Forestry Management Plan 2018-2038

Building bridges through Urban Forestry to enhance well-being of community and sustainability of the environment.

City of Prince Albert

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1.0 THE URBAN FOREST

1.1 Acknowledgments

The City of Prince Albert Urban Forest Management Plan is a collaborative effort between past and present City of Prince Albert Parks Division staff and Management. The intent is that it is a living document that is updated as information and knowledge becomes available.

While City staff; have been the driving force behind the Management Plan, there have also been advice and contributions from the Saskatchewan Ministry of Environment Forest Services Branch, SaskPower, Board Directors with the Association of Saskatchewan Urban Parks and Conservation Areas, the ISA and certified arborists, other municipalities, land developers, and current and retired members of the forestry profession. We have also gained valuable insight from the community – Prince Albert resident inquiries and forestry requests have informed the priorities, concerns, and outcomes of the Plan.

1.2 What is the Urban Forest?

Prince Albert's urban forest includes all trees and their habitat within the city's urban area boundary. This includes trees on both public and private property: along city streets; in parks, open spaces and natural areas; and in yards and landscaped areas of residences, offices, institutions, and businesses. The urban forest is a shared resource that provides a wide range of benefits and services to the entire community.

1.3 Overview

Urban forest management, or urban forestry, refers to the planning and managing of city trees and vegetation in a manner that promotes their environmental, cultural, and biological health. The Parks Division in the Community Services Department is responsible for the planting, maintenance, and protection of trees and vegetation on city-owned and public land within the City of Prince Albert.

There are many components that need to be considered when establishing good urban forestry practices within a City, including arboriculture, entomology, pathology, and the execution of established and proven horticultural practices. A well-planned Urban Forest Management Plan will help in ensuring that there is an urban forest for generations to come.

The City of Prince Albert residents enjoy a high quality of life in a vibrant, healthy and prosperous community. All of the city's trees, whether they are along streets or in parks, in yards or in woodlands, in the urban or in the rural areas, natural stands of boreal forest and aspen park land contribute significantly to the city's health and are considered part of the ***urban forest***. The effective management of this diverse and valuable resource is the focus of this plan.

Prince Albert's urban forest includes trees of different species, ages, sizes. Some are large, old remnants of the area's natural forests; others are small, young saplings. Some have been planted; others have regenerated on their own. All of these trees form part of the city's ***green infrastructure***, which sustains the community by filtering air pollution, providing shade, reducing energy use and bringing nature to the city.

Prince Albert's urban forest, as in many cities, is confronted with various challenges that threaten its health and sustainability. Key pressures include changes in land use, urban

intensification, conflicts with infrastructure, climate change, invasive pests (DED – Dutch Elm Disease, EAB – Emerald Ash Borer), plants and diseases, and limited allocation of resources.

To maintain and enhance the urban forest under these conditions requires thoughtful planning, effective management, sufficient resource allocation and ongoing cooperation between the city, its residents and other local stakeholders.

The purpose of this plan is to increase urban forestry management effectiveness and efficiency, assess and improve upon tree health and diversity, minimize risks to the public and maximize the benefits provided by a healthy and sustainable urban forest.

This plan will help identify opportunities on both the public and private lands, in urban and rural Prince Albert, and focuses on five key areas:

1) Management and Implementation
2) Community engagement and stewardship
3) Protection and Preservation
4) Reforestation and Enhancement
5) Tree Health and Risk Management

Recommendations for each of these areas have been developed based on a review of Prince Albert's current practices, evaluation of leading examples from other Municipalities, input from city staff and the community. The recommendations have been assigned priorities within the plan's 20-year framework (***still in development***), considering actions likely to provide the most tangible benefits in the short and long-term. These priorities will need to be reviewed every five years and may be adjusted to reflect changes in existing conditions and/or resource availability.

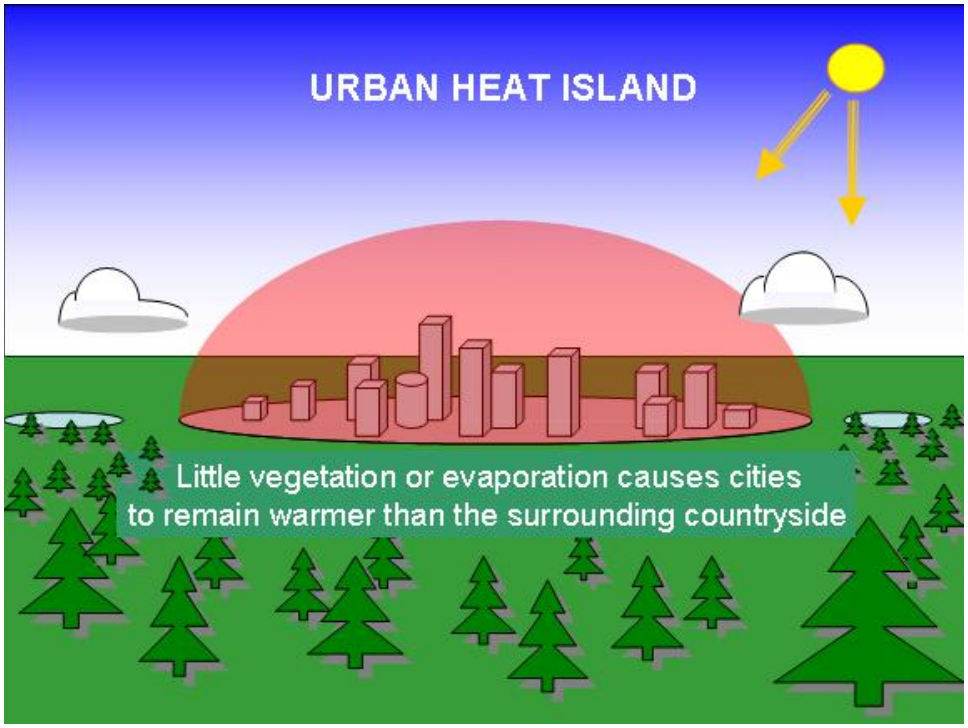
2.0 URBAN FOREST BENEFITS

Urban forests provide a wide range of benefits to cities and the areas around them. These have been well documented in various studies and reports, and the latest research attributes value to some of these benefits.

2.1 Environmental Benefits

Trees in cities provide valuable environmental services, including these:

- ***Filtering air pollution*** – Trees and vegetation reduce air pollution through carbon sequestration; by absorbing carbon dioxide and ozone, and releasing oxygen. Plants can capture and remove airborne pollutants and particulates such as dust, smog, and soot.
- ***Removing atmospheric carbon*** – Young trees absorb CO2 at a rate of 13 pounds per tree each year. Trees reach their most productive stage of carbon storage at about 10 years at which point they are estimated to absorb 48 pounds of CO2 per year. At that rate, they release enough oxygen back into the atmosphere to support two human beings.
- ***Moderating the Urban Heat Island Effect*** – Urban environments typically exhibit higher temperatures than their rural surroundings due to lack of vegetation, and increase in reflective, heat-absorbing, and impermeable surfaces. This is referred to as the Urban Heat Island Effect. Trees and vegetation can reduce urban temperatures by cooling cities during hot summer months through their daily dew and evaporation cycle. The light absorbed by vegetation might otherwise be converted into heat energy. Trees can extend the life of sidewalks and roadways.



- ***Providing energy savings by shading buildings in the summer and screening them from wind in summer and winter***.

- ***Cleaning and reducing storm water runoff*** – Trees can hold vast amounts of water that would otherwise wash away valuable nutrients and also pollutants that could end up in the river systems. Trees are an important part of storm water management in many cities.

- ***Stabilizing Slopes and Protecting Against Erosion*** – Trees and other vegetation are essential for stabilizing the soil and preventing erosion and excessive run-off. The roots bind the soil structure and the trunks of the trees slow down the flow of water. This is also critical especially along our North Saskatchewan River, Spruce River and the drainage channel.

- ***Increasing Biodiversity*** – Birds, animals and insects use trees for food, shelter, nesting and mating. Trees provide shelter for the undergrowth required for healthy soil structure. By protecting the trees we also save all the other plants and animals that they shelter.

Trees in built-up areas also provide habitat for urban-adapted wildlife and migratory birds, and they can provide temporary refuge for some types of wildlife moving between natural areas. Woodlands in both urban and rural areas provide habitat for a variety of species, including plant and animal species alike.

Although there remains uncertainty about how different species and ecosystems are going to respond to the shift predicted to be associated with climate change, it is generally agreed in the scientific community that the maintenance and reforestation of treed areas is one of the easiest and least expensive means of cooling urban and rural environments.

2.2 Social/Economic Benefits

Trees and green spaces have been linked to improvements in these:

- ***Physical and psychological well-being*** – It takes 3 minutes for blood pressure and muscle tension to reduce significantly after seeing trees. It has been observed that hospital patients, who can see trees out their windows, are hospitalized 8% fewer days than their counterparts.
- ***Visual screening*** – City trees often serve several architectural and engineering functions. They provide privacy, emphasize views, or screen out objectionable views. They reduce glare and reflection.
- ***Safety for pedestrians and other road users*** – There is a growing body of evidence suggesting that the inclusion of trees and other streetscape features in the roadside environment may actually reduce crashes and injuries on urban roadways. The

evidence suggests that the presence of a well-defined roadside edge may be leading drivers to exercise great caution.

- ***Property values*** – Trees are one of the few landscape investments that increase in value over time. Research shows that the beauty of a well planted property and its surrounding street and neighbourhood can raise property values by as much as 15%.
- ***Human Comfort*** - Trees provide shade, shelter, wind protection and visual screening, which can assist us in carrying on with our everyday activities. Trees can reduce exposure to harmful ultraviolet (UV) rays by offering shade and absorbing up to 95% of the UV radiation.

Urban spaces with large, healthy trees feel more welcoming and safer than those without them. Stress levels have been found to be lower among people who enjoy even moderate exposure to trees and green areas, and research shows that trees facilitate positive social interaction.

2.3 Urban (Forestry) Myth

Many people believe trees and vegetation provide insulation from noise. Studies have shown that a significant stand of mature trees and vegetation, 15-30 metres thick, are only able to reduce noise levels by 6 decibels. The reduction of noise is more of a psychological one – people are less conscious of noise if they cannot see the source.

3.0 PREAMBLE

The following vision, guiding principles and strategic objectives have been developed with careful consideration for best practices and for Prince Albert's distinctive environmental and social context. The themes that run through these statements are intended to be realized through the implementation of the recommendation laid out in this plan.

3.1 Vision

We envision a city in which all community members live and play where the trees and woodlands of Prince Albert are maintained and enhanced long term, in acknowledgement of the value environmentally, socially and economically that they provide. The city will work by building strategic partnerships within the community in both the urban and rural communities to ensure that essential resources are managed effectively to maximize the overall health of the trees, increase native biodiversity, minimize risks to public and property and contribute to the environmental sustainability and quality of life in Prince Albert.

3.2 Guiding Principles

The following seven principles are intended to guide the implementation of this plan over the long term.

1) The city's urban forest, a major component of its green infrastructure, is a valued and shared resource.

2) The city, its residents and other local stakeholders must work together to improve, care for, maintain and expand upon the urban forest.

3) The right tree must be planted in the right place to maximize upon its full potential

4) The city's urban forest must include a high diversity of native and non-invasive species to improve its resilience to various stressors

5) Tree protection and reforestation must be priority considerations during development and intensification.

6) The city's trees must be maintained in a healthy and safe condition through ongoing risk assessment, health care practices and an Integrated Pest Management (IPM) approach.

7) This plan must adopt an *adaptive environment assessment and management* approach that allows for changes in response to new information or conditions

3.3 Strategic Goals

The following eight goals identify the key items that the City of Prince Albert is seeking to achieve through implementation of this plan.

1) **Increase awareness** among city staff, local landowners and residents alike about the benefits and services provided by the urban forest and how to care for it.

2) **Forester engagement and stewardship** in both the urban and rural areas by providing resources, building partnerships and supporting educational and hands-on activities

3) **Transition the city from a reactive to a proactive management model** by implementing appropriate policies and management practices related to both the protection of existing trees and the planting of new trees, on public and private lands.

4) **Explore mechanisms** for more inter-departmental coordination regarding proper protections and management of the green infrastructure (i.e. trees) and educate about tree protection guidelines, policies and best practices.

5) **Improve the resilience of trees** to current stressors by implementing policies and industry best management practices that optimize *native species* diversity and tree growth potential

6) **Minimize the risk presented by trees** in the urban forest to people and property on public lands by developing guidelines and best management practices.

7) **Monitor and review the status of the urban forest** using established criteria and indicators on a regular basis, and revise planning and practices as required to ensure ongoing progress towards realizing the vision

8) **Ensure that the urban forest is recognized as a critical municipal asset** and infrastructure component through a long-term commitment to proactive management, adequate resource allocation and joint stewardship with the city and the community.

3.4 Purpose of the Plan

The Urban Forest Management Plan provides guidance and direction for all urban forest management decisions within the City of Prince Albert. Focusing on the maintenance, renewal, and community awareness of our urban forest, the Plan ensures:

- An effective and efficient urban forestry program is implemented in the City of Prince Albert that promotes the preservation of a healthy and sustainable urban forest;
- A framework is created that includes ongoing monitoring and assessment, so that priorities, requirements, procedures and specifications are adhered to when planting, removing, and maintaining all public trees within the City;
- Regular inspection cycles that utilize data of City-owned trees to establish cyclic maintenance programs and a system of response prioritization; and,
- That the benefits of the urban forest are maximized for the well-being of the community and residents of Prince Albert can enjoy a safe, attractive, and vibrant urban forest in perpetuity.

4.0 URBAN FOREST SUSTAINABILITY

4.1 Challenges and Solutions

The City of Prince Albert is the third-largest city in Saskatchewan and is situated near the centre of the province on the banks of the North Saskatchewan River. The city is well known as the **"*Gateway to the North*"** because it is the last major centre along the route to the resources of northern Saskatchewan. The city's current population of 35,930 (2016) along with the combined planning of development to accommodate a possible population of 50,000 by 2025 – the City of Prince Albert continues to be a leader and welcoming place to live for all.

New residents bring diversity, ideas and new opportunities. They also bring more demand for housing and more pressure on the city's urban municipal services, including roads, sewers, parks and natural areas. These pressures, combined with the already present and emerging threats of tree pests, and environmental stresses, will require careful planning, active management, ongoing monitoring and creative problem solving to maintain the urban forest as a healthy and growing entity.

Currently, the biggest threat(s) to the urban forest are the Emerald Ash Borer, which has the potential to decimate the city's ash trees. Emerald Ash Borer has shown itself to be an aggressive and non-selective pest when it comes to all members of the Fraxinus Genus Species (Ash trees).

The other threat is a well-known one, DED or Dutch Elm disease. Dutch Elm disease is a fungal disease of elms. The fungus is spread by both a native and an introduced bark beetle whose larvae tunnel under the outer bark and create distinctive feeding 'galleries'. There are

fungicide treatments available for individual trees but they are costly, must be repeated regularly, and may only prolong the life of the treated tree by 5-10 years. On average, DED arrives three to seven years after the first detection of elm bark beetles. Of the two, we know we can manage DED but not EAB.

At the site-specific level, particularly in urban and urbanizing areas, the biggest pressure on trees is the competition for space both above and below ground.

Below-ground root habitat in built-up areas is typically characterized by inadequate soil volumes, quality and drainage. Roots must compete for space with underground utilities, and soils can become too compact to support the fine root hairs that provide water, oxygen and nutrients. Above ground, trunks, branches and foliage compete for growing space with people, buildings, overhead utility services and vehicular traffic. As a result, conditions are typically insufficient to promote tree longevity and health, and trees are unable to reach their *genetic potential*, meaning they ultimately provide fewer benefits and cost more to maintain and replace.

Other conflicts occasionally occur when branch failures, tree roots and uprooted trees damage property and infrastructure and sometimes pose risks to human safety.

Solutions, as recommended in this plan, include the following:

- Identifying adequate space for trees early in the planning and development approval process;
- Improving above-ground and below-ground site conditions for trees, focusing in built-up areas;
- Protecting trees determined to be significant in the community;
- Planting a diverse mix of native and non-invasive tree species, and
- Regular, proactive tree care.

Urban trees with adequate growing space and subject to ongoing maintenance will be more resilient to environmental extremes and to the rigors of urban life and will, therefore, be better able to adapt to future challenges. They will also pose less risk of failure, need to be replaced less frequently and provide exponentially more benefits as they mature.

5.0 PRINCE ALBERT URBAN FOREST

Prince Albert's urban forest is constrained in that there is limited types of vegetation and diversity of tree species which will grow in our climate. The majority of our old growth urban forest (trees over 50+ years of age) is of the following species and characteristics.

- Acer Negundo (Manitoba Maple) – a fast growing, short lived tree, many of which are nearing the end of their life cycle and becoming a liability due to rot.
- Ulmus Americana (American Elm)
- Fraxinus pensylvanica (Green Ash)
- Populus x jackii Northwest (North West Poplars) – a fast growing, short lived tree with a weak limb structure and invasive and strong root system. Many of these were planted

as a donation in the 1980's and have also proven to be one of the few hardy species for our environment.

Many of Prince Albert neighbourhoods, particularly the more established ones such as Midtown, East Hill, and West Hill, are characterized by and loved for their established tree canopies.

6.0 PARK & BOULEVARD TREE PLANTING PROGRAM

6.1 Diversity

It is essential to implement the planting of various tree species. These different tree species add varying color, texture, form, size and adaptability to the finished landscape. An urban forest that has several diverse species and age is better able to withstand insect & disease infestations as well as severe weather conditions.

6.2 General Tree Pruning

Proper tree pruning will greatly assist in maintaining the health, appearance and vigour of trees. Regular pruning corrects minor defects that would otherwise eventually become major tree surgery. Pruning will be undertaken by the Forestry Crew in order to maintain these trees in the best possible condition as established by good arboricultural standards and industry best standards. Thus, pruning serves the following purpose (not listed as priority):

i) Health

- To maintain the overall health of the tree
- Remove broken & diseased branches
- Address rubbing branches/limbs that create wounds
- Improve taper on branches and limbs
- Remove codominant stems
- Attempt to improve overall structure and health of the tree to reduce the risk of failures

ii) Safety

- Trees in high use areas (playgrounds, e.g.)
- Removal of broken and dead material (widow makers)
- Look for poor branch attachments (V-crotches)
- Excessive leaning (may indicate root problems)
- Trees in construction areas (10+ year lag time)
- Interference with line of sight on streets
- Utility pruning (safety of workers, keep the light on)
- Topped trees (will be a hazard down the road)

iii) Aesthetics

- Improve Views (vista pruning)
- Provide clearance (car, mowers, pedestrians)
- Pathways & sidewalks to 8 feet
- Streets to 18 feet
- Reduce shade & wind resistance
- Lawns, groundcovers, mulch beds with flowers
- Influence fruit & flower production

7.0 BACK LANE/ALLEY'S

We want to encourage and educate that responsibility is taken by property owners to ensure the maintenance and health of the trees, on their properties whether they be at the front or the back of the property. The purpose of back alleys and lanes are to act as a right of way for public utilities, back yard and garage access. Back alleys/lanes are not recognized green spaces and therefore, the City of Prince Albert does not consider plantings located in the back alleys/lanes as part of the City of Prince Albert Urban Forest as it relates to both the forestry by-law and this master plan. ***The forestry division under the direction of the Community Services department when requested will perform needed pruning in these utility right of ways.***

8.0 PRUNING AND CHEMICAL DAMAGE

Through this plan we want to encourage accountability though education and engagement. Currently we have concerns with trees being altered, pruned, or damaged due to what we call "***Homeowner Blight***". We want to try and head this off through having a dedicated forestry crew to solely focus on the front sides of the streets, addressing the dead, diseased or dying, and a properly managed urban forest program that focuses in on the health of the tree.

9.0 MAINTENANCE / PLANTING OF TREES

The City of Prince Albert will only undertake tree maintenance on City property. No work will be completed on private property unless by custom work order due to infraction of a City Bylaw, in which case the property owner would be billed for the work. The exception to this is boulevard trees that were planted in the past on private property with permission of the property owner because the boulevard was an insufficient width to accommodate trees. There are very few instances of these being planted and include the following locations and tree species:

- *Johnson Crescent: Elms*
- *Kemp Crescent: Elms and Green Ash*
- *Helm Crescent: Elms and Green Ash*

The City of Prince Albert no longer plants trees on private property. All new developments must provide room for trees within boulevards conforming to the Parks and Open Spaces Design standards. Any previously constructed developments which do not provide space for trees within boulevards (such as Coombe Drive and Glenn Howard Way) will not be planted with boulevard trees.

We want to encourage our citizens to plant private trees on the frontages of City Property in residential areas to help enhance their neighborhood. Often the purpose is to offer additional protection from prevailing winds and privacy to their own yards. An application for approval must be made to the Department of Community Services, with written approval required prior to commencement of planting.

10.0 NATURAL STANDS

The natural stands of forest we have within the City are just as much part of Prince Albert's Urban Forest as the transplanted trees. We must protect and preserve these areas. They allow people to connect with Mother Nature the way it was intended to be. These natural stands contain vegetation and wildlife that cannot be seen and admired anywhere else within the City. The complete removal of trees and underbrush in some of these areas alters this habitat forever. Continuous removal of underbrush will eventually lead to the overall decline in health to the remaining trees, as they will be more susceptible to insect and disease attacks. Public safety is high priority in these areas but it should not be at the expense of these natural stands. Remember, these natural stands are not the problem. Any request for underbrush/tree removal in these natural stands will be studied and assessed on an individual basis. The amount and type of complaints relating to a particular site will be taken into account before a decision is reached, as to the approach to rectify the concern. Some of the natural stands we need to protect within the City are:

- The Cooke Municipal Golf Course
- North of the Crescent Acres Community Club
- West side of 15th Avenue East from 4th to 7th Street East
- Miller Hill Park area
- Waste Water Treatment Plant area through to MacDowall Crescent

- Between 18th & 19th Street from 6th Avenue East to 17th Avenue West
- All areas within the Pehonan Parkway, including the Little Red River Park

It is administrations recommendation that some of the above listed natural stands should be thinned as required. In consultation with Police and Fire Services some of these natural stands need to be thinned and/or mulched and identified for controlled burn. This will alleviate some of the concerns for public safety as well as allow the forest floor to recover to its natural state between thinning cycles. Only the required amount of underbrush and dead plant material should be removed. This would still allow for a healthy forest stand and also address the needs of public safety. Thinning brush at the Cooke Municipal Golf Course and at the Little Red River Park should be avoided unless absolutely necessary.

11.0 TREE PLANTING

Prince Albert property owners are encouraged to plant trees within their private property. The current Zoning Bylaw requires that in most zones, trees are planted at a ratio of 1 tree per 45 square metres of landscaped area, to provide canopy cover and help deliver the city-wide benefits of a healthy urban forest.

Planning before planting ensures that the right tree is planted in the right place. Proper tree selection and placement can enhance the design of a site and prevent costly maintenance and potential infrastructure damage later on.

Trees should be chosen so that they are suitable to the planting site, and so that:

- The size of the tree fits the size of the site and can attain a healthy, mature canopy without interference;
- The species is suited to and can survive in our climatic zone;
- Trees are selected and located to complement the conditions and function of a site, promote public safety, not impede vehicle and pedestrian sight lines, not block vehicle and pedestrian access, and not interfere with above- and below-ground utilities.
- A tree can survive under site-specific conditions such as exposed or sheltered sites, sites with higher pollution levels, less soil, and/or compaction of its root system due to high foot traffic;
- A tree is not unnecessarily exposed to pests and diseases, or conditions that may weaken the tree or expose it to pests and diseases;

Tree planting must follow the City of Prince Albert Master Specifications 2014 document, specifically Section 02950: Plant Material. All trees planted in the City of Prince Albert should have been grown in the same climatic zone as Prince Albert, or next immediate zone, to ensure hardiness of all nursery stock species.

When planting trees, it is important to plant the right tree in the right place. A Landscape Architect, experienced Landscape Designer or ISA Certified Arborist can help you make an informed decision.

Tree planting is undertaken only in the spring or the fall. In order to limit the demands and disruption to tree pruning and regular maintenance, planting will be split between these two times. Minimum tree container size shall be no smaller than a 15 gallon pot.

11.1 Park Trees

Parks provide space for neighbourhood residents to interact with each other and meet new people. They're also great spaces for events and for people to engage in recreational activities. This allows people to develop a sense of community. A park is perfect for a picnic, a concert, or a farmer's market – whatever the community feels it needs.

All plant materials shall be a hardy species capable of healthy growth in Prince Albert and shall conform to standards of the Canadian Nursery Trades Association for Nursery Stock. When planting park trees the City of Prince Albert Master Specifications along with the City of Prince Albert Design Standards will be used to identify preferred tree species and planting guidelines.

Trees and shrubs to be primarily planted in groupings and mulched with a bark mulch or post peelings as per specification while individual specimen trees in turfed areas are acceptable as well.

All plant material to be planted a minimum of 5m away from a pathway, sidewalk or property line within a park.

There should be a minimum of 40 trees/ha on all dedicated municipal reserve.

There shall be a replaced value of two (2) new trees planted for every one (1) tree removed on any public lands

11.2 Street (Boulevard and Median) Trees

Trees that are planted within a City Road Right of Way (ROW) must be of a species that can tolerate urban conditions, particularly pollution, salt exposure, and lack of growing medium.

There are 4 types of boulevards within the City of Prince Albert:

1. **Combined Curb and Sidewalk** - Where the sidewalk is directly adjacent to, and abuts the curb at the edge of the roadway. In this instance street trees will be planted between the sidewalk and property boundary.
2. **Separated Curb and Sidewalk** - Where there is a space between the sidewalk and the curb. In this instance street trees will be planted between the sidewalk and curb.
3. **Curb and No Sidewalk** – Where there is a curb and no sidewalk, street trees will be planted between the curb and property boundary following the setbacks for Curb Face of Roads.

4. **No Curb or Sidewalk** – Where there is neither a curb nor a sidewalk, street trees will be planted between the edge of paved roadway and the property boundary following the setbacks for Curb Face of Roads.

Boulevard trees should be planted in new single-family residential subdivisions at a minimum ratio of 1 tree per lot front, 1 tree per lot back, and 2 trees per lot side.

Street trees should be spaced a minimum 10 metres apart.

Trees should only be planted in a median where there is a minimum 2 metre wide planting area, and should be centered within the median where they are most protected from traffic and snow plow damage.

Property owners may request a tree(s) from the City to be planted in the boulevard adjacent to their property. Requesting a boulevard tree is not a guarantee that one will be planted. The Parks Manager or their designate will need to inspect the site to ensure that there is sufficient room and no infrastructure conflicts to accommodate a tree.

If tree removal is required and undertaken to accommodate City utility work along an entire block, the block will be re-planted as per the Tree Planting guidelines when landscaping is completed.

Refer to Appendix “A” Tree Planting Letter

11.3 Minimum Planting Distances from Infrastructure

The following is a set of guidelines that should be followed when considering a potential tree planting site. Trees require a setback of a minimum distance, measured from the centre of the tree trunk, from utilities and other objects. Distances that are listed below have been determined with the goal of preventing immediate and future conflicts:

Refer to Appendix “B” Tree Planting Tips

City of Prince Albert | Tree Planting Guidelines (metres)

Spacing	
Between Street Trees	10.0m
Curb Face of Roads	
Arterial Roads	2.0m
Collector Roads	2.0m
Local Roads	1.5m
Street Corners (in accordance with the Corner Visibility Triangle)	7.5m
Separated Curb-Sidewalk where minimum setbacks cannot otherwise be accomodated and trees are required	centered
Paving	
Sidewalks, Public Pathways, and other Pavement	1.0m
Private Walkways	1.5m
Driveways (located so as not to obstruct vehicle sight lines)	1.5m minimum
Tree Species > 6.0 metres tall	*2.0m (preferred)*
Tree Species > 12 metres tall	*3.0m(preferred)*
Tree Species < 12 metres tall	*5.0m (prefered)*

Buildings

Where there is lawn between the Building and Tree	3.0 m
Where there is no lawn between the Building and Tree	3.5m

Fences, Bollards, and Site Furniture

Private Fences adjacent to Road Right of Ways	1.0m
All Fences, Bollards, and/or Site Furniture adjacent to or within Municipal (Park) Reserve where there is no lawn between the Fence, Bollard, and/or Site Furniture and the tree	1.0m
All Fences, Bollards, and Site Furniture adjacent to/within Municipal (Park) Reserve where there is lawn between the	2.0m
Community Mailboxes	**3.0m**

Signs

Front of Stop and Yield Signs	7.0m
Roadway Signs except from front of Stop and Yield Signs	2.0m
Front of Bus Stop Signs	12.0m
Side and back of Bus Stop Signs, and front of Bus Stop Signs where tree is more than 3.0m from curb face	3.0m
Railway Signs	12.0m

Utilities

120 - 240 Voltage Lines (Street Light Power Lines, Traffic Control Lines, etc.)	0.6m
Buried High Voltage Power Lines	2.0m
Overhead Power Lines and Power Poles	
Tree Species > 6.0 metres tall	*3.0m*
Tree Species > 12 metres tall	*6.0m*
Tree Species < 12 metres tall	*15.0m*
Telecommunication Lines	2.0m
Fibre Optic Lines	3.0m
Gas Distribution Lines	2.0m
Gas Transmission Lines	10.0m
Water and Sewer Lines	3.0m
Utility Pedestals	2.0m
Electrical Transformers	3.0m
Curb Boxes	3.0m
Overhead Lights (Street Lights, etc.)	5.0m
Fire Hydrants	3.0m
Catch Basins	1.5m

Residential Subdivisions should provide a minimum of 1 street tree per lot frontage, 2 trees per lot side, and 1 tree per lot back within adjacent street boulevards or public open space (where lot backs or sides onto public open space or street right of way).

Trees must be located and planted so that they are capable of achieving a healthy growth, form, and aesthetic, without restricting vehicle and pedestrian access and safety. Variance from City requirements and guidelines may be considered on a case-by-case basis if they cannot be met without compromise to tree health.

12.0 REFORESTATION PROGRAM

Whenever a tree has to be removed from City property (ie. disease, old age, liability issue, interference with utilities) it must be replaced with two trees. This two to one ratio will ensure the continued growth of a successful urban forest. If the tree cannot be planted in or near the same location, then a tree will be planted in another site location to maintain the proper number of trees.

The need to maintain a comprehensive reforestation program results from a decline in general forest population in the older established areas of the City.

The reforestation program will see the planting of various tree species to help avoid devastation from insects or disease.

Selected trees will be drought tolerant, cold hardy (preferably Zone 2), salt tolerant and disease and insect resistant species. New species that are compatible to our zone will be considered.

Trees will also be considered for their aesthetics, leaf color, bark color & texture, longevity, mature height and spread, form and function for the planting site.

Refer to Appendix “C” – Preferred Tree Species.

13.0 CAPITAL PLANTING PROJECTS

These projects are generally located in the newer developments of the City. Most are funded through the Land Fund Accounts. The various species of trees planted will be on a one tree per private frontage with two trees allowed for corner lots. Trees will not be planted until the lot has been finished, underground structures installed and boulevard is finish graded. All projects relating to Parks will follow the designated plans.

14.0 PARK & BOULEVARD TREE MAINTENANCE PROGRAM

14.1 General Information

The purpose of this program is to preserve the health and appearance of the City’s boulevard and park tree inventory and to ensure that the trees do not constitute a hazard to public or to property.

Some of the maintenance will include pruning, bolting and/or bracing of trees, watering, mulching, removing dead or diseased trees and stumps, inspecting pruning activities performed by contractors or utility agencies, and providing information and training in proper tree maintenance techniques.

14.2 Services Provided

Pruning, removal, stumping, bolting and bracing services are provided for trees on City boulevards and parks (elm tree pruning is not allowed between April 1st and August 31st).

The tree inquiry program collects service requests from the public and other civic departments. Requests are addressed according to priority and available resources.

Tree pests and diseases will be monitored on a regular basis. In the years when the economic and/or aesthetic damage to trees may be excessive, a spray program may subsequently be recommended by Council.

A planned street tree health enhancement program is carried out on all new boulevard plantings for a minimum of three years. This includes mulching, replacing and removing tree stakes, replacing dead trees, watering (with adjacent property owner assistance) and structural pruning. An informational package will be supplied to each property owner so they can understand basic maintenance requirements of the new tree.

A gator bag shall be installed on all newly planted trees and shall remain in place to help with watering for a minimum on three years.

Boulevard tree planting shall not commence until the lot is improved, all underground structures have been installed and the boulevard is finish graded.

Our Forestry staff can provide technical advice and on-site supervision required by contractors, utility agencies or other civic departments.

New developments will have one tree per property, with corner lots been allowed two trees.

14.3 Current Status of Resources & Approaches

Currently, the greatest challenge facing the City of Prince Albert Forestry division in the Community Services Department is adapting best management practices with limited money, staff and resources. The Forestry section is currently responsible for all trees on City lands including those on streets (i.e., typically within the first 1.5 m from the curb), in riparian areas and greenways, in parks and in publicly owned natural areas. They deal with all aspects of the urban forest, including tree maintenance, planting, and removal, stumping and responding to storm damage.

The City of Prince Albert Forestry Section currently includes one Assistant Manager, one Foreman (II), Foreman (III), 5 Labourers and administration staff (see Figure 4.0 - Winter and 4.1 - Summer below for the staff organizational structure). There are in total 7 full-time staff members within the department to take care of all tree-related work within the City. What is slowing down the response time and quantity of work being done is the requirement of staff to perform winter maintenance support and other various services as requested, this has left us without a full-time dedicated forestry crew that solely focuses in on the health of the trees.

The physical resources (owned), as of January 17th, 2018, held by the Forestry division:

- ***1992 Forestry lift with a 40' Lift – Telescopic not articulating***
- ***2013 Forestry lift with a 60' Lift – Telescopic not articulating***
- ***2015 One ton truck with chipper box***
- ***2011 Forestry chipper***

- ***2011 Stump grinder***
- ***6 Stihl chainsaws***

In 2017, the Forestry Section responded to 709 requests for services ranging from tree stump removal to pruning with a 90% completion ratio.

Currently, strategic management of the urban forest is limited to a 1:1 ratio for tree removals and replacements, and response to customer service requests, with minimal activity spent on proactive forest management practices. The current approach involves applying the capacity of workload (with current staff, assuming no unanticipated winter storms or other emergencies) to undertake various forestry activities to existing outstanding requests. We then apply various factors (i.e., an assessment of potential risk to persons and property) to prioritize and schedule when the work can reasonably be expected to be accomplished.

Generally, a crew of 4 to 5 carries out tree planting for two months (April and May) each year. Throughout the rest of the season the crew works on tree trimming and removals (except for those transferred to snow removal or responding to other emergency work requests in the winter). When trees are removed, crews perform complete restoration activities (stumping and soiling).

14.4 Tree Inquiry Program

The purpose of this program is to systematically prioritize and respond to public concerns regarding trees. Hazard and high priority tree concerns will be addressed first, then general pruning requests will be addressed as time and resources permit.

In 2014, the Parks Division implemented an Urban Forestry Task List with the goal of being better able to prioritize and track Forestry requests as they were received and be better able to provide updates on requests.

14.5 Procedure

i) STEP 1 - A customer contacts the Community Services Secretary (CSS).

- The CSS will identify the problem(s) by asking questions of the caller. Is it a broken branch? Is it a tree pest or disease? Is it a hazard? Is it a nuisance? The CSS will determine if an on-site investigation is necessary.
- An **on-site investigation is not necessary** when the CSS is able to satisfy the callers concern over the phone. The CSS may document the comments for future reference.
- When an on-site investigation is necessary the CSS will generate an Incident Report Form with the name, address, and telephone number of the person with the concern. The callers' comments should be brief and concise regarding the concern.

- If the request is deemed to be an emergency, the Assistant Parks Manager or Forestry Foreman should be contacted by phone to check out the concern immediately.

ii) STEP 2 - The Assistant Parks Manager receives an Incident Report Form.

- He will review the Incident Report Form to be sure the information is clear and then forward it to the Forestry Foreman.

Please note: If elm tree requests are not deemed a hazard, they will not be addressed until after the pruning ban ends August 31.

iii) STEP 3 - The Forestry Crew will make an on-site investigation of the tree in question.

- They should let the homeowner know they are investigating the concern. The present health and structure of the tree should be assessed during the investigation. The assessment should be as professional and objective as possible. It is the Forestry Crew's responsibility to determine the appropriate course of action to be taken.

Refer to Appendix "D" - for Basic Hazard Assessment Form

- If they **deem no action is to be taken** the person should be notified by phone, in person or by a mailer of the investigation results.
- If the Forestry Crew deems that work is necessary then the Incident Report Form should include the work performed, the date completed; the Foreman's initials and any other comments. If time permits, any additional pruning requirements to the tree will be performed at this time.
- If the tree work cannot be completed at the time of the investigation, then the customer should be notified in person, by phone or mailer as to the intended work and when they feel they can return to complete the work.

iv) STEP 4 - The Forestry Foreman will prioritize the future tree work.

- The Incident Report Forms will be placed in order of priority for the work to be performed. Top priority will be completed first with low priority attended to as time permits.

v) STEP 5 - The service work is performed.

- The Forestry Crew should notify the adjacent homeowner that they are proceeding with the tree work. The Incident Report Form will be completed after the work is complete.

vi) STEP 6 - The Incident Report Form is returned to Assistant Parks Foreman.

- The work performed is confirmed and the forms are collected and returned to the CSS.

vii) STEP 7 - The CSS receives the completed Incident Report Form.

- All forms are then entered into our Incident Reporter data base.

14.6 Incident Report Priority Guidelines

i) Emergencies:

- Tree has fallen over and presents an immediate danger to the public.
- Large broken branch on the ground or in the tree and presents an immediate danger to the public.
- Severely leaning or swaying tree that presents an immediate danger to the public.
- Newly cracked or splitting tree that presents an immediate danger to the public.

ii) Top Priority

- Obstructing branches which over hang sidewalks, roadways, driveways, signage or streetlights.
- Tree removals that have been approved (ie. Service connection repair or water main break)
- Tree removals due to confirmed cases of disease (ie. Dutch Elm)
- Trees with branches rubbing on houses or shingles.

iii) Low Priority

- General tree pruning
- Tree is interfering or shading a privately owned tree
- Tree has die-back but not considered a hazard.

14.7 Pest Management

All trees within Prince Albert's Urban Forest will be monitored constantly for disease and insect infestations. When the Forestry Crew receives an Incident Report Form stating that there is a concern dealing with a pest, the tree(s) in question will be investigated. The assessment will determine if the tree is to be pruned, removed, treated or left to defend naturally.

The City does not promote the use of chemical sprays and will only spray as a last resort to control a severe outbreak. We can recommend to residents to use a pressure hose to knock down the pests with water if they choose. At their own expense, residents could also spray their boulevard tree adjacent to their property with insecticidal soap, Dipel or Thuricide, if this is one of the recommended biological controls for that particular pest.

A tree will be considered for removal if more than 40% of the crown has been killed. If a tree has been confirmed to have Dutch Elm Disease it will be removed (stump included) immediately. If a tree is confirmed to have EAB (Emerald Ash Borer) the department will contact CFIA (Canadian Food Inspection Agency) and seek direction from the agency.

No person shall apply or administer any chemical that would cause death to any public tree. If this was to occur the offender would be held responsible. If a person is deemed responsible, that person will bar the assessed value of that tree. Within that assessed value, would include cost of removal plus cost of replacement of the tree(s). The assessment of the infected tree will be assumed a healthy tree upon assessment.

14.8 Damage to Private Property Caused by City Trees

Any and all damage incurred to private property which may be caused by City trees requires submission of a claim to the City of Prince Albert Finance Department by the property owner. The Finance Department will then open a claim file and this will be provided to the City's insurance provider for further investigation. Should the City be found at fault for any damage caused by City trees, property owners may receive compensation from the City.

The exception to this is the removal of tree roots in sewer service lines. Should a property owner experience blockages, a back-up, and/or a flow issue to their sewer service line, the property owner should call a plumbing company to diagnose and solve the problem. If tree roots are identified in the service line, City of Prince Albert Staff will investigate on site to determine the ownership of the trees:

- If there are trees on City property and on private property (in this instance trees on private property are defined as vegetation higher than the house eaves), then the property owner will receive 50% reimbursement of the cost to clear the service line.
- If there are trees on City property only, then the property owner will receive 100% reimbursement of the cost to clear the service line.
- If there are trees on private property only, then the property owner will receive no reimbursement towards the cost to clear the service line.

The City will only reimburse for clearing tree roots in the service line. Unknown blockages such as diapers, napkins, towels, etc. are not covered as the City has no control over what goes into the sewer service connection. Service line maintenance, repair and/or replacement are otherwise the responsibility of the property owner for the service line connection between the building and the main. The City does not pay for replacement of private portions of a service even if a City tree caused root intrusion damage. Often root intrusions into a service line are an indication of a larger problem or failure(s) which have allowed the roots to gain entry into the service line. This usually occurs at the end of the life span of the service line.

If problems are identified, video of the service is recommended and the City will provide compensation only if there is problems on the City's portion of the service line outside of the private property. If a failure occurs on the portion that lies outside the private property on City-owned land, and this is identified through service line photography, then the City will repair the failure at no charge to the adjacent property owner and pay for the video.

In the past, agreements were made with property owners for yearly maintenance (clearing of tree roots) of service lines due to trees or moderate failures (sags) in the service through the Public Works Department. Public Works has no record of these agreements and learn of them as people bring them to their attention. Public Works will no longer be signing any more of these agreements, but rather will be fixing problems and/or identifying problem trees that need to be removed, whether City or private. Tree removals would be as per Section 15 of this document.

The property owner is responsible for paying for the removal of a City tree if the tree removal is required (as deemed by the Director of Community Services) for any work within their private property. This can be completed by custom work order through the Community Services Office.

15.0 TREE REMOVALS

When a request is received for a tree removal, it will be evaluated and determined whether it is a hazard or non-hazard tree. Tree removals will always be considered as a last resort to rectifying an issue, once all other options have been explored and exhausted.

15.1 Hazard Tree(s)

If a City owned tree is evaluated to be a hazard tree, the removal process will be scheduled for the earliest date. The City will pay for all costs associated with the removal and reforestation if required. The following situations are when tree removals may receive immediate approval:

- The tree poses an immediate hazard to people or property.
- The tree has a confirmed case of Dutch Elm disease.
- The tree has a confirmed case of EAB and direction for its removal is provided by the Canadian Food Inspection Agency.
- More than 40% of the crown of the tree is dead.
- More than 40% of the crown is infected by a disease.

15.2 Other Considerations for Tree Removal

Other trees considered for removal may have one or more of the following:

- Is the tree dead, diseased or dying? These are referred to as the Three D's. The percentage amounts are listed above.
- Trees in the way of a renovation/construction project and would interfere with utilities, buildings, driveways, etc.
- Trees that obstruct sight lines, causes roof damage, sidewalk damage, and utility line damage or interfere with public maintenance work.
- A tree that restricts the healthy growth of a more desirable tree.
- Trees that are leaning severely.
- Have major obstructive limbs and if the limbs were removed would ruin the overall structure of the tree that may cause a potential hazard.
- Trees that have a history of complaints or problems.
- Trees that are deemed to be causing a security concern.

- Trees that have been planted by citizens on City boulevards or parks and interfere with regular park maintenance or utilities.

The property owner adjacent to the tree to be removed will receive a Tree Removal Letter from the City.

Refer to Appendix “E” - for the Tree Removal Letter.

If a person(s) requests a city owned tree to be removed solely for personal purposes (i.e. driveway), and in the event the Parks & Open Space Manager agrees after exhausting all other avenues to save the tree, the person(s) shall be responsible for the assessed value placed on the tree, which would include removal and replacement costs.

Typically, healthy trees are not considered for removal except in extenuating circumstances and at the City’s cost which may include:

- Tree roots interfering with underground utilities, such as tree roots in sewer lines. In this case, the City requires proof that a City tree is the problem and it is not a one-time only occurrence. For example; if the property is being reimbursed by the Public Works Department for annual preventative maintenance of City tree roots in their sewer line, and an experienced member of the Urban Forestry Crew is able to clearly identify the offending tree, the tree may be removed. At time of removal, all parts of the tree must be removed including the stump. Preventative maintenance must be recommended by the Public Works Department Utility Manager.

Refer to Appendix “F” – Appraisal Worksheet

Refer to Appendix “G” – Guidelines for Evaluation of Trees

15.3 Non Hazard Trees

When the tree removal request has been investigated and the tree is determined to be a non-hazard, the tree will not be removed. Steps such as pruning will be considered to help alleviate the problem that is being investigated. The following are requests where, under normal circumstances, tree removal requests will be denied. The following concerns are considered a nuisance and are not reasonable grounds for removal.

- The leaves, fruit or seeds are a nuisance to clean up.
- Leaves are filling up eaves troughs.
- The leaves from boulevard trees are plugging up the catch basin.
- The seeds are considered unsightly.
- The sucker growth at the base of the tree is unsightly.
- People at the residence are too old or disabled to clean up the leaves, fruit or seeds.
- The tree is attracting insects.
- The tree is obstructing the street light.
- The tree is obstructing a view.

- The tree is affecting growth of private trees.
- The tree root flare is interfering with mowing.
- The tree roots are exposed above ground or lifting the ground.
- The branches are too low and interfering with mowing grass under the tree.
- The tree does not fit their landscape plans.
- The tree roots are growing into the sewer lines.

We will refer them to Public Works to apply for a sanitary sewer blockage reimbursement. A tree that has been identified causing root problems in a sewer line, on an on-going basis (annually), will be considered for removal. Should it be decided that the tree in question will not be removed; the applicant will be notified in writing as to the decision. The applicant must ensure that no undue harm comes to the tree(s) requested for removal. Malicious tree and/or City property damage will result in action taken to receive compensation for the tree and/or restoration of the City owned property to its full value as determined by the Council of Trees & Landscape Appraisers Field form report for Cost of Cure. Cost of Cure determines the cost of the replacement and/or repairing of plants and restoration of the property to its pre-casualty condition.

Refer to Appendix “H” – Cost of Cure

16.0 URBAN FOREST STORM RESPONSE PLAN

16.1 General

The purpose of the Storm Response Plan is to have an action plan in place to respond to damage to the Urban Forest caused by intense storms. This will assist with providing the City with the safest, efficient, organized clean-up procedures to returning the City’s Urban Forest to acceptable standards. All employees involved will know their role and the responsibilities that are required from them. All safety practices will be followed to ensure the safety of the employees, the public and all property involved.

16.2 Minor Storm

A minor storm will be of the nature that causes fallen trees and limbs, minor road blockages and minimal damage to a local or broad area. The Forestry Crew will perform the majority of the clean-up and all hazardous scenarios can be completed within a week’s work.

16.3 Major Storm

A major storm will be classified as of the nature that causes numerous fallen trees and limbs, uprooted trees, road blockages on both major arterial and residential streets, and severe damage throughout the City. Clean-up from these storms will involve assistance from other City crews including Parks crews and support from Public Works crews to supply loaders and trucks with operators. Private contractors or other trained personnel such as the Pen Crew/Riverbend

Work Crew may need to be called in to assist. Clean-up from these storms will take from one week to several weeks. Additional funding, staffing and equipment will need to be allocated to complete this severity of a clean-up.

16.4 Staff Responsibilities

To ensure a safe, efficient clean-up, all staff will know the role they are responsible for. All City Policies & Procedures, Occupational Health & Safety, Provincial Legislation and the Collective Bargaining Agreement will be adhered to. Any staff member locating an emergency situation shall notify 9-1-1 immediately.

All staff will be responsible for completing hazard assessments.

16.5 Training (Importance of ISA Certification)

Working towards having certified arborists on hand will be critical in how we deal with the health of the City's trees moving forward. The need to be knowledgeable, understand how to work with a tree, assess its overall health, determine whether it is dead, diseased or dying will only help to add depth and confidence to the department. The more knowledge and the more staff understand the better job they will be able to do of providing a safer and more sustainable Urban Forest for everyone to enjoy.

Why have a trained arborist(s) on staff? You wouldn't choose a doctor without a license to perform surgery – so why choose an arborist without a license to perform tree maintenance? The department believes that the best service comes from the most qualified professionals – that is why certification is important. Here's why it is important:

First of all, what is an ISA arborist certification?

The International Society of Arboriculture (ISA) certification program ensures arborists are trained in all aspects of arboriculture. If an arborist has an ISA certification, it means they meet basic criteria, including at least three years of full-time, hands on experience in arboriculture or a degree in related fields including forestry, horticulture, and landscape architecture. Candidates must pass an exam and maintain their certification through continuing education or retake the test every three years. Professionals can also further specialize and obtain certifications in areas including arborist utility, arborist municipal, tree worker climber, tree worker aerial lift, and board certified master arborist.

What are the benefits of having a certified arborist?

- They meet or exceed arboriculture standards: An arborist has passed an exam designed to cover all necessary areas of knowledge to thrive in the industry. The certification process includes an application process, an exam, and review following the exam. This means certified arborists have met the ISA's standards and have been screened and approved through their in-depth review process.
- They demonstrate dedication to continuing education: This certification means the arborist has made an effort to stay current and pursue continuing education. Certified arborists have fulfilled the required about of Continuing Education Units (CEU's) over a

three year period including taking college courses, participating in local events, presentations, and competitions, taking computer based trainings and seminars, and staying up-to-date with CPR and First Aid training.

- They have significant, relevant experience: To obtain certification, arborist must have at least three years in the field or a college degree in a related field. These professionals are not rookies – they are experts who have put a lot of time and effort in the field and want to maintain and build their knowledge throughout their careers. The ISA also promotes networking locally and beyond so professionals can work with each other to bring the highest quality services to a region.
- They use science and technology to bolster their practices: The ISA focuses not only on arboriculture best practices, but on how to use science, technology, and research to define best practices drive results. An arborist is not just trimming trees at random; they are using high quality tools backed by scientific knowledge of tree anatomy and ecosystems to maintain plant life. Professionals use literature reviews, podcasts, seminars, research databases and more to stay up-to-date on how science and technology can reinforce professional standards.
- They govern their actions with sound ethics: Certified arborists follow the ISA Certified Arborist Code of Ethics. This means they comply with local and national laws and policies, meet or exceed professional standards, practice safe and ethical decision making, respect confidentiality, reflect truthful and accurate public information and avoid conflicts of interest between customers and respect public health protocols.

What is the ISA?

The International Society of Arboriculture is an organization dedicated to using research, education, and technology to foster professional arborists who will benefit trees and forest worldwide. The organization was founded almost 100 years ago in Connecticut and has since gained over 20,000 members around the world. Their goals are to promote research for healthier trees, raise public awareness of public awareness of arboricultural issues, promote and provide professional development for arborists, and foster best practices to keep professionals and citizens alike safe when it comes to arboriculture.

16.6 Staffing

i) Assistant Parks Manager

- Investigate and monitor the severity of damage caused by the storm.
- Call in Forestry Crew as needed.
- Confirm with Forestry Foreman if extra help is required from within the department and call in the necessary amount of employees.
- Requests assistance from other departments when required.
- Requests assistance from contractors or other trained personnel (Pen Crew/Riverbend Work Crew) when required.
- Reviews the Incident Report Forms and prioritizes hazard and non-hazard trees or situations.
- Coordinates the location of the crews with the Forestry Foreman when damage is over a large area.

- Responsible for making overtime work decisions.
- Ensures only qualified personnel are operating specialized equipment.
- Deals with the follow-up calls from residents who were affected by tree damage from the storm.
- Contacts utility companies if they are required.
- Maintains a list of all staff, equipment and other related charges from the storm related clean-up.
- Reports to the Manager of Parks & Open Spaces as to the damage received and if more resources are needed.
- Provides all reports and documentation as required by the Manager of Parks & Open Spaces or Director of Community Services.
- Will be the immediate contact person with the Communications Manager as to the damage and progress the Crews are making.
- Will be the immediate contact person for the media regarding the damage and progress being made during the storm clean-up operation.

ii) Forestry Foreman (Foreman III)

- Lay out, assign, supervise and work with large sized crews engaged in maintenance, construction and repair operations.
- Maintains records of staff and equipment hours, materials and work performed and communicate all to out of scope supervisor.
- Responsible for requesting and ensuring all locates are completed.
- Assist with cost estimates when required.
- Assign and supervise the work of hired equipment and contractors.
- Follow Acts, Regulations, OH&S, Bylaws, Agreements, policies and procedures.
- Perform other related duties as assigned.
- Responsible for encouraging and maintaining high levels of safety and communication with all staff working under their supervision.
- Prepare reports and oversee the completion of reports by subordinates.
- Order materials and supplies.
- Pick up time cards and review the time cards as to the correct time and account numbers.
- Deal with Bylaw regarding complaints and clean ups.
- Run Toolbox meetings.
- Assist with Parks when needed.

iii) Forestry Foreman (Foreman II)

- Prioritizes, designates and assists with all duties of the Forestry Crew and other crews assisting with the clean-up.
- Calls in Forestry Crew and makes recommendations for staffing personnel, regular work hours, overtime and equipment required.
- Reviews the Incident Report Forms and gives updates to the Assistant Parks Manager as work is completed.
- Will authorize tree removals as required.

- Oversees proper pruning techniques for the damaged trees that do not need to be removed.
- Ensures the safety of all crews and the surrounding work area.

iv) Forestry Crew

- Performs all clean-up work as assigned by the Forestry Foreman.
- Completes any paperwork that may be required.
- Follows all safety requirements and guidelines.

v) Parks, Public Works, Contractor Crews

- Perform all clean-up work as designated by the Forestry Foreman or the immediate Crew Foreman.
- Follow all safety requirements and guidelines.

vi) Duty Foreman

- The Duty Foreman can call in the Forestry Foreman to respond to the storm clean-up.
- The Duty Foreman can assist with prioritizing the hazard areas needing immediate attention.

vii) Parks & Open Space Manager

- Reports to Director of Community Services the damages caused by the storm and gives updates as to clean-up progress.
- Assists the Assistant Parks Manager when necessary with administrative duties.
- Assumes the duties of the Assistant Parks Manager in his absence.

17.0 STORM CLEAN-UP PRIORITIES

The following will be used to prioritize the work assignments for the staff due to damage from the storm.

17.1 High Priority

- A call received from 9-1-1 that people are injured and trapped in a car or house that has a tree down.
- People caught in a life threatening situation due to a tree down.
- The possibility of a damaged/split tree falling on a house and cause injury to individuals.
- A damaged tree (ie. split) that could cause immediate danger to the public.

17.2 Mid Priority

- Trees down blocking major arterial street(s).
- Trees down blocking minor arterial street(s).

- Trees down blocking local streets and rear lanes.

17.3 High Priority

- Uprooted and damaged trees on public property.
- Trees from Mid Priority that are piled on boulevard for removal.
- Branches and cut up logs to be hauled to dump site.
- Stump grinding/removal will be performed at a later date.
- Tree replacements to be diarized and performed at a later date.

18.0 TREES ON PRIVATE PROPERTIES

City crews will only go on private property if:

1) There is a life-threatening situation that requires the City's specialized equipment and trained staff, or the potential for a situation to cause an injury.

2) A private tree has fallen onto a City street.

Homeowners are responsible for removing any damaged trees and branches from their own property.

19.0 PUBLIC EDUCATION AND PROGRAMS

Educating the public about the value and importance of the Urban Forest is essential. They will learn how to appreciate and assist in the development of our Urban Forest. They will learn how to care for and nurture the trees in an area, which in turn means a beautiful, well maintained, healthy and safe Urban Forest environment. The Plant-A-Forest Day, involving Grade 5 students from all schools, assists in young children replanting a forest that was devastated by Dwarf Mistletoe, a great example of educating and involving the public.

To assist in public education and programs the following could occur:

- Our Parks and Forestry Crew could be available to assist the public with any questions or concerns that they have.
- Meeting with groups or organizations to provide education on forestry related topics could be made available. .
- Horticultural/Forestry Information Sheets could be developed and made available to the public upon request. These sheets could be topic specific and cover a wide variety of issues with regard to Urban Forestry and other horticultural information.
- An update to our City website could be made to include Forestry related subjects and timely updates at a touch of a finger.
- Site specific meetings could take place to provide further direction that cannot be easily given out through an information sheet or through a telephone call.

20.0 PRUING CYCLE

Pruning street and park trees is an important component of managing a safe, hazard-free, and less costly urban forest in the long term. A pruning cycle will need to be initiated to provide regular maintenance to the City of Prince Alberts urban forest. Ideally, the pruning cycle would be: any tree under, 15" DBH (diameter at breast height) every 2 years to provide corrective and directional pruning, Elm to be pruned every 4 years and, parks and street boulevard pruning every 7 years. The focus being, on the overall health of the tree and ensuring that all hazards have been removed. The plan would be to strive towards an achievable maintenance cycle and to work towards having dedicated pruning crew(s) who are solely focused on tree care. In order to help us achieve this we will need to assess the Forestry Departments current commitments and look for solutions to providing consistency in the area of forestry management.

Pruning Crews would be responsible for the following:

- Reduce or remove limbs to train a central leader
- Remove any large deadwood and crossing branches
- Lightly thin to allow for light penetration and air circulation
- Prune broken or damaged limbs
- Raise the crown to provide clearance for vehicles (18'), pedestrians (7'), signs and street lights (as required)
- Note any remedial treatments such as cabling, bracing, fertilization, etc.

The seven zones involved in this cycle would be:

- *Midtown*
- *West Hill, East Hill*
- *West Flat, East Flat*
- *Crescent Acres/Crescent Heights*
- *Nordale/Hazeldell*

Homeowner Requests

To maximize the efficiency of operations, requests for pruning outside of the scheduled cycle should be minimized.

21.0 INVENTORY STRATEGY

As is the case with any renewable resource, an inventory is an essential tool for the formulation of management strategies. It provides data about the City's trees which is necessary for the planning of management activities to achieve specific goals. This data typically includes species composition, the relative proportion of native versus non-native species, age structure, tree condition, location, size, management history and habitat. This information can be linked to

a GIS system to facilitate data collection, tracking, analyses and to refine management approaches over time.

Ideally every municipality should have an inventory of all its trees. However, this is usually not feasible, and so the easiest place to start is by focusing on the City's own lands where it can access and manage trees without much difficulty.

Why Tree Inventories are Important

A comprehensive tree inventory is essential for the City of Prince Albert to effectively manage its urban forest, to maximize the benefits that trees provide, to minimize risk from potential hazards and to implement long-term management initiatives. It will identify details of the structure of the urban forest, which are necessary for the planning of management activities to achieve specific goals. An inventory may also reveal other valuable assets such as the presence of Species at Risk (e.g. Fraxinus Ash, Ulmus – Elm) that may otherwise be overlooked.

An inventory will also differentiate between intensively managed parts of the municipal forest (i.e., areas where individual trees are managed under arboricultural techniques) and extensively managed woodlands (i.e., areas that are managed using techniques more closely related to silviculture or forestry).

22.1 Status of Tree Inventory in the City of Prince Albert

We currently do not have a working inventory and are starting from ground zero. It is hard to estimate at this time how many trees the city currently has; however, the Forestry staff are working with the City's GIS Supervisor (i.e., using GIS) to start plotting for the inventory and will be collecting data trees. This data once collected will then be downloaded into an iTree program that will allow the department to start analyzing things like Landscape, Canopy cover, Value, Planting, Species, Carbon Capture, Disease, etc.

22.1 GIS & Asset Management

GIS or a Geographic Information System is basically a database of information that is geographically oriented. Like many municipalities, the City has recognized the potential value of this tool for planning (as well as some other applications e.g. iTree) and has gradually been expanding it capacities with this technology combines common data base functions with the visualization and geographic analysis benefits that are offered by maps, and can be very useful for linking urban forest data and mapping, and conducting a wide range of large, medium and small-scale analyses.

Examples of important urban forestry questions that can be answered with GIS, if the appropriate data is entered on a City-wide basis, and the appropriate planning layers are available, include:

LARGE-SCALE (can be conducted with air photo interpretation in conjunction with various planning layers)

- What is the City's total tree cover (including street trees) and how is it dispersed across the City?
- How much of the City's tree cover is in natural or semi-natural areas versus urban areas?
- How much of the City's tree cover is on private lands versus public lands?
- How much of the tree cover on private lands is on residential lands versus industrial, institutional and commercial?
- Where are the largest concentrations of City-owned trees?

MEDIUM- SCALE (requires some types of inventory data; the more comprehensive the data, the more accurate the answers will be)

- What parts of the City have mainly older trees?
- What proportion of the City's tree cover is in parks? Natural areas? Street trees?

SMALL-SCALE (requires a comprehensive tree inventory)

- What is the status (e.g., age, health, hazard rating) of all trees on City-owned lands?
- What is the status (e.g., age, health, hazard rating) of all trees on private lands?

23.0 QUANTIFYING OUR SUCCESS (ES)

As with all plans you must be able to quantify your successes. The following are some of the areas that we will monitor to see if we have achieved our goals:

- Two replacement trees planted for each tree removal
- Boulevard trees planted in new developments within a year
- Trees planted in parks as soon as a plan for the park is complete and the immediate surrounding properties have been developed.
- Completion of a zone per season for tree pruning/removal
- Implementation and monitoring of permanent positions for Forestry Crew
- A reduction in tree complaints due to an increased commitment to the maintenance of our Urban Forest
- An established block pruning program addressing the needs of all trees in an area.

We want to achieve these goals while staying within the approved budget for each year. The City of Prince Albert can achieve these goals with the cooperation of administration, Council and the citizens of this City.

24.0 POLICY AND GUIDELINE RECOMMENDATIONS

The Community Services Department:

a) *Should ensure that all policy revisions and updates define the urban forest, identify it as a high priority for protection, and describe it as "green infrastructure' which needs to be actively managed.*

b) *Should develop comprehensive, City-wide policies, guidelines for tree preservation, replacement and enhancement on both public and private lands.*

c) *Should commit to protecting and, where feasible, enhancing the natural linkages within the City and to outlying communities such as Hazeldell, Nordale and the County of Buckland.*

d) *The tree by-law should be reviewed and updated every 2 years to ensure it is relevant to the current standards and practices.*

e) *Should evaluate if existing staffing is adequate to address the immediate pruning and assessment needs. This process should also include a detailed plan of where we currently stand in regards to current staffing and equipment, what type of commitment would be involved to reach the desired levels of service and what other options would be available and the costs involved.*

Communications Recommendations

The Community Services Department:

a) *Should host workshops or public meetings to get community input to the vision and goals to keep the Urban Forest Management Plan relevant.*

b) *Should explore options for providing support and coordination of ongoing and potential volunteer activities related to tree planting in the City.*

c) *Should explore mechanisms for more inter-departmental coordination regarding proper protection and management of the City's green infrastructure (i.e., its trees) and educate about tree protection guidelines, policies and best practices.*

d) *Should expand its public education initiatives by (a) updating and enhancing its on-line urban forestry resources, (b) consider offering urban forestry workshops for residents, and (c) exploring other educational opportunities with other partners (e.g., Saskatchewan Polytechnic College, Government of Canada Forestry Centre.)*

26.0 INVENTORY RECOMMENDATIONS

The Community Services Department:

a) Should determine specific goals for a tree inventory and develop a system of data collection and asset management in the Forestry Master Plan.

b) Should complete a tree inventory for all trees on City lands outside of natural areas as part of the first 5-year management plan

c) Should collect the tree inventory and use the GIS Toolbox to monitor overall tree canopy cover in the City, and help identify potential planting locations.

d) Should explore options for administering and maintaining the forestry asset management system (e.g., tree inventory software, database, etc.) as it develops.

e) Should complete a tree inventory for all Municipal woodlands based on accepted forest stand inventory for all municipal woodlands based on accepted forest stand inventory protocols.

27.0 GLOSSARY

Boulevard
Corner Visibility Triangle
Hardscape
Median
Soft scape

28.0 APPENDIXES

Appendix "B" TREE PLANTING TIPS

- **Call Before You Dig!** Be certain of all utility locations. Do not plant directly over or under any utility services.
- Be aware of the distance from the home's foundation, fences and property edge. Consider windows, doors, air conditioning units, flower beds, other trees and all other hardscape features.
- A hole 1.5 times wider and deeper than the root ball or root spread should be dug.
- Plant the tree at the same depth that it had previously been growing.
- Spread roots out evenly in hole.
- Fill hole with parent material or a good loam soil. Pack firmly.
- Water thoroughly. Roots must not be allowed to dry out. Water at least once a week for the first growing season.
- Apply about 3 inches of mulch to help maintain moisture and protect root system.

- Trees of a 5-8 foot height should be staked for the first year. If staking with wire or rope, be sure to use a piece of rubber hose around the trunk to prevent damage to the newly transplanted tree.
- Keep mulch free of weeds and grass.
- Do not use herbicides around new tree.
- Avoid lawn mower and weed eater damage to tree trunk.

Appendix "D" TREE REMOVAL LETTER

City of Prince Albert

Date

Dear Resident:

Recently, the City of Prince Albert, Parks Department, performed an assessment of trees in your neighbourhood and determined that some of the trees should be removed. Located at your home are one or more such trees.

A Basic Tree Health and Risk Assessment was, completed using recommended standards as laid out by the International Society of Arboriculture (ISA). During our tree assessment, forestry staff completed a visual inspection to identify existing damage and potential risk. If the city tree in front of your property was identified as a candidate for removal a number of factors would have come in to play throughout the assessment to help identify it as such. .

To compensate for the removal of the tree(s), the City will be undertaking a program of reforestation next spring with trees of a suitable species.

Should there be questions or concerns regarding the process we would ask that you contact our Community Services Department at (306) 953-4800 where we can better direct your call.

Sincerely,

Parks Manager

Appendix "A" TREE PLANTING LETTER

Date:

Dear Homeowner;

The City Forestry crew recently planted a new tree on your property and we would like to ask your assistance in helping take care of it. The trees themselves will need to be watered at least twice a week and the process is as simple as filling the "Gator Bags" that have been provided by our department.

The Gator bags are designed to hold water and allow for a slow release of that water over a 9-12 hour period. This will allow for the following:

- 100% absorption with no run-off
- Deep saturation of the soil surface with every fill
- Reduces time spent at the tree
- Promotes deep root growth
- And only requires the bag(s) to be filled 1-2 times per week

WHY SHOULD I WATER MY TREE(S)?

Newly planted trees have lost more than 75% of their root system. Regular watering will help your tree recover faster and grow healthier especially during dry conditions.

CAN I OVERWATER MY TREE(S)?

YES – overwatering can be as harmful as a lack of watering. Always follow the recommended watering guidelines for normal, drought and wet conditions.

Drought – 20 gallons (90 litres) **twice** per week

Normal – 20 gallons (90 litres) **once** per week

Wet – No additional watering required

HOW WILL I KNOW WHAT THE CONDITION IS?

The condition (drought, normal or wet) is determined based on the amount of rainfall per week.

Drought – 0 mm of rainfall per week

Normal – 30 mm of rainfall per week

Wet – 60+ mm of rainfall per week.

If there are any questions or concerns please do not hesitate to call me at your convenience.

Respectfully,

Parks Manager

Appendix "A" PREFERRED TREE SPECIES – SUBJECT TO CHANGE

City of Prince Albert | Preferred Tree Species Botanic Name	Common Name	Zone	Height	Spread	Columnar	Upright Spreading	Flowering	Fruiting	Winter Interest	Drought Tolernt	Water Tolerant	Salt Tolerant	Okay to plant under Powerlines	Expected Life in Years
Acer ginnala	Tree-form Amur Maple	2	6m (18')	5m (15')		X							X	60
Acer ginnala 'Flame'	Flame Amur Maple	3a	6m (18')	6m (18')		X							X	60
Acer saccharinum 'Silver Cloud'	Silver Maple	2b	18m (60')	9m (30')		X				X	X	X		80
Acer tataricum 'GarAnn'	Hot Wings Tatarian Maple	3a	8m (25')	6m (18')		X				X		X	X	70
Alnus hirsuta 'Harbin'	Prairie Horizon Manchurian Alder	3a	12m (40')	9m (30')		X			X	X				80
Fraxinus mandshurica 'Mancana'	Mancana Manchurian Ash	2b	12m (40')	7m (20')		X				X	X	X	X	70
Fraxinus x 'Northern Gem'	Northern Gem Hybrid Ash	2b	15m (50')	12m (40')		X				X				70
Fraxinus pennsylvanica 'Patmore'	Patmore Green Ash	2a	18m (60')	11m (35')		X				X		X		70
Fraxinus pennsylvanica 'Rugby'	Prairie Spire Green Ash	2b	18m (60')	9m (30')		X				X		X		70
Quercus macrocarpa	Bur Oak	2b	24m (80')	18m (60')		X				X		X		99+
Quercus macrocarpa 'Top Gun'	Top Gun Bur Oak	2b	18m (60')	5m (15')		X				X		X		99+
Sorbus aucuparia 'Black Hawk'	Black Hawk Mountain Ash	3a	9m (30')	6m (18')		X		X					X	50
Tilia americana	American Linden/Basswood	2b	18m (60')	12m (40')		X	X							70
Tilia cordata 'Greenspire'	Greenspire Littleleaf Linden	3b	12m (40')	10m (30')		X								70
Tilia cordata 'Ronald'	Norlin Littleleaf Linden	3a	15m (50')	9m (30')		X								70
Tilia mongolica 'Harvest Gold'	Harvest Gold Mongolian Linden	2a	12m (40')	8m (25')		X								70
Tilia x flavescens 'Dropmore'	Dropmore Hybrid Linden	2a	15m (50')	9m (30')		X								70
*Ulmus americana**	American Elm	2a	20m (60')	12m (40')		X								99+
Ulmus americana 'Brandon'	Brandon Elm	2a	18m (60')	12m (40')		X								80

All-Purpose Trees for All Applications

Ornamental Trees Located Away from Pavement \| Street Trees between Property Boundary and Combined Curb-Sidewalk

Betula platyphylla 'Fargo'	Dakota Pinnacle Asian White Birch	3b	12m (40')	9m (30')	X				X					40
Celtis occidentalis	Hackberry	2	15m (50')	12m (40')		X	X	X		X	X			99+
Crataegus x mordenensis 'Snowbird'	Snowbird Hawthorn	3a	5m (15')	5m (15')		X	X	X					X	40
Elaeagnus angustifolia	Russian Olive	3a	6m (18')	6m (18')		X	X	X		X		X	X	50
Malus x adstringens 'Jefgreen'	Emerald Spire Columnar Crabapple	2a	5m (15')	2m (6')	X		X						X	50
Malus x adstringens 'Jefspire'	Purple Spire Crabapple	3a	5m (15')	2m (6')	X		X						X	50
Malus x adstringens 'Thunderchild'	Thunderchild Crabapple	3a	6m (18')	5m (15')		X	X	X						50
Malus 'Durleo'	Gladiator Flowering Crab	2a	6m (18')	3m (9')	X	X	X	X					X	40
Malus 'Royalty'	Royalty Crabapple	2	5m (15')	5m (15')		X	X	X					X	70
Prunus maackii	Amur Cherry	2b	10m (30')	8m (25')		X	X	X	X					30
Syringia reticulata	Ivory Silk Japanese Tree Lilac	3a	6m (20')	5m (15')		X	X		X			X	X	40

Picea glauca	White Spruce	2a	13m (43')	6m (18')		X			X					50
Picea pungens	Colorado Spruce Blue Spruce	2a	19m (62')	8m (25')		X			X			X		80
Pinus contorta var. latifolia	Lodgepole Pine	1	25m (80')	8m (25')		X			X					99+
Pinus sylvestris	Scotch Pine	2b	18m (60')	8m (25')		X			X	X				80

Upright Conifer Trees for Winter Interest Located where Space Allows

Park and Nature Trees Located Away from Infrastructure

Acer negundo	Boxelder Maple	2a	15m (50')	10m (30')		X				X	X			50
aesculus glabra	Ohio Buckeye	2b	11m (35')	11m (35')			X	X						60
Larix laricina	Tamarack	2a	12m (40')	6m (18')	X						X		X	99+

Larix siberica	Siberian Larch	1b	25m (80')	5m (15')		X							X	70
Quercus ellipsoidalis	Northern Pin Oak	3a	15m (50')	15m (50')					X					99+
Salix alba 'Siberica'	White Willow	2b	25m (80')	10m (30')		X					X			60
Salix pentandra	Laurel Leaf Willow	2b	18m (60')	9m (30')		X					X			60
Sorbus aucuparia 'Rossica'	Russian Mountain Ash	2b	8m (25')	6m (18')		X		X					X	50
Sorbus aucuparia 'Fastigiata'	Pyramidal Mountain Ash	3a	8m (25')	3m (9')		X		X					X	50
Sorbus decora	Showy Mountain Ash	2a	8m (25')	6m (18')		X		X					X	40

Please note that the Preferred Species are tried-and-true suggestions. Other species and substitutions may be permitted on City property with permission from the City of Prince Albert Parks Division

*Elms are permitted in limited numbers in high visibility locations where they can be easily monitored for DED

FIGURE 4.0

COMMUNITY SERVICES

PARKS – WINTER

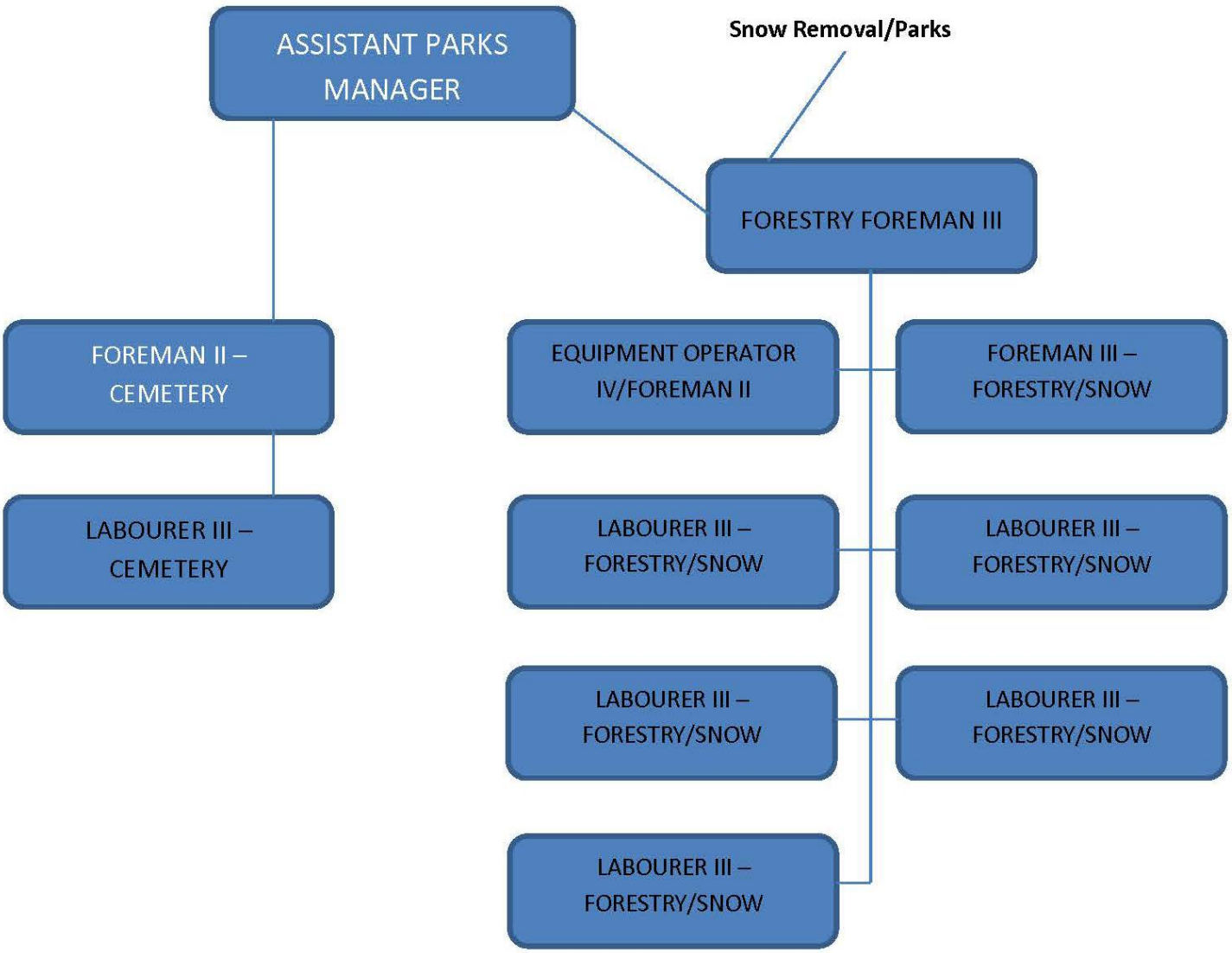
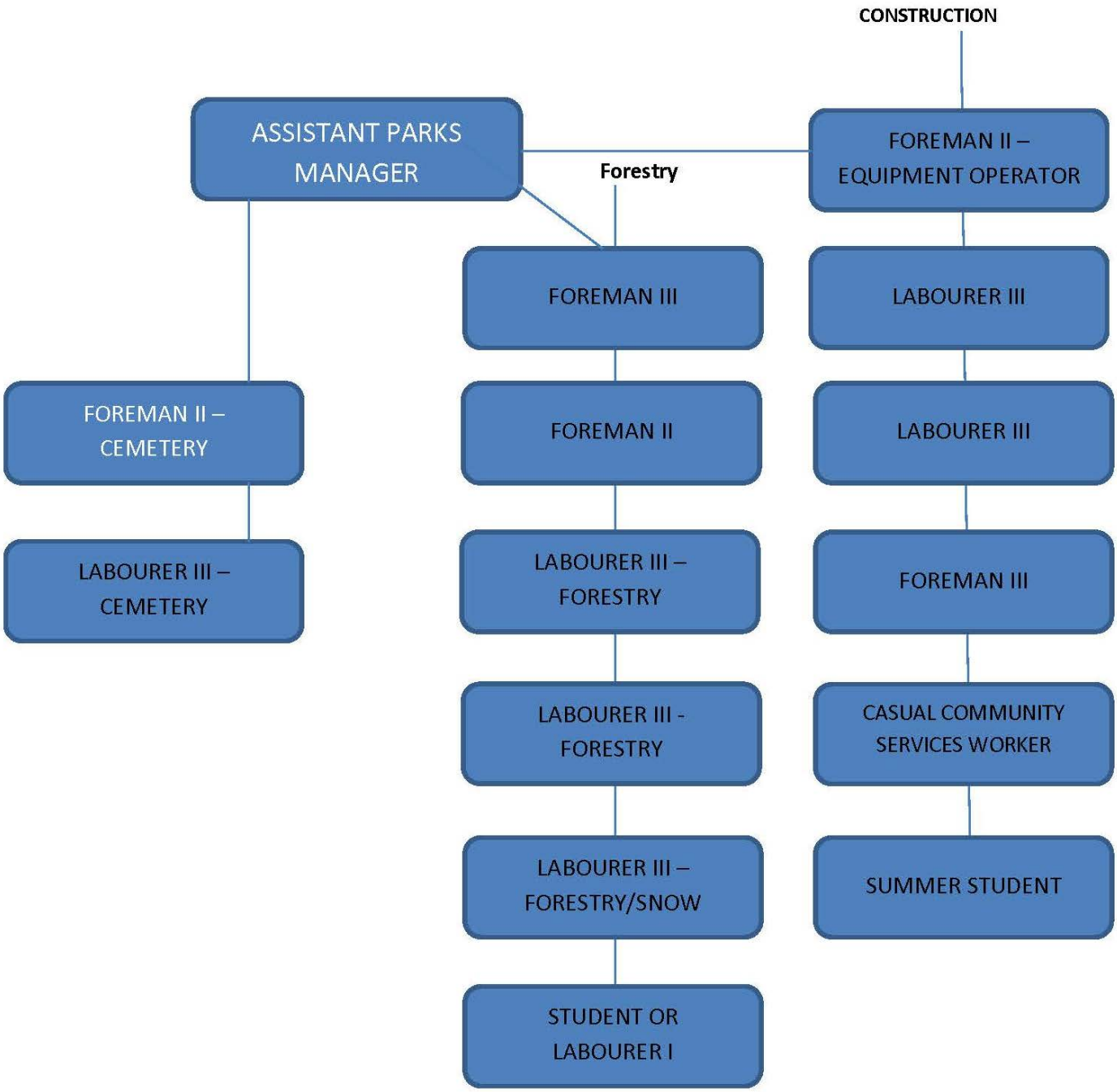


FIGURE 4.1

COMMUNITY SERVICES

PARKS – SUMMER



ISA Basic Tree Risk Assessment Form

Client _____ Date _____ Time _____
Address / Tree location _____ Tree no. _____ Sheet _____ of _____
Tree species _____ dbh _____ Height _____ Crown spread dia. _____
Assessor(s) _____ Tools used _____ **Time frame** _____

Target Assessment

Target number	Target description	Target protection	Target zone: Target within drip line	Target zone: Target within 1x Ht.	Target zone: Target within 1.5x Ht.	Occupancy rate (1 – rare, 2 – occasional, 3 – frequent, 4 – constant)	Practical to move target?	Restriction practical?
1								
2								
3								
4								

Site Factors

History of failures _____ **Topography** Flat ☐ Slope ☐ _____% **Aspect** _____
Site changes None ☐ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe _____
Soil conditions Limited volume ☐ Saturated ☐ Shallow ☐ Compacted ☐ Pavement over roots ☐ _____% Describe _____
Prevailing wind direction _____ **Common weather** Strong winds ☐ Ice ☐ Snow ☐ Heavy rain ☐ Describe _____

Tree Health and Species Profile

Vigor Low ☐ Normal ☐ High ☐ **Foliage** None (seasonal) ☐ None (dead) ☐ Normal _____% Chlorotic _____% Necrotic _____%
Pests / Biotic _____ **Abiotic** _____
Species failure profile Branches ☐ Trunk ☐ Roots ☐ Describe _____

Load Factors

Wind exposure Protected ☐ Partial ☐ Full ☐ Wind funneling ☐ _____ **Relative crown size** Small ☐ Medium ☐ Large ☐
Crown density Sparse ☐ Normal ☐ Dense ☐ **Interior branches** Few ☐ Normal ☐ Dense ☐ **Vines/Mistletoe/Moss** ☐ _____
Recent or expected change in load factors _____

Tree Defects and Conditions Affecting the Likelihood of Failure

— Crown and Branches —

Unbalanced crown ☐ LCR _____%
Dead twigs/branches ☐ _____% overall Max. dia. _____
Broken/Hangers Number _____ Max. dia. _____
Over-extended branches ☐
Pruning history
Crown cleaned ☐ Thinned ☐ Raised ☐
Reduced ☐ Topped ☐ Lion-tailed ☐
Flush cuts ☐ Other _____

Cracks ☐ _____ Lightning damage ☐
Codominant ☐ _____ Included bark ☐
Weak attachments ☐ _____ Cavity/Nest hole ____% circ.
Previous branch failures ☐ _____ Similar branches present ☐
Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐
Conks ☐ Heartwood decay ☐ _____
Response growth _____

_____ Condition(s) of concern _____

Part Size _____ Fall Distance _____
Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☐
Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

Part Size _____ Fall Distance _____
Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☐
Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

— Trunk —

Dead/Missing bark ☐ Abnormal bark texture/color ☐
Codominant stems ☐ Included bark ☐ Cracks ☐
Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze ☐
Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐
Cavity/Nest hole _____% circ. Depth _____ Poor taper ☐
Lean _____° Corrected? _____
Response growth _____
Condition(s) of concern _____
Part Size _____ Fall Distance _____
Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☐
Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

— Roots and Root Collar —

Collar buried/Not visible ☐ Depth _____ Stem girdling ☐
Dead ☐ Decay ☐ Conks/Mushrooms ☐
Ooze ☐ Cavity ☐ _____% circ.
Cracks ☐ Cut/Damaged roots ☐ Distance from trunk _____
Root plate lifting ☐ Soil weakness ☐
Response growth _____
Condition(s) of concern _____
Part Size _____ Fall Distance _____
Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☐
Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

Risk Categorization

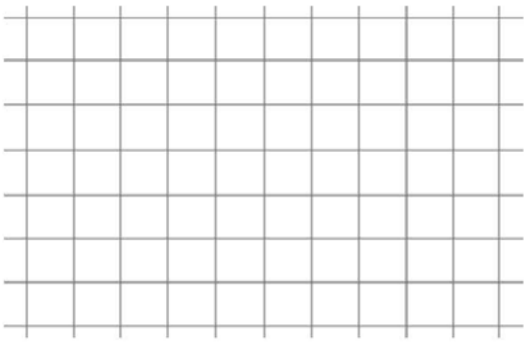
Target (Target number or description)	Tree part	Condition(s) of concern	Likelihood												Consequences				Risk rating (from Matrix 2)
			Failure				Impact				Failure & Impact (from Matrix 1)								
			Improbable	Possible	Probable	Imminent	Very low	Low	Medium	High	Unlikely	Somewhat	Likely	Very likely	Negligible	Minor	Significant	Severe	

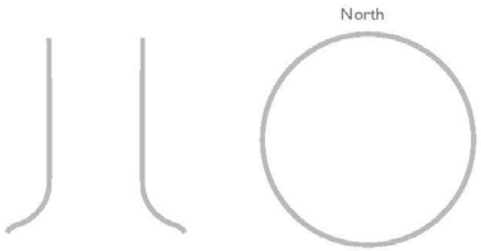
Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impact			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low





Notes, explanations, descriptions

_____

_____

_____

_____

_____

Mitigation options

1. _____ **Residual risk** _____
2. _____ **Residual risk** _____
3. _____ **Residual risk** _____
4. _____ **Residual risk** _____

Overall tree risk rating Low ☐ Moderate ☐ High ☐ Extreme ☐

Overall residual risk None ☐ Low ☐ Moderate ☐ High ☐ Extreme ☐ **Recommended inspection interval** _____

Data ☐Final ☐Preliminary **Advanced assessment needed** ☐No ☐Yes-Type/Reason _____

Inspection limitations ☐None ☐Visibility ☐Access ☐Vines ☐Root collar buried Describe _____