A light blue line-art map of the UBC Okanagan campus is visible in the background, showing various buildings, roads, and green spaces.

# UBC Okanagan Master Plan Growth and Campus Experience Charrette Summary and Emerging Directions

October, 2014

campus + **community** planning



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA

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## 1. Introduction

In June, 2014, over 50 participants with diverse interests gathered at the UBC Okanagan Campus to engage in a collaborative process to illustrate a future vision for the campus. This process – called a charrette – was grounded in the goals and commitments set out in UBC's **Place and Promise** and draft **Aspire** documents and was intended to guide the future development of the university campus in alignment with the following draft purpose statement:

*UBC's Okanagan Campus aspires to be a centre for learning and innovation that produces global citizens through transformative personal growth and collaboration. Its people, places, and activities are connected by a shared commitment to fostering community and supporting social and ecological well-being. Deeply connected to the landscape, the campus is an accessible, intimate, and welcoming environment – a catalyst for positive change.*

The UBC Growth and Experience Charrette was one step in a broader collaborative process to update the 2009 Master Plan for the UBC Okanagan Campus. The Charrette was designed as an interdisciplinary exercise for those with an interest in the campus to better understand opportunities, expectations and desires for its future evolution. This summary document serves as both a record of the Charrette and as an input into the development of Master Plan ideas and concepts that will be consulted on later in 2014.

### ***The Green Team at work***



*The Okanagan Campus Growth and Experience Charrette was a collaborative design exercise used to generate new ideas by engaging directly with university stakeholders, experts and users. This form of direct engagement and collaborative design process breaks traditional barriers between various parties and allows for the opportunity to generate consensus around competing interests, values and resources. The working assumption in charrettes is that everyone present, from experts to various stakeholders, is a unique source of valuable knowledge contributing to the creation of a holistic vision for the project area.*

***UBC Okanagan Growth and Experience Charrette Site Boundary***



## 2. Context

### 2.1. Introduction

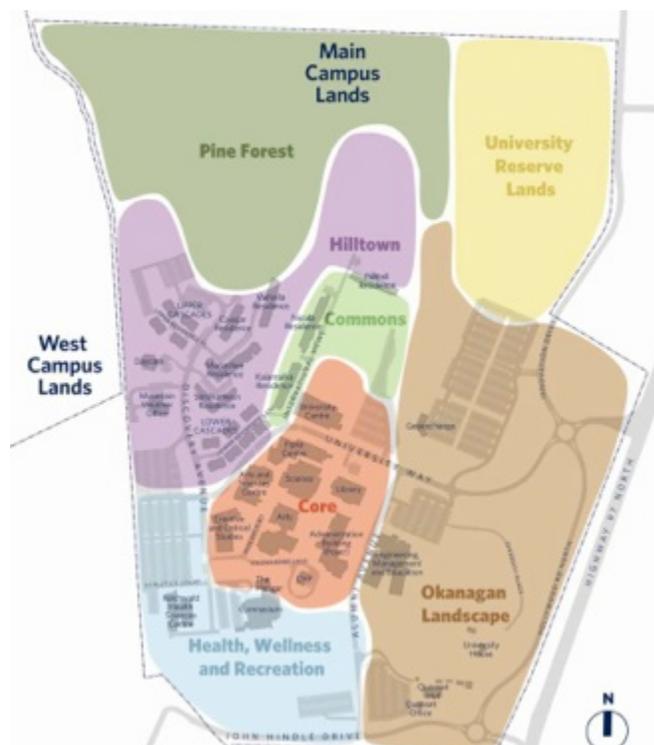
The UBC Okanagan Campus is located on approximately 202 hectares at the north end of the City of Kelowna. In 2010, the campus boundary expanded to include an additional 259 acres of agriculturally zones lands to the west. Originally the North Kelowna Okanagan University College, the campus merged with UBC in 2005 and since that time, has more than doubled its student population and expanded in size to accommodate new buildings, facilities, and associated infrastructure to support the growing population.

### 2.2. Master Plan Context

UBC's current Okanagan Campus Master Plan was approved in 2009 to address campus development needs to 2020. It outlines general planning and design principles to guide campus growth. It also identifies buildings, facilities, and their proposed locations within seven character precincts.

The 2009 Master Plan was developed with input from the campus community, was carefully tailored to the aspirations and specific directions of the Okanagan Campus' Academic Plan, and was grounded in UBC's strategic vision. Since the 2009 Master Plan's approval, the Okanagan Campus has doubled in land area. Given the historic pace of growth to the campus and the City of Kelowna it is reasonable to assume the campus population will continue to grow and double in size in the coming years.

The challenge now is to update the Master Plan to manage the campus' growth in a way that best supports the University's mission and vision.



#### **2009 Master Plan Precincts**

*The 2009 Master Plan defines seven precincts, each with a characteristic mix of uses, building typology, and landscape. They are: The Core Campus; The Commons; Health, Wellness, and Recreation; Okanagan Landscape, Hilltown, Pine Forest and University Reserve Lands.*

## 2.3. Local Planning Context

Development within the campus is subject to the City of Kelowna's bylaws, permits and approval process. The campus is zoned as CD20 – Comprehensive University Development Zone, which permits a full range of academic, research and supporting land uses essential to a leading-edge university program and campus. In addition to acceptable uses, the zoning regulates such things as site coverage (a max. 60% of combined buildings), building heights (6 storeys or 27m across campus with the exception of a 10 storey or 45m structure at the southwest corner of campus)

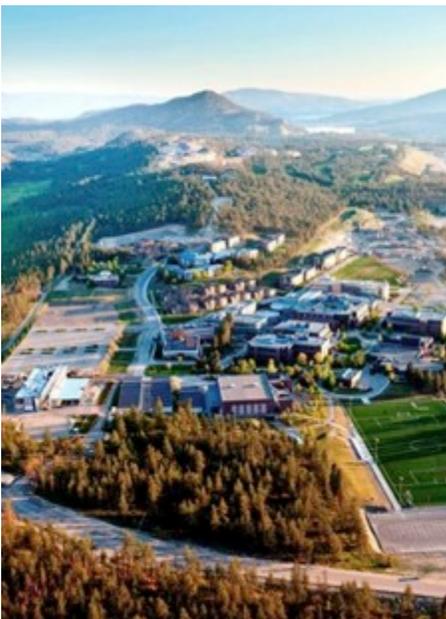
## 2.4. Site Context

As part of the charrette background work, a series of technical reports were prepared that provided information valuable to understanding the potentials and constraints of the campus. A summary of all reports is provided in the Appendix, and key highlights pertaining to ecology and transportation are provided below.

### 2.4.1. Ecology

Ecologically, the campus sits within the Okanagan Very Dry Hot Ponderosa Pine zone, which is known as one of the driest forested zones in BC, with hot dry conditions in the summer, and cool with little snow in winter. Within this zone are more specific ecosystems that are characterized by their vegetation, landform, and wildlife and include: coniferous woodland; urban and rural; gravel pit; open water and wetland; and cultivated field.

Environmental Topography is a significant feature of the campus. Slopes range from 0% to approximately 30% with some steep slopes associated with cutbanks, fill slopes, and other modified landforms. This has informed the placement and orientation of campus buildings, roads, and open spaces, although some challenging grades still exist. Several lower lying areas have developed as retention areas for stormwater and wetlands, which have become an important feature, both ecologically and culturally.



### **UBC Okanagan Campus**

*The campus lands are situated along the McKinley Escarpment, with north-south aligned ridges and valleys formed during the last glaciation of the Okanagan Valley. Positioned along the ridge line, the campus is afforded panoramic views to the east, to the valley floor and rolling hills beyond, and towards Roberts Lake and surrounding agricultural land to the west.*

The Ecological Analysis report, prepared by Ecoscape Environmental Consultants, provides recommendations for future land use planning and conservation or restoration efforts by overlaying Environmentally Sensitive Areas (ESAs) with the seven campus precincts defined in the 2009 Master Plan Update, shown in below. Rare and endangered plants, trees, wildlife and species at risk were also identified. The graphic below summarizes this assessment.

***Environmentally Sensitive Areas***

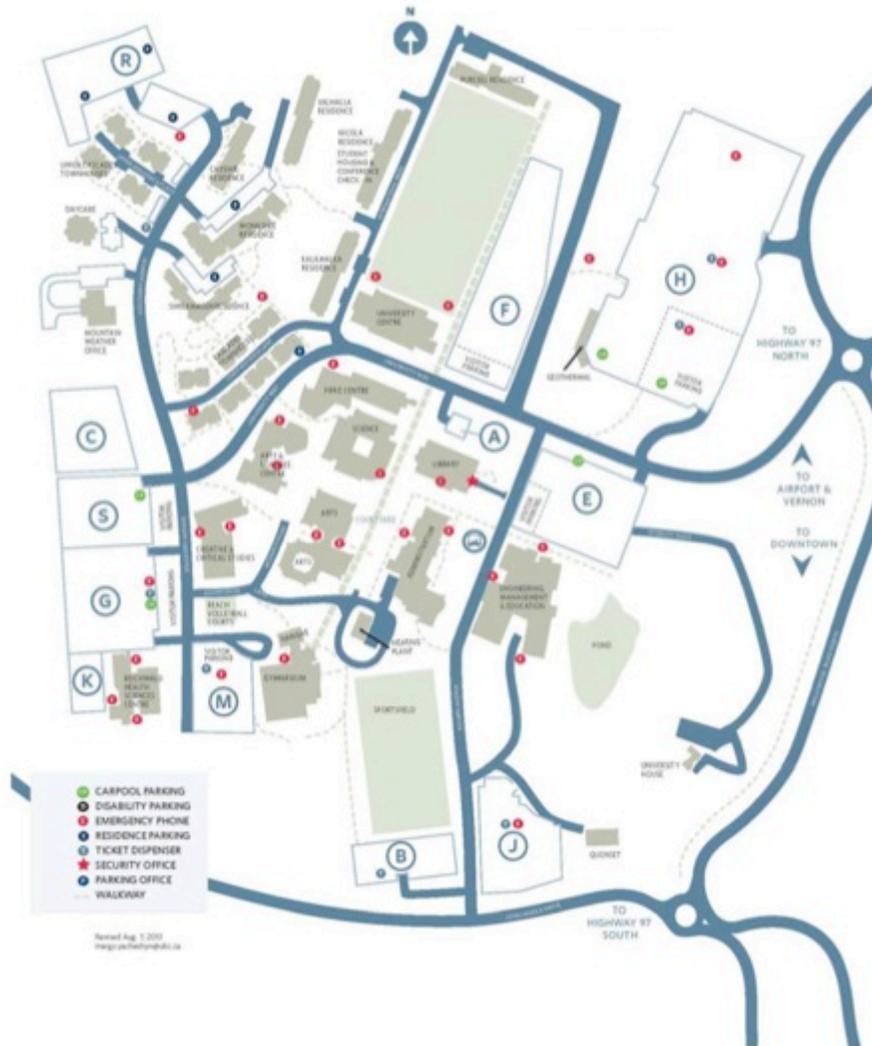


*As shown in this map of Environmentally Sensitive Areas, the areas of highest environmental sensitivity (dark green) are the Pine Forest, pockets of the Health, Wellness and Recreation, and Okanagan Landscape precincts, while those of least sensitivity (yellow) are located around the Campus Core, Commons, and the University Reserve Lands.*

**2.4.2. Transportation**

The campus is well served by transportation infrastructure including hosting a regional bus exchange. To its east, across Highway 97 is the Kelowna Airport. Travel distance to the downtown is around 8.5 kilometres and is accessed from Highway 97 where grade separated ramps are located at the southeast corner of the campus; while vehicle movements to/from the north are accommodated primarily at the traffic signal at University Way and Highway 97. Internal to the campus is a network of two lane streets, pedestrian pathways and trails, as well as service lanes.

### Campus Roads and Parking



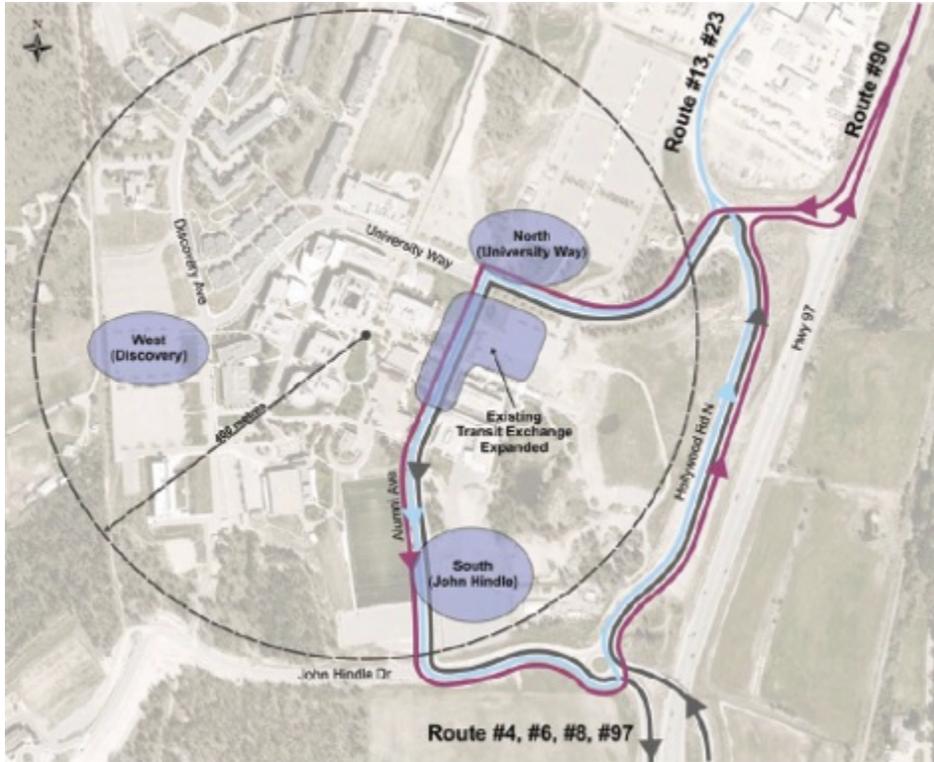
*Parking surfaces dominate the edges of campus, with roughly 11 parking lots providing a combined supply of 2900 spaces. With a doubling of campus population, and assuming only a 4% increase in transit mode share, it is estimated that an additional 1100 parking spaces would be required to meet a doubling of population. Where and how these additional spaces are provided was an important question asked of charrette teams.*

In 2015, construction will begin on an extension of John Hindle Drive, which will provide a connection from its current termination at the Glenmore Landfill entrance eastward to Highway 97. The extension will also provide a new connection to Academy Way to the south, and offers the potential to connect to the western boundary of the campus.

In terms of transit, the campus is relatively well served, and transit use represents 32% of all trips. The existing on-street bus exchange located adjacent to the Library and Administration Buildings serves seven routes, which arrive from both the north and south, and terminate on campus. In order to meet future demand and operational capacity at the campus, a new, expanded transit exchange is

necessary. The consideration of a new transit exchange (either an expanded exchange in its current location, or in an entirely new location) was a key question charrette teams were asked to resolve.

### **Transit Exchange Options**



*A preliminary transit charrette was held at UBC Okanagan on April 16th, 2014 to begin the discussion about how a new transit exchange facility might work for the campus as well as to identify the priorities that will shape its location and form. Four potential locations were explored as "test locations" to flush out some of the challenges and opportunities. This charrette looked more fully at the four options within the broader context of campus growth and development and narrowed the options down to 2 preferred scenarios – the West location off Discover Avenue, and an expanded exchange at the existing location.*

## **2.5. Whole Systems Thinking**

In addition to the technical background work, another lens charrette teams were asked to consider in developing their proposals was that of whole systems thinking.

### **2.5.1. What does systems thinking mean**

Systems thinking is a method to understand how things (elements and systems) are related, and how they influence one another within a whole. An example of systems thinking is how elements like water, sun, soil, air, plants, animals and human beings interact and support one another as a system.<sup>1</sup>

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<sup>1</sup> Atkisson, A. (2009). *The Sustainability Transformation. How to accelerate positive change in challenging times.* Earthscan Publications.

Meadows, D.H. (2008). *Thinking in Systems: A Primer.* White River Junction: Chelsea Green Publishing.

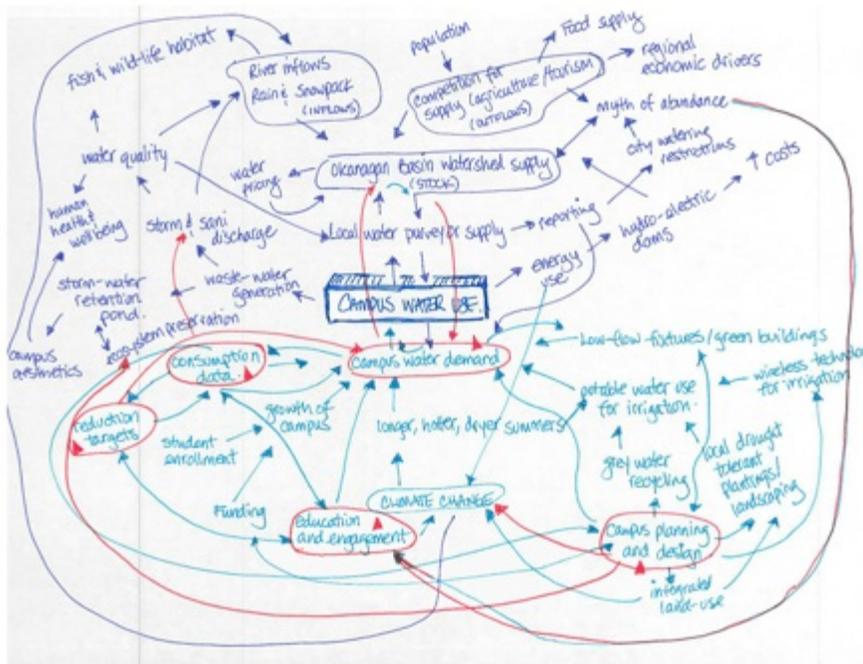
Systems thinking focuses on cyclical rather than linear cause and effect. It can be applied to understand linkages among elements, cause and effect, feedback loops or to identify leverage points, which are places in a system that can be influenced or changed.

Leverage points are most often (1) points where key choices, decisions, rules, and policies are made, determining system structure; (2) places where information is flowing (or not flowing) and affecting those decisions; or (3) places where one can intervene to break, or make, or change the causal linkages between system elements of any kind.

When we understand the components of a system and relationships between them we can begin to understand what affects them, and how to shift them into better patterns.

### 2.5.2. What is systems mapping?

Simple systems sketching and mapping can help us find relationships, patterns, links, feedback loops and leverage points. This often begins with the identification of one indicator (or issue), or a cluster of related indicators, as the starting point for the mapping exercise. This starting point is placed at the center of a piece of paper, on a whiteboard, etc. Then other issues and indicators are slowly added, together with the connections among them. Arrows are drawn from one Indicator to another, to indicate a causal influence relationship. Additional Indicators from the full array are slowly added.



*Campus Water Use Systems Map: The hand-drawn systems map explores elements and systems that impact - and are impacted by - campus water use. Leanne Bilodeau, June 6, 2014*

The map above shows the relationships between various elements related to campus water use, such as growth of the campus, which can increase demand or infrastructure needs. It also brings in

economic drivers like agriculture and tourism, which also rely on the ultimate water source/supply – the Okanagan Basin Watershed. The map also shows that various inflows to the basin from waterways to snowpack melts create a balancing loop on the supply-side that help to maintain the stock of the basin. In the past, inflows have served a stabilizing role for the basin, creating a balancing feedback loop (water in = water out). However, climate change, demand and many other issues will impact the reliability of this balancing feedback loop.

A reinforcing feedback loop exists on the demand-side of the map, where increasing demands for water perpetuate increasing outflows from the basin. Climate change serves to speed the direction of the change by creating longer growing seasons, which will increase water demands for irrigation and completion among users. The campus can help reduce its broader impact on these systems by reducing campus water demand.

Key leverage points for change are circled in red. One such leverage point is “campus planning and design”, because at the planning stage we can plan for the development of campus systems, infrastructure and design to reduce potable water use. Xeriscaping, storm water management and low flow fixtures are examples of measures that can be planned for future implementation to reduce campus potable water demand/use.

## 2.6. The Charrette Program

While there is no required program for the Master Plan to achieve, given past growth patterns of the city, region and the university, it is not unreasonable to anticipate the eventual doubling of the campus population. Therefore the charrette team’s concepts were to seek to accommodate the following:

Program Element	Target
Residential (student beds)	3500 beds
Academic / Research	Doubling of current space (approx. 950,000 SF)
Recreation Space	Min. 1 new sports field: <ul style="list-style-type: none"> <li>▪ 110 m x 70 m per field</li> <li>▪ Adjacent ancillary space</li> </ul> To existing gym: <ul style="list-style-type: none"> <li>• 3 additional basketball courts w/surrounding track</li> <li>• 3 storey ancillary space</li> </ul>
Public Realm / Open Space	Max. unlimited (min. 40% open space requirement)
Parking	Maximum 4000 spaces
Building Heights	4-storey (academic) 6-storey (residential)
Community Amenities	TBC at charrette
Transit	Provide a Transit Hub to serve the campus and surrounding areas

### 3. A Day in the Life: Visioning the Future

The evening prior to the charrette, CoDesign Group was retained to walk the charrette participants through a visioning process that was comprised of three activities: a sensory scavenger hunt on campus, 24 hours in the Day-of-a-Life and individual table discussions captured through graphic facilitation and based on the themes from the 24 hour Day exercise.

The sensory scavenger hunt encouraged participants to explore the campus with all senses:

- Sight, e.g. light and orientation to the sun, views;
- Movement and circulation, e.g. pedestrian, cycling, auto;
- Sounds, e.g. nature, machinery;
- Smells, e.g. landscape, pollution; and
- Tactile, e.g. sunlight, shade, wind, landscape and furniture.

#### ***Sensory Scavenger Hunt Image Quilt***



*Sensory Scavenger Hunt participants were asked to capture experiences through photos that were then emailed to a blog site that created an ideas quilt with the images. Examples of images captured are shown above.*



Following the 24 hour Day-in-a-Life exercise, the CoDesign consultants lead a graphic facilitation exercise in which artists sat at each dinner table and drew at the dictation of the diners scenes of themes and activities on the future campus. Each table focussed on one set of activities, or themes, from the 'Day-in-a-Life'. Examples of some of the drawings with descriptions are included below.

### **Movement and Circulation**



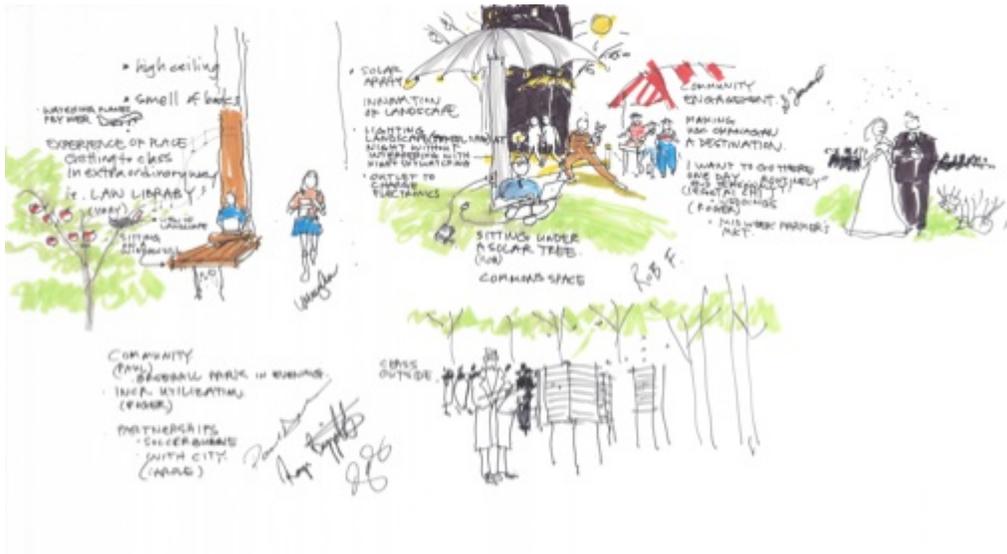
The future of a pedestrian priority campus is shown above, with access to Light Rapid Transit, pedestrian-oriented at-grade features like cafes, retail and places to sit and observe. Residential buildings face the street with mixed use, commercial functions at grade while parking is a back-of-house function of the campus. Pedestrians, cyclists and transit users interact in the street among locally relevant landscaping, artwork and impromptu musical performances.

### **Operations and Administration**



This drawing illustrates the desire to retain a demonstration stormwater management pond for living lab purposes and the aspiration to use water around campus as a means to cool off in the summer (via a misting spray under a shady, vegetative pergola) as well as a place to sit, ponder and enjoy (e.g. musical performances). The 24-hour campus will feature a concentrated arts and culture precinct with beautiful night time illuminated signage, outdoor terrace cafés, as well as opportunities for star gazing.

### Academic Activity



Community engagement through academic pursuits is the focus of this illustration – where academia becomes a welcoming and accessible pursuit to the greater community. Innovations are showcased inside and outside the classroom, for example solar trees, campus as a living lab, and outdoor classes. LED lights are used at night for safety without obscuring views to the night sky. Envisioned as a destination campus, T'ai chi classes, weddings and farmers markets are encouraged.

### Campus Animation



Specifically looking at activities that might occur on The Commons, this drawing illustrates the impromptu and spontaneous opportunities that might exist on campus in the future. Here we see a party on the rooftop, a slack line between the trees, food trucks on The Commons, open air film night, and casual frisbee and football. Outward views to the Okanagan are celebrated.

## 4. Four Team Proposals

On the day of the charrette, participants were divided into four multi-disciplinary teams and tasked with developing a proposal for the site that addressed the program, draft principles and strategies and answered the following key questions:

How can we use growth to:

1. strengthen the intimacy, accessibility and arrival experience of the campus?
2. create a deep experiential and ecological connection between the built environment and the landscape?
3. strengthen the connections between the campus and surrounding neighbourhoods and region?

Each charrette table team was to address these questions by producing the following:

- Name of scheme that captures the essence of the group's vision
- One overall rendered site plan at 1:1000 scale
- Context plan showing campus in the context of its surrounding landscape at 1:2000 scale
- Series of supporting diagrams illustrating patterns and systems on the site (i.e., public realm and open spaces; water and energy; movement and circulation; social and activity spaces, etc.)
- 3D building blocks (representing academic space, residential space, open space / public realm, and parking) configured to represent the team's proposal
- Flip-chart list of opportunities, challenges and potentially competing issues

### ***Physical Model***



*To help visualize proposals, UBC's elementslab constructed a 1:750 physical model of the UBCO site. Using styrofoam building blocks, each team translated their physical program onto the model. Above is the Red Team's proposal in 3D.*

## 4.1. Blue Team – “Archipelago: A Heart and Two Braids”

### *The Blue Team*



*Left to right: Paul Dorby, Lisa Moffatt, Dwayne Tannant, Rob Fershau, Ron Kellett, Orion Henderson, Denise Cook, Claire Budgen, Shannon Dunn and Michael White*

A heart is a centre or core of something; an archipelago is a chain of clusters of islands; braids are interwoven or interlaced strands. Together these three terms capture the core concepts and big moves of the Blue Team’s scheme, which are summarized as follows:

1. Infill and invigorate the campus heart with the most active programs and public realm places and services.
2. From that heart extend three ‘archipelagos’ — one primarily residential, one mixed residential and academic; one mixed academic and research — each programmed and shaped to suit the campus landscape type into which they extend. Long thin buildings parallel contours on the hillside. More diverse footprint buildings frame courts (and views) on the middle terraces. Larger footprint buildings and parking areas on the lower terraces.
3. Multiple finer braids of natural landscape and habitats, cycle and pedestrian paths link archipelago nodes to each other and to adjacent (off campus) places and corridors.

To strengthen the intimacy, accessibility and arrival experience of the campus, the Blue Team proposed to concentrate the most public (day and night) new academic programs at the heart to make it the densest, most intimate, most accessible and best-connected area on campus. The transit hub would be relocated and reshaped as a transit block (bus stops around the four block faces with services and social spaces within) at the edge of the heart embedding it more or less equidistant to core academic, arts, residential and recreation places. Other features related to this include:

- Environmental learning lab(s) and outdoor social spaces at southeast corner adjacent to transit.

- Pedestrian Priority based on principles of 'Complete Streets' along University Way from Penticton Avenue through to University Way North/South.
- Concentrate motor vehicles to the perimeter of the campus core (heart) and locate parking beneath larger footprint buildings.

To create a deep experiential and ecological connection between the built environment and the landscape, the team proposed an expansion and enhancement of the stormwater wetland and First Nations Circle area to elevate the ecological value and experiential opportunity of the southeast portion of campus in an environmental social learning area. A new building at the south edge would front John Hindle Road (potentially improving the arrival experience) and orient outdoor social and learning spaces south and east to the wetland. Pedestrian corridors connect this social and environmental outdoor learning lab to the heart of campus.

The team also considered the need of the residential areas to offer evening and off-hour areas for student congregation. An amphitheatre and plaza space was developed in the primary residential area, providing unobstructed views to the east and is envisioned to be flanked with commercial opportunities to activate the space and provide added convenience.

Exemplifying the concept of the 'Braid', thick green natural vegetation corridors extend into the campus from the north along the slopes between the hillside, terrace and lower terrace building zones. Thinner green corridors perpendicular to the slope transverse the thicker corridors linking downslope and upslope uses and habitats within and adjacent to campus. Four strategies support this concept:

1. Use of local vegetation
2. Locally relevant building materials and a sensitivity to topography – sitting lightly on the land.
3. A potential bio-fuelled district energy facility sited at the western perimeter could serve the high heat demanding residential precinct.
4. A second potential district energy loop could serve the lower terrace research / academic precinct and industrial park.

To strengthen the connections between the campus and surrounding neighbourhoods and region, the team proposed to make the heart of campus, auditorium / theatre, First Nations Circle and an environmental learning lab more accessible and attractive to the community as a transit and cycle destination. The transit hub is a short walk to several public facilities. A future LRT alignment would extend the reach of campus to the region.

An expanded sports and recreation facility hub in the southwest corner of the site is a potential community amenity complement to the future mixed-use neighbourhood node across John Hindle Drive. Research and academic functions (Innovation Hub) are co-located with a future Industrial Park and possibly share systems infrastructure (energy, waste and water, for example). Principal campus pedestrian and cycling routes directly link to existing or anticipated off campus routes.

**The Hearts**



**The Braids**



*The Campus has two hearts, a daytime heart in the campus core and a nighttime heart in the student residential area. There is a green braid connection extending from the northwest corner of the campus, beginning at the Pine Forest, continuing to the campus core and southeast corner.*

**Archipelago: A Heart and Two Braids**



*The Blue Team's Plan: 1) Transit Hub; 2) stormwater wetland and First Nations Circle; 3) environmental learning lab and outdoor social spaces; 4) new academic buildings framing entrance from John Hindle Drive; 5) amphitheatre and plaza space in residential area; 6) natural vegetation corridors; 7) future LRT alignment; 8) Innovation Hub; 9) expanded sports and recreation facility.*

## 4.2. Green Team – “Evolving Community”

### *The Green Team*



*Left to right: Kim Perry, Leanne Bilodeau, Carole Jolly, Rob Johnson, Danielle Noble-Brandt, Gord Binstead, Marta Farevaag, Don Thompson, Doug Doyle, Gord Lovegrove*

The Green Team envisions UBCO of the future to be a vibrant, beautiful campus that fits perfectly into its setting. It will achieve a balance of built form with a range of complementary academic, residential and community functions – and landscapes, both “designed” and natural that are properly scaled for both programmed and spontaneous activities. The campus systems will function utilizing state of the art sustainable infrastructure and will be adaptable to allow for future innovations. Designers will be challenged to address educational, social, cultural, ecological and economic objectives. Uses will be mixed, both within precincts and individual buildings. It will be easy to walk or cycle between campus destinations via multiple links to surrounding communities and amenities through a comprehensive trail network. Transit use to and from UBCO will be increased through incentives like U-Pass and improved service. The transit hub will be positioned to take maximum advantage of its central location serving the current and expanded campus. Those who drive will be encouraged to park immediately upon arrival in lots occupying the smallest possible footprint and to traverse the campus as pedestrians and cyclists. As budgets allow, structured parking will be considered that also incorporates uses such as research and office space. The university structure will be clear and legible, ensuring easy access to all destinations. The campus will have a centre of gravity – a “heart” – that will invite all to linger and experience the best of what UBCO has to offer.

The Green Team’s proposal responded to the four Principles in the following ways.

### **Celebrating Place**

The Green Team supports, and recommends reinforcement of the core structural elements of the 2009 UBCO Master Plan. This plan identifies both north/south and east/west axial corridors as organizing devices for the campus, providing opportunities for strategic placement of new buildings and landscapes. This structure responds well to the setting, terrain and natural features of the campus.

The creation of a “main street” on University Way, flanked by four new mixed-use buildings, provides an opportunity to create a University “heart” anchored by student services, an arrival gateway, courts and small plazas. It also provides for extension of the corridors in the future as campus expansion occurs.

### **Campus Vitality**

The objective is to transform UBCO from a “commuter campus” to a “university community”. This can be accomplished by strengthening the bond between the surrounding community and creating a place that is loved by those who live, work and visit the campus. Consideration should be given to a broader range of housing options such as married/mature students, market units and expanded conference facilities. Close proximity to the airport could be a factor when considering types of accommodation, parking and transit. To build momentum, we recommend prioritization of improvement/refurbishment of current campus landscapes such as the central courtyard, the commons and the axial corridors.

### **Whole Systems Thinking**

We perceive the UBCO campus as a single entity (an organism) with all component parts and systems working together to fulfill the broad goals of the institution. If this is to be achieved, social, educational, economic and ecological objectives all need to be achieved. There are many components that must all work together including connectivity, wayfinding, transit & parking, optimum land use mix, multiple/flexible use of interior and exterior spaces, teaching/educational landscapes, sustainable infrastructure, building momentum through pilot projects, strengthening relationships to the broader community (both physical and psychological), creating spaces that are loved...in short – creating a complete community.

### **Design Excellence**

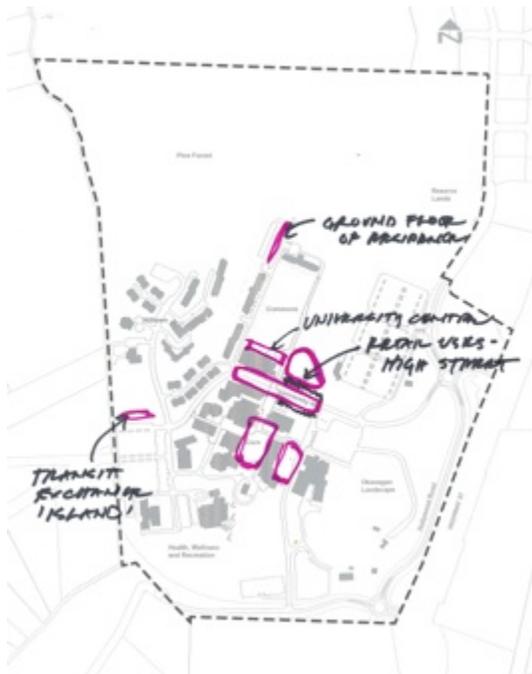
Future administrators and designers working at UBCO need to understand and stay focused on the broad objectives and systems. Consideration should be given to upgrading some of the older parts of campus that existed before the creation of the Master Plan. Pilot projects make people take notice that “things are happening”, instilling a sense of pride-of-place – while building momentum. Materials should be as high quality as budgets allow. The highest profile places, such as “the heart”, should receive the most refined quality of treatment and finish.

### **Relevancy of the Name – Evolving Community**

As stated above, our approach is to build upon the current campus structure as identified in the 2009 Master Plan. This legible pattern can be easily extended to allow for future campus expansion. As UBCO grows (evolves) in area and population, opportunities to fulfill the aspirations and vision will increase. Care should be taken however, to maintain the “compact” form of the campus. Increased land area could potentially lead to campus “sprawl” which should be avoided.

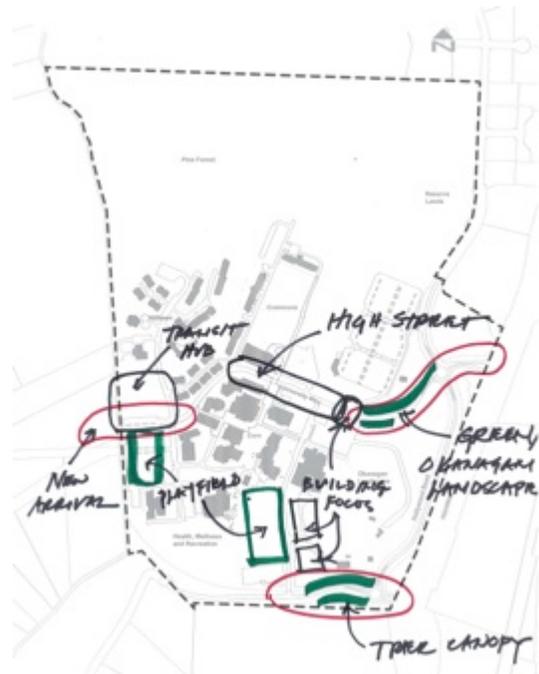
The word “community” was chosen carefully. Our vision for the future is one of UBCO as a fully formed place with many dimensions and qualities beyond that of an isolated campus.

**Services, Amenities and Food**



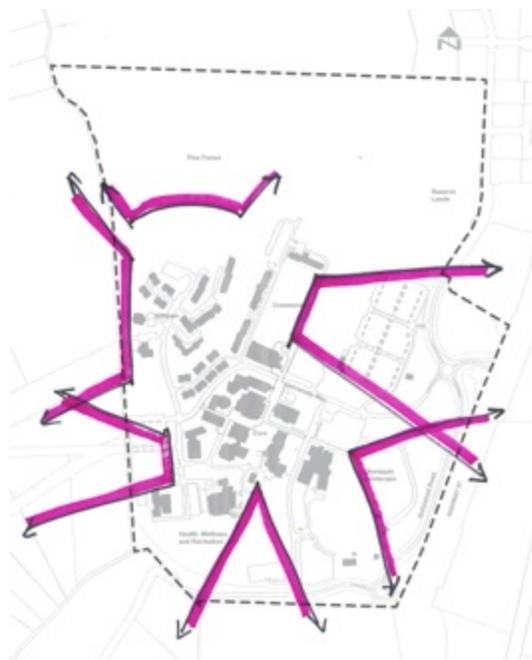
Key

**Campus Arrival**



**Special Places**

**Views Key**



Services are distributed across campus to both reinforce central activities and provide amenity opportunities throughout campus. Campus arrival is reinforced through landscape to announce entrances. Key views are maintained outward from the campus. Special places are given treatment that encourages different experiential moments throughout campus.

### Evolving Community



The Green Team's Plan: 1) The Campus Heart – Main Street with flanking mixed-use buildings; 2) key social spaces – the Courtyard, Commons, and axis to the First Nations Circle; 3) Primary Pedestian Mews with strengthened termini; 4) Transit Hub; 5) research core with green roof and parking below.

### 4.3. Red Team – “Toads + Turtles: Pond to Pond”

#### *The Red Team*



*Left to right: Abigail Riley, Guy Guttman, Cynthia Girling, Scot Hein, Adam Lee, Colin Christensen, Casey Hamilton, Shelley Kayfish, Brian Jones, Mary Ann Olson-Rusello*

The Red Team’s urban framework strategy is motivated by the recognition that the campus enjoys, and is influenced by, a larger contextual identity and a special relationship with environmental systems. The campus is privileged to have such a special landscape setting, related visual amenities, airport proximity, the rail corridor and potential for light rail service, the emerging mixed use community to the southwest and Robert Lake. An understanding of existing and anticipated movement systems, including John Hindle Drive and regional bicycle connectivity, was important towards identifying strategic locations where new campus investment should occur. The team recognized that the southerly half of campus lacks student vibrancy, which is essential towards activation of the north-south mews as a “stage” to reveal student life and promote campus identity. The team focussed on strategies that would initiate new place-making in south campus towards creating a more compact, integrated and vibrant campus including:

1. Relocation of the works yard function in the southeast quadrant of the campus to an off-campus location, towards modernizing these facilities while transforming the existing yards location back to a working, authentic landscape that visually emphasizes UBCO's stewardship;
2. Focussing new campus investment in the southwest quadrant through the introduction of a "Community Commons" that enjoys a strong visual and proximal relationship to the emerging, small scale, mixed-use opportunities on and off campus, and Robert Lake which provides accessible, pastoral amenity. These new commons would accommodate existing parking capacities while covering new community playfields. New student residence buildings would frame the commons/playfields on three sides while enjoying shared views west to Robert Lake. The more immediate introduction of the third commons would balance the distribution of on-campus residential uses towards a more vibrant place of living and learning;

3. Introducing additional on campus food services, and related commercial/socially focussed tenancy at grade, in the form of a "mini main street" that more immediately serve student residencies (four new 6 story building that frame the Community Common) as well as those who would walk or drive from off campus;
4. Introducing an innovative mixed-use strategy in the form of a parking structure that accommodates significant parking demand, in minimal footprint, while introducing ground oriented commercial tenancy. This initiative would be funded through the inclusion, and "wrapping", of single loaded market residential development that would disguise the primary parking function while generating economic value towards project viability.
5. Introducing a transit exchange at the existing north parking area towards eliminating any large bus service on campus. The Red Team is also recommending the introduction of smaller, frequent bus service that serves the residential areas up slope, as well as the internal "campus loop", as a strategy to augment the regional service while eliminating impacts of larger buses during periods of high student and pedestrian movement between classes;
6. Recognizing the opportunity to strengthen the campus core at the intersection of University Way and the north-south mews through the introduction of new academic buildings that provide a more urban street edge, and assist in transitioning between the upper North "Pastoral Commons". The team recognized the visual importance of natural landscapes, and topographic features, towards a distinctive campus experience that is visually memorable;
7. Anticipating future opportunities for research partnerships by introducing new academic building sites that would be proximate to the emerging Research and Development corridor located to the northeast and the airport. The potential for more immediate, walkable academic exchange could motivate new speculative buildings off campus towards strengthening local economy and distinguishing the campus and region as a place of innovation and invention. The team was hopeful that academic research, and any related scaling up/implementation of related entrepreneurial opportunities, might reinforce UBCO as stewards of local landscape and food systems. The potential to expand habitat and bio-diversity at the north end of the north parking lot would demonstrate this commitment;
8. Promoting the introduction of light rail into the existing corridor with two to three campus focussed stops, with walkable connections for pedestrians and cyclists; and
9. Introducing stormwater management systems that strengthen existing landscapes throughout campus, reinforce authentic identity and as an obvious expression of whole systems integration.

**Campus Arrival**

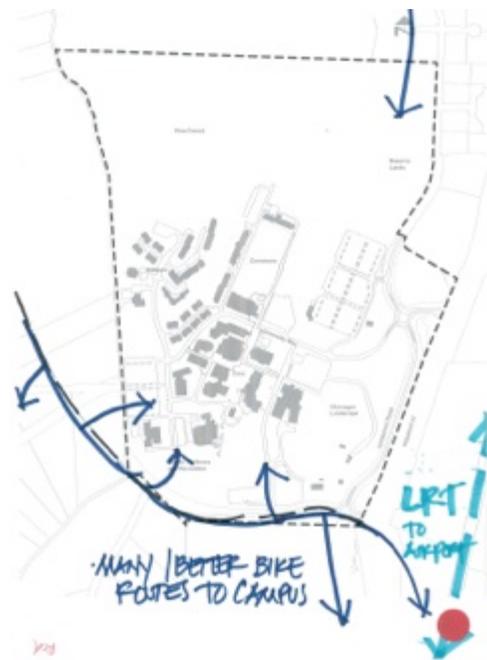


Key

**Key Views**



**Multi-Modal Access**



**Special Places**



Campus arrival points are distinguished through entrance experiences. Key views are maintained outward from the campus. Multi-modal access is enhanced by improved cycling connections and accommodate for anticipated light rapid transit. Special places are distributed throughout the campus to provide different experiential moments.

**Toads + Turtles: Pond to Pond**



The Red Team's Plan: 1) The relocated works yard; 2) Mixed-use Community Commons; 3) Mini Main Street; 4) Market Housing node with ground oriented commercial and wrapped parking; 5) Transit Exchange; 6) Reinforced Pastoral Commons; 7) new academic buildings reinforcing the campus entry and connecting to the emerging research& innovation corridor; 8) connection to future light rail; 9) stormwater management systems.

## 4.4. Yellow Team – Okanagan Hub

### *The Yellow Team*



*Left to right: Edward Porter, Joanne Proft, Trevor Demerse, John Metras, Vicky Topping, Krista Falkenr, Roger Bizzoto, Peter Arthur*

The Okanagan Hub concept evolved while reconciling the fundamental questions of arrival (transportation) and program (at a regional scale). In contrast to an inward-oriented campus planning exercise, the Okanagan Hub concept develops UBCO as a destination for the larger Okanagan community: where academic life and institutional programming may be experienced as a “best practice” of civic life.

Preliminary discussion acknowledged the need for a “bus exchange” or transit plaza... but evolved to consider a “modified barbell” structure, acknowledging both: a need to locate centralized transit services closest to residential areas (from an elevational perspective); and the real conflict of transit traffic through the centre of campus. As such, the Okanagan Hub scheme proposes eastern transit circulation with stops en route to the western transit plaza. Individual residential precincts are reinforced with recreational programming (sport/events fields and an enhanced trail network) and opportunities for additional retail/commercial. The concept provides a master plan strategy to help translate the Draft Master Plan Principles into community patterns/structures and physical form. Major elements include:

- **Gateways** – Glenmore, Okanagan and Central – punctuating arrival experiences based on landscape and architectural program-specific interventions;
- **The Civic Stage** – The Mews Crossing, Centre Stage and Front Porch – prioritizing a central pedestrian “street” with opportunities to platform/terrace significant gathering areas and public realm program while maintaining emergency access connections;

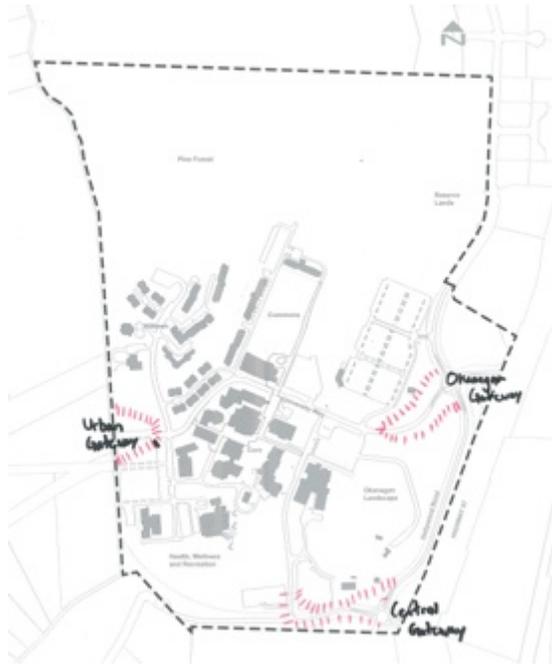
- **Dual Loop Transit** – Utilizing regional connections between Highway 97 and Glenmore Road, the proposed “dual loop” system removes conflict from high volume pedestrian areas while enhancing transit access to east- and west-campus areas; and,
- **TDM + Integrated Parking** – “Pedestrian-first” makes life easier without a car, and incorporates structured parking within the research park building program, where the majority of demand is expected. The concept also supports above-curb parallel parking within the internal, street networks, as well as small parking “pods” (~6 spaces) within the network of service lanes.

The opportunity presented by infill development was reflected by all charrette teams: intimacy and accessibility are concerns of scale, addressed through thoughtful consideration of massing and materials. As campus development proceeds, a balance between building efficiency and human scale may be struck with particular attention to entry articulation, wayfinding, indoor/outdoor relationships and layering/sequencing spatial transitions (public/private). Arrival is enhanced through a “scenographic” approach, where experience is choreographed with landscape and built form; and “gateways” are signalled by a distinct hierarchy of space and form.

As campus growth continues, the integration of building form and landscape will help support experiential and ecological connections between the built environment and the landscape. Beyond materiality, indoor/outdoor relationships (visual access to seasonal change, outdoor classroom space, retractable walls, etc.) and functional building systems (district energy/geoexchange, waste treatment and water/stormwater management) will provide a deeper structural connection that reinforces the same values. At the landscape scale, additional opportunities to utilize the west campus for recreational uses and (as more than “reserve lands”) stewardship activities could provide the greatest opportunity for applied/ecological learning.

Beyond physical adjacency and transportation linkages (from the scale of the arterial connection between Glenmore Highway and Highway 97, to formalized trail connections to the Quail Ridge neighbourhood), the Yellow Team’s concept proposes a significant, pedestrian-oriented “civic stage” to host community events/programming in a deliberate attempt to open the campus and provide additional opportunities to pro-actively host neighbours at a regional scale.

**Campus Arrival**



**New Academic / Research Uses**



**Campus Hearts**



**Ecological and Recreational Places**



Three arrival points have been enhanced. New academic/research uses are distributed throughout the campus. The campus heart, in the core, is anticipated as the centre of campus activity. Ecological and recreational places offer a variety of formal and informal programming throughout the campus.

**Okanagan Hub**



*The Yellow Team's Plan: 1) The relocated works yard; 2) Mixed-use Community Commons; 3) Mini Main Street; 4) Market Housing node with ground oriented commercial and wrapped parking; 5) Transit Exchange; 6) relocated and Reinforced Pastoral Commons; 7) new academic buildings reinforcing the campus entry and connecting to the emerging research & innovation corridor; 8) future light rail station; 9) stormwater management systems.*

## 5. Emerging Master Plan Directions

### 5.1. Draft Master Plan Principles, Strategies and Frameworks

Principles provide the over-arching direction for the Master Plan, while strategies and frameworks give specificity for what the principles mean and how they are to be achieved. Together, they help answer questions like: how will anticipated growth affect the campus experience? What campus places, art, cultures or customs do we want to celebrate? How best can the campus reach out to the surrounding community to position itself as a leader and steward? Or where are the opportunities to enhance the well-being of those living and working on campus while also enhancing the ecosystems that it supports?

Overwhelmingly, the four charrette proposals reinforce a number of important elements from the 2009 Master Plan, while establishing new routes for the campus over the coming years. The following Principles, Strategies and Frameworks distil the formative directions emerging from the four combined charrette proposals. Together they constitute the basis for developing a vision for the campus that respects the foundations of the 2009 Master Plan while supporting the 2014 Master Plan purpose:

*UBC's Okanagan Campus aspires to be a centre for learning and innovation that produces global citizens through transformative personal growth and collaboration. Its people, places, and activities are connected by a shared commitment to fostering community and supporting social and ecological well-being. Deeply connected to the landscape, the campus is an accessible, intimate, and welcoming environment – a catalyst for positive change.*

### 5.1.1. A Welcoming and Connected Campus

*Through physical design, programming and partnerships, the campus will reach out and connect to the surrounding community to create lasting connections between people and places.*

**This principle may be achieved by:**

- Designing flexible buildings and spaces to accommodate a range of academic and research activities
- Promoting opportunities to embed living laboratory projects into the design of buildings and open spaces.
- Supporting people who live, work, study, and conduct research, with world class facilities.
- Mitigating the impacts of parking and vehicle loading on the
- Staging parking surfaces as future building locations with structured parking.
- Designing spaces to host community events/programming in a deliberate attempt to open the campus and provide additional opportunities to pro-actively host neighbours at a regional scale.
- Making the campus more pedestrian-oriented
- Planning for an expanded transit hub that meets operational and passenger needs

#### **Parking at the Edges**



*Keeping parking at the campus edges will preserve the core for pedestrian activity and allow parking surfaces to transition to building sites with structured parking over time.*

#### **Connections and Movement**



*An integrated street network provides access to regional routes while all vehicular traffic, including transit, is kept at the campus edges to unify and pedestrianize the campus core.*

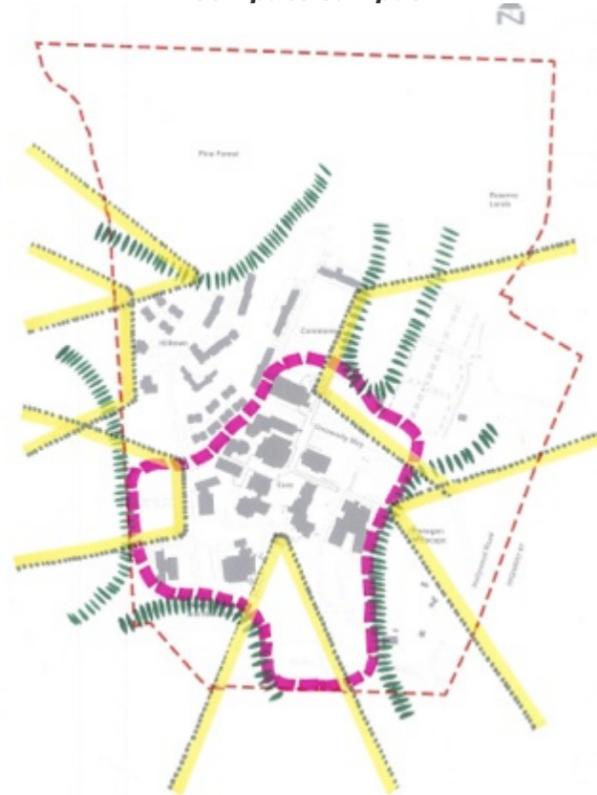
### 5.1.2. Celebrating Place

**Strengthen the intimacy and connectedness of campus spaces and places while celebrating and embracing the surrounding Okanagan landscape, to achieve a distinguished and compact core within an indigenous landscape setting.**

**This principle may be achieved by:**

- Creating a compact campus core and strengthening major pedestrian axes
- Providing a network of informal walkways, bike paths, and trails
- Bringing landscape features into the campus core as much as possible
- Strengthening the visual identity and cohesiveness of the campus
- Reinforcing the Okanagan grasslands and pine forest in landscape design
- Supporting design excellence and integration on multiple scales
- -

**Compact Campus**



*Creating a compact campus core concentrates development and strengthens the intimacy of spaces, while offering opportunities for expansive views of the Okanagan landscape.*

**Integrated Spaces and Places**



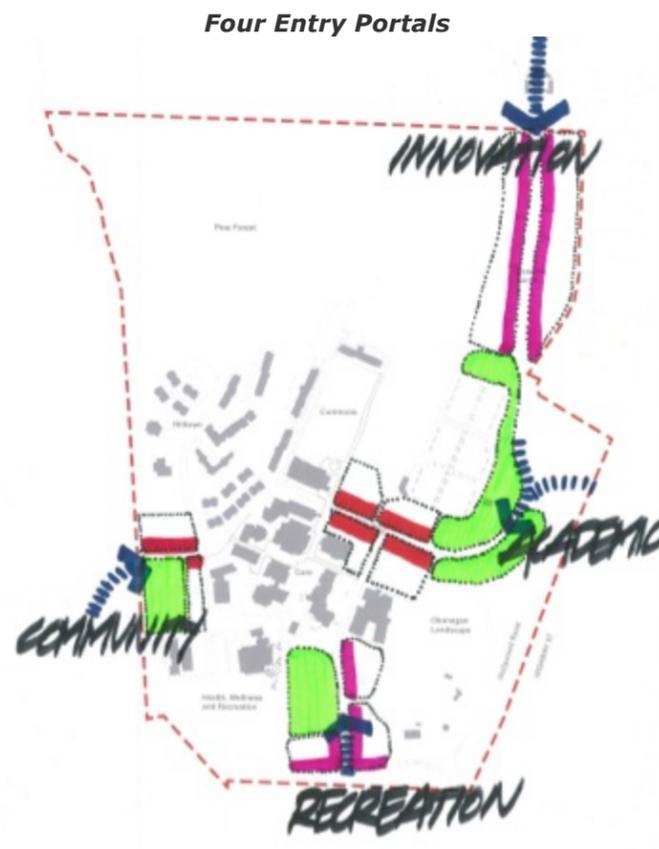
*A hierarchy of places and spaces is linked by a network of pedestrian, cycling and habitat connections and corridors. The larger open space Commons support a range of community, sport, and university functions while smaller, more intimate spaces offer options for neighbourhood gathering and social programs.*

### 5.1.3. Campus Vitality

**Leverage campus growth to create a vibrant community, meeting the needs of all users and enabling student, staff, faculty and the broader community to connect, learn and linger.**

**This principle may be achieved by:**

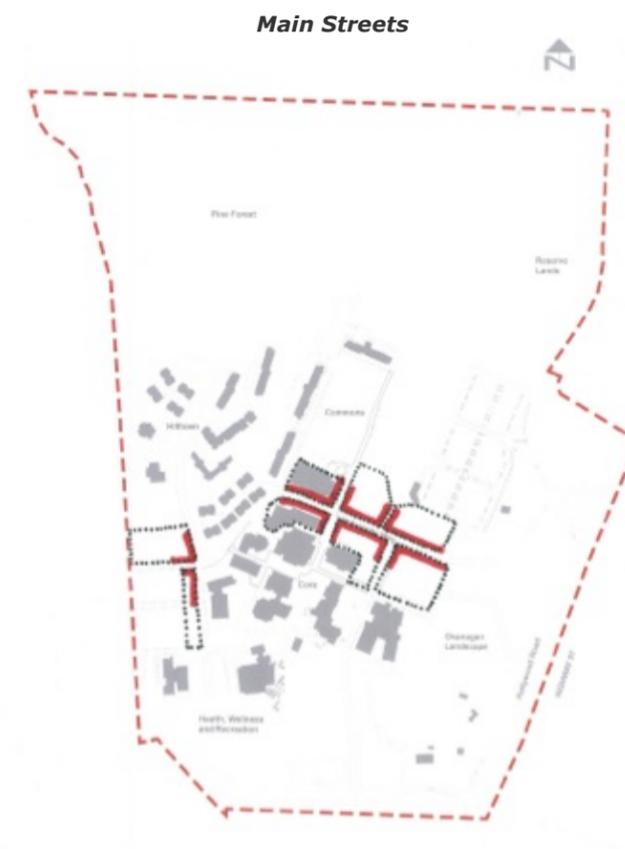
- Considering the distribution of residential uses on campus
- Responding to the needs and preferences of residents in neighbourhood design
- Allowing for flexibility of use at the ground floor of buildings
- Creating vibrant pedestrian-oriented streets Encouraging increased transit use and supporting a walkable campus



Entry to the campus is via four portals at the west, south, east and north of the campus.



Housing (shown in blue) is distributed across the north, west and south edges of the campus in close proximity to supportive amenities (shown in red).



The primary main street along University Avenue creates a pedestrianized nexus of activity and vibrancy at the campus core, while a smaller main street is proposed at the western residential commons.

#### 5.1.4. Whole Systems Infrastructure

**Campus growth to occur through a whole systems environmental, economic and social sustainability lens to achieve a net-positive impact on the wellbeing of the campus community and ecology.**

**This principle may be achieved by:**

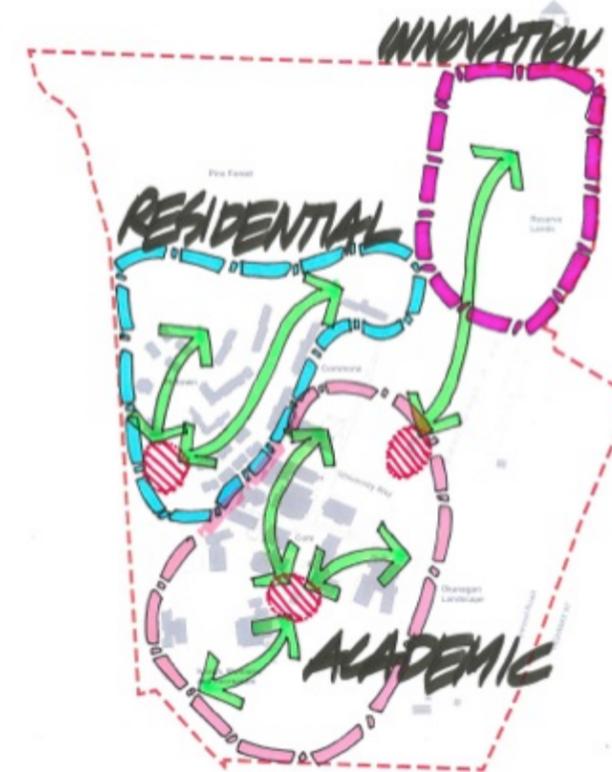
- Planning for flexibility and resiliency
- Exploring opportunities for the use of district energy systems, and passive design principles Incorporating landscapes characteristic of the Okanagan climate
- Implementing stormwater management strategies that preserve ecosystem assets
- Shifting towards renewable and regenerative energy, water, and waste systems

#### **Demonstrated Stewardship – Stormwater and Ecology**



*Stewardship will be manifest through the celebration and revelation of natural and cultural processes throughout the site. A distinctive cultural leadership expression will mark the terminus of primary east-west axis.*

#### **Demonstrated Stewardship – Energy and Waste**

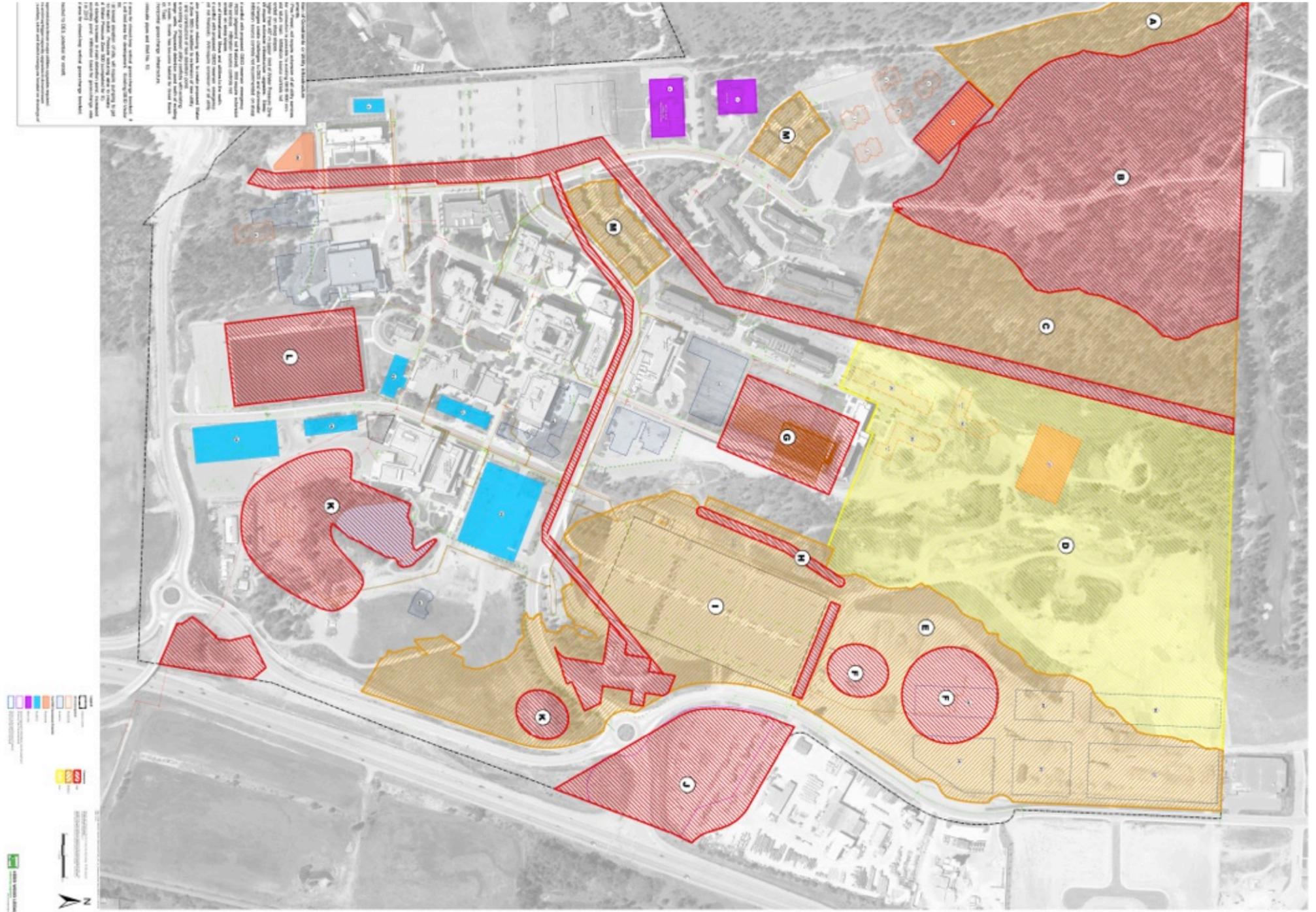


*Building on existing district energy and geothermal systems, long-term campus growth will be supported by net zero approach to energy and waste capture and re-use.*

## 6. Next Steps

The Master Plan directions and frameworks will be refined and discussed in consultation with stakeholders in the fall of 2014. In parallel, technical work on the transit hub and a whole systems infrastructure framework will progress through later 2014 and inform further development and testing of these directions and frameworks. A Master Plan update will be presented to the Board of Governors in December 2014 and the community will be consulted on a draft Master Plan in early 2015. Based on community input, a final Master Plan will be presented to the Board of Governors in June of 2015 followed by presentation to the community.

## Technical Analysis 2 – Utilities



## 7. Appendix - Technical Analysis Summaries

A series of Technical Analysis Reports have been prepared to inform the Charrette and the Master Plan Update. The following summaries provide key highlights of the technical reports, with full versions of the reports available through UBC.

### Technical Analysis 1– Transportation: Transit Exchange Location Review

#### Introduction

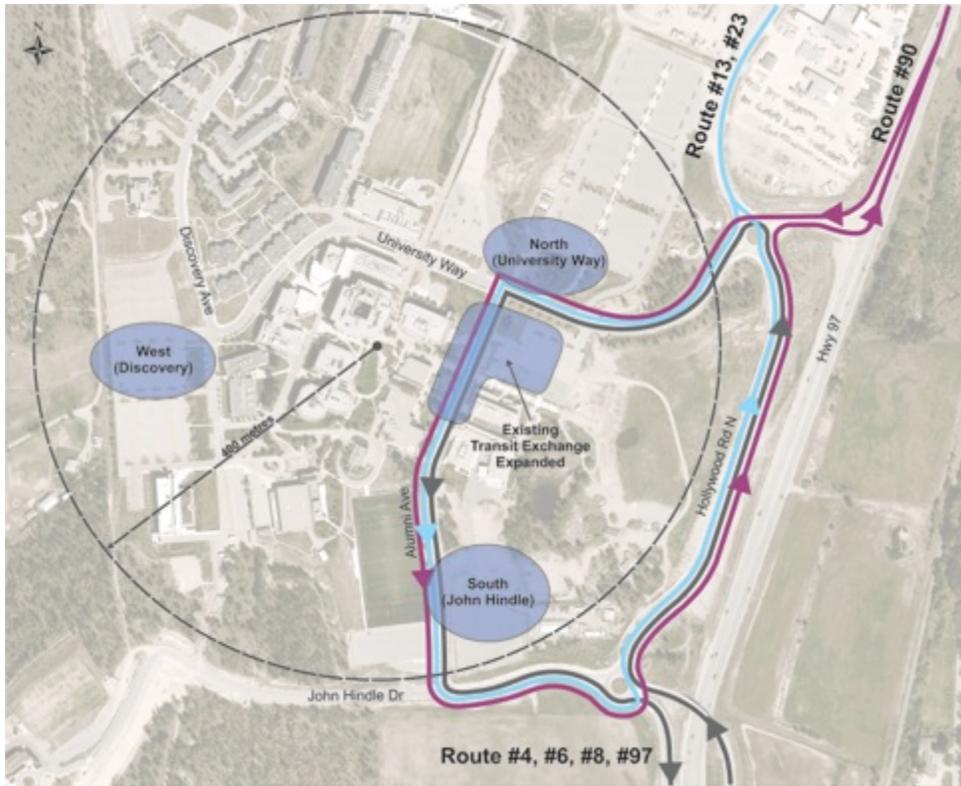
Consideration for a new transit exchange is a key component of the transportation plan to meet future demands at the Campus as it expands and matures. It needs to provide a comfortable and safe environment for transit users; integrate with the campus’s urban design and main activity areas; be adaptable to future demands; and, support the functional needs of the operator. Each of these considerations is an important determinant that will contribute to its future success, or failure.

A preliminary transit charrette was held at UBC Okanagan on April 16<sup>th</sup>, 2014 to begin the discussion on how a new transit exchange facility might work for the Campus as well as to identify the priorities that will shape its location and form. Three potential new locations were explored as “test locations” for the charrette exercise to flush out some of the challenges and opportunities.

Moving forward, these test locations will be considered in addition to the potential reconfiguration and expansion of the existing exchange facility at Alumni Avenue. The following provides a starting point for continuing this assessment, first covering each of the potential location descriptions before presenting guiding principles for the charrette design process.

#### Location Descriptions

The four potential transit exchange locations identified are pictured below, and the following table provides a summary description for each location.



Potential Transit Exchange Locations

Location	Description
West (Discovery Ave)	<ul style="list-style-type: none"> <li>Positioned on existing surface parking (Lot S);</li> <li>The shape could be generally square, but depends on design needs</li> </ul>
North (University Way)	<ul style="list-style-type: none"> <li>Positioned on the slope between University Way and parking Lot H, and would require grading work or structure to support;</li> <li>The shape would need to be elongated given the limited depth available</li> </ul>
South (John Hindle Drive)	<ul style="list-style-type: none"> <li>Positioned at parking Lot J</li> <li>The shape options are flexible given the footprint available, but would require some re-grading</li> </ul>
Existing Expanded (Alumni Ave)	<ul style="list-style-type: none"> <li>Utilizes the street system occupied by existing transit exchange and extended also into Lot E around the new building;</li> <li>The shape would be rectangular, utilizing the frontage of future building on Lot E for passenger loading/unloading</li> </ul>

### Transit Hub Guiding Principles and Criteria

The following 'guiding principles and criteria' have been developed to ensure that the charrette design process remains focused and balanced on the needs of the University and the operator. They will

provide objectivity and transparency in the assessment process in order to decide on the optimal exchange location and what form and features it will embrace.

### ***Location***

- Central if possible;
- Some level of connectivity to the residences;
- Proximity to the existing routing system; and,
- Mid-level location along Campus slope.

### ***User Experience***

- Feel secure (active, well lit, animated) for use at all times of the day;
- Readily accessible from all part of the campus;
- Locate transit hub to extend or compliment an existing pedestrian corridor;
- Adjacent uses that are active through the hours of the transit exchange; and,
- Weather protection.

### ***Quality Public Realm***

- Frame and integrate with buildings to optimize users' experience;
- Develop a well landscaped plaza area to connect with waiting areas and accommodate pedestrian demands;
- Provide flexibility to introduce amenities on campus (i.e. groceries, entertainment, wine and beer); and,
- Design for a strong pedestrian/bicycle network between the transit hub and surrounding neighbourhoods.

### ***Operational Efficiency***

- Minimize pedestrian / bus movement interactions;
- Minimize bus routing through campus;
- Fully utilize the benefit of new road corridors (e.g. John Hindle Drive);
- Consider dynamic loading / unloading facilities (currently fixed) to reduce footprint;
- Provide strong circulation routes for users along with ample queuing areas; and,
- Sequence unloading, layover, and loading with minimal bus movements between steps.

### ***Adaptability***

- Flexibility of design to allow contraction/expansion of the facility as demand decreases/increases;
- Transit hub need not to be at the campus core but should be close enough to contribute to vitality and safety of the core;
- Central and relevant to the future expansion of the campus; and,
- Design future intersections with transit operations as a priority

### Multi-modal Capability

- Develop a bike station or other form of central storage facility;
- Provide location for accessing taxis;
- Consider bicycle rental system;
- Provision of car-share vehicles; and,
- Communication boards, real-time for arrivals, travel option information, travel coordinator.

### Evaluation Matrix

Each of the above criteria will assist in the decision making process, making it robust and focused. It can be developed into a matrix with each location listed in columns to see how they measures up using either ticks or stars.

Guiding Principle	Criteria	Location			
		W	N	S	EE*
Location 	Central if possible	✓			✓
	Some level of connectivity to the residences	✓		✓	✓
	Proximity to the existing routing system	✓		✓	✓
	Mid-level location along Campus slope	✓	✓	✓	✓
User Experience 	Feel secure (active, well lit, animated) for use at all times of the day		✓		✓
	Readily accessible from all part of the campus		✓		✓
	Locate transit hub to extend or compliment an existing pedestrian corridor		✓		✓
	Adjacent uses that are active through the hours of the transit exchange		✓		
	Weather protection	✓	✓	✓	✓
Quality Public Realm 	Frame and integrate with buildings to optimize users' experience	✓			✓
	Develop a well landscaped plaza area to connect with waiting areas and accommodate demands	✓			✓
	Provide flexibility to introduce amenities on campus (i.e. groceries, entertainment, wine and beer)			✓	✓
	Design for a strong pedestrian/bicycle network between transit hub and surrounding neighbourhoods	✓		✓	
Operational Efficiency 	Minimize pedestrian / bus movement interactions	✓	✓	✓	✓
	Minimize bus routing through campus		✓		✓
	Fully utilize the benefit of new road corridors (e.g. John Hindle Drive)	✓	✓		✓
	Consider dynamic loading / unloading facilities (currently fixed) to reduce footprint				
	Provide strong circulation routes for users along with ample queuing areas	✓			✓
	Sequence unloading, layover, and loading with minimal bus movements between steps	✓		✓	
	Minimize pedestrian / bus movement interactions		✓		
Adaptability 	Flexibility of design to allow contraction/expansion of the facility as demand decreases/increases	✓	✓		
	Transit hub need not to be at the campus core but should be close enough to contribute to vitality and	✓		✓	✓

UBC Okanagan Master Plan Growth and Experience Charrette Summary

	safety of the core				
	Central and relevant to the future expansion of the campus	√			√
	Design future intersections with transit operations as a priority	√			√
Trip Extension 	Develop a bike station or other form of central storage facility	√			
	Provide location for accessing taxis	√			
	Consider bicycle rental system			√	√
	Provision of car-share vehicles	√			√
	Boards, real-time for arrivals, travel option information, travel coordinator	√			

Note "EE" stands for Existing Expanded transit exchange

The table below describes the constraints presented as part of the analysis of on-campus utilities.

	Area	Constraint Level	Description of Constraints or Utility Infrastructure Requirements.
A	Pine Forest Northwest	Medium	Edge of Pine Forest, will require extension of all utility services. New water connection is possible to existing GEID 600 mm supply and return main. Infiltration source controls not recommended on steep slopes.
B	Pine Forest South of Reservoir	High	Area is higher than 487 m (upper limit of Water Pressure Zone 515). Will require extensive infrastructure upgrades. Steep elevation changes create challenges to DES and stormwater runoff. Infiltration source controls not recommended on steep slopes.
C	Pine Forest East Slope	Medium	Potential conflict with proposed GEID reservoir emergency spillway ROW (alignment not finalized). Will require extension of all utility services. Infiltration source controls not recommended on steep slopes.
D	Pine Forest/Hilltown East of ROW	Low	Extension of International Mews and utilities to the north. Potential conflict with proposed GEID reservoir emergency (alignment not finalized). Will require extension of all utility services.
E	University Reserve Lands	Medium	Will require pressure reducing valves to create proposed Water Pressure Zone 500) in addition to extension of new utility services and construction of new detention pond.
F	University Reserve Lands (Southwest)	High	Area has existing or proposed utility conflicts with existing geoexchange wells. Proposed detention pond north of existing infiltration swale. Swale has become habitat for Great Basin Spadefoot Toad.
G	Commons (Grass area)	High	Existing horizontal geoexchange infrastructure.
H	Okanagan Landscape Parkade H(G)	High	Need to relocate pipes and Well No. 10.
I	Okanagan Landscape Existing Parking Lot H	Medium	Potential area for closed-loop vertical geoexchange borefield. If installed, will limit area for development. Existing GEID Vector well ROW.
J	Okanagan Landscape East of Innovation Dr	High	Located at lowest elevation of site, will require pumping to get sanitary to main outlet. Pressure reducing valve to create proposed Water Pressure Zone 500 (completed for E).
K	Okanagan Landscape Main Detention Pond	High	Proposed storage increase in main detention pond, increased use in secondary pond. Infiltration basin for geoexchange was installed in 2013
L	Health, Wellness and Recreation Main Field	High	Potential area for closed-loop vertical geoexchange borefield.
M	Hilltown Residences	Low	Not connected to DES, potential for retrofit.

Notes: All other areas are considered 'opportunities' for development due to fewer major utilities upgrades required. However, buildings will require new service connections and may trigger capacity upgrades to downstream infrastructure. Technical details of upgrades for water, sanitary, storm and district energy are located on drawings of each respective utility

### Technical Analysis 3 - Ecological

Ecoscape Environmental Consultants Ltd. was retained by the University of British Columbia to complete an ecological analysis of the UBC Okanagan Campus to support the Campus Master Plan update. The following provides a high level brief on its detailed report of June 2014.

The report provides a baseline ecological inventory. Existing data including Sensitive Ecosystem Inventory (SEI) and Terrestrial Ecosystem Mapping (TEM) has been updated, refined and scaled. Recommendations for future land use planning and conservation or restoration efforts have been derived by overlaying Environmentally Sensitive Areas (ESA) with the seven campus precincts defined in the [2009 Master Plan Update](#) (see campus precincts map, p. 16). Rare and endangered plants, trees, wildlife and species at risk are identified. The West Campus lands are not currently part of the Campus Master Plan, but were mapped and evaluated for future considerations.

The **core precinct** is the compact heart of the campus centered on University Way with the highest density of buildings and hardscape/landscaped land. This precinct is rated as having a Low environmental sensitivity. Key recommendations center on the integration of drought tolerant native plants and trees, and control of invasive species.

The **commons** consists of largely soft landscaped open lawn along adjacent buildings. The east side features panoramic views of the valley. The majority (94%) is rated as having low environmental value. The remaining 6% rated as having moderate environmental value comprises the slope of coniferous woodland, east of the Commons. Key recommendations center on methods reduce environmental degradation and limit the spread of invasive species.

The **Health, Wellness and Recreation** precinct is comprised of indoor and outdoor recreation facilities. The pocket of coniferous woodland bound by John Hindle Drive and the main campus is rated as having a high environmental sensitivity. Key recommendations are associated with ensuring appropriate infrastructure and woodland buffering with carefully placed access routes to retain environmental integrity of areas with High sensitivity.

The **Okanagan Landscape** precinct is located between the Core and Highway 97. Home to the Engineering, Management and Education building, parking lots, patches of coniferous woodland, the storm water retention pond and an ephemeral pond, the 2009 Master plan update indicates the potential for additional buildings. This precinct contains all classes of environmental sensitivity. The storm water receiving wetland is classified as very high, with the surrounding woodland polygon as high, disturbed rural areas and isolated pockets of woodland as moderate and hardscape parking lots and buildings as low. Of particular relevance is a detention ditch that occurs at the north end of the lower parking lot at the interface between the Okanagan Landscape and University Reserve Land precincts. Despite its basic design as a ditch to collect runoff from the parking lot, it is currently providing open water habitat for the Blue-listed Great Basin Spadefoot Tadpoles. Pockets of coniferous woodland support corridors for wildlife. Key recommendations are associated with enhancing the environmental values of the area and maximizing benefits for



species at risk, such as above noted toad and painted turtle.

The **Hilltown** Precinct includes the mountain weather building, existing and future residences, the campus daycare and parking lots. 68% is rated as having low environmental sensitivity and 28% as moderate. A single adult Great Basin Spadefoot toad was discovered in a recently dried ephemeral pool within the disturbed site north of the residences. Recommendations center on targeting weedy species encroaching onto the natural woodland habitats, as well as opportunity to enhance or create suitable Spadefoot habitat.

The **pine forest** precinct is characterized by young ponderosa pine woodland, interspersed with human activities including road and trail, recreation and adjacent development. It is the least distributed natural ecosystem and future development in this area is not recommended. To maintain ecological value and movement corridor, wildfire management, control of noxious and invasive weed species, and the use of sanctioned trails only for sanctioned purposes is recommended.

The **University Reserve Lands** precinct is characterized by gravel pit use and effects. The environmental sensitivity of this precinct is rated as low, suitable for future intensive development, given certain considerations for effects on other adjacent habitats and existing wildlife species. Recommendations focus on mainlining connectivity with adjacent Pine Forest, buffer zones between future development, widespread invasive weed management planning and storm water management.

Generally, climate change implications strategize expansion of existing wetlands, native species and drought tolerant plants. Trees and other vegetation will promote carbon uptake and release of oxygen to the atmosphere while providing local level benefits such as wind and sound barriers.

### **ESA Key in Brief**

Very High: Areas representing extremely high ecological value and typically contain rare or critical habitat areas for sensitive or at risk species (highest priority for conservation).

High: Areas that contribute to the regional biodiversity and connectivity of the surrounding landscape but lack critical habitats for at risk species (development should generally avoid these areas).

Moderate: Areas that represent distributed habitats or fragmented features with potential to return to high value through natural succession (benefit from restoration).

Low: Areas that contribute little to no value with regard to habitat diversity and have limited potential for supporting significant wildlife (development is typically focused on these areas).

## **Technical Analysis 4 - Cultural Landscape**

The overall intent of the cultural landscape analysis is to understand the physical changes to the campus over time that reflect historical changes in land use, policy and governance, demographics, teaching and curriculum

The UNESCO World Heritage Convention Operational Guidelines and Australia's Burra Charter use the term cultural landscape to embrace the diversity of interaction between humankind and the natural environment.

Cultural landscapes fall into three general categories:

1. The designed landscape created intentionally by a person or group
2. The organically evolved landscape resulting from the social, economic, administrative or religious occupancy on the land
3. The associative landscape that has important intangible associations with the past

## **Methodology**

The cultural landscape document was developed using the following methodology:

1. Development of the brief historical context of UBC Okanagan  
Any heritage building or feature must be considered in the context of the history and historical geography of the area surrounding it in order to obtain a meaningful understanding of its significance.
2. Creation of the thematic framework  
Historical themes are succinct ways of describing the major forces or processes that have contributed to the history of a place. Thematic frameworks ensure that the full extent of the history of a landscape or place is considered:
  - Theme A: On Highway 97
  - Theme B: Start-up Collaboration
  - Theme C: Sustainable Expansion
  - Theme D: Serious Inquiry, High Purpose
  - Theme E: Diverse Vistas
3. Use of the thematic framework to document significant landscape characteristics.  
Best practices in the documentation and assessment of cultural landscapes uses a series of landscape characteristics to comprehensively identify features of heritage significance. Landscape characteristics may be important to more than one theme; each theme may not necessarily contain every characteristic. Components of the cultural landscape may include:
  - Natural systems and features
  - Cultural traditions
  - Vegetation
  - Constructed water features
  - Spatial organization
  - Circulation
  - Buildings and structures
  - Small-scale elements
  - Land use
  - Topography
  - Views and vistas
  - Archaeological sites

Theme and description	Key points	Future growth and experience
<p><b>Theme A: ON HIGHWAY 97</b> The ambiance of the campus is informed by its semi-rural situation on the south and east flanks of a hilltop next to Highway 97 connecting Kelowna with the Okanagan Valley. This context both contributes to the campus feeling like an isolated entity on the highway, but one that can be seen also as a unique dynamic independent community.</p>	<ol style="list-style-type: none"> <li>1. The location of the University on Highway 97 north of Kelowna presents problems of access and cultural connection with the City of Kelowna, but also facilitates ease of connection within the region and beyond (via the airport); highway design presents challenges and opportunities for campus visibility and accessibility</li> <li>2. The present campus sits on disturbed and human-modified grassland that is typical for much of the developed Okanagan</li> <li>3. The sloped topography and remaining vestiges of hilltop pine forest help give UBC Okanagan a unique character</li> <li>4. Views of adjacent valleys, hills, and agriculturally cultivated lands create an atmosphere of openness and high purpose</li> <li>5. The present campus is the eastern portion of the total lands base now owned by UBC; what the University does with the West Campus Lands - the land west of the hills and saddle - is part of the University's future definition</li> </ol>	<ul style="list-style-type: none"> <li>• Linking growth of the campus to improvement of the experience of arrival on campus</li> <li>• Exploring restoration of modified grasslands next to highway as living lab project</li> </ul>
<p><b>Theme B: START-UP COLLABORATION</b> During these early years as a university, the atmosphere is not unlike that of a start-up company: academic initiatives flow from faculty inspiration and are supported by those in charge of running the institution. Spaces are commandeered for purposes unplanned-for. Faculty and teaching space across many disciplines are situated in close proximity at the core of the campus.</p>	<ol style="list-style-type: none"> <li>1. The retention of original low-rise red-brick faced Okanagan College campus is critical for understanding the roots of UBC Okanagan's culture</li> <li>2. The built nature of the landscape design and character of the Courtyard situates the roots of the University in the late 20th Century designed landscape aesthetic</li> <li>3. Alterations and additions to the original Okanagan College buildings help convey the development of today's UBC Okanagan</li> <li>4. The inward orientation and edges of the Courtyard reinforce the enduring importance of social interaction in campus life</li> <li>5. Later buildings and structures with forms, materials and details that reflect their respective contemporary design aesthetics both represent the evolving campus and help define the central original intimate core</li> </ol>	<ul style="list-style-type: none"> <li>• Linking growth with intensified and multiplied collaboration</li> <li>• Identifying means to forming collaborative environments</li> <li>• Funding for non-programmed collaborative space - a social sustainability issue</li> <li>• Forming a coffee house culture: eating and drinking venues to support campus life</li> </ul>
<p><b>Theme C: SUSTAINABLE EXPANSION</b> The campus' expansion out from its core of college buildings is a physical manifestation of the University's academic and cultural ambitions to be a major force locally and globally. As a leader in sustainable development, including social sustainability, the campus is an on-going research piece, with the potential of bringing best-practices theory to the campus environment.</p>	<ol style="list-style-type: none"> <li>1. The contrast between the earlier Okanagan College campus and later buildings and landscape design is a defining feature of the campus</li> <li>2. Expansion according to well-defined residential, educational, and recreational precincts would ensure an overall spatial and social coherence</li> <li>3. Managed incremental development can continue to be a defining socially sustainable strategy for campus development, avoiding a wholesale destruction of valuable physical infrastructure that is also the visual evidence of campus evolution</li> <li>4. Sustainable building and landscape design can define the growth of the campus and define a role for the University in the region and around the globe</li> <li>5. Buildings and structures with forms, materials and details that reflect their respective contemporary design aesthetics are important contributors to understanding the campus as a dynamic work in progress that began with a cluster of buildings now at the core</li> </ol>	<ul style="list-style-type: none"> <li>• Linking sustainability to effective regional transit system</li> <li>• Use of West Campus Lands to demonstrate sustainable community development</li> <li>• Linking UBC Okanagan's growth to regional growth</li> <li>• Rate of growth/change and social sustainability</li> </ul>
<p><b>Theme D: SERIOUS INQUIRY, HIGH PURPOSE</b> There is a pervasive sense among the faculty and operational staff that UBC Okanagan has a role as a place of serious academic inquiry. The University is committed to an engagement with issues faced uniquely in the Okanagan, but with the high purpose of demonstrating the global implications and applications of this regional engagement.</p>	<ol style="list-style-type: none"> <li>1. The University is committed to growing a campus culture that is marked by a commitment to co-creating knowledge an understanding across traditional boundaries</li> <li>2. The campus is being formed as a place for seamless learning experiences grounded in the integration of innovative teaching, opportunities for application, and research</li> <li>3. The University places a high value of developing itself as a network of collaborative spaces to engage both on and off-campus communities</li> <li>4. The University as an institution is supportive of the campus development itself as an application of innovative research</li> <li>5. The West Campus Lands provide opportunities for the University to realize its ambitions</li> </ol>	<ul style="list-style-type: none"> <li>• Designing aspirational and inspirational spaces</li> </ul>
<p><b>Theme E: DIVERSE VISTAS</b> The development of a physical campus within the context of the surrounding hills and valleys of the Okanagan landscape can be seen to be the physical equivalent of the University's cultural engagement with its immediate context and goal to foster a diverse character that is globally engaged.</p>	<ol style="list-style-type: none"> <li>1. Unprogrammed open spaces created in part by the incremental nature of campus development have resulted in eclectic social spaces and the potential for the creation of others in the future</li> <li>2. The increasingly social nature of the campus has allowed the evolution of outdoor space - inclusion of picnic tables, benches and activities spilling out into the available landscape is an important characteristic</li> <li>3. A more globally diverse faculty and student population will promote the University's aspirations to contribute to research with global impact</li> <li>4. The University has a stated goal of wanting to strengthen opportunities for learning and research with Aboriginal communities</li> <li>5. Increasingly, student voices have been heard through outreach through means such as student government, newspaper, radio and internet</li> </ol>	<ul style="list-style-type: none"> <li>• Linking growth with deepening relationships with Aboriginal communities</li> <li>• Linking growth with global presence</li> </ul>