



Saskatoon's urban forest is healthy and growing –

it is up to everyone to protect it.

Trees help to make our communities beautiful and improve our quality of life by helping to modify our climate, reduce air pollution, protect our soil and water resources, and provide habitat for wildlife. Protecting and conserving urban forests through proper management is vital to sustaining healthy communities. Saskatoon is well-known for its oasis of trees. Residents and visitors enjoy the quality of life they provide.

Unfortunately, urban trees are often faced with difficult environmental conditions. For example, large areas of pavement and high maintenance lawns can deplete a tree's water resources. Lawns with a lush carpet appearance require pesticide and fertilizer applications as well as frequent mowing – all activities that can be detrimental to a tree's health. In the winter, vehicle exhaust and road salts can cause injury to boulevard trees. As cities grow, many trees are lost to construction activities such as in-fill housing developments and roadway construction.

You can help ensure that we have an urban forest, for both your enjoyment and that of future generations, by planting trees and ensuring that they are properly maintained and protected.

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Tree roots damage water and sewer lines. FALSE!

- Original clay tile sewer lines leak at the connections because of ground shifting and heaving or deterioration due to old age
- Tree roots do not cause these breaks but they do take advantage of the leaks
- All new water and sewer lines are considered leak tight because they are made of polyethylene
- Water and sewer lines are located approximately 2 to 3 metres below ground and become shallower as they connect at the house
- The fibrous hair-like tree roots that are responsible for obtaining air, soil, and water are only 60cm (24") below ground
- Studies show that shrub roots growing close to the house are more likely to be found in a water line than tree roots

Tree roots push their way through sidewalks and driveways. FALSE!

- Tree roots do not have the strength or capability to hammer through cement and asphalt
- Infrastructure aging, and the freeze-thaw cycle cause cracking and heaving in concrete
- Tree roots will fill-up these underground spaces where they will get the air, water and nutrients they need to survive
- It is possible that a tree's trunk flare can cause cracking and heaving of concrete and asphalt if the tree is planted too close to the driveway or sidewalk. When planting a tree, stay 1.5m (5ft) away from your driveway, sidewalk and patio

Tree roots will damage my foundation. FALSE!

- Typically, foundations shift due to prolonged summer dry spells, especially when the foundation is shallow and surrounded by clay soil
- Aging foundations can eventually deteriorate and begin to crack
- The freeze-thaw cycles will cause small cracks to get bigger



The following tips apply to any type of tree planting.

- Choose a tree species that is suitable to our climate and appropriate to the planting site, it is important to consider the mature height and width of the tree
- Consider all potential underground and overhead utility conflicts when selecting a plant site. Stay a minimum of 2 metres from buildings and overhead structures
- Dial before you dig! Call Sask First toll free at 1-866-828-4888
- Choose a tree that has healthy green leaves, light coloured roots, and branches that attach to the trunk at approximately 45° to 90°
- Dig a saucer-shaped hole that is 3 times the width of the tree's root system, and at the same depth or 3cm (1") shallower than the height of the root ball
- Most likely, you will find the fibrous roots on the outer edge of the root ball have been circling around the container wall; these roots must be pulled apart if the root ball is loose, or cut if the root ball is compact
- Look inside to the inner roots, if you find kinked, bent, or girdling roots you need to pull the roots straight or cut the root behind the bend or kink.
 Encourage the roots to grow straight out from the trunk in a radial or fan-like pattern
- Place the tree in the hole and make sure the top lateral roots are at ground level or slightly higher definitely not lower
- Using the original soil, backfill the hole half way and use the heel of your foot to tamp the soil
- Continue to add soil and tamp until the soil level matches the surrounding grade
- See watering instructions

Spacing Requirements

- 7m (23') between shade trees
- 6m (20') between ornamental trees
- 7m (23') from curb at intersections
- 3m (10') from street lights
- 3m (10') from alleys, fire hydrants & streetlights
- 7m (23') from front of stop signs
- 3m (10') from old water & sewer lines
- 1m (3') from new water & sewer lines
- 1.5m (5') from driveways & private walkways

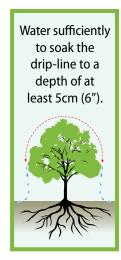


- Proper use of mulch will increase soil moisture levels, maintain moderate soil temperatures, minimize weed and turf competition, reduce soil compaction, and may prevent equipment such as mowers and weed trimmers from damaging tree trunks
- Trees that are planted in well-drained loam or sandy soil require 10cm (4") of organic mulch such as bark chips, leaves and compost
- Keep in mind that trees planted in wet soils will need adequate oxygen and may require less mulch
- Mulch should be kept a minimum of 15cm (6") away from the trunk of the tree to prevent trunk decay
- Apply mulch to a width of 30cm-45cm (12"-18")



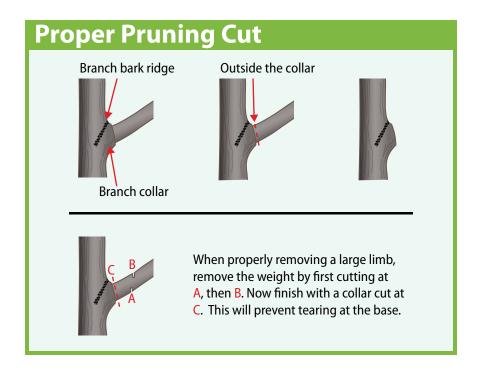
Watering Tips

- Adequate water is critical for the establishment of new trees and beneficial to the health of established trees
- The amount of water that a tree requires depends on the type of soil, the age of the tree, the species of tree, plant site characteristics, and the amount of rainfall
- Irrigating the turf does not supply adequate moisture for the tree's root system
- The best method is to let a hose flow slowly, about 15cm (6") away from the tree trunk, until the area is saturated
- It is important to soak the area outside of the root zone to encourage the roots to grow out in a radial pattern
- Water the tree at least twice a week for the first month then every 7 - 10 days until the first frost
- Keep in mind that during drought conditions, or with compacted heavy soil, the water may not soak in at first. In this situation water lightly several times and then slowly saturate the area as the soil starts to absorb the moisture more readily
- Trees that are growing in exceptionally dry locations will benefit from the use of water bags. One water bag holds 20 gallons of water, the bags can attach and be used on more mature trees that require more water, the bags slowly release water directly onto the root zone which decreases water loss due to evaporation and run-off





- Pruning of City-owned trees is the responsibility of the Parks Branch
- The City of Saskatoon Arborists are professionally trained and have an International Society of Arboriculture (ISA) designation
- City trees are pruned on a seven-year cycle, as per industry standards
- Young trees are pruned to improve structural strength, reduce costly maintenance in the future, and to increase their longevity
- Mature trees are pruned to eliminate hazards, provide clearance, maintain health, and influence flower or fruit production
- No more than 1/4 of a tree's canopy should be removed in one year
- Homeowner's are encouraged to have their privately owned trees pruned on a regular basis by a certified arborist





Common Aesthetic Pests

There are many organisms that co-exist with trees. The following are examples of common insects and mites that may inhabit our trees.

While they may temporarily change the appearance, these pests do not affect the survival of our trees. Aesthetic pest issues can be reduced by keeping trees healthy through watering and by protecting the trunk from lawnmower and weed trimmer damage.



1 Gall mites are commonly found on linden and silver maple.



2 Oak galls are caused by a small wasp and can be found on the twigs and leaves of bur oak.



3 Ash leaf coneroller rolls the leaves of green, black and mancana ash. The damage is very noticeable, but has no affect on the growth or survival of ash trees.





Photo courtesy of Joseph Berger, Bugwood.org

4 Cankerworms are a common defoliator in Saskatoon. Generally they do not affect tree survival. Female cankerworms must walk up the trunk of the tree to lay their eggs. For this reason, banding the trunk is an effective tool to reduce cankerworm populations. Place the bands in the fall after the first frost and remove them in early June. For more information on banding visit www.saskatoon.ca.



Photo courtesy of Joseph Berger, Bugwood.org

5 Lady beetles (ladybugs) are beneficial predators of many insect pests. The larvae look quite different from the adults and are often misidentified. Lady beetles are voracious predators of aphids and the number of lady beetles will often increase when aphid populations increase.

For more information, visit **www.saskatoon.ca** and look under "P" for Pest Management.



Some pests cause serious damage and should be dealt with as soon as possible. For example, beavers, porcupines or voles damage trees by feeding on the bark while insects can damage trees by feeding beneath the bark. Some of the signs and symptoms of serious pests include chewed or peeling bark, dying branches and significant defoliation (more than 50 percent of the entire tree). Tree diversity is one way to reduce the spread of these damaging pests, as many favour specific species of trees.



- 6 Dutch elm disease is a serious disease that is difficult to detect and causes elm tree mortality. The Province of Saskatchewan prohibits:
 - transporting elms unless to a designated disposal site (e.g. City of Saskatoon Landfill),
 - storing any elm material (e.g. firewood and brush) , and
 - pruning of elms from April 1 to August 31



- Photo courtesy of Barry Lyons, CFS
- 7 Emerald ash borer is a beetle that attacks ash trees. It is spreading rapidly in north-eastern North America. It is difficult to detect until the tree is in decline; however, better traps are allowing for earlier detection of the beetle. The City of Saskatoon monitors for the presence of the emerald ash borer.
- 8 Voles feed on tree bark underneath the snow and can cause enough damage to kill a young tree within one season. Voles prefer ash trees but will also feed on oak, apple and cherry trees.





To report a serious pest issue contact Pest Management at **975-3300.**



Community Tree Planting Program

The community tree planting program is funded by prepaid levies collected from the original sale of residential lots. Homeowners can request their preference of available tree species for the City-owned portion of their front and/or side yard in newly developed neighbourhoods. The yard must be up-to-grade before a tree request can be processed and the tree planting site must meet minimum spacing requirements and be cleared of all above and below ground utilities to be approved as a plant site. The homeowner is responsible for watering the new trees unless otherwise noted. The City of Saskatoon is responsible for all maintenance of city trees.

Industrial Tree Planting

The Industrial Tree Planting program is funded by prepaid levies collected from the original sale of industrial lots. Property and business owners can request their preference of available tree species for the City-owned portion of their front and/or side property. The property must be up-to-grade before a tree request can be processed and the tree planting site must meet minimum spacing requirements and be cleared of all above and below ground utilities to be approved as a plant site. All trees are watered and maintained by the City of Saskatoon.

Plant by Request

The plant by request program offers homeowners living in older neighbourhoods a choice of ball and burlap trees for their front and/or side boulevards. Homeowners can request to have a tree planted where one has recently been removed or in a new location. The planting site must meet minimum spacing requirements and be cleared of all above and below ground utilities to be approved as a plant site. The homeowner is responsible for watering the new trees unless otherwise noted. The City of Saskatoon is responsible for all maintenance of city trees.

Urban Reforestation

The urban reforestation program systematically replaces trees in older neighbourhoods based on the number of available planting sites in each area. Tree planting sites are chosen by our Contract Administrator and ball and burlap trees are planted by contractors between June 1 and October 31. Trees are watered and maintained by the City of Saskatoon.

For a list of appropriate container trees review the Tree Species section in the booklet or visit **www.saskatoon.ca** and look under "U" for Urban Forestry, or call 975-2890.



Recommended for Saskatoon's city boulevards

The City selects tree species that are suitable to the specific site location, that provide natural beauty, that are hardy to our climate and that require minimal maintenance. These descriptions are meant to introduce some of the trees we have selected for our planting programs.

Tree nurseries produce new varieties and cultivars each year. For a more recent update of our tree selections please visit our website at **www.saskatoon.ca** search for Urban Forestry under "U" in the service directory.

Alder – Alnus

Prairie Horizon® Alnus hirsuta 'Harbin'



Photo courtesy of the City of Bismarck

This is a cold hardy tree that will grow in both dry and wet locations. They are fast-growing, have a low canopy, and an upright spreading habit. Alders are attractive for their dark green glossy leaves and polished brown-grey bark. Their purple catkins and clusters of small brown cones add winter interest.

Mature height: 12m (40ft)

Spread: 9m (30ft)

Ash - Fraxinus

Black Ash Fraxinus nigra



This tree is oval in shape and has uniform branching habit making this species a good street tree. It has compound leaves and a moderate growth rate. It performs best when planted in full sun, and provided with adequate moisture.

Cultivars:

 Fallgold (Fraxinus nigra 'Fallgold') is a seedless selection with full lush growth in summer and longer lasting bright yellow fall colour.

Mature height: 10-12m (33-39ft)

Spread: 5-7m (16-23ft)

Green Ash Fraxinus pennsylvanica



Green ash is a hardy tree tolerant of drought and salt, making it ideal for our prairie environment. It works very well as a street tree because it is easy to maintain, hardy, and long-lived.

Cultivars:

- Prairie Spire™ (Fraxinus pennsylvanica 'Rugby') has a narrower upright growth habit
- Foothills™ (Fraxinus pennsylvanica 'Heuver') has an oval shaped canopy

Mature height: 15m (50ft) Spread: 6-7m (20-23ft)

Mancana Ash Fraxinus mandshurica 'Mancana'



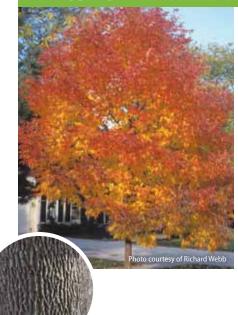
This attractive shade tree has an oval form with dense canopy, and produces no seeds. The striking compound feather-like foliage turns to a beautiful fall gold colour.

Hybrids:

 Northern treasure is a cross between the native black ash and the Mancana ash (Fraxinus nigra x mandshurica).

Mature height: 10m (33ft) **Spread:** 6–7m (20-30ft).

White Ash Fraxinus americana



This attractive tree has an upright oval form and dense canopy. The striking compound foliage turns from yellow into shades of purple and peach.

Cultivars:

 Northern Blaze® (Fraxinus Americana 'Jefnor')

Mature height: 12-17m (40-55ft) Spread: 8-12m (26ft-40ft)

Photo courtesy of Paul Wray

Basswood and Linden - Tilia

American Basswood Tilia americana



This attractive, large shade tree is easy to maintain and grows at a moderate rate. It is a low-headed pyramidal tree in its youth, becoming more round as it matures. The striking, dark green leaves are large and broad, growing up to 20cm (8") on a mature tree. The leaves are beautiful in autumn when they turn vivid yellow. The basswood also produces fragrant yellow flowers in late June.

Cultivars:

 Redmond (Tilia americana 'Redmond') has large shiny light green heart-shaped leaves with a downy white underside.

Mature height: 15m (50ft)

Spread: 8m (26ft)

Little Leaf Linden Tilia cordata



This tree is pyramidal in shape when young and becomes more rounded as it ages. It is an excellent shade tree, well-suited for street planting. It produces white to yellow fragrant flowers.

Hybrids:

Dropmore (Tilia cordata 'Dropmore')
has a dense pyramidal shape and is
resistant to the linden mite.

Mature height: 10-15m (33-50ft)

Spread: 8-10m (26-32ft)

• Greenspire (*Tilia cordata* 'Greenspire') is a fast growing tree with a pyramidal form. The leaves are heart-shaped leathery and dark green.

Mature height: 12m (40ft)

Spread: 10m (30ft)

Mongolian Linden Tilia mongolica



This is a linden with interesting exfoliating bark, yellow flowers in the spring, and a golden fall colour.

Cultivars:

 Harvest Gold™ (Tilia mongolica 'Harvest Gold') has an upright form, and a consistent golden-yellow fall colour.

Mature height: 10-12m (35-40ft)

Spread: 8m (26ft)

Photo courtesy of Jeffries Nurseries

Birch - Betula

Paper Birch Betula papyrifera



This moderate growing, upright tree makes a valuable landscape feature. The paper-like bark is attractive throughout the year and the leaf colour in the fall is a brilliant yellow. Paper birch is not drought tolerant and requires more water.

Cultivars:

 Prairie Dream® (Betula papyrifera 'Varen') is stress tolerant and considered resistant to the bronze birch borer. This selection of paper birch has a broad oval shape and exfoliating chalk white bark.

Mature height: 12m (40ft)

Spread: 9m (30ft)

Asian White Birch Betula platyphylla



This tree is hardier than paper birch, drought tolerant and insect resistant.

Cultivars:

 Dakota Pinnacle® Asian white birch (Betula platyphylla 'Fargo') is a columnar shaped tree with dense foliage and chalk white bark.

Mature height: 10m (35ft)

Spread: 3m (10ft)

Buckeye - *Aesculus*

Ohio Buckeye Aesculus glabra



This is a low headed tree with an upright oval form. It does best when planted in a sheltered location but can tolerate most urban environmental conditions. Its leaves are dark green and palmately compound, and may turn orange in the fall. It will produce a large brown nut covered by a prickly husk. There are several mature Ohio buckeye at the Forestry Farm.

Mature height: 6-12m (20-40ft) **Spread:** 6-12m (20ft-40ft)

Cherry - **Prunus**

These are attractive ornamental trees that are excellent for small spaces.

They produce attractive white flowers in the spring and small ornamental fruit in late summer.



Schubert chokecherry is a hardy, drought tolerant tree that grows at a moderate rate. Schubert's have smooth grey bark and green leaves that emerge in the spring and turn a burgundy wine colour by midsummer. They are susceptible to black knot and suckering.

Mature height: 6-8m (20ft-26ft)

Spread: 6-8m (20-26ft)

Amur Cherry (Prunus maackii)



Photo courtesy of Anne Elliott

Amur cherry is a fast growing ornamental tree with attractive copper-orange bark, dark green leaves, and white flowers in the spring.

Cultivars:

•Goldrush® amur cherry (Prunus maackii 'Jefree')

Mature height: 8m (26ft)

Spread: 6m (20ft)

•Goldspur® amur cherry (*Prunus maackii* 'Jefspur')

Mature height: 5m (15ft)

Spread: 3m (10ft)

Crabapple - Malus

An ornamental crabapple is an attractive tree for the landscape. They are appreciated for their beautiful fowers, outstanding fragrance, hardiness, and ability to grow in most conditions.



Thunderchild Crabapple Malus x adstringens 'Thunderchild'



This is an outstanding flowering crabapple with an oval crown and deep purple leaves. It has delicate rose-pink flowers early in the spring and very small dark red fruit. Below is a list of similar varieties with slightly different characteristics.

- Kelsey crabapple (Malus x adstringens 'Kelsey')
- Selkirk crabapple (Malus x adstringens 'Selkirk')
- •Gladiator® Rosybloom crabapple (Malus x adstringens 'Durleo')

Mature height: 4-6m (13-20ft) Spread: 3-5m (10-16ft)

Purple Spire® Crabapple Malus x adstringens 'Jefspire'



This tree has a compact columnar form that is ideal for planting on side boulevards or in small spaces. It has attractive purple foliage and a few pink flowers in the spring.

Mature height: 5m (15ft)

Spread: 2m (6ft)

Elm - Ulmus

American Elm Ulmus americana

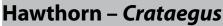


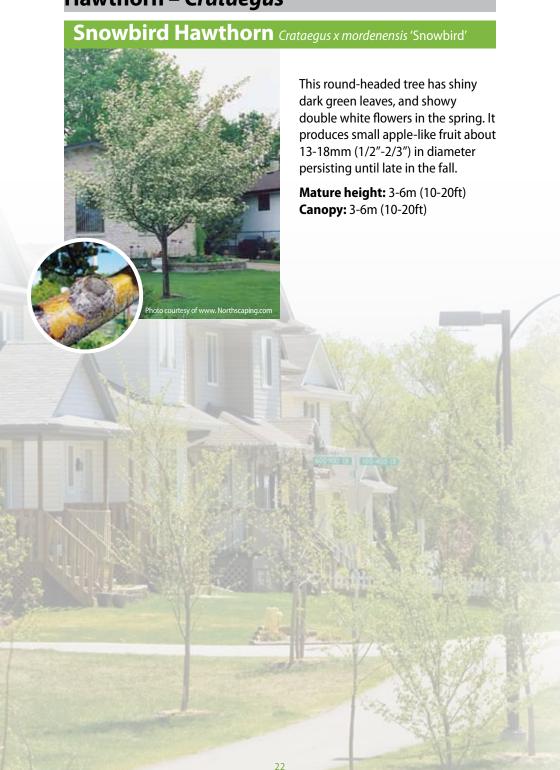
American elm is considered a majestic tree that adds a feeling of richness to Saskatoon's downtown and older residential neighbourhoods. It is a high-headed spreading tree with a unique umbrella shape; these characteristics make them ideal for street boulevards and for providing us with excellent shade.

Due to the threat of Dutch Elm Disease, the Province of Saskatchewan issues a pruning ban between April 1 and August 31.

Mature height: 20-30m (66-98ft)

Spread: 15-25m (50-82ft)





Maple - Acer

Manitoba Maple Acer negundo



This is a fast growing, irregular branched tree that produces seed. It is very hardy and able to withstand difficult urban conditions. The bark is dark brown and furrowed. There are many Manitoba maple planted in the older neighbourhoods of Saskatoon.

Cultivars:

 Baron (Acer negundo 'Baron') – is a seedless variety

Mature height: 12-15m (40-50ft)

Spread: 12-15m (40-50ft)

Amur Maple Acer ginnala



This small low-headed ornamental tree has dark green three-lobed leaves. The fall foliage can range from orange to an outstanding red, particularly when planted in full sun. Amur maple produces a two-winged fruit that resembles a miniature lobster claw, and contrasts nicely with the foliage. It is adaptable to relatively wide range of soils and pH ranges. Single-stemmed trees are

the best form for boulevard use.

Mature height: 3-5m (10-16ft)

Spread: 3-5m (10-16ft)

For a complete list of related maple species visit our website at **www.saskatoon.ca** and look under "U" for Urban Forestry.

Unity Sugar Maple Acer saccharum 'Jefcan'



This tree is a cold hardy selection of Canada's national tree. They require rich, well-drained soil, and a sheltered location. The leaves turn a yellow-orange colour in the fall.

Mature height: 12m (40ft)

Spread: 9m (30ft)

Silver Maple Acer saccharinum



This attractive oval-shaped tree has many ornamental attributes. Its deeply lobed leaves are light green on top and silvery beneath, and it has an excellent yellow autumn colour. This tree is fast growing and prefers a moist site. It is susceptible to die-back in exposed sites or when under moisture stress.

Cultivars:

• Sienna Glen® freeman maple (Acer x freemanii 'Sienna')

Mature height: 16-20m (52-65ft)

Spread: 7-10m (23-35ft)

Mountain-ash - Sorbus

European Mountain-ash Sorbus aucuparia



Photo courtesy of Tom DeGomez

This tree has an oval form, dark green compound leaves, and showy white flowers in the spring followed by bright orange-red fruit in the fall. This tree will attract birds and provide interest to the winter landscape. The single-stemmed trees are the most appropriate form for boulevards. The mountain-ash requires well-drained locations.

Varieties:

 Russian mountain-ash (Sorbus aucuparia 'Russica') is a cold hardy selection with a dense upright crown.

Mature height: 6-8m (20-26ft) **Spread:** 4-6m (13-20ft)

Showy Mountain-ash Sorbus decora



It is more resistant to fire blight than other susceptible species.

Mature height: 4-8m (13-26ft)

Spread: 4-6m (13-20ft)

This is a small ornamental tree that is very hardy in our prairie climate but requires a well-drained location.

Photo courtesy of Bill Cook, Michigan State University, Bugwood.org

Oak - Quercus

Bur Oak Quercus macrocarpa



This is an attractive, long lived shade tree that is ideal for our prairie environment. It has interesting corky bark and lobed leaves that turn an antique yellow in the fall.

Mature height: 15-20m (50-65ft)

Spread: 10m (33ft)

Northern Pin Oak Quercus ellipsoidalis



This is a long lived shade tree that is tolerant of alkaline soils. The dark green lobed leaves turn a spectacular red colour in the fall.

Mature height: 18m (60ft)

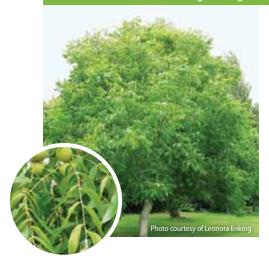
Spread: 12m (40ft)

Photo courtesy of Ren Rhodman

Walnut - Juglans

These trees have unique branching and foliage. Branching begins low on the trunk. Compound leaves with long narrow leaflets give these trees a tropical-like appearance; leaves turn yellow in the fall. Walnut species need to be planted in a sunny location.

Black Walnut Juglans nigra



Black walnut is an attractive tree for sheltered locations. The nuts are round and the bark is dark brown.

Mature height: 14m (45ft)

Spread: 9m (30ft)

Butternut Juglans cinerea



Butternut trees are similar to black walnut. Some differences are that the nuts produced are oblong and pointed. Also the bark is smoother and ash-grey in color.

Mature height: 14m (45ft)

Spread: 9m (30ft)

KEEP OUR URBAN FOREST GROWING

Order Your Free Tree Today

For a list of available tree species, visit **www.saskatoon.ca** and look under "u" for urban forestry or call **975-2890.**

| The owner may list their choice of tree species in order of proceedings are filled subject to species availability and suitability. Date Telephone () Owner's Name | ity to the site. |
|--|------------------|
| Date | |
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| Send to 1101 Avenue P North, Saskatoon SK S7L 7K6 | |





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under "U" for urban forest.