REFORESTATION OF AN URBAN FOREST

WHAT IS REFORESTATION?

Put simply, reforestation is the act of replanting trees to establish a new forest. The actual work of reforestation can be much more complicated as it often seeks to mimic the succession and habitat value of the forests we experience in key wildlife areas.

Throughout urban areas, careful planting and selection as well as landscape management has helped cities create and maximize the biodiversity and habitat value of urban forests.

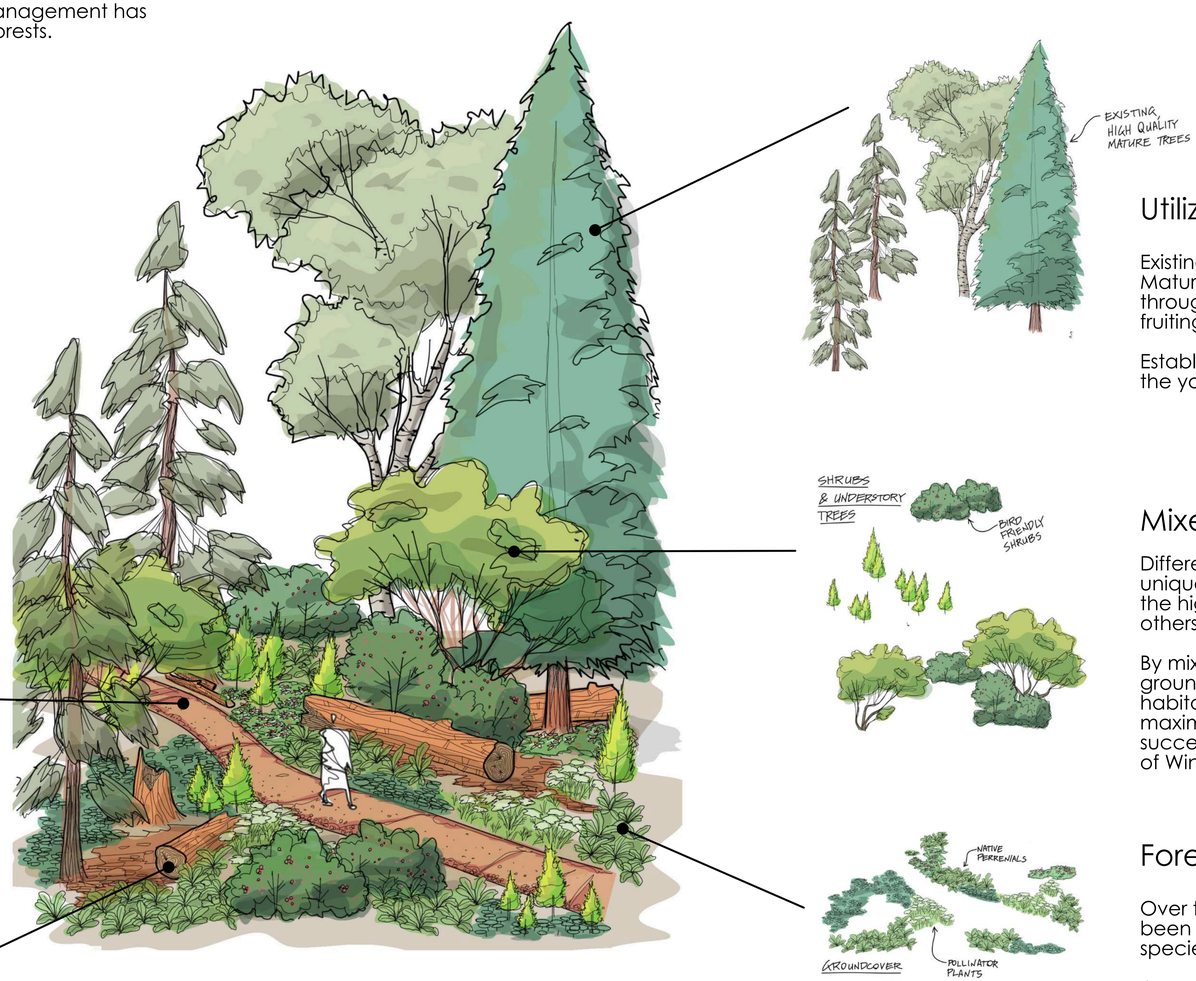
WHAT IS IN AN URBAN FOREST?

Most landscapes in urban areas are constructed and maintained - that includes forests!

An urban forest is a constructed and/or retained forest area within an urban landscape. As urbanization has continued to increase around Winskill, the forest has faced increased stress from lower water availability, soil compaction, root trampling, and more extreme temperatures.

The Reforestation project at Winskill seeks to retain existing trees where feasible, replace removed trees, and increase the diversity and resilience of the existing forest.

By increasing the resilience of this resource, Winskill forest can continue to thrive as Tsawwassen grows around it, and as we experience more extreme regional weather.



Utilize Existing Trees

Existing trees help anchor new forest areas. Mature trees offer unique habitat benefits through their height, micronutrients, and fruiting capacity.

Established trees help provide a support for the younger parts of the forest.

Mixed Maturity Planting

Different species of animals and insects have unique habitat requirements. Some thrive in the high branches of mature trees while others look for areas of new growth.

By mixing a diversity of new trees, shrubs and groundcover with the existing trees, the habitat value of the forest area can be maximized and we can mimic natural forest succession to protect the next 50-100 years of Winskill Forest.

Public Access

Soil compaction caused by walking on delicate forest areas impedes plant growth and causes stress to tree roots over time.

A new accessible forest trail will clearly denote walking areas to improve public access and limit damage to tree roots.

Reusing Wood

A key element of forest succession includes allowing deadwood from trees to compost on site. This adds important habitat for insects and returns nutrients to the soil.

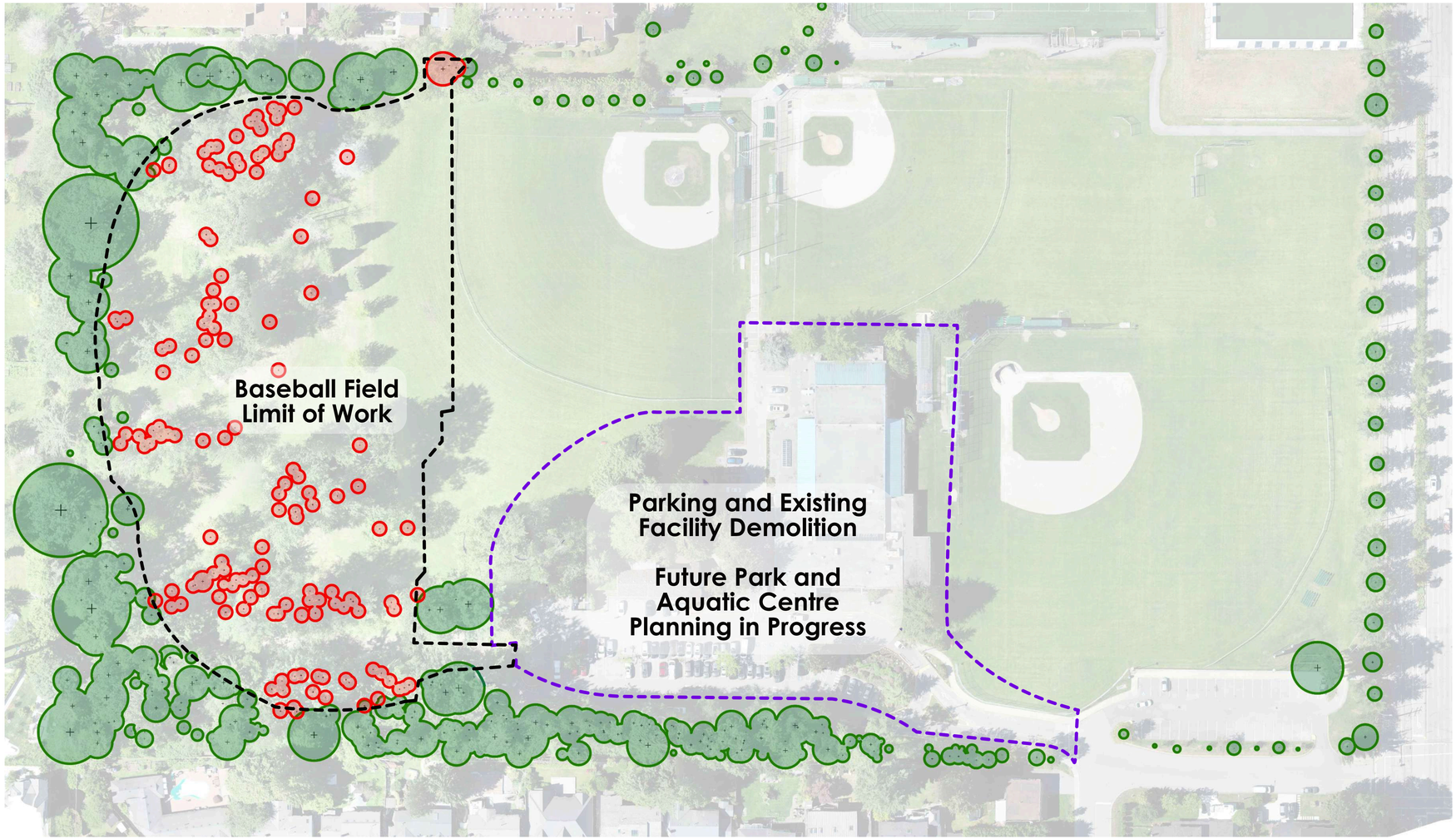
The material from some of the felled trees will be placed on site to build a complex forest floor with habitat and seating/play opportunities.

Forest Floor Repair

Over the years, the forest floor of Winskill Park has been impacted by the establishment of invasive species and compacted through walking activity.

As part of the renewal, invasive species will be removed and a new trail will be constructed to help protect the future of the forested area.

WINSKILL TREE MANAGEMENT



550
Trees Identified in Winskill Park

400
Trees Retained to Date

150
Trees Removed

31
Trees Transplanted

24
Felled Trees Reused on Site

400+
Target Replacement Tree Count

Retained Trees

Removed Trees

Trees in this area to be reviewed as the design proceeds into detailed design. Efforts will be made to retain or transplant these trees wherever feasible.

Project Timeline

WE ARE HERE

Building and Facility Siting

The existing forest was reviewed during the schematic design phase. The Aquatic Centre and desired park amenities were sited to minimize impacts to existing trees where feasible.

Arborist Report

A tree assessment and report were completed for the project site to ensure the latest data was utilized in evaluating the health of the existing trees.

The arborist report also outlined mitigation strategies and transplant opportunities where feasible. A tree survey was conducted to ensure all existing trees were captured and their location was accurately reported.

Sports Field Tree Removal

Trees were removed during Fall 2024 to avoid conflict with bird nesting season. This will allow for the completion of the baseball facilities in summer/fall 2025, ensuring fields are accessible to user groups during the Aquatic Centre construction.

Design Development and Reforestation

Detailed reforestation design to include the required number of replacement trees while also providing a new climate-adaptive forest.

The following pages outline our approach to limit the construction impacts of Winskill Aquatic Centre and the new park facilities to the surrounding urban forest.

Design Confirmation and Construction

Finalized plans will be implemented with the Aquatic Centre construction.

Additional tree removal may be required for the facility but will be balanced with the tree replacements supported in the reforestation plan.

Project Completion and Delivery

REFORESTATION AT WINSKILL PARK

PROJECT START



490
Trees identified within the Western Park area per initial report

166
Anticipated removal for ball fields

- Baseball field siting was reviewed based on preliminary information available
- Detailed Arborist Report and Tree Survey undertaken over multiple site visits to provide up to date information on location and health of Winskill Trees
- Trees reviewed for transplant potential based on size and condition
- Coordination with user groups and the design team minimized field impact and adjusted siting to retain trees wherever feasible

FALL 2024 - EXISTING CONDITION

0



550
Trees per detailed survey (all trees within the park parcel)

150
Trees removed

60
Additional trees identified in detailed tree survey

31
Trees identified for transplant

- Through a detailed tree survey that ensured all areas of Winskill park and its associated trees were accounted for, 60 additional trees were identified on site. Precise locations and impact zones were recorded to mitigate construction risk and review retention
- 31 Trees were identified as candidates for transplant and replanted on site
- Wood from removed trees was reviewed for reuse on site as natural features and deadwood
- Despite additional trees identified on site (32 within the removal area), the removal number was able to be reduced to 150

WINTER / SPRING 2025 - TREE SURVEY AND SITE PLANNING

WE ARE HERE



400+
Replacement trees currently targeted

- Construction on ballfields starts
- Detailed review of trail material to balance accessibility and permeability to manage impact to tree roots
- Tree placement within retained area reviewed to create a robust and diverse forest
- Trees around the exisiting Winskill facility will be reviewed for retention, transplant, and removal based on site requirements

1

2025 TO 2026 - CONSTRUCTION AND AQUATIC CENTRE PLANNING



1.5-3m
Typical install height of replacement trees

Replacement trees to be finalized and installed

- Forest path planting and construction to proceed alongside aquatic centre construction
- Installed trees to supplement mature trees for a healthy mixed forest
- Typical moderate growth rate of a tree is approximately 2 feet (0.6m per year)
- Growth is dependent on species, conditions, soil quality and volume, water, light and stress on trees

5

2026 TO 2031 (YEAR 1-5) - COMPLETION AND GROWTH



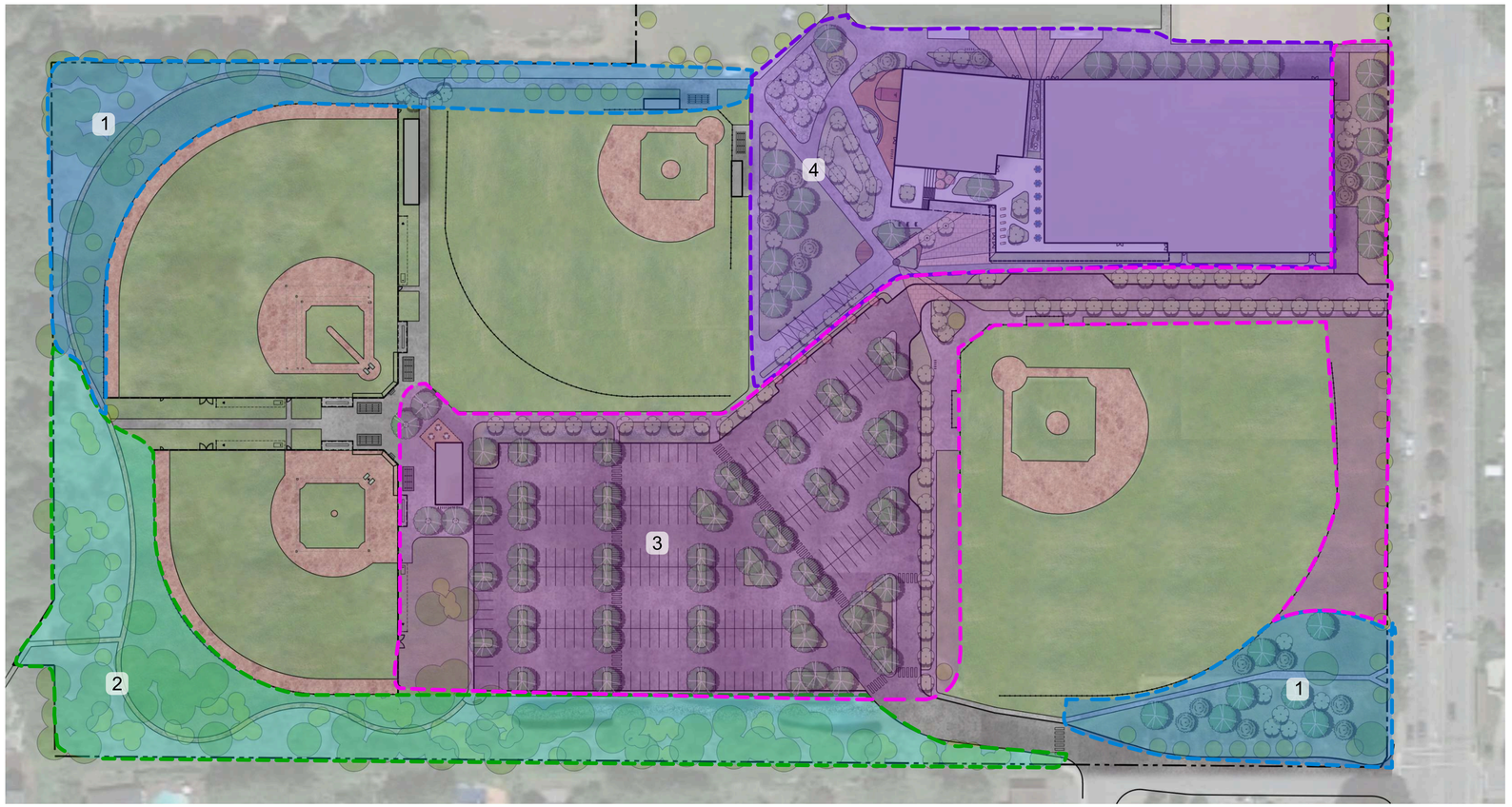
Project complete Winskill forest continues to grow

- Younger trees continue to grow as the existing trees reach their age of maturity
- Mature trees will continue to feed into Winskill soils - any failed trees not hazardous to the public will be reviewed for viability as deadwood and wildlife trees (snags)
- Wildlife trees provide nesting areas, habitat and food for insects, and nutrients for the soil as they decompose
- Typical 10 year growth of trees is considered ‘mature height’ for urban trees, as many remain smaller than their wild counterparts. Dependent on species a moderate growth rate tree will typically grow 20 feet (6m) in favourable conditions over 10 years

10+

2036 (YEAR 10+) - TREES REACH MATURITY

REFORESTATION STRATEGY



400+
Target Replacement Tree Count

110+
Forests for the Future

70+
Native Forests

135+
Streetwise Trees

85+
Feature Trees

What Does Reforestation Mean at Winskill Park?

Trees will be planted site wide to improve and repair gaps in the retained forest buffer, decrease urban heat island in the parking lot, add shade, habitat and aesthetic value throughout the site. Current concept plans are preliminary and the team will continue to review opportunities for planting as the project progresses. Within the forest buffer area, smaller trees will be planted to minimize risk to existing tree roots, and allow for the trees to better integrate into the retained forest as they grow.

A mix of native trees and non native trees will be planted throughout the site with different pallets provided to target key concerns of introduced planting in various areas of Winskill.

1



Forests for the Future

Modeled after the existing Winskill Park planting, this area will focus on supplementing native trees with climate adaptive native and non-native trees for added forest resilience.

This forested area can be used as an educational opportunity to showcase how our forests are transitioning, and in some cases struggling due to more extreme seasonal temperatures.

2

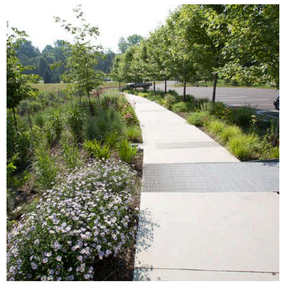


Native Forests

This planting typology provides opportunities to showcase native plants by utilizing the high quantity of existing native trees. As some of the existing planting is in poor condition, newer planting will help retain the character of this area and continue to allow local species to be showcased and supported.

The project team will explore educational and cultural potential with local First Nations to showcase traditional practices, knowledge and,names in these areas.

3



Streetwise Trees

Trees next to roads, parking areas, and pedestrian paths face unique challenges. Increased pollution, salt from paths and roads, heat, and physical stress limit the types of planting that can tolerate these areas.

Despite these challenges, streetwise trees provide significant value by providing shade, deceasing the urban heat island effect, and enhancing stormwater management by reducing rainwater runoff and filtering pollutants in soil.

4



Feature Trees

A quick walk around Tsawwassen neighbourhoods showcases a diversity of ornamental trees and interesting specimens in private gardens and select public areas.

To help incorporate local species into this new community space, select planting focused on seasonal interest and trees commonly seen around the neighbourhood will be utilized.

While not always native, these trees can provide pollinator support, shade and interesting windows into the past.

SAMPLE PALLETS

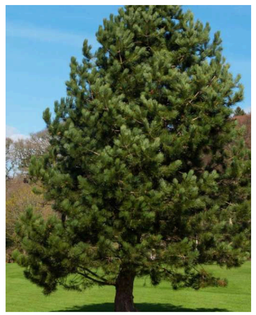
1 : FORESTS FOR THE FUTURE




DROUGHT-TOLERANT POLLINATOR TREES




DROUGHT-TOLERANT DECIDUOUS TREES | NATIVE AND NON-NATIVE



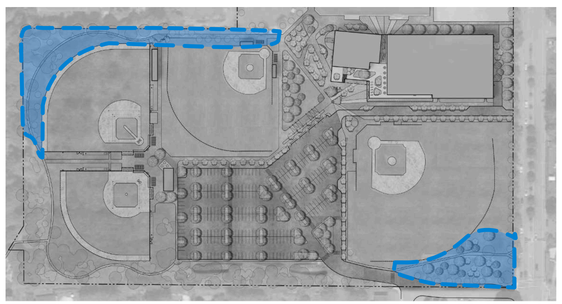



DROUGHT-TOLERANT CONIFERS | NATIVE AND NON-NATIVE

Forests for the Future

The northwest and southeast corners of Winskill Park are forested areas with a more sparse amount of existing trees.

As these areas will have a higher quantity of newer trees, resilience and adaptability to climate change are key to allow for proper establishment. Mixing in near-native species can help showcase the future of urban forests and juxtapose against existing native planting to monitor resilience based on age and species.



2 : NATIVE FORESTS





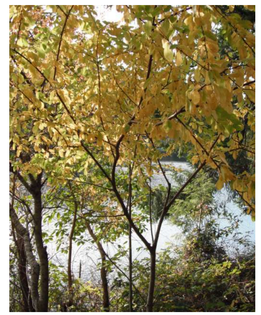
NATIVE CONIFERS



NATIVE MAPLES



NATIVE DECIDUOUS TREES



NATIVE UNDERSTORY TREES



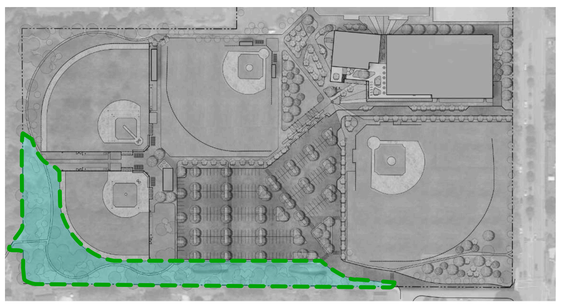
NATIVE POLLINATOR TREES

Native Forests

The forested area focused on native trees is in the south west corner of the park where a majority of the retained trees are located.

This area seeks to fill gaps in planting with a variety of climate resilient native plants. A focus will be placed on diversity, vertical stratification, and pollinator/ habitat value to encourage increased biodiversity within this area.

As a fair amount of trees within this area are in poor condition, replacements for both removed trees and poor condition trees will be factored in when selecting the proposed trees.



SAMPLE PALLETS

3 : STREETWISE TREES



AIR POLLUTION TOLERANT TREES





FLOOD TOLERANT TREES





HEAT TOLERANT TREES





NARROW CANOPY TREES



NARROW EVERGREEN TREES

Streetwise Trees

A specialized selection of trees is required for street trees and trees located in parking areas. Street trees are selected based on recommendations from the city to ensure species with wet fruit, brittle branches, or sensitivity to urban conditions are avoided.

These tree selections help ensure the long term viability of shade and tree cover within urban spaces to help reduce urban heat island effect



4 : FEATURE TREES

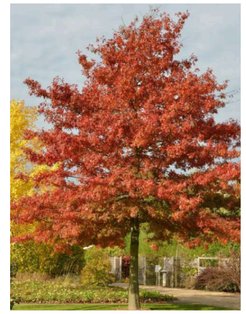


POLLINATOR / FLOWERING TREES





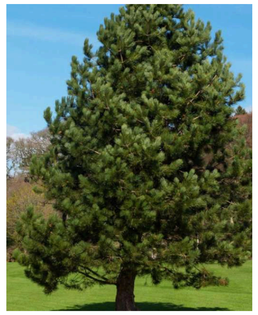
FALL INTEREST





ORNAMENTAL / ARCHITECTURAL TREES





WINTER STRUCTURE



SHADE TREES

Feature Trees

Planting in the plaza and public gathering areas is focused on seasonal interest, shade, and plants that tie in the surrounding community.

These trees help create spaces for programming, with a fewer higher maintenance trees mixed in alongside typical plantings for interest.

