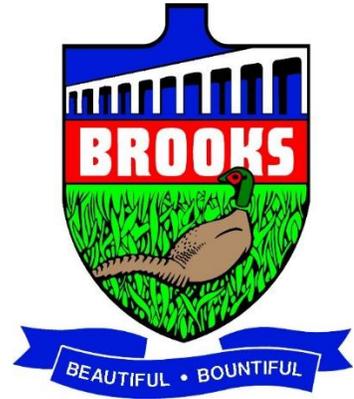


Parks Department



City of Brooks

Urban Forestry Management Plan

November 2016

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Executive Summary

The City of Brooks recognizes the need to protect, maintain and enhance its urban tree population. Consequently, the Parks Department has conducted a review of the City's urban forest to develop this Urban Forestry Management Plan ("**Management Plan**").

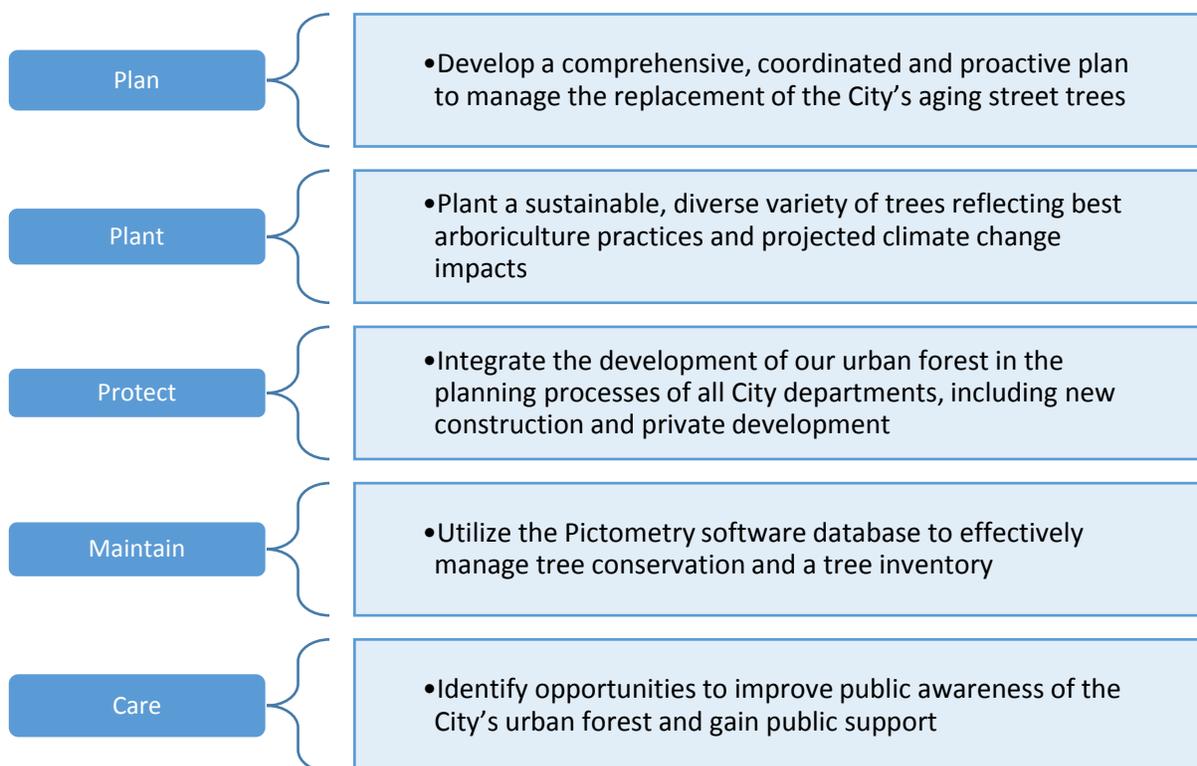
There are approximately 4,100 trees in our parks and other City owned properties' that make up the City's urban forest. These trees include heritage trees, street trees, specimen trees, and other natural tree varieties throughout the City. However, many trees are aging and will need to be removed as they continue to decline over the next decade, particularly those situated on Cassils Road and some older neighbourhoods.

A Management Plan is required:

- To plan for the protection and conservation of City trees
- To manage the removal, replacement and maintenance of the City's trees; and
- To plan for a sustainable and healthy future urban forest.

A comprehensive and proactive Management Plan will assist in ensuring that the trees within the City are managed responsibly and according to best practices.

The City of Brooks has made many commitments historically to care for and preserve all trees on City property. The City of Brooks will strive to attain the goals of sustainable planning, planting, protection, maintenance and care of trees, urban forests, green space, and related resources for public benefit.



1. Introduction

Trees are believed to have a significant impact on mitigating and reducing the impact of global warming. Further, there are many benefits of trees that can be obtained on a local scale, such as:

- Add beauty and vitality to the community;
- Improve personal health;
- Reduce air pollution;
- Conserve water and reduce soil erosion;
- Save energy;
- Reduce noise pollution;
- Increase property values;
- Provide shade and shelter from wind;
- Serve as natural air cleaners, removing carbon dioxide from the air and releasing oxygen; and
- Slow rainfall runoff, and contribute to storm water management.

A healthy and well maintained urban forest does not come about without forethought, planning and resource commitments. Instead, the health and stability of trees can only be achieved through careful planning and systematic maintenance of the tree population.

The City of Brooks will safeguard, renew, and enhance our urban forest to ensure the economic, environmental, cultural and social benefits of a healthy and vibrant ecosystem for our future generations.

Purpose

The purpose of this Management Plan is to develop a coordinated and proactive plan to manage the renewal of the City's trees utilizing arboricultural best practices. The Management Plan provides information for adequate budgeting and maintenance procedures to ensure the perpetuation and enhancement of the City's urban forest.

Actions

Short Term	Long Term
<ul style="list-style-type: none"> • Maintain the City's tree inventory database 	<ul style="list-style-type: none"> • Develop a comprehensive and coordinated set of procedures for all tree maintenance and activities: planting, watering, staking, fertilizing, pruning and tree removal
<ul style="list-style-type: none"> • Establish best practices for the selection of tree and plant varieties to be planted on City property, and specifically to eliminate the use of invasive species 	<ul style="list-style-type: none"> • Establish a tree reserve fund to be used for the procurement and planting of trees from a dedicated annual budget
<ul style="list-style-type: none"> • Annual monitoring to see how the plan is working and update as necessary 	<ul style="list-style-type: none"> • Continue efforts to encourage and support community based initiatives to plant trees

2. Urban Forestry Management Plan

The Management Plan will focus on the following areas:

- Tree Classification
- Maintenance and Monitoring
- Removal Guidelines and Process
- Replacement and Renewal
- Protection and Conservation
- Outreach and Education
- Budgeting and Funding

Tree Classification

The classification system is designed to present a clear comprehensive distinction of trees to enable the appropriate management of trees in each category. This classification system will form the foundation of the Management Plan.

A. Class A: Heritage & Rare Trees

Heritage and rare trees are of high value, usually non-native and planted. Trees in this category merit special considerations for preservation and conservation. The heritage tree component would include many trees in their original historic core areas.

B. Class B: Park & Street Trees

This class of trees are generally high value, usually non-native and planted. These include:

1. Ornamental trees in established park areas
2. Trees in the downtown core; and
3. Street trees outside of the downtown core

C. Class C: Trees in Natural & Semi-natural Areas

These areas include wildlife corridors, urban/forest interface zones, green spaces and other minimally managed areas such as: underdeveloped right of ways and otherwise unused City property; highway arterials and interchanges, etc. Trees in this category may be ornamental and planted but are mostly native trees or naturalized exotics, some of which are invasive.

Maintenance & Monitoring

Maintenance generally refers to proper pruning. This involves the maintenance of appropriate road, sidewalk and pathway clearances, the removal of dead wood that may become hazardous, and other operations to maintain the health of the tree. Maintenance also involves regular monitoring of health and

pests, pest control, assessments of conflicts, potential property damage and hazards. Prevention and early detection is a cost effective way of avoiding serious problems.

Each tree will be assessed using a Tree Risk Assessment Points System as used by the International Society of Arborists (ISA). Trees that are rated as:

- Extreme hazard (10-12 points) will be pruned or removed immediately
- High hazard (6-9 points) will be pruned or removed within five-years
- Moderate hazard (3-5 points) will be re-assessed in five years
- Low hazard (1-2 points) will be maintained

A cyclical pruning program, implemented properly, can update the value of the forest, reduce storm damage and other problems and, in time, reduce costs and liabilities. An effective pruning program involves the following:

- Proactive management: regular review of each tree;
- Record keeping and inventory, including maintenance, removals, pruning, and inspections; and
- Preparation of annual work plans, including fall and spring pruning schedules, and the planting of new trees

On average, pruning one tree can take 1 to 2 man-hours based on size and site specifications. Typically, it takes 15 days by contract to complete 15% of the City's tree maintenance or 250-520 man-hours for an in-house crew. Refer to **Appendix 1** for the detailed pruning work plan.

Removal Guidelines & Process

The City of Brooks' *Protection of Trees and Shrubs Bylaw 15/18* regulates the planting and protecting of trees and shrubs on any street or public place, and establishes the conditions to which a municipally owned tree can be removed.

The removal of trees can sometimes be a contentious issue for the public. When considering removals, it is important to consider the actual value of the tree and weigh that against the advantages of having it removed. If a tree has existed for many years, and is classified as a heritage or rare tree, or it has a recognized landscape or cultural function, then its social and economic value may outweigh the rationale for removing it. In terms of new development, construction or repairs, if there is no hazard, consideration should be taken for working around the tree instead of removal wherever possible. Factors for removal will include hazard and risk management, conflicts with infrastructure, mortality, nuisance and disease. A proactive and defined procedure that determines exactly when a tree must be removed is set out below.

Prioritization of Tree Removal

Emergency Removal Criteria
• Trees having 50% or more trunk decay/disease;
• Trees extremely damaged by storm or severe weather conditions;
• Trees requiring fire mitigation; and
• Trees presenting hazard to life/property.

Secondary Removal Criteria
<ul style="list-style-type: none"> • Trees that are a public nuisance/basis for widespread complaints; and
<ul style="list-style-type: none"> • Trees causing damage to underground pipes and/or obstructing sewer flow.

Other than in emergency situations, trees will be removed in accordance with the above tree removal criteria, as specified in the Bylaw and developed through this Management Plan.

Replacement & Renewal

A proactive program of renewal involves planting the best tree for the site, soil, appropriate spacing to maintain sightlines, and site preparation. A 2 to 1 ratio of new trees planted to removals should be utilized. The exact location of each tree will be determined on a case-by-case and site-specific basis (i.e. either in the same location or elsewhere in the City). The reasoning for the 2 to 1 ratio is that 50% of new trees could possibly die in the first 50 years. Annual work plans help to coordinate anticipated removals, utilizing an organized and safety-oriented approach, centred on the City's objectives for long term management of the urban forest and the minimization of significant tree loss.

Each tree removal and replacement will be assessed using the following type of action:

- Type A – Remove trees, no replacement
- Type B – Remove trees and replace
- Type C – Plant trees and remove trees later
- Type D – Remove trees to ground level and no replacement
- Type E – Remove trees to ground level to allow natural vegetation to grow

Further, stump removal and renewal will be assessed using the following type of action:

- Type A – Grind and landscape
- Type B – Dig out and plant in same spot
- Type C – Cut to ground level and leave
- Type D – Excavate all stumps and roots plant and landscape

Refer to **Appendix 2** and **Appendix 3** for detailed work plans on tree and stump removals.

Tracking tree and stump removals is also necessary to facilitate renewal. An inventory of the City's trees will be maintained by the Pictometry Image Capture database. Further, planting should be encouraged in all available areas. This includes unplanted streets and right of ways, commercial areas and parking lots. This will involve investigating possibilities in every unplanted area. The above removal and replacement guidelines will ensure this goal is met, and reviewed regularly to assess potential conflicts with utilities and streetscape design.

Protection & Conservation

In this section, the protection and conservation techniques for City trees are outlined. Trees that have been identified for protection in areas known for pests or disease; or where construction, repairs, or new development activity are occurring, adequate tree and root protection must be put in place to protect the tree(s) from damage and/or compaction. Following are the control measures for pest and development activity.

Pest Control Measures

Pest control measures depend on the extremity of the pest and the impact on the tree(s). Control measures include anywhere from removing or pruning branches, insecticide treatments, or removal (as previously defined). Early detection and appropriate treatment based on the stage of infestation can significantly improve mitigation outcomes.

Activity Control Measures

Activity control measures involve appropriate communication among City staff, City contractors, the public and developers to ensure City policies and procedures are understood and followed.

Outreach & Education

Efforts to ensure the City's tree canopy remains intact and expands will require community involvement. Appropriate public relations strategies will be used to facilitate acceptance of policies and education about the realities of tree operations. These will keep the public informed and deflect unwarranted criticisms of operations and encourage community involvement and the growth of awareness about trees and the environment. Outreach methods will include utilizing the Parks Department section on the City webpage, flyers, social media, public meetings, letters to residents, door hangers and newspaper articles. Residents have also taken part in seminars on tree pruning and maintenance conducted by the Parks Department; and if there is further public interest, more seminars could be offered.

THE COMMEMORATIVE FOREST

The Commemorative Forest project is an example of successful community involvement with urban forestry renewal in the City. Initiated in 2010 by Communities in Bloom with the support of the City, local businesses, various grants and individuals, trees are planted to commemorate births, deaths, weddings, anniversaries, and other memorable occasions. Donors are recognized with granite tablet plaques. Businesses have also sponsored ornate benches, and a picnic table. The forest will be a lasting legacy in the City.

3. Budgeting & Funding

Each year the City devotes financial resources to the management of the urban forest. City funds are spent on leaf collection and removal, pruning and tree maintenance, new tree planting, and tree removals. The costs associated with tree maintenance include regular pruning, removals, planting, inventory maintenance, as well as any emergency pruning or removals either from public requests or damaged trees.

A dedicated annual budget enables the City to maintain the health of its tree population. With a sustained budget, systematic tree pruning, removals, inventory management, and priority maintenance can be effectively achieved. Being aware of relevant grants and donations available for urban forestry is also important to achieving sustainable funding.

2016 Grant Sources Available

Grant Name	Amount \$
TD <i>Friends of the Environment</i>	2500
Fortis Alberta <i>Community Naturalization Grant</i>	1000 – 3000
Tree Canada Alberta <i>Urban Forest Releaf</i>	10,000
Tree Canada Alberta <i>Edible Tree Program</i>	25,000
Alberta Council for Environmental Education <i>Alberta Ecotrust</i>	7500 – 30,000

However, as the City implements a systematic pruning, maintenance and replacement program, it is expected that the need for pruning would eventually drop drastically, and further, public requests for services are expected to drop significantly.

4. Conclusion

This Management Plan will enable the City to accomplish its tree management goals. Given the population of aging trees in some areas of the City, it is important to preserve City trees for as long as possible until renewal efforts begin to catch up. This Management Plan will assist the City in planning for the conservation of its trees as well as manage removal and replacement.

Key components for the successful implementation of this Management Plan include:

- Adequate and sustained funding;
- Monitoring and maintenance of a tree inventory; and
- Developing community support.

Through this Management Plan and attached appendices, the short and long-term planning for the City's urban forest is made possible.

5. Appendices

1.	Pruning Work Plan
2.	Tree Replacement Work Plan
3.	Stump Removal Work Plan
4.	Cottonwood & Nuisance Tree Work Plan