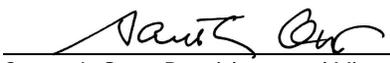


SUBJECT	UBC OKANAGAN CAMPUS PLANNING UPDATE
MEETING DATE	SEPTEMBER 24, 2019

APPROVED FOR SUBMISSION

Forwarded on the Recommendation of the President



Santa J. Ono, President and Vice-Chancellor

FOR INFORMATION

Report Date	August 20, 2019
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Presented By Deborah Buszard, Deputy Vice-Chancellor and Principal, UBC Okanagan
Ananya Mukherjee Reed, Provost and Vice-President Academic, UBC Okanagan
Michael White, Associate Vice-President Campus & Community Planning
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EXECUTIVE SUMMARY

UBC Okanagan continues its robust growth in students, faculty, staff, and research funding, within the context of surrounding communities also undergoing a period of significant development and change. This report provides an annual update of major UBC Okanagan campus planning, and development issues and initiatives underway:

1. Current Planning and Development Update
2. Long Range (2040) Infrastructure Planning and Funding Options
3. Lower Innovation Precinct Planning and Phasing
4. Community Long Range Planning

Attachments:

1. Campus Main Street Precinct Concept Plan
2. Campus Site-Specific Planning Projects 2019-2020
3. Outlook 2040 Vision of Potential Future Campus Development
4. Five Major Zones for Campus Infrastructure Development
5. Campus Innovation Precinct Sub Areas
6. Campus Innovation Precinct Location in Context
7. Lower Innovation Precinct North: Development Phasing

STRATEGIC CORE AREAS SUPPORTED

a People and Places a Research Excellence a Transformative Learning a Local / Global Engagement

DESCRIPTION & RATIONALE

1. CURRENT PLANNING AND DEVELOPMENT UPDATE

Background

In 2014, UBC Okanagan (UBCO) set out the Aspire vision: to be a model of innovation and interdisciplinary programming as an expression of UBC's core commitments – a vision that continues to be aligned with the UBC strategic plan.

Implementation of the vision has meant significant growth for UBCO in recent years. Since 2008, the Okanagan campus has seen a 62 percent increase in total students, putting it just over the provincial target for the institution. This has been accompanied by a 27 percent increase in faculty. Research activity has increased rapidly as the campus has expanded; UBCO has experienced a doubling of research income since 2015, signaling the explosive development of scholarly activity on the campus.

The UBC Okanagan Campus Plan (2015) set out a framework to enable UBCO to potentially double the campus built area over the next 20 years, if desired. It called for a campus characterized by four basic Planning Principles: A Welcoming and Connected Campus; Celebrating Place; Campus Vitality; and Whole System Infrastructure.

Implementation of this plan is being accomplished through a number of campus-wide plans and guidelines as well as several capital projects.

With the growth of the university community and the development of scholarly and research activity, there is considerable pressure to develop additional academic facilities to accommodate increased student enrollment (and the need for high quality learning spaces) and the space needs of research-active professors and associated support services.

Discussion

The recently completed and on-going major campus-wide plans, policies, frameworks, guidelines and capital projects are summarized below. Collectively, these initiatives will serve to guide and transform the physical campus.

Campus-wide Initiatives

Recently completed plans, policies, frameworks, standards and guidelines include:

- UBCO Design Guidelines (2018)
- Innovation Precinct Structure Plan (2018)
- Campus Wayfinding Signage guidelines update and improvements (2018)
- Main Street Precinct Concept Plan (*see Attachment 1*) (2019)

Site-Specific Capital Projects

Current Okanagan campus capital projects in the design or construction phase are listed below (scheduled completion dates). As a set, they will have a significant influence in re-shaping the future UBC Okanagan campus.

2019-2020:

- Modular Engineering Design Labs (EDL) (Dec. 2019)
- Innovation Precinct 1 Building (IP1) renovations (i.e. 1540 Innovation Drive), for Engineering research, Master's of Fine Arts studios and an industrial partner (Phase 1 renovations, April, 2020; phased move-in starting Fall 2020)
- Daycare Building and Playground renovations to add 20 new daycare spaces (Summer 2020) :
- Campus Signage Retrofit – Phase 1 (Spring 2020)
- Plant Growth Facility (PGF) (Summer 2020)
- Temporary Office Modular Building (OM1) (Summer 2020)
- Skeena Residence (Passive House), 220 student housing units (August 2020)

2021:

- 1545 Innovation Drive (potential leased space), office/swing and high head research space (Winter 2021)
- Nechako Residence and Commons Block, 220 student housing units, 500-seat dining hall and enhanced student services (Summer 2021).
- Campus Signage Retrofit – Phase 2 (Summer 2021)
- University Way Pedestrianizing – Phase 1 (Summer 2021, subject to available funding)

2024:

- Environmental Testing Chamber Research Facility (Canadian Foundation for Innovation – Innovation Fund CFI-IF application). (Winter 2024)
- Interdisciplinary Collaboration & Innovation (ICI) Building (Fall 2024*) (Approval Status: Executive 1)

*assumes project funding approval by March 31, 2020.

Next Steps

Campus-Wide Planning Initiatives

- Facilities Strategic Planning Framework, Facilities Inventory and Capital Planning prioritization (in progress)
- Long Range Campus Infrastructure Concepts, Costs and Financing Strategy (see Section 2 below)
- Okanagan Gateway Transportation Study (OGTS), partnering in a long-term planning study with City of Kelowna, Kelowna International Airport (YLW), and Ministry of Transportation and Infrastructure (MOTI) to define projects, programs and policies that will improve connections to, from and within the YLW and UBCO 'gateway' area.

- Outdoor Gathering Space, Campus Trail Enhancements, Campus Signage & Wayfinding reflecting Okanagan language and culture, conceptual planning in support of the June 2019 UBCO Declaration of Truth and Reconciliation Commitments (in progress)
- Okanagan Campus Climate Action Plan, in conjunction with District Energy Strategy (in progress)
- Transportation and Parking Strategy. Follow up on the OGTS with a campus-focused transportation and parking strategy now with new campus access from John Hindle Drive, including a focus on 'Transportation Demand Management' (TDM), modeling a shift towards more sustainable transport and to avoid the need for a future parkade structure(s) (Fall 2019 start)
- Others (TBD)

Site-Specific Campus Planning Initiatives

Looking to 2020 and beyond, significant planning and partnering activities will focus on the following *site-specific* planning activities:

- Lot F Mixed Use and University Housing study. Scoping shows little demand for staff and faculty housing on campus in the context of the Kelowna market. Staff are investigating future student housing potential on campus with SHHS.
- Lower Innovation Precinct planning (see Section 3 below).
- Digital Learning Factory, refined cost estimates, site servicing investigation (see Section 3 below), and potential partnerships and funding for a prospective major industrial-research partnership.
- Campus Gateway Planning, improving the entrance experience at the three campus access points: Upper Campus Way (west), Alumni Avenue (south), and University Way (east).

The locations on campus of these various projects underway or in the planning phase are shown on *Attachment 2*.

2. LONG RANGE (2040) CAMPUS INFRASTRUCTURE CONCEPT PLANNING AND FUNDING OPTIONS

Background

Last year, UBCO Campus Planning and Development (CP&D) prepared materials illustrating the long range potential for the physical campus (i.e. Outlook 2040), based on Campus Plan (2015), the Innovation Precinct Structure Plan (2018) and an artist's interpretation (and fly through video) of the future campus built form (*see Attachment 3*).

Since that time, CP&D have been envisioning the infrastructure necessary to enable the development of further buildings on campus (i.e. for core campus and prospective Innovation Precinct facilities). The concepts for this connecting, or enabling, infrastructure is also based on the Whole Systems Infrastructure Plan (2016), the Integrated Rainwater Management Plan (2017) and the UBCO Design Guidelines (2018).

This has included an infrastructure concept and costing study that addresses the following layers of infrastructure between buildings and other necessary infrastructure (e.g. DES Central Plant upgrades, off-campus works):

Vehicle-based Infrastructure

- Roads, Surface parking, loading zones
- Structure parking

Pedestrian-based infrastructure and landscaping

- Sidewalks, Plazas
- Multi-use trails, unpaved pedestrian trails
- Accessibility ramps, feature retaining walls with built-in seating, street furniture, waste collection
- Water features, rainwater management features
- Lawns and planted areas, maintained natural areas

Water

- Water mains and local connections
- Off-site connections

Sanitary Sewer

- Sewer mains and local connections
- Lift stations
- Off-site connections

Shallow Utilities

- Gas
- Electricity (Fortis)
- UBC IT, Commercial IT (Telus, Shaw, etc.) and IT distribution hubs

District Energy

- Protected corridors
- Low Temperature District Energy System distribution mains
- DES Central Plant upgrades

Off-Site

- Glenmore Ellison Irrigation District fees, rates, and expansion trigger points
- Fortis Gas fees, rates, and expansion trigger points
- Fortis Electric fees, rates, and expansion trigger points
- City of Kelowna sewer fees, rates, and expansion trigger points
- City of Kelowna DCCs and permits (current)
- City of Kelowna DCCs and permits (potential)

Discussion

An initial campus-wide infrastructure concept plan has now been prepared that addresses the design concept, order of magnitude costing and preferred phasing for the 'layers' outlined above to service a campus build-out consistent with Outlook 2040. The intention of this campus wide view is to provide an informed framework to help ensure that staged investments are guided by a long term plan that will maximize value and avoid potential inefficiencies.

Attachment 4 outlines the infrastructure development concept, divided into the following five distinct campus sub-areas, or zones:

From Campus Plan (2015):

Zone 1. Core Academic Campus Build-out

Zone 2A. South and West Campus Residential Build-out

From Innovation Precinct Structure Plan (2018) (*see also Attachment 5*):

Zone 2B. Lower Innovation Precinct North

Zone 3. Upper Innovation Precinct

Zone 4. Lower Innovation Precinct South

While these zones are listed sequentially above, there could be overlap in the timelines for development of Zones 1, 2A, and 2B in particular, whereas Zones 3 and 4 are considered to be 'reserve' areas for long term future development (i.e. 2035+), unless academic and/or research partnership growth accelerates significantly.

Prioritizing future infrastructure development in Zone 1 for the remaining academic buildings in the core campus is suggested since the future core academic buildings: (a) are consistent with the Board-approved Campus Plan (2015); (b) will help to enliven the core campus and better serve students; and (c) facilitate more affordable access and servicing. Timing for Zone 1 infrastructure would need to precede the future core campus academic and athletic buildings investments over the upcoming decades as needed. The order of magnitude cost for enabling Infrastructure to serve the Core Academic Campus Build-out in accordance with Campus Plan 2015 (i.e. Zone 1) is estimated to be in the range of \$22m. to \$34m. (2020 costs) including services for the remaining 7 core campus buildings/additions and complete the campus core development.

Zones 2A and 2B infrastructure development could proceed just after Phase 1 or could overlap somewhat with Zone 1, depending on need, partnerships and available funding. Both will have their own unique drivers and resulting timelines:

The priorities and the resulting schedule for new building projects and Zone 2B infrastructure development timeline is expected to be driven by industrial partnerships, research activity and funding, senior government funding and project financing arrangements. The infrastructure development concept suggests that Zone 2B, Lower Innovation Precinct North, precede the other parts of the Innovation Precinct (i.e. Zones 3 and 4) because: (a) it is a flat, underutilized part of campus (presently used by an aggregates contractor); (b) access to

existing roads and utilities from the adjacent Innovation Drive is relatively straightforward; (c) it will open up new sites for industry-research partnership buildings that do not yet exist on the Okanagan campus (i.e. 'learning labs'); and (d) it would create an improved visual presence at the 'northeast gateway' of campus. The cost for enabling Infrastructure to serve the Lower Innovation Precinct North, in accordance with the Innovation Precinct Structure Plan (2019) (i.e. Zone 2B) is estimated to be in the range of \$24m. to \$38m. to serve the 5 or 6 new building sites (including the Learning Factory).

The Zone 2A infrastructure development timeline will be driven by student housing needs, The cost for enabling Infrastructure to serve South and West Campus Residential Development in accordance with Campus Plan 2015 (Zone 2A) is estimated to be in the range of \$18m. to \$28m. , which encompasses 8 new residential buildings.. These projects are likely to follow a funding model that assigns a portion of infrastructure costs to the projects themselves. This will be assessed on a project-by-project basis.

Zone 3, the Upper Innovation Precinct, immediately north of the existing Purcell residence, represents a major, long term opportunity for campus development. However, given the remaining academic and residential development capacity of the core campus combined with the industry-research area of the Lower Innovation Precinct North, this part of the Innovation Precinct is not likely to be developed for 15 years or more. In addition, the enabling infrastructure, including the access road up the slope, will require a certain 'critical mass' of future building occupants (industry, academic and residential) to be identified in order to justify the initial infrastructure expenditure. The Upper Innovation Precinct area can be considered 'reserve' for future consideration, once long range campus development priorities are more clearly understood.

Phase 4, Lower Innovation Precinct South, would mean redevelopment of the existing, near-capacity Parking Lot H and, as such, would require considerable progress in reducing parking demand through multi-modal transport solutions, and/or construction of an expensive parking structure. As such, this part of the Innovation Precinct is expected to remain parking for the short to medium term, and long term 'reserve' for future campus development.

Next Steps

Infrastructure Concepts and Cost Estimates

Staff are continuing to refine the infrastructure design concepts, cost estimates of future infrastructure development, including looking for servicing efficiencies and cost savings at the campus scale. Part of this is to refine the zone-by-zone infrastructure descriptions and develop a set of discrete, infrastructure development projects, by zone that are also connected to the building sites that they will enable.

Some additional issues identified through this work, and to be addressed further over the coming months and years include:

- Review of life cycle, operational and maintenance considerations (including costs, energy, carbon and other sustainability considerations) to refine the scope of future capital projects;

- Forecasting future campus parking demand in the context of a changing local and regional transportation system (and modelling the impact of existing and future land use and transportation policies, plans and programs at the regional, local and campus scales);
- Further analysis of energy and water efficiency targets for new buildings and retrofits and their implications for optimizing district scale solutions
- Further exploration of potential UBC Data Centre and 5G network, and opportunities with adjacency and/or integration with District Energy System;
- Resiliency measures for campus, including: reduced interface fire risk, grey water reuse for irrigation, and restorative landscaping and rainwater management features;
- Review of current and future campus operations facility needs in light of future campus expansion; and
- Discussions with local authorities (City of Kelowna, Glenmore Ellison Irrigation District, Fortis) about existing and future development and permitting fees;

Potential Infrastructure Funding

Staff are assessing potential funding and financing sources for the infrastructure necessary to enable UBCO's prioritized growth. This assessment will consider: infrastructure needs and phasing; municipal best practices in development funding; funding and financing capacity relative to other UBC priorities; and governance.

Potential funding and financing sources for exploration include:

1. Utility user fees (either pay as you go, or pay in advance sinking funds);
2. Capital project fees;
3. Provincial funding such as routine capital or Carbon Neutral Capital funds;
4. Other external funding (eg. senior government grants/programs);
5. Savings from conservation programs (supported by internal borrowing); and,
6. Allocation of UBC Vancouver Infrastructure Impact Charge (IIC) revenue.

The potential to allocate UBC Vancouver IICs to UBCO growth costs is an important opportunity under investigation. IICs are a per square foot fee on new development to pay for new infrastructure, similar to municipal development charges. The current \$39.39/sq ft fee is collected largely from Vancouver market housing development and supports more than \$340 million in Vancouver infrastructure spending from 1997-2041.

Infrastructure Impact Charges are a key component of UBC Vancouver's municipal-like governance. UBC's IICs are fully allocated to Vancouver infrastructure projects through 2041. As a result, IIC rates would need to increase to fund a portion of UBCO infrastructure growth or some UBC Vancouver projects would need to be delayed depending on overall prioritization. As an example, a 25% increase to the current market housing IIC rate of \$39.39/sq ft could generate an approximate additional \$45 million by 2041. An increase in IIC rates would represent a decrease in land development contributions to UBC's endowment.

Through 2019, staff will assess the funding, financing, and governance impacts of using IIC funds to support UBCO infrastructure and will return to the Board of Governors for direction.

3. LOWER INNOVATION PRECINCT PLANNING AND PHASING

Background

The UBC Strategic Plan (2018) describes a UBC Okanagan Innovation Precinct (IP) as a revolutionary new space for research and development activity. The intention of the Innovation Precinct development is to create a hub for academic research and innovation within an attractive and welcoming mixed-use area shared with businesses partners, residences and other complementary uses.

The physical planning of the IP parallels and supports the Office of the VP Research-led efforts on strategic research, industrial partnerships, funding and business case development for the IP (see Attachment 6).

As illustrated in the Outlook 2040 video, staff have been exploring the physical potential to develop an Innovation Precinct. As outlined above, the Innovation Precinct has been organized into three unique sub-areas, or phases:

Zone 2B. Lower Innovation Precinct North

Zone 3. Upper Innovation Precinct

Zone 4. Lower Innovation Precinct South

As outlined above, the Lower Innovation Precinct North is likely to be the first phase of a future Innovation Precinct. Once each building site in this zone is serviced, UBC would have readily available sites for industry-research buildings that otherwise would not exist at the Okanagan campus. As such, staff have been examining how this part of the future IP could be developed in the short term.

Initially, with the development of Innovation Precinct 1 (i.e. renovation of 1540 Innovation Drive), there is a need to initially connect the core campus with IP1 with a lit pathway (i.e. cyclists, pedestrians and off-road campus vehicles). Subsequent development could see the Lower IP North Zone further divided into three sub-zones (see Attachment 7):

- Gateway Sub-Zone: in addition to IP1, this zone includes one or two small buildings on the northeast corner of campus (possibly including an Environmental Control Chamber research facility and one other building).
- Industry-Research Collaboration Sub-Zone: includes three mid-sized buildings totaling about 27,000 sq.m. (275,000 sf.) potential building space just north of existing Lot H and just south of the future Digital Learning Factory site. These building sites could be refined further once the future occupants and their needs are better understood.
- Digital Learning Factory Sub-Zone: this site is being reserved for a major production and research facility for the development and production of advanced composite materials (e.g. for the aerospace industry) alongside School of Engineering research and learning facilities. This initial facility could range in size from about 9,000 sq.m. (100,000 sf.) to 21,000 sq.m. (220,000 sf.) depending on the level of commitment by the industrial partner(s).

These three sub-zones could occur in any sequence or simultaneously, depending on; research priorities; the progress with different partnership-building and fund-raising pursuits; and the resulting user group demands. Site servicing, including some Innovation Dr. public road improvements, would need to occur: (a) for the overall Lower IP North zone; and then (b) for each of the three sub-zones.

Staff continue to refine the details of this development concept along with the associated site servicing and cost implications. In addition, staff is working with the City of Kelowna authorities to determine the appropriate contribution to the adjacent road improvements (Innovation Drive), site access as well as on- and off-site utility improvements.

Next Steps

A preliminary servicing cost estimate to service these five building sites has been prepared. On the basis of this estimate, staff are seeking a funding commitment to carry out the necessary improvements to enable these five building sites.

Staff will also continue to develop more detailed sub-area layout and site servicing design along with refined capital cost estimates.

4. COMMUNITY LONG-RANGE PLANNING

Background

The Okanagan Campus lies within the northeast part of the City of Kelowna that is undergoing rapid growth and change, including Kelowna Airport and the surrounding business park as well as the residential growth in the University South neighbourhood where 1,200 new units of housing have been approved by the City over the last 8 years. Capital projects completed this fall include: John Hindle Drive, the Okanagan Rail Trail, the pedestrian overpass and new transit routes to and from campus.

While campus planning is primarily focused on the campus, the public policy and investment decisions at broader scales (especially regional transportation and land use) will continue to have an impact on the physical planning choices available for the campus itself. This includes the transportation options to and from campus, campus parking demands (and parking opportunity costs); permitted land uses and housing types adjacent to campus; neighbourhood character as well as recreational and other public amenities.

There are a number of City planning, engagement and public policy initiatives now underway that will have significant and permanent impacts on the northeast part of Kelowna in general, and UBC Okanagan campus in particular, including:

- Official Community Plan update (OCP) (2018 - 2020);
- Regional Transportation Plan 2040 (2018-1019);
- Okanagan Gateway Transportation Study (for area including UBCO, Kelowna Airport and surrounding properties and transportation infrastructure; also with Kelowna Airport and Ministry of Transportation and Infrastructure);
- Potential new City of Kelowna DCC charges for Parkland; and
- other City and regional planning and development initiatives.

In addition, UBC senior staff are in discussions with City of Kelowna leadership about the potential for creating an important, community-facing UBC presence in downtown Kelowna.

Discussion

To proactively respond to the many issues, UBCO senior leadership and staff are engaging with City staff in different forums to advocate for UBC strategic interests, including:

- UBCO-City of Kelowna MOU Steering Committee to identify, prioritize and coordinate bilateral initiatives, including links to research partnerships.
- Continue to engage with the City of Kelowna on land issues: west campus, south of campus and downtown.
- Continue to engage with the City of Kelowna OCP Process: engage with City staff to advocate for an OCP that reflects UBC strategic interests (e.g. moving towards a mixed-use campus as a key, mixed-use urban hub, and complementary neighboring land uses).
- Continue to engage with Regional Transportation Plan 2040 and Okanagan Gateway Transportation Strategy (OGTS): advocate for improved transportation to, from, and within the 'gateway' area and a further shift towards sustainable multi-modal transportation to and from campus.
- Engage City staff on specific projects: UBC staff will continue to engage City staff on specific projects: JH Drive and campus access; relocation of Hollywood Rd. N. Road Reserve; Greenhouse on West Campus lands (A1 zoning); transit and cycling improvements.

Next Steps

Staff are pursuing a coordinated UBC strategy for working with the City and community at large that builds on the areas of engagement outlined above and aligns with UBC strategic priorities for the Okanagan campus.

Increase UBCO strategic communications with the community at large: in addition to direct communications with the City, increase coordinated engagement with (a) neighbouring property owners and (b) local and regional networks to accentuate UBC's benefits (social, economic and environmental) to the community and region.

Attachment 1

UBC Okanagan Campus Main Street Precinct Concept Plan



Attachment 2

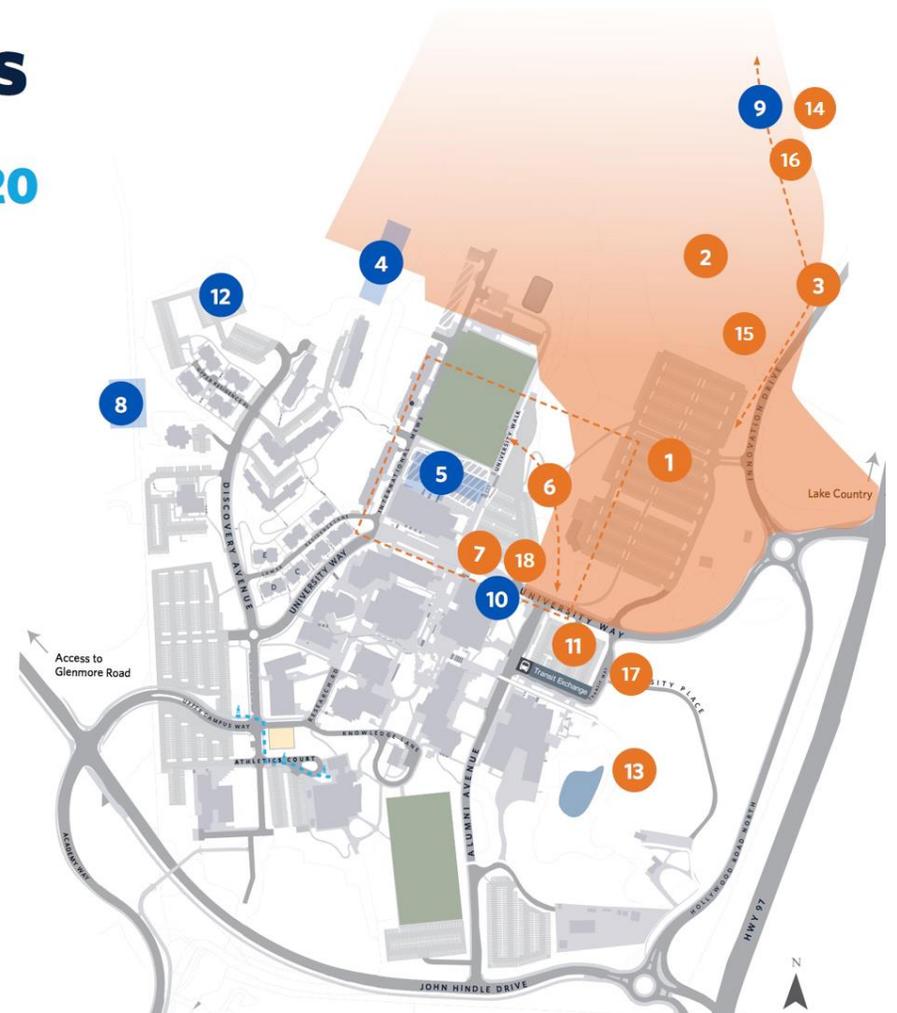
UBC Okanagan Campus Site-Specific Planning Projects 2019/20

UBC Okanagan Campus

Site-Specific Planning Projects 2019/20

● Planning ● Construction

- 1 Innovation Precinct
- 2 Digital Learning Factory
- 3 Realign Hollywood Road North Road Reserve
- 4 Skeena Residence
- 5 Nechako Residence
- 6 Alumni Avenue Extension
- 7 Main Street Precinct Planning
- 8 Plant Growth Facility (Greenhouse)
- 9 Innovation Precinct 1 (1540 Innovation Drive)
- 10 Engineering Design Labs
- 11 ICI Building
- 12 Parking Lot R Improvements
- 13 Outdoor Classroom
- 14 1545 Innovation Drive (Potential future lease)
- 15 Lower Innovation Precinct North - Near-Term Site Servicing Concept and Costing
- 16 Environmental Testing Chamber
- 17 Office Modular 1
- 18 Block F Future Site Servicing Concept



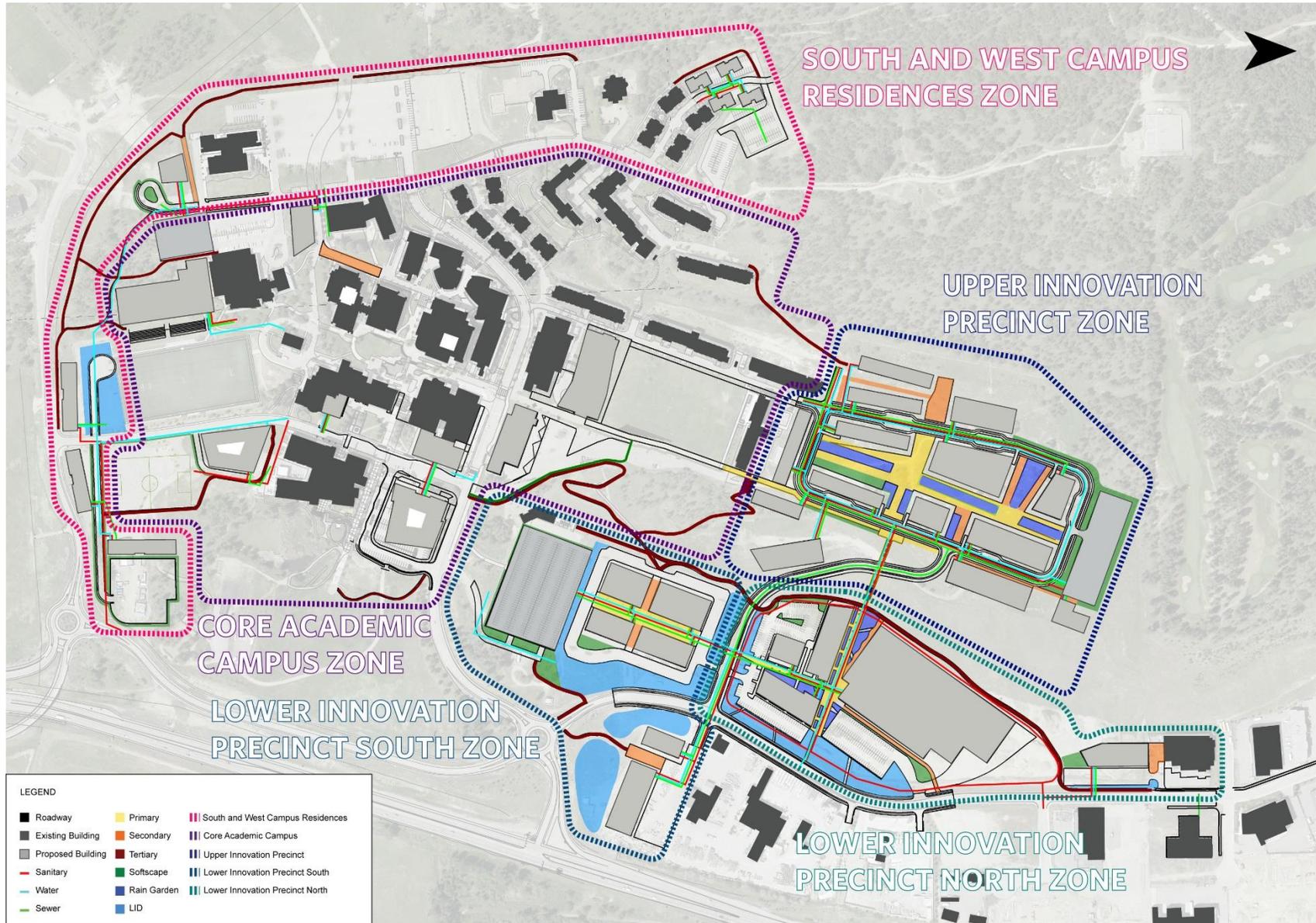
Attachment 3

Outlook 2040 Vision of Potential Future Campus Development



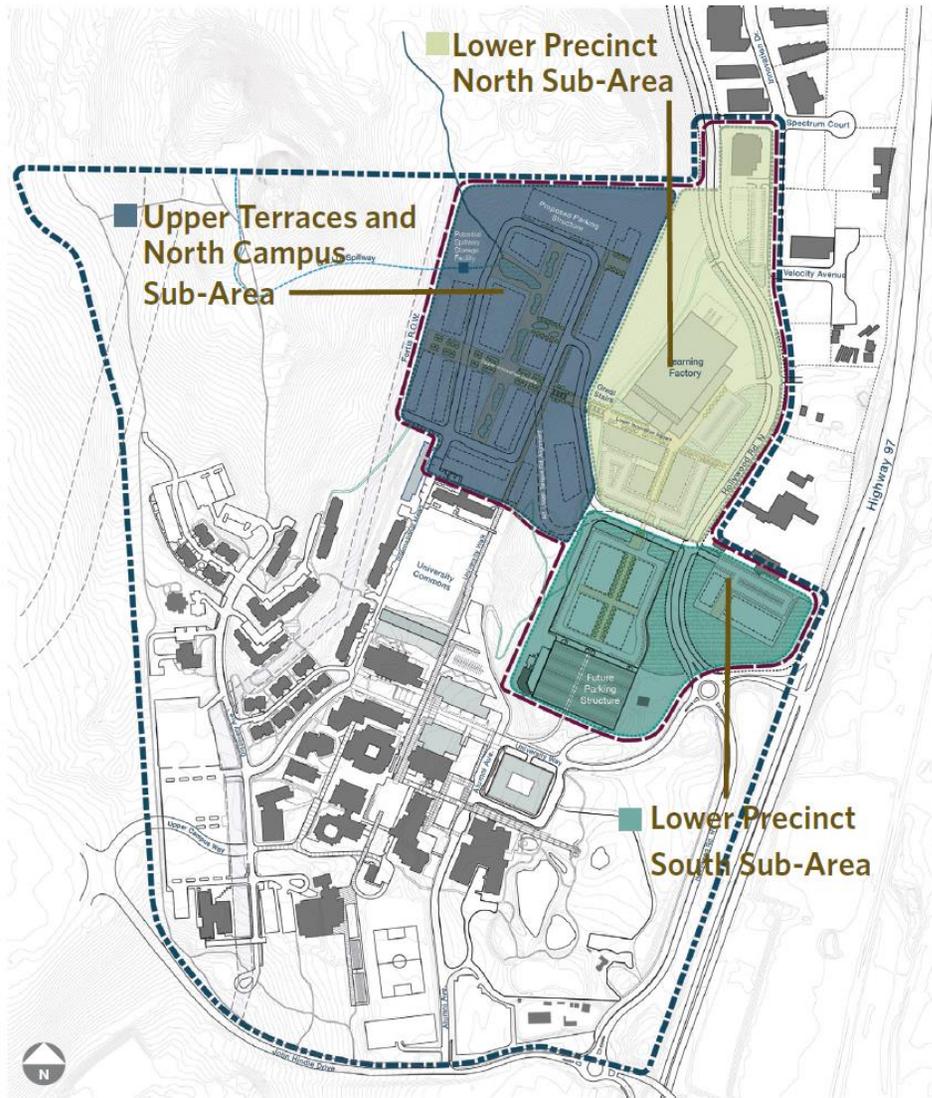
Attachment 4

Five Major Zones for Campus Infrastructure Development



Attachment 5

UBC Okanagan Campus Innovation Precinct Sub Areas



SUB-AREA SIZES AND POTENTIAL BUILDING CAPACITIES

Lower Precinct North
Overall: 105,064m ²
Building Footprint: 21,390m ²
Gross Floor Area (avg. 2 storeys): 42,780m ²
Upper Precinct
Overall: 119,350m ²
Building Footprint: 23,057m ²
Gross Floor Area (avg. 3.5 storeys): 81,765m ²
Lower Precinct South
Overall: 84,102m ²
Building Footprint: 10,413m ²
Gross Floor Area (avg. 4 storeys): 41,652m ²

Attachment 6

UBC Okanagan Campus Innovation Precinct Location in Context



Attachment 7

Lower Innovation Precinct North: Development Phasing

Full Build Out

LEGEND

- Existing Buildings
- Future External / Out of Scope Buildings
- New Buildings

