The University of British Columbia Okanagan

WEST CAMPUS LANDS CONCEPTUAL STRUCTURE PLAN

| 2023

ACKNOWLEDGMENT

We begin by acknowledging that UBC's Okanagan campus is located on the unceded territory of the Syilx (Okanagan) peoples and that UBC's activities take place on Indigenous lands throughout British Columbia and beyond.

The Syilx Okanagan people have been here since time immemorial. In September 2005, the Okanagan Nation Alliance officially welcomed UBC to Okanagan territory in a ceremony, Knaqs npi'lsmist, where UBC signed a Memorandum of Understanding with the Okanagan Nation Alliance. The University works with the Okanagan Nation in the pursuit of campus plans for UBC Okanagan in respectful acknowledgment of the Syilx Okanagan people's stewardship of their territory for thousands of years.

CONTENTS

1. Executive Summary

The Conceptual Structure Plan is intended as a guiding document, providing planning and design principles as well as a land use framework to guide near- and long-term land-based uses and development on the University's West Campus Lands in support of UBC's academic mission.

In March 2022, UBC engaged Kasian Architecture, Interior Design & Planning Ltd. to develop a Conceptual Structure Plan for UBC Okanagan's (UBCO) West Campus Lands.

The West Campus Lands are 45 hectares of land, divided into four legal parcels, directly west of the Main Campus as shown in Figure 1.1. The lands are part of the province's Agricultural Land Reserve (ALR) and municipal A-1 Agricultural Zone, and are currently used in accordance with their existing agricultural character and designations. As UBCO continues to grow, the West Campus Lands have been identified as an area for potential expansion of academic uses, with a focus on land-based research* and research partnerships. The purpose of this project was to define an overall vision for the use of the lands, summarize the feasibility and key site considerations for their use and establish a structural organization for land uses, site circulation and site infrastructure.

Through engagement with campus leadership, faculty and staff, a guiding Vision and set of Planning Principles specific to the West Campus Lands were developed. The principles, with associated strategies for implementation, are described in Section 2.1:

- Advance Land-based Research and Innovation at UBC Okanagan.
- Celebrate and Protect the West Campus Lands as a Unique Place.
- Embrace Indigenous Knowledge, Teaching and Learning.
- Foster Resiliency through Sustainable Planning and Design.
- Enhance and Support Connectivity for People and Wildlife.
- Leverage Community and Research Partnerships.
- Design in a Way that is Cost Effective and Optimizes Flexibility.

Land-based Research and Innovation

In the context of this document, Land-based Research and Innovation... refers to research activities and areas of inquiry that seek to advance knowledge and innovation connected to the physical environment of the West Campus Lands and include agricultural and ecological research as well as research activities linked to conservation and restoration of the natural environment.

FIGURE: UBCO Aerial 2018
Source: UBC Brand & Marketing

It is anticipated that over time proposals to utilize the West Campus Lands will come forward from the campus community including researchers, faculties and other campus stakeholders. The Conceptual Structure Plan – its Vision, Planning Principles, and land use framework – will serve as a resource to research applicants and to staff and campus leadership assessing the appropriateness of a proposal's use and location within the West Campus Lands.

Using the Vision and Planning Principles as background, UBC faculty and staff stakeholders identified a series of potential future uses for the West Campus Lands. The uses identified, detailed in Section 2.2, emphasized land-based research activities and conservation initiatives to support innovation while respecting the agricultural character of the West Campus Lands, and honouring its traditional uses by the Syilx peoples.

To understand the opportunities and constraints of the site and how the Vision, Planning Principles and potential uses could be organized within the West Campus Lands, a site feasibility assessment was performed. The feasibility assessment, built upon a previously completed existing conditions analysis, identified key site characteristics and established the use potential of the lands.

The key site characteristics that informed the Conceptual Structure Plan included:

- Existing land use which place limits on the types of land uses, prioritizing agricultural uses, as well as limiting the number and size of structures, roadways and the extent of site infrastructure. Deviations from these regulations would require regulatory approval.
- Areas of archaeological potential which cannot be developed without further archaeological assessment and approval.
- Areas of environmental sensitivity, in particular the unique saline ecosystem associated with Robert Lake, which could be harmed through development.
- The sloped topography of the eastern side of the site which, in concert with height restrictions due to the flight path for the Kelowna Airport, will affect the placement of structures.
- Limited connectivity with the Main Campus, due to the sloped topography and narrow legal lots, owned by the City of Kelowna and Glenmore Ellison Improvement District (GEID), between the Main Campus and the West Campus Lands.

A summary of all the site considerations and future use potential is included in Section 3, with a detailed site assessment provided in Appendix B.

Since their acquisition by UBCO...

the West Campus Lands have received increasing attention by members of the campus community for future research and academic opportunities.

FIGURE 1.1: UBCO West Campus Lands Aerial View.
Source: City of Kelowna Map Viewer, 2022.
Note: Outline of West Campus Lands shown is approximate


GLENMORE LANDFILL
WEST CAMPUS LANDS
LOT 1
LOT 1
JOHN HINDLE DRIVE
LOT B
LOT C
LOT A
DISCOVERY AVENUE
MAIN CAMPUS
UPPER CAMPUS WAY
ALUMNI AVENUE
ACADEMY WAY
ROBERT LAKE

The Conceptual Structure Plan, shown in Figure 1.2 and detailed in Section 4, is a response to the Vision, Planning Principles, potential future uses, and the site assessment. The Conceptual Structure Plan is based on the following conceptual frameworks:

PROPOSED LAND USE

The Conceptual Structure Plan identifies a series of land use zones across the West Campus Lands including:

- A Conservation and Rehabilitation zone around Robert Lake to protect the unique saline ecosystem.
- Opportunities for agricultural and ecological research, in particular agro-ecological research, across the West Campus Lands to take advantage of the differing soil conditions and ecosystems.
- A Research and Operational Support Hub, located adjacent to the existing Plant Growth Facility, with direct links to the Main Campus.
- An Academic Hub, with potential for educational or community use building(s) at the southern end of the site, with direct links to the Main Campus.

SITE ACCESS AND CIRCULATION

The Conceptual Structure Plan includes potential for site access and circulation via new gravel roads, in a simple organization. The proposed roads will provide access to each of the key land use areas, while minimizing the amount of land used for circulation and maintaining large contiguous areas for future uses. These roads would be developed and extended as needed, over time, for access.

SITE SERVICES AND INFRASTRUCTURE

The existing West Campus Lands have minimal infrastructure and, in particular, no sanitary servicing. The Site Services and Infrastructure concept proposes a phased build out of services for sanitary, shallow utilities and water. An initial build out is proposed, delivering infrastructure to the Research and Operations Support Hub, connecting to existing services along the eastern perimeter of the site and the Main Campus. Further distribution of services beyond the hub would be provided when specific projects are implemented on site. To protect the alkalinity of Robert Lake and its surrounding saline meadows, the Conceptual Structure Plan recommends the stormwater system should not increase the volumetric flow of storm water to Robert Lake from current levels, providing control and treatment on site, through a prioritized use of Low Impact Development (LID) and green infrastructure.

Did you know?

Robert Lake's unique saline ecosystem has been created over time as the lake is fed by groundwater and overland flows but has no natural outflow. This makes it a biodiversity hotspot which provides habitat for many species at risk.

The Conceptual Structure Plan concludes with discussion of key activities for implementation, including considerations and dependencies, required regulatory approvals, and existing UBC policies and guidelines that could be applied to the West Campus Lands. The Conceptual Structure Plan is a living document, designed to be flexible and responsive to changing needs over time. As this project moves forward, further engagement activities are anticipated to add greater levels of detail to the Conceptual Structure Plan and to move toward the implementation of specific projects within the West Campus Lands. Through a process of continuous engagement, UBC can guide the development of the West Campus Lands in accordance with the Vision and Planning Principles established through this project, and provide a unique environment that supports UBC's future needs.

FIGURE 1.2: Conceptual Structure Plan

1.2 PROCESS

The planning process for the West Campus Lands began in March 2022 with a review of UBC's policies and plans, including the UBC Okanagan Campus Plan, UBC Okanagan Whole Systems Infrastructure Plan, UBC Okanagan Integrated Rainwater Management Plan, and UBC Okanagan Design Guidelines, to help inform the structure of this study and understand the relevant policy context. A further desktop review of a previously completed existing conditions analysis of the West Campus Lands, in conjunction with a site visit, provided the basis for the site feasibility assessment detailed in Section 3, determining the future use potential of the West Campus Lands.

These reviews were followed by collaborative workshops identified in Table 1.1. These workshops brought together campus leadership, faculty, and staff from the Okanagan and Vancouver campuses to understand the potential and identify the aspirations for the future role of the West Campus Lands in support of UBC's academic mission. These workshops refined the Vision and guiding Planning Principles and identified the potential future uses, detailed in Section 2 of this report, upon which the Conceptual Structure Plan was built.

A series of Conceptual Structure Plan options were developed and reviewed with the UBC Working Group as described in Table 1.2. UBC Campus Planning then led a series of engagement activities with the UBC Steering Committee and key faculty, staff and external stakeholders, such as the Agricultural Land Commission (ALC) and City of Kelowna, to gather additional feedback to refine the preferred direction. The result of the process is the Conceptual Structure Plan, and Policy and Guidelines for the West Campus Lands, as detailed in Section 4.

The overall project process is illustrated in Figure 1.3.

TABLE 1.1: Workshops: Context and Vision Development

Phase 1 Key Workshops: Context and Vision	
Workshop	**Process/Outcomes**
Workshop 1 Feasibility Assessment	Define needs, expectations, and aspirations Review existing site assessment studies, existing site context, opportunities, and constraints Outcome: Deliver preliminary Existing Conditions and Feasibility Assessment Report
Workshop 2 Vision & Future Use Exploration	Define vision, principles and strategies Identify potential uses that are compatible with the University's mission and the site's ecology · Outcome: Develop 2-3 Conceptual Structure Plan Options based on the results of Workshop 2 and follow-up survey on potential uses.

TABLE 1.2: Workshop: Conceptual Structure Plan Development

Phase 2 Key Workshops: Conceptual Structure Plan Development	
Workshop	**Process/Outcomes**
Working Group Review Session	Preview 3 Preliminary Conceptual Structure Plan Options Outcome: Identify a preferred direction for refinement to proceed to UBC-led stakeholder engagement and Steering Committee review

FIGURE: John Hindle Drive looking northeast across Lot 1
Source: Abigail Riley (UBCO)

FIGURE 1.3: Project Process Graphic

2. Vision for Future Use

"I see many great opportunities for plant and agricultural research on these lands: Indigenous plants, Indigenous communities and conservation of traditional ecological knowledge (TEK) in the region, community engagement, knowledge generation, teaching and mentorship, sustainable food production systems, vineyards, water efficiency, agrivoltaics, development of sustainable technologies."

- Visioning & Future Use Survey Participant

A Vision statement, Planning Principles, and associated Strategies for the West Campus Lands Conceptual Structure Plan were developed in support of the University's strategic plan and academic mission.

The following Vision statement, developed in consultation with UBCO leadership, faculty and staff, will guide the future use of the West Campus Lands.

FIGURE: Amphibian fencing at Robert Lake
Photo Credit: Abigail Riley (UBCO)

FIGURE: UBCO Plant Growth Facility
Source: Abigail Riley (UBCO)

2.1 VISION STATEMENT

> The West Campus Lands will advance land-based research while respecting and enhancing their unique environment, ecology and agricultural value. Grounded in sustainable practices and Syilx Okanagan knowledge, their use will serve as a living demonstration of learning and resilience and leverage partnerships to support research, innovation, and ecological and community well-being.

2.2 PLANNING PRINCIPLES

Building on the Vision statement, seven Planning Principles were developed through engagement with UBCO leadership, faculty and staff and review of existing UBCO policies. These principles provide goals and strategies to guide the use of the West Campus Lands and implementation of the Conceptual Structure Plan.

RESEARCH
Advance Land-based Research and Innovation at UBC Okanagan.

PLACE
Celebrate and Protect the West Campus Lands as a Unique Place.

INDIGENEITY
Embrace Indigenous Knowledge, Teaching and Learning.

SUSTAINABILITY
Foster Resiliency through Sustainable Planning and Design.

CONNECTIVITY
Enhance and Support Connectivity for People and Wildlife.

COMMUNITY PARTNERSHIPS
Leverage Community and Research Partnerships.

COST EFFECTIVENESS
Design in a Way that is Cost Effective and Optimizes Flexibility.

Campus As A Living Lab

"UBC's faculty, staff, students and partners use the University's buildings and infrastructure, as well as its education and research capabilities, as a living laboratory to test, study, teach, apply and share lessons learned, technologies created, and policies developed."

- UBCO Campus Plan

Research

PRINCIPLE

ADVANCE LAND-BASED RESEARCH AND INNOVATION AT UBC OKANAGAN.

INTENT

Support and enhance UBC Okanagan's commitment to research excellence and transformative student learning with a focus on land-based research and inquiry. Stimulate innovation and promote the advancement of knowledge and interdisciplinary learning for all.

STRATEGIES TO IMPLEMENT THE RESEARCH PRINCIPLE

- Prioritize land-based research opportunities for the West Campus Lands.
- Connect and ensure compatibility of research to the ecological, geological and topographical attributes of the site.
- Promote opportunities for interdisciplinary research and shared learning.
- Leverage the West Campus Lands as a living lab for land-based research and knowledge sharing.

FIGURE 2.1 (TOP)**:**
Restinclières research farm. Source: https://news.mongabay.com/

FIGURE 2.2 (BOTTOM)**:**
Research and Study. Source: UBC Brand & Marketing

Place

PRINCIPLE

CELEBRATE AND PROTECT THE WEST CAMPUS LANDS AS A UNIQUE PLACE.

INTENT

Support and enhance the ecological health and diversity of the West Campus Lands and celebrate its agricultural and natural character and history, including its geological past and Syilx traditional use of the land.

STRATEGIES TO IMPLEMENT THE PLACE PRINCIPLE

- Protect areas of high environmental sensitivity and value such as Robert Lake, saline meadows, and intact woodland areas.
- Integrate restoration and remediation into future activities to enhance the Lands' natural ecology and biodiversity.
- Ensure activities are compatible with or enhance agriculture within the West Campus Lands and surrounding area.
- Avoid and protect archaeological sites and areas of high archaeological potential.
- Collaborate with Syilx people to learn about their history in the West Campus Lands and have their traditional use/knowledge of these Lands inform land use design/decisions.

FIGURE 2.3 (TOP)**:**
Saskatoon Bushes at Robert Lake Source: Abigail Riley

FIGURE 2.4 (BOTTOM)**:**
West Campus Lands. Source: Kasian

Indigeniety

PRINCIPLE

EMBRACE INDIGENOUS KNOWLEDGE, TEACHING AND LEARNING.

INTENT

Respect the language and culture of the Syilx (Okanagan) people in whose territory the campus is situated, and engage Syilx knowledge to guide the use of the West Campus Lands, while advancing Indigenous teaching and research through land-based learning and Indigenous land management practices.

STRATEGIES TO IMPLEMENT THE INDIGENEITY PRINCIPLE

- Incorporate Syilx traditional knowledge to inform research and the use and management of the West Campus Lands, as well as the infrastructure needed to support their use.
- Engage Syilx researchers, students and community members to identify areas of high Syilx value, direct their use, and strengthen opportunities for Indigenous research and learning.

FIGURE 2.5 (TOP)**:**
Social Life of Water. Source: www.Syilx.com

FIGURE 2.6 (CENTRE)**:**
Nsyilxcn language signage. Source: www.ok.ubc.ca

FIGURE 2.7 (BOTTOM)**:**
Indigenous flowers. Source: Abigail Riley (UBCO)

Did you know?

The open water, saline meadow, grasses, and patches of shrubs and cattails around Robert Lake provide habitat potential for a variety of wildlife and species at risk. (Ecoscape, 2021)

Sustainability

PRINCIPLE

FOSTER RESILIENCY THROUGH SUSTAINABLE PLANNING AND DESIGN.

INTENT

Manage the use of the West Campus Lands through a whole systems approach to achieve a net-positive impact on their well-being and demonstrate best practices in sustainable planning and design to support their resilience and the climate more broadly.

STRATEGIES TO IMPLEMENT THE SUSTAINABILITY PRINCIPLE

- Employ site design strategies that conserve, enhance, and restore the Lands' unique site ecology.
- Design use and development to minimize energy and water consumption and carbon emissions.
- Implement rainwater management strategies that enhance ecosystem assets.
- Integrate renewable and regenerative energy, water and waste systems.
- Minimize the impact and need for hard infrastructure extension and connection.

FIGURE 2.8 (TOP)**:**
Robert Lake. Source: Kasian

FIGURE 2.9 (BOTTOM)**:**
Great Basin Spade Toad.
Source: Gary Nafis

Connectivity

PRINCIPLE

ENHANCE AND SUPPORT CONNECTIVITY FOR PEOPLE AND WILDLIFE.

INTENT

Provide pedestrian and cyclist connectivity and access within the West Campus Lands, to/from the Main Campus and with the surrounding area, in a way that minimizes the impact on the land. Preserve and enhance the movement needs and migration patterns of the wildlife associated with these Lands.

STRATEGIES TO IMPLEMENT THE CONNECTIVITY PRINCIPLE

- Prioritize active transportation modes within the West Campus Lands, and minimize the need for vehicular infrastructure and parking.
- Provide direct access between the West Campus Lands and the Main Campus.
- Preserve and enhance wildlife migration and movement patterns within and through the West Campus Lands.

FIGURE 2.10 (TOP)**:**
Quail Flume Trail. Source: www.hiking.addition.ca

FIGURE 2.11 (BOTTOM)**:**
Deer in WCL. Source: Abigail Riley (UBCO)

Research Partnerships

UBC's partnership activities enable the university to share its research expertise, capacity and infrastructure with industry, government and non-profit partners to translate new knowledge into real-world applications.

Source: https://research.ok.ubc.ca/innovation-impact/

Community Partnerships

PRINCIPLE

LEVERAGE COMMUNITY AND RESEARCH PARTNERSHIPS.

INTENT

Develop new and leverage existing partnerships with community, industry and government to promote discovery, research and innovation, and strengthen opportunities for local and regional education and engagement with the Lands to advance ecological health and community well-being.

STRATEGIES TO IMPLEMENT THE COMMUNITY PARTNERSHIP PRINCIPLE

- Seek Syilx engagement and partnerships for research and use of the West Campus Lands.
- Pursue and build partnership opportunities with industry and government, aligned with advancing land-based research and innovation.
- Develop local partnerships in the community to provide opportunities for education and public engagement with the Lands that help advance ecological health and community well-being.

FIGURE 2.12 (TOP)**:**
Work and Study at UBC. Source: UBC Brand & Marketing

FIGURE 2.13 (BOTTOM)**:**
Summerland Research & Development Centre. Credit: Tania Simpson

Cost Effectiveness

PRINCIPLE

DESIGN IN A WAY THAT IS COST EFFECTIVE AND OPTIMIZES FLEXIBILITY.

INTENT

Minimize future capital and operating costs while optimizing flexibility for development over time.

STRATEGIES TO IMPLEMENT THE COST EFFECTIVENESS PRINCIPLE

- Provide a long-range road map for use and development, facilitating efficient phasing.
- Ensure efficient use of the land, its management and servicing.
- Work within the regulatory and servicing constraints of the site and its locational resources.

FIGURE 2.14 (TOP)**:**
UBCO Plant Growth Facility. Source: www.chandos.com

FIGURE 2.15 (MIDDLE)**:**
UBCO Aerial 2018. Source: UBC Brand & Marketing

FIGURE 2.16 (BOTTOM)**:**
Water Utility. Source: UBC Brand & Marketing

2.3 POTENTIAL FUTURE USES

Through engagement with campus leadership, faculty and staff, and based on the Vision and Planning Principles, potential future research, academic and campus community uses were identified for the West Campus Lands, which are summarized in Table 2.1. A full detailed list is included in Appendix A. These uses informed the land use categories included in the Conceptual Structure Plan.

TABLE 2.1: Potential Land Uses

Potential Land Uses	Potential activities include, but not limited to:
Agricultural Research	General crop studies; orchard studies; technology testing (e.g. smart watering systems); viniculture studies (e.g. experimental/ demonstration winery)
Agro-ecology Research	Agro-ecology & permaculture; climate change & resiliency studies (e.g. climate resilient food crops); irrigation/water studies (e.g. water-wise irrigation strategies); micro-forestry; soil ecology (e.g. nutrient availability/cycling); invasive species management; technology testing; native plant botanical garden
Community & Industry Partnerships	Community farm/garden/food hub; wildlife viewing; education/ interpretation; research partnerships; technology testing
Conservation, Rehabilitation, Compensation	Robert Lake restoration; habitat enhancement (e.g. Great Basin Spadefoot)
Ecology Research	Field research; study of naturalized environments; wildlife studies (e.g. Robert Lake waterfowl)
Indigenous Learning and Research	Agro-ecology & permaculture; Indigenous plant research; rehabilitation (e.g. Sylix ecological knowledge for restoration); partnerships/engagement (e.g. En'owkin Centre)
Sustainability Research	Sustainability studies (e.g. sustainable agriculture); technology studies, solar energy research (e.g. agri-voltaics); environmental monitoring (e.g. microbial communities, nutrients, GHG production)

3. Site Feasability Assessment

The Conceptual Structure Plan is informed by a Feasibility Assessment of the existing conditions of the West Campus Lands, the aim of which was to develop a comprehensive understanding of the Lands, their key attributes, and the considerations and implications for their potential future use.

3.1 EXISTING LAND USE AND CONTEXT

The West Campus Lands consist of four legal parcels, totalling approximately 45 hectares (112 acres), directly west of the UBCO Main Campus.

NEIGHBOURING USES

- City of Kelowna greenfield lands to the north;
- Ponderosa pine woodland area and the UBCO Main Campus to the east. (Note: Two narrow legal parcels, not owned by UBC, along the eastern edge of the West Campus Lands almost entirely separate the lands from the Main Campus.)
- City of Kelowna greenfield lands and the Glenmore Landfill to the west.
- Robert Lake and rural residential properties to the west and south.

CURRENT LAND USES WITHIN WEST CAMPUS LANDS

- Agricultural Production: The majority of the West Campus Lands are undeveloped leased land used for forage production (alfalfa).
- UBC Plant Growth Facility: A 462 sq. m (5000 sq. ft.) greenhouse facility supporting agricultural research, which required a Non-Farm Use approval from the Agricultural Land Commission.
- Three leased Single Family Residential Homes.
- Occasional research activities at Robert Lake and other areas of the West Campus Lands.

FIGURE 3.1 (TOP)**:**
UBCO West Campus Lands Aerial View.
Source: Google Earth, 2022.
Note: Outline of West Campus Lands shown is approximate

FIGURE 3.2 (CENTER)**:**
Lot 1 looking southwest.
Source: Kasian

FIGURE 3.3 (BOTTOM LEFT)**:**
Lot 1 looking south to Robert Lake.
Source: Kasian

FIGURE 3.4 (BOTTOM RIGHT)**:**
UBCO Plant Growth Facility Lot 1. Source: Kasian


Glenmore
Landfill
Greenfield
Lands
UBCO Main Campus
West Campus
Lands
West Campus
Lands
Lot 1
Greenfield
Lands
Lot 1
Lot B
Lot A
Lot C
Robert Lake

3.2 EXISTING CONDITIONS ANALYSIS: SUMMARY OF KEY SITE CONSIDERATIONS

In 2021, UBC commissioned an Existing Conditions Analysis to assess applicable regulations, environmental sensitivity, archaeological potential, agricultural capability, and available utilities for the West Campus Lands [1]. This report has been used as the basis to identify the key site considerations to inform the Conceptual Structure Plan.

The following tables summarize the key site considerations and their implications for the Conceptual Structure Plan and associated future use of the West Campus Lands. Table 3.1 summarizes regulatory considerations, while Table 3.2 summarizes site characteristics. Refer to Appendix B for a full existing conditions analysis providing detail on the items noted in the tables.

TABLE 3.1: Key Site Considerations: Regulations

Key Site Considerations: Regulations	
Consideration	Implication
ALR Designation: The West Campus Lands are within the Agricultural Land Reserve (ALR).	ALR designation places limits on non-farm uses and limits on building sizes. Any deviations from ALR requirements requires the approval of the Agricultural Land Commission (ALC).
City of Kelowna Zoning: A-1 Agricultural.	Any non-agricultural use, not identified as permitted under A-1 zoning, requires City approval and potential rezoning.
City of Kelowna Official Community Plan Development Permit Areas (DPA): The West Campus Lands are fully covered by the Farm Protection DPA, and partially covered by the Wildfire DPA, Hazardous Conditions DPA, and Natural Environment DPA.	Development of buildings on the West Campus Lands will need to meet the requirements of the applicable DPAs.
City of Kelowna Official Community Plan Educational/ Institutional (EDINST) designation: The area south of Upper Campus Way is classified for Educational/ Institutional uses in the Official Community Plan.	The City is open to the use of this area of the West Campus Lands for educational and institutional buildings, rather than just for agricultural use.
Legal Charges: There are a series of legal charges registered on the titles for the West Campus Lands lots, primarily for existing services infrastructure on the West Campus Lands.	Limitations are placed on development and infrastructure on areas within the areas of legal charges, potentially requiring relocation of existing services, easements or purchase of additional lands.
Municipal Road Reservation Covenant: There is an existing road reservation covenant with the City of Kelowna to connect John Hindle Drive to Country Club Drive across the West Campus Lands.	The potential future roadway should be considered in the Conceptual Structure Plan with further discussion with the City required to determine need, timing and alignment.
Airport Restrictions: The sloped eastern side of the West Campus Lands falls under the area of potential restrictions due to the flight path overhead.	Height limitations may be applied to buildings on the eastern side of the site, and approvals are required from the applicable regulatory bodies.

1 UBC Okanagan West Campus Lands Existing Conditions Analysis, January 2022, prepared by CTQ Consultants.

FIGURE 3.5: Robert Lake salt crusted saline meadow.
Source: Abigail Riley (UBCO)

TABLE 3.2: Key Site Considerations: Site Characteristics

Key Site Considerations: Site Characteristics	
Consideration	Implication
Access to Main Campus: There are limited opportunities for direct access from the Main Campus to the West Campus Lands due to topography (sloped areas on the north-east perimeter), and narrow legal lots/utility right of ways on the eastern perimeter.	Program activities requiring strong connections to the Main Campus should be located in the south-eastern portion of the West Campus Lands where there is the greatest potential for connection.
Topography: The eastern portion of the site is sloped, with relatively flat lands across the centre and west of the site.	Building development, on the eastern side of the site, will require site works to address the sloped conditions.
Environmental Sensitivity: Two environmentally sensitive areas were identified. The alkaline ecosystem south of John Hindle Drive, associated with Robert Lake, is the most sensitive area. The eastern Coniferous Woodland is also environmentally sensitive, but not to same degree.	Uses which would disturb the alkaline ecosystem are not recommended. Uses in the Coniferous Woodland should be sensitive to that ecosystem.
Agricultural Capability: The sloped eastern portion of the site has the most favourable soil conditions for agricultural use. The area around Robert Lake has the least favourable conditions, while the centre of the site has moderate limitations due to the soil types in these areas.	Use of the Lands should allow for areas for research across the various soil classification zones of the site.
Archaeological Potential: Five sites of archaeological potential were identified on the West Campus Lands around John Hindle Drive and on the north-eastern perimeter, with one site containing a confirmed archaeological find.	Development must be avoided in these areas until provincially required assessments and approvals are undertaken.

TABLE 3.2: Key Site Considerations: Site Characteristics (cont'd)

Key Site Considerations: Site Characteristics	
Consideration	Implication
Saskatoon Berry Area: An area in the south-east quadrant of the West Campus Lands contains rare Saskatoon Berry bushes with high Syilx value.	This area should be retained as Saskatoon Berry habitat for study and harvesting. Uses around the area should be sensitive to the preservation of this zone.
Wildlife Movement: There are wildlife movement patterns that run across the West Campus Lands linking the Coniferous Woodland with Robert Lake. This linkage is particularly significant for the at risk Great Basin Spadefoot.	Use of the lands between the two ecosystems should prioritize open land activities over buildings, to maintain the potential for wildlife movement across the lands.
Infrastructure: There is no sanitary service on the West Campus Lands. Connection points from City infrastructure or UBC infrastructure are available for water and shallow utilities.	Uses requiring sanitary service should be consolidated and located close to the Main Campus for potential connections to minimize the extent of new sanitary distribution.
Stormwater: The West Campus Lands drain to the south-west to Robert Lake.	Discharge from the West Campus Lands into Robert Lake has the potential to alter the alkalinity of the unique ecosystem. Uses must consider stormwater management, including controlling discharge and providing treatment.

FIGURE 3.6: Saskatoon Berry Area
Source: Abigail Riley (UBCO)

FIGURE: Lot 1 looking west.
Source: Abigail Riley (UBCO)

3.3 POTENTIAL USE FEASABILITY ANALYSIS

To communicate the potential of the West Campus Lands and identify which locations may be most feasible for potential future uses, the Lands have been broken into six Future Use as shown in Figure 3.7, based on their site characteristics.

Refer to Appendix B for the full analysis of the potential of each Future Use Area. Table 3.3 below provides a summary of the potential recommended uses for each area, based on their site characteristics and regulatory limitations.

FIGURE 3.7: Development Areas Map. Background Source: Google Earth, April 2022

TABLE 3.3: Recommended Potential Uses by Area

Recommended Potential Uses	
Future Use Area	Recommended Potential Uses
Area A	Consideration for conservation, restoration, ecological research activities and limited passive recreation associated with the natural ecosystem.
Area B	As per Area A, with the additional potential use for agricultural research in the eastern zone sensitive to the adjacent environmentally sensitive ecosystem.
Area C	Consideration for larger scale mixed research activities such as agricultural, agro-ecology, ecological and sustainability research initiatives.
Area D	Consideration for conservation and restoration activities for the Coniferous Woodland, perhaps in association with land-based research that can work in concert with the natural ecosystem. The existing orchard provides opportunity for agricultural research.
Area E	Preservation of an existing area of rare Saskatoon Berry plants for study and harvesting activities. Prioritize remaining area for activities that would benefit from a direct relationship with the Main Campus and a future road connection.
Area F	Consideration for more typical education or public-facing community-use spaces given the City's EDINST (education/institutional) land use designation and potential access and servicing extension from the Main Campus.

4. Conceptual Structure Plan

The Conceptual Structure Plan – its Vision, Planning Principles and land use framework – will serve as a resource to research applicants and to the Campus Planning staff and campus leadership assessing the appropriateness of a proposal's use and location within the West Campus Lands.

Building on the Vision and Planning Principles established for the West Campus Lands, this section summarizes the three conceptual frameworks comprising the Conceptual Structure Plan:

- Site Organization and Land Use.
- Site Access and Circulation.
- Infrastructure and Site Servicing.

This section concludes with key implementation steps, including a summary of considerations and dependencies, required regulatory approvals, existing UBC policies/guidelines that can be applied to the West Campus Lands, and future process and governance considerations within the West Campus Lands.

For information on the process that led to the final Conceptual Structure Plan, including preliminary plan options and feedback received, refer to Appendix C.

FIGURE: UBCO Aerial 2018
Photo Credit: UBC Brand & Marketing

FIGURE: UBCO Aerial 2021
Source: UBC Brand & Marketing

4.1 SITE ORGANIZATION AND LAND USE

Building on the Potential Future Use Areas identified in Section 3.3, Figure 4.1 on the following page provides an overview of the general site organization and recommended land use areas.

ACADEMIC HUB

The area south of Upper Campus Way has been identified as an area for an Academic Hub. This open site, designated Educational/Institutional (EDINST) under the City of Kelowna's Official Community Plan (OCP) and with strong potential connections to the Main Campus, is an ideal location for a building providing teaching and research space (e.g. research labs) and/or community services (e.g. food hub) associated with agriculture and the ecology of the West Campus Lands. Positioning a future building here will reinforce the new gateway to the Main Campus, providing an opportunity to express UBCO's identity in the built landscape.

AGRICULTURAL RESEARCH

This area could be suited to multiple agricultural research uses taking into account the existing moderate soil limitations, and the potential of the existing orchard in the northeast quadrant. It is anticipated that this zone will be primarily open-field research with only minor ancillary structures supporting the agricultural research activities, such as equipment sheds. Agricultural research in this area should take into account the migration patterns of wildlife between Robert Lake and the Coniferous Woodland.

AGRO-ECOLOGICAL RESEARCH

This area has been identified for Agro-ecological research that considers synergies between agricultural use and the natural ecologies of the site. These zones include three unique ecosystems for study:

- The sloped Coniferous Woodland with mild soil limitations on the eastern site perimeter.
- An area of moderate soil limitations south of John Hindle Drive.
- Portions of Lots B and C immediately north of Upper Campus Way, which include the Saskatoon Berry preservation zone for special consideration.

CONSERVATION AND REHABILITATION

The area around Robert Lake has been identified for rehabilitation and conservation of areas with high environmental value and sensitivity. Access to these areas would be limited to research activities in support of conservation.

ECOLOGICAL RESEARCH

This area has been identified to support general ecological research and sustainability studies. This area is located immediately north of John Hindle Drive, in the transition zone between the saline meadow ecosystem adjacent to Robert Lake and the existing alfalfa production area, creating an opportunity to research the interaction between potential uses in transition areas.

RESEARCH AND OPERATIONAL SUPPORT HUB

This flexible area will accommodate two primary functions: Operations Support and Research. Operations support will be a common area for equipment, materials and operational support structures (e.g. storage sheds, small washroom building) to support activities across the West Campus Lands. Operations support will be prioritized on the western side of the Hub. This area will act as a node for operational vehicle traffic and site services distribution out into the West Campus Lands.

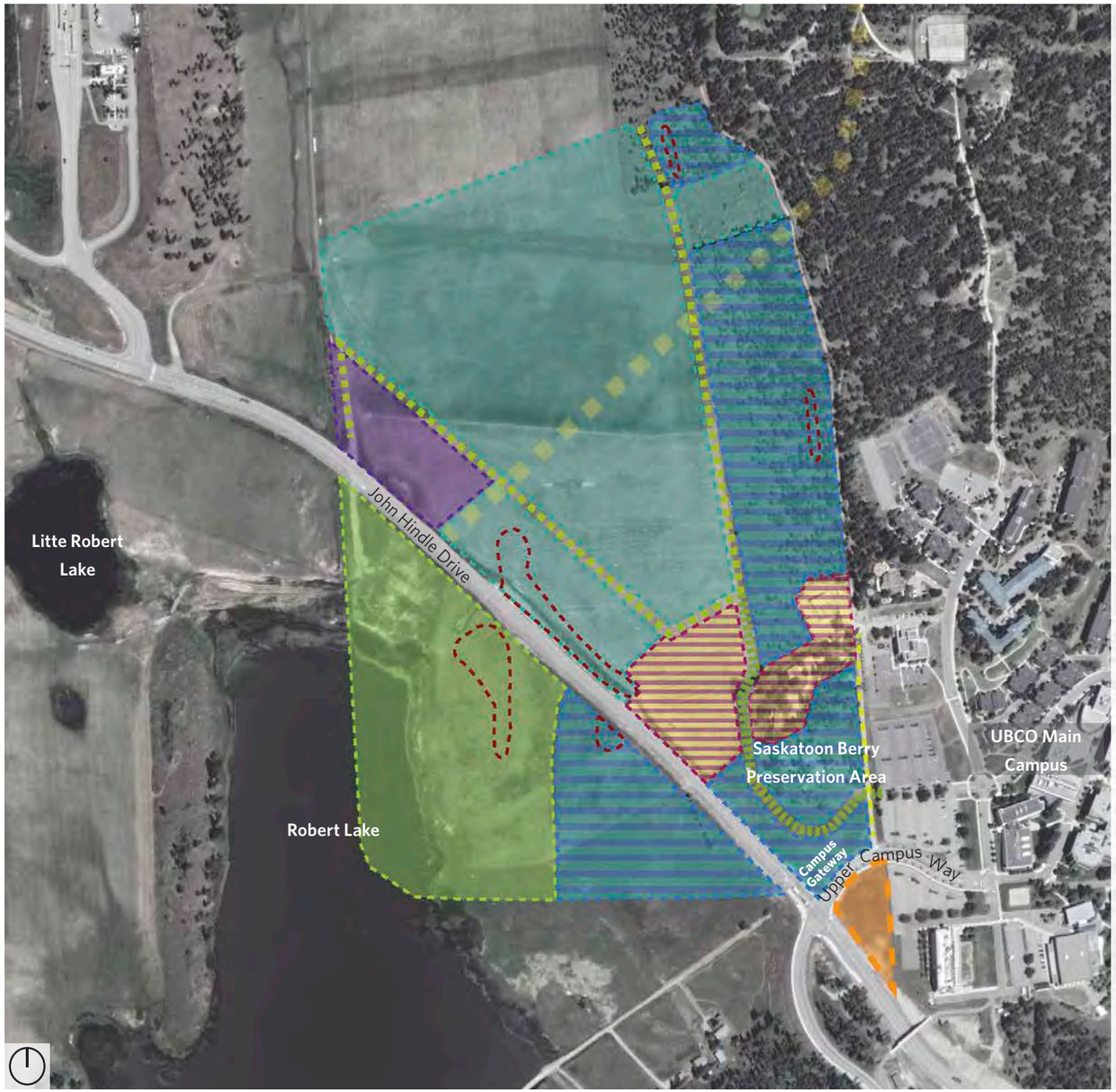
On the eastern side of the Hub, in the more favourable soil conditions, a potential area for research activities and structures, such as greenhouses, and in particular viticulture studies, is proposed. This area is in the developed area adjacent to the existing Plant Growth Facility, and would include the planned expansion to that facility. The Research and Operational Support Hub is anticipated to contain larger built structures and will benefit from close proximity to and direct access from the Main Campus.

AREA SPECIFIC CONSIDERATIONS

- **Areas of Archaeological Potential:** The five areas of archaeological potential are identified on the land use plan for special consideration, and cannot be disturbed without provincially required assessments and approvals having been completed.
- **Saskatoon Berry Preservation Area:** A rare variety of Saskatoon Berry plants have been identified in this area and should be preserved and used for Indigenous studies and research.

Future Land Use Areas			
Area name	**m2**	**ha**	**%**
Agricultural Research	188,914	18.89	43%
Agro-ecological Research	115,576	11.55	26%
Conservation & Rehabilitation	83,934	8.39	19%
Research & Operational Support Hub	30,406	3.04	7%
Ecological Research	17,573	1.75	4%
Academic Hub	5,456	0.55	1%

FUTURE LAND USE



LEGEND

ACADEMIC HUB
- Community and student outreach and education
- Key location for academic / laboratory building(s)
- Connection to heath services / promotion
- Climate research and education

AGRICULTURAL RESEARCH
- General crop research
- Orchard research
- Technology testing (e.g., smart watering systems)
- Viniculture research (e.g., experimental/demonstration winery)

AGRO-ECOLOGICAL RESEARCH
- Agro-forestry
- Agro-ecology and permaculture research
- Climate change and resiliency studies (e.g., Climate resilient food crops)
- Irrigation/water studies (e.g., Water wise irrigation strategies)
- Micro forestry
- Soil ecology (e.g., nutrient availability)
- Invasive species management
- Technology testing
- Native plant botanical garden/nursery
- Orchard research and expansion
- Saskatoon Berry Preservation Area

CONSERVATION & REHABILITATION
- Robert Lake restoration
- Habitat enhancement (e.g. protecting Great Basin Spadefoot)

ECOLOGICAL RESEARCH
- Research on agricultural impact on ecology (e.g.,effects of irrigation)
- Sustainability studies
- Potential as extended buffer to protect wetlands area
- Potential to protect/enhance great basin spadefoot habitat

RESEARCH & OPERATIONAL SUPPORT HUB
- Equipment storage; composting
- Parking; loading and staging
- Potential connection with viticulture research for experimental winery
- Existing and future research greenhouses
- Agrivoltaic research

FIGURE 4.1: Conceptual Structure Plan: Land Use Plan

Existing Municipal Road Reserve

Areas of Archaeological Potential

Refer to Site Circulation Plan for Detail

4.2 SITE ACCESS AND CIRCULATION

The siting of the individual land use areas was informed in part by potential circulation routes, for both people and wildlife, as well as connection points to both the Main Campus and the surrounding areas. Figure 4.2 on the following page illustrates the key circulation and connection opportunities, including:

EXISTING MUNICIPAL ROAD RESERVE

An existing covenant for a future road is registered on title for Lot 1. A conceptual location for the future road is shown in the Conceptual Structure Plan. Further discussion with the City is required to confirm the purpose, timing and alignment for this road. In preparation, UBC should undertake further analysis to determine a preferred alignment and design that is consistent with the University's Vision and Planning Principles for the West Campus Lands, and provides efficient access to the different use areas across the site.

NEW PROPOSED OPERATIONAL AND SERVICE VEHICLE CONNECTIONS

The proposed routes are based on considering the existing site conditions and topography and maximizing efficiency to reduce the amount of area required to be given over to circulation. The roadways are designed to follow transitions between different land uses to provide main access. The majority of the circulation is anticipated around the Research and Operational Support Hub, therefore the roadway there will be developed for 2-way traffic at 6m wide. As the roadways branch off to distribute around the West Campus Lands, they will reduce to single lane traffic at 4m wide. The intention of the Conceptual Structure Plan is to identify a rural gravel road standard to help minimize impact on the lands. Refer to Appendix D for greater detail on roadways.

NEW PROPOSED CONNECTION TO THE MAIN CAMPUS

The new operational and service vehicle internal roadways are proposed to connect to the Main Campus via the central drive aisle in Parking Lot G that connects to Discovery Avenue and the major circulation arteries of the Main Campus. This connection will cross over the narrow parcel currently owned by the City and will require an easement or potential purchase of lands from the City.

EXISTING ACCESS POINTS

Existing gated access points to the north and south sides of John Hindle Drive will be maintained, with limited access permitted. No further roadways will be provided south of John Hindle Drive in order to protect the sensitive ecosystem. The existing gravel drive serving Lots B and C off Upper Campus Way will be retained, but will be used for emergency access only to reduce potential effects on traffic on Upper Campus Way.

PEDESTRIAN/BIKE CIRCULATION

Gravel pedestrian and bicycle paths will be provided along the 1m wide shoulders of the 6m wide proposed operational and service vehicle connection route. The smaller 4m wide roads, will allow for pedestrians or bikes to pull off to the 0.5m wide shoulder as vehicles pass. These internal routes are not intended for general public use but to provide research access only. The Quail Flume Trail that runs along the east side of the West Campus Lands within the GEID parcel will continue to provide public access for pedestrians and cyclists.

WILDLIFE CONNECTIONS

The identification and development of specific uses across the West Campus Lands should consider the maintenance of the east-west connection for wildlife movement and migration between Robert Lake and Coniferous Woodlands. Modifications to John Hindle Drive to support this movement are not within the scope of the Conceptual Structure Plan, which is under the control and direction of the City of Kelowna.

SITE CIRCULATION

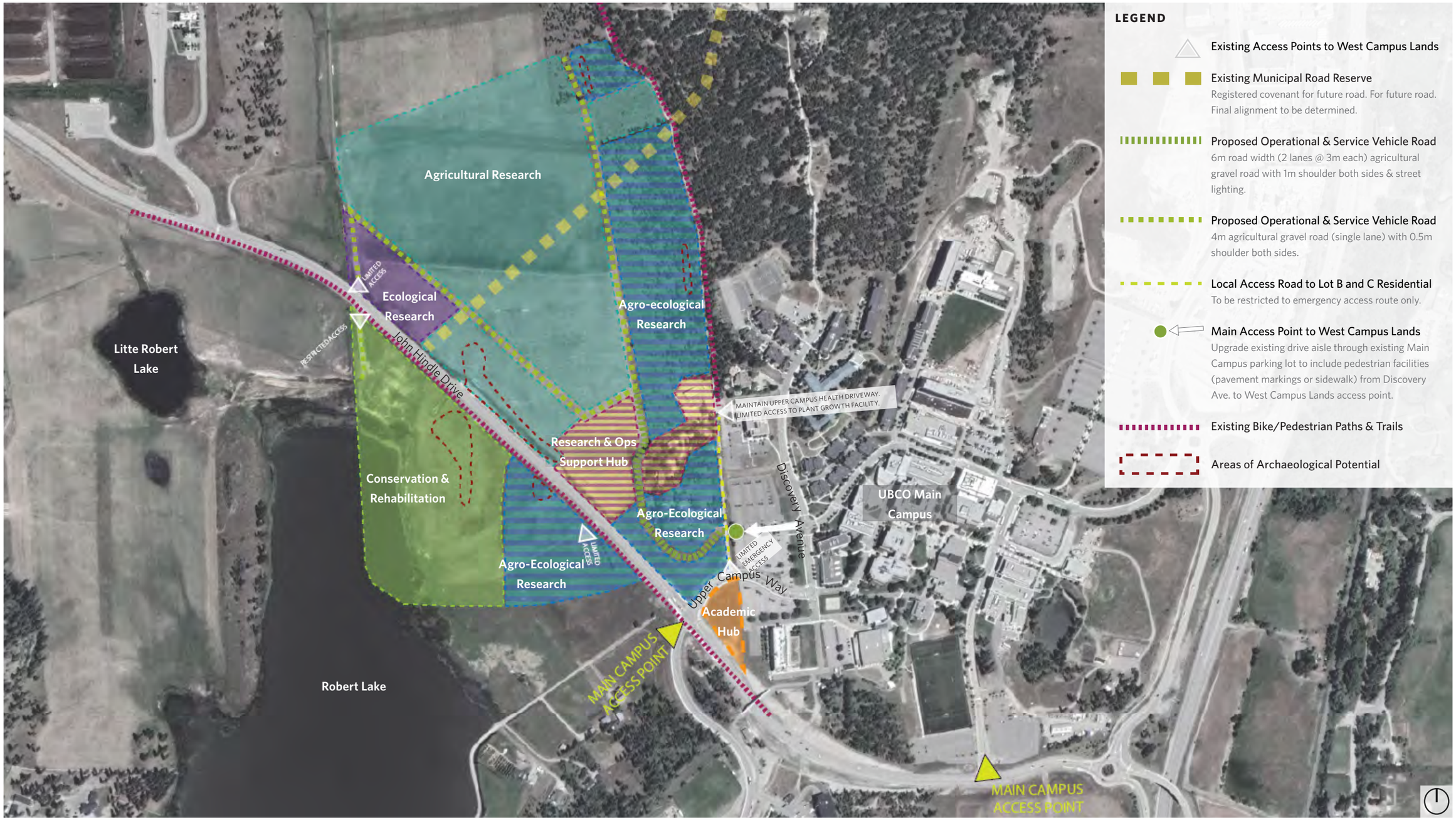


FIGURE 4.2: Conceptual Structure Plan: Circulation Plan

4.3 INFRASTRUCTURE AND SITE SERVICING

The following is a summary of the proposed infrastructure and servicing approach, with a site services concept plan, Figure 4.3, describing the scope on the following page. Refer to Appendix D for more details on site servicing.

WATER SERVICES

Water services are proposed to be extended for the Research and Operational Support Hub and to provide irrigation for future agricultural research uses. The main tie in will be to the GEID main on the eastern perimeter with mains routed along the proposed main operational and service vehicle road to the Research and Operational Support Hub. Two future connections for irrigation north and south of John Hindle are proposed with the subsequent distribution built out when required.

Servicing for the Academic Hub is proposed to tie into the existing water service for the adjacent Reichwald Health Sciences Centre (RHSC) building to the east.

SHALLOW UTILITIES

Gas, electrical and communications/IT services would be provided to the Research and Operational Support Hub through connections to existing infrastructure on the Main Campus at Discovery Way. Gas and electrical services are provided by Fortis BC.

Servicing for the Academic Hub would connect by extending existing services from the adjacent building.

DISTRICT ENERGY

The only portion of the West Campus Lands that is proposed to be connected to the existing District Energy System is the Academic Hub, which will connect to the system from the adjacent RHSC building.

SANITARY SEWER

Due to the topography of the West Campus Lands, a low pressure system is proposed for sanitary sewer serving the Research and Operational Support Hub, with individual pumps at future buildings, as required. This system would tie into the existing gravity system near the intersection of Discovery Avenue and University Way.

Sanitary Sewer servicing for the Academic Hub is proposed to be extended from the existing gravity sanitary service of the adjacent RHSC building.

No other sanitary service distribution is anticipated at this time.

STORM WATER

The conceptual approach to storm water management is to manage flows to protect the unique alkali habitat and capacity of Robert Lake and its surroundings. In addition to meeting the City of Kelowna bylaw requirements for storm water management, it is anticipated that the City will require the storm water system for future development within the West Campus Lands to be designed to ensure there is no impact to downstream infrastructure including Robert Lake.

The City could consider any runoff volume as a negative impact environmentally and reduced capacity due to the absence of an outlet at Robert Lake. To manage the increase in runoff flow and volume related to future development, the servicing concept for the West Campus Lands includes the following:

- The UBC Okanagan Integrated Rainwater Management Plan (IRMP) should be implemented to manage and retain onsite storm water up to 50mm for all additional impervious areas due to the development of the Research and Operational Support Hub. Any increased runoff beyond the 50mm captured onsite shall be retained by a storm water facility onsite within the West Campus Lands and disposed through infiltration or evaporation. The storm water facility shall be sized to accommodate up to and including the 100-year event with an emergency overflow to John Hindle Drive.

INFRASTRUCTURE AND SITE SERVICES

- The IRMP should also be implemented for the Academic Hub to manage and retain onsite stormwater up 25mm for all additional impervious areas. As the storm water systems within the Main Campus are already at capacity, it is not feasible for the proposed development to connect, and all runoff beyond the 25mm shall be retained onsite via infiltration tank or alternative solution and accommodate up to the 100-year event.
- Additional technical work will be required to confirm the sizing of proposed storm water facilities.
- Roads will be used to manage storm water via ditching, low impact drainage and/or attenuation.
- All proposals for future use of the West Campus Lands will need to demonstrate a water balance into Robert Lake that matches the current state.
- Future storm water management design should consider increasing attenuation and storm water quality prior to the culverts crossing John Hindle Drive, notably to mitigate any effect of irrigation or other application of imported water and any use of soil or plant supplements.

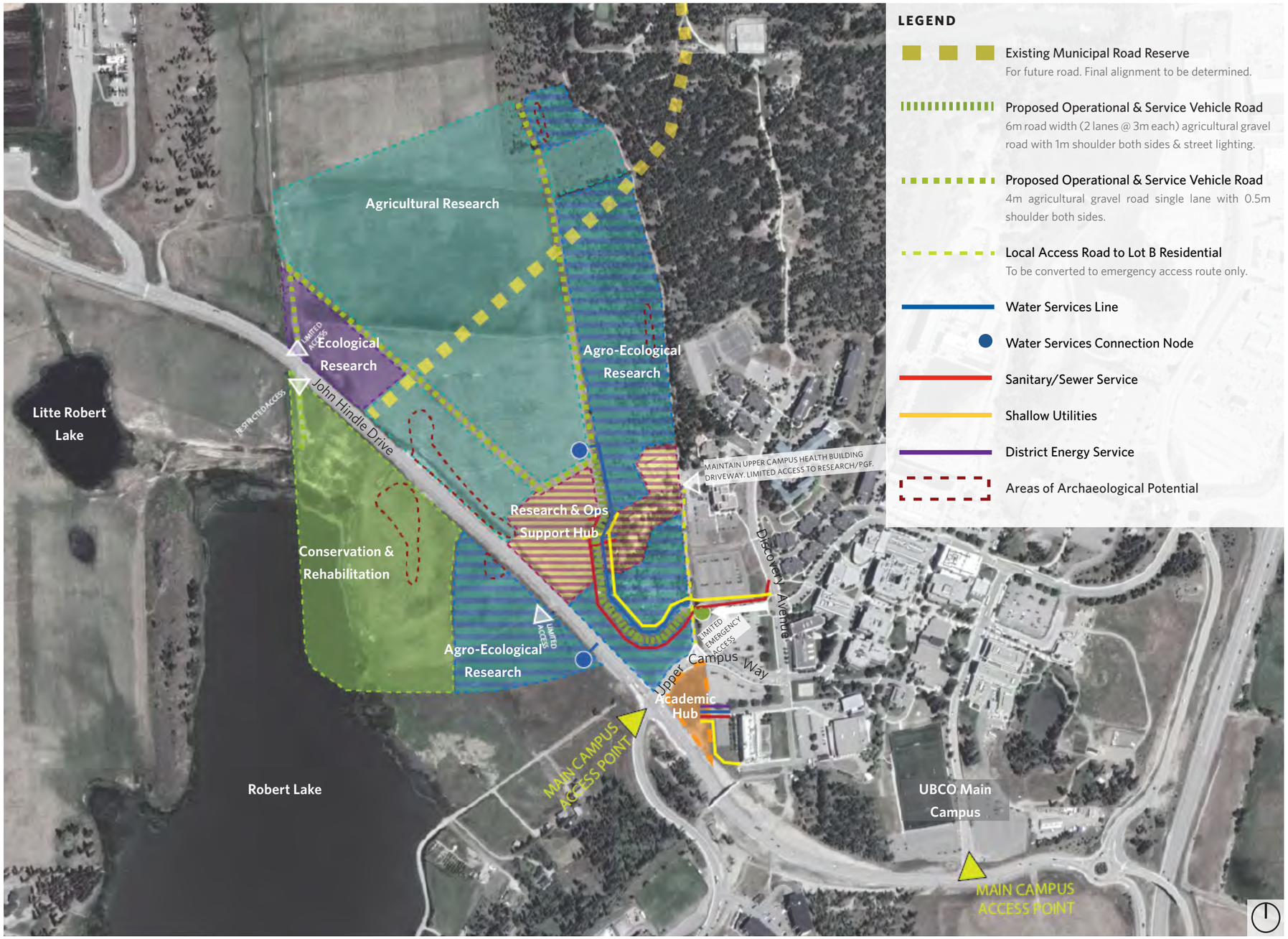


FIGURE 4.3: Conceptual Structure Plan: Services Plan

4.4 IMPLEMENTATION

4.4.1 CONSIDERATIONS & DEPENDENCIES

The Conceptual Structure Plan is a high-level land use plan that will assist UBCO in identifying the appropriate area for different projects or activities on the West Campus Lands. At this time, specific projects have not been identified, therefore the information included in this section focuses primarily on supporting infrastructure, dependencies and future considerations. This is not intended to show a required order of development to support use of the West Campus Lands.

DEVELOPMENT OF AN OPERATIONS SUPPORT ZONE WITHIN THE RESEARCH AND OPERATIONAL SUPPORT HUB AND CONNECTION TO MAIN CAMPUS

A road connection may be considered from the Main Campus to access the Operations Support Zone, consistent with Figure 4.2 Site Access and Circulation Plan. Basic infrastructure could be extended along this route with a main site services connection hub established within the area. As use of the West Campus Lands increases, additional services could be distributed from this area. Within the Operations Support Zone itself, UBC may consider building basic support structures, such as a small washroom facility and an equipment storage shed in anticipation of the future needs on the West Campus Lands.

CONSERVATION AREAS

As the Conservation area activities will not require major servicing or road networks, these activities could begin with very little build-out required by UBC.

RESEARCH AREAS

As research projects are identified for the West Campus Lands, the necessary gravel roads and service infrastructure to serve them would need to be implemented. Future expansion of the Plant Growth Facility could be accommodated within the Research Zone of the Research and Operational Support Hub. If possible, it is recommended that the first research areas be developed close to the Research and Operations Support Hub to co-locate uses which may require early services being built out in the area, with subsequent projects moving out from the Hub. However, it is understood that research activities need to be located where the site is most supportive of their requirements (e.g., appropriate soil conditions), which may necessitate that they be located at a distance from the Hub. Necessary supporting infrastructure, such as roads, services or buildings, will require consideration when proposals for future land uses are assessed. Some uses may require modifications to the Operations Support Zone to support the activities.

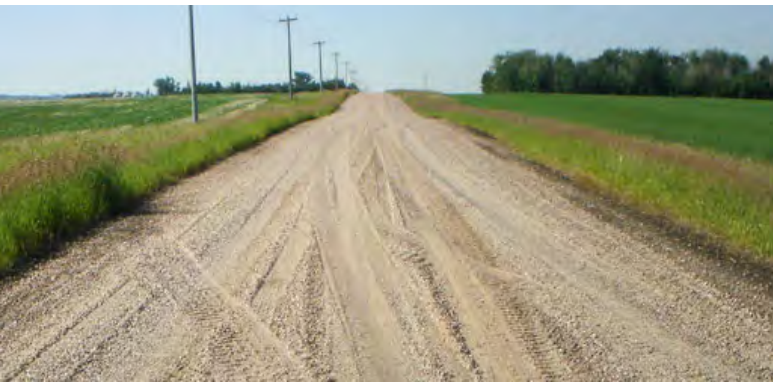
ACADEMIC HUB

The Academic Hub is a standalone component of the Conceptual Structure Plan and could be implemented at any time. The time line for implementation of this area is anticipated to be longer-term due to more extensive programming, design and construction required to build out an academic or community use building in this area.

A high-level budget for roadways and infrastructure within the West Campus Lands was established to provide order of magnitude costing. This budget is detailed in Appendix D and reflects 2022 costing. The budget would be expected to need updating over time to reflect contemporary cost conditions.

FIGURE (TOP)**:** Rural gravel road.
Source: www.strathcona.ca/transportation-roads/construction?rural-construction/rural-gravel-program

FIGURE (BOTTOM)**:** Inside of Lot 1 Plant Growth Facility
Source: Abigail Riley (UBCO)



4.4.2 REGULATORY PROCESS

The Conceptual Structure Plan developed through this project process can be used as a basis for discussions seeking approvals of proposed land uses and development applications to the Agricultural Land Commission (ALC) and City of Kelowna. As individual projects are identified within the West Campus Lands, additional regulatory bodies will need to be consulted, in particular the Kelowna International Airport (YLW), Transport Canada and NAV Canada.

AGRICULTURAL LAND COMMISSION (ALC)

The West Campus Lands are within the provincial Agricultural Land Reserve (ALR), and as such, the ALC needs to approve any development applications for these lands. This plan may be used by UBCO to seek the ALC's endorsement of the overall concept of the Conceptual Structure Plan. Once general approval is provided, individual applications for the plans sub-components, such as structures and roadways, would then be made as projects are identified for the West Campus Lands.

Key items for regulatory approval include:

- The anticipated form of development within the Academic Hub is anticipated to require ALC approval for an exclusion of this portion of land from the ALR (or a non-farm use approval).
- All roads, including unpaved farm roads, require application for approval. The priority of the ALC is to preserve as much land as possible for agricultural use and therefore prioritizes minimizing roadways to maximize the agricultural potential of the property.
- As identified in Appendix B, research structures would be limited to 100m2 per parcel. If a larger size structure is desired, an application would need to be made to the ALC. If the research structure supports research on farm uses, it has a greater likelihood of being approved.
- While the ALC identifies that there is no requirement to farm agricultural land within the ALR, conservation and restoration activities may require an application. In the past, the ALC has allowed for such activities as restoring agricultural lands within the ALR back to wetlands, through their application and approval process.

CITY OF KELOWNA

The West Campus Lands are currently zoned as A-1 Agricultural in keeping with its designation as part of the Agricultural Land Reserve. Development activities on the land will require Development Permit, Farm Protection Development Permit and Building Permit applications to the City. Depending on the specific location of proposed developments, additional specialty development applications may apply, including the requirements of the Natural Environment, Wildfire, and Hazardous Conditions Development Permit Areas (DPA). The applicable specific requirements of these DPAs will vary based on the nature of the individual projects and cannot be anticipated at this time. The requirements of each of the DPAs will need to be coordinated so that proposed developments either conform with all applicable requirements or seek a Development Variance Permit that captures all deviations and proposes agreeable alternative means to achieve the City's requirements.

If the proposed use does not meet the regulatory requirements the OCP and/or A-1 Agricultural zoning, an Official City Plan Amendment and/or Rezoning would be needed. At this time and with the current level of detail of the Conceptual Structure Plan, it is not anticipated that rezoning will be required except for the area where the Academic Hub is proposed. This area is identified in the OCP as Educational/Institutional (EDINST), however, it is still zoned A-1 Agricultural under the City of Kelowna bylaws. This discrepancy will need to be addressed, however, the land use designation of the OCP is in alignment with the types of uses anticipated for the Academic Hub.

NARROW LEGAL LOTS

The narrow legal lots, owned by the City and GEID, that separate the eastern perimeter of the West Campus Lands from the Main Campus in the locations where connections are desired, will need to be addressed. Roadway crossings and service infrastructure crossings of these lands will require easements, as was done to enable the Plant Growth Facility. Alternatively, UBC could approach the City and GEID to determine if either would be willing to sell these lands to UBC. Consideration would still be required for the GEID right-of-way for their water pipelines.

FIGURE: Narrow legal lots
Photo Credit: Abigail Riley (UBCO)

OTHER KEY REGULATORY BODIES: KELOWNA INTERNATIONAL AIRPORT, TRANSPORT CANADA AND NAV CANADA

Development on the eastern side of the West Campus Lands will need to consider building heights with respect to the requirements of Transport Canada and NAV Canada. Approval from these regulatory bodies will be required for any buildings/structures located at 463m above sea level, and may be required for those located between 447m and 463m above sea level as outlined in Appendix B. The intent of the height restrictions is to protect aircraft safety by ensuring the Obstacle Limitation Surface (OLS), air navigation systems and flight paths are not impacted by proposed developments.

The submission of a Development or Building Permit application to the City of Kelowna, for any areas within Kelowna Airport's OLS, triggers the following requirements:

- Kelowna Airport (YLW): UBC will be required to submit an assessment of the proposed development demonstrating adherence to YLW's outer surface regulation, for YLW's review. If the package is acceptable, YLW will issue a letter of no objection or an exemption.
- Transport Canada: UBC will also be required to submit an application demonstrating adherence to YLW's development regulations to ensure there is no impact on the OLS to Transport Canada for approval.
- NAV Canada: NAV Canada will require review of all the proposed developments across the West Campus Lands, not solely within the OLS, to confirm general conformance with best practices for developments around airports including consideration of such items as sight lines, electronic interference, light pollution and heights.

FIGURE: Robert Lake looking west
Photo Credit: Abigail Riley (UBCO)

FIGURE: Sustainability staff in meetings
Source: UBC Brand & Marketing

4.4.3 POLICY AND DEVELOPMENT GUIDELINES FOR THE WEST CAMPUS LANDS

The Conceptual Structure Plan is intended to function as an organizing framework for the future development of the West Campus Lands. It provides general guidance on the placement of high-level activities, with a circulation and services network designed to maximize flexibility for implementation over time. As specific uses are identified for implementation in the West Campus Lands, the Conceptual Structure Plan will assist in determining the appropriateness of the activity and the most ideal location for that use. The subsequent design and build out of that use, including any new requirements or modifications to infrastructure, would then be based on the program requirements of the function, specific site conditions, development conditions, and, where applicable, should seek to strike a unified aesthetic and vision with UBCO's Main Campus.

Depending on the nature of the project, which may vary from a field for agricultural research with no associated buildings, to a community or academic use building, the following existing UBC guidelines may apply, in whole or in part:

- UBC Okanagan Campus Plan
- UBC Okanagan Design Guidelines
- UBC Wayfinding: Exterior Signage Standards and Guidelines
- UBC Okanagan Whole Systems Infrastructure Plan
- UBC Okanagan Campus Integrated Rainwater Management Plan
- UBC Okanagan Campus Wildland Fire Management Plan

FIGURE: UBCO Gateway
Source: UBC Brand & Marketing

PUBLIC REALM: GATEWAY TO UBCO

While the principal focus of the future use of the West Campus Lands is to promote land-based academic research and to protect and enhance the local ecology, there will be opportunities to develop public realm elements to highlight the functions of the lands and educate the public about research at UBCO and the traditional Syilx uses of the West Campus Lands. In particular, the development of the lands around the Academic Hub and the adjacent area north of Upper Campus Way will provide a unique opportunity to enhance UBCO's identity by establishing an inviting and welcoming gateway entry to the University.

Gateways into the campus play an important role in establishing the University's identity and should be highly legible and provide a means to wayfinding. North of Upper Campus Way, the campus arrival experience could celebrate the Okanagan landscape through a naturalized setting that evokes the history and traditional uses of the West Campus Lands. Complementing the naturalized setting, the development of the adjacent Academic Hub could support a distinguished expression of arrival while providing an open and welcoming experience to the community. To achieve this vision, projects in the Academic Hub might consider the following applicable concepts from the Okanagan Campus Design Guidelines:

- Including materials and colours that are unique to the natural environment, and support UBCO's sustainability initiatives.
- Including plantings that are native to the local ecosystem, that can promote learning, are easy to maintain and drought resistant.
- Design to support and invite student and academic displays and installations that are consistent with the academic mission, and with careful and thoughtful consideration of open space configuration, design and programming.
- Encouraging social interaction, fostering cross-discipline learning and, reflecting Indigenous culture, learning, and research. Spaces should be flexible in their use and allow for creative expression by students and invite a variety of academic activities and learning interventions, both permanent and temporary. Landscape designs should incorporate pedagogical opportunities in botanical, ecological and indigenous learning through plant selection.
- Maximizing environmental and economic sustainability through designs, materials and operations that minimize maintenance, and maximize durability, resilience, and life-cycle costs.

ROADS AND PARKING

The Conceptual Structure Plan identifies major circulation routes to provide access to large areas of land. As the West Campus Lands are developed, further support roads, branching off these main routes, may be required to serve specific uses. To guide the development of roadways, the Conceptual Structure Plan has established a hierarchy of roadways as detailed in Section 4.2.

As access to the West Campus Lands will be restricted to UBCO authorized staff, faculty and students, all vehicle access points should be secured through gates or bollards. General public vehicle, pedestrian and bike circulation is not anticipated on the West Campus Lands.

Dedicated vehicle parking is only anticipated, in a very limited quantity, in the Research and Operational Support Hub, where common equipment/vehicles serving activities on the West Campus Lands will be stored. Consideration could be given to providing shed structures for parking security and the protection of equipment from the elements. Roadways through the West Campus Lands should accommodate vehicle pull-outs for temporary parking on specific sites as required.

BUILDING FORM AND SITING

While the future development of the West Campus Lands does not anticipate the widespread construction of new buildings, there will be the need to provide modestly scaled facilities to support the land-based research activities. Unless required otherwise, these facilities should be focused primarily within the Research and Operational Support Area. The exception to this is the potential for a formal academic building in the Academic Hub.

In determining the siting, orientation and design of buildings on the West Campus Lands, the following key elements should be considered:

- Buildings should be located close to the roadway circulation identified in the Conceptual Structure Plan to minimize additional roadway construction as much as possible.
- Buildings should prioritize compactness to minimize land use, enhance energy efficiency and minimize their effects on the existing ecology.
- Where feasible, buildings should align with area and height restrictions imposed by the ALR, City of Kelowna and airport regulations. Deviations from these restrictions can be considered, however they will require more extensive approval processes.
- In the Campus core, building footprints must align with the campus grid, however, in the West Campus Lands, building footprints should be situated in response to both the dominant landscape contours and passive design objectives. In particular, consideration should be given to avoid locating structures in the more highly sloped areas of the landscape which are identified as falling under the Hazardous Conditions DPA.
- Building siting should consider the potential for movement of wildlife across the West Campus Lands. Where possible, buildings should be grouped, or focussed in the Research and Operational Support Hub, to maximize the open area available for land-based research and wildlife movement.

FIGURE: Ponderosa Pine at WCL.
Source: Abigail Riley (UBCO)

4.5 FUTURE CONSIDERATIONS

4.5.1 FUTURE ENGAGEMENT

The Conceptual Structure Plan and guidelines established in this report are a starting point. The Conceptual Structure Plan is living document, designed to be flexible and responsive to changing needs over time. As this project moves forward, further engagement activities are anticipated to add greater levels of detail to the Conceptual Structure Plan and to move toward the implementation of specific projects within the West Campus Lands. This engagement will take the form of continued conversations with stakeholders already consulted, such as faculty, the City of Kelowna and the ALC, as well expanding out to additional voices, such as the Okanagan Nation Alliance, potential industry partners and interested community groups. Through a process of continuous engagement UBCO can guide the development of the West Campus Lands in accordance with the Vision and Planning Principles established through this project.

There are a number of areas of ongoing work and discussion that will need to occur in lead up to and during implementation of the Conceptual Structure Plan including:

- Working with the City of Kelowna to finalize the requirement for the potential road connection between John Hindle Drive and Country Club Drive.
- Working with the City and community partners to improve wildlife movement across John Hindle Drive.
- Working to further capture Indigenous knowledge and understanding of the West Campus Lands

4.5.2 UBC LAND USE GOVERNANCE

To ensure the use of the West Campus Lands is in accordance with the Conceptual Structure Plan, UBCO will need to identify a formal approval process and governance structure. This process will assess requested land uses, identify the ideal location with respect to the Conceptual Structure Plan, and identify the associated limitations and regulatory processes that a project will be subject to given its location. This process will be crucial to ensure that UBC's Vision and Planning Principles for the West Campus Lands are upheld.

Credits

The UBC Okanagan West Campus Lands Conceptual Structure Plan was developed between Spring 2022 and Winter 2023 and was developed with extensive input of Campus Planning, stakeholders, staff, faculty, students and aided by technical experts from multiple disciplines.

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Campus Planning