OR TREE WELLS:

In areas of high pedestrian oriented activity such as the downtown commercial center, where there are no planting strips and where sidewalks have been expanded to a minimum of 15', trees shall be located in tree wells with metal grates or in raised planters. A minimum of 25 SF of surface area must be provided for each tree. Planters shall be setback a minimum of 30" from the face of the curb and no less than 5' from any building or structure. Metal tree grates shall be at least 5' by 5' with openings no more than 1/4" in width. Trees shall be at least 3" inches in caliper, with high branching so that adequate branching height is achievable without severe pruning. *Small and Medium* trees are allowed in the raised planters. Only *Medium* trees are allowed in tree wells. A 3-4" layer of mulch shall be applied to both. Space 25' o.c.

As trees becomes established, a clearance area with a minimum height of 8' along the sidewalk and 15' along the street shall be maintained to allow pedestrians and vehicular traffic beneath the canopy. The tree type selected shall be open enough to allow visual access to store fronts, yet large and dense enough to provide shade for pedestrians. Tree planting shall be coordinated with other street elements such as sign control, lighting, pedestrian access and parking. Spacing of trees is closer together to moderate the harshness of the micro-site for the trees and to provide shade and visual continuity.

5. CLASS V- UNDER POWER LINES:

Because of the variety in size and form, a separate listing of trees that are appropriate is included.

CURRENT SPECIES LIST:

This list should be reviewed and updated periodically to reflect new research data available. The following tree species and varieties are considered suitable for street tree planting in Riverton; however, some species are not readily available at this time, because they have not yet gained popularity. Because these less common trees are often better suited than the common varieties they have been included.

In addition, it should NOT be interpreted that existing street trees which do not conform to the following list, would be removed.

Purchase and install only high-quality trees. A high-quality tree has an adequate sized root ball and is not root bound (having circling roots); The tree trunk is free of mechanical wounds and the tree has a strong form with well-spaced, firmly attached branches with no stems squeezing against each other or against the trunk.

SPECIES BY TREE SIZE**1. SMALL TREES- (HEIGHT- UP TO 25') USE IN 4-6' WIDE MEDIANS OR IN RAISED PLANTERS; SPACE 25' O.C.:**

- Paperbark Maple- (*Acer griseum*)
- Tatarian Maple, single stemmed- (*Acer tatarium*, *single stemmed*)
- Nettleleaf Hackberry- (*Celtis reticulata*)
- Thornless Cockspur Hawthorne- (*Crataegus crus-galli* var. *inermis*)
- LaValle Hawthorne- (*Crataegus x lavalley* 'Carrier')
- Amur Maackia- (*Maackia amurensis*)
- Fruitless Crabapple spp.- (*Malus ioensis* 'Klehm's Improved'; or 'Spring Snow', etc.)
- Eastern Redbud- (*Cercis canadensis*)
- Blackhaw Viburnum- (*Viburnum prunifolium*)

2. MEDIUM TREES- (HEIGHT- 25 - 40') SPACE 30' O.C. IN PLANTING STRIPS. SPACE 25' O.C. IN PLANTERS & TREE WELLS (CLASS IV):

- Hedge Maple- (*Acer campestre*)
- Purpleblow Maple- (*Acer truncatum*)
- European Hornbeam- (*Carpinus betulus* 'fastigiata')

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- *Autumn Purple Ash- (Fraxinus americana or 'Autumn Purple')*
 - *Marshall's Seedless Ash- (Fraxinus pennsylvatica lanceolata 'Marshall's Seedless')*
 - *Thornless Honeylocust- (Gleditsia triacanthus var. inermis 'Skyline'; or 'Shademaster'; or 'Imperial'; or 'Moraine'; or 'Majestic')*
 - *Goldenrain Tree- (Koelreuteria paniculata)*
 - *American Hophornbeam- (Ostrya virginiana)*
 - *Callery Pear- (Pyrus calleryana 'Aristocrat'; or 'Canticleer'; or 'Redspire')*
 - *Sawtooth Oak- (Quercus acutissima)*
 - *Japanese Pagodatree- (Sophora japonica 'Regent' or 'Princeton Upright')*
3. **LARGE TREES-** (HEIGHT- 40' OR MORE) USE ONLY IN PLANTING STRIPS AND MEDIANS THAT ARE 6' OR WIDER. SPACE 35' O.C.:
- *Norway Maple- (Acer platanoides) only use in Class III*
 - *Sycamore Maple- (Acer pseudoplatanus)*
 - *Common Hackberry- (Celtis occidentalis)*
 - *Katsuratree- (Cercidiphyllum japonicum)*
 - *Yellowwood- (Cladrastris lutea)*
 - *Turkish Filbert- (Corylus colurna)*
 - *Ginkgo- (Ginkgo biloba) Male trees only*
 - *London Planetree- (Plantanus x acerifolia 'Bloodgood')*
 - *Swamp Oak- (Quercus bicolor)*
 - *California Valley Oak- (Quercus lobata)*
 - *Bur Oak- (Quercus macrocarpa)*
 - *Chickapin Oak- (Quercus muehlenbergii)*
 - *English Oak- (Quercus robur; also 'Fastigiata' (columnar)*
 - *Red Oak- (Quercus rubra)*
 - *Shumard Oak- (Quercus shumardii)*
 - *American Linden- (Tilia americana)*
 - *Littleleaf Linden- (Tilia cordata 'Greenspire', etc.)*
 - *Crimean Linden- (Tilia x euchlora 'Redmond')*
 - *Silver Linden- (Tilia tomentosa)*
 - *Lacebark Elm- (Ulmus parvifolia)*
 - *Homestead Hybrid Elm- (Ulmus x 'Homestead')*
 - *Japanese Zelkova- (Zelkova serrata 'Green Vase'; or 'Village Green')*

4. **TREES APPROPRIATE FOR USE UNDER POWER LINES:**

The following trees are included because of their height or because of their open form. Plant the same species on both sides of the street, continuously for each block affected.

Typically *Small* and *Medium* trees should only be located under Power Lines. However, *Large* trees with an open form of growth can also be used with selective pruning to protect the overhead utilities.

- Netleaf Hackberry- (*Celtis reticulata*)
- Marshall's Seedless Ash- (*Fraxinus pennsylvatica lanceolata* 'Marshall's Seedless')
- Thornless Honeylocust- (*Gleditsia triacanthus* var. *inermis* 'Imperial')
- Goldenrain Tree- (*Koelreuteria paniculata*)
- Crabapple spp.- (*Malus ioensis* 'Spring Snow')
Also acceptable are 'Snowdrift'; 'Centurion'; and 'Zumi'.
- Callery Pear- (*Pyrus calleryana* 'Aristocrat'; or 'Canticleer'; or 'Redspire')
- Japanese Pagodatree- (*Sophora japonica* 'Regent')

5. PROHIBITED TREES:

Any weeping or pendulous type tree;
Artificial trees, shrub, turf, or plants;
Any tree or shrub which could conflict with the safe use of the right-of-way;
Specifically prohibited are:

- Box Elder- *Acer negundo*
- Silver Maple- *Acer saccharinum*
- Tree of Heaven- *Ailantus altissima*
- Birch- *Betula nigra*
- Russian Olive- *Eleagnus angustifolia*
- Poplar (includes Cottonwood)- *Populus spp.*
- Quaking Aspen- *Populus tremuloides*
- Flowering Plum- *Prunus cerasifera*
- Pin Oak- *Quercus palustris*
- Idaho Locust- *Robinia x ambigua* 'Idahoensis'
- Black Locust- *Robinia pseudoacacia*
- Willow- *Salix spp.*
- American Elm- *Ulmus americana*
- Siberian Elm- *Ulmus pumila*

Trees which are prohibited from being planted as street trees may do well in other areas and should not be eliminated from consideration under a different scenario.

PLANTING LOCATIONS AS IDENTIFIED BY THE PLAN:

The *Riverton Street Tree Master Plan* graphically indicates several zones or districts (See attached Map.) The existing arterials and major collector streets within Riverton funnel a lot of traffic through the City. These streets will continue to be of major importance for the City as they are widened to accommodate the increased loads of traffic. Therefore, it is the intent of this Plan to

soften the effects of these future expanses of pavement through the planting of street trees. Trees have been selected which have a wide canopy and substantial height and are indicated to be planted at even spaced intervals for emphasis. The rhythm developed will enhance visual unity within the community.

These are important nodes within the City and are represented by a specialized grouping of trees as indicated below. Street trees which currently exist and which do not conform to the Plan will remain until such time as their removal becomes necessary given other conditions. This Plan is intended to direct future plantings of trees.

1. **GATEWAY NORTH- REDWOOD ROAD AT NORTH EDGE OF THE CITY:**
 - Planting Strip: London Planetree- (*Platanus x acerifolia* 'Bloodgood'); Space 35' o.c.
 - Median: London Planetree- (*Platanus x acerifolia* 'Bloodgood'); Space 35' o.c.

2. **GATEWAY SOUTH: REDWOOD ROAD AT SOUTH EDGE OF THE CITY:**
 - Planting Strip: London Planetree- (*Platanus x Acerifolia* 'Bloodgood'); Space 35' o.c.
 - Median: London Planetree – (*Platanus x acerifolia* 'Bloodgood'); Space 35' o.c.

3. **GATEWAY EAST- 12600 SOUTH AT EAST EDGE OF THE CITY:**
 - Planting Strip: London Planetree- (*Platanus x acerifolia* 'Bloodgood'); Space 35' o.c.
 - Median: London Planetree- (*Platanus x acerifolia* 'Bloodgood'); Space 35' o.c.

4. **DOWNTOWN- AREA AROUND REDWOOD ROAD & 12600 SOUTH:**
 - Planting Strip: Japanese Zelkova- (*Zelkova serrata* 'Village Green'); Space 35' o.c.
 - Planters & Tree Wells (Space 25' o.c.): Autumn Purple Ash- (*Fraxinus americana* 'Autumn Purple') or Japanese Pagodatree- (*Sophora japonica* 'Regent')

5. **BANGERTER NORTH- AREA AROUND 12600 SOUTH & BANGERTER:**
 - Planting Strip (12600 South): Japanese Zelkova- (*Zelkova serrata* 'Village Green'); Space 35' o.c.
 - Median: Littleleaf Linden- (*Tilia cordata* 'Greenspire', etc.); Space 35' o.c. or Silver Linden- (*Tilia tomentosa*); Space 35' o.c.
 - Side Streets: Littleleaf Linden- (*Tilia cordata* 'Greenspire', etc.); Space 35' o.c. or Silver Linden- (*Tilia tomentosa*); Space 35' o.c.

6. BANGERTER SOUTH- AREA AROUND 13400 SOUTH & BANGERTER:

- Planting Strip (13400 South): English Oak- (*Quercus robur*); Space 35' o.c.
- Median: Littleleaf Linden- (*Tilia cordata* 'Greenspire', etc.); Space 35' o.c. or Silver Linden- (*Tilia tomentosa*); Space 35' o.c.
- Side Streets: Littleleaf Linden- (*Tilia cordata* 'Greenspire', etc.); Space 35' o.c. or Silver Linden- (*Tilia tomentosa*); Space 35' o.c.

7. BANGERTER HIGHWAY AND PROPOSED LEGACY HIGHWAY-

The following is a list of trees for use along the Bangertter Highway and proposed Legacy Highway. These trees are required for commercial sites or other developments in which the City has mandated trees adjacent to the corridor. These are only suggestions for individual homeowners whose property is adjacent to either highway (No trees will be permitted on UDOT property without UDOT's approval.)

BANGETER HIGHWAY:

1. PLANTING STRIPS 6' OR WIDER:

- Common Hackberry (*Celtis occidentalis*)
- London Planetree (*Platanus x acerifolia* 'Bloodgood')

2. PLANTING STRIP 4"-6":

- Autumn Purple Ash (*Fraxinus pennsylvatica lanceolata* 'Marchall's Seedless')
- Japanese Pagodatree (*Sophora japonica* 'Regent')

PROPOSES LEGACY HIGHWAY:

- Common Hackberry (*Celtis occidentalis*)
- London Planetree (*Platanus x acerifolia* 'Bloodgood')

In addition, streets which are located along significant transportation corridors have selected list of trees designated for use:

1. 1300 WEST- MAJOR COLLECTOR STREET WITH RESIDENTIAL:

- Emerald Queen Maple- (*Acer platanoides*);; Space 35' o.c. or Common Hackberry- (*Celtis occidentalis*); Space 35' o.c.

2. 1700 WEST / REDWOOD ROAD- ARTERIAL WITH COMMERCIAL:

- Japanese Zelkova- (*Zelkova serrata* 'Village Green'); Space 35' o.c.

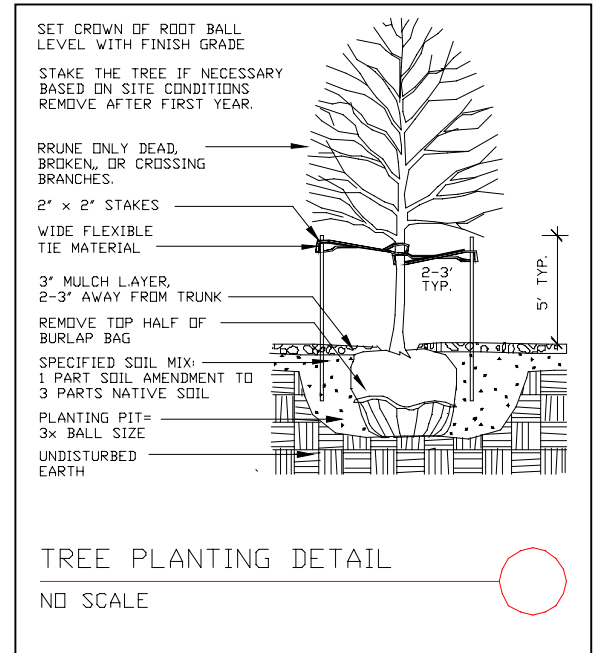
3. **2700 WEST-** MAJOR COLLECTOR STREET WITH RESIDENTIAL:
 - Homestead Hybrid Elm- (*Ulmus x 'Homestead'*); Space 35' o.c. or Common Hackberry- (*Celtis occidentalis*); Space 35' o.c.
4. **3600 WEST-** MAJOR COLLECTOR STREET WITH FIUTURE COMMERCIAL:
 - Red Oak- (*Quercus rubra* ; Space 35' o.c.
5. **4000 WEST-** MAJOR COLLECTOR STREET WITH FUTURE COMMERCIAL:
 - Littleleaf Linden- (*Tilia cordata 'Greenspire', etc.*); Space 35' o.c.
6. **11800 SOUTH-** MAJOR COLLECTOR STREET WITH RESIDENTIAL:
 - Bur Oak- (*Quercus macrocarpa*); Space 35' o.c. or Sycamore Maple- (*Acer pseudoplatanus*); Space 35' o.c.
7. **12600 SOUTH-** ARTERIAL STREET CONNECTING COMMERCIAL ZONES:
 - Japanese Zelkova- (*Zelkova serrata 'Village Green'*); Space 35' o.c.
8. **13400 SOUTH-** ARTERIAL STREET WITH MIX OF RESIDENTIAL & COMMERCIAL:
 - English Oak- (*Quercus robur*); Space 35' o.c. or Silver Linden- (*Tilia tomentosa*); Space 35' o.c.

STREET TREE SPECIFICATIONS:

INSTALLATION OF TREES (SEE ATTACHED DETAIL):

Nationwide 20% of all newly planted street trees die soon after being planted. Experts estimate that if a tree is planted correctly it will grow twice as fast and live at least twice as long as the one that is incorrectly planted.

1. Remove all roadbase and construction debris from the planting area to a depth of 3'. Prepare a planting hole that is at least 3 times the root ball width and no deeper than the depth of the root ball.
2. Place the tree upright in the bottom of the hole onto compacted soil with the root collar at or above the level of the surrounding soil. Remove all ropes and wires that surround the trunk or root collar.
3. Do not fertilize at planting time.
4. Fill the hole with a soil mix composed of 3 parts native soil blended thoroughly with 1 part partially decomposed organic material. Pack the soil lightly to avoid over-compaction.
5. Water once hole is half filled with soil then finish adding soil, watering immediately to settle the soil and remove air pockets. Then deep water twice a week (during growing season) for the first year. During dry and especially warm winter months, deep water every 3 or 4 weeks.
6. Mulch around the base of the tree with wood chips or coarse organic material. Keep mulch 2-3" away from trunk to avoid decay. Place mulch within a 2' radius circle with a depth of 3-4".
7. Plastic sheeting and rock mulch shall not be used around trees.
8. Stake newly planted trees with wide flexible tie material such as canvas strapping to prevent trunk damage. (Hose covered wire often girdles trees which damages or kills the tree.) Guy loosely to allow some stem movement. Remove all staking materials after first year.
9. Install expandable tree guards on trees in turf areas to protect trunks from weed wackers.
10. Prune mature trees so that the branching height on the traffic side of the street should be no less than 13' 6" above the street and no less than 8' above the sidewalk.



11. Create a financial source for future funding for tree maintenance, removal, and new planting projects within the next 5 to 10-year time frame.

IRRIGATION OF TREES:

An irrigation system to maintain the trees shall be installed with the trees. The system shall be installed to operate in a efficient manner to maintain tree growth while minimizing waste.

Trees should be watered more deeply and less frequently than turf and where possible should be watered as a separate zone from the surrounding turf. Water should be applied slowly to minimize surface run-off and to foster thorough wetting of the rootball and surrounding soil. Applying frequent, shallow watering does not properly meet the needs of trees. The preferred method of irrigation for trees are bubblers or drip.

Newly planted trees should be watered twice a week. The amount of water an individual tree will require will vary by season, species, tree size, soil, and site characteristics, however, trees generally need the equivalent of one inch of rain every 7-10 days. Caution must be exercised to prevent over-watering and saturating the sub-soil and to prevent over-spray from wetting sidewalks and thereby creating potentially hazardous conditions for pedestrians.

MAINTENANCE OF TREES:

It shall be the responsibility of the property owners, unless otherwise specified, to provide the ongoing maintenance for street trees and park strips along the entire park strip area abutting their property.

REPLACEMENT OF TREES:

Replacement of street trees and the addition of street trees to an existing row shall be of the same species as what is existing within the block except in cases where the species is prohibited from being planted in the planting strip, in which case, trees of similar characteristics (including form, height, texture, and color_ and which are consistent with the *Riverton Street Tree Master Plan*, shall be permitted but shall require a permit from the Planning Department.