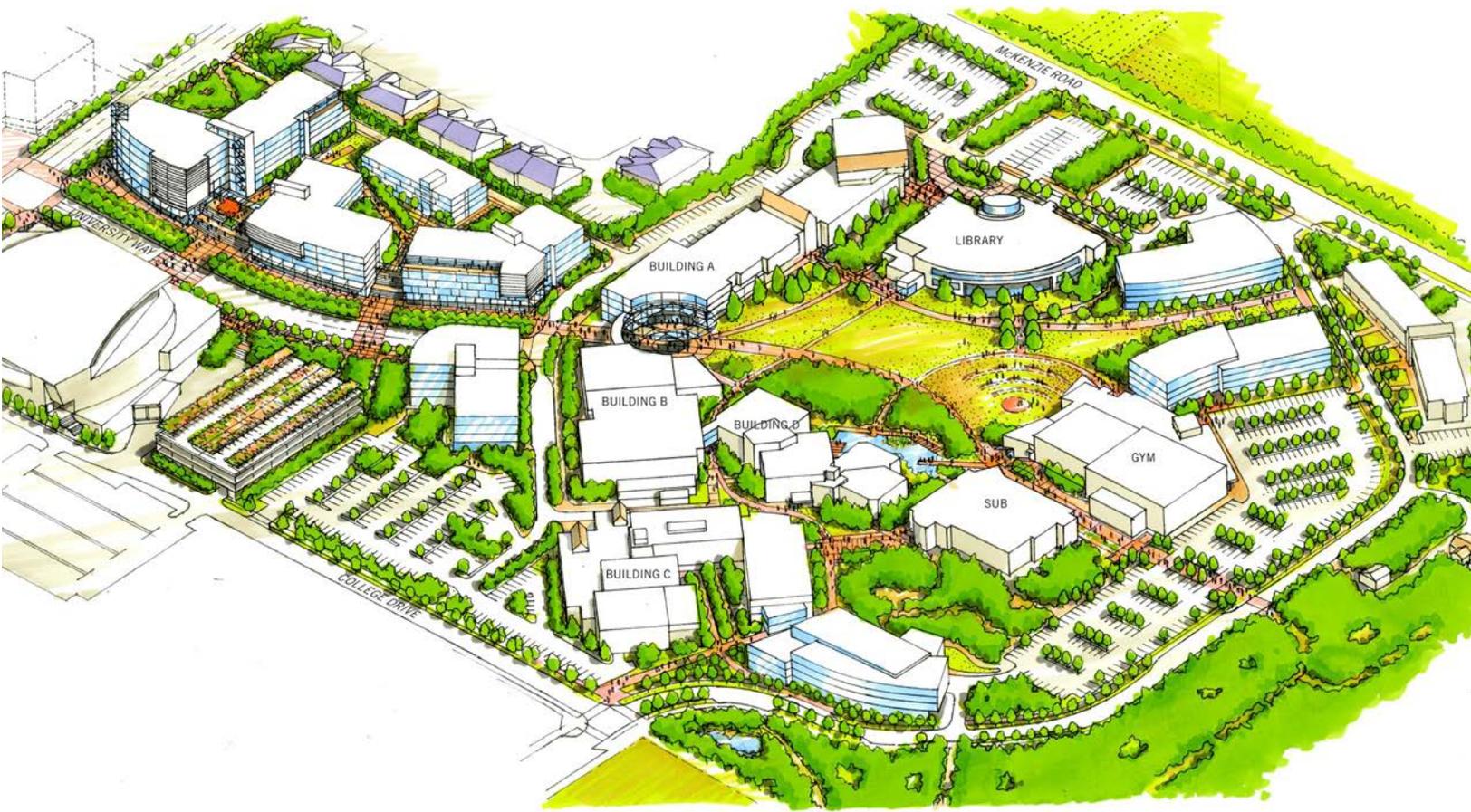


ABBOTSFORD CAMPUS MASTER PLAN

UNIVERSITY OF THE FRASER VALLEY



APRIL 2016

The University of the Fraser Valley is situated on the unceded traditional territory of the Sto:lo peoples. The Sto:lo have an intrinsic relationship with what they refer to as S'olh Temexw (Our Sacred Land), therefore we express our gratitude and respect for the honour of living and working in this territory.

ABBOTSFORD CAMPUS MASTER PLAN

UNIVERSITY OF THE FRASER VALLEY

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1 INTRODUCTION

1.1 Overview + Purpose

In 2015 the City of Abbotsford (the City) and the University of the Fraser Valley (UFV) undertook a joint planning initiative (the UDistrict planning process) to shape the future of the UDistrict. This unique partnership between a municipality and university was initiated to ensure that the campus and community are seamlessly integrated to create a vibrant university village.

History

In 2012, the City of Abbotsford developed a Vision for the UDistrict that imagined a mixed-use transit oriented community supporting UFV. The UDistrict planning process builds on this Vision and seeks to more strongly integrate campus and community planning. In addition, the 2012 Vision considered potential expansion of UFV onto the agricultural lands to the east of the campus. The UDistrict planning process revisited this assumption and decided to redirect all future expansion within the existing built form. This represents an important step forward for the university's sustainability goals as well as regional goals around preservation of agricultural lands.

Purpose

In the context of a rapidly changing educational, political, and economic environment, the purpose of the Abbotsford Campus Master Plan is to create a comprehensive plan for future growth on UFV's Abbotsford Campus. The planning process is intended to gain a better understanding of the various factors that will influence the type of growth the University will experience in the coming years and identify priorities for renewal, preservation and redevelopment.

Importantly, the Campus Master Plan ensures alignment with the City's UDistrict neighbourhood planning process and coordination of landscape and infrastructure investment on and off campus.

The Project Team

The Campus Master Planning process was managed by the project team and overseen by the Campus Plan Advisory Team (CPAT), consisting of a cross-section of UFV leadership, student representatives and on-campus engagement stakeholders.

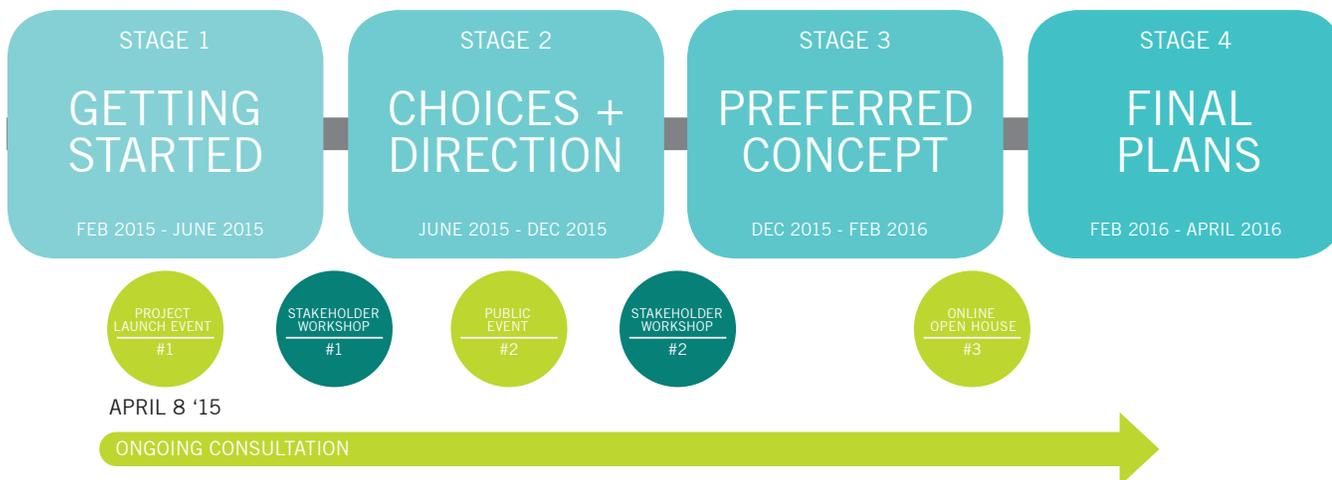
The UDistrict Integration Team (UDIT), which was comprised of UFV and City representatives, was responsible for overall management of the joint planning initiative and ensuring integration of the UDistrict neighbourhood planning process and the UFV Campus Master Planning process. UDIT was responsible for making key decisions throughout the planning process and facilitating public engagement sessions including workshops and internal and external meetings.

Other committees were regularly consulted throughout the process including:

- Board of Governors
- UFV Campus Planning Advisory Committee (CPAC)
- UFV 2025 Visioning Committee

1.2 Process

The campus master planning process was informed by a comprehensive consultation program ensuring the Plan was developed collectively with UFV faculty, staff, students, City staff and community stakeholders. The consultation program included two open houses, a public forum, a series of stakeholder interviews and workshops, and three opportunities for online engagement and feedback.



Stage 1: Getting Started

Stage 1 included review and analysis of the existing conditions and opportunities and initial community and stakeholder engagement to raise awareness and gather input on future directions for the neighbourhood and the campus. Stage 1 wrapped up with the completion of the UDistrict Background Report, including a campus needs assessment, a key input for the development of Neighbourhood and Campus Concepts in Stage 2.

Stage 2: Choices + Direction

The purpose of Stage 2 was to develop integrated neighbourhood and campus concepts, evaluate these concepts and identify a preferred direction for each plan. This stage includes two integrated workshops bracketing a public open house where participants were asked to vote on their preferred directions for each plan.

Stage 3: Preferred Concept

During Stage 3, the project team refined the preferred concept for the Abbotsford Campus Master Plan, ensuring integration with the City's Neighbourhood Plan. A list of assumptions relating to the integration of these two plans can be found in Appendix A.

Stage 4: Final Plan

Stage 4 synthesized the feedback received in Stage 3 to finalize the Campus Master Plan. An online open house to present the plan and ask the question 'did we get it right?' allowed for a final opportunity for students, faculty, staff and the community to share their input.

1.3 Existing UFV Directions

The Campus Master Plan builds on existing UFV policy, and has been coordinated with ongoing planning initiatives, specifically Vision 2025 to ensure seamless integration of UFV's various initiatives and directions.



Recognizing that the long term success of UFV depends on how well it adapts to the new realities of the 21st century, UFV's senior academic team was brought together with the purpose of imagining and articulating a broad vision of the future of universities, the future of learning, and, within this broader vision, the future of teaching- and regionally-focused institutions - more specifically, the future of the University of the Fraser Valley. This work is embedded in the physical plan for the campus and has informed the goals of the UFV Education Plan, 2016-20:

1. Prioritize Learning Everywhere

UFV values the learning of faculty, students, staff, and community no matter when, where, and how it occurs. Courses, schedules, programs, and administration put the journey of the learner first. UFV recognizes that our learners are diverse; this necessitates diverse learning options and settings. UFV works to create learning opportunities in communities both inside and outside of UFV.

2. Commit to Flexibility + Responsiveness

UFV recognizes the importance of agility in its programs and administrative units to enable us to adapt and respond to the diverse learning needs of our students, faculty, staff, and community. We will streamline organizational procedures and practices that limit creative problem solving.

3. Collaborate Across Boundaries

UFV supports and develops opportunities for collaborative and interdisciplinary work. This involves collaboration around research, programming, learning, and community development. It also involves collaboration with other educational institutions, community organizations, and industry, both locally and globally.

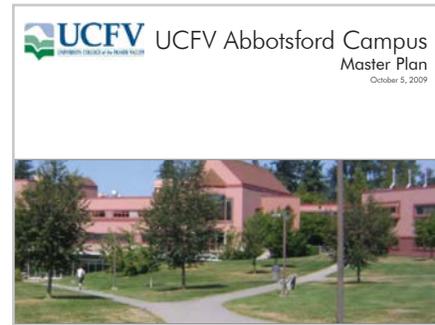
4. Develop Local + Global Citizenship

At UFV we develop and model civic engagement and social responsibility. Our students, faculty, and staff recognize the importance of nurturing a global awareness that

supports the health and safety of citizens around the world. Part of being a UFV citizen also involves responsibility to our communities and environment. Locally we work on the unceded territory of the Stó:lō people and the Indigenization of UFV is a priority. It informs every course and department through the inclusion of Indigenous content, curriculum, and ways of knowing.

5. Integrate Experiential Learning

UFV will ensure opportunities to incorporate experiential learning both inside and outside of the university classroom. This may involve assignments and assessment activities, field experiences, community placements, research, and cooperative learning.



'Changing Lives, Building Community, the title of our Strategic Directions Statement and the unofficial motto of UFV, captures the core values and commitments that have endured through the first forty years of UFV's existence. "Changing Lives" refers to our twin commitments to transformation and students, to putting students and their success first and enabling them to transform themselves. "Building Community" makes this civic and community service function even more explicitly while underlining UFV's integrative role in providing a physical and intellectual public space in which the diverse communities of the Valley can express and explain their identities for themselves and to each other.' - *UFV 2025*

The following summarizes UFV's Strategic Goals and includes several initiatives currently underway.

1. Provide the best undergraduate education in Canada

- Flexible learning spaces
- Digital media technologies
- Discovery-based learning
- Applied research

2. Be a leader of social, cultural, economic, and environmentally-responsible development

- Healthy living, walkable community
- Social, creative spaces
- Knowledge economy
- Social-cultural diversity
- Sustainable agriculture

3. Be innovative, entrepreneurial, and accountable in achieving our goals

- Digital Media Hub
- Public-Private partners
- Innovation hub for entrepreneurs
- Sustainable development

Abbotsford Campus Master Plan, 2009

In 2009, the University of the Fraser Valley completed a Campus Master Plan for the Abbotsford campus that identified preliminary opportunities for future growth. The master planning process builds off of this work with an emphasis on better integrating the campus with surrounding neighbourhood.

1.4 Study Area

UFV's Abbotsford campus is located within the UDistrict Neighbourhood in Abbotsford, BC. The UDistrict is located to the south of Highway 1 at the southern terminus of Abbotsford's primary transit corridor. This transit corridor links UFV with residential areas along McCallum Road, the historic downtown, City Hall and various commercial areas including 'High Street.'

The UDistrict is also home to the Abbotsford Centre, a venue for large events. The Abbotsford Centre is

located at the main entrance to UFV and shares parking facilities with the university.

The UDistrict includes a mix of low to medium density residential land uses, a small commercial area, a number of churches and a large industrial area to the north of King Road. To the south of the UFV campus is the Urban Development Boundary (UDB) and the Agricultural Land Reserve (ALR). These are, respectively, municipal and provincial designations

restricting the encroachment of urban development onto agricultural lands.

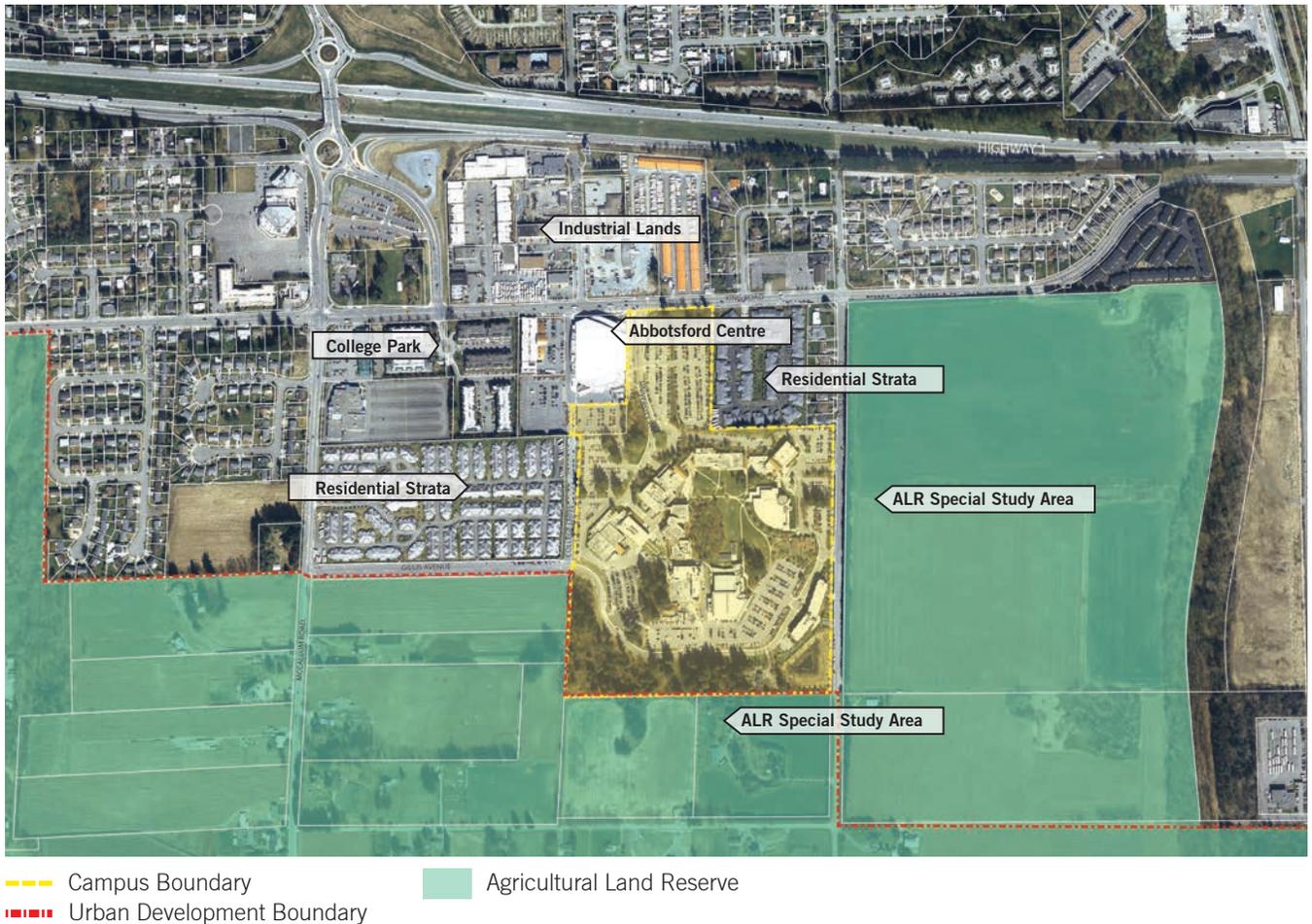


Figure 1 - Study area

1.5 Campus History

UFV has over 40 years of history in the Fraser Valley. Over time it has evolved from a small teaching college to a highly regarded university offering a wide range of post-secondary education opportunities. In a time where new economies, technology, and global migration patterns have radically shifted the way people learn, research and innovate, UFV must continue to evolve. This section documents UFV's history in the Fraser Valley.



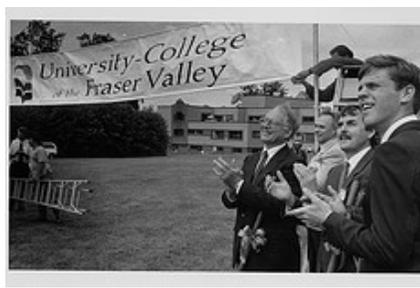
Fraser Valley College (FVC)

Fraser Valley College (FVC) was founded in 1974. The first classes were held in rented and borrowed facilities including church basements, storefronts, and high school classrooms, as a "college without walls".

In 1975 the Chilliwack Rale Road campus opened followed closely by the Abbotsford Marshall Road campus. By the end of 1975 FVC enrolled 2,300 students in Abbotsford, Chilliwack, Agassiz, Hope and Mission.

Initially FVC was focused heavily on trades programming including carpentry and welding. By 1980 FVC had launched a theatre program on the Chilliwack campus, despite having no theatre.

In 1983 the Abbotsford King Road campus opened with the construction of Buildings A, B, and C. The Agriculture Technology Centre opened in Chilliwack in 1986 and FVC launched its International Education program in 1988 followed by a Co-operative Education office in 1990.



University College of the Fraser Valley (UCFV)

FVC was granted university-college status on July 3, 1991 and began using the name University College of the Fraser Valley (UCFV). Programs continued to be expanded with Health Science opening on the Chilliwack campus and the initiation of several bachelor's degrees. In September, 1995 the new Learning Centre (now Peter Jones Learning Commons) opened at the Abbotsford campus, housing a greatly expanded library, writing and math centres, and Instructional Media Services. Programs continue to be expanded and in 2007 UCFV opened its first student residence building on the Abbotsford campus, with 102 double occupancy suites.



University of the Fraser Valley (UFV)

Following another successful campaign, UCFV received university status and changed its name to the University of the Fraser Valley (UFV). Renovated Building C reopened in 2009, housing the School of Business and Visual Arts programs. In 2011 UFV welcomed its second Canada Research Chair with Dr. Lenore Newman joining UFV as Canada Research Chair in Food Security and the Environment.

In 2013, the UFV Campus Connector shuttle bus, a partnership between the Student Union Society and UFV, began operating between Abbotsford and Chilliwack campuses and now serves Langley.

In 2015 the Abbotsford Campus Master Planning process was initiated and the new Student Union Building opened on the Abbotsford campus.

1.6 How to Read This Document



Chapters 1 and 2

Introduction + Space Needs

Chapter 1 outlines the process involved in creating the Campus Master Plan and introduces the site. Chapter 2 discusses current trends in post-secondary education and provides a summary of anticipated space needs over the timeframe of the campus master plan.



Chapter 3

The Campus Vision

This chapter outlines a high level direction for UFV's physical setting and the guiding principles that will be used to evaluate new development of planning initiatives in the future.



Chapter 4

The Campus + Community

This chapter provides a framework for campus systems and networks - such as movement, parking and housing - at the city scale. It also provides opportunities and considerations for integrating Campus and Community initiatives for the benefit of both.



Chapters 5

Campus Master Plan

The Campus Master Plan provides direction regarding all future development on the Abbotsford campus. This section describes the built form, program, parks and open spaces, movement and servicing recommendations coming out of the master planning process



Chapter 6

Implementation

This chapter provides a framework for implementation of the plan including phasing recommendations, funding opportunities and design guidelines.

2. EXISTING CAMPUS

2.1 Trends in Post-Secondary Education

Supporting Vision 2025

Dramatic change is happening in both higher education and society in general. This is prompting universities to respond proactively by engaging in longer-term visioning exercises focused not on the minutia of courses and programs, but on the very nature and organization of universities themselves. For most of the last century universities have considered formal teaching opportunities as separate from co-curricular experiences. Vision 2025 has recognized that changing demographics and widespread adoption of digital technologies have transformed the nature of both learning and learners. In an effort to enhance a more complete educational experience, UFV needs to plan and design environments that can encompass previously un-choreographed campus activities into intentional learning experiences that support overall learning outcomes.



1. Learning Happens Everywhere

We are in the midst of a paradigm shift from teaching to learning, from students as passive consumers of knowledge to active agents in their own learning. Today, much of higher education occurs outside of formal learning environments. The future of a truly exceptional campus relies on intentionally supporting this “space between”. When fostering real life skills like interactive collaboration and cooperative team work, a coffee shop or maker space can be more effective learning environments than a classroom.

Libraries and IT departments are merging into new information services areas and are being managed as multi-purpose academic space. University media centres (with 3D printers and visualization devices) are being combined with student support services, retail amenities, and extended, user-friendly hours to create functional collaboration spaces. Distance education, online classes and eLearning have not slowed down face-to-face learning. Instead, added value is now placed on active learning and collaboration with peers.

2. Commitment to Flexibility + Responsiveness

Design of today’s university campuses calls for adaptability and flexibility to address the constant and significant change seen across post-secondary institutions. This means the physical campus – including facilities, infrastructure and open space – must be planned for flexibility to meet unanticipated program and service needs. The campus master plan does not presuppose a particular rate or type of growth, but illustrates potential physical opportunities and configurations that will guide the development of capital projects in the future.





3. Collaboration Across Boundaries

As the hierarchical model of pedagogy is replaced by an increasingly horizontal and interactive model, faculty are more often playing the role of coaches, mentors, and facilitators. Their focus is less on content delivery and more on inquiry-based learning and mentoring. The design and retrofit of academic buildings should reflect this new cross-disciplinary model, creating shared spaces for collaboration and exploring new models of faculty offices and advising.

Crossing traditional program boundaries is strengthening the student experience by bridging the educational spectrum from formal to informal learning including research and internships. The University Village offers an attractive location for physical and programmatic synergies with public and private partners on and near the campus. Student housing on and off campus that caters to student age, lifestyle and learning choices is a trend that is encouraging a diverse campus community and 24/7 life.

4. Integrating Technology

The expansion of technology and the increasing digitization of education is changing the economics and delivery of post-secondary education. The impacts of information technology include digitization of university life and business, breaking down the universities' monopoly on knowledge and credentialing, incorporating social media and mobile devices, and ever-changing educational technology. Technology is breaking down the barriers of time and geography and enabling learning to happen anywhere, anytime.

Computers will provide a more mobile and personalized educational experience and improved campus IT infrastructure will be required to connect across the campus and around the world to foster seamless collaboration. Concurrently, power requirements are diminishing as battery life and wireless are increasing. The trend to BYOD (bring your own device) is stressing the ability to provide ubiquitous connectivity.

5. Doing More with Less

Universities across North America are facing the challenge of doing more with less while the traditional business model of public universities has become unsustainable. Responding to rising financial/operating costs, and shrinking public financial support, institutional mergers and international/regional partnerships are becoming increasingly important. International students are being targeted to maintain and grow enrollment and generate revenue. University programs that targets community and corporate partnerships is expanding to encompass economic development and partnerships are strengthening the connection between curriculum and employer needs.

The major renovations of Building A, B and D are being driven by trends in post-secondary economic models, maximizing precious capital resources by repurposing existing building stock wherever possible.

2.2 The Physical Campus

Land Utilization

To understand the potential of the Abbotsford campus, existing conditions were analyzed to determine the current and future capacity on site.

Sites were considered to have development potential if they were located on previously disturbed sites within the core campus area. The forested areas to the south of campus were not considered for development due to 1) their ecological value, and 2) their distance from existing and future community amenities on King Road.

Surface parking lots were also identified as potential development sites while recognizing that over the timeframe of the plan, the need for surface parking was likely to remain.

Building Condition

Buildings on the Abbotsford campus range in age from just over 30 years to less than one year. The temporary modular building and U-House are in poor condition and are likely to be demolished within the next 5-10 years. Building A, B and D are in fair condition but due to various envelope issues they are likely to require major renewal or redevelopment within 10-15 years. The remaining buildings on campus are in good condition and will remain in use over the planning horizon of this campus master plan.



Figure 2 - Land utilization and building condition

2.3 Campus Needs

An analysis of existing and required facilities to support research, teaching, and campus life was conducted through the master planning process. The following section summarizes the existing conditions on campus and presents a high level space needs assessment of UFV's academic and administrative functions.

A Growing Need

UFV is an important educational institution in the Fraser Valley. The majority of applicants reside locally with approximately 85% coming from Abbotsford, Chilliwack, Mission, Hope, Agassiz, Langley, Maple Ridge and Surrey. The population of these areas are among the fastest growing in BC with the Fraser Valley expected to experience a cumulative population growth rate from 2012-2036 of 43%.

The growth in student population and accompanying growth in utilization at UFV's Abbotsford campus has created infrastructure challenges that have restricted growth in student enrollment. The space utilization rate at the Abbotsford campus is approximately 110% (since construction of the new SUB building) and is expected to increase as the demand for post secondary increases in the region.

Programs

UFV's Abbotsford campus is organized into the following six College and Faculties:

- College of Arts
- Faculty of Access and Open Studies

- Faculty of Health Sciences (small presence at Abbotsford campus)
- Faculty of Professional Studies
- Faculty of Science
- Faculty of Trades and Technology (small presence at Abbotsford campus)

In addition to the faculties, there are five research focused areas :

- Citizenship, Culture, Governance, and Human Rights
- Crime Prevention and Criminal Justice
- Environment and Sustainable Development
- Human Development, Health and Well Being
- Scholarship of Teaching and Learning

Current Faculty + Staff

The current number of staff and faculty employed at UFV's Abbotsford Campus is estimated to be a total of 822 full time equivalents.

Existing Facilities

The following table shows the existing component areas by functional category for the facilities located at the Abbotsford campus.

| Space Category | Area (m ²) | % of Total |
|---|------------------------|---------------|
| Classroom Facilities | 3,991 | 8.3% |
| Laboratory Undergraduate | 5,180 | 10.8% |
| Research Laboratory Space | 362 | 0.8% |
| Academic Departmental Offices + Related Space | 2,792 | 5.8% |
| Library Facilities + Study Space | 1,991 | 4.2% |
| Athletic / Recreation Space | 2557 | 5.3% |
| Food Service | 906 | 1.9% |
| Bookstore + Merchandising | 699 | 1.5% |
| Plant Maintenance | 285 | 0.6% |
| Administrative Office + Related Space | 6,611 | 13.8% |
| Central Services | 379 | 0.8% |
| Health Safety Facilities | 31 | 0.1% |
| Common Use + Student Activity Space | 2,415 | 5.0% |
| Assembly + Exhibition Facilities | 163 | 0.3% |
| Non-Assignable (Circulation, Plant, Washroom, etc.) | 15,010 | 31.3% |
| Residential Space | 4,517 | 9.4% |
| TOTAL | 47,890 | 100.0% |

Figure 3 - Existing component areas by functional category

2.4 Future State

The future state master program has been shaped by recent trends in post secondary education and through ongoing consultation with the Vision2025 committee. The following directions describe how these were reflected in the future master program.

Applying Vision2025

Changing Pedagogy Changing Space Needs

Vision2025 anticipates dramatic changes in the way learning happens in the future. This will necessarily influence the physical configuration of spaces on campus with some component areas expanding, while others contract.

To adequately accommodate the trend toward active learning, more classroom space per student is needed for group work, break out space and flexible classroom configurations. On the other hand, office space could be optimized by reducing dedicated faculty offices and lounges in favour of more open office space and shared social spaces. Part-time or adjunct professors would also require less space.

It is possible that UFV could see net efficiencies in space requirements through the full implementation of Vision2025. This could result in a net reduction of up to 20% of the master program outlined in Section 2.4.1. This space could then be utilized for other compatible on campus including private commercial and/or residential uses within the University Village.

Campus / Community Integration

More strongly integrating with the adjacent community has been a guiding principle throughout the campus master planning process. From a master programming perspective this was reflected through an emphasis on special facilities that could be co-located in the University Village:

- Digital Hub / Conference Centre / Performance Space – used by UFV for lectures, theatre program, and continuing education programs, and by community for conferences. The facility would have breakout rooms, lounge space and food services
- Bookstore + Merchandising - relocating and expanding the UFV bookstore at the front door to the campus could help to strengthen connections to the community
- Health and Wellness – linking bike, walking trails and active park space on campus with surrounding community trails, preserving natural landscape as much as possible
- Daycare centre run by outside operator for use by University staff, students and families in the surrounding community
- Food Services – retail food services should be provided across the campus and in particular where campus and community intersect
- Sports and Recreational amenities – development of sports fields for Kinesiology program, varsity sports and community use. Additional sports facilities for students, staff and neighbours could include a pool, gym or yoga studio.

Learning Everywhere

The campus learning environment and the delivery of classes will change with the evolving pedagogy and educational technology. There will be an emphasis on “learning everywhere”, requiring connectivity and technology to support learning in atypical locations across the campus and in the wider community.

Students will be collaborating more with each other and their instructors both inside and outside the classrooms and virtually on-line. More functional and technology-enabled study space located across the campus will need to increase in the future along with wireless connectivity for students to learn/study anywhere. On-line and distance learning – increasing need for this type of course delivery places a demand on space for course development, technology requirements to host courses, etc. In the future, informal learning spaces will become more important. These spaces should be messy, collaborative and digitally equipped for student and faculty drop-in.

As the Library continues to evolve into a dynamic Learning Commons with fewer traditional stacks and more digital resources, students will utilize the library for both research and for study space. Librarians will increasingly play a role in assisting students with locating information, doing research, and transferring knowledge. Additional Learning Commons space will be distributed throughout the campus in collaborative, social spaces linked with high speed wireless technology to digital library resources and databases.

Classrooms

As a student-focused institution, class size (the number of students per classroom) is expected to remain relatively similar to what we see today. A mix of smaller classrooms and a small number of larger classrooms that are technology enabled will provide flexibility for a range of course formats. All classrooms must be similarly equipped with movable furnishings, whiteboards and flexible display abilities to increase flexibility in room booking. Dedicated classrooms will decrease with the exception of highly specialized spaces or permanent equipment requirements. An additional lecture hall will be required to support economies in course delivery for first and second year courses in particular.

Student population

Population growth will continue to drive strong demand for post secondary education in the region over the 15 and 25 year planning horizons. UFV plans on attracting more International Students in the future (expected to increase by 38% by 2019). These students will require more dedicated student space, study areas and residences on campus.

With increased numbers of students on the Abbotsford campus, there is a need to provide more and better services for students such as advising, counseling, recreational facilities, health and wellness and increased general study space. As a recognition to the importance of the First Nations to the University, a gathering space should be provided, ideally located central to the whole campus.

Innovation on Campus

Applied Research will increase across all disciplines. Research will include both undergraduate and graduate students and both wet and dry research. Dedicated project rooms will become important in support of research efforts.

The project rooms can be left set up with experiments, equipment, and research materials for periods of time without being disturbed for course delivery requirements. Centres of Excellence in identified research areas will increase on campus, requiring dedicated spaces.

The Digital Hub and Food Security/Sustainability are two opportunities for innovation on Campus that respond to UFV's Strategic Enrollment Management plan. They also act as magnets to attract the community to the campus. The Digital hub will be an innovation incubator supporting students, academics, and entrepreneurs from the Valley by bringing everyone together in one location to research and develop new technologies. Critical to UFV remaining relevant in a rapidly growing digital economy, the HUB will facilitate interactive teaching and performance-based learning utilizing a highly sophisticated digital infrastructure (UFV's Capital Plan). The idea is to drive economic growth for the region while supporting applied research at the University.

Food Security/Sustainability will increasingly become important with our changing climate. UFV and specifically the Abbotsford campus with its adjacency to the ALR lands. A demonstration farm with test crops, composting and recycling,

and community market garden, not only can provide research opportunities but also closely tie the University to the community by putting on display the efforts of the University into Food Security innovations and provide healthier options for students.

Partnerships and Market Potential

As traditional funding models for post secondary education are evolving, universities are increasingly looking to creative partnerships with other educational institutions, community organizations, government, and industry, both locally and globally. As part of the master planning process, UFV is currently undertaking a market study to determine feasibility for development partnerships on and adjacent to the campus. This work will guide implementation of the campus master plan and will significantly contribute to achieving the campus vision.

2.4.1 The Master Program

The following master program addresses academic and associated space requirements on campus over the planning horizon of the campus master plan. Space needs calculations were based on the BC Universities Space Manual (Feb 2003) and adjusted to reflect the Vision 2025 direction described above. These adjustments included an increase in classroom space per student to adequately accommodate the trend toward active learning and a decrease in office space to reflect optimization of faculty offices to include more shared space and remote offices. In addition, some UFV growth was considered within the larger UDistrict area to meet the vision for an integrated campus and community.

A supplementary market study is currently being undertaken to further explore opportunities for development partnerships on and adjacent to campus.

Future Faculty + Staff

Faculty and staff are projected to increase from 822 (2015) to 917 FTEs by 2030 and 1191 FTEs by 2040. Administrative staff at the Abbotsford campus will continue to provide administrative functions for all other campuses from this location requiring appropriate office and support spaces.

Faculty, including sessionals, will continue to need office space on campus; however, the configuration of the space will be different from current spaces. There will be more open office space, collaborative space for students and faculty to interact. Resource rooms, faculty offices and project rooms will form local “mini- communities” around

each department or program. Students will be drawn to these interactive spaces for sharing ideas, peer to peer learning, and project work. However, the mini-communities will not have dedicated classroom spaces; the idea is for all students and faculty to utilize the full campus. This is accomplished by scheduling classes in multiple locations across the campus. "Recommendations from the Scheduling Task Force could improve classroom utilization based on a new scheduling model."

Student Residences

Although UFV has surveyed students and discovered the majority prefer to live off campus in the surrounding neighbourhood, the needs assessment suggests planning for additional housing on site for International Students and for local students. For planning it is assumed that 10% of total number of students would likely reside on campus.

Future Enrollment Projections

Student FTEs on the Abbotsford campus in the 2014-15 school year were 5,284. They are expected to reach 5,892 by 2030 and 6,865 by 2040.

Master Space Program

The outcome of the space needs analysis is summarized in the following table. The table is organized by component area and shows existing and projected space requirements by planning horizon year.

Space requirements were calculated using either projected Student FTEs or Faculty FTEs, Laboratory Weekly

Student Contact Hours, and Library Collection numbers as inputs. The space requirements were then supplemented with additional specialty spaces. Baseline areas/input were adjusted to accommodate changes in pedagogy, and to reflect changes based on recent university projects that take into account new teaching methods, student requirements, and increased use of technologies.

Although future projections are always subject to fluctuations, based on the assumptions and methodology above, we can expect the university to grow from 47,890 m² to 111,096 m² over the next 25 years.

Scenario 2

It is possible that UFV could see net efficiencies in space requirements through the full implementation of Vision2025. This could result in a net reduction of up to 20% of the academic and support master program outlined in Figure 4 and 5. This space could then be utilized for other compatible uses on campus including private commercial and/or residential uses within the University Village (as illustrated in Section 5.2).

In this 'full implementation of Vision 2025' scenario, we could expect UFV to grow from 47,890 m² to 93,105 m² over the next 25 years.

| Program Components | | Existing Space | Projected Space Total 2030 | Projected Space Total 2040 | Comments |
|------------------------------------|--|----------------|----------------------------|----------------------------|--|
| | | NSM | NSM | NSM | |
| Component Space Allocations | | | | | |
| 1 | Academic Spaces | | | | |
| | Classrooms | 4093 | 7669 | 7950 | Classrooms, lecture halls (2), and applicable storage space. |
| | Classrooms/Lecture Hall/Seminar Rooms | | | | |
| | Classroom Support Spaces | | | | |
| | Teaching Laboratories | 5059 | 9378 | 10927 | Teaching Labs include wet and dry lab areas, computer labs, applied arts. Calculations are based on weekly student contact hours |
| | Wet/Dry Labs | | | | |
| | Lab Support Spaces | | | | |
| | Faculty Offices | 3753 | 6,037 | 8,623 | Included are all faculty and faculty support office space, departmental support such as reception, storage and technical areas. This will grow to accommodate future graduate students as well as increased numbers of faculty. Calculations are based on faculty FTEs |
| | Faculty offices | | | | |
| | Faculty Office Support Spaces | | | | |
| | Meeting Rooms | | | | |
| | Education Technology Systems | 129 | 300 | 400 | To support and expand increased on-line course development |
| | Office and support | | | | |
| | Data Centre | | | | |
| | Subtotal, Academic Spaces | 13,034 | 23,384 | 27,900 | |
| 2 | Administration | 3,204 | 6,600 | 7,800 | Includes meeting spaces and non-academic office and support spaces. The space required for these uses would be reduced in the 'full implementation of Vision 2025' scenario described in Section 2.4.1 |
| | Administration Offices | | | | |
| | Office Support Spaces | | | | |
| | Subtotal, Administration | 3,204 | 6,600 | 7,800 | |
| 3 | Support Services for Students | | | | |
| | Food Services | 1529 | 1825 | 2025 | Food Services includes the main cafeteria, Student Union restaurant and retail coffee shop. In the future, more distributed retail food services are expected on and off campus |
| | Services for Students | 3,184 | 6,425 | 7,840 | Student Services are calculated based on FTEs of students. |
| | Health and Wellness Centre | - | 150 | 150 | Health and Wellness Center is calculated based on future student FTEs, and space standards based on best practice |
| | Subtotal, Services for Students | 4,713 | 8,400 | 10,015 | |
| 4 | Learning Commons | 2,051 | 3,500 | 4,500 | Library area is calculated on based on Student FTE and collection size |
| | Social / Collaborative Space | | | | |
| | Active Learning | | | | |
| | Library Offices and support spaces | | | | |
| | Subtotal, Learning Commons | 2,051 | 3,500 | 4,500 | |

Figure 4 - Master Space Program

| | | | | | |
|---|--|---------------|---------------|----------------|---|
| 5 | Facility Operations | 707 | 1,000 | 1,250 | Facility operations include building maintenance offices, equipment storage, workshops and shipping and receiving. Area does not include Energy Plant, comms closet, mechanical rooms, etc. |
| | Plant Maintenance | | | | |
| | Equipment Storage | | | | |
| | Shipping and Receiving | | | | |
| | Subtotal, Facility Operations | 707 | 1,000 | 1,250 | |
| 6 | Campus Housing | 4,544 | 9,541 | 11,876 | Campus housing is based on 12% of total student population living on campus. This will predominately house International Students. Additional student housing has also been allowed for within the Digital Hub |
| | Dormitories (with a range of configurations) | | | | |
| | Subtotal, Campus Housing | 4,544 | 9,541 | 11,876 | |
| 7 | Research/Interactive | 924 | 1,602 | 2,081 | Although UFV is not a research university, all faculty are required to undertake scholarly activity. This space can help to accommodate these activities |
| | Research/Interactive Spaces | | | | |
| | Support Spaces | | | | |
| | Subtotal, Research | 924 | 1,602 | 2,081 | |
| 8 | Specialty Facilities | | | | |
| | Digital Hub | 0 | 8,000 | 8,000 | Includes several collaborative spaces with central common areas connected to interactive learning spaces, digital media labs, performative spaces, innovation hub, multi-purpose theatre, lobby, and adaptable breakout rooms |
| | Welcome Centre | | 500 | 500 | Welcome / orientation space / services for students |
| | Conference Centre/Gathering Space | 78 | 1550 | 1550 | Includes conference hall/gathering space with stage, and backstage areas, seating for 200, bistro, lobby, and breakout rooms and other support spaces |
| | Bookstore + Merchandising Facilities | 713 | 900 | 900 | Larger retail to support increase student population |
| | Gathering Place | 0 | 200 | 200 | The Gathering Place is comprised of circular seating area for up to 50 people plus food preparation and other support spaces |
| | Athletic / Recreation Space | 2666 | 3665 | 3865 | Additional gym facilities, including yoga studio, etc. |
| | Gym | | | | |
| | Related Support Spaces | | | | |
| | Daycare | 0 | 240 | 360 | Daycare requirements based on best practices |
| | Subtotal, Specialty Facilities | 3,458 | 15,055 | 15,375 | |
| | Building Gross Areas | 47,890 | 94,987 | 111,096 | Includes factor for building circulations, exterior wall thicknesses, etc. |

Figure 5 - Master Space Program

3. CAMPUS VISION

3.1 Planning Principles

The Abbotsford Campus Master Plan was developed in parallel with the City of Abbotsford's UDistrict Neighbourhood Plan. The planning principles described below were developed in collaboration with the

City to guide future development in the neighbourhood and on campus. They have been further refined to define the assumptions and philosophies driving the vision and recommendations of the Campus

Master Plan. They also provide a means of evaluating future Campus Master Plan updates and amendments.



1. CREATE A COMMUNITY + CAMPUS HUB

The university is a vital part of the UDistrict neighbourhood and is supported by a dynamic mixed use community. As the walls within the university and between the university and the community become more permeable, the Campus Master Plan will bring the campus and community together to create a vibrant and identifiable university village that becomes a destination in the City and a draw for UFV students.

- 1.1 Create a welcoming campus that showcases university programs
- 1.2 Locate community-oriented campus uses within the University Village to create a hub of activity at the 'front door'
- 1.3 Draw people into the campus with clear wayfinding and a legible public realm that expresses openness and inclusivity
- 1.4 Enhance community connections through a new U-Walk linking the campus core with adjacent community
- 1.5 Partner with the City to create a diversity of housing opportunities both on and off campus
- 1.6 Think holistically about the relationship between the campus and the surrounding neighbourhood to determine how campus-wide systems can be coordinated in a mutually beneficial way
- 1.7 Explore opportunities to integrate some non-university uses in the University Village and some academic uses beyond the boundaries of the existing campus



2. DESIGN GREAT PLACES

As post-secondary institutions evolve, it has become increasingly important for each institution to articulate what makes its approach to education unique. This begins with the institution's core purpose and extends to the development of a unique campus and student experience that reflects this purpose in a meaningful way. The Campus Master Plan will enhance the campus experience by designing great places for people to enjoy each other and their surroundings. Distinct campus precincts will be organized around high quality public spaces to enhance student life and campus identity.

- 2.1 Reinforce a rich mix of uses organized in walkable precincts to enhance student life, campus vibrancy and interaction
- 2.2 Create a diversity of open spaces that offer places to rest, reflect, play, interact and learn
- 2.3 Design campus buildings to create high quality environments for people indoors and outdoors
- 2.4 Ensure the campus is accessible, adhering to existing campus policy and guidelines regarding universal design
- 2.5 Enhance campus safety through programming and design
- 2.6 Continue to improve connections between UFV campuses
- 2.7 Integrate cultural landscapes and public art that tells the stories of UFV, the First Nations and the City



3. SUPPORT LEARNING EVERYWHERE

Recent advances in brain science and learning research have revealed insights into how people learn and point the way to more active engagement, peer-to-peer interaction, and flexible learning spaces.

This focus on flexibility and on the goal that 'learning happens everywhere' is supported by indoor and outdoor common spaces that bring people together in informal, collaborative spaces to expand their learning opportunities.

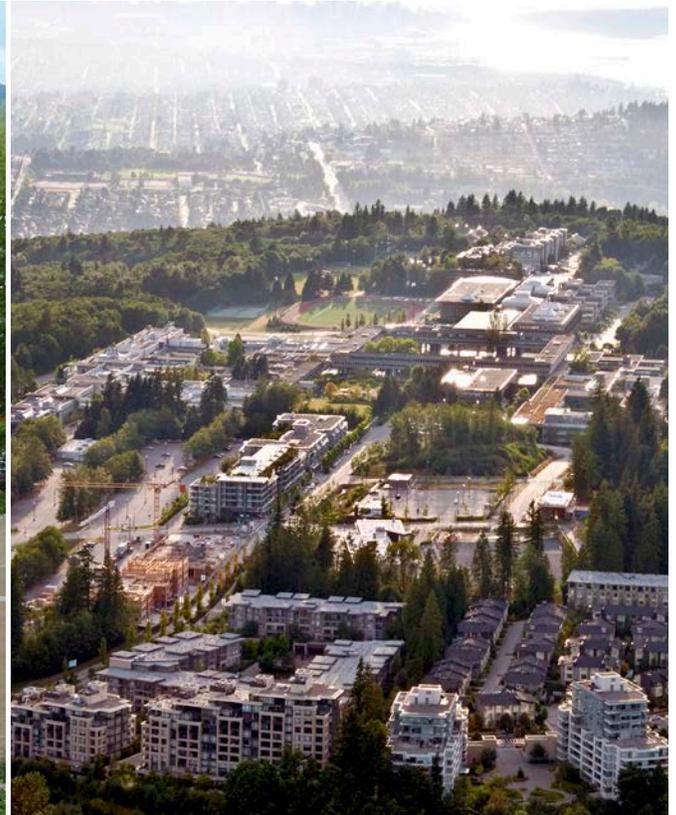
- 3.1 Locate and design common spaces throughout the campus that support active, experiential, and peer-to-peer learning and cross-disciplinary collaboration
- 3.2 Support the student learning journey by providing space for one-on-one advising, student and faculty collaboration and expansion of services for students
- 3.3 Partner with local businesses and industry to create meaningful connections between students, faculty and business
- 3.4 Align campus planning with the University's teaching, learning and applied research missions and the 5 strategic areas of research
- 3.5 Create open, adaptable learning environments that promote collaboration and innovation
- 3.6 Build on UFV's cross-disciplinary culture by creating an accessible system of higher education that contrasts siloed disciplines in an 'ivory tower' model



UFV's Abbotsford campus is situated within a rich natural setting of productive agricultural lands and diverse ecological areas. The connection to this natural setting is a valued characteristic of the existing campus.

The Campus Master Plan seeks to protect and enhance the existing natural features on campus and provide additional opportunities for natural areas to be more deeply integrated into new development and the campus experience.

- 4.1 Protect and enhance existing high value natural areas on campus
- 4.2 Enhance existing ecological areas including the 'fen' and woodlot
- 4.3 Design on-site stormwater management systems that also act as amenities and green space on campus
- 4.4 Explore opportunities to integrate local food production into campus food services
- 4.5 Seek to foster connections between indoor spaces and the natural areas adjacent to them, especially to create a richer learning environment both indoors and outdoors
- 4.6 Create better access to the natural environment for students, faculty, staff and community to enjoy



5. BRING INNOVATIVE SOLUTIONS

Innovation is an important value for UFV and is expressed in a wide range of ways on campus. Perhaps the single largest influence on higher education is the increasingly digital structure of our society.

The Campus Master Plan will support the continued use of technology on campus and reinforce innovative approaches to demonstrating cutting edge theory and practice in sustainability, social inclusiveness and economic development.

- 5.1 Explore innovative partnerships with government, businesses and other organizations to create new opportunities for learning on and off campus
- 5.2 Develop a technology hub in the UDistrict through the creation of a Digital Hub that attracts and supports entrepreneurship and innovation in digital media
- 5.3 Respond to evolving pedagogy, research, teaching and learning needs by providing state-of-the-art learning facilities, technology and amenities inside and outside of the classroom
- 5.4 Demonstrate sustainability through the design and program of campus buildings and open spaces
- 5.5 Create interactive learning environments inside and outside of the classroom that are flexible to support a variety of learners and activities
- 5.6 Explore opportunities for innovative site-wide sustainability strategies such as district energy, waste management, and water management

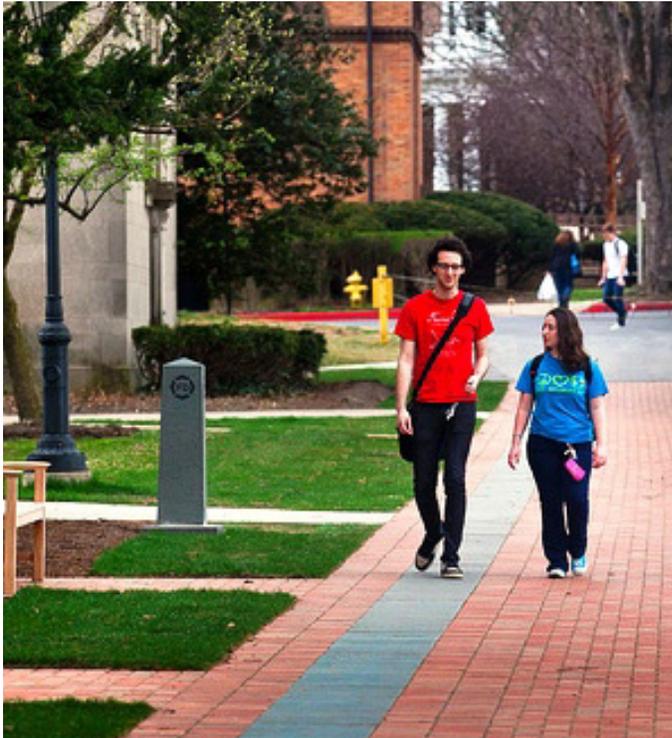


6. MANAGE TRANSPORTATION

For the past several decades UFV has largely operated as a commuter campus with limited opportunities for walking, cycling or transit. As the campus and the adjacent community densifies these alternative modes of transportation are becoming more attractive to students, faculty and staff.

As this transition to a less auto-dependent campus continues, short term parking needs will continue to be met while over the long term parking demand is significantly reduced and increasingly accommodated in structured facilities.

- 6.1 Relocate transit facilities to the 'front door' to better serve the university and the community
- 6.2 Improve transit, cycling and pedestrian connections and facilities on campus
- 6.3 As surface parking lots are redeveloped, provide structured parking within new developments to accommodate parking demand
- 6.4 Work with the City to develop a structured parking facility to serve the university and the Abbotsford Centre
- 6.5 Integrate stormwater management and pedestrian pathways into existing surface parking lots



7. MAKE IT A REALITY

Higher education institutions in BC and across Canada are increasingly having to do more with less as enrollment continues to increase and funding sources become more constrained.

The Campus Master Plan will ensure the vision has the policy, market, and infrastructure support to become a reality in the Abbotsford context. This will include careful phasing, pursuit of strategic catalyst projects and a focus on partnerships and collaboration.

- 7.1 Conduct a financial assessment to ensure viability of new development
- 7.2 Align campus improvements and development with the University's goals and Strategic Plans
- 7.3 Ensure flexibility to allow for changes over time
- 7.4 Identify opportunities to leverage equity in property and lands
- 7.5 Continue to coordinate infrastructure improvements with the City and the Abbotsford Centre
- 7.6 Allow for flexibility in the plan to respond to market conditions and opportunities

3.2 The Vision

The overall vision for the campus master plan is one that brings learning to the forefront and recognizes the importance of an enhanced campus experience in attracting and retaining students and supporting their learning journey. Five major elements of the plan are described in more detail below.



U-WALK

The U-Walk is a strong pedestrian / cyclist spine connecting all the way through the campus from King Road (and beyond) to the Student Union Building and forested lands to the south end of campus.



UNIVERSITY VILLAGE

The University Village brings the campus and community together on both sides of King Road creating a vibrant hub of activity at UFV's front door.



STUDENT PLAZA

Create a strong entrance plaza between Building A and B. This plaza would provide a 'front door' arrival to the campus core with views to Mt Baker and could be partially covered for year round use.



CAMPUS HEART

The Central Green is a valued social space on campus. Strengthen this function with an amphitheatre, improved access to the wetland and informal spaces for gathering, playing frisbee and studying.



NATURAL AREAS

The Abbotsford campus is blessed with an abundance of green space and natural areas. These areas have been protected and become important ecological and amenity spaces in the future campus.



Figure 6 - Illustrated Master Plan

4. THE CAMPUS + COMMUNITY

UFV is an important urban anchor in the City of Abbotsford. Decisions made by the university have an impact on the adjacent neighbourhood and the neighbourhood character and quality affects the image of UFV and its ability to attract future students and faculty.

Coordinated planning between the University and the City has been a hallmark of this process and will ensure mutual benefits for UFV and the surrounding community. This section describes the relevant City initiatives and provides a framework for establishing synergies related to transportation, housing and

employment. Appendix A describes a list of assumptions developed in collaboration with the City to help guide the Campus Master Planning work.



Figure 7 - Urban Context

4.1 Regional Policy

A number of provincial, regional and municipal plans and policies provide a framework for planning in the UDistrict and on campus. Regional policies include:



Agricultural Land Reserve

The Agricultural Land Reserve (ALR) was created to preserve agricultural land and encourage farming. It limits non-agricultural development within ALR designated lands. As shown in Figure 8 on the following page, UFV's Abbotsford campus is situated adjacent to ALR lands to the east, south and southwest.

While the majority of UFV's agricultural programming is located at the Chilliwack campus, there are opportunities to expand agricultural programs at the Abbotsford campus with a Food Security Centre and associated test plots and research facilities.



Fraser Valley Regional District (FVRD) Growth Strategy

Adopted in 2004, The Regional Growth Strategy for the Fraser Valley Regional District provides the primary policy guidance at the regional scale. It aims for a network of vibrant, distinct and sustainable communities linked by multi-modal transportation, and set in a largely agricultural context. Within this strategy, key directions are set in order to manage growth responsibly and holistically in support of social sustainability, local character, and regional needs

The Abbotsford campus is linked with regional and local transit as well as a campus shuttle to other major growth centres in the region.



Transit Future Plan

The Abbotsford-Mission Transit Future Plan has been approved by BC Transit, the District of Mission, the City of Abbotsford and the Fraser Valley Regional District. The plan envisions the transit network 25 years from now and describes what services, infrastructure and investments are needed to get there. In order to achieve the 8% mode share target, the plan is designed to create a stronger link between transit plans and local land use and transportation plans. It includes the following goals:

- Transit supports + enhances economic development by integrating with land use
- Transit is an attractive transportation choice by being reliable, safe, convenient, accessible and integrated with other transportation modes
- Transit is efficient and cost effective
- Excellent customer service and communication improve the image of transit
- Service contributes to environmental sustainability

4.2 City Initiatives

Planning and policy at the City level has a significant impact on the campus as it continues to grow and expand, particularly as it relates to the adjacent neighbourhood. Two key initiatives are currently underway:

Abbotsford: Official Community Plan Update

The City of Abbotsford is currently undertaking a comprehensive planning process to update the City's Official Community Plan. The OCP will provide the high level guidance for new development in the UDistrict and includes a vision for a mixed use, transit-oriented community supporting UFV. The OCP also establishes 7 Big Ideas for the future of Abbotsford:

1. Create a City Centre
2. Establish Distinct Neighborhoods
3. Make Walking, Cycling, and

Transit Delightful

4. Design Places for People
5. Foster Natural Beauty
6. Enhance Agricultural Integrity
7. Make it Work

These big ideas have been embedded within the campus vision and are strongly reflected in the Planning Principles developed in collaboration with the City

UDistrict Neighbourhood Plan

The City of Abbotsford is nearing completion of it's UDistrict Neighbourhood Plan. The

neighbourhood planning process has been closely coordinated with the campus master planning process to ensure two compatible plans that effectively manage growth and take full advantage of potential synergies. The two plans seek to establish a coordinated approach to capital projects, public realm investments, and new development. The UDistrict has the opportunity to redevelop into a transit-oriented mixed use community that supports a vibrant University Village. Key opportunity areas are highlighted in Figure 8 below.



Figure 8 - Urban Context

4.3 Transportation

UFV requires an expanded transportation system to better connect the campus and community. To complement the successful, student-run Campus Connector Shuttle, the City and UFV are exploring new pedestrian, cycling and transit connections to better serve the University. Specifically, the City will seek to improve transit, cycling and pedestrian connections to the university by:

- Enhancing cycling facilities connecting to the campus,
- Pursuing funding for a bike/

pedestrian bridge over Highway 1,

- Supporting the relocation of transit to UFV's new 'front door',
- Exploring feasibility of a structured parking facility adjacent to Abbotsford Centre,
- Improving the streetscape design, particularly on King Road, to support pedestrians, cyclists and transit users

2. The University should coordinate with the City to develop a parking management strategy that includes potential partnership on a parkade to serve the campus and Abbotsford Centre
3. The University should enhance cycling facilities on campus to connect strongly to planned cycling infrastructure upgrades in the adjacent neighbourhood

Recommendations

1. The University should coordinate with BC Transit and the City to re-route transit service and improve transit facilities on campus

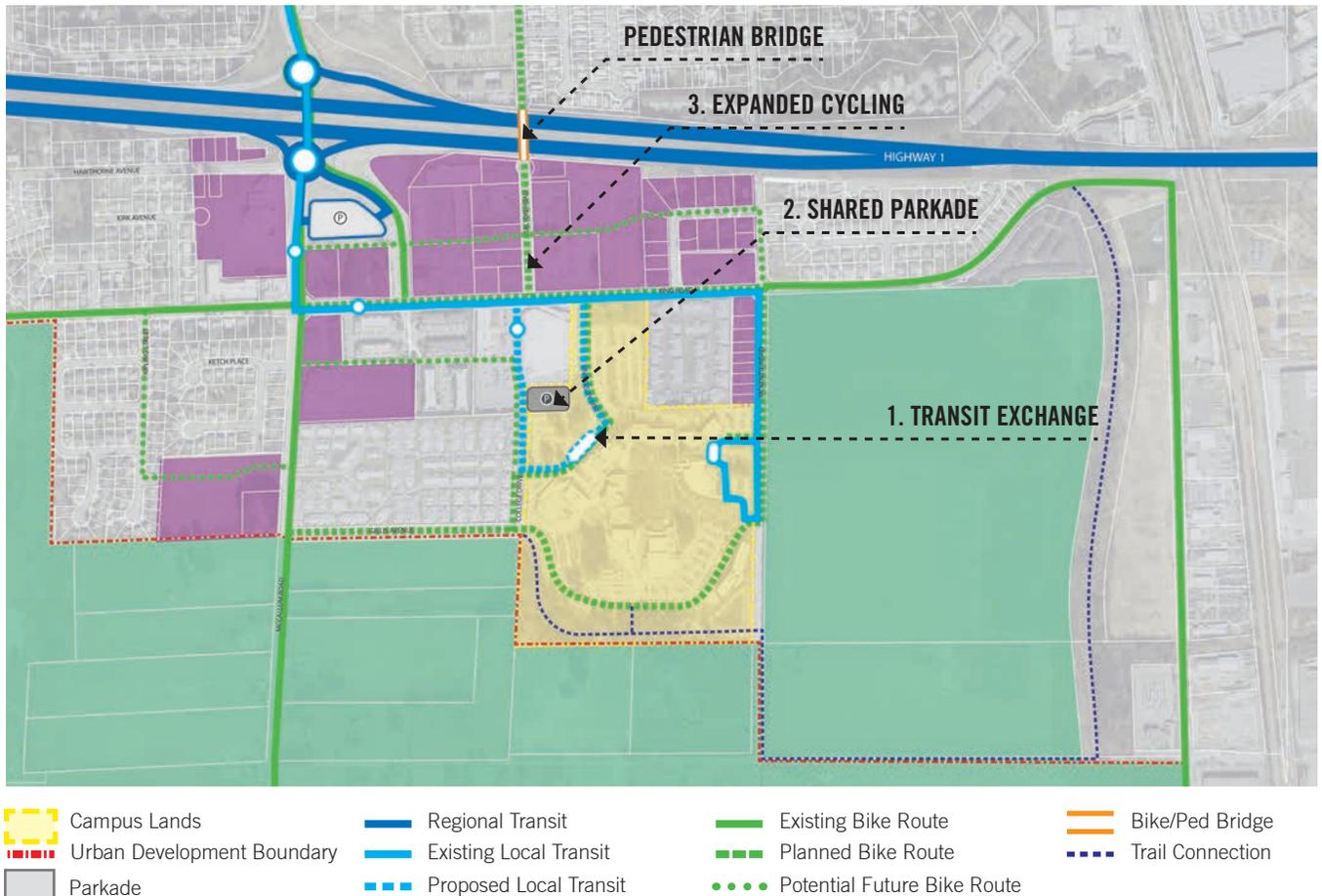


Figure 9 - Transportation network

4.4 Housing, Services + Employment

Currently, a lack of appropriate housing and services in the adjacent neighbourhood has reinforced the idea of UFV as a commuter campus with few amenities for students, faculty and staff.

While the University is able to provide some housing and services on campus, it depends on the adjacent neighbourhood to support a more multi-faceted approach to city building that includes diverse housing opportunities, local retail and amenities, and employment opportunities.

The UDistrict Neighbourhood Plan supports the development of a University Village that is a mixed use centre bringing the campus and community together on both side of King Road. This community hub will include academic, residential, and commercial uses.

Housing and employment uses located elsewhere in the UDistrict will help to support the University and provide opportunities for future partnerships between the University and business/industry in the area.

Recommendations

1. Prepare a UFV housing strategy that sets out short and long term priorities for the provision of housing for students
2. Continue to engage the City of Abbotsford and other stakeholders to realize opportunities for meeting mutual University and city-building goals.
3. Explore opportunities for non-residences housing in the University Village
4. Continue to explore development partnerships and market opportunities on and adjacent to campus

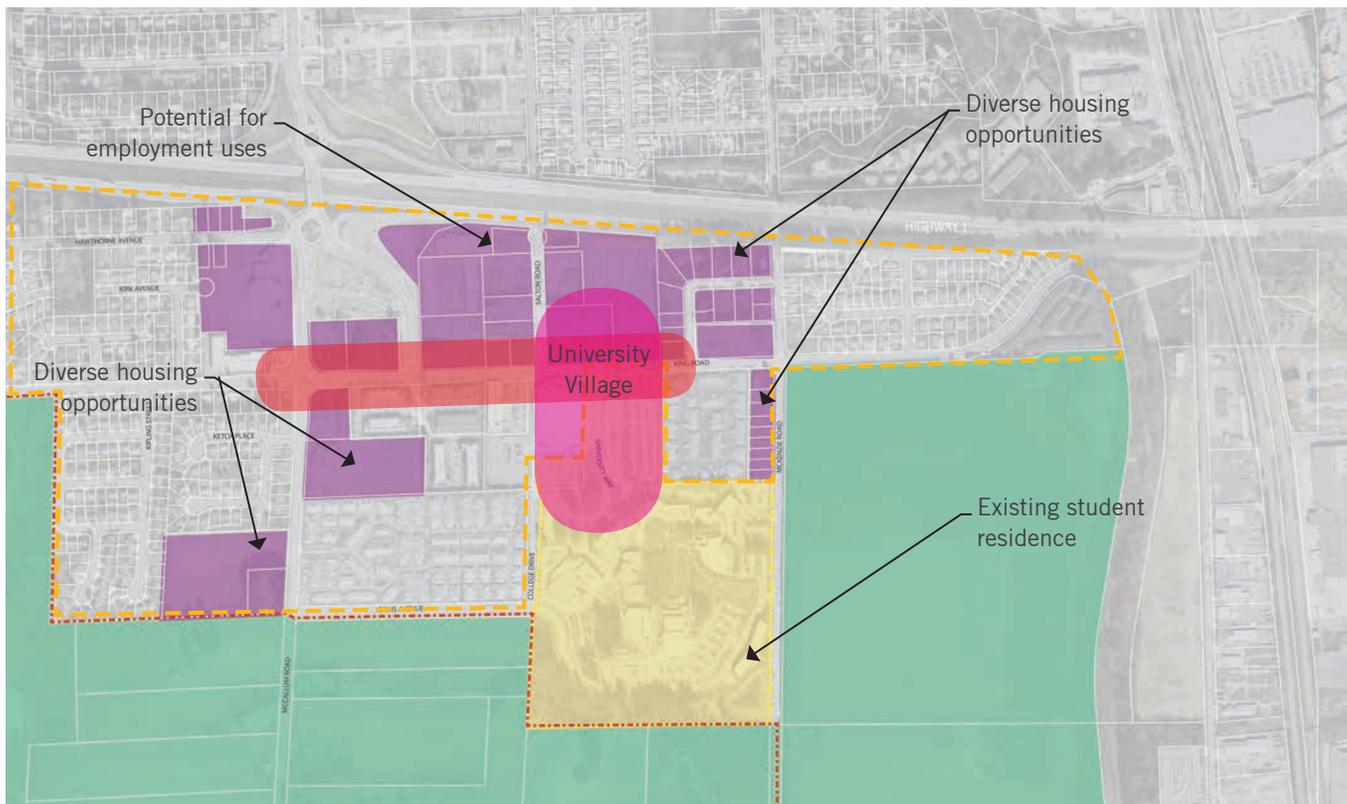


Figure 10 - Urban Context



Campus Residences

UFV currently operates a student residence at the southern end of campus. Students have expressed a desire for more independent housing options, therefore, other forms of housing will be prioritized in earlier phases of the plan with construction of additional campus residences considered in later phases.



University Village

The University Village is envisioned as a mixed use hub connecting the campus and community. Opportunities for more independent living and market housing should be considered in this area. The Village should also provide retail opportunities and amenities to support student life on campus.



King Road Revitalization

Active, mixed-use development is planned along King Road, a transit priority corridor connecting the campus with communities north of Highway 1. This area offers opportunities for apartment-style housing for students and a mix of uses and amenities to support a vibrant community.



Urban Infill

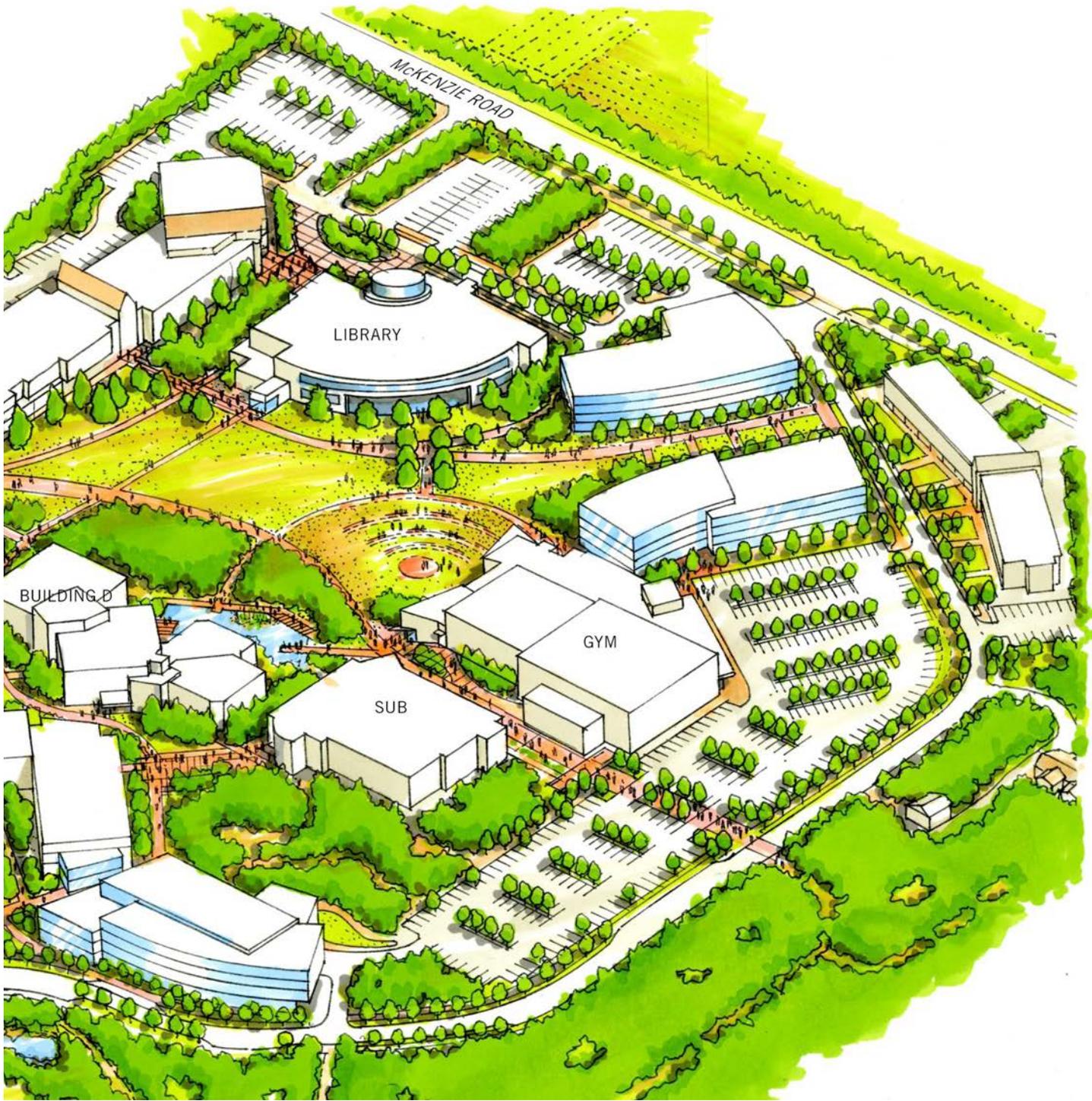
Residential densification in the form of low to mid-rise buildings complementary to the surrounding housing character, is expected throughout the UDistrict. Housing here should be designed to be attractive to students, faculty and staff and the University may explore opportunities with private partners to deliver this type of housing.

5. THE CAMPUS MASTER PLAN

The Campus Master Plan is a framework for change that will guide how the University of the Fraser Valley's Abbotsford campus physically evolves over the next 20 - 25 years. The Plan provides guidance on the siting, design and program of new facilities, the renovation or redevelopment of existing facilities, and the design and program of open spaces. In addition, the Plan provides guidance on transportation and infrastructure improvements that will support the campus vision over the short and long term.



Figure 11 - UFV Campus Master Plan Axo



5.1 Social Spaces + Collaborative Learning



The need for better social and collaborative learning spaces on campus has been a consistent theme throughout the master planning process. Increasingly, universities are seeking to break down barriers between disciplines, and between the campus and the community, to foster a stronger sense of community, better collaboration, and innovative solutions to cross-disciplinary problems.

Combining uses within buildings and sharing common spaces reflects this move towards more multi-disciplinary learning and contributes to an engaging campus experience.

Learning Happens Everywhere

The Learning Commons Network (LCN) builds off of the existing and proposed pattern of "social infrastructure", the key places of gathering and learning at UFV. Evenly distributed across the campus, the LCN includes spaces for learning, research,

and socializing together with study commons and access to library support. Technological advancements have made it possible to access learning networks throughout the campus and these designated spaces foster an environment of learning and social interaction supported by this new distributed learning network.

This section identifies those places on campus that are currently lacking social infrastructure, those that have a concentration of social activity, and opportunities to strengthen both.

Where are the Social Spaces?

With the opening of the new Student Union Building (SUB) in 2015, student life on campus has tended to gravitate towards the southern end of campus where services and activities geared towards student life (the Student Union, campus cafe, student newspaper, pub etc.) have been relocated.

The Learning Commons continues to offer study spaces, gathering places

and a cafe that is well used by students, faculty and staff. Transit and shuttle services are located in front of the library and create a secondary hub of activity.

Building A and B are home to the cafeteria, services for students, and administration. The buildings have been designed to include informal gathering spaces that are generally well used by students.

New Social Spaces on Campus

The campus master plan builds on the existing social spaces on campus, strengthening existing hubs of activity and distributing new social space throughout the campus as buildings and open spaces are renovated and developed.

The U-Walk is itself a strong social space on campus. It creates a thread that links many of the new and existing social spaces on and off campus. The Central Green is strengthened as a social space with the addition of an amphitheatre for large events and a variety of spaces for eating, relaxing, playing frisbee and socializing.

Indoor and outdoor social spaces are integrated to create flexible and dynamic learning spaces that are functional throughout the year. More community-oriented social spaces such as coffee shops, the bookstore and the Welcome Centre are located to the north of campus, while student-focused social spaces are integrated in each new academic building.

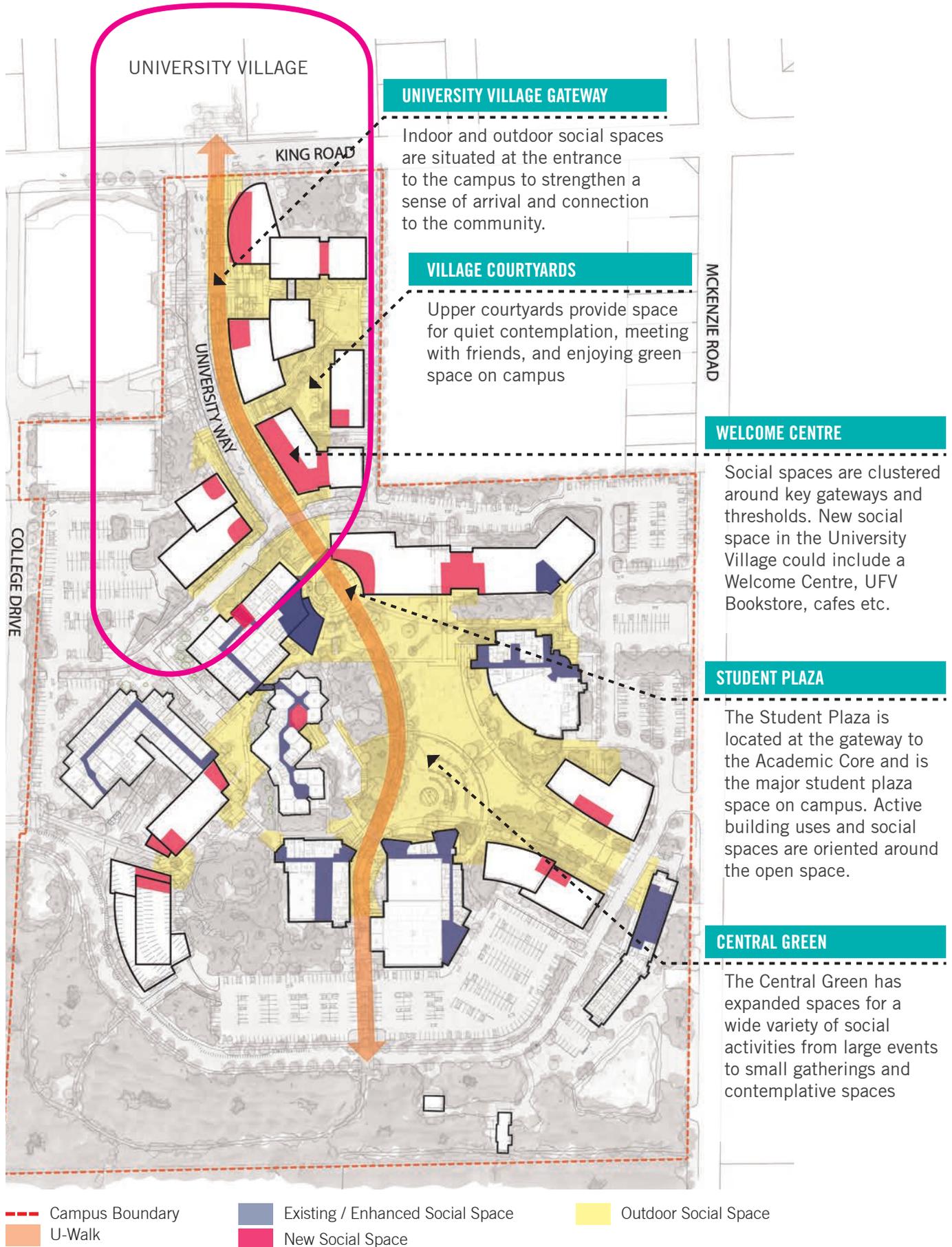


Figure 12 - Proposed Social Spaces on Campus

5.2 Partnership + Market Opportunities

One of the objectives of the CMP is to create opportunities for the incorporation of private sector development that could add diversity and vitality to the campus experience, while possibly also generating revenue that could be applied to university initiatives. UFV retained Coriolis to analyze the potential for market development on the UFV campus. The campus master planning process has identified the University Village as the preferred location for market development such as:

- Ground level retail could include food and beverage (café, bakery, restaurant, pub), services (hair care, cleaning, florist), convenience store, and specialty retail (ie. bookstore).
- Market rental residential could be targeted at students that want to rent on or near campus but do not want to be in dorm style accommodation. Rental units could also be rented by faculty or the open market.
- Strata residential could appeal to faculty or to purchasers interested in living in a university environment. Such units would be leasehold strata title, because UFV can lease land but cannot sell land.

Market Findings

1. Residential Development

Previous forecasts have suggested a range of 600-800 multifamily units in the UDistrict over the next 20 years. Coriolis estimates a slightly lower range (330-750 units), mainly because of a more conservative view of UDistrict's potential share

of total Abbotsford development. It is estimated that between 170 and 230 residential units could be accommodated in the University Village.

2. Retail Opportunities

The retail opportunity on the UFV campus over the next decade or two will be limited to some food and beverage space and a small amount of retail with a mix of convenience and small specialty tenants. This could be accommodated at the ground level of buildings fronting on King Road and University Way.

3. Multifamily Land Values

Rental housing could perform better than strata residential, in terms of land value to UFV, assuming small student-oriented units and depending on how parking is handled. If development must include structured parking, it will not be viable. A rental housing strategy will have to be linked to an overall parking strategy.

Two Scenarios

Two scenarios were explored for accommodating market development in the University Village:

1. Independent Approach: Academic and market uses occupy separate buildings - half of the land is made available for market use and the residential portion achieves an approximate total yield of about 150,000 f², or 170 units (Figure 13)
2. Integrated Approach: Academic and market uses are mixed within the same building - development of the whole area achieves site coverage of 50% and all projects include 4 storeys

of residential over ground floor retail and university use, then total capacity is about 200,000 f² or 230 units (Figure 14)

These estimates work out to about one quarter to one third of the total UDistrict forecast over 20 years, which is perhaps aggressive but achievable provided that units are offered on terms that allow leasehold units to compete against normal strata units and provided the campus plan implementation creates an attractive residential environment.

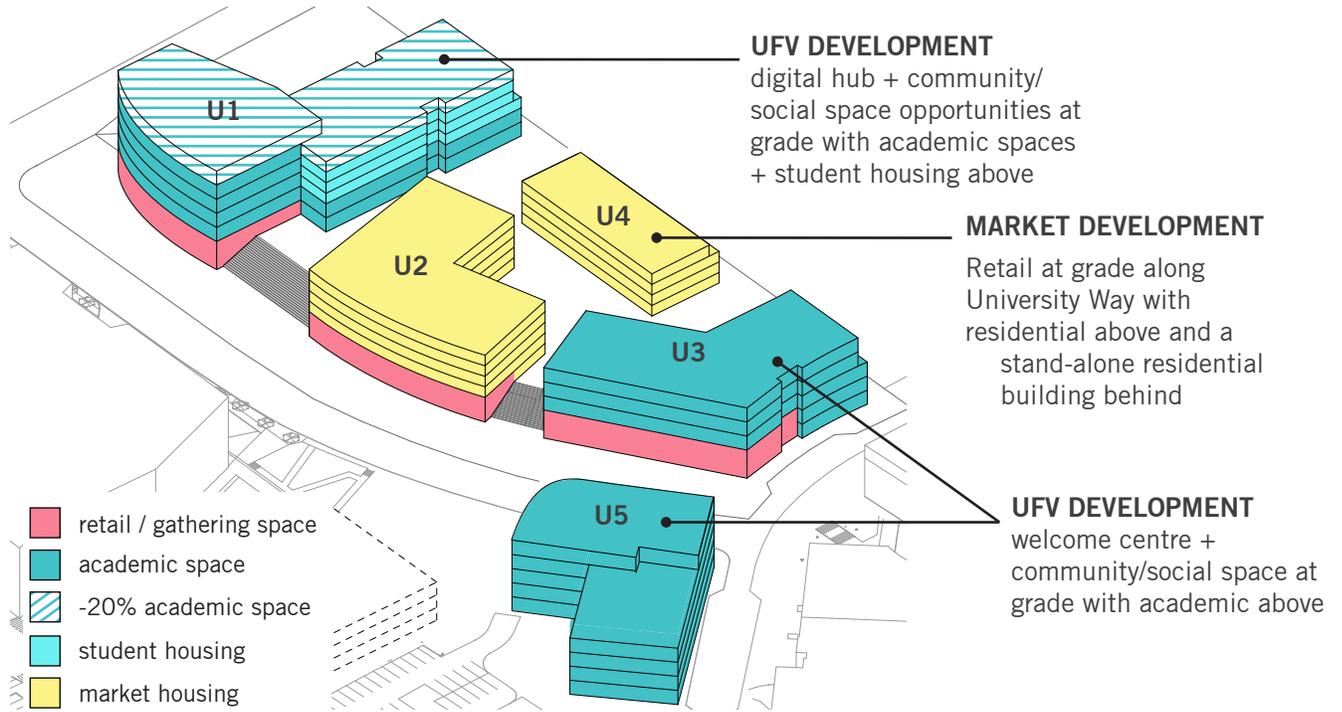


Figure 13 - Scenario 1: Independent Approach

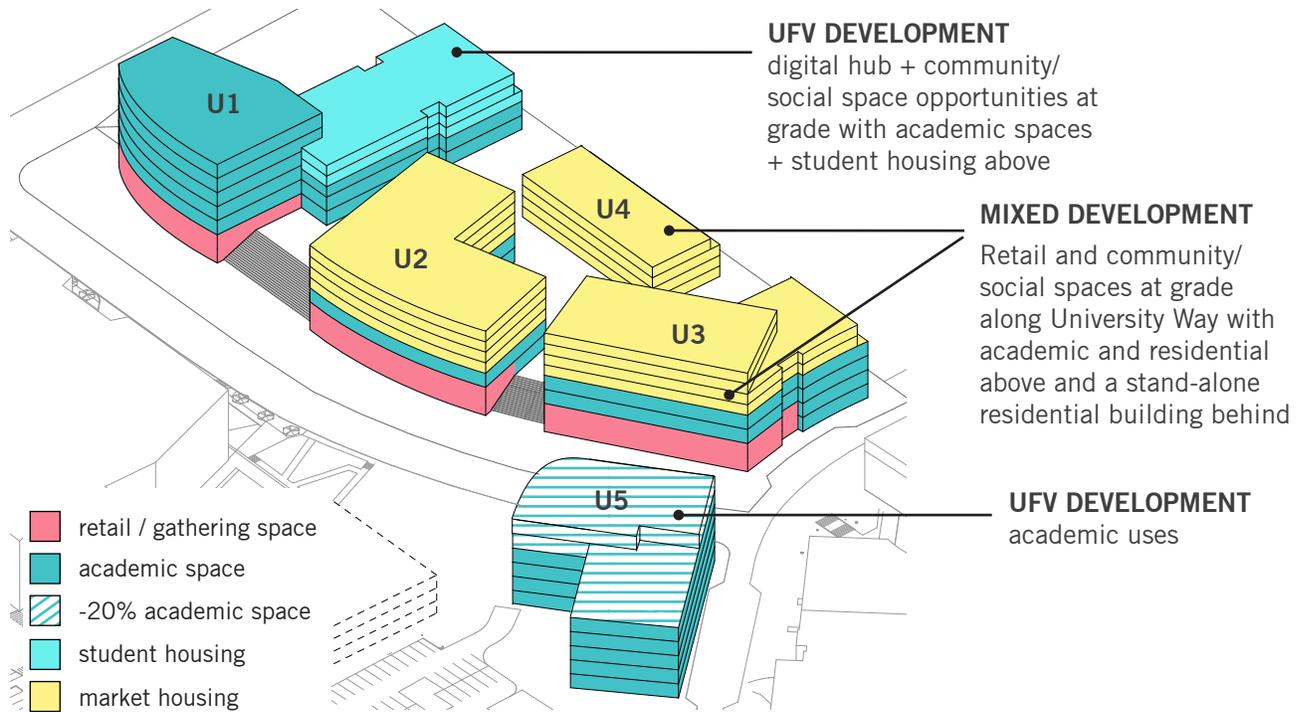


Figure 14 - Scenario 2: Integrated Approach

5.3 Campus Land Use + Zones

Establishing a strong character and program focus for each of the three campus zones helps to reinforce intuitive wayfinding, create a stronger sense of place within each area, and strengthen synergies between compatible uses.

Rather than provide prescriptive land uses for each development site, this

section provides recommendations on compatible land uses that help to reinforce the vision and principles of the plan. The objective is to identify and reinforce the pattern of activity and social infrastructure on campus and ensure that new and existing facilities support places of gathering and learning at UFV.

The Abbotsford campus includes three distinct campus zones shown below and described on the following pages. Options for specific programs and facilities are illustrated to allow flexibility within the overall structure of the plan.



Figure 15 - Campus Zones

5.3.1 University Village

The University Village is where the campus and community come together, creating a vibrant hub of activity at the University's front door that reframes the whole arrival experience. Buildings, uses and open spaces strengthen connections and synergies between the campus and community, welcome the community onto the campus, and showcase the activities happening there.

Master Program Elements

Uses in the University Village include a mix of academic, student and community uses. Based on the results of the market study, this area could also accommodate private commercial and/or residential development to support a vibrant University Village.

| | |
|-------------------------------|-----------------------------|
| UFV: DIGITAL HUB | 8,000 |
| UFV: ACADEMIC + SUPPORT | 11,413 |
| UFV: CAMPUS HOUSING | 3,000 |
| UFV: COMMUNITY / SOCIAL SPACE | 1,400 |
| TOTAL NEW UFV SPACE | 23,813 m² |
| PRIVATE DEVELOPMENT | 25,000 m² |

Recommendations

1. Explore opportunities to combine a new Digital Hub, Performance Space, Conference Centre and Gallery space within a purpose-built facility. This new building could also include a cafe and/or international student housing.
2. Locate the Welcome Centre centrally in the Village. The Welcome Centre should have a strong at-grade connection to adjacent open space and the U-Walk. Compatible uses include administration, services for students, bookstore, academic uses and faculty offices.
3. Provide a mix of housing in the University Village ranging from international student housing to independent student housing and/or market housing.
4. Ensure provision of academic uses within the University Village. Academic uses and faculty offices should have a strong presence in the University Village to maintain a strong campus identity.
5. Consider relocating or expanding programs such as Business, Arts, and Cultural Studies to the University Village to facilitate a stronger connection to the community.

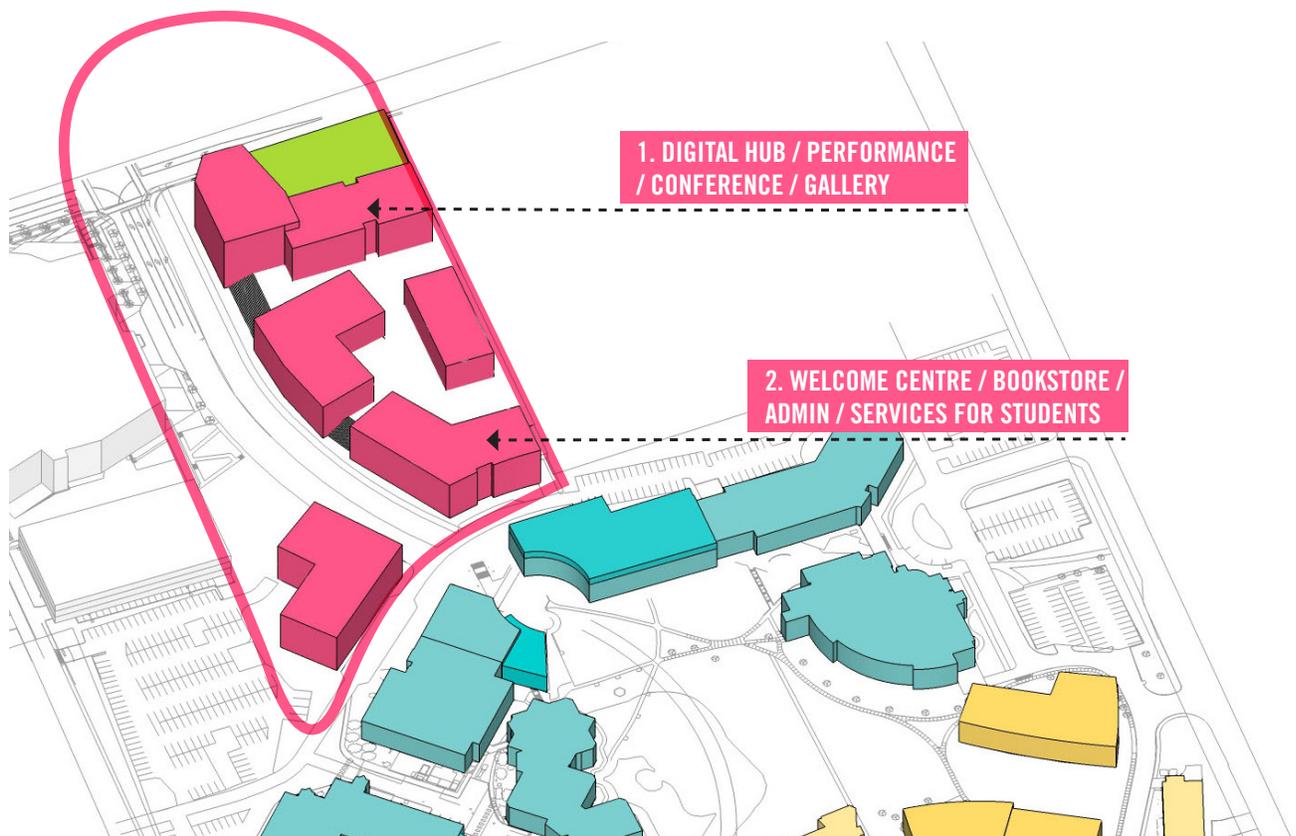


Figure 16 - University Village: Master Program

5.3.2 Academic Core

The Academic Core is the true heart of the campus. Uses are focused on research and academics and the buildings and open spaces reinforce an atmosphere of collaboration, innovation and higher learning. Opportunities for cross disciplinary collaboration are embedded throughout the academic core and oriented around the large central green.

Master Program Elements

Uses in the Academic Core are focused on students and learning:

| | |
|----------------------------|-----------------------------|
| ACADEMIC SPACES | 5,500 |
| SERVICES FOR STUDENTS | 2,650 |
| LEARNING COMMONS | 1,250 |
| FACILITY OPERATIONS | 550 |
| RESEARCH | 1,150 |
| TOTAL NEW UFV SPACE | 11,100 m² |

Recommendations

1. Locate administration uses and services for students in Activity Zone 3. Compatible uses in Building A and B include classrooms, teaching labs, research facilities, food services, and faculty offices.
2. Accommodate additional academic uses in a Building C2. A 'pilot' program for the Digital Hub can find it's interim home here in advance of a purpose-built facility in the University Village.
3. Locate new academic uses in Building C3, strengthening the academic focus and creating a new western gateway.
4. Relocate Shipping and Receiving from Building D to Building C3.
5. Consider relocating or expanding programs such as Science and Geography to Building C3
6. Distribute new Learning Commons space throughout the campus by incorporating collaborative learning spaces into new and existing buildings.
7. Retain food services in Building B

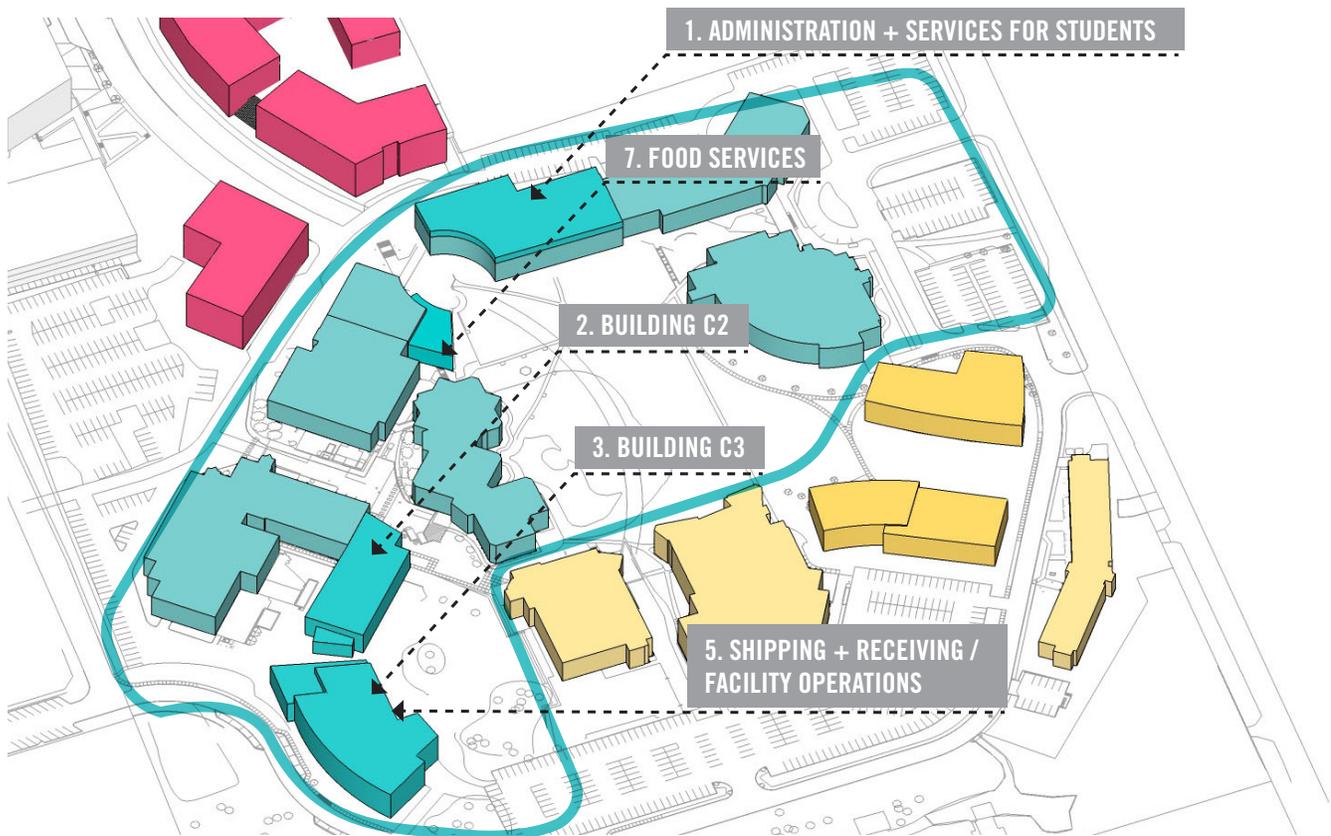


Figure 17 - Campus Core: Master Program

5.3.3 Student Village

The Student Village is closely associated with the Academic Core and provides amenities, housing and services geared towards students and the campus experience. This area builds off of the existing uses on campus creating a vibrant campus village to support campus life.

Master Program Elements

Uses in the Student Village are focused on student life and recreation:

| | |
|----------------------------|-----------------------------|
| ACADEMIC SPACES | 6,000 |
| LEARNING COMMONS | 1,750 |
| CAMPUS HOUSING | 3,700 |
| GATHERING | 50 |
| ATHLETIC/REC | 1,700 |
| TOTAL NEW UFV SPACE | 13,250 m² |

Recommendations

1. Replace U-House with a new academic building that could include classrooms, faculty offices and collaborative learning spaces.
2. Over the long term, consider developing a mixed use academic and/or student housing facility that provides space for additional classroom space and student residences.
3. Relocate the bookstore from its current location in the basement of the Student Residence building to the University Village. The space previously dedicated to the bookstore could transition to communal space associated with the Student Residence.

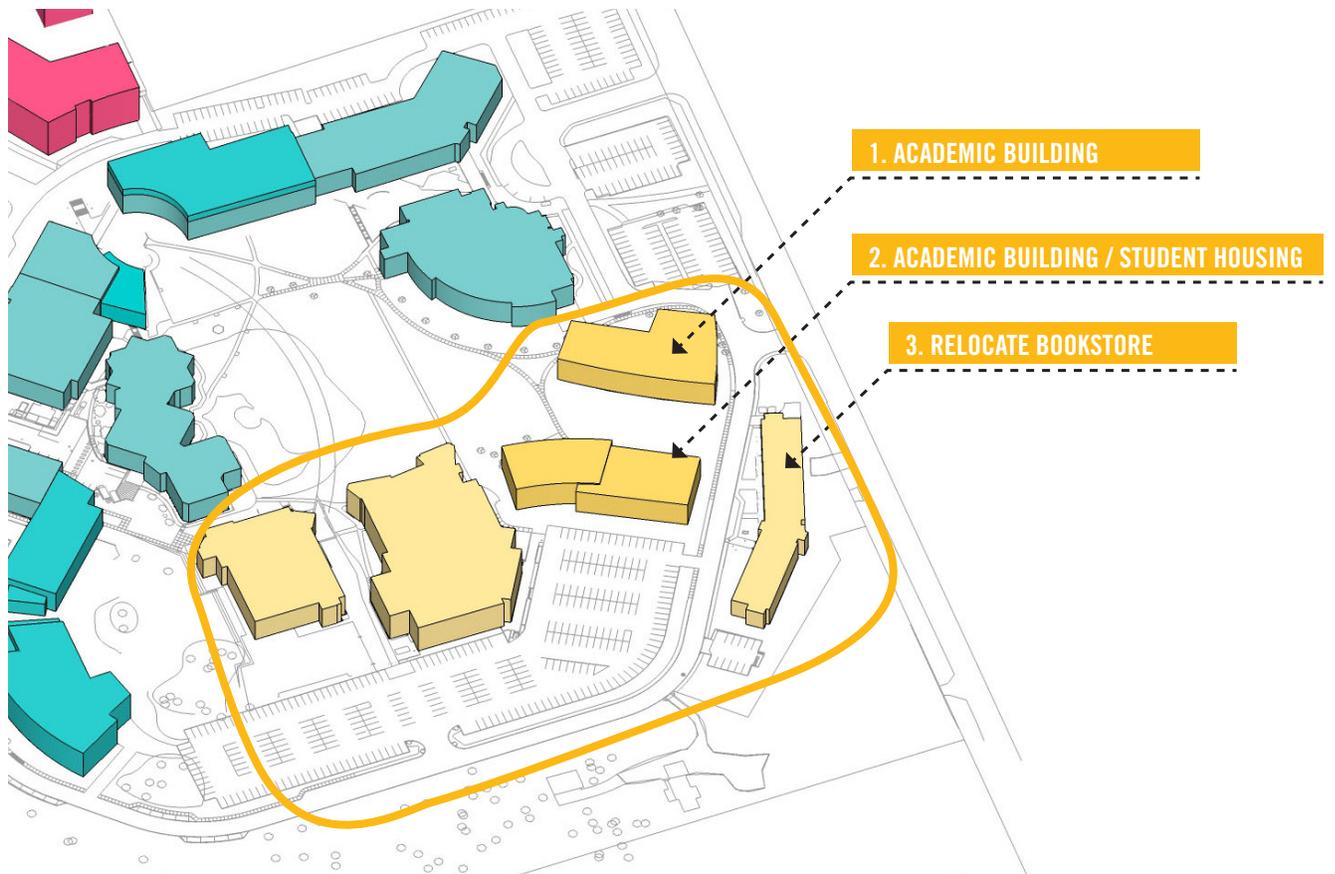


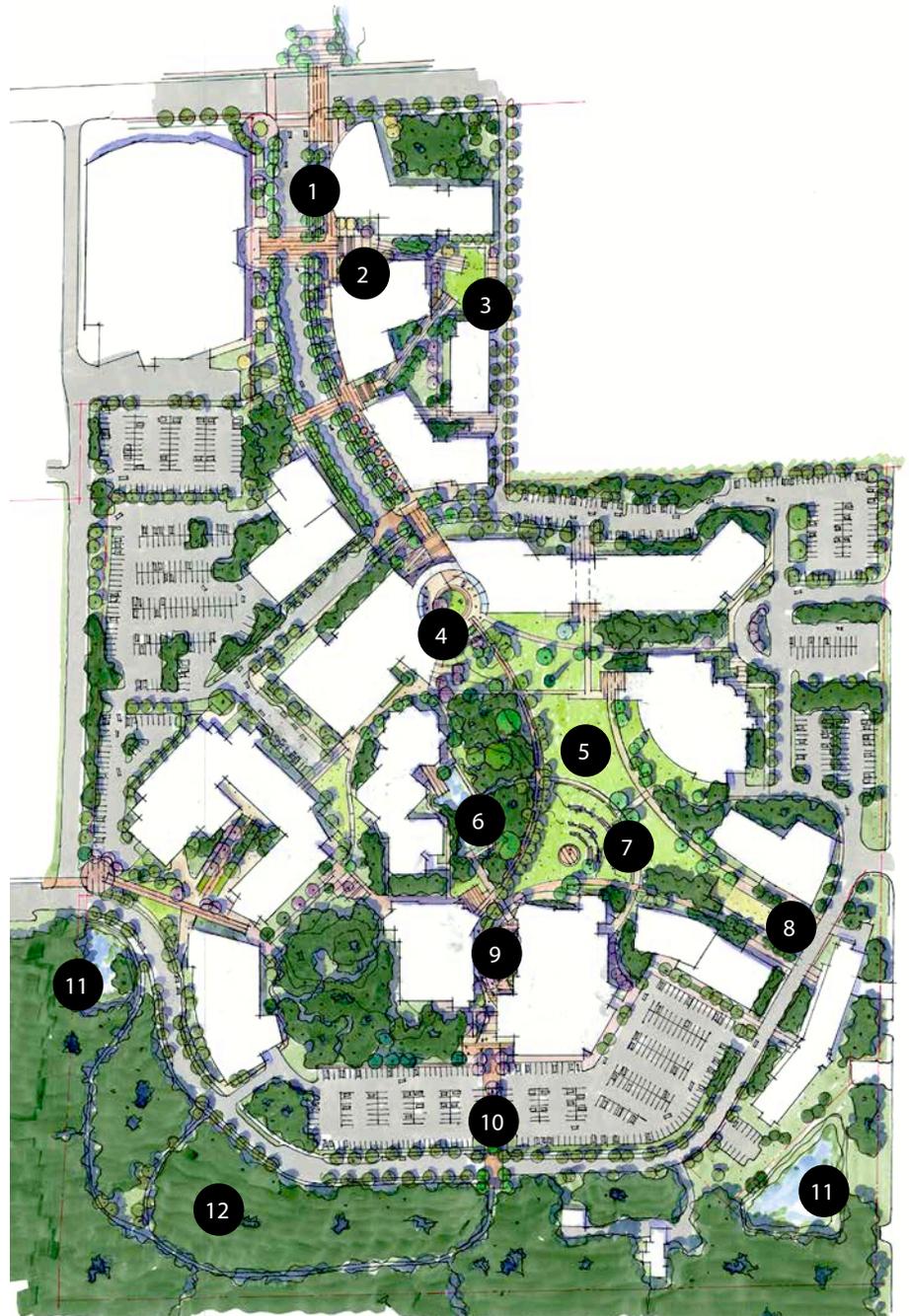
Figure 18 - Student Village Master Program

5.4 Open Space Network

UFV's open space network is a critical element in the ultimate success and character of the campus. The formal and informal spaces between buildings enhance the campus experience and include important places to gather and reinforce a strong sense of community and place.

Open Space + Landscape Principles

- A. Minimize disturbance of and enhance connections to existing natural and forested areas.
- B. Reinforce physical/visual connections to surrounding community and University District.
- C. Build on use of landscape as an educational and social amenity that building campus community.
- D. Reinforce and build on valued landscapes such as the Central Green, Wetlands, and Forested Areas.
- E. Utilize Campus Open Space as venues to reinforce and celebrate the educational departments and specialty programs.
- F. Integrate green infrastructure as landscape public amenity.
- G. Maximize and enhance walkability and bike-ability experience on campus.
- H. Use landscape and open space to link precincts and campus amenities and buildings.
- I. Indigenous plant materials should be utilized in all areas of the campus to reinforce biodiversity and natural landscape.



Open Space Network Rendering

- | | | |
|--------------------------------|------------------------|--------------------|
| 1 U-Walk | 5 Central Green | 9 Plaza node |
| 2 Plaza node | 6 Plaza node | 10 U-Walk |
| 3 University Village courtyard | 7 Amphitheatre | 11 Stormwater pond |
| 4 Plaza node | 8 South-east courtyard | 12 Forested area |

Landscape Typologies

The Campus' open space network can be described in seven landscape types that reflect the particular role, function and hierarchy of these places within the larger open space network. These landscapes include:

- The U-Walk
- The Central Green
- Plaza Nodes
- Courtyards
- Wetland
- Stormwater
- Tree Retention



5.4.1 U-Walk

The U Walk will become the main pedestrian / cycling central spine connecting the campus from north to south and to the U District neighbourhood. Buildings and open spaces fronting the U Walk will provide animation and activity along the central spine. This walk will provide seating, gathering, and hang-out opportunities throughout.

Recommendations

- Create a central pedestrian spine that links the campus from north to south and serves as the main component of the circulation system for the site.
- Provide variety of spaces and experiences to allow for wide range of uses along the central axis.



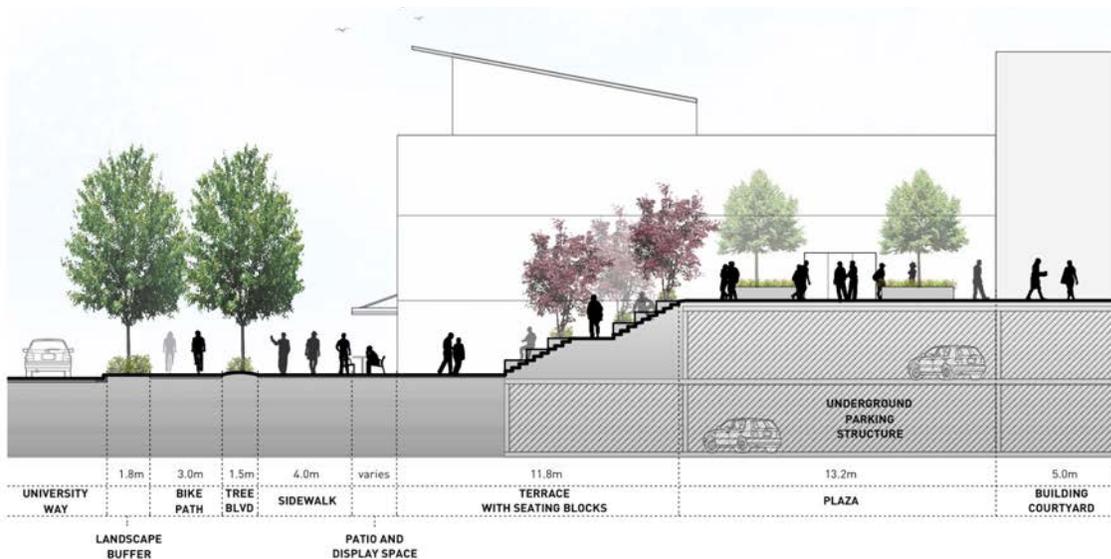
Commercial and educational spaces



Separated bike lane



- 1 University Way
- 2 Plaza node
- 3 Bike lane
- 4 Terrace with seating blocks



SECTION A - A'
THROUGH U-WALK AT UNIVERSITY WAY NORTH

5.4.2 The Central Green

The Central Green is a much loved and valued campus amenity that has historically been under utilized. The new Central Green Landscape / Open Space will be enhanced with better connections through the space, animated with new plaza nodes bordering the green, and new features such as the lawn knoll and U Walk.

Recommendations

- Provide central space with strong identity to allow for diverse educational and recreational activities and strong connection to the rest of the campus.
- Celebrate and capitalize on the views from the central green.
- Indigenous plant material should be used to reinforce the biodiversity



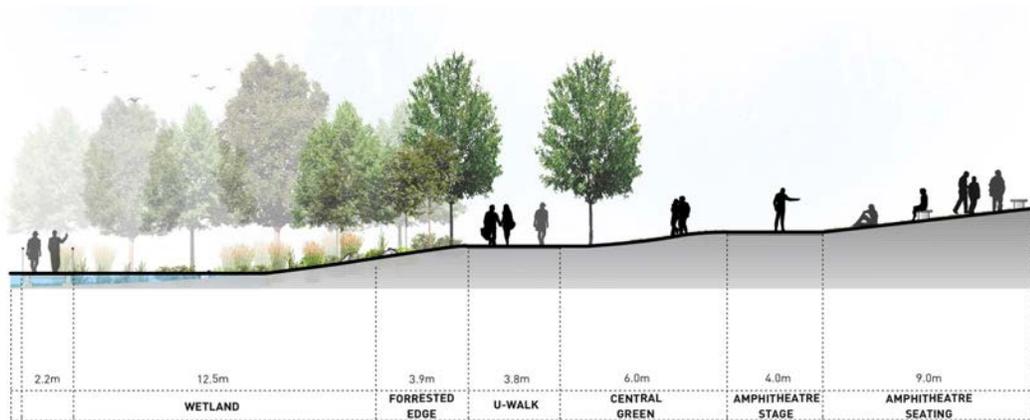
Central commons space



Amphitheatre seating



- 1 Plaza node
- 2 Central Green
- 3 Wetland
- 4 Amphitheatre
- 5 South-east entry plaza



BOARDWALK

SECTION D - D'
UNIVERSITY WALK THROUGH WETLAND AND AMPHITHEATRE

5.4.3 Plaza Nodes

Plaza Nodes are entry features and gathering spaces at building entrances. These plaza nodes will be located at strategic building facades and entries to reinforce the indoor-outdoor experience. The Plaza Nodes are intended to expand the interior building amenity spaces to the outdoor environment. The U Walk, primary and secondary pathways will be intersected and connect to these Plaza Nodes. These spaces will become importation hang-out, gathering, and opportunities for students, staff, academic professionals, and the public to interface. These spaces also become outdoor display opportunities for art, class projects, and temporary events and activities.

Recommendations

- Reinforce the network of circulation system around the campus by creation of strategically positioned plaza nodes that increase walkability and open space occupancy by the students.



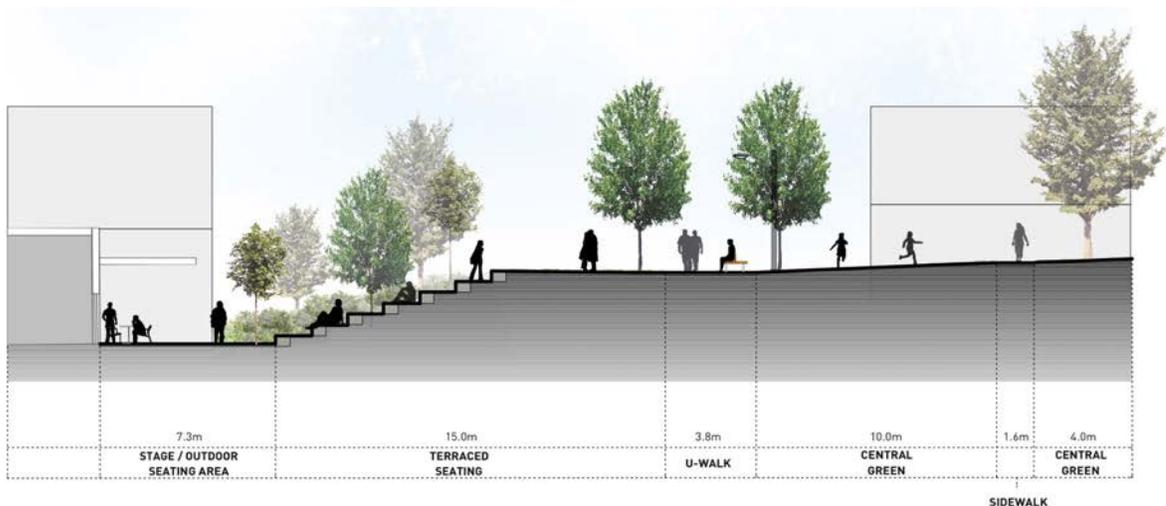
Outdoor space node



Informal seating



- 1 University Way
- 2 Sloped plaza entry
- 3 Plaza node
- 4 Terraced seating
- 5 Central Green



SECTION C - C'
THROUGH UNIVERSITY WALK AND AMPHITHEATRE

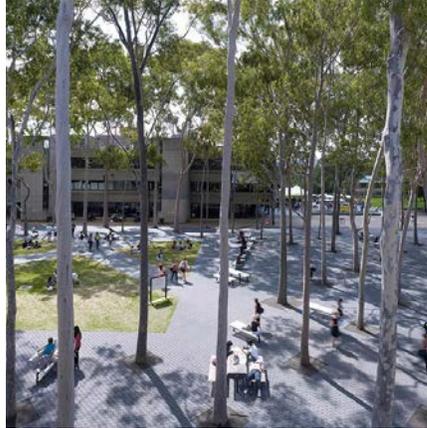
5.4.4 Courtyards

Courtyards are the outdoor areas between buildings that offer an outdoor environment for classrooms, nature, contemplative, recreation, and connections to buildings. Courtyards will be semi public and public depending on their location and building interface. Typical courtyards will include:

- Academic Courtyards,
- Residential Courtyards
- Recreation Courtyards

Recommendations

- Use courtyards to reinforce interior building uses and programing.
- Utilize microclimates created by the built form to create pleasant outdoor sitting areas.
- Utilize building canopies and covered structures to extend the seasonal experience in the courtyards.



Courtyard integrating trees



Covered courtyard



- 1 Terrace with seating blocks
- 2 Courtyard with lawn
- 3 Courtyard
- 4 Plaza node
- 5 University Way

5.4.5 The Wetland + Natural Areas

The existing Wetland and surrounding Natural Areas are important features that reinforce the rural and natural character of the campus within an urban setting. These are valued amenities on the campus and as new areas of development occur, new natural areas should be introduced to reinforce the biodiversity of the campus. The wetland will be enhanced with additional boardwalks and viewing decks so that the area is more accessible and available to the campus users. The rich biodiversity of this area will be emphasized by an interpretative educational component.



Boardwalk with docks



Wetland

Recommendations

- Create circulation system that connects the existing natural areas to the campus trail system.
- Integrate wetland and natural areas into a system of ecological spaces suitable for recreation.
- Minimize disturbance and protect the wetland and all natural areas.



- 1 Building D
- 2 Wetland
- 3 Boardwalk and docks
- 4 U-Walk
- 5 Plaza node

5.4.6 Tree / Forest Protection

The existing tree collection and forested areas on the campus are valuable environmental attributes and green canopy cover to the overall campus. The trees and forest offer habitat for birds and wildlife, reduce the urban heat island effect. As the campus builds out existing trees should be incorporated into the new building and campus development and identified areas of forest should be preserved. Trails and small amenity features should be incorporated in the forest areas to provide more access and utilization of the forest. Outdoor classrooms and educational opportunities should be incorporated as well.

Recommendations

- Protect and enhance the existing tree habitat.
- Minimize impact of new building on the existing trees and incorporate existing trees into proposed development.



Development incorporating trees



Educational opportunities



- 1 Wetland
- 2 Tree retention area
- 3 Stormwater detention
- 4 U-Walk
- 5 Tree retention area

5.4.7 Green Infrastructure

Green Infrastructure is an important aspect and overlay influencing the character of the landscape and open space for the campus. All aspects of the open space should be reinforced with green infrastructure initiatives such as storm water management, biodiversity, climate adaptation, food production, and healthy soils. As the campus builds out, green infrastructure should serve to provide an ecological framework for the social, economical, and environmental health of the campus.



Stormwater collection and filtration



Rain garden

Recommendations

- Create a system of green infrastructure that adheres to low-impact development design strategies.
- Develop methods addressing stormwater harvesting, expansion of biodiversity and reduction of non-permeable surfaces.



Existing stormwater systems can be expanded throughout the campus

5.5 Movement

Managing transportation demands going forward will be one of the key strategies in creating an effective and sustainable Campus Master Plan. Central to this will be the development of a mixed use and compact academic community within an emerging 'U District', offering opportunities to focus choices towards active transportation along with expanding transit opportunities.

Managing parking demand will also be a key issue. As new buildings are introduced, innovative strategies will be needed to lower the parking footprint, minimize new structured parking costs, and lower vehicle demands.

The following assumptions have been made regarding future connectivity in the surrounding neighbourhood:

- That the proposed pedestrian and cycle bridge will be constructed within a reasonable time frame;
- That the area just north of the campus, along King Road, will be developed as a mixed use, walkable neighbourhood;
- That the intersection of University Way and King Road be designed to encourage pedestrian and cycle use as well as create a sense of arrival for the campus;
- That safe, low stress bicycle routes are developed between this intersection and the new pedestrian and cycle bridge;
- That the proposed transit plan, including the proposed new transit loop using College Way and University Way be supported by the city;
- That public parking in the area be managed in such a way that students or staff are not encouraged to use off campus parking.

5.5.1 Pedestrian Network

Pedestrian routes should have the following characteristics:

- Gathering and lingering spaces along the routes
- Be well lit
- Overlooked by fronting buildings or adjacent to open spaces
- Where adjacent to campus buildings, weather protection should be considered
- Hard surfaces for use in all weather
- A minimum of 1.8m wide to allow people to walk side by side. Considerably more width than this will be required in higher trafficked areas.



5.5.2 Cycling Network

The campus cycling network should connect to existing and potential City bike routes to provide easy access for cyclist to and through the campus. The U-Walk is the main pedestrian and cycling route on campus and links directly to end of trip bike facilities provided within new and existing buildings.



Figure 19 - Multi-use pathway



Figure 20 - Bike storage on main route

Recommendations

Cycling paths should have the following characteristics:

- Convenient, direct routing;
- Secure and well lit;
- Minimize required grade changes and keep grades to within 5% where possible;
- Hard surfaces, for use in all weather; and
- Where pedestrian routes coincide with bicycle routes, pathways can be shared, with a minimum 4m wide hard surface.

Long term bicycle storage should:

- Include weather protection;
- Central bike station facility located adjacent to main activities in a prominent location along with parking at each building;
- Adjacent to well trafficked route;
- Showers and lockers;
- Consideration of electric bicycle charging stations.

Short term bicycle storage should:

- Include weather protected;
- Be located in multiple convenient and prominent locations adjacent to building entrances; and
- Ensure proper lighting.



Figure 21 - Proposed Campus Cycling Network

5.5.3 Transit

The campus transit exchange is currently located off of McKenzie Street to the eastern edge of the campus. It is recommended to be relocated to a more central location at the ‘front’ of the campus, to offer greater convenience and prominence to transit users and lower travel distances.

As shown in Figure 24, transit buses would turn right from King Road to College Drive, before turning left on a new section of street and dropping passengers off at the ‘front door’ of the campus. The pick up point would be slightly to the north along a redesigned University Way. Buses would then exit back onto King Road, utilizing the signalized intersection to make a left turn movement towards McCallum Road. There is potential to use part of the parking lot between College Drive and University Boulevard as a bus layover facility.

Recommendations:

- Explore whether the #66 (Highway 1 Express Route) can be more closely integrated with local services (#3, #12) at the UFV campus.
- Promote expanding transit facilities and frequencies in the longer-term as the campus and U District grows.
- UFV students were proactive to introduce a shuttle service that runs between the Abbotsford and Chilliwack campuses and Langley. This service was started two years ago and originally moved 500 students per week. It has grown in popularity and currently accommodates over 2,500 students per week. This service should be enhanced and supported and synchronized with the Fraser Valley Express bus.



Figure 22 - Transit shelters



Figure 23 - Transit plaza

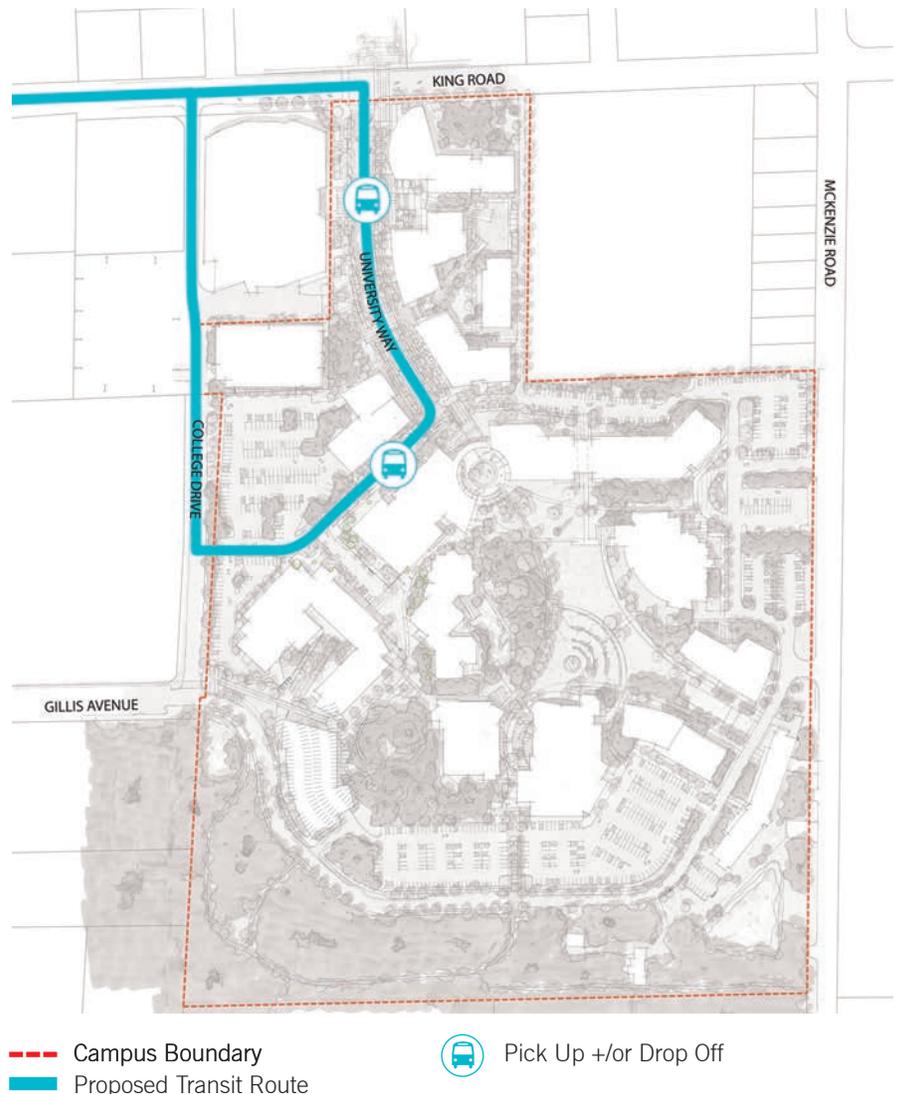


Figure 24 - Proposed Transit Network

5.5.3 Vehicles + Servicing

Figure 27 outlines the proposed street network within the campus. A new connection between College Drive and University Way will be an important component, especially in terms of transit routing. University Way itself will be transformed into an attractive, walkable street with wide sidewalks and a two-way bike path on the east side as show in Figure 25 and 29 on the following page.



Figure 26 - University Way



Figure 27 - Structured parking

Servicing for loading and garbage collection will need to be considered going forward. Servicing requirements for particular buildings will be considered in detail at the time of their development.

Truck Servicing Opportunities:

- Utilize where possible a central loading facility;
- For buildings that require individual servicing, try to create routing that can be shared with pedestrians (low volume activity);
- Avoid the need for loading docks by creating informal loading areas;
- Relocate shipping and receiving from where it currently resides in Building D to a new building off of the campus ring road to avoid high pedestrian activity areas.



--- Campus Boundary P Structured Parking
 New / Enhanced Campus Road P Surface Parking

Figure 28 - Proposed Campus Road Network

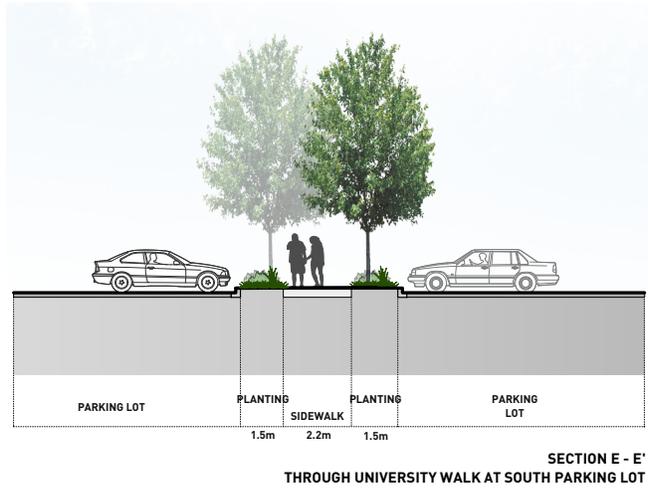


Figure 29 - Conceptual 'greening' of surface parking areas

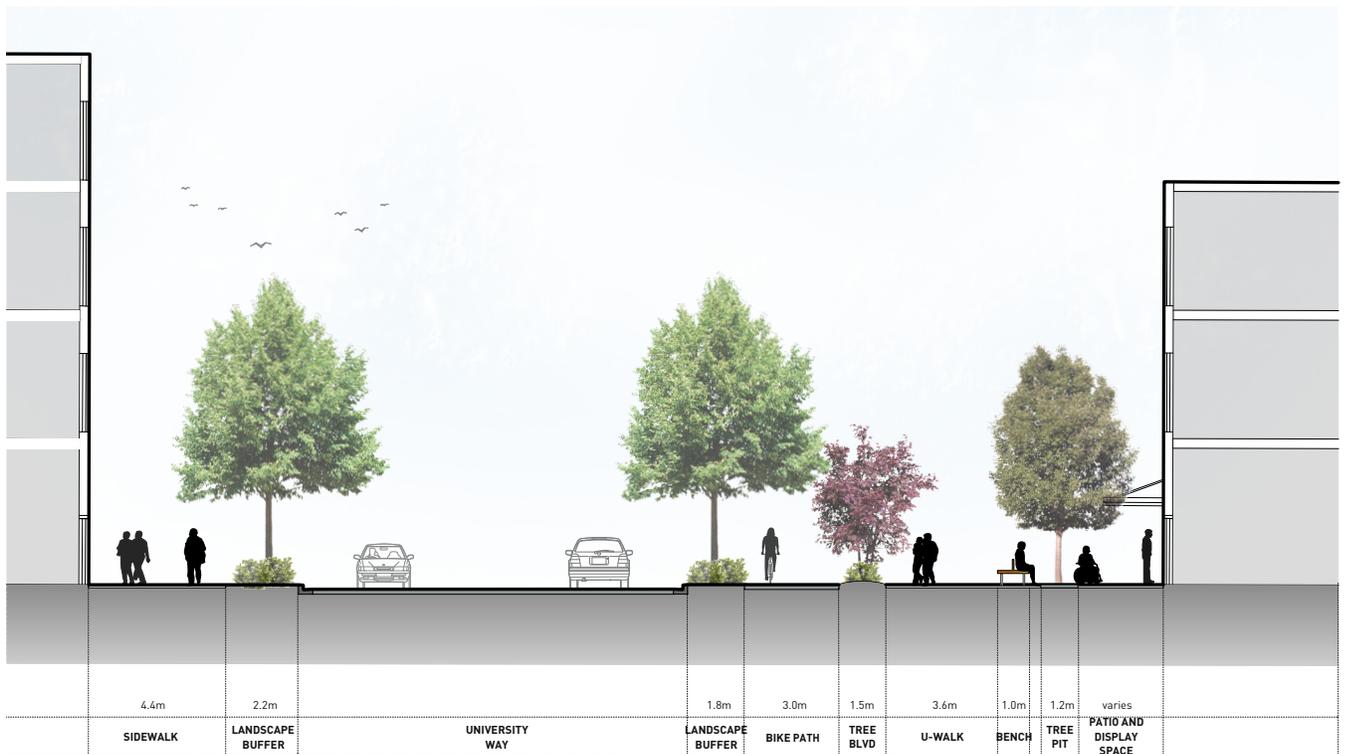


Figure 30 - Conceptual Streetscape Design for University Way

5.5.4 Parking - Phasing + Demand Management

Existing Parking Supply + Demand

A campus parking survey was undertaken to understand parking trends through the day and total parking supply. There are approximately 1,885 on campus parking spaces, with around 270 shared with the arena. There is also public on-street parking, available in close proximity to the site with a supply of approximately 405 spaces. The campus total parking supply, including on-street, is approximately 2,290 stalls.

The current parking supply of campus and public on-street parking is illustrated in Figure 33.

On-street daily pay parking is available on College Drive, Gillis Avenue and

McKenzie Road. McKenzie Road is well used as it is cheaper than on-site parking at the campus, with a parking rate of \$1.00 per hour, while Gillis Avenue is generally under-utilized. Free street parking is also available on King Road east of McKenzie Road and this is usually full during the middle part of the weekday.

The observed parking demand (for campus and on-street parking) at UFV is summarized in the Figure 34 on the following page (survey April 2015). Observations indicate there is sufficient supply to meet current demands, peaking at approximately 1,270 occupied stalls on campus. It however noted this is only a best estimate as vehicles counted in the parking survey could be attributed to another use than the university.

Additionally, demand may be higher in the fall semester.

An estimate of parking off-campus is hard to carry out accurately. It is difficult to assess whether it is attributed to the University or other uses. The best estimate is that this could be in the range of 300 to 350 vehicles connected with university activities.

Given the above, the total estimate for current campus parking demand is in the range of 1,570 to 1,620 stalls.

For campus planning, the surplus of parking supply for the existing student population at UFV, will allow in the short term, additional yearly student enrollment, without the requirement of adding parking supply.

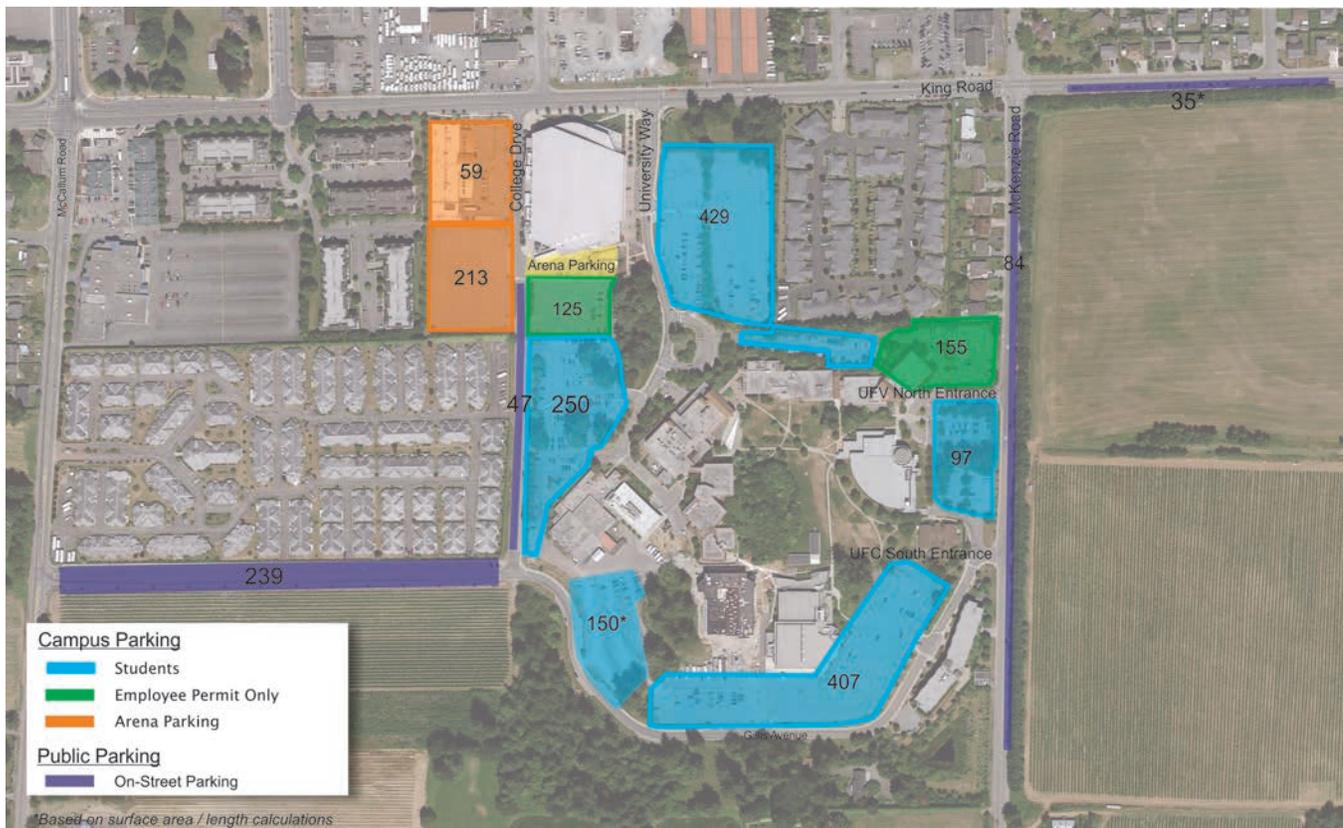


Figure 31 - Current parking supply of campus and public on-street parking

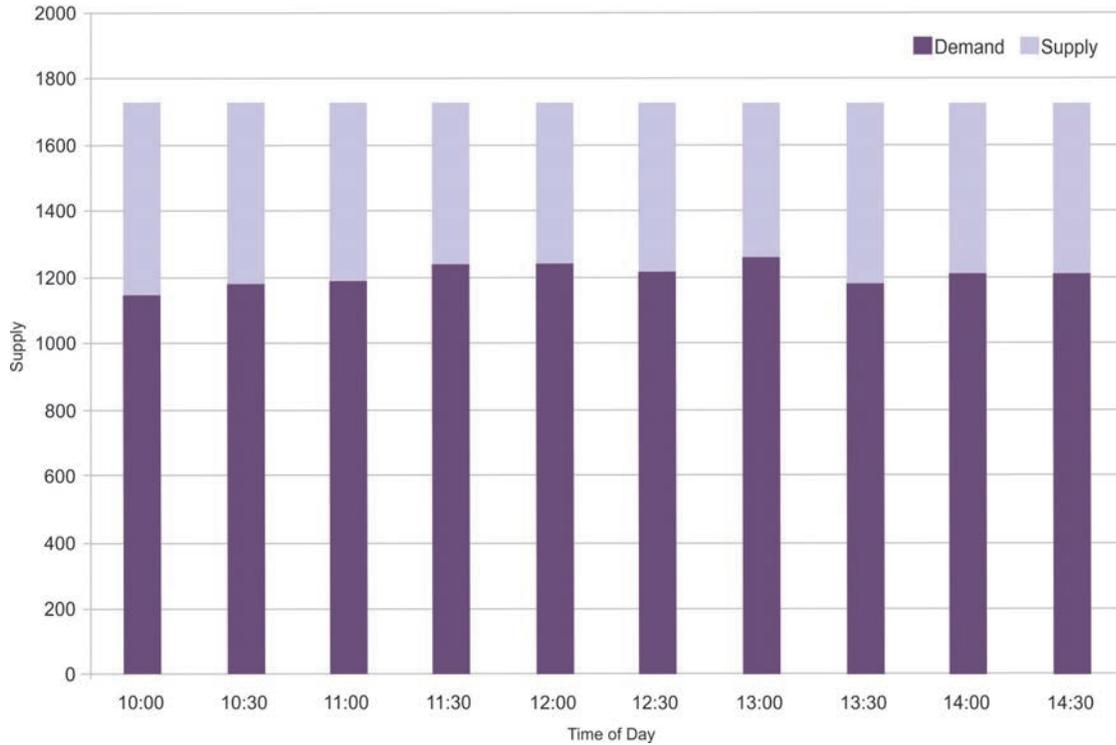


Figure 32 - Observed parking demand on UFV campus (surveyed April 2015)

Existing / Future Parking Supply Ratios

Although the parking supply at UFV is approximately 2,290 stalls, this includes public on-street parking. The following section assumes approximately a parking supply of 1,900 which is located on campus. For the current 5,221 full time students who do not live on campus, there are therefore 0.36 parking spaces per student. This is known as

a Full Time Equivalent (FTE) parking ratio. For campuses comparable to UFV Abbotsford in terms of location and surrounding land uses, the FTE parking ratios range from 0.20 to 0.30 stalls.

The Phase 3 enrollment is targeted for 7,831 students. If the current parking supply largely remains constant, the future parking/ FTE ratio at Phase 3 would be comparable to other similar

campuses in British Columbia.

Students living on site are expected to increase from the current 106 through to 175 in Phase 2 and 210 in Phase 3. A parking supply of 0.2 stalls per student is recommended for their use. This should be provided in close proximity to their accommodation, separate from other parking areas.

| Scenario | Non Resident FTE | Ratio of stalls to FTEs if current parking supply is maintained | Resident FTE | High range ratio | TOTAL (Using High supply) |
|----------|------------------|---|--------------|------------------|---------------------------|
| Existing | 5,221 | 0.36 | 106 | 0.2 | 1903 |
| Phase 1 | 6,100 | 0.31 | 150 | 0.2 | 1912 |
| Phase 2 | 6,615 | 0.28 | 175 | 0.2 | 1917 |
| Phase 3 | 7,831 | 0.24 | 210 | 0.2 | 1924 |

Table 1: Current and Future Parking Ratios

Demand Management

This section outlines measures that could be put in place to lower parking demand in line with supply as the number of FTE students increase. The main recommendations are summarized below.

Parking Charging Structure

One of the most efficient measures to manage parking demand is a well balanced charging structure. UFV already charge for parking but parking management will need to be further considered as the campus expands. A balance will be required between encouraging effective turnover and encouraging people to stay on campus for academic, social, cultural and economic reasons. Currently, semester and annual passes offer no incentive for people to come by other means on days when they may not need a vehicle. Technologies are now available to monitor when someone uses a space and to charge accordingly. Such systems can be effective at encouraging use of transit or cycling.

Neighborhood Parking Management

The effectiveness of parking management measures will also be reliant on the City to implement parking management for on-street parking in the U District neighbourhood. Without this there may be significant spill-over impacts. Growth will occur gradually over the course of the plan, so there will be time to review and take actions where appropriate.

Promotion of Ridesharing

UFV should connect with a rideshare program, such as the Jack Bell Foundation, a charitable society, focusing on ride share. This allows 100s of staff, and students, drivers and riders from the region to share rides to campus, utilizing on-line system.

Subsidized Transit Pass/ U-Pass

The implementation of the subsidized transit pass (U-Pass) at other British Columbia universities has been a huge success story, providing a cost effective and sustainable transportation solution for a large number of people, namely students. Application of a U-Pass program, also reduces congestion, and extends the distance for a person to walk or cycle.

Cycling Promotion

UFV should favor cycling, (and when used with walking and transit) as a mode of getting to/from and around campus. Low stress bicycle routes and safe and convenient bicycle parking facilities need to be priority, this include the proposed new bridge at Salton Road.

Other TMD Measures

Support and expansion of the student shuttle service between campuses. Additional routes could integrate UVF with transit centres and town centres.

Assignment of some parking stalls as electric vehicle charging stations.

The promotion of car share vehicles when they become viable through the lifetime of the plan.

Some reduction in vehicle parking

demand is expected to come about as a result of both the campus land use plan and the area plan for the U District. The campus land use plan calls for more residential accommodation for students, as well as greater facilities which will reduce the need for students to travel off-site. This will reduce the need for vehicles for the increasing number of students who are able to live on campus. The U District Area Plan also calls for a compact mixed use community around the campus which will enable more students to live within walking or cycling distance of their classes.

Parking Location + Supply

An examination of how the existing parking supply changes with each phase of development was completed to understand how the FTE to parking stall ratio was affected and when a structured parkade may need to be provided.

It should be noted the development plan for each phase is still at a high level and thus detailed design of parkade and surface parking lots are not available with precise area calculations. The numbers contained in Table 2, represent the best approximation at this time. Figure 35, illustrates areas considered.

As part of Phase 1 it is proposed to build some underground parking as part of the development of Area A. However, parking stalls will also be lost elsewhere, reducing the overall supply whilst the number of FTEs increases. The result is a reduction in the parking stall to FTE ratio from 0.36 to 0.30. This is a fairly significant drop in ratio and providing additional parking as part of this phase could be considered. However, this is still early in the redevelopment of the campus and significant on-street parking, currently under-utilized, is available. At this point therefore, it not recommended to construct any additional on campus parking.

For Phase 2 however, it is recommended to construct a three level parkade on a current surface parking lot south of Abbotsford Centre (Area D). The net increase in stalls this provides is approximately 130. Further information on the structured parkade is provided below.

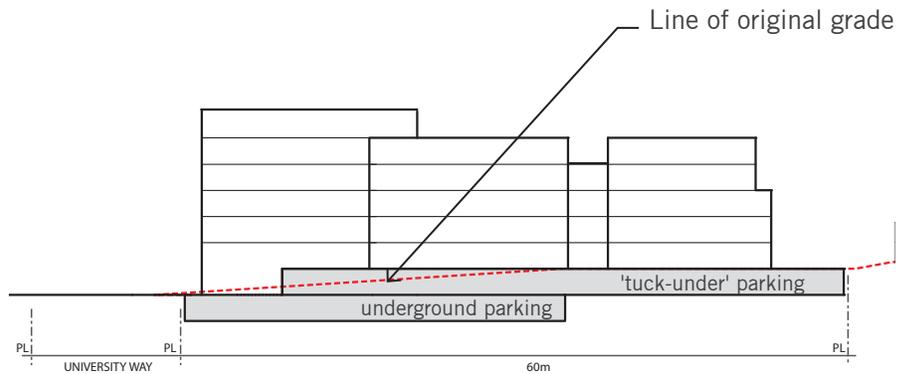


Figure 33 - Section A-A' Structured parking in Area 1A and 2A take advantage of existing grades to minimize the extent of underground parking

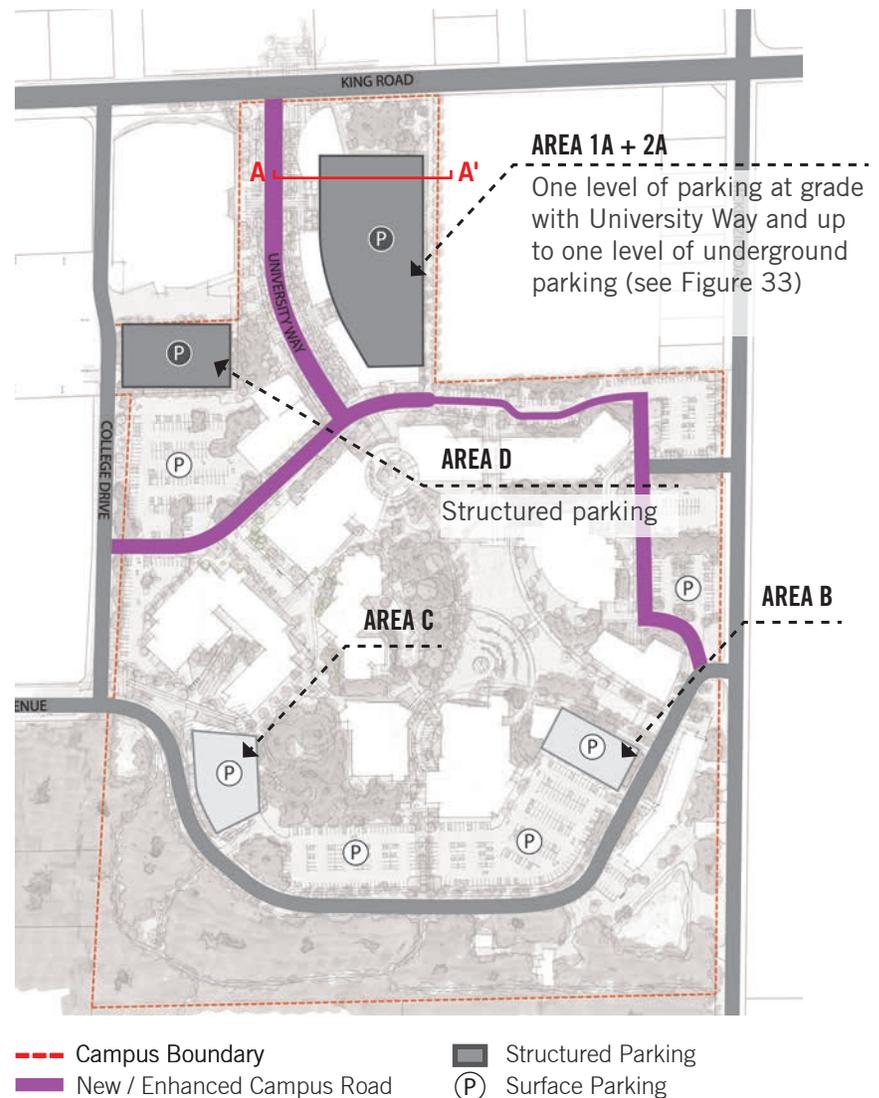


Figure 34 - Structured parking areas

By the end of Phase 3, the ratio is 0.24 stalls per FTE. This is within the mid range of observed values for similar campuses elsewhere in British Columbia at this time.

| Phase | FTE | Parking Supply Per Phase | Ratio (Stalls to FTE) | Notes |
|----------|-------|--------------------------|-----------------------|--|
| Existing | 5,221 | 1,903 | 0.36 | |
| Phase 1 | 6,100 | 1,804 | 0.30 | 25% of spaces from Area C are lost. 1.5 level underground parkade is constructed under Area A |
| Phase 2 | 6,615 | 1,915 | 0.29 | 100% of spaces from Area C are lost. 3 level parkade added at Area D, south of Abbotsford Centre |
| Phase 3 | 7,831 | 1,890 | 0.24 | Some spaces from Area B are lost |

Table 2: Current and Future Approximated Parking Supply

Structured Parkade Considerations

Structured parking is more efficient than surface parking, allowing land to be developed for other uses and creating a better public realm. The trigger for developing these parkades will likely not occur in the short term. The preceding analysis looked at solely parking for campus users only (i.e. on campus, not public streets). This is a conservative measure, and the additional 405 on-street parking supply give flexibly to when parkade development needs to occur. Although it is suggested that the parkade could be provided as part of Phase 2, it is recommend that a follow up parking demand study be carried out after the completion of Phase 1. The number of stalls, and thus the approximate cost for a future parkade should be based on the follow up parking demand study. Typically however, an above ground parkade can cost around \$30 - 50,000 per stall. A three level parkade in Area D could, therefore, cost in the region of \$7 - \$12 million.

5.6 Servicing

5.6.1 Water Infrastructure

Water is an essential community service for public health and safety and critical for providing the quality of life that residents of Abbotsford have come to expect.

The UFV Abbotsford campus receives water service from the City of Abbotsford and District of Mission Regional Water System. Water from the regional system currently enters UFV campus at three connection points along the campus property line: two at the northeast and southeast corner of campus along McKenzie Road and one at the western edge of campus along College Drive. From these points, water is distributed to hydrants and buildings across the campus through 2.1 km of water mains oriented into

a single loop to promote efficient service delivery and continuity. The City of Abbotsford plans to install three meter chambers, one at each of the three connection points, in order to meter water service and consumption across campus. An additional connection point currently exists to the north of campus at King Road, which services a small collection of hydrants adjacent to the parking lots at the north end of the site. Existing water infrastructure on campus is shown in Figure 32.

As of 2011, there were approximately 13,000 students attending school at UFV, with a growth rate of around 1,000 students per year until 2041 and

potentially beyond. According to the City of Abbotsford's Water Master Plan (2010), the regional water system has sufficient capacity to service the new buildings planned under the UFV Campus Master Plan. As shown in Figure 33, additional water mains and hydrants will be added to the campus water infrastructure in order to service new buildings as they are developed. These proposed changes include tying the collection of hydrants located at the north end of the campus to the core campus loop and disconnecting the site from the existing King Road connection.

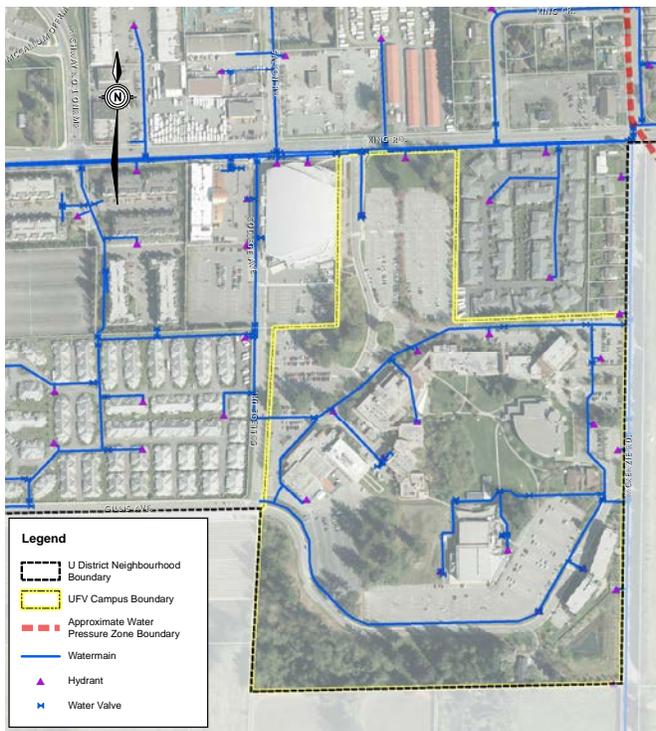


Figure 35 - Existing water infrastructure

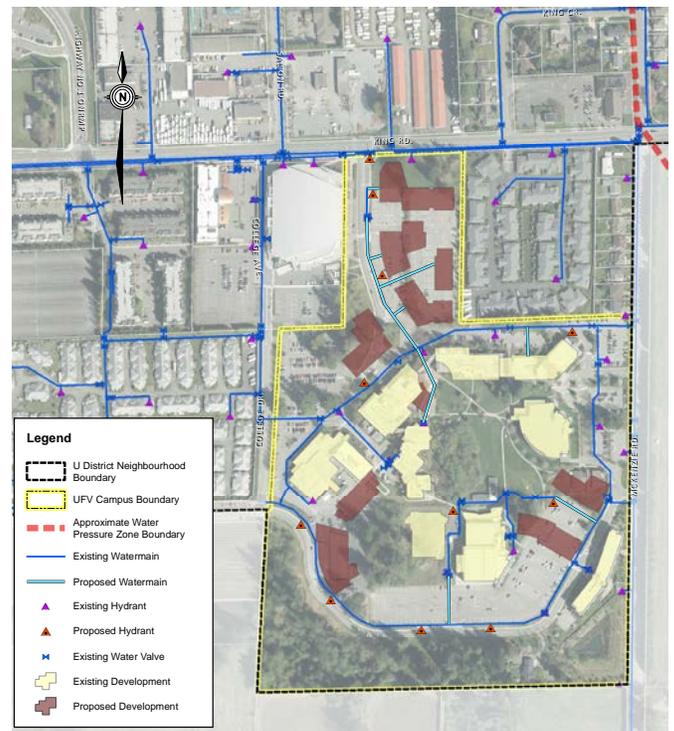


Figure 36 - Proposed water infrastructure

5.6.2 Sanitary Sewer

Sanitary sewer collection is another essential community service that supports health, safety and environmental protection. Wastewater from the UFV Abbotsford campus is collected by the City of Abbotsford’s sanitary sewer system. The City’s collection system conveys wastewater through a network of pipes and pump stations to the Joint Abbotsford Mission Environmental System (JAMES) Plant for treatment.

Sanitary sewer infrastructure on the UFV campus includes 1.4 km of sanitary mains, 24 manholes and 1 private pump station connected to the City’s collection system. Wastewater collection on campus drains in two directions, with the

northwest half of the campus draining northwest to the City’s King Pump Station, and the southwest half of the campus draining southwest to the UFV pump station, which pumps the wastewater into the City forcemain on McKenzie Road. Existing wastewater infrastructure on campus is shown in Figure 34.

The City of Abbotsford is currently in the process of assessing the capacity of the City’s collection system to determine the system’s ability to meet the needs of projected growth in the U District, including development on the UFV campus. While some new sanitary sewer mains and upgrades to the existing system on campus are

planned in concert with phased development, the overall structure of wastewater collection on campus is not expected to change.

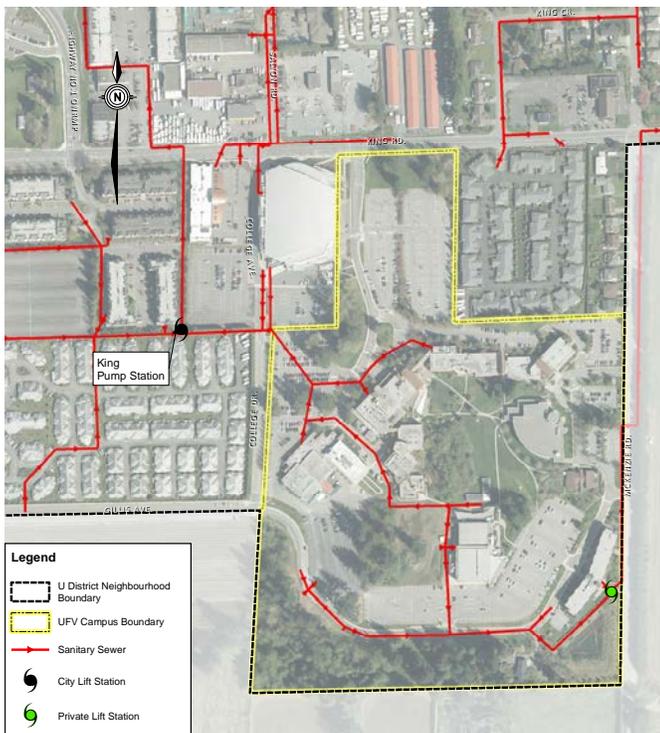


Figure 37 - Existing sanitary infrastructure

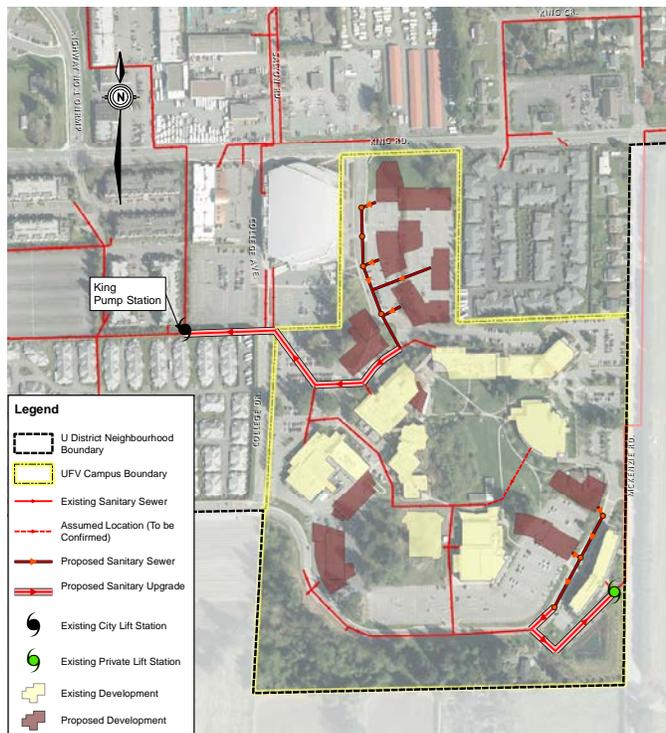


Figure 38 - Proposed sanitary infrastructure

5.6.3 Storm Water Service

Storm water management is critical for protecting community safety, private property, and the natural environment with respect to aquatic habitat, ecological health, flooding, erosion, and water quality. Innovative and low impact approaches to storm water management provide both effective solutions for managing storm water and also providing attractive green spaces and wildlife habitats.

The UFV Abbotsford campus falls within the Sumas River watershed, which includes the Lonzo (Marshall) Creek sub-watershed. No watercourses run through the site

and the soils consist primarily of gravel, sand and till. UFV's storm water management system includes four on-site detention ponds, one underground detention tank, and 2.3 km of storm sewers that connect to the City of Abbotsford storm water system. Drainage from the campus flows in three directions:

- the western area drains westward via storm sewer to Gillis Avenue and then south to discharge in Marshall Creek;
- the southeastern area drains southward via storm sewer along McKenzie Road and then east to discharge into Marshall Creek;

and

- the northern area drains to King Road in the north, and then into a northeastern tributary of Marshall Creek.

Some City drainage runs south along McKenzie Road and crosses into the campus, joins with UFV infrastructure, and reconnects back into City storm sewers across the southwestern campus boundary and onto McKenzie Road. The City and UFV may want to connect the McKenzie Road storm sewers so that City drainage stays on City property.

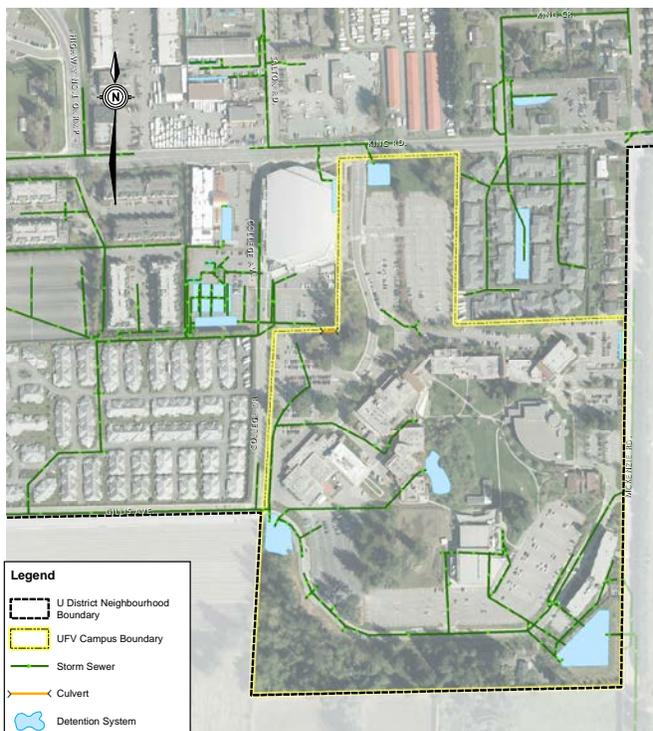


Figure 39 - Existing water infrastructure

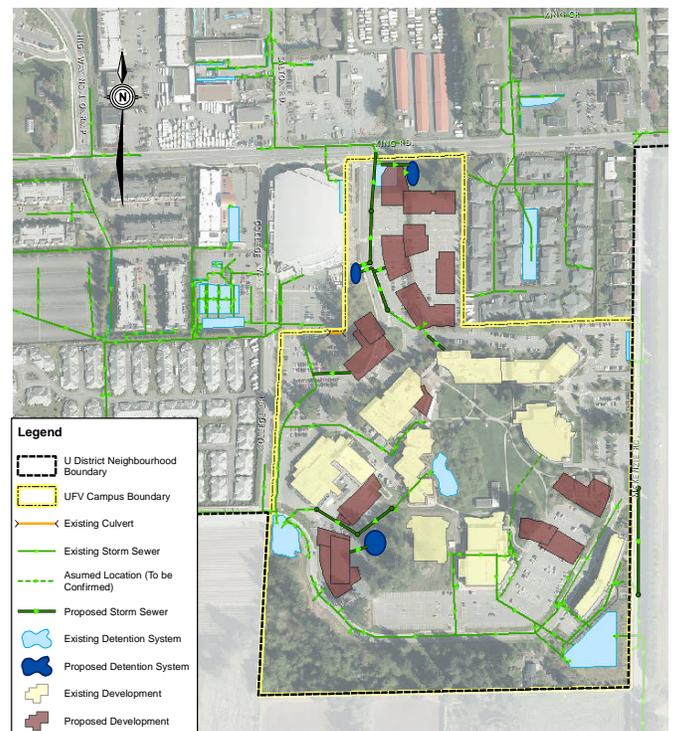


Figure 40 - Proposed water infrastructure

Site conditions are well suited for on-site management approaches including infiltration, detention and biofiltration. Existing water infrastructure on campus is shown in Figure 36.

The UFV Master Plan incorporates many storm water management best practices, as recommended in the Marshall Creek Integrated Storm Water Management Plan (2006). Key on-site features of UFV's storm water management system include:

- maximizing on-site source control for 6-month and 10-year storm events;

- integrating low impact development measures into campus design;
- providing a range of on-site storm water detention facilities including detention ponds, tanks, rooftop detention and parking lot surface detention; and
- implementing a drainage plan to minimize impacts from land use changes.

Low impact development measures planned for the campus include infiltration facilities such as rock pits and rock trenches, rain gardens, grass swales, pervious pavement, maximizing soil coverage, and green

roofs with leaders that drain onto pervious surfaces. Figure 37 shows the proposed additions to campus storm water infrastructure to service proposed development.

5.6.4 Heating + Cooling

Existing buildings on the UFV Abbotsford Campus are serviced by their own heating and cooling systems. As development of the Campus Master Plan unfolds, there will be significant potential to design buildings with the capability to connect to a district energy system, with the possibility to expand this capability to existing buildings on the site. It is important

to note, however, that retrofitting existing buildings on campus may not be economically feasible in the short term. A feasibility study is required to provide a more detailed analysis of district energy potential on the UFV Abbotsford campus as the three phases of site development progress.

6. IMPLEMENTATION

Phase 1A

Two options for phase 1 have been explored based on likely and possible upcoming capital funding. Option A lands the new purpose-built Digital Hub in phase 1 while Option B lands the new Welcome Centre. Both options represent a significant first step in the full build out of the University Village. Structured parking associated with the new building is integrated with existing surface parking.

1. Building C2

The extension to Building C (Building C2) is likely to be the first new development on campus. Expansion of this building will provide much needed academic space and could include a 'Digital Hub Incubator' program.

2. U-Walk

Reconfiguration of University Way should be a priority for the University. The street realignment at the southern end can coincide with the first phase of the U-Walk through the University Village. This landscape and infrastructure improvement supports the first phase of the University Village (Building U1) and potential future market development in this area.

3. Building U1

A Digital Hub as part of phase 1 would include approximately 8,000 m² of mixed use academic and community space.

| GROSS FLOOR AREA (M ²) | |
|------------------------------------|-----------------------|
| EXISTING | 47,890 m ² |
| PHASE 1 | 67,300 m ² |

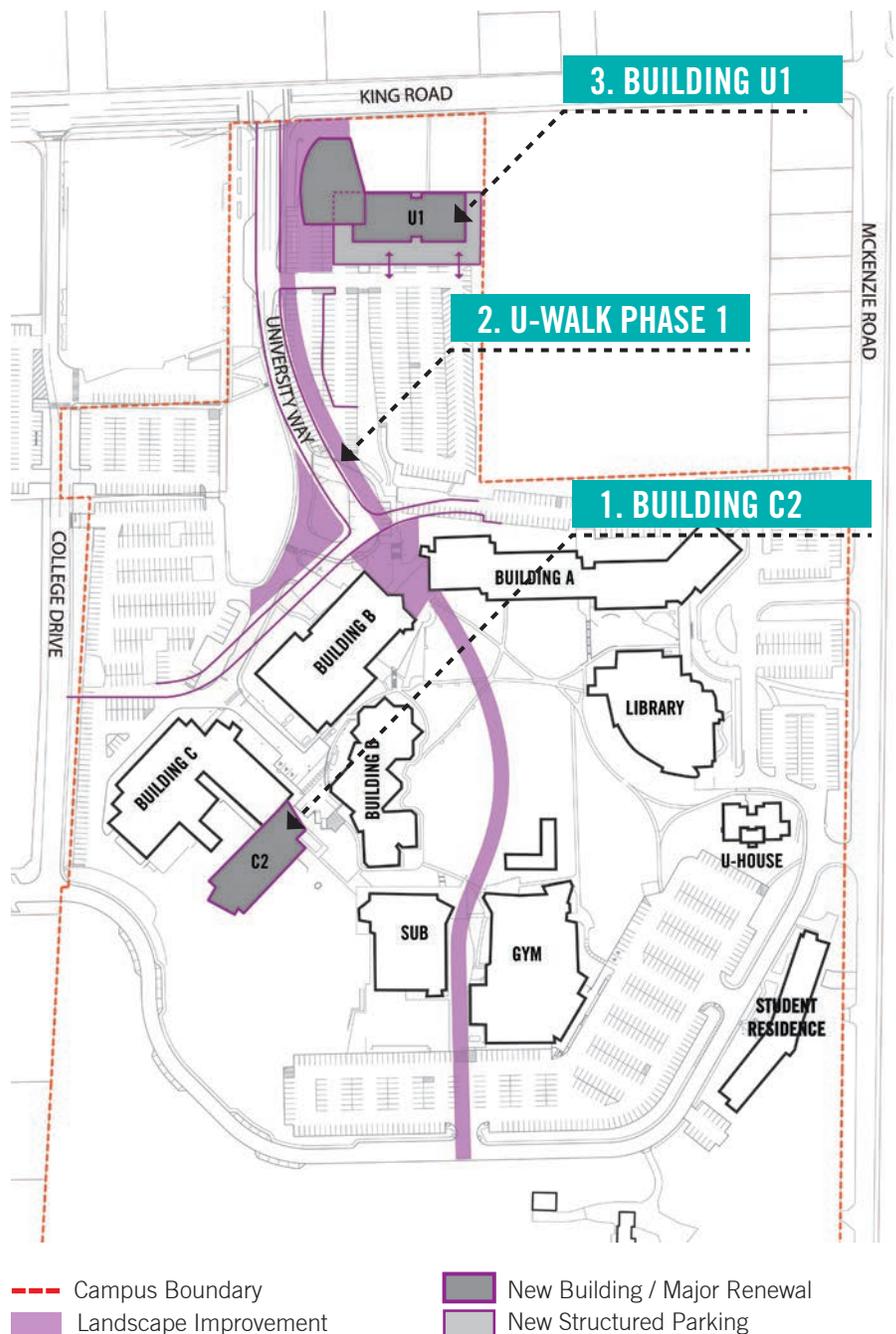


Figure 41 - UFV Campus Master Plan Phase 1A

Phase 1B

Option A and Option B both include an initial expansion of Building C and reconfiguration of University Way and concurrent U-Walk upgrades. Option B proposes the initial phase of the University Village at the southern end of the area with development of a mixed use Welcome Centre and associated student housing.

1. Building C2

The extension to Building C (Building C2) is likely to be the first new development on campus. Expansion of this building will provide much needed academic space and could include a 'Digital Hub Incubator' program.

2. U-Walk

Reconfiguration of University Way should be a priority for the University. The street realignment at the southern end can coincide with the first phase of the U-Walk through the University Village. This landscape and infrastructure improvement supports the first phase of the University Village (Building U1).

3. Building U3

A new building at the southern end of the new University Village will be constructed as part of phase 1. Locating the initial phases of new development at this location allows UFV to create a place on day one at the gateway to the Academic Core. Tuck-under parking is provided to take advantage of the grades and up to one level of underground parking. Uses could include a Welcome Centre, UFV Bookstore, Cafe, and Academic Space.

| GROSS FLOOR AREA (M ²) | |
|------------------------------------|-----------------------|
| EXISTING | 47,890 m ² |
| PHASE 1 | 59,400 m ² |

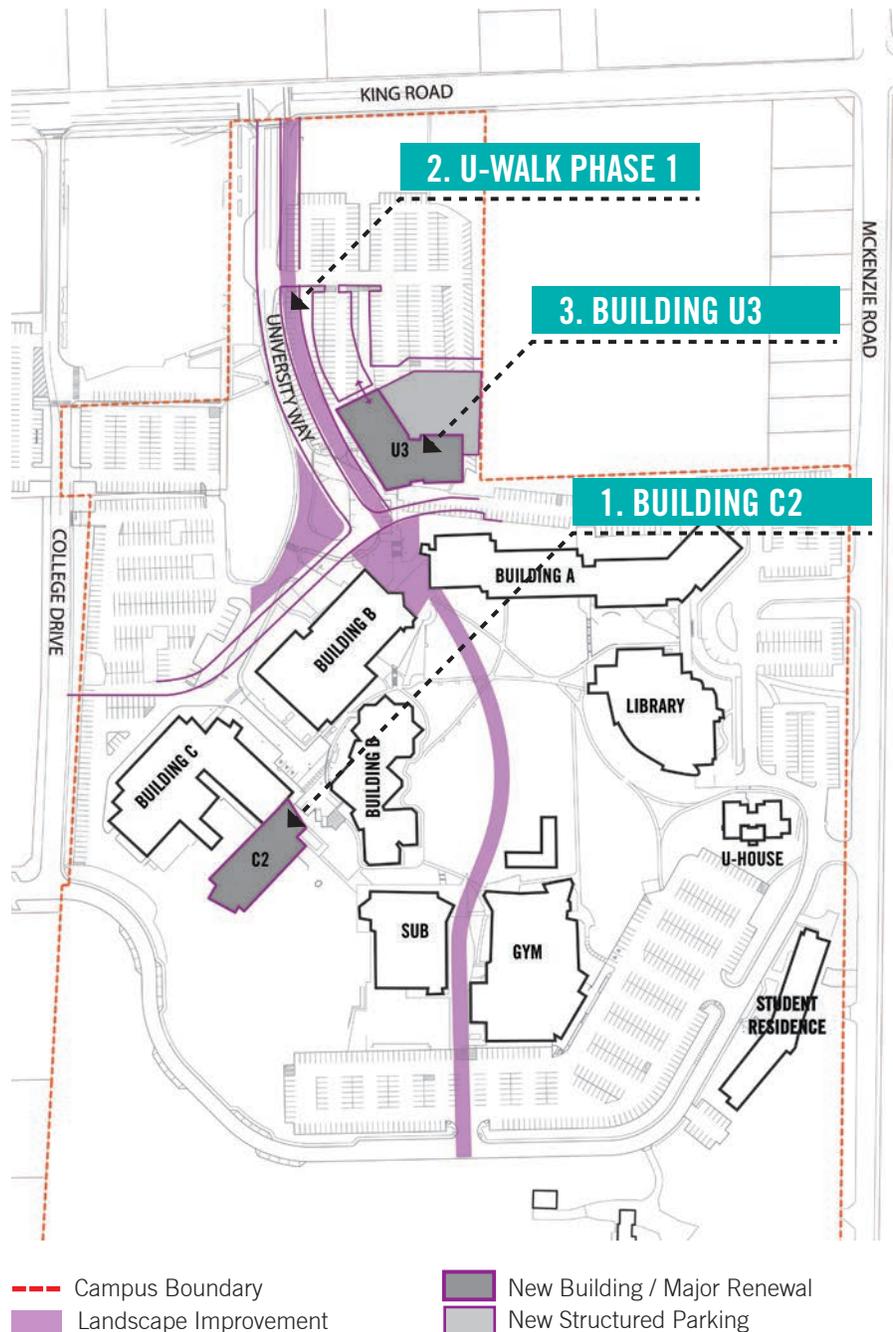


Figure 42 - UFV Campus Master Plan Phase 1B

Phase 2

Phase 2 completes the University Village parcel to the east of University Way and expands academic uses in the southern portion of campus.

1. Building U2, U3, and U4

This can happen either together as an integrated development, combining academic, commercial and market housing (Scenario 2 as described in Section 5.2), or independently, with Buildings U2+U4 being built out by a developer as a separate parcel from U3. The integrated approach would require synchronized capital funding for the academic portion and partnership with a local developer. This can happen concurrently or in subphases and provides space within the University Village to decant existing uses from Building A and/or B while they are undergoing major renewal in phase 3.

2. Building C3

Building C3 is located on the existing gravel parking lot in the south west quadrant of campus. It reinforces the western gateway to the campus and provides space within the academic core to decant existing uses from Building A and/or B while they are undergoing major renewal in phase 3.

3. U-House Demolition + Construction of Building S2

Phase 2 includes demolition and redevelopment of the U-House site. Building S2 provides space in the student village to decant existing uses from Building A and/or B while they are undergoing major renewal in phase 3.

| GROSS FLOOR AREA (M ²) | |
|------------------------------------|-----------------------|
| EXISTING | 47,890 m ² |
| PHASE 1 | 62,700 m ² |
| PHASE 2 | 91,400 m ² |

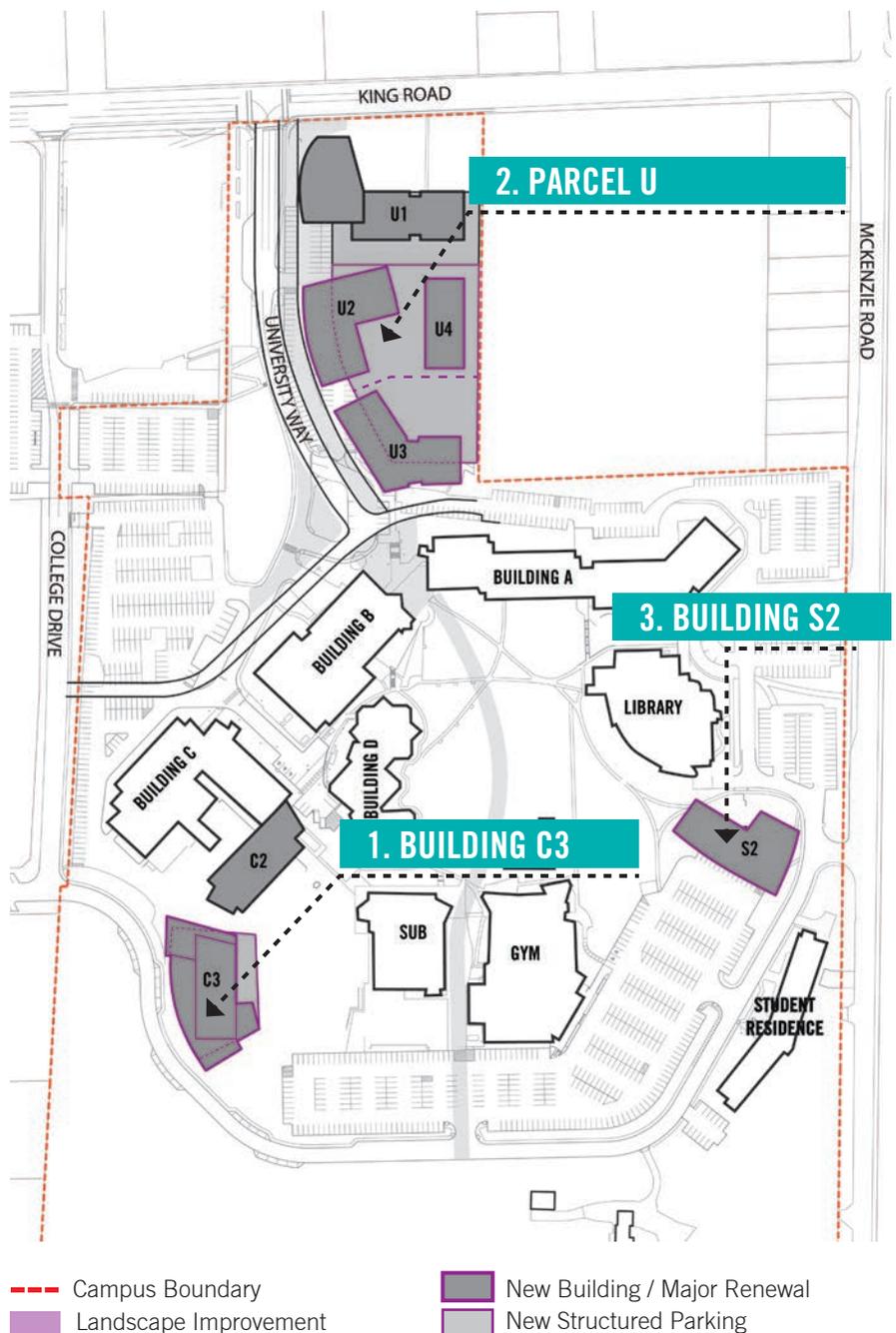


Figure 43 - UFV Campus Master Plan Phase 2

Phase 3

Phase 3 represents the final build out of the campus master plan. It includes major renewal of Building A and B and further development in the University and Student Villages.

1. Major Renewal

Building A and B are both in need of a major renewal over the time frame of this plan. Because of the integration of their building systems this would likely need to happen concurrently. New development in phase 2 provides the space to decant the existing uses from Building A and B during their renewal. The major entry plaza at the gateway to the Central Green is constructed during this major renewal.

2. Building U5

As the campus builds out, Building U5 offers an opportunity to expand academic uses within the University Village and create an iconic building at the 'front door' that reinforces a strong sense of arrival.

3. Building S3

Building S3 rounds out the Student Village, creating a well defined and active open space connecting the existing Student Residence to the Central Green.

| GROSS FLOOR AREA (M ²) | |
|------------------------------------|------------------------|
| EXISTING | 47,890 m ² |
| PHASE 1 | 62,700 m ² |
| PHASE 2 | 91,400 m ² |
| PHASE 3 | 111,096 m ² |

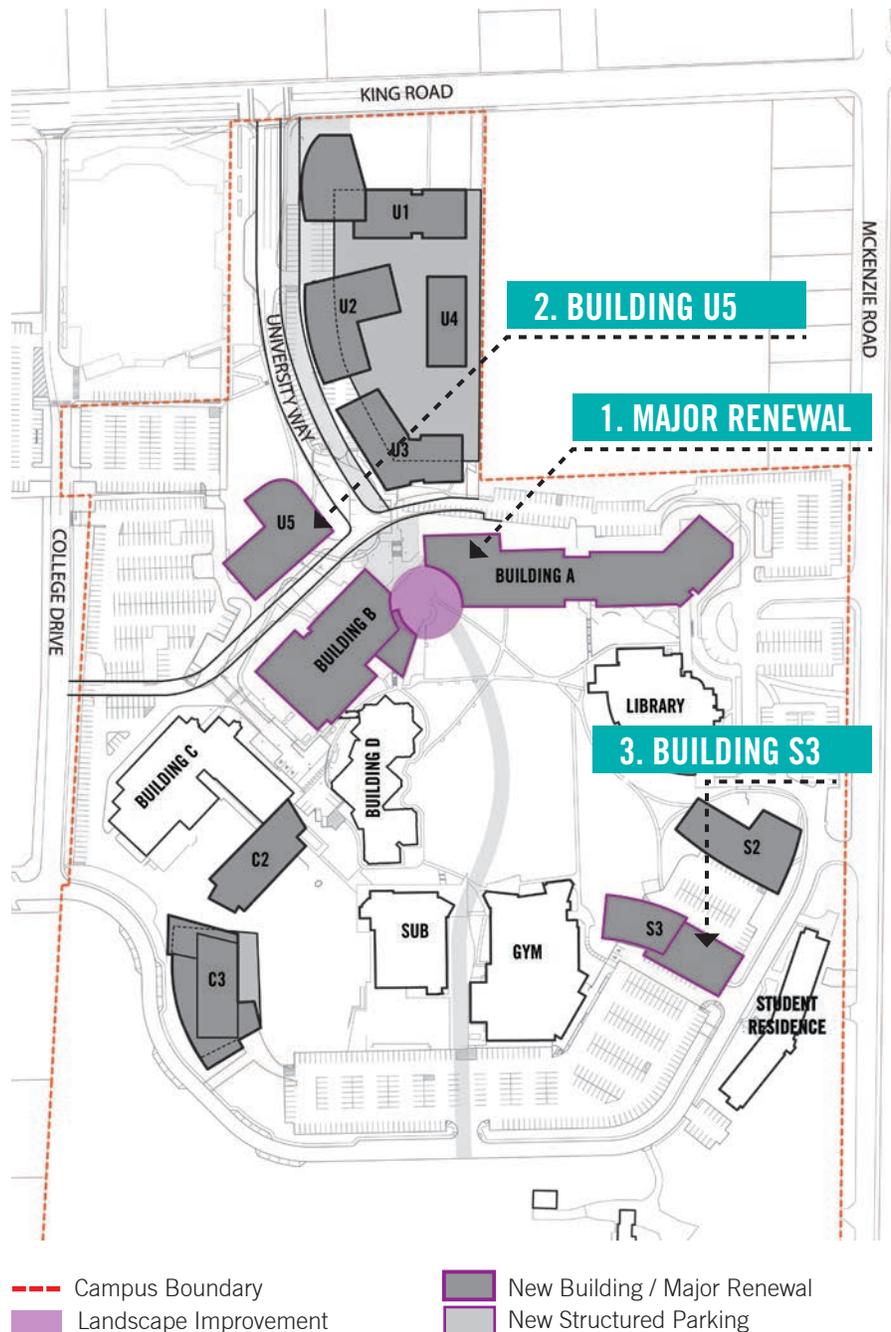


Figure 44 - UFV Campus Master Plan Phase 3

6.2 Campus Planning + Capital Projects

UFV's capital planning process is integral to the university's strategic plan and fundamental to supporting the long-term goals and priorities for responsible growth and development. It involves developing strategic and logistical capital plans to support the university's physical assets including buildings and open space, infrastructure, and critical building upgrades and renewal.

CURRENT PRIORITY PROJECTS



1. Digital Hub

A Digital Hub is UFV's top priority. Up-to-date training facilities with the latest technology and equipment are critical to making sure students have the right skills for high-demand jobs. The Digital Hub will be a 21st century facility designed with highly sophisticated interactive learning spaces to support problem-solving, creative production + innovation.



2. Building C Expansion

An expansion to Building C is an extremely cost effective solution to provide much needed classrooms, laboratories and support space. Since the Digital Hub project is 3-4 years out, UFV has prepared design and engineering plans to expand Building C which would provide 1,200 gross square metres of practical space.



3. Building D Renewal

Analysis and replacement of the entire building D envelope including the wall, window and roof assemblies.



4. Building A+B Renewal

This project includes a complete mechanical/ electrical overhaul to the building automation and lighting systems. The building's structure is also beginning to experience some failures. Conducting a pre-feasibility study on these systems is required to determine their precise condition.

Through the campus master planning process a number of additional projects and upgrades have been identified for completion over the timeframe of the plan. More detailed study regarding the costs and funding for these projects will need to be completed. Below is a summary of the high priority initiatives recommended in this plan.

RECOMMENDED PROJECTS



1. U-Walk

The U-Walk is a major public realm investment that will dramatically improve wayfinding on campus and create a strong sense of place. The U-Walk landscape improvements should be completed in conjunction the re-alignment of University Way.



2. Welcome Centre

The campus master planning process identified the need for a UFV Welcome Centre on the Abbotsford Campus. This could include services for students, linkages to cultural studies programs, and the relocation of the UFV Bookstore.



3. Campus Housing

Providing for student housing on and off campus supports UFV's vision for a vibrant university village. Further study on the type and location of future housing will be needed to ensure feasibility.



4. Central Green

The Central Green is an important open space on campus and will need to be improved to better serve the campus community in the future. These improvements will be complemented by the U-Walk extension to the south end of campus.

6.3 Funding / Market Implications

Over the past four years, the University has not been granted an increase in general FTE funding to respond to the enrolment pressure of increased student demand. As such, UFV's SEM anticipates that domestic FTEs will remain relatively constant over the 2014-19 period based on the assumption that UFV will not receive growth FTEs from the Ministry of Advanced Education (AVED). However, growth in international student numbers is forecast to increase by 38% over the same period. This, along with revenue-generating continuing education programming, will provide some potential to increase domestic seats. It is important to note, in the context of capital and infrastructure planning, that existing student demand is not presently satisfied, and post-secondary educational needs will continue to grow in the Fraser Valley, independent of the current FTE funding.

Partnerships + Market Potential

In the context of decreasing public funding and strong post-secondary demand, universities across North America are looking to new funding models to deliver high quality learning opportunities. There are two different ways to look at the financial benefit of urban development.

One option is to assume that the revenue from parcel marketing can be translated into UFV space. If UDistrict markets the equivalent of 4 acres of land for strata residential, the yield will be (in 2016\$) at most about \$4 million. Recent UFV projects have cost on the order of

\$300 per square foot, so about 13,500 square feet of university space could be built. Note that this is a small number relative to the residential capacity estimated above and that this approach ignores the need to replace the existing surface parking.

The second option is to look at the replacement parking situation. The gateway lands currently provide about 400 surface parking stalls. If these stalls have to be replaced in an above grade structure elsewhere on the campus, the total capital cost is likely to be at least \$12 million (at \$30,000 per stall). There is not enough land revenue to absorb this cost.

CMP Implications

1. Market strata development on the gateway parcel will not generate enough land value to support the construction of all of the university and related space that has been allocated to this area. Therefore, build-out of the university functions will require other sources of capital.
2. On the assumption that the pace of market development will not be perfectly synchronized with the availability of capital funds from other sources (e.g. Province, philanthropy, industry partners), it is probably better to divide the gateway district into parcels earmarked for university use and parcels earmarked for market development, rather than to assume that all projects will contain a mix of educational and market development. There may be some mixing, but most

new construction will likely be either university with some ground floor commercial, or residential possibly with ground floor commercial depending on location.

3. Parcels fronting on King or University should be shown as having commercial at grade. While there may be one or two larger tenants, most spaces will be small CRUs for café, fast food, pub, personal service and similar uses.
4. Rental housing could perform better than strata residential, in terms of land value to UFV, assuming small student-oriented units and depending on how parking is handled. If development must include structured parking, it will not be viable. A rental housing strategy will have to be linked to an overall parking strategy.