UNA UNIVERSITY NEIGHBOURHOODS ASSOCIATION

Landscape Management Plan

MAY 2023

VERSION CONTROL

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DISCLAIMER

UNA neighbourhoods are on the traditional, ancestral, unceded territory of the xʷməθkʷəy̓əm (Musqueam) First Nation.

ABBREVIATIONS

CLS	Canadian Landscape Standard
cm	centimeter
GIS	Geographic Information Systems
GVRD	Greater Vancouver Regional District
IPM	Integrated Pest Management
LMP	Landscape Management Plan
m	metre
m^2	square metres
m^3	cubic metres
mm	millimetre
TMP	Tree Management Plan
UBC	University of British Columbia
UBCPT	UBC Properties Trust
UNA	University Neighbourhoods Association

EXECUTIVE SUMMARY

This Landscape Management Plan (LMP), developed by the University Neighbourhoods Association (UNA), has been created to support the development and implementation of processes, tools, guidelines, and systems for effectively managing University of British Columbia (UBC) neighbourhood landscapes now and into the future.

CONTEXT

Prior to 2023, UBC Properties Trust (UBCPT) managed landscape contracts on behalf of the UNA. Starting April 1, 2023, the UNA took over contracts with landscape maintenance providers and management of landscaping services within certain UNA neighbourhoods, as defined in the current Neighbours' Agreement. With this shift comes a need for the UNA to strategically deliver current and future services to meet sustainability, service delivery, and financial accountability goals.

To date, the UNA's role in landscape management has typically begun after a landscape is designed and constructed. During design phases, where there has been less attention to long-term maintenance considerations, a gap has emerged between level of service expectations and the capacity to provide this level of service sustainably over the long-term. This is especially apparent in newer neighbourhoods.

The UNA receives funding support from UBCPT for neighbourhoods in development, including the Wesbrook neighbourhood, being developed at the time of the LMP writing. The landscapes in Wesbrook have higher maintenance levels and larger landscape areas than other neighbourhoods maintained by the UNA. The funding provided by UBCPT supports the higher levels of service that are required to maintain the landscapes as designed. Given the high requirements for service, UBCPT and UBC will need to continue to subsidize these higher maintenance landscapes, until gradual shifts can be made to bring landscapes more inline with the level of service provided in other UNA neighbourhood landscapes.

Key goals for the LMP are to identify opportunities to **better align services across existing neighbourhoods** and to **integrate long-term maintenance considerations in future neighbourhood landscape development.**

AUDIENCES & SCOPE

The LMP is meant for several audiences:

- It is a tool for the UNA staff and board to continue to improve landscape management practices.
- It is intended to support continued collaboration between UBC and the UNA.
- It is meant to inform landscape maintenance providers about management requirements and support a consistent approach across UNA neighbourhoods.
- It is for UNA residents to understand goals and constraints of landscape management.

The UNA is one of several parties delivering landscape management across the UBC campus. Other organizations include UBC Municipal Operations – managing the academic parts of campus, UBCPT – managing neighbourhoods under active development, and strata lot owners – managing areas around private buildings.

The LMP is specifically intended for the UNA's landscape management areas which primarily are the public spaces in UNA residential neighbourhoods, including:

- Streetscapes;
- Parks and playground areas;
- Community garden spaces; and
- Green spaces like urban forests and select naturalized areas.

The LMP is focused on soft landscapes including lawns, planted areas, and naturalized areas, while also including select guidance on built elements like water features. It should be noted that while the LMP provides direction for planted areas that may include trees, it does not provide specific tree management guidance. A separate Tree Management Plan (see Table 9: Potential Studies on page 80) will be completed to provide a comprehensive approach to managing trees across UNA neighbourhoods.

PURPOSE & INTENDED OUTCOMES

The LMP is intended to help:

- Protect the environment and support ecology and nature;
- Increase the resilience of UNA neighbourhoods to the impacts of climate change;
- Maintain neighbourhood landscapes so they continue to be safe, attractive, and livable places for residents to enjoy; and
- Provide landscape maintenance practices are consistent, cost-effective, and sustainable.

The four guiding principles in Section 1.4, created in collaboration with residents and stakeholders, describe the UNA's overall approach to landscape management.

Landscapes are dynamic systems influenced by many factors, including those beyond human control. Landscape management has the unique challenge of contending with variables such as living plants, pests, weather, evolving regulations like water restrictions, and more. The changing nature of landscapes require an adaptive approach for successful management.

In addition to day-to-day factors that affect landscapes, the LMP also recognizes that global changes, like our growing knowledge base and shifts in societal values, affect our approach to landscape management.

Notable happenings informing the creation of this LMP include:

- Ongoing work on reconciliation and collaboration between UBC and Musqueam partners;
- Growing awareness of and commitment to sustainability, greenhouse gas emission reductions, and living within our environmental limits;
- Recognition that our water resources are finite and an increasing need for water conservation; and
- Inflation driving up the cost of all services, including landscape maintenance.

To respect this dynamic system and the changing nature of landscapes, it is necessary for landscape management practices to evolve and adapt accordingly.

IMPLEMENTATION

As part of ongoing landscape management and to continue to meet operational and sustainability objectives, the UNA will continue a process of revising and updating the Landscape Types and Maintenance Levels identified in this LMP (see Section 2). A Potential Projects list, outlined in Table 8 on page 76, identifies a series of projects that could help shift level of service requirements for certain landscape areas over time. Each project identified will need to be implemented through a process that:

- Selects specific priorities and locations for implementation;
- Analyzes capital costs for implementation alongside projected short- and long-term cost savings;
- Consults with stakeholders including UBC / UBCPT and landscape maintenance providers to recognize the implications of changes; and
- Analyzes outcomes and confirms further application or modification of projects for the future.

The intent of the LMP is to implement changes across UNA neighbourhoods incrementally, with careful review of trade-offs to understand both the immediate and long-term benefits and costs. As the LMP is implemented, the UNA will seek a balance between quality, sustainability, and cost.

Hawthorn Neighbourhood – Eagles Park

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Hampton Place – Traffic Circle

SECTION 1 | INTRODUCTION & CONTEXT

1.1 ABOUT THE UNA

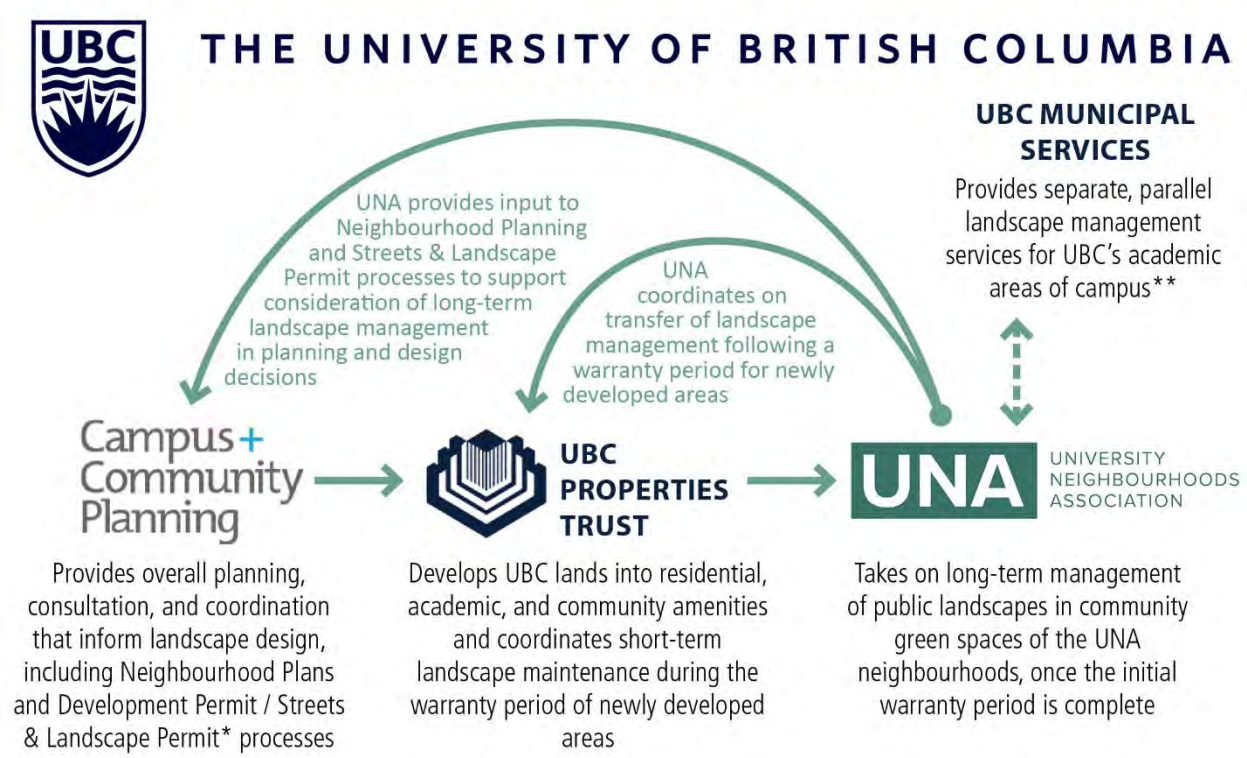
The University Neighbourhoods Association (UNA) was established by the University of British Columbia (UBC) in 2002 as a civic and social organization to represent residents living within UNA neighbourhoods. The UNA promotes the development of good neighbourhoods and provides, operates, and maintains municipal-like services and facilities on behalf of residents. Residents' concerns, opinions, and views are heard through the UNA and help shape development and allocation of community services for UNA neighbourhoods.

The UNA is governed by a Board of Directors, an elected body that provides oversight, develops policies, and sets out strategic priorities. As shown in Figure 1, the UNA provides a number of key services to the residents of UNA neighbourhoods.

Figure 1: Services Provided by the UNA

1.1.1 Key Partnerships

The UNA is part of an interconnected UBC network. The UNA works closely with other campus organizations to deliver integrated and coordinated services. Figure 2 outlines key relationships between the UNA and other UBC partners as they relate to landscape management.



Notes:

* UBC and the UNA are currently developing an updated Streets & Landscape Permit process which will specifically guide future permitting processes for public landscapes areas. This process will further define opportunities for the UNA to provide input during design development with regard to long-term landscape management considerations.

** UBC Municipal Services follows the Association of Physical Plant Administrators (APPA) Standards which are common building and operations standards used by academic institutions (and include typical landscape management standards). This LMP is based on the Canadian Landscape Standard (CLS) as UNA neighbourhoods are not within an academic area. The APPA and CLS have similar systems with some variation. UBC Municipal Services and the UNA should continue to collaborate to support and coordinate between the organizations.

Figure 2: Key Partnerships that Influence UNA Landscape Management

1.1.2 Role in Landscape Management

The approach to managing landscapes in UNA neighbourhoods has grown organically. Prior to 2023, UBC Properties Trust (UBCPT) managed landscape contracts on behalf of the UNA. Starting April 1, 2023, the UNA took over the management of landscape maintenance contracts.

The UNA is the manger of landscaping services within certain UNA neighbourhoods, as confirmed in the current Neighbours' Agreement, coordinating provision of services by several private landscape contracting companies. This differs from UBC Municipal Services which has landscape maintenance providers on staff. As a small organization, the UNA currently utilizes landscape maintenance contracts with private companies to provide landscaping services.

To date, the UNA's role in landscape management has typically begun after a landscape is designed and constructed, and the warranty period is complete. Design of landscapes is managed by UBC Campus + Community Planning and initial warranty period maintenance is managed by UBCPT.

Four key challenges have been identified as the UNA role in landscape management increases:

- There has been limited opportunity for the UNA to provide input on past design decisions that ultimately affect long-term landscape management. Certain design features such as decorative water features, plant selections that require intensive maintenance to retain their intended character, or water-intensive landscapes that rely heavily on irrigation, can be misaligned with sustainability objectives, and can necessitate more labour- and cost-intensive maintenance practices to retain the initial landscape design intent. Increasing sustainability and resilience in landscapes and controlling landscape management costs are important to the UNA's long-term success in landscape management.
- There is typically a gap between the short-term resources that UBCPT can allocate to managing landscapes in neighbourhoods that are under development (i.e., currently the Wesbrook neighbourhood) for the initial maintenance and warranty period versus the resources that the UNA has available to fund long-term maintenance once they are handed over to the UNA (funded through the UNA's operating budget). Because the UNA has limitations to its operating budget, it can be difficult to match the maintenance standards provided during the initial maintenance and warranty period consistently over the long-term, which can in turn affect resident perceptions about landscape quality.
- There are currently five unique UBC residential neighbourhoods, each developed in a different era of landscape design. As a result, there is variation in the neighbourhood landscapes and in how they are maintained. The practice of landscape design, like any profession, continues to evolve, influenced by trends and changing priorities. Landscapes designed decades ago do not always align with the priorities and realities of today. For example, water conservation has become an

increasingly high priority in the past decade, with tightening water restrictions reducing the amount available to maintain landscape plantings and water features. Many landscapes within the UNA neighbourhoods were designed in an era where it was assumed a regular, ongoing supply of potable water would be readily available. Adaptation is needed to manage the landscapes effectively in an era of water awareness and conservation. With precedents set by existing landscapes, it can be difficult make changes to the landscape that could impact resident perceptions and expectations.

- As public landscapes in UNA neighbourhoods grow, so to do landscape maintenance requirements. A key issue identified through the LMP process was the lack of a permanent works yard to support equipment and materials storage and management by UNA landscape maintenance providers. Currently a temporary works yard is in place in the Wesbrook neighbourhood; however, the area is identified for future neighbourhood development. Without access to a permanent works yard, landscape maintenance providers will see a significant increase in the time and costs required to transport equipment and materials to and from site. This in turn will lead to impacts on sustainability, cost, and service provision.

A goal for the coming years is to further integrate long-term landscape management considerations into planning, design, and short-term maintenance processes. Section 3 of this Landscape Management Plan encourages coordinated participation by the UNA within the planning and design of the future neighbourhood landscapes they will ultimately manage and an increase in the consistency of landscape management practices over time and across all neighbourhoods.

1.1.3 Landscape Management by the UNA

The UNA is one of several parties delivering landscape management across the UBC campus. Other organizations include UBC Municipal Operations, UBC Properties Trust, and strata lot owners. The LMP is specifically intended for the UNA's landscape management areas which focus on the public spaces of UBC's residential neighbourhoods, including:

- Streetscapes;
- Parks and playground areas;
- Community garden spaces; and
- Green spaces like urban forests and select naturalized areas.

Areas that are not within the UNA's scope, and therefore outside of the scope of the LMP, include (but are not limited to):

- Strata landscapes surrounding private residences and buildings within the UNA neighbourhoods. These areas are managed by building owners.

- Landscapes within the academic areas of the UBC Campus. These areas are managed by UBC Municipal Services.
- Select leased lands within UNA neighbourhoods such as:
  - Daycares (managed by operators).
  - Schools (managed by the School District).
  - Others select areas managed by other organizations, for example, the landscapes around the Epiphany Chapel (managed by the church).

1.1.4 Funding Landscape Management

Ongoing landscape management is funded through the UNA's Operating Budget, collected through the UBC Services Levy. The UBC Services Levy is based on the Provincial Rural Tax Rate and the City of Vancouver Residential Tax Rate and cannot be adjusted by the UNA. The total property taxes paid by UNA property owners must be the same as property taxes paid for a comparably assessed property in the City of Vancouver.

The UNA also receives funding support from UBCPT for neighbourhoods in development. This funding supports the higher level of landscaping that is required by UBCPT. Recent UNA neighbourhood landscapes require higher maintenance levels to support the landscapes as designed. Given the high requirements for service, UBCPT and UBC will need to continue to subsidize these landscapes, until changes are implemented that bring these landscapes more inline with the level of service provided in other UNA neighbourhoods.

With finite funds available and a broad range of services that the UNA must deliver (as per the Neighbours' Agreement and outlined in Figure 1 on page 1), efficient and cost-effective landscape management is a priority. The UNA must balance the costs of many services including landscape maintenance, recreation and cultural program delivery, community event organization, upgrades to facilities or fields, maintenance of streets, snow removal, and more. If UNA residents desire landscapes in UNA neighbourhoods to be maintained to a very high standard, less funding is available for other services.

Chancellor Place – Theology Mall

1.2 ABOUT THE LANDSCAPE MANAGEMENT PLAN

Landscape management considers how to sustain healthy landscapes through their evolution, considering different layers like ecology, character, function, location, safety, and cost. A Landscape Management Plan marries day-to-day maintenance with a long-term vision so that landscapes continue to fulfill their intended purpose – providing healthy, aesthetically-pleasing environments that enhance community livability and social connection.

The LMP provides direction to standardize maintenance approaches across all neighbourhoods. It is intended to help:

- Protect the environment and support ecology and nature;
- Increase the resilience of UNA neighbourhoods to the impacts of climate change;
- Maintain neighbourhood landscapes so they continue to be safe, attractive, and livable places for residents to enjoy; and
- Provide landscape maintenance practices are consistent, cost-effective, and sustainable.

While the LMP provides landscape management for planted areas that may include trees, it is not intended to provide specific guidance on tree management practices. A separate Tree Management Plan (see Table 9: Potential Studies) will be completed to provide a comprehensive approach to managing trees across UNA neighbourhoods.

1.2.1 LMP Development

The LMP has been developed through a collaborative process involving partners, stakeholders, landscape contractor service providers, and UNA neighbourhood residents as summarized in Figure 3. Refer to **Appendix B: Engagement Summary** for an overview of engagement activities completed and key input received.

Figure 3: LMP Process

1.2.2 How to Use the LMP

The Landscape Management Plan includes three sections:

1. **Introduction & Context** – Provides context for the LMP, to explain how landscape management in UNA neighbourhoods is administered and the principles behind how it is managed.
2. **Landscape Maintenance Guidelines & Policies** – Outlines guidelines and policies related to management of established landscapes, providing consistent guidance to landscape maintenance providers, UNA staff, and residents on future maintenance and expectations.
3. **Future Landscapes** – Acknowledges that future development in UNA neighbourhoods will include community green space areas that will ultimately be maintained by the UNA and provides guidance for planning and design as they relate to maintenance considerations.

The guidelines and policies in the LMP describe the general criteria and requirements which are intended to help maintain UNA landscapes to a consistent and optimal condition over the long-term. Successful landscape management will require a collaborative approach in order to make progress on the LMP's guiding principles and policies, while working within the practicalities of service provision and meeting resident expectations. Each landscape is unique and will have more specific needs than a community-wide LMP can provide. It will be the responsibility of the UNA, with support from their landscape maintenance providers, to collaborate on applying LMP guidance to the unique site conditions in each neighbourhood.

An LMP cannot anticipate every problem which may occur or develop over time. Landscape management is a continuous process of adaptation to keep landscapes healthy and available for the enjoyment of users. The intent is for the UNA and their landscape maintenance providers to work closely together to deliver healthy, thriving landscapes for UNA residents.

Wesbrook Neighbourhood

1.3 NEIGHBOURHOODS OVERVIEW

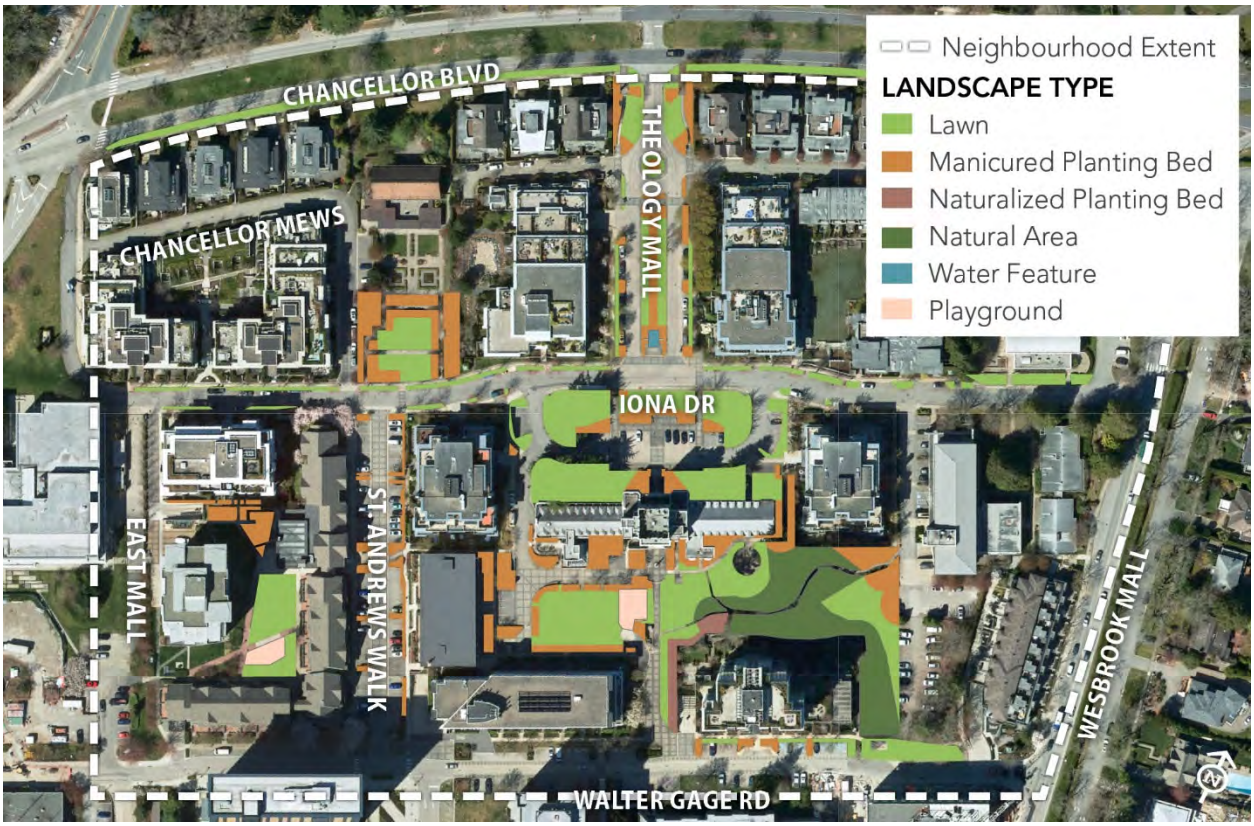
The UNA currently manages community green space landscapes within five residential neighbourhoods at UBC: Chancellor Place, East Campus, Hampton Place, Hawthorn Place, and Wesbrook Place as shown in Figure 4.

Figure 4: UNA Neighbourhoods with Landscape Areas Managed by the UNA

The five neighbourhoods have developed over different timeframes and processes, each having unique landscapes that define sense of place and character. The Landscape Management Plan seeks to create a consistent and equitable approach to maintaining landscapes across all neighbourhoods, while preserving the distinctive qualities that contribute to the diverse character of the UBC campus.

The following sections provide a brief overview of the five neighbourhoods and a summary of the landscape types within each neighbourhood. Refer to Section 2.2 for a description of each landscape type.

1.3.1 Chancellor Place



Location & Context	Located at the north-east boundary of campus, bounded by Chancellor Boulevard, Wesbrook Mall, and Walter Gage Road, with Gage Residences to the south, and Allard School of Law to the west. Also known as the Theological Neighbourhood, formed through a partnership between UBC and four theological colleges.
Neighbourhood Composition	▪ 975 residential units including purpose-built rental, market leasehold, and student housing ▪ Institutional buildings serving the Theological colleges ▪ Open spaces
Timeline	▪ 2001 – Neighbourhood Plan adopted (GVRD) ▪ 2011 / 2014 – Amendments to the Neighbourhood Plan
Landscape Character	Mix of formal, manicured landscapes framing key streets and buildings, combined with open space and natural areas tucked behind and beside buildings.
Key Community Landscape Features	▪ Theology Mall, providing a sense of entry to the neighbourhood and framing the Iona Building ▪ Iona Woods, with mature trees and natural space providing a spiritual, contemplative, and meditative quality for the area ▪ Iona Green, providing lawn and open space for outdoor activities

CHANCELLOR PLACE – SAMPLE OF EXISTING LANDSCAPE CHARACTER

Theology Mall

Iona Lawn and Playground

St. Andrews Walk

Lawn and Gardens behind St. Andrews Hall

Open space near Epiphany House

1.3.2 East Campus

Location & Context	Located on the east edge of the academic core, East Campus is between Acadia and Hampton Place neighbourhoods. The neighbourhood is bound by Wesbrook Mall and Osoyoos Crescent and overlooks Thunderbird Park and recreation facilities to the west.
Neighbourhood Composition	▪ 276 residential units including purpose-built rental and market leasehold ▪ Open spaces
Timeline	▪ 2004 – Neighbourhood Plan adopted ▪ 2013 – All planned buildings in neighbourhood complete
Landscape Character	Park-like character extended through the neighbourhood and centered on preserved natural areas at East Campus Park.
Key Community Landscape Features	▪ East Campus Park, a natural woodland area with a playground, trails, and seating ▪ Treed and landscaped boulevards along Thunderbird Boulevard ▪ A treed backdrop created by mature trees in and around the neighbourhood

EAST CAMPUS – SAMPLE OF EXISTING LANDSCAPE CHARACTER

Walkway through East Campus Park

East Campus Park Playground

Treed and Landscaped Boulevards along Thunderbird Drive

Boulevard and Gardens at TRIUMF House

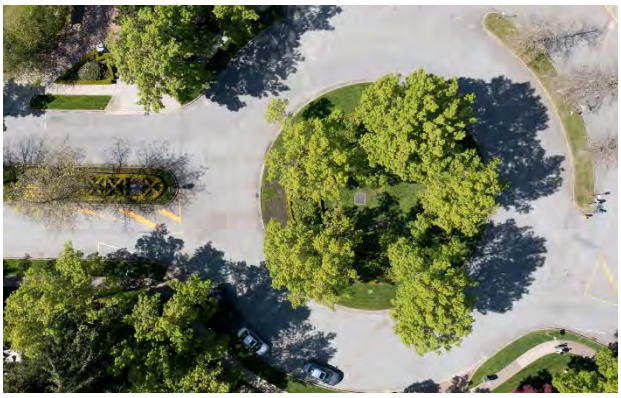
Boulevards along Wesbrook Mall

1.3.3 Hampton Place

Location & Context	UBC's first residential neighbourhood and located on the east edge of campus, bounded by Wesbrook Mall to the west, the Acadia Park area to the north, Pacific Spirit Regional Park to the east, and West 16th Ave to the south.
Neighbourhood Composition	▪ Market leasehold residential units ▪ Open space
Timeline	▪ 1984 – Lands designated for residential development ▪ 1989 – All planned buildings in neighbourhood complete
Landscape Character	A mix of residential buildings along tree-lined streets with formal neighbourhood gateways.
Key Community Landscape Features	▪ Hampton Place streetscape connecting the neighbourhood along tree-lined streets ▪ Backdrop of Pacific Spirit Regional Park ▪ Formal "maze" hedges neighbourhood entrances and in traffic circles

HAMPTON PLACE – SAMPLE OF EXISTING LANDSCAPE CHARACTER

Hampton Place Neighbourhood looking east toward Pacific Spirit Park



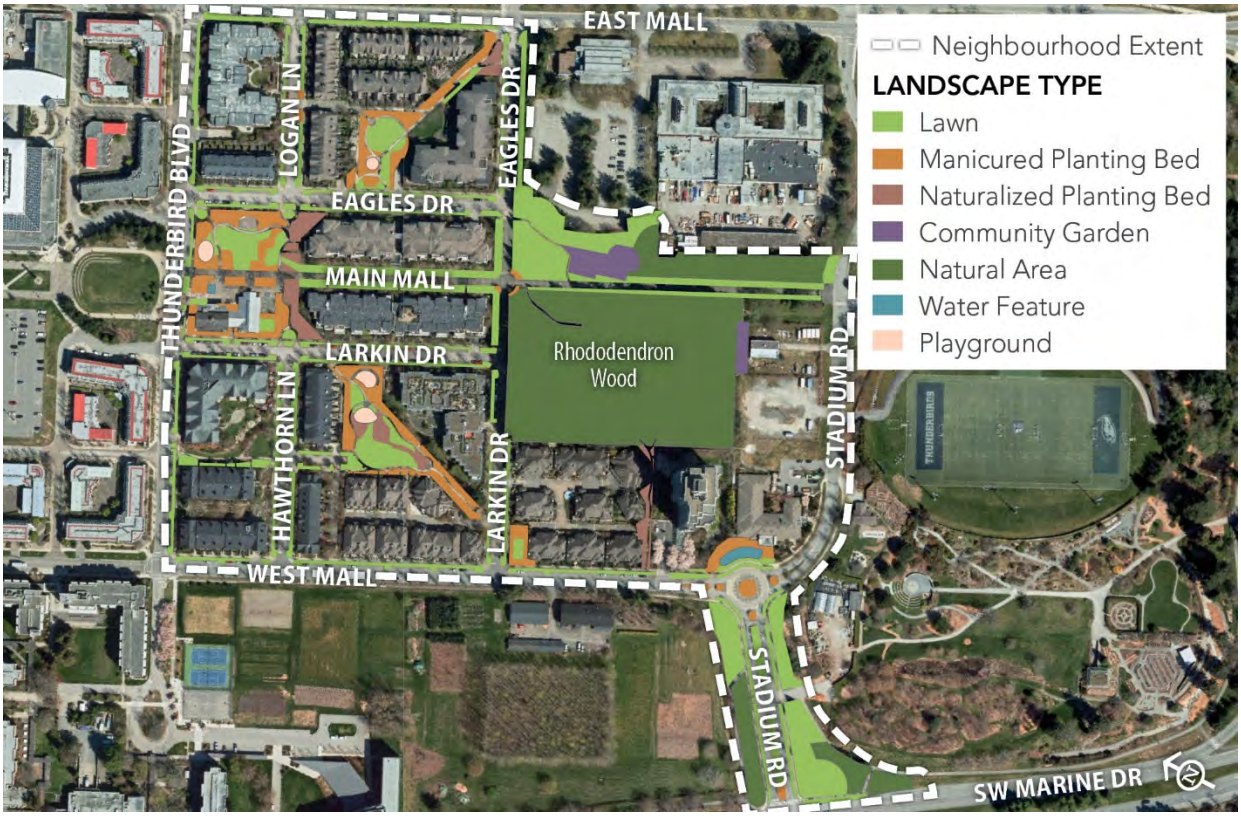
Traffic Circle in the Centre of the Neighbourhood

Formal Hedges at Wesbrook Mall Entrance

Trees and Traffic Circle

Neighbourhood Entrance from W 16th Avenue

1.3.4 Hawthorn Place (and Stadium Road)



Location & Context	Located in the middle of campus and straddling the Main Mall, bounded by East Mall to the east, Thunderbird Boulevard to the north, and West Mall to the west
Neighbourhood Composition	▪ 708 residential units including market leasehold, faculty and staff co-housing, faculty and staff discounted rental ▪ A community centre with a coffee shop ▪ Strong greenway connections via the Main Mall linked with diagonal pedestrian connections across the neighbourhood
Timeline	▪ 2001 – Neighbourhood Plan adopted ▪ 2007 – All planned buildings in neighbourhood complete
Landscape Character	A "university town" character that provides spaces for walking and cycling and provides many places for interaction through a variety of parks and open spaces connected by pedestrian linkages.
Key Community Landscape Features	▪ Greenway along Main Mall connecting the academic core and the Stadium area ▪ Rhododendron Wood, a large, forested area ▪ Formal campus entry along Stadium Road from SW Marine Drive to West Mall ▪ Parks with play activities and open space including Jim Taylor Park, Eagles Park, and Larkin Park

HAWTHORN PLACE – SAMPLE OF EXISTING LANDSCAPE CHARACTER

Eagles Park

Stormwater Swale in Jim Taylor Park

Main Mall

Stadium Road Entrance and Roundabout

Hawthorn Community Garden

1.3.5 Wesbrook Place (and W 16th Avenue)

Location & Context	UBC's largest neighbourhood and located in the south end of campus, bounded by UBC Farm to the west, West 16th Ave to the north, and Pacific Spirit Regional Park to the east. Neighbourhood development is ongoing.
Neighbourhood Composition	▪ Residential units, with rental, family, and seniors housing options ▪ A commercial town centre with services including grocery, restaurants, cafes, and shops ▪ A community centre, high school, and six local parks
Timeline	▪ 2005 – Neighbourhood Plan adopted ▪ 2011 / 2016 / 2020 – Neighbourhood Plan updated ▪ 2023 – About 65% of planned buildings complete
Landscape Character	Envisioned as a walkable urban village in the woods, encompassed within green edges and connected through a well developed greenway network.
Key Community Landscape Features	▪ Green edges surrounding the community ▪ Six community parks: Wesbrook Community Park (with a community centre and athletic field), Khorana Park, Michael Smith Park, Mundell Park, Nobel Park, and one undeveloped future park ▪ Greenway connections throughout the neighbourhood ▪ Connections to water including visible stormwater management features and water features

WESBROOK PLACE – SAMPLE OF EXISTING LANDSCAPE CHARACTER

Wesbrook Community Centre and Park

Khorana Park

Michael Smith Park

Southwest Green Edge, Nobel Park, and Wesbrook Mall

UBC Entrance on W 16th Avenue

1.4 GUIDING PRINCIPLES

Guiding principles describe the UNA's overall approach to landscape management and have been developed with input from stakeholders and residents. These principles inform the Landscape Management Plan and will support future decisions that arise around landscape management. The guiding principles may be updated in the future to continue to align with the broader vision for UBC and the neighbourhoods within it.

ECOLOGY & NATURE AT WORK

The UBC campus is committed to inspiring people, ideas, and actions for a better world. Neighbourhood landscapes are an opportunity to demonstrate this commitment, planting seeds for a thriving urban ecology. This means a sustainable approach to maintaining public spaces and enhancing biodiversity within landscapes.

THIS WILL BE ACHIEVED BY...

- **Creating true living landscapes:** Identify opportunities to shift lower-value habitats into landscapes with high ecological and habitat value that support a broad range of flora and fauna.
- **Prioritizing natural ecology:** Intentionally shift towards natural landscapes where ecology and succession are prioritized, allowing them to evolve through the work of nature, with less human intervention.
- **Managing water:** Improve water management through processes that mimic nature and landscapes that thrive in lower water conditions.
- **Listening to Musqueam leaders:** Support the collaborative work of Musqueam and UBC to honour and celebrate UBC's host nation on whose traditional territory the campus is situated, including landscapes that highlight Musqueam knowledge.
- **Providing public education:** Share information and support residents who wish to participate in enhancing nature in their neighbourhoods.

CLIMATE ADAPTATION & PROTECTION

The climate is changing. Shifting how we plan and maintain our landscapes is essential to both managing the impacts we are seeing and preparing our landscapes for a future climate that is even more extreme.

THIS WILL BE ACHIEVED BY...

- **Transitioning landscape management practices:** Use new technologies and knowledge to reduce our reliance on fossil fuel powered equipment and chemical treatments that impact our environment.
- **Reducing and reusing waste:** Seek opportunities to maximize the benefits of a circular life cycle, such as reusing our green landscape waste to nourish future landscapes.
- **Conserving water:** Reduce the amount of water needed to maintain healthy and functioning landscapes, increase consistency in watering practices, and leverage greywater sources to support landscape management.
- **Protecting the urban forest:** Care for the ongoing health of the urban forest to improve air quality, provide habitat, and capture carbon pollution.
- **Adapting our landscapes:** Use materials, plants, and practices that allow landscapes to thrive, even in the face of emerging climate impacts such as extreme heat, drought, and intense storms that bring heavy winds and precipitation.
- **Leverage knowledge:** Seek opportunities to engage UBC specialists, staff, and students, as well as other communities and partners, to identify and implement actions that support climate resiliency in UNA landscapes.
- **Living local:** Prioritize use of materials and processes that can be sourced from locations at or close to UBC, reducing impacts related to transportation of goods, equipment, and services.

GREAT NEIGHBOURHOOD EXPERIENCES

The UNA neighbourhoods are peoples' homes. It is important that residents feel safe, welcomed, and included within their communities. Continuing to provide positive neighbourhood experiences as landscapes grow and evolve is essential to fostering community connection.

THIS WILL BE ACHIEVED BY...

- **Maintaining attractive landscapes:** Take care of our landscapes in our neighbourhood parks, streets, and social spaces, especially those spaces that welcome gathering and socialization.
- **Supporting equity and inclusivity:** Ensure equitable access to quality greenspaces and amenities for residents of all ages and abilities.
- **Enhancing livable, safe neighbourhoods:** Keep livability and safety at the forefront of landscape management by discouraging inappropriate activity and encouraging social activity, and by balancing clear sightlines and visibility with aesthetics and quality of place.
- **Recognizing neighbourhood uniqueness:** Celebrate the unique character and qualities of each UNA neighbourhood through our landscapes.
- **Providing varied experiences:** Maintain landscapes to promote opportunities for varied activities ranging from quiet reflection to gathering and active recreation and more.
- **Connecting people with nature:** Increase opportunities for residents to connect with and observe nature on a daily basis.
- **Enhancing landscape management:** Develop, monitor, and update landscape management regimes so landscapes are managed in perpetuity, for the benefit of both people and nature.
- **Sharing responsibility:** Use education, campaigns, and signage to raise awareness that all residents are responsible for keeping UNA neighbourhoods clean and safe and identify how people can contribute.
- **Involving residents:** Identify opportunities for programs that support resident contributions or volunteering.

FINANCIAL SUSTAINABILITY

The UNA provides many services to support quality of life for neighbourhood residents. Meeting community needs in a financially sustainable way is essential to continuity of these services. A careful balance allocates resources towards identified priorities, while meeting the fiscal challenges of today.

THIS WILL BE ACHIEVED BY...

- **Prioritizing resources:** Develop and use landscape maintenance level budgeting tools to allocate resources to maximize benefit and reflect priorities of neighbourhood residents, focusing intensive maintenance in critical spaces, while considering opportunities to reduce maintenance requirements in less prominent locations.
- **Spending wisely:** Identify opportunities to reduce landscape management costs where a lower level of service may be sufficient, while at the same time, be prepared to invest in higher quality materials and techniques where long-term benefits will be achieved.
- **Investing in ongoing maintenance:** Support the long-term health of neighbourhood landscapes to limit need for premature capital reinvestment or replacement by following routines that prevent deterioration.
- **Shifting to naturalized landscapes:** Where appropriate, encourage naturalized areas to be created where they can bring both ecological and financial benefits.
- **Integrating planning and operations:** Provide input to new landscapes early in UBC planning and design processes so that landscape management is effectively integrated into design decisions.
- **Testing and monitoring change:** Seek opportunities to pilot landscape management innovations that could bring efficiency and monitor outcomes and feedback from residents and partners.

Wesbrook Neighbourhood – Michael Smith Park

SECTION 2 | LANDSCAPE MAINTENANCE GUIDELINES & POLICIES

2.1 INTRODUCTION

Landscapes function best when management activities support intended design and function. For example, in manicured areas, timely maintenance is important to sustaining attractive landscapes with a more refined appearance. In naturalized areas, monitoring and adaptive management can allow natural evolution to occur while preventative maintenance addresses issues and supports ecological processes. Thoughtful decisions about the **Landscape Types** developed in UNA neighbourhoods and the **Maintenance Levels** assigned to them will support consistency and efficiency in landscape management.

As shown in Figure 5, two key components influence the landscape management activities required for a landscape area.

Figure 5: Components that Influence Landscape Management Activities

Landscape management issues can compound quickly if appropriate and timely maintenance is not provided. For example:

- Weeds growing to the point of going to seed, increasing weed populations exponentially and creating untenable maintenance challenges.
- Irrigation breakdown, improper scheduling, or lack of proper watering during drought impacting plant survival.
- Pruning left too long that the desired form for a hedge or plant cannot be recovered.
- Invasive species spreading into natural areas, compromising ecosystem function.

Completion of appropriate maintenance activities based on the Landscape Types outlined in Section 2.2 and the Maintenance Levels outlined in Section 2.3 of this LMP will help reduce risk of issues compromising the health of neighbourhood landscapes, while supporting efficient use of resources.

These tools will support informed decisions about changes in maintenance levels or landscape types. Using the LMP guidance, the UNA may consider opportunities to reduce maintenance in select landscape areas to support cost savings. However, these decisions will need to be made in the context of long-term management so that maintenance reductions do not compromise landscape health and lead to significant losses or premature replacements. Like a car needing routine maintenance to avoid engine breakdown, an appropriate level of landscape maintenance keeps things running smoothly and helps limit significant losses.

2.1.1 Landscapes as a Dynamic System

Landscapes are dynamic, continuously growing and changing and influenced by many factors, including those beyond human control. Landscape management has the unique challenge of contending with variables such as living plants, pests, weather, evolving regulations like water restrictions, and more. The changing nature of landscapes require an adaptive approach to management.

There are common stages in the evolution of a landscape:

- After initial development, a landscape is in its **establishment phase**, where plants are immature and beginning to take hold on the site. Often this stage is characterized by gaps between plantings, lawns starting to fill in, and a more open character. In these stages, landscapes can be more vulnerable to disturbance and often require more water, fertilization, and care. Establishment can commonly last up to 5 years and will typically require a higher level of maintenance (e.g., Maintenance Level 2).
- Once established, a landscape moves to its **mature phase**, where plants are well established and hardier. At this stage, the landscape appears more filled in, with issues around overcrowding or competition becoming more apparent. Mature phases can last many years (5 to 50+) depending on

the materials used and maintenance practices. Landscape maintenance in mature landscapes may have potential to be reduced (e.g., Maintenance Level 3 or 4), provided that issues that could compromise the landscape are managed. During this time, monitoring can be used to help identify potential issues or make adjustments to keep the landscape healthy.

- Like all living things, landscapes reach an **end phase** where they no longer function as intended. Often this stage sees plants and landscape structure starting to break down, with more losses than typical. As a landscape reaches its end of life, more effort can be required to sustain the landscape quality and there comes a time where renewal or replacement is required. Regular maintenance and select replacement or upgrade projects can help prolong the lifespan of a landscape.

Because landscapes are dynamic, landscape management should also evolve through different phases in a landscape's life cycle. This practice can be seen in the UNA neighbourhoods today. Older neighbourhoods like Chancellor and Hawthorn have mature landscapes, and landscape maintenance levels are often between a Maintenance Level 2 and 3. In Wesbrook, where many landscapes are still within an establishment phase, these areas are being routinely managed to a Maintenance Level 2 or higher.

Maintenance requirements also vary seasonally – at times linked to watering restrictions. For example, in shoulder seasons when soils are moist and lawns are actively growing, these areas may be managed at Maintenance Level 2, with mowing once per week. During summer seasons, when watering restrictions are in place and lawn areas become dormant, mowing frequency may be reduced to be closer to a Maintenance Level 3.

Understanding where a landscape is in its life and seasonal cycles, and adjusting maintenance service to match, is part of effective landscape management.

Hawthorn Neighbourhood – Jim Taylor Park

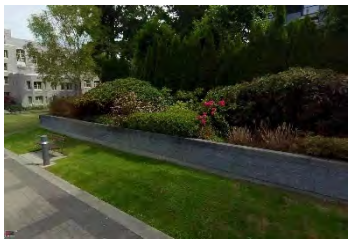
2.2 LANDSCAPE TYPES IN UNA NEIGHBOURHOODS

Landscape Types describe the intended use, form, and character of different landscape areas. As shown in Figure 6 (below), eight Landscape Types comprise the community green space areas in UNA neighbourhoods. Each landscape type has different management needs as summarized Table 1.

As part of ongoing landscape management, the UNA, with resident input, may choose to revise certain Landscape Types. For example, select lawn spaces could be transitioned to natural areas as meadows, or manicured planting areas may be shifted towards naturalized planting beds. Changes in Landscape Type will affect maintenance requirements.

Figure 6: Landscape Types

Table 1: Overview of Landscape Types

Landscape Type	Sample Image	Description
LAWN		▪ Mown lawn areas including street boulevards and park open spaces ▪ Typically mown lawn with trees ▪ Typically maintained to a high level (e.g., Maintenance Level 2 to 4) ▪ Found throughout all neighbourhoods
MANICURED PLANTING BED		▪ Formal planting areas that are typically maintained to a high level (e.g., Maintenance Level 2) ▪ Maintenance practices often endeavour to keep these areas in a "static" state, making them some of the most time intensive landscapes to maintain ▪ Found in all neighbourhoods
NATURALIZED PLANTING BED		▪ Native or naturalized plantings, typically maintained to a more moderate level (e.g., Maintenance Level 3 to 4) ▪ Maintenance practices often allow these areas to evolve and naturalize to a greater extent ▪ Found in Hawthorn, Chancellor, East Campus, and Wesbrook neighbourhoods
COMMUNITY GARDEN		▪ Plots assigned to UNA residents enrolled in the community garden program ▪ Plot maintenance is by community gardeners, with common areas lightly maintained by the UNA if required (e.g., Maintenance Level 6) ▪ Found in Wesbrook and Hawthorn neighbourhoods
GRASS FIELD		▪ Grass playing fields with mown lawn ▪ Maintained to a very high level (e.g., Maintenance Level 1) ▪ Found in Wesbrook neighbourhood at Nobel Park

Landscape Type	Sample Image	Description
NATURAL AREA		▪ Treed, forested, wetland, or meadow areas focused on natural area protection ▪ Typically, limited maintenance (e.g., Maintenance Level 5), focused on monitoring against invasive species or other issues that could compromise ecological health ▪ Found in all neighbourhoods
WATER FEATURE		▪ Decorative water features either with or without functional services like stormwater channels and ponds ▪ Typically, intensive to manage and maintain, requiring specific maintenance attention ▪ Found in Wesbrook, Hawthorn, and Chancellor neighbourhoods
PLAYGROUND		▪ Children's play spaces ▪ Regularly monitored for safety and function ▪ Updates and repairs provided as needed to maintain a safe play environment ▪ Found in Chancellor, Hawthorn, East Campus, and Wesbrook neighbourhoods

Wesbrook Neighbourhood – Nobel Park

2.3 LANDSCAPE MAINTENANCE LEVELS

Landscape Maintenance Levels outline the expectations as to what standard and how frequently landscape areas should be maintained. The Maintenance Levels are intended to provide clarity on expectations and support consistency in the application of maintenance activities across neighbourhoods.

Maintenance of landscapes is a critical part of preserving intended character and protecting initial landscape investments. Without appropriate maintenance, the landscape will not perform as intended and may require replacement before its planned lifespan.

The *Canadian Landscape Standard (CLS) Section 9 - Landscape Maintenance* is the starting point for recommended maintenance practices for the UNA neighbourhoods. The six Maintenance Levels outlined are adapted from the CLS and refined to suit the site context of UBC. The tables on the following pages include:

- **Table 2: Landscape Maintenance Levels Overview** – Introduces the six Maintenance Levels and clarifies expectations on performance for each level.
- **Table 3: Maintenance Level Activities & Frequencies** – Outlines the expected maintenance activities and their frequency to be performed within each Maintenance Level.
- **Table 4: Typical Seasonal Procedures** – Provides an overview of seasonal expectations for different maintenance activities.

Together, these three tables are intended to guide maintenance activities in the neighbourhoods.

The cost for maintenance is typically related to the Maintenance Level selected, as illustrated in Figure 7 below. In urban environments like those in the UNA neighbourhoods, maintenance levels are most commonly between Level 2 “Groomed” and Level 5 “Background,” though there are some limited areas of Level 1 and Level 6.

Figure 7: Landscape Maintenance Levels Overview

2.3.1 Overview of Landscape Maintenance Levels

Table 2 summarizes the objectives, appearance standards, typical locations, plant characteristics, traffic levels, and general maintenance practices for the six Maintenance Levels. It communicates expectations on the performance of landscapes under the different Maintenance Levels.

Table 2: Landscape Maintenance Levels Overview
Adapted from the Canadian Landscape Standard, Second Edition, Tables T-9.1 to T-9.6 Maintenance Levels.

MAINT. LEVEL	1 Well-Groomed	2 Groomed	3 Moderate	4 Limited	5 Background	6 Service
Objectives	▪ First-class appearance, impeccably clean and well groomed	▪ Neat, orderly, groomed appearance but not to the same "near-perfect" standard as Level 1	▪ Generally neat, moderately groomed ▪ Some tolerance for "wear and tear," moderate traffic, and natural processes	▪ An orderly appearance ▪ Considerable tolerance for the effects of play, traffic, and other activities	▪ Habitat and ecosystem function is prioritized ▪ Accommodation of low intensity activities	▪ Vegetation is managed for functional rather than aesthetic concerns
Appearance Standard	▪ Plants kept "manicured" and in near-perfect health and condition ▪ Lawns uniformly green and thoroughly groomed ▪ Area is kept substantially free of weeds, invasive plants, debris ▪ Seasonal plantings lush and "very showy" through all seasons	▪ Plants are healthy and vigorous ▪ Lawns are healthy, uniformly green, and regularly mowed within accepted height range ▪ Few weeds and no invasive or noxious weeds, little accumulated debris ▪ Seasonal plantings kept lush and "showy"	▪ Plants and lawns are healthy ▪ Lawns are kept within accepted height range ▪ Weeds and debris are acceptable between visits ▪ Invasive and noxious weeds are eradicated ▪ Seasonal plantings are kept attractive at appropriate seasons	▪ Appearance is secondary to function ▪ Vegetation retains healthy, normal appearance ▪ Grass is kept within accepted height range; trimming may be less frequent ▪ Invasive and noxious weeds are eradicated	▪ Vegetation has healthy, normal appearance ▪ Mowing is limited to seasonal or as-needed care ▪ Invasive plants are controlled, and noxious weeds are eradicated	▪ Vegetation is controlled to accommodate service activity ▪ Invasive plants are managed to prevent spreading ▪ Noxious weeds are eradicated

MAINT. LEVEL	1 Well-Groomed	2 Groomed	3 Moderate	4 Limited	5 Background	6 Service
Typical Locations	▪ Small, high-profiles area of a larger site ▪ Some neighbourhood entrance areas ▪ Some sports fields ▪ Some intimate outdoor areas where people are close to the landscape (e.g., courtyards)	▪ High-profile area of a larger site ▪ Neighbourhood or building entry ▪ Urban landscapes ▪ Some sports fields ▪ Areas where people are close to the landscape	▪ Building sites, especially those of medium to large size ▪ Publicly visible sections of larger landscapes ▪ Areas for occasional recreational use ▪ Areas viewed from a medium distance	▪ General park areas and open spaces ▪ Play and recreation areas ▪ Areas viewed from medium to long distance	▪ Transitional areas from developed areas to more natural areas ▪ Meadows, forests, riparian areas, and wetlands ▪ Low intensity recreation areas, trails, etc. ▪ Areas viewed at a distance	▪ Service areas away from public view ▪ Functional landscapes such as community gardens
Plant Characteristics	▪ Often include specimen plants, rare and unusual plants, fine turf varieties	▪ Some specimen plants, but not usually as numerous or exotic as Level 1	▪ May include a mix of native / naturalized planting and more formal planting ▪ Plants selected for appearance or moderately intensive use	▪ Plants and grasses selected for "toughness" and low maintenance ▪ Priority for native or naturalized vegetation where suited to site conditions	▪ Native and suitable trees, shrubs, and grasses	▪ Native or re-vegetated trees and shrubs, controlled grass ▪ Some areas where no vegetation is desired
Traffic Activity Levels	▪ Pedestrian traffic is limited	▪ Pedestrian (and other) traffic is often limited ▪ Maintenance measures are taken to compensate for the effects of traffic	▪ Moderate traffic is tolerated; minor deterioration due to traffic is acceptable ▪ Maintenance may be adjusted in response to "wear and tear"	▪ "Wear and tear" is tolerated except where it interferes with the intended use or leads to severe deterioration	▪ Pedestrian traffic is typically limited to trails through or adjacent to natural areas ▪ Deterioration (human-induced or natural) is monitored and remediated as necessary	▪ Deterioration is rectified as necessary ▪ General pedestrian traffic is low (excluding use by specific user groups)

MAINT. LEVEL	1 Well-Groomed	2 Groomed	3 Moderate	4 Limited	5 Background	6 Service
Maintenance Practices	▪ Consistent, frequent attention to health and appearance ▪ May include extensive work to upgrade conditions that would be acceptable in most other landscapes ▪ Tasks require qualified professionals with expertise in managing maintenance to suit the site	▪ Requires frequent, regular, routine maintenance of a high intensity ▪ Regular monitoring and adjustment to keep high visual quality ▪ Most tasks require a qualified professional for execution	▪ Routine maintenance of moderate frequency and intensity ▪ Regular monitoring to avoid serious deterioration ▪ Many tasks require a qualified professional for execution	▪ Routine maintenance of moderate to low intensity ▪ Emphasis is on controlling deterioration and adapting the site to activities ▪ Vegetation is managed to accommodate intended use ▪ Some tasks require a qualified professional for execution	▪ Maintenance is low, focused on maintaining ecosystem function and habitat quality ▪ New native or natural plantings may be added as required ▪ Many tasks require a qualified professional for execution	▪ Maintenance is primarily vegetation and invasive plant control ▪ Some tasks require a qualified professional for execution

2.3.2 Standard Maintenance Activities & Frequencies for Each Level

Table 3 provides guidelines for achieving the appearance standards outlined in Table 2. These guidelines should be used in maintenance planning for landscape areas, adjusted as needed to achieve the outcomes and appearance standards of the assigned Maintenance Level. The guidelines are a starting point. Site specific planning will be required to address specific landscape needs and practical constraints such as scheduling.

Table 3: Maintenance Level Activities & Frequencies
Adapted from the Canadian Landscape Standard, Second Edition, Tables T-9.7 to T9.12. The information below has been customized to reflect practices for the UNA neighbourhoods. This table may continue to be updated by the UNA, with input from landscape maintenance providers, to align with maintenance practices used in the UNA neighbourhood landscapes and to support realization of the LMP's guiding principles and policies.

MAINT. LEVEL	ITEM	1 Well-Groomed	2 Groomed	3 Moderate	4 Limited	5 Background	6 Service
General	Inspection	▪ Each time personnel on site	▪ Monthly	▪ Monthly	▪ Monthly	▪ 3 times / year	▪ 2 times / year
	Reporting	▪ Monthly	▪ Monthly	▪ Monthly	▪ Monthly	▪ 3 times / year	▪ 2 times / year
	Litter Removal	▪ Weekly (and as necessary)	▪ Weekly (and as necessary)	▪ Weekly (and as necessary)	▪ Weekly (and as necessary)	▪ As required	▪ As required
	Soil Testing	▪ Annually	▪ Every 2 or 3 years	▪ To diagnose problems	▪ To diagnose problems	▪ To diagnose problems	▪ To diagnose problems
	Plant Debris Removal	▪ After all maintenance activities	▪ After all maintenance activities	▪ Monthly	▪ Monthly	▪ Only if required for safety	▪ Only if required for safety
	Pest Control	▪ As needed per IPM protocol and provincial regulations	▪ As needed per IPM protocol and provincial regulations	▪ As needed per IPM protocol and provincial regulations	▪ As needed per IPM protocol and provincial regulations	▪ To prevent the loss of rare or threatened ecosystems	▪ As needed to prevent spread
	Weed Control	▪ No weeds larger than 2.5cm / 1" width ▪ Remove all weeds when observed	▪ Weed when isolated patches have a width of 15cm / 6" ▪ Remove 90% of weeds or repeat within the next two site visits	▪ Weed when isolated patches have a width of 15cm / 6" ▪ Remove 80% of weeds or repeat within one month	▪ Weed when isolated patches have a width of 30cm / 12" ▪ Remove 80% of weeds or repeat within one month	▪ Remove invasive plants when they threaten the sustainability and/or function of the natural area landscape	▪ Remove invasive plants when they threaten the sustainability and/or function of the landscape

MAINT. LEVEL	ITEM	1 Well-Groomed	2 Groomed	3 Moderate	4 Limited	5 Background	6 Service
Lawns	Aerate	▪ Every 1-2 years	▪ Every 1-2 years	▪ Every 2-4 years	▪ Every 2-4 years	▪ n/a	▪ n/a
	De-thatch	▪ As required, as conditions allow	▪ As required, as conditions allow	▪ As required, as conditions allow	▪ As required, as conditions allow	▪ n/a	▪ n/a
	Edge	▪ Monthly	▪ 3 times / growing season	▪ Annually	▪ Annually	▪ n/a	▪ As required to prevent spread
	Fertilize	▪ 2-3 times / year as per growing medium test results	▪ 2 times / year as per growing medium test results	▪ 1 time / year as per growing medium test results	▪ Annual application or as per growing medium test results	▪ Subject to UNA / UBC policies on fertilization	▪ n/a
	Lime	▪ As per growing medium test results	▪ As per growing medium test results	▪ As per growing medium test results	▪ As per growing medium test results	▪ n/a	▪ n/a
	Mow	▪ 3–7-day intervals ▪ Less than 1/3 blade removal ▪ Mow height 25mm / 1”	▪ 7-day intervals ▪ Less than 1/3 blade removal ▪ Mow height 63-76mm / 2.5”-3”	▪ 7–10-day intervals ▪ Less than 1/3 blade removal ▪ Mow height 76-100mm / 3”-4”	▪ 10–14-day intervals ▪ Less than 1/3 blade removal ▪ Mow height +100mm / +4”	▪ Seasonally, if needed or as required	▪ Seasonally, if needed or as required
	Repair	▪ Subject to water availability. Repair should not be completed when watering restrictions prevent establishment watering					
		▪ Immediately when observed	▪ Within 2 weeks	▪ Within 2 weeks	▪ Within 1 month	▪ To rectify deterioration	▪ To rectify deterioration
	Reseed / Overseed	▪ Subject to water availability. Seeding should not be completed when watering restrictions prevent establishment watering					
		▪ As required	▪ As required	▪ As required	▪ As required	▪ n/a	▪ n/a
	Trim	▪ Each mow	▪ Each mow	▪ Monthly	▪ 3-4 times / year	▪ n/a	▪ n/a
	Water	▪ Following Metro Vancouver Drinking Water Conservation Plan for Government / Schools / Parks					
		▪ Up to every other day, as possible	▪ At least once per week, as possible	▪ As needed to prevent loss or deterioration	▪ As needed to prevent loss or deterioration	▪ n/a	▪ n/a

MAINT. LEVEL	ITEM	1 Well-Groomed	2 Groomed	3 Moderate	4 Limited	5 Background	6 Service
Trees / Shrubs / Perennials	Fertilize	▪ 3 times / year or as determined by growing medium test results	▪ 2 times / year or as determined by growing medium test results	▪ Annually or as determined by growing medium test results	▪ Annually or as determined by growing medium test results	▪ n/a	▪ Subject to UNA/ UBC policies on fertilization
	Mulch / Cultivate	▪ Biannually	▪ Biannually	▪ Annually	▪ Annually	▪ Around new plantings	▪ Around new plantings
	Plant, Prune, Repair Transplant	▪ As required	▪ As required	▪ As required	▪ As required	▪ As required for safety ▪ To compensate for losses / support renewal	▪ As required for safety
	Water	▪ Following Metro Vancouver Drinking Water Conservation Plan for Government / Schools / Parks					
		▪ Up to every other day, as possible	▪ Up to every other day, as possible	▪ As needed to maintain plant health	▪ As needed to prevent plant loss or deterioration	▪ Establishment watering of new plantings during drought conditions	▪ Establishment watering of new plantings during drought conditions
	Weeding	▪ Weekly	▪ Every two weeks	▪ Monthly	▪ 4 times / year	▪ 2 times / year	▪ Annually, or as required
Bulbs	Fertilize	▪ 3 times / year or as determined by growing medium test results	▪ 2 times / year or as determined by growing medium test results	▪ Annually or as determined by growing medium test results	▪ n/a	▪ n/a	▪ n/a
	Renew	▪ Annually	▪ Every 2 years	▪ Every 2 years	▪ n/a	▪ n/a	▪ n/a
Annuals	Change	▪ Each season	▪ 2-3 times / year	▪ 2 times / year	▪ n/a	▪ n/a	▪ n/a
	Deadhead	▪ Twice weekly	▪ Once weekly	▪ Bi-weekly	▪ n/a	▪ n/a	▪ n/a
	Fertilize	▪ Monthly	▪ As required	▪ As required	▪ n/a	▪ n/a	▪ n/a
	Water	▪ Before wilting	▪ Before wilting	▪ As required	▪ n/a	▪ n/a	▪ n/a

2.3.3 Typical Seasonal Maintenance Procedures

Landscape maintenance requirements vary from season to season. In the UBC climate, while landscape maintenance must be performed year-round, plant material is typically in a more dormant state through the winter and summer seasons, reducing certain maintenance requirements. In addition, some maintenance practices should only be completed during certain seasons or under specific weather conditions. Table 3 in Section 2.3.2 above outlines typical maintenance activities for each Maintenance Level during the "active" season. Table 4 below, outlines what months are typically considered "active" for maintenance activities to be completed.

NOTE: *This schedule is for information only and provides guidance for minimum effort, but not the maximum required to meet performance specifications outlined in Table 2. Changes in weather and site conditions will dictate increased effort or tasks. It is the responsibility of the landscape maintenance provider to determine and carry out tasks in order to ensure landscape areas are healthy and thriving and weed management is maintained.*

Table 4: Typical Seasonal Procedures

LEGEND

✓ = Required Procedure (if required as part of Maintenance Level) ● = As Necessary (depending on annual weather conditions)

PROCEDURE	TYPICAL ACTIVE SCHEDULE												NOTES
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
GENERAL													
Inspection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Reporting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Litter Removal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Soil Testing			✓	✓									Prior to fertilizing to obtain amendment recommendations
LAWNS													
Aerate			✓	✓					✓				
De-thatch			✓	✓					✓				
Edge	●	●	●	●	✓	✓	✓	✓	✓	●	●	●	
Fertilize				✓			✓		✓				Based on soil testing results

PROCEDURE	TYPICAL ACTIVE SCHEDULE												NOTES
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Lime				✓					✓				Based on soil testing results
Mow	●	●	●	✓	✓	✓	✓	✓	✓	●	●	●	
Pest Control				✓	✓	✓	✓	✓	✓	✓			
Repair			●	●					✓	✓	✓		
Reseed / Overseed			●	●					✓	✓	✓		
Trim	●	●	●	✓	✓	✓	✓	✓	✓	●	●	●	
Water				●	✓	✓	✓	✓	✓	●			Per Metro Vancouver bylaws
Weed Control	●	●	●	✓	✓	✓	✓	✓	✓	●	●	●	
TREES / SHRUBS / PERENNIALS													
Cut Back Grasses /		✓	✓										Prior to spring regrowth
Fertilize				✓		✓			✓				
Mulch / Cultivate			✓	✓					✓				
Plant	●	●	✓	✓					✓	✓	✓	●	
Prune		✓							✓	✓	✓	✓	Per species requirements
Repair	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Transplant			✓	✓					✓	✓			
Water				●	✓	✓	✓	✓	✓	●			Per Metro Vancouver bylaws
Weed Control	●	●	✓	✓	✓	✓	✓	✓	✓	●	●	●	
BEDDING PLANTS													
Bulbs: Fertilize			✓		✓			✓					
Bulbs: Renew		●	✓	✓					✓	✓			Per bulb requirements
Annuals: Change	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Per locational requirements
Annuals: Deadhead	●	●	●	●	✓	✓	✓	✓	✓	●	●	●	
Annuals: Fertilize			✓		✓			✓					
Annuals: Water				●	✓	✓	✓	✓	✓	●			Following local bylaws

2.4 CURRENT MAINTENANCE LEVELS

The following sheets provide an overview of current (2023) **Landscape Types** and **Maintenance Levels** within each UNA neighbourhood.

Evident in the current maintenance levels shown in the maps that follow is variation in the level of service provided between different neighbourhoods. The most recent development area – Wesbrook – currently has higher maintenance levels and service requirements, as well as larger areas of landscape than other neighbourhoods. The landscape design in these areas is complex and requires a higher level of maintenance to preserve original design intent. Given the high requirements for service, UBCPT and UBC will need to continue to subsidize the Wesbrook neighborhood landscape operation until gradual shifts can be identified and completed to bring the landscape to be more inline with the level of service provided in other UNA neighbourhood landscapes and outlined in the LMP.

As part of ongoing landscape management, the UNA will continue a process of revising and updating Landscape Types and Maintenance Levels in order to meet operational and sustainability objectives. The Potential Projects list in Table 8 on page 76 identifies a project called “Maintenance Level Shifts in Select Areas.” These will be a series of projects that identify and change level of service provided to certain areas over time.

The current maintenance information shown on the following maps were developed through a GIS mapping and database creation process. See Section 2.6.1 for information on the process of identifying and classifying landscape polygons.

Chancellor Neighbourhood – Iona Lawn

UNA UNIVERSITY NEIGHBOURHOODS ASSOCIATION

CHANCELLOR NEIGHBOURHOOD

LEGEND

LANDSCAPE TYPE

- Lawn
- Manicured Planting Bed
- Naturalized Planting Bed
- Natural Area
- Water Feature
- Playground

MAINTENANCE LEVEL

- 2 - Groomed
- 3 - Moderate
- 4 - Limited
- 5 - Background

MAINTENANCE LEVEL SUMMARY (2023)

Landscape Type	Maint. Level	~Area (m^2)	% of Total
Lawn	2	6,838	54%
Lawn	4	403	3%
Manicured Bed	2	3,188	25%
Manicured Bed	4	319	3%
Naturalized Bed	3	219	2%
Natural Area	5	1,679	13%
	TOTAL	12,645	100%

KEY MAINTENANCE NOTES

- Theology Mall is a primary neighbourhood gateway and landscapes are to be maintained to a consistently high standard
- The water feature on Theology Mall to be inspected regularly

LAST UPDATED: MAY 8, 2023

EAST CAMPUS NEIGHBOURHOOD

LEGEND

LANDSCAPE TYPE

- Lawn
- Manicured Planting Bed
- Naturalized Planting Bed
- Natural Area
- Playground

MAINTENANCE LEVEL

- 2 - Groomed
- 3 - Moderate
- 4 - Limited
- 5 - Background

MAINTENANCE LEVEL SUMMARY (2023)

Landscape Type	Maint. Level	~Area (m²)	% of Total
Lawn	3	4,141	32%
Manicured Bed	2	230	2%
Naturalized Bed	4	588	4%
Natural Area	5	8,126	62%
	TOTAL	13,085	100%

KEY MAINTENANCE NOTES

- East Campus Park is an important natural landscape within the campus and should be managed to maintain ecological values

LAST UPDATED: MAY 8. 2023

UNA UNIVERSITY NEIGHBOURHOODS ASSOCIATION

HAMPTON PLACE NEIGHBOURHOOD

LEGEND

LANDSCAPE TYPE

- Lawn
- Manicured Planting Bed
- Naturalized Planting Bed
- Natural Area

MAINTENANCE LEVEL

- 1 - Well-Groomed
- 2 - Groomed
- 4 - Limited
- 5 - Background

MAINTENANCE LEVEL SUMMARY (2023)

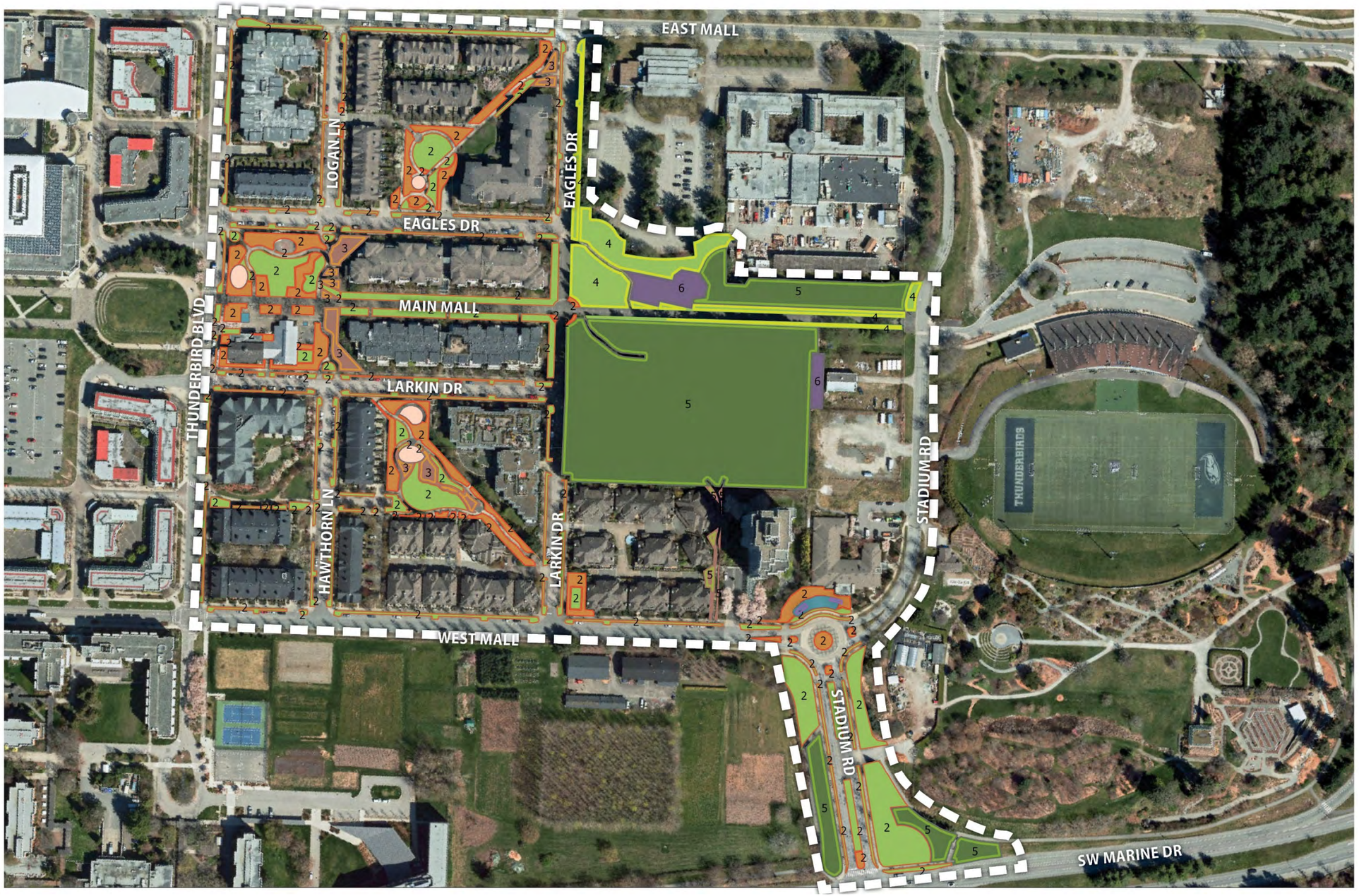
Landscape Type	Maint. Level	~Area (m^2)	% of Total
Lawn	2	5,771	61%
Manicured Bed	1	1,416	15%
Manicured Bed	2	289	3%
Naturalized Bed	4	173	2%
Natural Area	5	1,769	19%
	TOTAL	9,418	100%

KEY MAINTENANCE NOTES

- Hampton Place entrances at Wesbrook Mall and W 16th Avenue are neighbourhood gateways and landscapes are to be maintained to a consistently high standard
- The boxwood hedges at the neighbourhood entrances and along Hampton Place Road require special pruning to maintain their desired shape

LAST UPDATED: MAY 8, 2023

HAWTHORN NEIGHBOURHOOD



LEGEND

LANDSCAPE TYPE

- Lawn
- Manicured Planting Bed
- Naturalized Planting Bed
- Community Garden
- Natural Area
- Water Feature
- Playground

MAINTENANCE LEVEL

- 2 - Groomed
- 3 - Moderate
- 4 - Limited
- 5 - Background
- 6 - Service

MAINTENANCE LEVEL SUMMARY (2023)

Landscape Type	Maint. Level	~Area (m^2)	% of Total
Lawn	2	14,400	31%
Lawn	4	4,388	9%
Manicured Bed	2	5,287	11%
Naturalized Bed	3	1,419	3%
Naturalized Bed	5	300	1%
Natural Area	5	19,828	42%
Community Garden	6	1,138	2%
	TOTAL	46,759	100%

KEY MAINTENANCE NOTES

- Stadium Road is a primary campus gateway and landscapes are to be maintained to a consistently high standard
- The water features on Stadium Road and in Jim Taylor Park to be inspected regularly

LAST UPDATED: MAY 8, 2023

UNA UNIVERSITY NEIGHBOURHOODS ASSOCIATION

WESBROOK NEIGHBOURHOOD

LEGEND

LANDSCAPE TYPE

- Lawn
- Manicured Planting Bed
- Naturalized Planting Bed
- Community Garden
- Grass Field
- Natural Area
- Water Feature
- Playground

MAINTENANCE LEVEL

- 1 - Well-Groomed
- 2 - Groomed
- 4 - Limited
- 5 - Background
- 6 - Service

MAINTENANCE LEVEL SUMMARY (2023)

Landscape Type	Maint. Level	~Area (m²)	% of Total
Grass Field	1	4,321	3%
Lawn	2	49,593	36%
Lawn	4	4,241	3%
Manicured Bed	2	15,130	11%
Naturalized Bed	4	1,115	1%
Natural Area	5	60,498	44%
Community Garden	6	1,780	1%
	TOTAL	136,679	100%

KEY MAINTENANCE NOTES

- Boulevards along W 16th Avenue are included in this area
- The water features throughout the neighbourhood to be inspected regularly

LAST UPDATED: MAY 8, 2023

2.5 GENERAL MAINTENANCE POLICIES

Maintaining UNA neighbourhood landscapes to support the goals of UBC and align with the guiding principles of the LMP will support long-term sustainability. This section outlines general maintenance policies that apply to all neighbourhood landscapes managed by the UNA.

2.5.1 General

The general intent of landscape maintenance is to provide the care necessary so that all landscape elements are maintained in good health and repair.

APPROACH TO LANDSCAPE MAINTENANCE

2.5.1.1 At least once per year, the UNA and landscape maintenance providers should complete a site walk-through to review and discuss the following:

- Maintenance Levels being followed (with review of current Maintenance Level map);
- Services being performed and frequencies;
- Equipment being used in providing services;
- Sustainability measures being implemented;
- The current state of landscape areas;
- Issues identified, along with potential remedies to address the issues;
- Potential changes to Maintenance Levels or services that may warrant consideration;
- Potential projects or changes that could improve landscape maintenance services; and
- Other considerations.

The UNA may record a summary of this meeting. See **Appendix C** for a sample walk-through report.

2.5.1.2 Landscape management should provide allowance for adaptation as the landscape changes, grows, matures, and/or is damaged. The landscape maintenance provider and the UNA should work together to adapt as needed.

2.5.1.3 All landscape maintenance activities should follow ecologically-sound, sustainable practices.

LANDSCAPE CONTRACTOR REQUIREMENTS

2.5.1.4 All landscape maintenance personnel will be trained and qualified in their work and be knowledgeable of all workplace hazards and precautions that must be taken to ensure that safe work practices are followed.

2.5.1.5 All landscape maintenance personnel must conduct themselves in a professional manner while on site.

2.5.1.6 All materials and work are to be to the highest possible standard and in accordance with any relevant local, provincial, or federal standards; good horticultural and arboricultural practices; and the conditions identified in the contract.

2.5.1.7 Equipment operators will be qualified and experienced with the equipment being operated and licenced by the authority having jurisdiction, as required.

ENVIRONMENTAL & SITE PROTECTION

2.5.1.8 All existing horticultural and non-horticultural elements including, but not limited to, plants, growing medium, water bodies, site services, curbs, paving, structures, and finishes, will be protected against damage during landscape maintenance work. Should damage occur as a result of maintenance procedures, it shall be documented, reported to the UNA, and promptly and completely repaired by the parties responsible.

2.5.1.9 Appropriate measures will be taken to prevent spillage of fuels, fertilizers, chemicals, toxic materials, or toxic wastes. Where the use of such materials is necessary and approved by the UNA, the landscape maintenance provider will provide adequate containment facilities and cleanup equipment for use if required.

HEALTH & SAFETY

2.5.1.10 Maintenance procedures will be carried out in a manner that complies with all applicable laws, bylaws, rules, regulations, and lawful orders of any public authority having jurisdiction for the safety of persons or property to protect them from damage, injury, or loss.

2.5.1.11 Suitable protective clothing and equipment will be available to and worn by landscape maintenance personnel, as required by the work activity.

2.5.1.12 Use of equipment and products will be as per the manufacturer’s recommendations, taking into account the need to protect all horticultural and non-horticultural elements on the site.

2.5.1.13 The maintenance provider will erect necessary barricades, safety guards, and warning devices for the protection of persons and property suitable to the type of landscape maintenance work being undertaken.

2.5.2 Ecology, Biodiversity, & Sustainability

The LMP guiding principle "Nature at Work" means making choices that support a thriving urban ecology. A sustainable approach to maintaining community green spaces and enhancing biodiversity within landscapes, at times requires choices to prioritize natural ecological processes over purely aesthetic practices. It also means enabling sustainable activity. A key challenge identified through the LMP process is a lack of a permanent public works yard for future landscape management delivery in UNA neighbourhoods. A nearby public works yard is important to supporting storage of materials and equipment and potential for processing materials locally. In the absence of a permanent works yard, landscape maintenance providers will see increased travel time and emissions related to moving equipment and materials on and off site. Section 2.6.7 on page 75 identifies a project for securing a permanent public works yard.

VEGETATION MANAGEMENT

2.5.2.1 In naturalized areas including woodlands, wetlands, and meadows, natural processes will be prioritized. Fallen branches, deadwood, and leaf fall should only be removed where it represents an unacceptable safety risk.

2.5.2.2 Where possible, dried flower heads or ornamental grasses should be left on perennial species over winter to provide visual interest, a food source for seed-eating birds and insects, and sheltering for animals, before pruning back in early spring.

2.5.2.3 Where possible and appropriate, fallen leaves should be left in planting beds, community garden beds, and select low-traffic lawn areas through the winter months to provide a food and shelter for local fauna, insulation of plants, and nutrients for the soil. Fallen leaves should be removed from all hardscapes, playgrounds, pathways, sports fields, high-use lawn areas, and landscape areas with plants more susceptible to disease. Leaves left in place over winter should be managed (e.g., removed, mulched over) in early spring, prior to first signs of plant growth.

2.5.2.4 Any maintenance activities that disturb existing vegetation in natural areas will be undertaken outside bird nesting season(s).

RAINWATER MANAGEMENT LANDSCAPE FEATURES

2.5.2.5 Rainwater conveyance and functionality through rainwater management landscape features (e.g., swales, raingardens, etc.) will be maintained through frequent monitoring and maintenance of vegetation, infiltration capacity, and structures. Regular inspections should be completed to identify signs of erosion or sediment and debris accumulation that could compromise function.

2.5.2.6 Following major precipitation events, rainwater infrastructure should be inspected for debris and blockages of inlets and outlets. Any debris and blockages should be promptly removed to ensure infrastructure is functioning properly.

2.5.2.7 Rainwater management landscape features should be maintained to support regular water infiltration and avoid incidences of standing water. If pools of standing water are observed, actions should be taken to remediate the soil to improve infiltration capacity.

2.5.2.8 Plantings within rainwater management landscape features will not be fertilized.

SUSTAINABILITY

2.5.2.9 Travel to and from UNA neighbourhoods should be minimized to the extent possible (assuming provision of a permanent public works yard).

2.5.2.10 Landscape maintenance providers should collaborate to the extent possible in the provision of efficient materials and resource management.

East Campus Neighbourhood

2.5.3 Growing Medium & Fertilizing

Growing medium is the life support system for plants. Healthy soils are essential for healthy plant growth and water filtration, helping to support landscapes that are resilient to climate change and human activity.

GROWING MEDIUM MAINTENANCE

2.5.3.1 A test of each planting area's growing medium should be completed periodically (as per Table 3) to determine if the nutrient levels are sufficient to sustain healthy, vigorous plant growth. Amendments should be undertaken based on the findings.

2.5.3.2 A recognized testing laboratory should conduct growing medium testing using standard methods, with results expressed in consistent form, units, and format and provided to the UNA as part of landscape maintenance reporting.

2.5.3.3 Growing medium should be reviewed regularly for signs of erosion, slip, or depression with soils added or raking completed to address problem areas and limit further deterioration.

FERTILIZING & LIMING

2.5.3.4 Growing medium testing should be carried out to inform a fertilizer and liming plan.

2.5.3.5 Plants should only be fertilized as required to obtain a healthy rate of growth and quality of plant or to correct symptoms of nutrient deficiency.

2.5.3.6 The use of fertilizers should be reviewed regularly in relation to overall sustainability objectives and may be adjusted as UBC and UNA priorities or policies evolve.

2.5.3.7 Dolomite lime should be applied at rates based on growing medium test results to bring the pH to within normal ranges as follows:

- Lawn areas 6.0 – 7.0
- Planting beds 4.5 – 6.5

2.5.3.8 Consider the following factors when identifying requirements for fertilizing: the Maintenance Level (per Table 2), the intensity of activity, the ability of the growing medium to retain nutrients, and the amount of water received by the planting.

2.5.3.9 Fertilizers should be applied just prior to the period when plant nutrient requirements are at their highest. Apply fertilizers in a form and at a rate to supply a regular and continuous source of nutrients throughout the growing season.

2.5.4 Lawn Management

Lawn areas occur within park areas, open spaces, boulevards, medians, and pathway shoulders throughout the UNA neighbourhoods. Ongoing and proactive care of lawns keeps them functioning as intended.

MOWING

2.5.4.1 All trash, debris, and sticks should be picked up from lawn areas prior to mowing.

2.5.4.2 All mower blades must be kept sharp and level.

2.5.4.3 Grass clippings should be left on lawn areas, except where this will create a large surface buildup (e.g., grass is very tall in the early season). Leaving grass clippings in place returns nitrogen to the soils and improves resistance to drought damage and weed invasion. Mulch mowing practices are encouraged to support this practice.

2.5.4.4 For lawns with Maintenance Levels 1-3, mowing height should be no less than 50mm / 2" to manage stress tolerance, and no more than 100mm / 4". Lawns with higher Maintenance Levels (1-2) will typically be kept to the lower heights. Mowing heights should be higher (+75mm / 3") during times of extreme heat or drought to increase tolerance.

2.5.4.5 For lawns with Maintenance Levels 1-3, mowing should be performed as necessary to avoid removal of more than one-third of the grass blade length at any one time.

2.5.4.6 Machinery should be kept back at least 250mm from any plant stems or trunks. Damage must be avoided to stems and trunks when using power mowing or trimming equipment.

HEALTHY LAWN MANAGEMENT

2.5.4.7 Lawn areas with Maintenance Levels 1-3 should be kept neatly mown and trimmed, weeded, edged, and fed, to support optimal health and appearance as outlined in Table 2 and Table 3. Where optimal health appears to be compromised, changes to the landscape Maintenance Level and associated practices (as per Table 3) may need to be considered.

2.5.4.8 Where fertilization is used, natural organic fertilizers or "bridge" (organic plus slow release synthetic) fertilizers should be prioritized.

2.5.4.9 All fertilization applications should be recorded, including fertilizers used, weather conditions during application, and application rates.

2.5.4.10 Core aeration should be undertaken regularly (at minimum as per the frequency noted in Table 3), especially for high-use areas and any areas that show signs of thin turf, weed invasion, poor irrigation penetration, or soil compaction.

2.5.4.11 Core aeration should be undertaken with a suitable corer that removes cores of soil at least 75mm / 3" in depth and at a maximum of 125mm / 5" on centre spacing.

2.5.4.12 Cores should be left in place and raked into the surface.

2.5.4.13 Core aeration should typically be completed in the spring or fall when lawn is actively growing, and when soils are neither too wet nor too dry.

2.5.4.14 Thatch build-up is typically a sign of over-fertilization, overuse of pesticides, over-watering, soil compaction, or other causes that diminish soil biota that break down thatch. Excess thatch prevents water penetration and promotes shallow rooting. Good maintenance practices will generally prevent thatch build-up, but where thatch is present in larger than typical quantities, it should be reduced by de-thatching.

2.5.4.15 Topdressing should be completed to fill low areas and bare spots and should be completed after mowing and power raking thoroughly to remove build-up. Apply topdressing in one application to a maximum depth of 13mm / ½", and ensure the material is incorporated fully into the turf by raking or dragging.

2.5.4.16 Overseeding should be completed on thin or weed infested areas, or areas subject to heavy wear as a weed control practice, typically completed after aeration and/or de-thatching.

2.5.4.17 The surface of the lawn should be level prior to overseeding.

Hawthorn Neighbourhood – Jim Taylor Park

2.5.5 Planting Bed Management

Planting beds, when properly maintained, bring colour, beauty, and texture to the landscape, and provide habitat and ecosystem services. In the absence of proper maintenance, planting beds can suffer unrecoverable damage from weed populations and overgrowth which may compromise the effect intended in the original design.

PLANT REVIEW & REPLACEMENT

2.5.5.1 Maintenance shall include all measures necessary to maintain plants in a vigorous, healthy, normal growing condition, providing an appearance characteristic of their species and appropriate to their surroundings.

2.5.5.2 All plants should be maintained to have abundant foliage. Plants with less than 75% of their foliage should be identified for replacement.

2.5.5.3 Plants should be re-firmed when necessary to ensure plants are securely planted and upright.

2.5.5.4 After major disturbances including strong winds or major precipitation events, plant materials will be reviewed, and pruning or re-firming will be promptly completed as needed to address failures or damages.

2.5.5.5 Each year, select planting beds (starting with those in high priority areas) should have a comprehensive plant material review completed to identify:

- Dead, dying, or poorly performing plants that are recommended for replacement.
- Removals where overcrowding has become an issue.
- Recommendations for alternate species that may be better suited to the observed conditions to replace those that have been unsuccessful (e.g., extremely poor growth, block sightlines, etc.)
- Costs for materials and replacement work.

Reviews should be coordinated to align with regular UNA / landscape maintenance provider walk-throughs (see policy 2.5.1.1). The UNA and landscape maintenance providers should develop a system for identifying and selecting planting beds to be reviewed each year.

2.5.5.6 Replacement or new plant materials shall be quality nursery stock, true to name and type, with form and rooting characteristics of their species. They will be free from disfiguring knots, bark abrasions, injury, or other disfigurements.

PRUNING

2.5.5.7 Pruning should be completed to support plant health, maintain landscape character, and ensure visibility of key features, including:

- Removal of injured twigs and branches.
- Pruning of trees, shrubs, and perennials as necessary so they are not obstructing street signs, traffic signs, streetlights, or sidewalks.
- Selective thinning or reductions to allow room for growth and avoid overcrowding.
- Selective pruning to ensure hazards such as thorns are kept from becoming pedestrian hazards.
- Where appropriate and required, pruning to maintain a specific form (e.g., hedging).

2.5.5.8 Pruning will be undertaken by skilled operatives and carried out using sharp, clean implements and following good horticultural and arboricultural practice and standards.

2.5.5.9 Pruning should not adversely affect the healthy living condition of a plant or significantly reduce the plant function.

2.5.5.10 Pruning should be completed at times that do not affect key functions such as ornamental flowering or fruit production. Timing of pruning should consider the requirements of different plants (e.g., winter flowering shrubs should be pruned in spring; spring flowering shrubs should be pruned immediately after flowering, etc.)

CULTIVATION

2.5.5.11 Cultivation of growing medium in planting beds should be completed to reduce invasive plant growth, improve air and water penetration of the soil, moderate soil temperature, and improve planting area appearance, at the minimum frequencies outlined in Table 3, but more often if needed to maintain the landscape to its appropriate standard.

2.5.5.12 Depth of cultivation should be determined by the type of growing medium and plant material and should be undertaken without causing damage to roots of desirable plants.

MULCHING

2.5.5.13 Mulch should be replenished regularly, no less than at the frequencies in Table 3, to retain soil moisture, protect plantings, and restore cover and planting bed design depth (typically not less than 50mm or 2” depth). A quality mulch layer reduces the labour and materials needed to control weeds, reduces water use, and helps maintain plant health.

2.5.5.14 Mulch applications should ensure no plants are covered or smothered.

2.5.5.15 Mulch is to be maintained clear of building foundations, paved areas, and utility covers.

2.5.5.16 Composted organic mulches such as compost, leaf mulch, composted bark mulch, or well-rotted manure should be worked into the soil with thorough cultivation to provide an organic soil amendment. Non-composted bark mulch should not be cultivated into the soil.

2.5.5.17 Mulch should be uniform in colour and appearance; free of sticks, cedar bark, splinters of wood, or trash; and free of invasive and noxious plants.

SEASONAL PLANTINGS

2.5.5.18 Changes in display of annual plants should be as the Maintenance Levels in Table 3 or as specified in the landscape contract.

2.5.5.19 Layouts of annual plants should be such that each variety is shown to its best advantage and allows individual plants to mature to achieve a showy, attractive appearance.

2.5.5.20 Moisture content in annual plantings should be monitored regularly and watered whenever necessary to prevent wilting and maintain plant health.

2.5.5.21 Where garden beds are not planted during any season, they will be left cultivated and groomed to a smooth, friable soil surface.

Wesbrook Neighbourhood – Nobel Park

2.5.6 Integrated Pest Management

Management of weeds and other pests is critical to landscape health. Landscape maintenance issues compound quickly if weeding and pest management is not provided. Integrated Pest Management (IPM) is an approach to pest control (weeds, insects, and diseases) that uses regular monitoring to determine if and when treatments are needed, and employs cultural, physical, mechanical, and biological tactics to keep pest numbers low enough to prevent intolerable damage or annoyance. Least-toxic chemical controls are used as a last resort.

MONITORING

2.5.6.1 Monitoring for weeds, invasive plants, noxious plants, insect pests, and plant disease should be completed during each site visit, with potential issues reported promptly to the UNA.

2.5.6.2 Entomological or disease infestation must be dealt with promptly after identification using appropriate controls, following an Integrated Pest Management approach. It is essential that infestations are contained quickly to limit spread.

2.5.6.3 Insect, disease, or weed pests can be challenging to completely eliminate. The landscape should be managed at acceptable levels to avoid significant landscape or economic losses (e.g., avoiding uncontrolled spread, major plant loss, or other issues that could necessitate replacement of a landscape area).

2.5.6.4 Weed and invasive plants can be characterized under three categories:

- **Weeds** include any plant that grows where it is not wanted.
- **Invasive plants** include non-native plants that have been introduced to the area without the insect predators and plant pathogens that help keep them in check in their native habitats. Because of their aggressive growth, invasive plants can be highly destructive and difficult to control.
- **Noxious weeds** are those species that have been designated by an agricultural authority as one that is injurious to agricultural or horticultural crops, natural habitats or ecosystems, or humans or livestock and are regulated by provincial legislation.

MANAGEMENT

2.5.6.5 Weed and invasive plant controls should be very thorough in high level maintenance areas (e.g., Maintenance Levels 1-4). In lower priority areas (e.g., Maintenance Levels 5-6), invasive plant control activities will be less intensive, potentially limited to cutting back or mowing plants on a regular basis.

2.5.6.6 Proactive horticultural practices, including cultural, physical, and biological practices, should be prioritized to limit the need for more aggressive plant controls such as the use of chemicals.

2.5.6.7 All areas should be treated for weeds and invasive plants prior to those plants flowering. When weeds and invasive plants are permitted to flower, seeds are distributed and weed spread can be difficult to control.

NON-CHEMICAL TREATMENTS

2.5.6.8 The following non-chemical controls should be considered first when managing pests:

- **Cultural controls** that use a plant health care approach that focuses on managing soil health, selecting plants that are appropriate to the site and resistant to pests, locating planting appropriate to site context, irrigation, pruning, and plant nutrition.
- **Physical or mechanical controls** that include manual removal of infested plants / plant parts or weeds; products that trap insects; or water pressure from a hose.
- **Biological controls** that introduce living natural enemies that are beneficial species to eliminate the pest in affected areas including beneficial insects (e.g., ladybugs) or pathogens (e.g., fungi or bacteria) that feed on pests while supporting the landscape.

2.5.6.9 Cultural controls should be undertaken for all landscape areas as follows:

- Avoid irrigating between late afternoon (e.g., 3:00 pm) and early morning (e.g., 4:00 am), as leaf wetness periods that extend into the night may increase disease problems.
- Irrigate enough to adequately wet the root zone but allow the soil to dry out between irrigation events to encourage deeper rooting.
- Select plant cultivars (where new plants are introduced) that are tolerant of disease and insect pests and select plant specimens that are healthy and free of pests.
- Inspect all plants, equipment, soils, mulch, and other materials being brought to the site to ensure they are free of potential pests.

2.5.6.10 Physical or mechanical controls should be undertaken for all landscape areas as follows:

- Manually remove any weeds, infested plants, or plant parts from site and destroy them. No diseased plant material should be left on site.
- Remove weeds in their entirety, including root systems and any other below-ground parts.
- Consider using sticky bands to repel crawling insects and sticky traps to attract and destroy flying insects away from their natural plant hosts.

2.5.6.11 Biological controls may be considered, where natural predators exist for the pest. To prepare for biological controls, the contractor should:

- Identify natural predators and parasites that will fight pests.
- Take measures to protect natural predators that are already present.
- Introduce new natural predators to help avoid a pest issue that is common with the plant types in the landscape, or to combat an infestation that has started.

CHEMICAL USE

2.5.6.12 Chemical use will follow all UBC campus policies and BC provincial requirements.

2.5.6.13 All areas in which chemical controls are proposed to be used will be identified by the landscape maintenance provider in writing by the UNA prior to each application.

2.5.6.14 The UNA will review and consider future chemical use in UNA neighbourhoods on an annual basis.

2.5.6.15 The use of chemicals to control unwanted weed growth should be avoided or minimized to the greatest extent possible, recognizing these measures may at times be needed to control noxious or uncontrolled weeds that would result in unacceptable outcomes including irreversible damage from pest, disease, or weed infestation.

2.5.6.16 Facilities to which the public has free access should have no or minimal pesticide use except where irreversible damage would result from pest, disease, or weed infestation.

2.5.6.17 Where chemical controls are required, select pesticides to be used on the basis of highest effectiveness and selectivity, lowest hazard to human and environmental health, and least toxicity to non-target organisms.

2.5.6.18 Carry out any pesticide applications in strict accordance with the most current version of BC's *Integrated Pest Management Act* and *Regulation*.

2.5.6.19 Do not use any chemical restricted by provincial or municipal bylaws or regulations, or under review by Agriculture Canada for a health or environmental issue.

2.5.6.20 Read the pest control product's label and understand its relative toxicity, mode of action, persistence, and safe application. Apply the product to coincide with the susceptible stage of the pest and monitor outcomes.

2.5.6.21 Pesticide Use Records will be maintained for each application in accordance with BC's provincial requirements.

2.5.7 Watering

Landscapes are living systems, and like all living things, require water to survive. Climate change projections indicate that the Lower Mainland will continue to see long stretches of drought during the summer. These dry conditions will tax water supply and increase the importance of observing water conservation practices, balanced with the need to provide enough water to keep landscapes healthy.

SYSTEM MAINTENANCE & MANAGEMENT

2.5.7.1 Watering will follow current Metro Vancouver Drinking Water Conservation Plan regulations for Government / Schools / Parks.

2.5.7.2 Irrigation systems will be regularly monitored to identify leaks, performance issues, overspray, or other problems that could lead to water waste.

2.5.7.3 Watering will be such that the water penetrates the full depth of plant root zones.

2.5.7.4 Where automatic irrigation is run on a timer, it should be adjusted seasonally (every 2-3 months during the operating season) to respond to changes in precipitation rates, with water use minimized to the extent possible needed to maintain plant health.

2.5.7.5 Vegetation should be monitored during extended dry periods (typically July through August) for signs of drought impacts and adjustments made to watering schedules as required.

2.5.7.6 Irrigation scheduling should adhere to watering restrictions and automatic irrigation should be run outside high traffic periods and times when evapotranspiration is high (e.g., mid-day). Where possible, irrigation should be scheduled for early morning hours.

2.5.7.7 Irrigation systems will be turned off and blown out each fall (typically between September 15 – October 15) to prevent freezing damage. Systems will be restarted and tested each spring (typically between March 15 – April 30).

2.5.7.8 When a system is restarted in the spring, it should be thoroughly checked for leaks, valve problems, suitable irrigation head and nozzle operation, condition and effectiveness of risers, and controller and schedule operation.

2.5.7.9 Damage and repairs to the irrigation system should be recorded as part of monthly inspection records and promptly repaired.

2.5.7.10 An irrigation repair kit should be kept on site to ensure timely and effective irrigation system repairs.

2.5.7.11 Use of water conserving irrigation equipment such as smart controllers, moisture-based irrigation sensors, and efficient irrigation heads should be prioritized.

2.5.8 Landscaping Equipment

High-quality commercial landscape equipment is essential to ongoing maintenance of landscapes in the UNA neighbourhoods. Conventional, gas-powered landscape equipment has negative impacts related to fossil fuel consumption, air pollution, and noise. Communities across British Columbia are beginning to transition to quieter, zero-emissions equivalents. To support this transition, the UNA should pursue opportunities to support convenient electric charging, help reduce vehicle travel through options like equipment storage or on-site green waste management, and work with maintenance providers to undertake a phased transition to zero-emissions equipment. See Section 2.6.7 on page 75 for potential projects that the UNA could consider.

EQUIPMENT

2.5.8.1 All equipment used on site will be in good working order and suitable to the work.

2.5.8.2 All equipment and hand tools should be cleaned between site visits to prevent the spread of plant diseases and invasive or noxious weed seeds or reproductive parts.

2.5.8.3 Landscaping personnel shall take care when working beside structures, paved areas, or amenities, and will be responsible for making good any damage caused.

2.5.8.4 All equipment should be shut off when not actively being used for maintenance. Equipment will not be left idling or unattended under any circumstance.

2.5.8.5 The use of gasoline-powered landscape maintenance equipment will be phased out beginning in the 2024/2025 maintenance season, starting with frequently used equipment where equivalent or close-to equivalent level of service can be provided by zero-emissions alternatives (e.g., mowers, leaf blowers). During transition phases, seasonal equipment selection may be considered. For example, use of gas-powered leaf blowers only in fall months when leaf litter is heavy and wet or continued use of gas-powered equipment for low-frequency activities such as aerating.

2.5.8.6 All landscape equipment used in the course of landscape maintenance should not exceed a rating of 77 dBA on an approved sound meter, when received at the greater of 50 feet (15.2 metres) or a point of reception. Quieter equipment should be prioritized.

2.5.9 Water Features

UNA neighbourhoods include a range of water features, including decorative fountains that use recirculated potable water, natural rainwater swales and ponds fed only by rain, and hybrid features fed by a combination of rainwater and potable water input (the channels and ponds of the Wesbrook neighbourhood).

Public water features are often highly appreciated by residents and bring value to properties in the neighbourhoods. However, decorative water features have some of the highest landscape maintenance requirements and costs and where maintenance is deferred there can be significant impacts including shut-down. In the future, water features fed by potable water sources are also at increased risk of impacts from elevating water restrictions. For example, Metro Vancouver's current Drinking Water Conservation Plan prohibits topping up or filling of aesthetic water features when restrictions move to Stage 2 or higher.

Each water feature has unique maintenance requirements. Monitoring and maintaining existing water features to avoid leaks or damage is important to keeping them in good operating condition.

MAINTENANCE

2.5.9.1 An updated maintenance plan specific to each water feature should be prepared at the start of the maintenance period.

2.5.9.2 During operational periods, water features should be checked weekly, or as specified in the landscape maintenance contract, to confirm water level and absence of leaks, check operation of mechanical and electrical elements and filters, remove debris, and identify any need for corrective maintenance.

2.5.9.3 Water feature surfaces should be cleaned of algae, debris, and build-up at minimum once a year or as required to maintain operation and appearance.

2.5.9.4 Standing or stagnant water should be avoided. Where standing water is identified, corrective actions to drain or repair the issue should be taken.

2.5.9.5 Where existing decorative water features are subject to ongoing maintenance issues, impacts from water restrictions, and/or escalating management costs, the UNA should carefully consider retrofits into natural rainwater features without potable water use or removals to support water-wise and efficient landscape management practices. Changes to existing water features should be considered on a case-by-case basis, with careful analysis, identification of options and related costs, and consultation with residents and stakeholders.

2.5.10 Non-Horticultural Element Maintenance

Non-horticulture elements include features such as paving, signage, lighting, curbing, furnishings, fences, play equipment, and art works.

2.5.10.1 Non-horticultural elements within the site will be maintained to the standards consistent with the selected Maintenance Level or surrounding landscape areas or as specified in the landscape maintenance contract.

2.5.10.2 Deterioration or unsafe conditions in any element of the site shall be documented and reported to the UNA.

2.5.10.3 Undesired vegetation and built-up sediment that will grow vegetation in paved or granular landscape areas will be removed. Pay special attention to areas around grates and drains to support clear drainage.

2.5.10.4 Drainage systems associated with hard surfaces should be inspected regularly and maintenance work completed as necessary to support clear drainage.

2.5.11 Waste Management

A tidy landscape is important to community livability and neighbourhood character.

2.5.11.1 Litter picking / cleaning should take place during each maintenance visit and as per the frequencies outlined in Table 3.

2.5.11.2 Biodegradable landscape debris should be removed to a yard waste recycling facility, including turf clippings, leaves, branches, annuals, dead plant material, soil, etc. Acceptable facilities include composting facilities, topsoil production facilities, or other facilities which utilize yard waste for landscape purposes. No biodegradable material should be disposed of in garbage or landfill sites.

2.5.11.3 Weeds, prunings, leaves, rubbish, and other arisings from landscape maintenance work will be removed from site for composting or proper disposal (except where intentionally being left for winter habitat or ecological services – see policy 2.5.2.3). No material will be left on site, and the area will be left in a neat and tidy condition after each visit.

2.5.11.4 All hard surfacing should be swept or blown as necessary, with rubbish removed from site.

2.5.11.5 Waste disposal, both organic and inorganic, should occur as close as possible to the UBC campus, within reason, to reduce emissions associated with vehicle travel.

2.5.11.6 If landscape waste composting is undertaken within UNA neighbourhoods, composting facilities should be screened and maintained to minimize noise, odor, or visual impacts.

2.6 IMPLEMENTATION

Management of UNA neighbourhood landscapes will require ongoing adaptation. Review and adjustments to the Landscape Management Plan and the Maintenance Levels assigned to landscapes will necessarily evolve to reflect best practices, climate change adaptation, sustainability, cost, and other considerations. The following section outlines tools and processes to support the UNA in implementation of the LMP.

2.6.1 Landscape Mapping

A goal for the LMP is to support informed decision-making about landscape maintenance activities. Initial GIS mapping for landscape maintenance areas has been developed as a tool to identify areas under the UNA's jurisdiction, evaluate bids for consistency and value, and plan for future neighbourhood landscapes that will be added to the UNA management portfolio.

GIS MAPPING & DATABASE

A key outcome of the LMP process is a GIS database that will allow the UNA to continue to track, adjust, and manage the inventory of landscape areas for which they provide maintenance. Through this process, existing community green space landscapes were mapped in GIS and a database developed to code key characteristics for each unique landscape polygon that the UNA manages. Nearly 900 polygons are in the current landscape management area. The GIS database contains the details outlined in Table 5 about each landscape polygon.

Table 5: GIS Data

Data	Description
Neighbourhood	The neighbourhood in which it is located.
Location	A more detailed description of the polygon's location, typically described by proximity to a street, building, or park.
Landscape Type	The polygon's type of landscape (e.g., lawn, manicured garden, community garden, etc.), per Table 1 on page 29.
Maintenance Level	The polygon's currently assigned landscape maintenance level (level 1 through 6), per Table 2 on page 32.
Contractor (current)	The current landscape contractor providing maintenance for the polygon.
Shape Area	The area of the landscape polygon (in m^2).

The landscape polygons in the GIS database were created using the following process:

- Eight Landscape Types (see Section 2.2) were identified to categorize current landscapes within UNA Neighbourhoods.
- Six Maintenance Levels (see Section 2.3) were established based on the Canadian Landscape Standard and customized to local context to set consistent standards for landscape maintenance.
- Using a combination of site review, aerial photo interpretation, and referencing of the UNA's existing GIS datasets, landscape areas managed by the UNA were divided into landscape polygons based on shared characteristics and assigned an initial Landscape Type and Maintenance Level. An initial landscape management map was prepared for each neighbourhood.
- Review and ground-truthing of the initial mapping was completed by the project team and revisions to the mapping were completed.
- Review and feedback from stakeholders was obtained to further identify refinements.
- The working GIS database was packaged for ongoing use and management by the UNA.

The GIS landscape management database prepared through this process is a living database. All areas identified in the GIS database are approximate, based on aerial photo interpretation and site reconnaissance. Detailed information such as site survey was not available. It is anticipated that the GIS database will continue to be reviewed and refined over time.

Hampton Neighbourhood

2.6.2 Landscape Maintenance Budgeting

Understanding the cost associated with landscape maintenance can help inform maintenance decisions and expectations going forward. A preliminary budget estimating tool for landscape maintenance paired with the GIS data provide information that the UNA can use to:

- Review annual landscape maintenance bids for consistency and value.
- Analyze opportunities to change Landscape Types or Maintenance Levels to manage costs while maintaining acceptable quality.
- Anticipate landscape maintenance costs for future neighbourhood landscapes that will be added to the UNA management portfolio.

BUDGETING SPREADSHEET

Managing landscape areas comes with costs. A large part of this cost is related to the labour required for maintenance activities to be completed. In estimating costs for landscape maintenance, an estimated duration of labour for required activities is multiplied by the frequency of each task to account for an estimated total number of hours needed for that task over a period of time (i.e., one year). The maintenance activities required, and the frequency of each activity, is guided by the Landscape Type and Maintenance Level assigned to an area in the GIS database.

Through this process, an initial budgeting spreadsheet has been developed to support future budget estimating and planning. The spreadsheet considers current (2023) budget unit costs for the different Landscape Types and Maintenance Levels that currently exist in UNA neighbourhoods. These were created using a process that included:

- Review of existing maintenance contracts.
- Development of assumptions around the activities and level of effort (person hours) to complete activities for Landscape Types / Maintenance Levels.
- Development of a preliminary unit cost (in m^2) for each Landscape Type / Maintenance Level.

Table 6 below summarizes initial budget estimate unit costs for the existing Landscape Types / Maintenance Levels within UNA neighbourhoods. The following assumptions support these estimates:

- Estimates are approximate values for typical conditions. Specific variables (e.g., species of vegetation, access limitations, location, etc.) will increase or decrease actual maintenance costs. For example, maintaining lawn in boulevards is more cost-intensive than lawn in large park areas as the smaller spaces mean there are more points of interface with hardscape areas like curbs and sidewalks, which can increase edging and trimming demands. Budget estimates should be used for planning and budgeting purposes only.

- Budget estimates are based on available existing data and experience and are provided to support initial budgeting efforts. It is anticipated that estimates and budgeting approach will continue to be refined as new data becomes available through future contract bid processes.
- Budget estimates are identified for 2023. In future years, budget estimate updates should be completed to account for inflation and market variation.
- Budget estimates utilize information from existing contracts which are based on having access to the temporary public works yard in Wesbrook. If a permanent works yard is not available in the future, it should be anticipated that landscape costs will increase significantly (double or more) and challenges securing contactors to do the work may arise.

Table 6: Unit Costs for Current Landscape Types / Maintenance Levels in UNA Neighbourhoods

Landscape Type	Maintenance Level	2023 Budget Unit Cost Estimate
Grass Field (Playing Field)	1 – Well-Groomed	$9.30 / m^2
Lawn	2 – Groomed	$8.40 / m^2
Lawn	3 – Moderate	$5.60 / m^2
Lawn	4 – Limited	$5.00 / m^2
Manicured Planting Bed	1 – Well-Groomed	$17.20 / m^2
Manicured Planting Bed	2 – Groomed	$12.10 / m^2
Manicured Planting Bed	3 – Moderate	$7.90 / m^2
Manicured Planting Bed	4 – Limited	$5.90 / m^2
Naturalized Planting Bed	2 – Groomed	$7.90 / m^2
Naturalized Planting Bed	3 – Moderate	$5.50 / m^2
Naturalized Planting Bed	4 – Limited	$3.80 / m^2
Naturalized Planting Bed	5 – Background	$2.60 / m^2
Natural Area	5 – Background	$2.10 / m^2
Community Garden	6 – Service	$1.40 / m^2
Landscape Irrigation	n/a	$4,800 / system
Water Feature / Splash Pad Inspection	n/a	Varies by feature
Playground Inspection	n/a	$1,200 / playground / year
Garbage Receptacle Management	n/a	$1,400 / receptacle / year

Unit Cost Estimates should be reviewed and updated in the database on an ongoing basis.

2.6.3 Landscape Management Contracts

The UNA holds contracts for landscape maintenance services with various commercial landscape companies. Selecting and collaborating with appropriate landscape maintenance providers for these services is essential to ongoing care of the spaces. The intent is for landscape management to be a collaborative process between the UNA and landscape maintenance providers to manage spaces for their optimal health, using a safe, environmentally sound, and cost efficient approaches.

It should be noted that many variables will affect costs of services. Ongoing shifts like increasing labour costs, equipment changes, fuel cost increases, or changes in maintenance levels will have ongoing, but typically manageable cost implications. Significant changes such as loss of access to an onsite public works yard will result in major cost implications.

LANDSCAPE BID COMPARISON

It is anticipated that the UNA will collect bids and award landscape contracts on a regular basis. Through this process, opportunity exists to continue to collect data on landscape maintenance costs. This data will help the UNA more accurately forecast future landscape maintenance costs and increase consistency in the bidding and review process.

To collect bid data in a more consistent and comparable way, it is recommended that the UNA develop and implement a Standard Landscape Maintenance Bid Form to be completed by all contractors when bidding on maintenance contracts. See **Appendix D** for preliminary sample form that could be used as a starting point for refinement. The data collected through bid forms could inform regular reviews and updates of Budget Unit Cost Estimates.

Chancellor Neighbourhood

2.6.4 Involvement of Others

While landscape management will primarily be the responsibility of the UNA and their landscape maintenance providers, along with UBC and UBCPT, opportunities may arise for others to contribute to maintaining landscape areas in UNA neighbourhoods. The UNA should consider opportunities such as:

- **Resident Feedback.** While the UNA collects resident feedback on an ongoing basis, there will be opportunities to "check-in" on landscape maintenance changes or pilot projects as they unfold. Gaining this feedback will help the UNA assess the effectiveness of potential management decisions and tailor landscape management approaches accordingly. An opportunity could be piloting a landscape maintenance change in a specific location, with signage and feedback opportunities to gather specific comments on residents' perceptions on a change before it is implemented more broadly.
- **Collaborations with UBC Students & Organizations.** UBC has a wealth of knowledge across several departments that could contribute to the future of landscape management. Landscapes within the neighbourhoods could be candidate sites for studies, research, and pilot programs that involve educational learning, while supporting the guiding principles of the LMP. The UNA should seek opportunities to connect with potential educational partners to identify program ideas.
- **Volunteer Activities.** Residents in UNA neighbourhoods often express a willingness to participate in activities that support the health of their community, including the landscapes that surround them. While volunteers are not suitable for day-to-day maintenance of landscapes, a well-organized volunteer program can contribute to discrete activities like a neighbourhood clean-up event, a neighbourhood planting event, or an invasive species removal project. These types of activities help residents feel connected to their neighbourhood landscapes and can build understanding about how landscapes are managed in UNA neighbourhoods. Volunteer activities need to be thoughtfully organized and planned in order to achieve success.

2.6.5 Alignment with Key Processes & Documents

NEIGHBOURS' AGREEMENT

The Neighbours' Agreement is an important contract between UBC and the UNA that provides a framework for the respective roles and relationships in managing the UNA neighbourhoods. Updates are negotiated from time-to-time to reflect current community characteristics. The Neighbours' Agreement is currently under review.

Matters documented in the agreement include:

- **(a)** the UNA's purposes and obligations;
- **(b)** the relationship between the UNA and UBC;
- **(c)** the scope of the Municipal-like Services and the UNA Facilities and Amenities that the UNA has agreed to manage, operate, or undertake;
- **(d)** the terms and conditions under which the UNA has agreed to manage, operate, or undertake the Municipal-like Services and the UNA Facilities and Amenities;
- **(e)** the sources and management of funds for the activities and services referred to in; and
- **(f)** the mechanism by which rules relating to noise, nuisance, parking, traffic, and other regulatory matters within the Neighbourhood Housing Areas will be put into effect.

Through the Neighbours' Agreement, the UNA agrees to provide landscaping services within the Neighbourhood Housing Areas. Schedule "D" of the current agreement outlines standards to which the UNA will adhere. The LMP provides a greater level of detail about the varied landscape areas in the neighbourhoods, including parks, streetscapes, open spaces, and community gardens, and integrates Landscape Types and Maintenance Levels. The LMP and the GIS Mapping Database are tools to support future updates to the Neighbours' Agreement.

FUTURE UBC PROCESSES

UBC continues to plan for the future of the entire campus, including initiatives that may affect neighbourhood landscapes. Known plans that could influence landscape management practices in UNA neighbourhoods include:

- **Campus Vision 2050 –** Campus Vision 2050 will shape how UBC Vancouver's physical campus will change and grow over the next 30 years. The process will include a high-level long-term description of the campus and conceptual diagrams that chart out its evolution over the coming 30 years; an updated land use plan for the campus, including policies on buildings, densities, and open space; and a 10-year campus plan that guides how academic facilities, housing, transportation, green and open space, and community amenities are accommodated. The LMP guiding principles and policies should align with and support the Campus Vision 2050.
- **Future Neighbourhood Climate Action Planning (Timing TBD)** – A Neighbourhood Climate Action Plan will be developed through a future process to support UBC's climate action planning in UNA neighbourhoods, as these areas will see a large portion of the campus' future growth. Like all sectors, landscape management will need to play a role in reaching ambitious climate action goals. Outcomes of future climate action planning work may inform refinement or addition of policies that support climate action, for example strengthening policy on emissions reduction in landscape maintenance equipment, or management of landscape waste to support a zero-waste future.
- **Neighbourhood Plans** – As UBC plans for future neighbourhoods, it will develop Neighbourhood Plans to guide how each UNA neighbourhood implements the UBC Land Use Plan. Neighbourhood Plans provide guidance on the public use and experience expected from public spaces, influencing how these landscapes will be managed in the future. It is anticipated that a Stadium Neighbourhood Plan will be completed in the short-term, and a neighbourhood planning process for Acadia East will be completed at a future point. In addition, existing neighbourhood plans could be updated.

As the UBC campus and neighbourhoods continue to evolve, new and updated plans will be created. Continuing to align the LMP with emerging practices and new information will ensure neighbourhood landscapes contribute positively to the vision for UBC's future.

2.6.6 Ongoing Review & Updates

ONGOING LMP MANAGEMENT

It is expected that the UNA will update the mapping, budgeting information, and policy in the LMP on an ongoing basis, so it continues to provide accurate guidance for decision-making. Table 7 summarizes recommended actions and frequency for maintaining the LMP.

Table 7: Recommended Actions for Maintaining the LMP

Action	Recommended Frequency
GIS Mapping & Database Maintenance: Update the GIS Mapping & Database to incorporate new landscape polygons added to UNA's management portfolio, update changes in Landscape Types / Maintenance Levels, update information about landscape maintenance providers, and keep data current.	▪ Annually ▪ As new landscape areas are added to the UNA management portfolio
Budget Unit Cost Estimate Maintenance: Update the Budget Unit Cost Estimates for each Landscape Type / Maintenance Level to reflect current cost information gained through contract bid details and other updated cost information.	▪ Annually (after review of maintenance provider bids)
Landscape Maintenance Provider Annual Meetings: Consider meeting with current landscape maintenance providers near the end of their annual contract term to discuss potential refinements to Landscape Types / Maintenance Levels that could improve landscape maintenance delivery in the coming years (e.g., reduce costs, improve outcomes, etc.) Meetings would also be an opportunity to review updated or refined policies and to discuss issues and opportunities.	▪ Annually (near end of contract)
LMP Policy Updates: When related UBC plans or initiatives are completed, review the LMP guiding principles and policies to confirm they continue to align with broader strategies for the UBC campus and make updates as appropriate.	▪ As needed, when relevant initiatives are complete
LMP Review: In addition to ongoing data management, a detailed review and update of the LMP should be completed within 10 years to incorporate emerging best practices and policies, renew guiding principles, recognize new landscape areas in UNA neighbourhoods, and review and amend the Landscape Types and Maintenance Levels as required. The process should involve consultation with stakeholders, landscape maintenance providers, and neighbourhood residents.	▪ 10 years

2.6.7 Future Projects

The Landscape Management Plan will increase consistency and clarity on how the UNA manages neighbourhood landscapes. However, there are also opportunities to continue streamlining landscape management in UNA neighbourhoods through future **Potential Projects**. Theses are physical projects that the UNA could consider to help advance the guiding principles and policies of the LMP and reduce the resources required for long-term landscape management. Several project ideas are outlined in Table 8. The list developed is not exhaustive. Other opportunities for projects may arise.

There is a connection between landscape management delivery and resident expectations and property values. In many locations, public landscape areas are an important reason why people choose UNA neighbourhoods for their home. This underlines the importance of taking an incremental approach to change as significant shifts to perceived landscape quality may have negative impacts. As changes to the landscape can significantly affect resident perceptions, landscape character, and long-term management, all projects should be carefully considered and planned.

Over time, the UNA could consider making changes to landscape areas to better fulfill the guiding principles of the LMP. This could lead to changes in either Landscape Types (e.g., a shift from a manicured bed to a naturalized bed) or Maintenance Levels (e.g., shifting frequency and intensity of landscape maintenance either up or down). When considering changes, the LMP GIS Data and Budget Unit Cost Estimating information will help the UNA analyze potential benefits or challenges of making changes. It will also be important to carefully consider resident experience and expectations.

Pilot programs are an opportunity for the UNA to study potential changes within a small area, as well as resident support or concerns about the changes, prior to broad adoption. The UNA should consider pilot programs to study the effectiveness of potential projects in Table 8, or others as identified. Typical steps within a pilot program include:

- Design of the pilot program, with input from stakeholders as required;
- Implementation of the landscape management change within a selected area;
- Creation of communications materials and messaging outlining the rationale and benefits of the change to stakeholders and residents;
- Completion of a process for gathering feedback from stakeholders and residents on the pilot;
- Review of technical outcomes; and
- Decisions to continue, expand, or cease further implementation of the landscape management change.

Table 8: Potential Projects

Potential Project	Neighbourhood	Challenge / Issue	Ideas	Priority
Permanent UNA Public Works Yard	All Neighbourhoods	▪ Currently, a temporary public works yard exists in Wesbrook; however, this area is planned for development ▪ Without access to a works yard on the UBC campus, landscape maintenance providers estimate a doubling in landscape management costs and decrease in service levels due to the time required to move equipment in and out of UBC each day; the need to purchase bulk materials in small quantities and truck to site as needed; impacts to snow removal; and the inability to do on-site composting, requiring transfer station disposal ▪ The LMP guiding principles and policies emphasize decreasing travel to reduce GHG emissions and increase sustainable service delivery	▪ Collaborate with UBC to identify and establish a permanent UNA public works yard within or close to UBC campus before the temporary works yard is decommissioned	1
Select Water Feature Updates	Wesbrook	▪ Some existing water features have ongoing management challenges including leaks, significant potable water use, and stagnation / algae growth ▪ Metro Vancouver's Drinking Water Conservation Plan prohibits topping up or filling of aesthetic water features in Stages 2-4 of water restrictions, which may become more frequent if summer drought escalates ▪ Public water features are often valued by residents and changes to them could affect resident perceptions or property values	▪ Limit new water features in public landscape areas ▪ Research potential adaptations to sections of the system to be "dry" in summer with design mitigations to manage appearance issues (e.g., river rock lining) ▪ Research other options to reduce / limit potable water addition ▪ Integrate consultation with residents and stakeholders when considering changes	2

Potential Project	Neighbourhood	Challenge / Issue	Ideas	Priority
Maintenance Level Reductions in Select Areas	All Neighbourhoods	▪ Most lawn and manicured planting beds within UNA neighbourhoods are maintained at a high level (e.g., Maintenance Level 2) ▪ This increases the frequency of maintenance services	▪ Work with landscape maintenance providers to identify select areas to be shifted to lower maintenance levels (e.g., Maintenance Level 3 or 4) ▪ Consider the balance between immediate cost-savings with perceptions of landscape quality and long-term impacts (e.g., premature replacement) ▪ Focus changes initially on less prominent landscape areas and use pilot programs to test maintenance changes and monitor outcomes	1
Forest Edge Naturalization	East Campus Hawthorn Wesbrook	▪ Most natural areas include a finished edge of well-maintained (i.e., Maintenance Level 2) mown lawn ▪ This creates large expanses of lawn area that require regular mowing and maintenance ▪ Typically, these areas are not “actively” used by residents	▪ Convert existing lawn edges next to natural areas to a more natural finish (e.g., meadows or naturalized beds) that requires less frequent mowing (e.g., cutting back 1-2 times/year) ▪ Consider sightlines in these areas	1
Small Grass Boulevard / Median Naturalization	All Neighbourhoods	▪ A large portion of boulevards and medians within UNA neighbourhoods are lawn that are regularly maintained to a high level (i.e., Maintenance Level 2)	▪ Convert select boulevards and/or medians from lawn to low-maintenance, drought-tolerant groundcovers (e.g., decorative grasses, perennials, low woody plants) ▪ Select plants tolerant to streetscape activity impacts, such as pedestrian traffic, snow loading, salt, etc.	3

Potential Project	Neighbourhood	Challenge / Issue	Ideas	Priority
Large Grass Boulevard Naturalization	Hawthorn Wesbrook	▪ The campus entrances on W 16th Avenue and Stadium Road feature expansive lawn boulevards that are regularly maintained to a high level (i.e., Maintenance Level 2) ▪ Typically, these areas are not "actively" used by residents	▪ Convert select large grass boulevard areas to Natural Area, including consideration for expansion of wooded areas and/or meadow landscapes ▪ Consider the need for entries to remain attractive and iconic with pedestrian sightlines	3
Annual Planting Reductions	All Neighbourhoods	▪ Select campus areas include spaces for annual plantings to provide colour and interest ▪ Annual plantings typically require more maintenance and water than other landscapes	▪ Convert select annual planting areas to perennials and/or bulbs so that splashes of colour continue to be provided, but with lower maintenance needs	3
Manicured Hedge Reductions	Hampton Wesbrook	▪ Landscapes within the Hampton neighbourhood include highly manicured hedges ▪ Street trees in the Wesbrook neighbourhood are often surrounded by manicured boxwood hedges that require regular pruning to maintain their desired form	▪ Consider converting select manicured hedging to an alternate finish such as low-maintenance groundcover / shrubs, mulch, or crushed stone ▪ Consider how the updated landscapes continues to provide visual interest	3
Electric Charging for Landscape Maintenance Equipment	All Neighbourhoods	▪ Policy in the LMP supports a shift to electric equipment starting in the 2024/2025 season ▪ Access to secure electric charging facilities is not available in all UNA neighbourhoods	▪ Seek to provide secure, convenient electric charging access to landscape maintenance providers throughout UNA neighbourhoods	2
Plant Species Replacement	All Neighbourhoods	▪ Some plant species / landscape areas are performing poorly under current climate conditions	▪ Replace poor performing plant species with better suited species	3
CPTED – Sightline Improvements	All Neighbourhoods	▪ Currently, some planting areas act as a visual screen for public areas creating uncomfortable spaces	▪ Revise vegetated areas to enhance sightlines and visibility	3

Potential Project	Neighbourhood	Challenge / Issue	Ideas	Priority
Plant Species Enhancement	All Neighbourhoods	▪ Some plant species / areas provide low habitat value for pollinators, butterflies, birds, etc.	▪ Integrate species that provide enhanced environmental services such as attracting pollinators or supporting rainwater management	3

Wesbrook Neighbourhood – Community Field & University Hill Secondary School

2.6.8 Future Studies

Within the UNA landscape management system are a number of components that would benefit from future study to determine where efficiencies in maintenance practices exist. **Potential Studies**, outlined in Table 9 below, include system-wide analyses and planning focused on improving specific aspects of the system. The list below is not exhaustive. Other opportunities for studies may arise.

Table 9: Potential Studies

Potential Study	Purpose	Candidate Topics	Priority
Tree Management Plan (TMP)	A TMP is an opportunity to focus specifically on long-term management of the tree canopy, providing guidance for planning, maintaining, and renewing trees in UNA community green spaces. This could be coordinated with the UBC campus-wide biodiversity and tree strategy.	▪ Inventory of existing trees (species, location, age, health, etc.) ▪ Tree health management ▪ Process for tree replacement / renewal ▪ Details and specifications for long-term tree health ▪ Integration of technologies such as soil cells	1
Irrigation Audit & Strategy	Review the entire irrigation system managed by the UNA (by neighbourhood) to identify opportunities for water conservation, increased efficiency, and cost savings and to address existing issues such as watering schedule limitations.	▪ Inventory of existing irrigation system and review of as-built drawings ▪ Audit of irrigation function and issues ▪ Recommendations for system upgrades and replacements ▪ Standards for future irrigation connections	3
Water Feature Strategy	A water feature strategy would provide an opportunity for a closer look at the benefits, issues, and costs of the management of water features across UNA neighbourhoods and identify potential strategies to increase sustainability, manage costs, or address issues.	▪ Inventory of existing water features ▪ Annual water use and cost review ▪ Analysis of benefits and issues ▪ Identification of options to change existing water features and summary of benefits ▪ Potential pilot projects ▪ Guidance on decision-making for future water features	3

Potential Study	Purpose	Candidate Topics	Priority
Fertilizer Use & Pesticide Application Strategy	The use of fertilizers and chemicals can impact the natural and human environment. Opportunities to reduce or eliminate chemical applications could be considered. This strategy would allow more in-depth study of opportunities to transition to non-chemical pest management.	▪ Inventory of current fertilizer and pesticide applications in all landscapes ▪ Analysis of natural / non-chemical fertilization and pest management techniques and best practices ▪ Potential pilot studies to shift fertilization and pesticide application in certain landscapes and monitor for efficacy ▪ Updated policy for all landscapes in UNA neighbourhoods	3

Hawthorn Neighbourhood – Rainwater Swale

Wesbrook Neighbourhood – future development area

SECTION 3 | FUTURE LANDSCAPES

As shown in Figure 8, four UNA neighbourhoods – Chancellor Place, Hawthorn Place, East Campus, and Hampton Place – are substantially built-out with little new development planned for the near future. Wesbrook Place neighbourhood is partially built-out, with development ongoing. Stadium is a future UNA neighbourhood, currently in the neighbourhood planning stage. In the mid- to long-term, a neighbourhood plan for Acadia East is anticipated. Campus Vision 2050, to be completed in 2024, will include an updated Land Use Plan that could refine future UNA neighbourhoods.

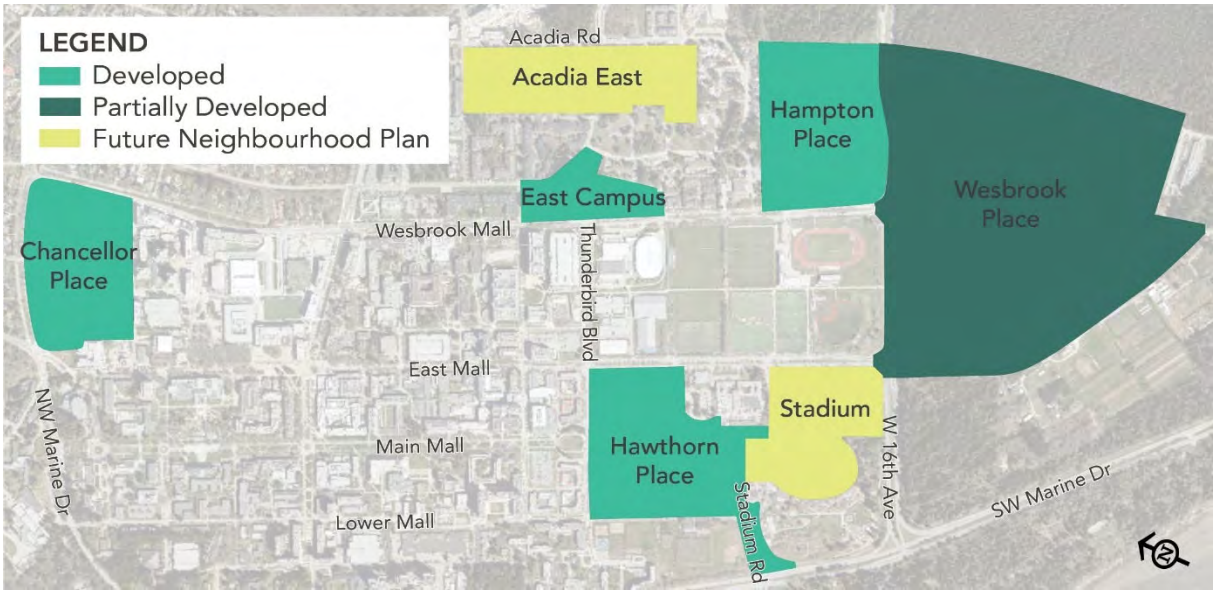


Figure 8: Status of UNA Neighbourhood Development

3.1 INPUT TO PLANNING & DESIGN

The UNA is responsible for landscape management of UNA neighbourhoods – existing and future. While it can take time to enact change and update landscapes in established neighbourhoods, future neighbourhoods present opportunities to do things differently. By Integrating landscape management considerations early into planning and design processes for future neighbourhood landscapes, UBC and the UNA can position these neighbourhoods to better deliver sustainable long-term landscape management.

3.1.1 Neighbourhood Planning Processes

Before a neighbourhood can be built, a Neighbourhood Plan is prepared to detail the layout and development program, following the policies set out in UBC's overall Land Use Plan. Neighbourhood Plans typically include a detailed plan of land uses, design guidelines, development controls, transportation strategies, and servicing strategies.

While each Neighbourhood Plan has a specific process, Figure 9 describes a typical planning process and opportunities for UNA involvement. A key role for the UNA will be reviewing plans and policy directions with a lens to long-term landscape management and sustainability.

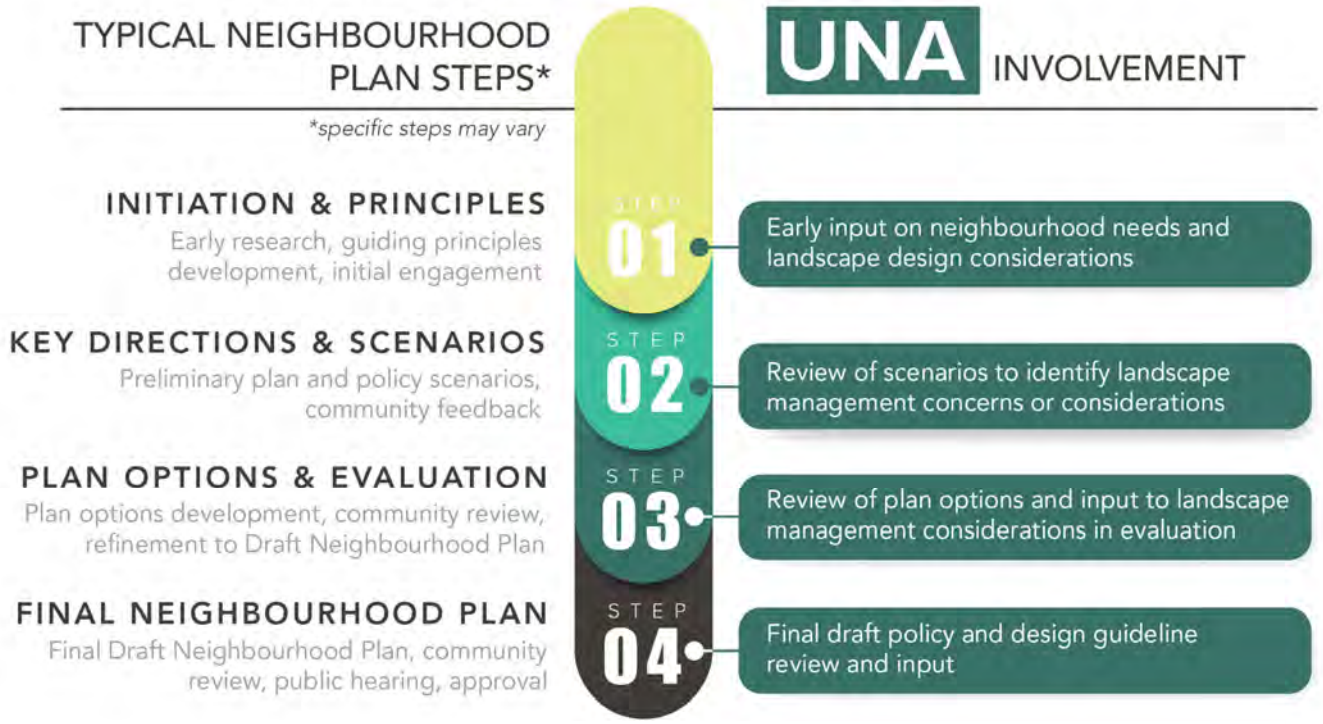


Figure 9: UNA Input Points to Neighbourhood Planning Processes

The UNA should contribute review and input to the following typical components of a Neighbourhood Plan:

- Sustainable Community Strategies
- Parks and Open Space Elements
- Design Guidelines for Public Realm Areas, including Streets, Greenways and Green Streets, and Plazas and Open Spaces
- Illustrations that describe the character of public realm areas

3.1.2 Development Permit Processes

When major new developments such as housing, commercial or community buildings, or significant new public realm projects like parks or trails, are proposed for UNA neighbourhoods, they must go through a Development Permit Application process. These processes allow for careful review and consideration on designs as they are developed so they meet the needs of UBC and its community. UBC Campus + Community planning guides these review processes.

UNA input on the design of community green space areas at strategic points in Development Permit Application processes will provide opportunity to identify landscape maintenance concerns or considerations, prior to acceptance of the design. Figure 10 on the following page outlines key points where UNA involvement in the Development Permit Application process for new major developments that include public open space in UNA neighbourhoods should be considered.

UBC and the UNA are currently refining the Streets & Landscape Permit Process to guide future permitting processes specific to public landscape areas. Once refined, the Streets & Landscape Permit Process will increase opportunities for the UNA to provide input at key points in the process.

UNA UNIVERSITY NEIGHBOURHOODS ASSOCIATION

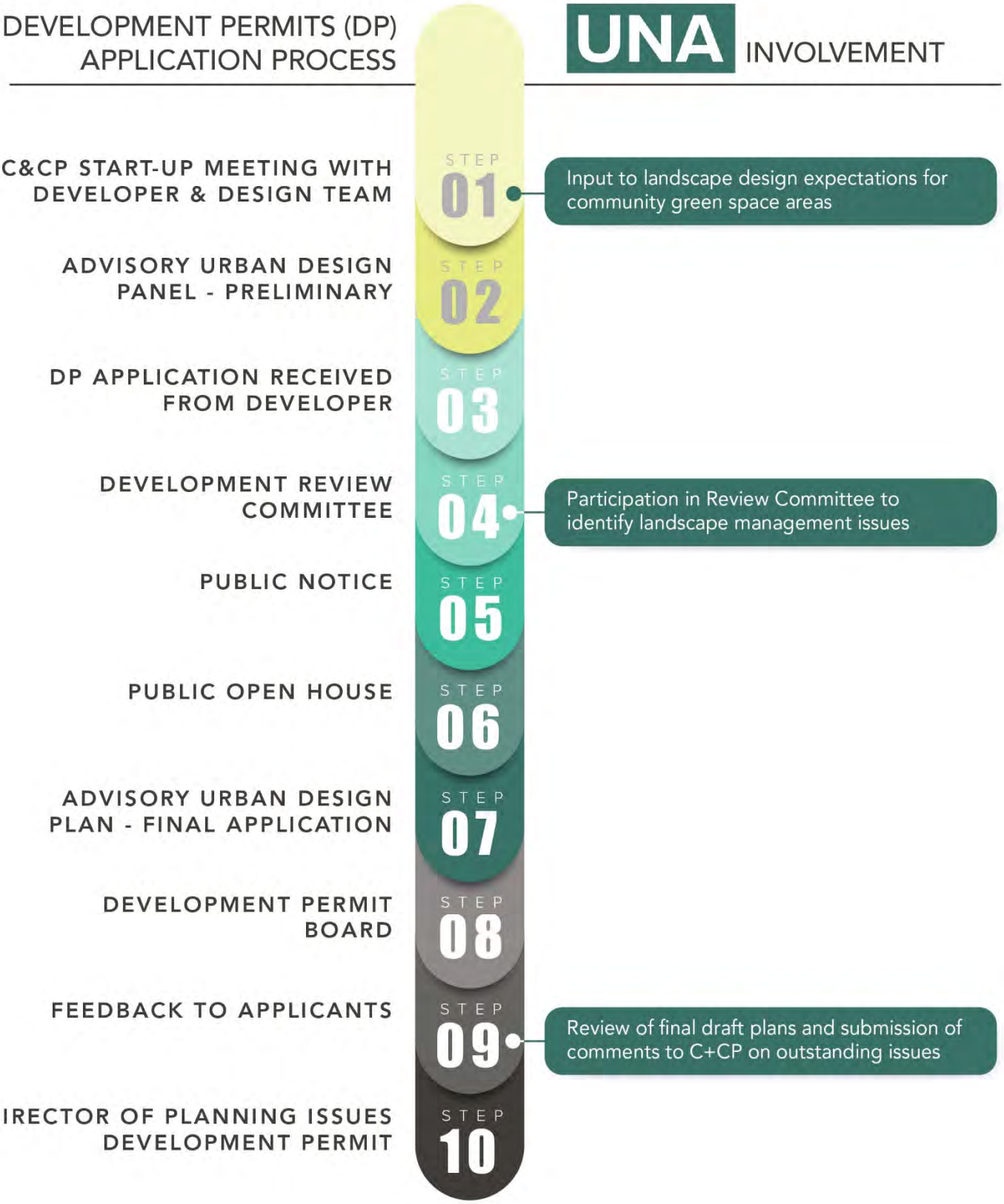


Figure 10: UNA Input to Typical Development Permit Application Processes

3.2 UNA LMP DESIGN GUIDELINES

Every landscape decision comes with human, health, financial, and ecological implications. By designing landscapes that thrive naturally in a site's particular conditions, landscape management activities will be efficient and cost-effective. The following UNA LMP design guidelines specifically consider long-term management impacts of landscape design decisions and are provided for consideration in neighbourhood planning and site design processes for community green space areas that will be under the long-term management of the UNA.

PROCESSES

3.2.1.1 During a Neighbourhood Plan process, review by the UNA landscape management team should be included at key stages to obtain input on neighbourhood design and policy directions that may affect long-term landscape management.

3.2.1.2 During Development Permit Application processes for major developments within UNA neighbourhoods that include community green spaces that will ultimately be managed by the UNA, review by the UNA landscape management team should be included at key stages to obtain input on design directions that may affect long-term landscape management. Applications should include the following components to support UNA review of landscape management considerations:

- a narrative of the community green space landscape design that describes how it responds to the site's specific conditions and how it considers ongoing maintenance;
- a complete plant list and planting plan; and
- a diagram of proposed Landscape Maintenance Levels per Table 2 of the LMP for each landscape area within the public realm.

3.2.1.3 At handover of landscape management of an area from UBCPT to the UNA, the following information should be provided:

- As-built drawings showing the installed landscape, including planting, irrigation, and all site features;
- Operational manuals or other information that informs site functions;
- The current landscape maintenance plan;
- Landscape maintenance logs that document activities completed, their frequency, and issues identified / managed; and
- Budget details and costs for current landscape management activities.

LANDSCAPE DESIGN

3.2.1.4 Landscapes should be designed to be easily maintained using sustainable landscape maintenance procedures.

3.2.1.5 Landscapes that require complex, time consuming maintenance processes and methods should be limited or avoided, for example:

- Design / installation of lawn areas that make servicing with riding mowers difficult, such as those that are less than 2m wide, end in very narrow angles, are punctuated with obstacles, are overly steep, are surrounded by vegetation, or are oddly shaped.
- Placement of lawn directly adjacent to vertical features such as retaining walls or buildings that would necessitate regular trimming. Mow strips should be provided.
- Designs that restrict access by maintenance personnel for regular activities including monitoring, weeding, mulching, pruning, etc., such as high retaining structures, overly steep slopes, or impermeable plant massing.
- Plantings in narrow medians where landscape maintenance personnel are exposed to higher than typical risks from moving vehicle traffic.
- Watercourses or water features that have non-natural edges or bottoms (e.g., concrete / rubber) or recirculating systems that necessitate regular maintenance and management of mechanical equipment.

3.2.1.6 Highly decorative and maintenance-intensive landscapes that are intended to be maintained to Landscape Maintenance Levels 1 or 2 (per Table 2), should be restricted to a small number of high-visibility areas such as campus or neighbourhood gateways.

3.2.1.7 Naturalized landscapes that are intended evolve over time are encouraged. Where naturalized landscapes are installed, establishment maintenance for the first two to five years should be to a high maintenance level (e.g., Level 2 or 3). Once the landscape is established and functioning as intended, the maintenance level reductions may be considered (e.g., Level 4 or 5).

3.2.1.8 To the extent possible, areas that require intensive mowing should be minimized, especially in locations that do not function for human activity such as hillsides or along busy roadways. It is expected that areas with mown lawn will continue to be provided to support resident activity such as playing fields, areas around playgrounds, and spaces for casual use and enjoyment.

SUSTAINABILITY

3.2.1.9 Broad-scale planning should identify opportunities for landscape composting on campus to reduce travel distances related to off-site landscape waste disposal.

3.2.1.10 Decorative water features requiring mechanical systems and/or ongoing addition of potable water should be avoided (excluding recreational water features like spray parks or play features). If decorative water features are used, they should be designed for efficient recirculation with minimal water lost to evapotranspiration, run-off, overspray, etc.

3.2.1.11 Stormwater features that rely on natural water supply from rainwater should be designed to be aesthetically pleasing and functional during both wet and dry conditions, including when no natural water source is available during summer months (i.e., there is no standing or stagnant water, plantings are attractive through all seasons).

3.2.1.12 Landscape designs should provide sufficient root growing zones for trees, particularly in streetscape areas. Refer to James Urban's Up By Roots publication, 2008 for recommended soil volumes related to tree sizes. Soil cells or other technologies to increase root growing zones in urban environments should be considered. Tree planting in locations with limited rooting zones typically necessitate higher-intensity maintenance including pruning, replacement, or addressing issues with lifting hardscapes.

3.2.1.13 Designs should include direction on management of invasive species, including those that exist on site in pre-development conditions, and where there are invasive species on adjacent sites that could impact the landscape post-development.

3.2.1.14 All neighbourhoods should include secure electric charging infrastructure that is available for charging of electric landscaping equipment.

3.2.1.15 Landscape designs should address life-cycle costs including ongoing maintenance and renewal / replacement.

PLANTING

3.2.1.16 Landscape areas should use plants tolerant of UBC's soils, climate, and water availability.

3.2.1.17 Plant material selection should prioritize species that are anticipated to withstand the impacts of a changing climate.

3.2.1.18 Drought tolerant plant species should be prioritized to create a landscape that, when mature, will require little or no water use for survival, recognizing that the UBC climate is not conducive to elimination of all irrigation.

3.2.1.19 Plant species that form dense coverage should be used within the shrub and groundcover layers to facilitate full coverage and help reduce landscape maintenance requirements.

3.2.1.20 Plant materials that require minimal pruning, cutback, or replacement should be used. Plantings that require frequent pruning to maintain form and character or to avoid crowding of adjacent building foundations or walkways should be limited or avoided.

3.2.1.21 Use of plants with substantial thorns or brambles that restrict maintenance access or those that contain toxic substances that cause irritation, poisoning, or allergic reaction should be avoided.

3.2.1.22 No invasive plants or plants known to aggressively spread through underground rhizomes will be permitted.

3.2.1.23 Opportunities to utilize hardy flowering perennials and seasonal bulbs (rather than annuals) should be maximized to provide vibrant, colourful landscapes, while reducing ongoing maintenance requirements.

3.2.1.24 Planting layouts should be designed to allow plants to naturally grow to their mature size and form without overcrowding.

3.2.1.25 Planting areas should have a minimum 50 mm / 2” depth of appropriate mulch to retain soil moisture, protect plantings, control weeds, and help maintain plant health. This mulch is to be topped up within the month prior to handover of landscape maintenance to the UNA.

3.2.1.26 Newly installed landscape plantings should be maintained for at least two years (or longer), prior to handing landscape management over to the UNA.

IRRIGATION

3.2.1.27 Where possible, landscapes should be designed to require little to no permanent irrigation. In circumstances where automatic irrigation is required, high-efficiency automatic irrigation systems should be used to provide effective watering of landscape areas. Where possible, alternatives to use of potable water for irrigation systems (e.g., grey water re-use) should be explored.

3.2.1.28 Hose bibs or quick couplers should be provided at intervals that can reach all landscape areas to allow for manual watering if required.

East Campus Park

Wesbrook Neighbourhood – Wesbrook Community Park

APPENDICES

APPENDIX A: GLOSSARY

APPENDIX B: ENGAGEMENT SUMMARY

APPENDIX C: SAMPLE WALK-THROUGH FORM

APPENDIX D: SAMPLE LANDSCAPE MAINTENANCE BID SHEET

East Campus Park Playground

APPENDIX A

GLOSSARY

Aeration - A maintenance procedure to improve water penetration and soil / growing medium structure by relieving compaction; often done by coring.

As-Built Drawing - A drawing or series of drawings that record the features, layout, and details of a construction / installation project as-built following its completion. As-built drawings show the dimensions, geometry, and location of all features of the project. As-built drawings document any changes made during the construction of the project that differs from the original design.

Bark Mulch - An organic mulch that is comprised of bark chips and fines which are spread out over the ground surface to prevent growing medium erosion and weed germination, improve growing medium fertility and health, and conserve growing medium moisture.

Canadian Landscape Standard - A nationally recognized standard which defines good landscape construction and management practices.

Climate Change - A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels. Climate change refers to significant changes in global temperature, precipitation, wind patterns, and other measures of climate that occur over several decades or longer.

Community Green Spaces - Landscaped areas within UNA neighbourhoods intended for public use, including streetscapes, parkland, and green spaces like urban forests. Landscapes in these areas are typically managed by the UNA.

Cultivation - A term used for the tilling of growing medium to promote air exchange and water penetration. Cultivating is undertaken in preparation for planting or during regular maintenance.

De-Thatching - A maintenance procedure that involves a machine that makes a series of vertical cuts into turf to penetrate and remove accumulated layers of decaying plants on the growing medium surface.

Developer - The party responsible for building a new area of campus such as a building or green space. Typically, the developer is responsible for providing landscape maintenance of public green spaces from the end of construction for a specified timeframe (often two years) before maintenance becomes the responsibility of the UNA.

Development Permit - A permit issued by UBC Campus + Community Planning that allows the construction of buildings, structures, or open spaces at UBC Vancouver‘s campus lands. Development Permits are required for any project that involves new building construction, changes to the exterior appearance of an existing building, changes to the public realm, and changes to land use.

Edging - A maintenance activity that involves cutting back overgrowth of lawn into adjacent hard or soft landscape areas to form a tidy edge.

End Phase - The final stage in a landscape's life cycle, often characterized by the decline, removal, or transformation of landscape elements. This phase typically occurs when the landscape has reached the end of its intended lifespan or when there is a need for significant changes or redevelopment.

Erosion - The action of surface processes (such as water flow) that removes growing medium, rock, or dissolved material from one location and then transports it to another location.

Establishment Phase - The period in a landscape's life cycle immediately following the installation, during which the newly installed elements are nurtured to grow and develop.

Fertilizer - An organic or inorganic material, of natural or synthetic origins, that is applied to growing medium or plant tissue to supply one or more plant nutrients essential to the growth of plants.

Green Waste - Organic waste that can be composted. For landscape maintenance providers that includes grass clippings, leaves, and branches from pruned plants, finished annuals, non invasive weeds, and fallen leaves from trees.

Greenway - A corridor of undeveloped land typically near or surrounded by urban development that is retained for recreational use or environmental protection.

Greywater - Lightly used household wastewater that does not contain fecal contamination. Greywater may have potential for reuse in the landscape for irrigation purposes.

Groundcover - Small, low-growing plants that grow over an area of ground, used to provide protection from erosion and drought, and to improve aesthetic appearance.

Growing Medium - The material that plants grow in. Growing medium has three main functions: to supply roots with nutrients, air, and water; to support maximum root growth; and to physically support the plant.

Guiding Principles - Overarching statements that describe the UNA's overall approach to landscape management.

Habitat - The natural home of the native / local flora and fauna.

Integrated Pest Management (IPM) - An approach to planning and managing pests that uses a combination of cultural, biological, mechanical, and chemical methods to reduce pest populations to acceptable levels and with the least disruption to the environment starting with the least toxic control first.

Invasive Plants - Plant species that can be harmful when introduced into new areas. These include non-native plants that have been introduced to the area without the insect predators and plant pathogens that help keep them in check in their native habitats. Because of their aggressive growth, invasive plants can be highly destructive and difficult to control.

Irrigation - Distribution of water over the surface of land to encourage the growth of vegetation.

Irrigation System - An automated system that delivers and distributes water to landscape / softscape elements including but not limited to lawns, gardens, and horticultural crops, for the purpose of growing and maintaining moisture during periods of inadequate rainfall. Components of these systems can include sprinklers, nozzles, controllers, bubblers, drip emitters, valves, backflow prevention, pipe, etc.

Landscape Maintenance Contract - A written contract between the UNA and a landscape maintenance provider that outlines the requirements for maintaining a select landscape area for a specified term.

Landscape Maintenance Provider - The successful landscape contracting proponent to procure a maintenance contract for maintaining UNA landscapes for a specified contract term. Their responsibilities typically (but do not always) involve landscape and lawn maintenance, clearing of pedestrian surfaces, litter clean up, and irrigation system management. Other tasks can also be included in the contract scope of work as determined in each landscape maintenance contract.

Landscape Management Plan - A Landscape Management Plan marries day-to-day maintenance with a long-term vision so that landscapes continue to fulfill their intended purpose – providing healthy, aesthetically-pleasing environments that enhance community livability and social connection. Landscape management guides how to sustain healthy landscapes through their evolution, considering different layers like ecology, character, function, location, safety, and cost.

Landscape Type - Landscape Types describe the intended use, form, and character of landscape areas.

Lawn - An area of land planted with grasses and other durable plants which are maintained at a short height with a lawnmower and used for aesthetic and recreational purposes.

Maintenance Level - Landscape Maintenance Levels outline the expectations as to what standard and how frequently landscape areas should be maintained. Adapted from the Canadian Landscape Standard, they are intended to provide clarity about expectations and support consistency in the application of maintenance practices.

Maintenance Plan - A document, developed by a landscape maintenance provider, that includes details about landscape maintenance activities for a specific landscape area over a certain timeframe, and includes information such as tasks to be performed, methods, product application rates, frequencies, and schedules.

Maintenance Policy - General considerations for landscape maintenance that apply to all UNA landscape management areas.

Maintenance Report - A regular summary that documents maintenance services performed, a summary of current state of the landscape, and identification of issues and solutions to rectify identified issues.

Mature Phase - The stage in a landscape's life cycle when the plants and other elements have reached their full size and character. It is the point at which the landscape has achieved its intended design vision and has become an established and thriving ecosystem.

Mulch - A layer of material applied to the surface of planting beds. Mulch materials can include products such as bark, peat moss, compost, shredded leaves, hay or straw, lawn clippings, and gravel, spread over growing medium around the base of plants. During the growing season, mulch can help conserve growing medium moisture, improve fertility and growing medium health, inhibit weeds, and moderate growing medium temperature. Fresh layers of mulch are also spread to enhance aesthetics.

Municipal-like Services - Services provided by an organization that are comparable to those provided by a municipality for its residents. The UNA provides the following municipal-like services: community programs and facilities, regulations (e.g., parking and noise), maintenance of local infrastructure (sewer and streets), maintenance of community green spaces, planning for future community amenities, elections, sustainability promotion, and liaising with UBC and others.

Native Species - A plant or animal that occurs naturally in a particular habitat, ecosystem, or region of Canada without direct or indirect human actions.

Naturalized Species - Plant species that spread into environments that are not within their native range and are able to reproduce in their new home, and eventually establish a new population there. They do not typically outcompete native vegetation and instead live alongside them.

Neighbourhood Housing Areas - Areas of the UBC campus specified for neighbourhood development in the UBC Land Use Plan. There are seven Neighbourhood Housing Areas: Chancellor Place, Hampton Place, Hawthorn Place, Wesbrook Place, East Campus, Stadium, and Acadia East.

Neighbourhood Plan - A document that provides a clear and comprehensive land-use and development vision for a specific neighbourhood.

Neighbours' Agreement - An important agreement between the University of British Columbia and the UNA that provides a framework for the respective roles and relationships in managing the UNA neighbourhoods. The matters documented in the agreement include:

- **(a)** the UNA's purposes and obligations;
- **(b)** the relationship between the UNA and UBC;
- **(c)** the scope of the Municipal-like Services and the UNA Facilities and Amenities that the UNA has agreed to manage, operate, or undertake;
- **(d)** the terms and conditions under which the UNA has agreed to manage, operate, or undertake the Municipal-like Services and the UNA Facilities and Amenities;
- **(e)** the sources and management of funds for the activities and services referred to in; and
- **(f)** the mechanism by which rules relating to noise, nuisance, parking, traffic, and other regulatory matters within the Neighbourhood Housing Areas will be put into effect.

Non-Chemical Treatments - Pest management controls that do not utilize chemicals to control pests. These may include:

- **Cultural controls** that use a plant health care approach that focuses on managing soil health, selecting plants that are appropriate to the site and resistant to pests, locating planting appropriate to site context, irrigation, pruning, and plant nutrition.
- **Physical or mechanical controls** that include manual removal of infested plants / plant parts or weeds; products that trap insects; or water pressure from a hose.
- **Biological controls** that introduce living natural enemies that are beneficial species to eliminate a pest in affected areas including beneficial insects (e.g., ladybugs) or pathogens (e.g., fungi or bacteria) that feed on pests while supporting the landscape.

Noxious Weeds - A weed that has been designated by an agricultural authority as one that is injurious to agricultural or horticultural crops, natural habitats or ecosystems, or humans or livestock. Often, they are plants that grow aggressively, multiply quickly without natural controls, and display adverse effects through contact or ingestion.

Overseeding - The planting of grass seed directly into existing turf, without tearing up the turf or the soil. Overseeding is performed to fill in bare spots, improve the density of turf, and establish improved grass varieties.

Pesticide - Substances that are meant to control pests, including weeds. They are available in a variety of chemical compositions in the form of dusts, granules, pellets, wettable powders, emulsified concentrates, and aerosols. The term pesticide includes all of the following: herbicide, insecticides nematicide, molluscicide, piscicide, avicide, rodenticide, bactericide, insect repellent, animal repellent, antimicrobial, and fungicide.

Pilot Program - A small-scale, short-term project that helps an organization learn how a large-scale project might work in practice and collect user opinion on how it functions. It is a way to test out a new amenity, program, or study with lower cost and risk.

Pollinator Plant Species - Flowering plant species that attract and support bees, butterflies, and other pollinators because of their source of pollen or nectar.

Pruning - The selective cutting and removing of parts of a tree or shrub. Pruning covers a number of horticultural techniques that control growth and shape; removes dead, damaged, or diseased wood; and/or stimulates the formation of flowers and fruit buds. Pruning often means cutting branches back and sometimes removing limbs entirely to preserve or improve plant health and structure.

Rainwater Management Landscape Feature - A landscape element that supports regular infiltration of rainwater (e.g., raingarden, swale, etc.) and avoids incidences of standing water. Regular monitoring and maintenance of rainwater management landscape features are required to maintain the vegetation, structures, infiltration capacity, and remove blockages.

Specimen - An unusual or impressive plant that exhibits all the best characteristics typically associated with its type, planted as a focal point or point of interest in a landscape. This designation may be used to indicate exceptionally heavy, well-shaped plants or to emphasize that certain specified traits are required.

Stakeholder - A person or group of people with particular interest or concern in something as they would be affected by the outcome of the project, decision, or change.

Sustainability - The continuous effort to meet the needs of the present generation without compromising the ability of future generations to meet their needs.

Topdressing - Application of fertilizer, compost, manure, or other growing medium amendment to the ground surface or a lawn.

UBC Campus + Community Planning - The UBC organization that provides overall planning, consultation, and coordination to create a campus that supports UBC's guiding vision of making the world a better place.

UBC Facilities Municipal Services - Provides municipal-like services to UBC academic campus areas, similar to the services that the UNA provides to the neighbourhoods. The groups collaborate to deliver consistent and aligned services.

UBC Properties Trust - The UBC organization that develops land into residential, academic, and community amenities that build a financial legacy and create innovative spaces for learning and living.

UBC Services Levy - The taxes collected by UBC to pay for municipal-like services. The levy amount is set through the Provincial Rural Tax Rate and the City of Vancouver Residential Tax Rate and cannot be adjusted by the UNA. The total property taxes paid by UNA homeowners must be the same as property taxes for a comparably assessed property in the City of Vancouver.

University Neighbourhoods Association (UNA) - The UNA was established by the University of British Columbia in 2002 as a civic and social organization to represent the residents living within UNA neighbourhoods. The UNA promotes the development of good neighbourhoods and provides, operates, and maintains municipal-like services and facilities on behalf of the residents.

Urban Ecology - The study of ecosystems and the biodiversity of plants and animals (including humans) in an urban environment and their relationship to and function within the urban environment. The goal of urban ecology is to support sustainable development and enhance greenspace in urban environments.

Urban Forest - The collection of trees or forest that grow within a city or urban area. Urban forests often provide habitat corridors for wildlife.

Weed - Any plant that grows where it is not wanted.

Zero-emissions - Refers to an engine, motor, process, or other energy source that emits no waste products that pollute the environment or disrupt the climate.

Hampton Neighbourhood

APPENDIX B

ENGAGEMENT SUMMARY

SNAPSHOT

This page provides a quick summary of community input.
Learn more by browsing the full report.

141 completed resident surveys

14 meetings with stakeholders

100+ project website visits

The following is a snapshot of input collected through the public survey. It includes feedback on draft guiding principles for landscape management in UNA neighbourhoods, resident priorities for the future, and how the UNA can balance landscape maintenance in a fiscally responsible manner.

DRAFT GUIDING PRINCIPLES

Level of participant agreement with the draft guiding principles

ECOLOGY & NATURE AT WORK	**88.3%**	Agree / Strongly Agree
GREAT NEIGHBOURHOOD EXPERIENCES	**84.7%**	Agree / Strongly Agree
CLIMATE ADAPTATION & PROTECTION	**82.0%**	Agree / Strongly Agree
FINANCIAL SUSTAINABILITY	**70.8%**	Agree / Strongly Agree

TOP PRIORITIES

Resident priorities for landscape management

1. Environmental / habitat protection and enhancement
2. Using landscape management practices that have low impact
3. Managing noise of daily operations (e.g., use of equipment)

BALANCING COSTS & SERVICE

Thoughts on approaches for balancing level of landscape maintenance with increasing costs for services

66% Support consideration of strategic changes to decrease maintenance requirements in certain landscape areas (e.g., naturalization, reduced mow areas, reduced watering), helping to manage increases in maintenance costs

24% Encourage approaches to maintain landscape areas to a similar standard as today, recognizing that costs will continue to increase and may require trade-offs that reduce other services the UNA provides (e.g., recreation and cultural programs, community events, upgrades, etc.)

10% Are unsure at this time

OTHER THEMES

Common comments and suggestions

- **Collaborate** to share knowledge and maximize benefits
- **Prepare** now for climate change
- **Plan** future landscapes to be sustainable
- **Maintain** quality of life
- **Make** changes thoughtfully (do not rush)

Hawthorn Neighbourhood – Eagles Park

APPENDIX C

SAMPLE WALK-THROUGH FORM

The following walk-through form is provided for information. It is intended to form a starting point that will be adapted to site context and customized by the UNA, in partnership with landscape maintenance providers.

SITE DETAILS

Contract No. & Site Name: _____

Contractor: _____

Inspected by: _____

Date of Walk-Through: _____

EQUIPMENT

List all equipment being used during maintenance:

Equipment Make / Model	Use	Electric Power (Y/N)	Noise Rating

SUSTAINABILITY

List and describe sustainable maintenance practices or techniques undertaken:

Sustainable Landscape Practice / Description

WALK-THROUGH SUMMARY REPORT

Remove or cross off areas / topics that are not applicable to the landscape contract.

Area	Walk-Through Report		Condition Inspection Report			
	Typical Maintenance Level	Discussion on Potential Changes / Updates	Topic	Condition		Comments / Locations
				Good	Needs Attention	
Lawns			General Appearance			
			Mowing Height			
			Water / Moisture			
			Edging & Trimming			
			Pest / Disease Monitor & Control			
			Weed Control			
			Fertilization			
Trees			General Conditions			
			Water / Moisture			
			Pest / Disease Monitor & Control			
			Wells / Saucers / Edging / Mulch			
			Pruning / Repair			
			Stakes / Wires / Anchors			
			Base Damage / Girdling			
			Fertilization			

Area	Walk-Through Report		Condition Inspection Report			
	Typical Maintenance Level	Discussion on Potential Changes / Updates	Topic	Condition		Comments / Locations
				Good	Needs Attention	
Planting Beds Shrubs, Perennials, Groundcover, Vines			General Condition			
			Water / Moisture			
			Pest / Disease Monitor & Control			
			Pruning / Repair			
			Weed Control			
			Cultivation			
			Edging / Mulch			
			Fertilization			
Annual Beds			Plant Condition			
			Water / Moisture			
			Pest / Disease Monitor & Control			
			Cultivation / Deadhead			
			Fertilization			
Paved / Graveled / Bare Areas			Surface Condition			
			Weed Control			
			Curbs / Stops / Dividers			

Area	Walk-Through Report		Condition Inspection Report			
	Typical Maintenance Level	Discussion on Potential Changes / Updates	Topic	Condition		Comments / Locations
				Good	Needs Attention	
Irrigation System			Heads / Risers			
			Pressure			
			Coverage			
			Controllers / Settings / Schedule			
Drains / Ditches			Draining As Intended			
			Inlets / Outlets Clean			
Play-grounds			Inspected / Litter Removed			
			Repairs / Repainting Completed			
Water Features			Mechanical Systems Functioning			
			Inlets / Outlets Clean			
			Surfaces / Finishes Clean			
Fixtures			Cleanliness / Damage / Graffiti			
Litter			Clear of Litter / Garbage			
Other						

East Campus – TRIUMF House

APPENDIX D

SAMPLE LANDSCAPE MAINTENANCE BID SHEET

The following sample maintenance bid sheet is provided for information. It is intended to form a starting point that will be adapted to site context and customized by the UNA.

CONTRACT AREA OVERVIEW

Neighbourhood(s):	*Insert name of neighbourhood(s) included in contract*
Key Components:	*Describe key components or tasks to be completed* *Refer to map on following page for locations*
General Objectives:	*Summarize general intent of landscape management in this area*
Special Considerations:	*Summarize considerations that are specific within this contract area*
Sustainability Requirements:	*Outline specific sustainability requirements that UNA requires for the contract period. These could include requirements related to zero-emissions maintenance equipment, chemical use restrictions, landscape green waste disposal, or other specific measures where further detail is required beyond the guidance provided in Section 2.5: General Maintenance Policies.*
Contract Period:	*Dates between which the contract will be valid*

LANDSCAPE MAINTENANCE PROVIDER DETAILS

Company Name: _____

Primary Contact Name: _____

Phone: _____

Email: _____

Date Submitted: _____

SUSTAINABLE PRACTICES DETAILS

Landscape Equipment List

List all equipment intended to be used in provision of the landscape maintenance services.

Equipment Make / Model	Intended Use	Electric Power (Y/N)	Noise Rating

Green Waste Disposal Practices

- Location to be used for green waste disposal: _____
- Distance of disposal facility from site: _____ km

Sustainability Practices

List sustainable or green practices intended to be used in the provision of landscape maintenance services. These could include practices such as use of mulching mowers to leave grass clippings on site, use of cultural, physical, or biological controls for invasive species, irrigation management to reduce water use, leaf litter management to increase habitat and cover during the winter months, etc.

Sustainability Practice	Description

COSTS FOR UNSCHEDULED OR ADDITIONAL TASKS

List any common maintenance activities that could arise during the contract period but are not included in the base contract.

Task	Cost

CONTRACT AREA MAP

Insert map showing the extents of the landscape areas within the contract (extract from GIS database).

BID SHEET

The sample bid sheet would be customized to include the Landscape Types / Maintenance Levels within the contract area (unused lines would be deleted). UNA would enter information including area and description of the areas to be maintained from the GIS database and provide a map of the maintenance areas. The maintenance provider would provide bid information for each area to summarize level of effort and costs of services.

Maintenance providers to refer to the following sections of the LMP when preparing their bids to confirm maintenance expectations, activities, frequency, policies, and seasonal requirements for each Landscape Type included in the contract.

- Table 2: Landscape Maintenance Levels Overview
- Table 3: Maintenance Level Activities & Frequencies
- Table 4: Typical Seasonal Procedures
- Section 2.5: General Maintenance Policies

Included Items *(UNA to complete, delete all lines not included in this service contract)*				**Maintenance Provider Bid**
Landscape Type	**Maintenance Level**	**Qty**	**Description**	**Estimate**
Grass Field (Playing Field)	1			
Lawn	2			
Lawn	3			
Lawn	4			
Manicured Planting Bed	1			
Manicured Planting Bed	2			
Manicured Planting Bed	3			
Manicured Planting Bed	4			
Naturalized Planting Bed	2			

Included Items *(UNA to complete, delete all lines not included in this service contract)*				**Maintenance Provider Bid**
Landscape Type	**Maintenance Level**	**Qty**	**Description**	**Estimate**
Naturalized Planting Bed	3			
Naturalized Planting Bed	4			
Naturalized Planting Bed	5			
Natural Area	5			
Community Garden	6			
Water Feature Inspection	n/a			
Playground Inspection	n/a			
Irrigation Operations	n/a			
Garbage Waste Removal	n/a			
Other (as described)	n/a			
			TOTALS	

EXAMPLE BID SHEET (REFERENCE)

CONTRACT AREA OVERVIEW

Neighbourhood(s):	Hampton Neighbourhood
Key Components:	▪ All boulevard, median, traffic circle, and entry landscapes including lawn and planting beds along Hampton Place and the east wide of Wesbrook Mall adjacent to the neighbourhood. ▪ Grass boulevards along W 16th Avenue are excluded. ▪ Review and management of the natural tree edge on the neighbourhood side of the sidewalk on W 16th Avenue is included. ▪ Refer to map on next page.
General Objectives:	▪ Keep all landscape areas to a high quality
Special Considerations:	▪ Manicured beds within the neighbourhood include boxwood hedging with specific pruning needs to maintain the hedge form ▪ Irrigation operations
Sustainability Requirements:	▪ Hand-held landscaping equipment including, but not limited to, hedge-trimmers, leaf blowers, and grass trimmers are to be zero-emissions during normal operations ▪ Gas-powered leaf blowers may be used during the fall clean-up period, if required ▪ Gas-powered mowers may be used during this contract period ▪ Green waste is to be disposed of at the nearest feasible facility to UBC to limit off-site travel
Contract Period:	For 12 months, starting April 1, 2024

LANDSCAPE MAINTENANCE PROVIDER DETAILS

Company Name: _____

Primary Contact Name: _____

Phone: _____

Email: _____

Date Submitted: _____

SUSTAINABLE PRACTICES DETAILS

Landscape Equipment List

List all equipment intended to be used in provision of the landscape maintenance services.

Equipment Make / Model	Intended Use	Electric Power (Y/N)	Nose Rating

Green Waste Disposal Practices

- Location to be used for green waste disposal: _____
- Distance of disposal facility from site: _____ km

Sustainability Practices

List sustainable or green practices intended to be used in the provision of landscape maintenance services. These could include practices such as use of mulching mowers to leave grass clippings on site, use of cultural, physical, or biological controls for invasive species, irrigation management to reduce water use, leaf litter management to increase habitat and cover during the winter months, etc.

Sustainability Practice	Description

COSTS FOR UNSCHEDULED OR ADDITIONAL TASKS

List any common maintenance activities that could arise during the contract period but are not included in the base contract.

Task	Cost

CONTRACT AREA MAP

UNA UNIVERSITY NEIGHBOURHOODS ASSOCIATION

HAMPTON PLACE NEIGHBOURHOOD

LEGEND

LANDSCAPE TYPE

- Lawn
- Manicured Planting Bed
- Naturalized Planting Bed
- Natural Area

MAINTENANCE LEVEL

- 1 - Well-Groomed
- 2 - Groomed
- 4 - Limited
- 5 - Background

MAINTENANCE LEVEL SUMMARY (2023)

Landscape Type	Maint. Level	~Area (m^2)	% of Total
Lawn	2	5,771	61%
Manicured Bed	1	1,416	15%
Manicured Bed	2	289	3%
Naturalized Bed	4	173	2%
Natural Area	5	1,769	19%
	TOTAL	9,418	100%

KEY MAINTENANCE NOTES

- Hampton Place entrances at Wesbrook Mall and W 16th Avenue are neighbourhood gateways and landscapes are to be maintained to a consistently high standard
- The boxwood hedges at the neighbourhood entrances and along Hampton Place Road require special pruning to maintain their desired shape

LAST UPDATED: MAY 8, 2023

BID SHEET

Maintenance providers to refer to the following sections of UNA's LMP when preparing bids to confirm maintenance expectations, activities, frequency, policies, and seasonal requirements for each Landscape Type included in the contract.

- Table 2: Landscape Maintenance Levels Overview
- Table 3: Maintenance Level Activities & Frequencies
- Table 4: Typical Seasonal Procedures
- Section 2.5: General Maintenance Policies

Included Items				**Maintenance Provider Bid**
Landscape Type	**Maintenance Level**	**Qty**	**Description**	**Estimated Cost**
Lawn	2	5,771 m^2	Grass / tree boulevards and medians on Hampton Place and the east side of Wesbrook Mall fronting the neighbourhood (boulevards on W16th Ave not included)	
Manicured Planting Bed	1	1,416 m^2	"Maze" hedges and planting beds	
Manicured Planting Bed	2	289 m^2	Other manicured shrub areas	
Naturalized Planting Bed	4	173 m^2	Pathway connection to Pacific Spirit Regional Park	
Natural Area	5	1,769 m^2	Forested edge along the W 16th Ave sidewalk	
Irrigation Operations	n/a		Automatic irrigation in all landscape areas	
			TOTALS	

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