

UDISTRICT

NEIGHBOURHOOD PLAN + ABBOTSFORD CAMPUS MASTER PLAN



June 2015

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USING THIS DOCUMENT

This document summarizes the background review and analysis undertaken in Stage 1 of the UDistrict planning process. This document is intended as the main background resource for the development of the UDistrict Neighbourhood Plan and the Abbotsford Campus Master Plan. It is divided into the following six sections:

Executive Summary

This section summarizes the highlights from the Background Report.

A. Introduction

This section introduces the project background, purpose and process.

B. City Context

This section summarizes City-wide information that will inform the development of the UDistrict Neighbourhood Plan and the Abbotsford Campus Master Plan.

C. Neighbourhood Analysis

This section focuses on neighbourhood-wide information and analysis. It includes the Abbotsford Campus as a major element of the UDistrict neighbourhood and provides a level of detail appropriate for the development of the UDistrict Neighbourhood Plan.

D. Campus Analysis

This section provides further detail on campus-specific information and analysis that will inform the development of the Abbotsford Campus Master Plan.

E. Key Findings/Next Steps

This section summarizes key findings from the background analysis done to date as well as engagement activities undertaken as part of Stage 1. It concludes with a description of next steps.

EXECUTIVE SUMMARY

Overview

The City of Abbotsford and the University of the Fraser Valley are undertaking a joint initiative to shape the future of the UDistrict. This initiative includes the development of a UDistrict Neighbourhood Plan and a fully compatible and integrated Abbotsford Campus Master Plan. Building on the original UDistrict Vision, this integrated approach will deliver two highly effective plans to manage future growth.

Process

The UDistrict Project will be completed over four stages:

- Stage 1: Getting Started (Feb '15 - June '15)
- Stage 2: Choices and Directions (June '15 - Dec '15)
- Stage 3: Create the Plan (Dec '15 - Feb '16)
- Stage 4: Complete the Plan (Feb '16 - Apr '16)

Results

City

Abbotsford is a growing city and new development should be accommodated within the UDistrict as a key growth area. UDistrict is also home to the University of the Fraser Valley. New development should support a compact, transit-oriented university village while considering the Sumas-Abbotsford aquifer and responding to local climactic/ecological conditions in the Fraser Valley.

UDistrict

Planning + Market Context

There is both higher level policy support and market support for compact, mixed-use development in the UDistrict that will support a vibrant, transit-oriented

Land Use Type	2030*	2040*
UDistrict Population	4,350	5,650
Townhouse (units)	250	420
Apartment (units)	420	800
Commercial (f ²)	174,600	205,600
Business Park/ Industry (f ²)	120,600	140,230
Hotel (rooms)	92	100

*Source Urbanics 2011

Figure 1 - Total Warranted Market Demand Forecast

community around the UFV campus. The following projections indicate the total warranted market demand by 2030 and 2040.

Site Analysis

Soil and topographic conditions would support on-site stormwater infiltration. There is a need for additional parks and gathering spaces in the UDistrict and better pedestrian connections throughout. There are a number of 'locked' land uses including large stratas however there are also significant opportunities to intensify existing developed areas.

Movement

There are gaps in the walking and cycling networks that discourage pedestrian and cycling use within and to the UDistrict. Transit is well-used and could be strengthened by having transit infrastructure more closely integrated with new development. Vehicle use could be mitigated with a more balanced approach to parking and alternative transportation modes.

Infrastructure

- Water: with the City's conservation program, we can expect two or more decades of projected growth before capacity is exceeded although local conditions may vary.
- Sanitary: there are a number of potential capacity bottlenecks in the UDistrict neighbourhood that will need to be considered throughout the planning process
- Stormwater: Planning will need to address effective impervious area + water quality

Precedents

Projects in similar contexts (e.g. Portland State University) have been able to achieve 1) a high quality public realm, 2) a compact, mixed-use built form, and 3) a more walkable, transit-oriented community. Lessons learned from these projects can help to create an aspirational and implementable UDistrict Neighbourhood Plan.

UFV

Planning Context + Trends in Higher Education

UFV's strategic directions need to be supported with a master plan that improves student experience and learning outcomes. This could include common/learning spaces, lifestyle options and social opportunities.

The following lists some of the latest trends in higher education that will influence the development of the campus master plan:

- Changing demographics
- Evolving ways of learning
- Doing more with less
- Use of technology
- Blurred boundaries
- Flexibility/nimbleness

Site Analysis

There are opportunities relating to topography and views and the enhancement of existing open spaces and university facilities on campus. The greatest opportunity for integrating the campus with the community exists within the northern portion of the campus lands adjacent to King Road.

Campus Needs Assessment

A high level space needs assessment of UFV's academic and administrative functions resulted in a master space program that describes long range space requirement estimates by function and space type. The projected future requirements are summarized below:

Program	2015 (m ²)	2030 (m ²)	2040 (m ²)
Students	5,327	5,892	6,865
Academic	13,034	24,984	29,500
Admin	3,204	6,600	7,800
Student Support	4,713	8,400	10,015
Learning Commons	2,051	3,500	4,500
Facility Operations	707	1,000	1,250
Student Housing	4,544	14,141	16,476
Research	924	1,602	2,081
Specialty Facilities	3,458	8,855	9,175
Sports Fields	-	10,800	10,800
Total Program Area	33,050	69,082	80,797
Building Gross Area	47,890	94,987	111,096

Figure 2 - Master Space Program Projections (UFV)

Precedents

Projects in similar contexts (e.g. Bates Technical College) have been able to enhance the natural environment, integrate with agricultural uses, connect with the surrounding community and develop innovative facility models that offer a rich mix of uses and a vibrant public realm for students, faculty and staff.

Key Findings/Next Steps

Engagement Outcomes

Stage 1 engagement included a public launch event to raise awareness about the project and gather information from participants to inform the development of concept options in Stage 2. The feedback showed a desire for a walkable, mixed-use, and complete community where residents, students, faculty and staff can live, work, shop, learn and play. Priorities included a grocery store, local retail, cafes and common spaces, and fitness and childcare facilities.

Draft Guiding Principles

The following draft guiding principles emerged out of the work completed in Stage 1. These ideas build off the work done in the UDistrict Vision as well as the detailed background analysis and preliminary public/stakeholder engagement.

1. **Bring the Campus + Community Together:** Invite the community onto the campus and create strong physical and programmatic linkages to the community. Support university life within the community by providing housing, services and amenities that create a vibrant university village supporting the campus.
2. **Create a Compact, Transit-Oriented University Village:** Concentrate campus development to physically connect with the community. Focus new community development to support transit and retail and put students/residents close to daily needs.
3. **Support Student + Community Life:** Introduce a rich mix of uses, linked by pedestrian and cycling paths and organized in distinct precincts to heighten community/student life and offer a diverse experience for students, residents and visitors.
4. **Support Learning Everywhere:** Support flexible, engaging learning opportunities throughout the campus and the community including innovative teaching spaces and flexible common spaces.
5. **Integrate Agriculture and the Natural Environment:** Enhance existing agricultural and natural areas and more deeply integrate them into new and existing development.
6. **Demonstrate Innovation:** Look for new ways of demonstrating how campus and community can support each other in a creative, interactive environment and create meaningful partnerships between business, the community and academia.
7. **Manage Parking:** Allow for a balanced approach to parking that supports retail and a vibrant, pedestrian-oriented campus and community.

A. INTRODUCTION

1 THE PROJECT

1.1 Overview

The City of Abbotsford and the University of the Fraser Valley are undertaking a joint initiative to shape the future of the UDistrict. This initiative includes the development of a UDistrict Neighbourhood Plan and a fully compatible and integrated Abbotsford Campus Master Plan. Building on the original UDistrict Vision, this integrated approach will deliver two highly effective plans to manage future growth.

1.2 Background

1.2.1 City of Abbotsford

In 2012 City Council endorsed the UDistrict Vision which provides a long term vision for future development in the UDistrict. This Vision was the result of extensive public and stakeholder engagement and will provide a starting point for this planning process. The principles developed during the UDistrict Visioning process will help to guide development of the detailed UDistrict Neighbourhood Plan and Abbotsford Campus Master Plan.

- **SUPPORT INNOVATION:** Partner with government, non-governmental organizations and private businesses to pursue innovation in clean energy, food security, applied research, and green development.
- **BE STRATEGIC:** Support the growth of UFV and strengthen investment in the area while providing the foundations for a stronger, more diverse economy in the future.
- **CREATE A VIBRANT COMMUNITY:** Support an inclusive and diverse community with local services and amenities clustered in high-activity nodes or corridors. A higher density, mixed-use community will be supported by walkable streets and high quality public amenities.
- **SUPPORT HEALTHY LIFESTYLES:** Promote safe and healthy lifestyles through walkable urban form, access to green space and local, healthy food options.
- **BE STEWARDS OF THE LAND:** Create and protect habitat, reduce emissions and waste, use energy more efficiently and from cleaner sources, capture and infiltrate rainwater and promote local agriculture.



1.2.2 University of the Fraser Valley

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 current master planning process will build off of this work, link the University's strategic directions to the master plan and look for ways to better integrate the existing campus with the larger community.

The following describe the University of the Fraser Valley's strategic goals (Changing Lives, Building Community - April 2010) and include several initiatives currently underway.

- **HIGHER LEARNING:** Provide the best undergraduate education in Canada
 - Flexible learning spaces
 - Digital media technologies
 - Discovery-based learning
 - Applied research + practicum
- **LEADERSHIP:** Be a leader of social, cultural, economic, and environmentally-responsible development
 - Healthy living, walkable community
 - Social, creative spaces
 - Knowledge economy
 - Social-cultural diversity
 - Local foods, sustainable agriculture
- **INNOVATION:** Be innovative, entrepreneurial, and accountable in achieving our goals
 - Digital Media Hub
 - Public-Private partnerships
 - Innovation hub for entrepreneurs
 - Sustainable development

2 THE PROCESS

2.1 Engagement Approach

The joint nature of the UDistrict Neighbourhood Planning process and the Abbotsford Campus Master Planning process provides opportunities for an integrated engagement approach that weaves these two deeply related plans together as they progress.

The joint planning process has been organized into four stages with opportunities for public and stakeholder input at key milestones to ensure broad support for the plans

STAGE 1: GETTING STARTED (FEB-JUNE '15)

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, a key input for the development of Community and Campus Concepts in Stage 2.

STAGE 2: CHOICES + DIRECTION (JUNE-DEC '15)

The purpose of Stage 2 is to develop land use scenarios and campus concepts, evaluate these concepts and identify a preferred concept for each plan. This stage includes two integrated workshops bracketing one public event.

STAGE 3: CREATE THE PLAN (DEC '15-FEB '16)

During Stage 3, the project team will refine the preferred concepts for each plan into a draft UDistrict Neighbourhood Plan and draft Abbotsford Campus Master Plan. These plans will be presented to the community and key stakeholders for review and feedback.

STAGE 4: COMPLETE THE PLAN (FEB-APR '16)

Stage 4 will incorporate the feedback received in Stage 3 to finalize the plans. These plans will be circulated for government/agency review and acceptance.

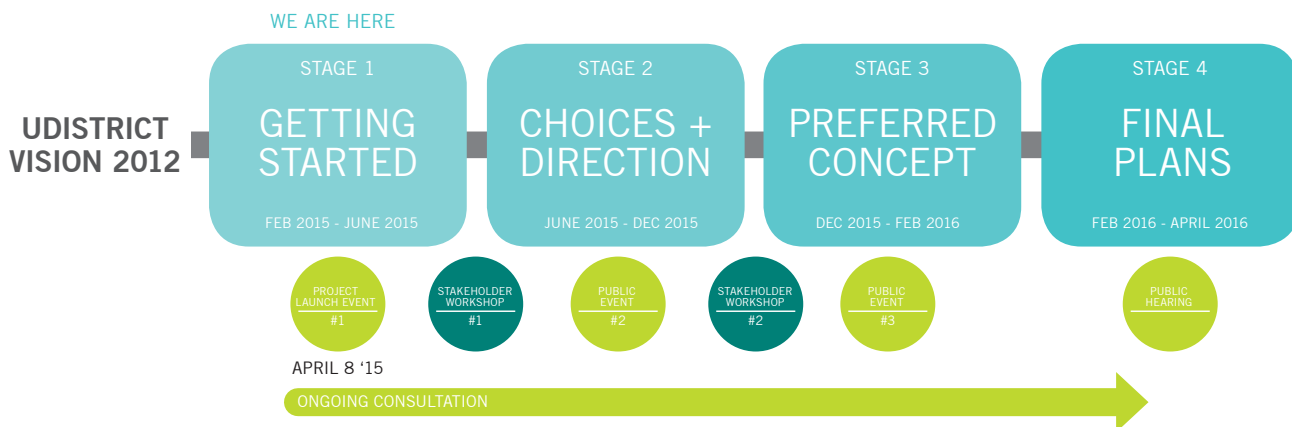


Figure 3 - Process diagram

B. CITY CONTEXT

3 ABBOTSFORD

This section summarizes City-wide planning, demographic and environmental information that will inform the development of the UDistrict Neighbourhood Plan and the Abbotsford Campus Master Plan.

Key Findings: Abbotsford is a growing city and new development should be accommodated within the UDistrict as a key growth area and home to the University of the Fraser Valley. New development should support a compact, transit-oriented university village while considering the Sumas-Abbotsford aquifer and responding to local climactic/ecological conditions in the Fraser Valley.

3.1 Introduction

The City of Abbotsford is centrally located in the Lower Mainland, just west of Metro Vancouver. Abbotsford is well connected to Metro Vancouver, the BC Interior and the United States by rail and road networks including the Trans-Canada highway. The recently-upgraded Abbotsford International Airport (YXX) is the second largest international airport in the region and is expected to expand in the future.

Abbotsford's economy was originally dominated by logging and agriculture. The construction of the Canadian National Railway and of permanent dykes along the Fraser River greatly increased the agricultural capacity of the city. In 1910, the development of the inter-urban railway provided access to growing markets of Vancouver and New Westminster for agricultural produce. Today, over 61% of the areas' land is actively farmed, for diverse agricultural productions including: hay and field crops, livestock, and fruits (mainly blueberries, raspberries, and cranberries).

3.2 Policy Framework

A number of key provincial, regional and municipal plans and policies provide a framework for planning at the city-scale in Abbotsford. These include:

- Fraser Valley Regional District (FVRD) Growth Strategy;
- City of Abbotsford's Official Community Plan (2005 and Abbotsforward: 2015 OCP Update); and
- Abbotsford-Mission Transit Future Plan.

3.2.1 Regional Growth Strategy

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.

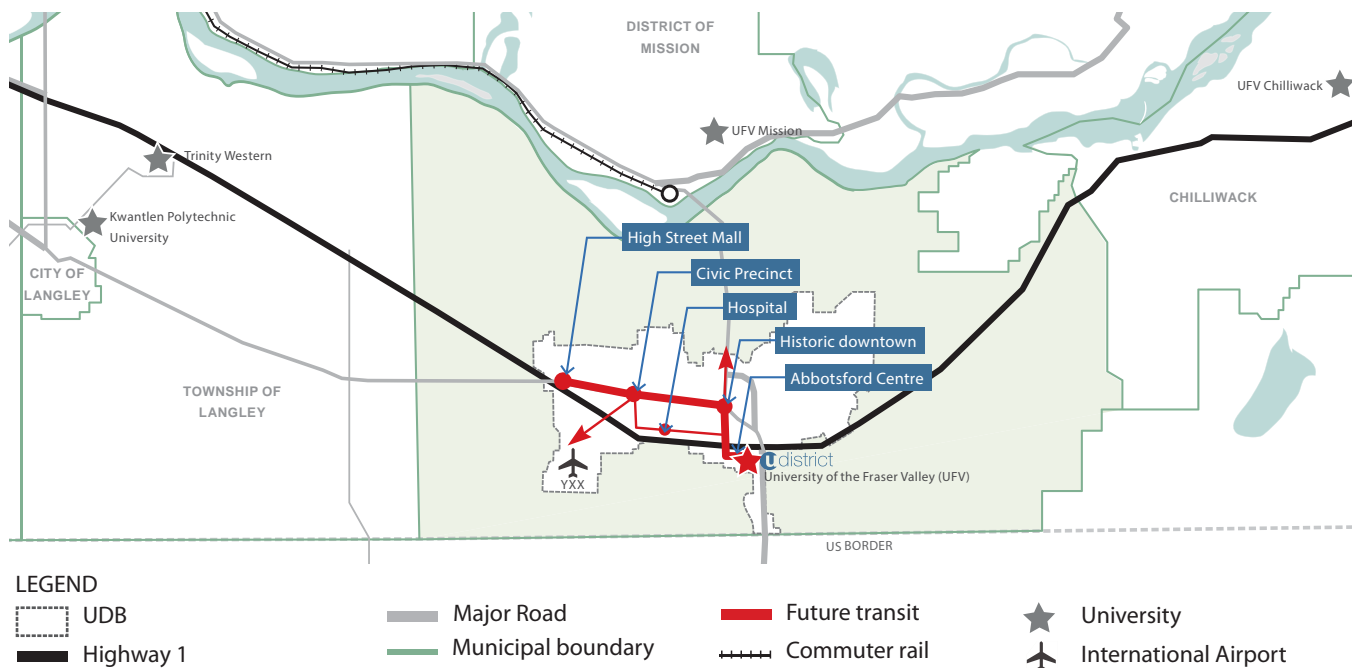


Figure 4 - Context Map

3.2.2 Official Community Plan (OCP)

Abbotsford: OCP Update

The City of Abbotsford is undertaking a comprehensive 4 stage planning process, Abbotsforward, to update the City's Official Community Plan. The plan will result in a City wide vision premised on accommodating a future population of 200,000. Stage 1 of the process involved technical and background analysis and engagement with the community around key issues, challenges and opportunities. This resulted in a 'snapshot' of the City as the foundation for the development of big ideas, policies and actions in subsequent phases.

Stage 2 of the process has included a range of community engagement activities including online surveys, citizen circles and roadshow events throughout the community, resulting in a community vision and set of '7 Big Ideas'. Next steps of the process will include creating and completing the OCP.

7 Big Ideas

1. Create a City Centre

The City Centre will be the heart of the city. It will be a vibrant area that is scaled to pedestrians. The diverse uses of civic, public, economic and cultural life will make it a destination throughout the day.

2. Establish Distinct Neighborhoods

Neighborhoods will have distinct character and sense of place. Residents will be able to work, and enjoy services such as cafes, shops, schools and parks within walking distance of home. By supporting walking, these neighborhoods will enhance health, safety, and sense of community. Diverse housing types will allow residents to live in their chosen neighborhoods throughout their lives.

3. Make Walking, Cycling, and Transit Delightful

Getting around by foot, bike, and transit will be convenient and enjoyable options in Abbotsford. As a safe, accessible, and interesting experience, walking will be the first choice for residents for short trips.

4. Design Places for People

Streets, parks and plazas will provide the stage for public life. Sidewalks will be filled with people going about their daily lives, walking, lounging, socializing, and enjoying being in the presence of their fellow citizens. In urban places, streets will be designed to be experienced while traveling at the scale and speed of people on foot.

5. Foster Natural Beauty

The "city" and "country" will both be enhanced as Abbotsford grows. The cherished natural areas will remain intact. Wildlife and recreation areas will be thriving, and the natural setting of Abbotsford will find its way into the city with growing tree canopy and in naturalized open spaces.

6. Enhance Agricultural Integrity

Agricultural areas will be protected as places for agricultural production and processing, and of thriving livelihoods. This rich agricultural identity will also be felt more strongly within urban areas, with the increasing presence of community gardens, local markets, and food culture.

7. Make it Work

This plan will be invested to ensure follow-through and implementation. Departments will work together with a holistic perspective on city-making and a shared definition of success. Policy and implementation will be bridged to support and follow the OCP, and decision making and regulatory tools will be updated and strengthened to support the Plan.

3.2.3 Transit Future Plan

The Abbotsford-Mission Transit Future Plan has been approved by 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

3.3 Demographics

City-wide population and housing trends will influence the type, intensity and location of new development in the UDistrict neighbourhood and on the UFV campus.

Regional demographic profiles were compiled based on Statistics Canada Census (2011) and the National Household Survey (2011). Based on this data, we have highlighted several city-wide demographic trends relevant to the UDistrict planning process.

POPULATION

- At the time of the last census in 2011, the population of Abbotsford was 137,830.

AGE

- The median age in Abbotsford increased from 35.1 years old in 2001 to 37.8 years old in 2011.

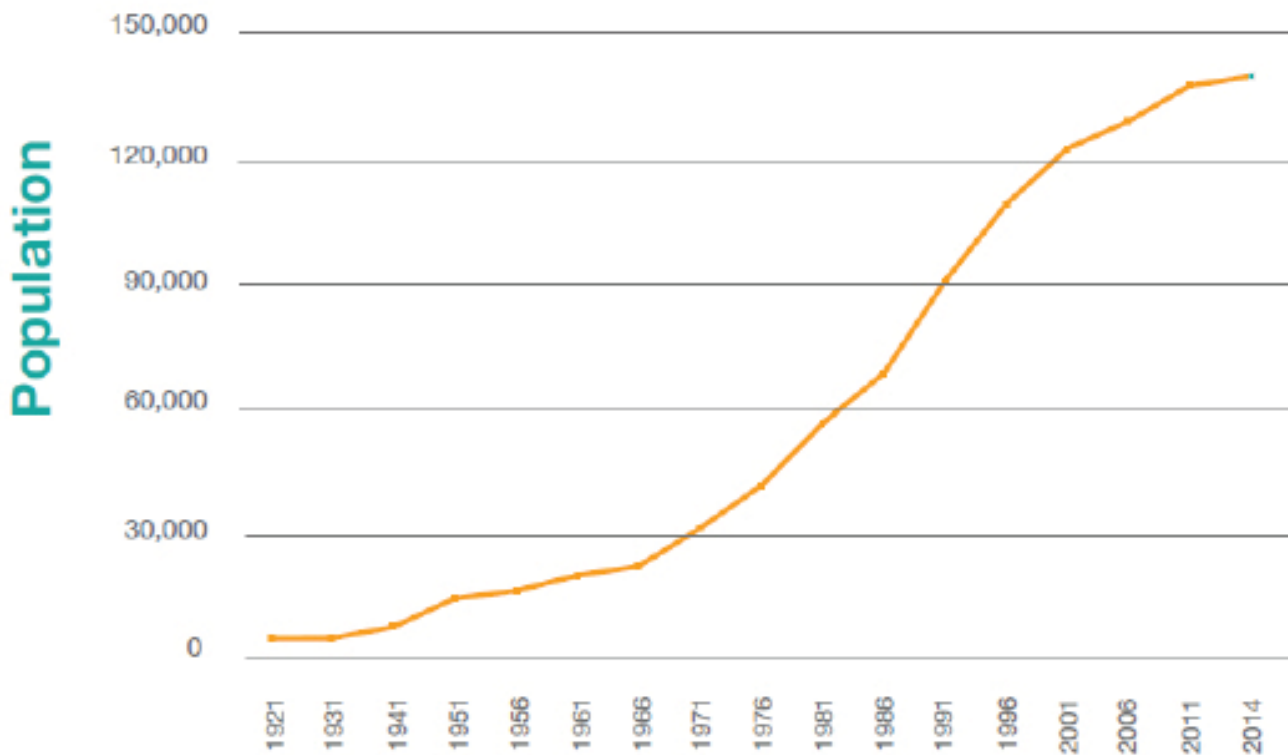


Figure 5 - City of Abbotsford population (1921 - 2014): from the Abbotsford Background Research Report

IMMIGRATION

- Approximately 27% of Abbotsford residents are immigrants. The majority of immigrants were born in South Asia, followed by the United Kingdom, the Netherlands, the United States, Germany and the Philippines.

INCOME

- The median household income in the City of Abbotsford is \$62,350 and the median individual income is \$26,428. (2011 Census).

HOUSING TENURE

- Home ownership in the City of Abbotsford represents 74.2% of the total number of private households, compared to 25.8% which are rented. This is an increase from 2006 when 72.7% of homes were owned.

DWELLING COUNTS

- Single family detached houses are the predominant dwelling type in the City of Abbotsford, followed by apartment buildings of 5 storeys or less.

3.4 Environment

Local environmental conditions are important considerations in the development of neighbourhood and campus plans. Local climate will influence opportunities for outdoor recreation, public gathering spaces and building design. Local ecology can be incorporated into landscape designs to create habitat and landscapes that will thrive over time. Finally, understanding the local hydrology allows new development to work with, rather than against, the natural flow of water across the site and ensures that local aquifers are considered appropriately. These environmental considerations are described in more detail below.

3.4.1 Climate

Abbotsford enjoys the mild climate typical of south coastal BC. Characteristics are warm dry summer and thanks to proximity to the ocean, mild, wet winters.

The average annual minimum temperature is approximately 13 degrees Celsius and average annual high temperature is 30 degrees Celsius.

During summer months, there is little precipitation and the average daily high temperature is 23.8 degrees Celsius which means that crops and ornamental plantings often require irrigation.

In the Fall rainfall is heavier with November being Abbotsford's rainiest month. Abbotsford is the 4th wettest major city in Canada receiving 1573.2mm of precipitation annually.

Frost can be expected in late September and snow by the end of October. Snow is usually wet, and there is an average of 63.5 cm of snowfall annually. Winter is at its coldest in January when the mean of The temperature is 2.5 degrees Celsius and the average low is -12.4 degrees Celsius.

3.4.2 Ecology + Vegetation

The City of Abbotsford falls within the USDA Zone 7b (Coastal Western Hemlock Zone biogeoclimatic ecosystem with the Very Dry Maritime subzone, Eastern variant), allowing for a wide range of plant species to be grown successfully.

3.4.3 Hydrology

The Abbotsford-Sumas aquifer underlays the site. It covers 260 square kilometers and flows from B.C. south to Washington State. The aquifer provides water for over 100,000 people in B.C. and Washington and is also used for

agriculture and industry.

As this is an unconfined aquifer - no impermeable layer separates the aquifer from soils above - it is susceptible to contamination by surface pollution. Contamination is an issue as nitrates, hydrocarbons, pesticides, solvents, pharmaceuticals, heavy metals, phosphorus, and pathogenic bacteria have been detected in the aquifer. Suspected causes are agricultural handling of manure, fertilizer and pesticide use, septic systems, fuel storage tanks, surface mining, storm water run off, industrial uses and urban gardening practices.

The City of Abbotsford has been active in developing aquifer management strategies and involving the public in protecting the Aquifer's water quality and resource values. Adopted in 2012, the City's Groundwater Management Strategy addresses protection, management, financing, data collection and performance measurement mechanisms to ensure groundwater quality and supply into the future. High priority suggested protection measures include public education, water use charges, requirements for well siting and enhanced infiltration.

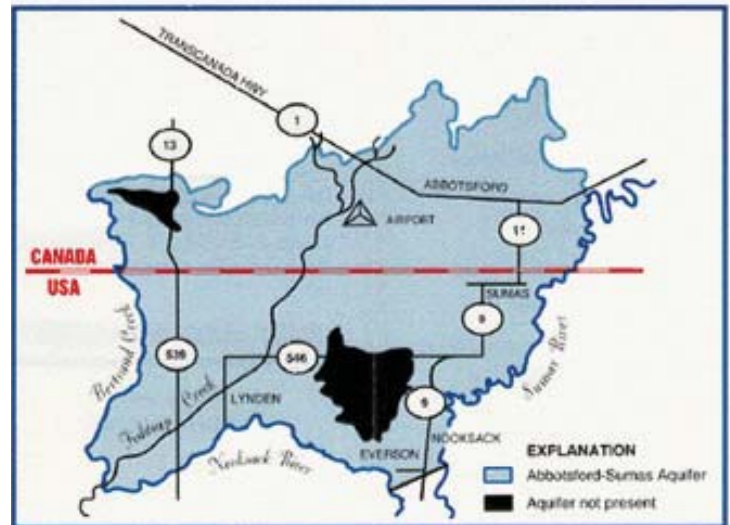


Figure 6 - Abbotsford-Sumas Aquifer

C. NEIGHBOURHOOD ANALYSIS

4 PLANNING + MARKET CONTEXT

This section describes the existing policy and market conditions that will influence development in the UDistrict. These include both local and regional policies and trends.

Key Findings: There is both higher level policy support and market support for compact, mixed-use development in the UDistrict that will support a vibrant, transit-oriented community around the UFV campus.

4.1 Introduction

Located within the City’s Urban Development Boundary (UDB), the UDistrict anchors the southern terminus of Abbotsford’s primary transit corridor. The UDistrict area is approximately 365 acres in size and has a population of approximately 3,200 residents. The UDistrict is home to the Abbotsford Centre and the University of the Fraser Valley (UFV).

4.2 Policy Framework

In addition to the city-wide plans described in Section B, a number of municipal plans and policies provide a more detailed framework for planning in the UDistrict Neighbourhood. These include:

- City of Abbotsford OCP (2005);
- City of Abbotsford Zoning Bylaw;
- 2012 UDistrict Vision; and
- City of Abbotsford Airport Zoning

4.2.1 Abbotsford OCP (2005)

The Official Community Plan (OCP) provides long range guidance on desired land use and development. The 2005 OCP supports a compact, mixed use neighbourhood surrounding the University of the Fraser Valley's Abbotsford campus. Higher density retail, residential and employment uses are primarily focused around McCallum Road and King Road as shown in Figure 7 below.

4.2.2 Zoning Bylaw

The City of Abbotsford's Zoning Bylaw describes the land use regulations currently in force in the UDistrict. They generally support the focus of retail, employment and higher density residential along the McCallum/King transit route.

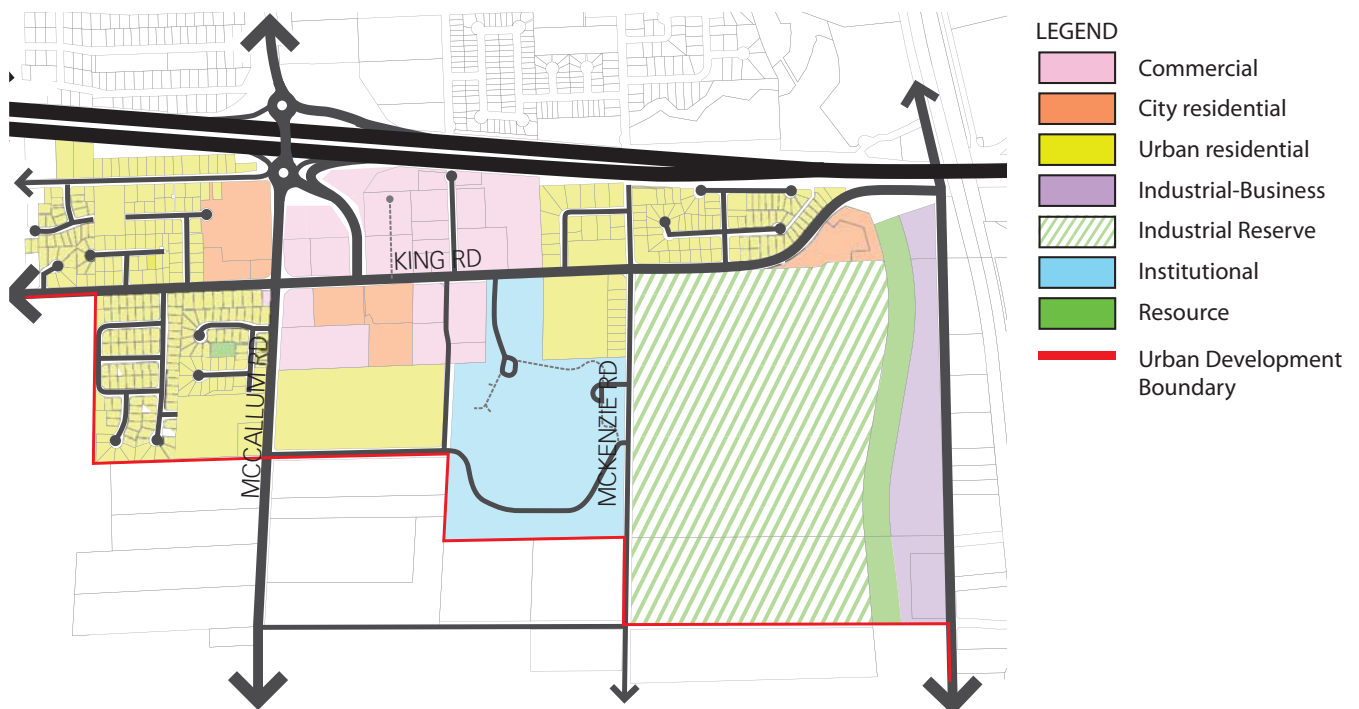


Figure 7 - Official Community Plan Map Land Use Designations (2005)

4.2.3 UDistrict Vision

Endorsed by Council in 2012, the UDistrict Vision is a 30 year vision for a green, transit-oriented community that serves as a strategic location for the City of Abbotsford as a key destination and urban anchor. The Vision is guided by general policies for land use, built form, transportation, green infrastructure, and parking which will help to achieve these goals.

LAND USE

- Concentrate commercial land uses along King Road, near the intersection of King and McCallum Road, and in areas visible from Highway 1
- Create a diversity of housing types and tenures including affordable rental housing for students

BUILT FORM

- Street-fronting development, with active ground floors and parking underground or behind
- Define and activate public realm areas with ground-oriented development and programming that generates activity during the day and evening
- Transition sensitively to existing development

TRANSPORTATION

- Create a walkable pattern of small blocks with pedestrian connections
- Enhance the pedestrian environment of all streets

- New pedestrian/bicycle connection to the neighbourhoods north of Highway 1
- Accommodate bikes on streets and trails

GREEN INFRASTRUCTURE

- Create a network of parks, trails and open spaces
- Use street right-of-ways to collect and infiltrate rainwater and use native species
- Integrate urban agriculture
- Integrate renewable energy systems such as district energy, solar and anaerobic digestion
- Use 'green' building strategies such as energy and water efficient fixtures, passive solar design and high performance building envelopes
- Compost/recycling management program

PARKING

- Reduce on-site parking requirements
- Include on-street parallel parking, underground parkades, stacked parking and shared surface parking modules

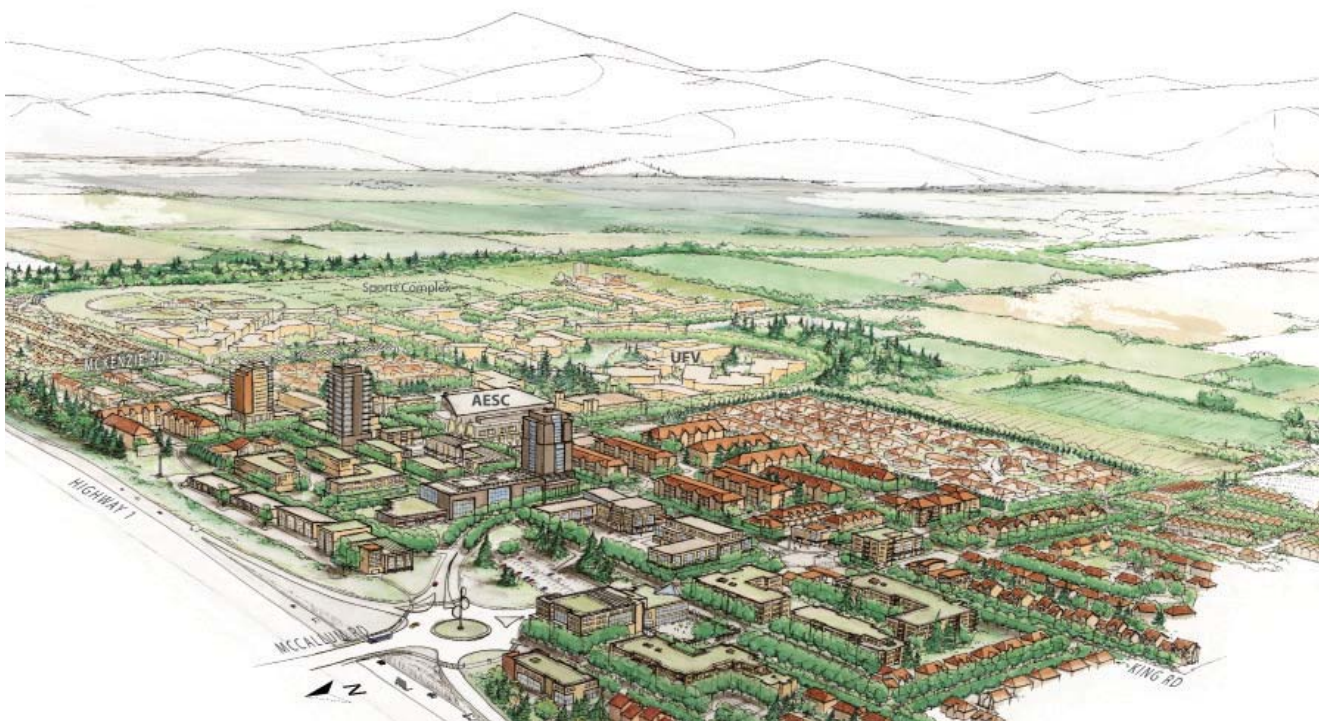


Figure 8 - UDistrict conceptual vision

4.2.4 Airport Zoning

Airport flight path restrictions exist within the UDistrict as shown in Figure 10 below. The UFV campus is located approximately 4,550m east of the end of the runway strip. The university is approximately 11.5m higher than the airport base elevation. Given a 2% approach restriction and the existing elevation gains, development on campus

under approximately 80m (26 stories) would likely not impede the airport restrictions.

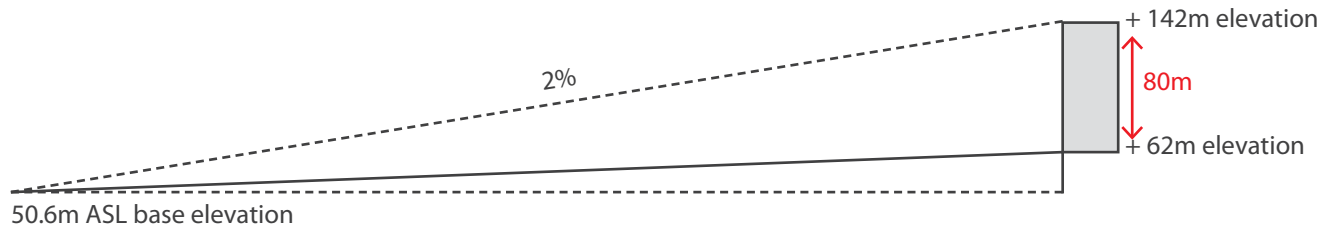
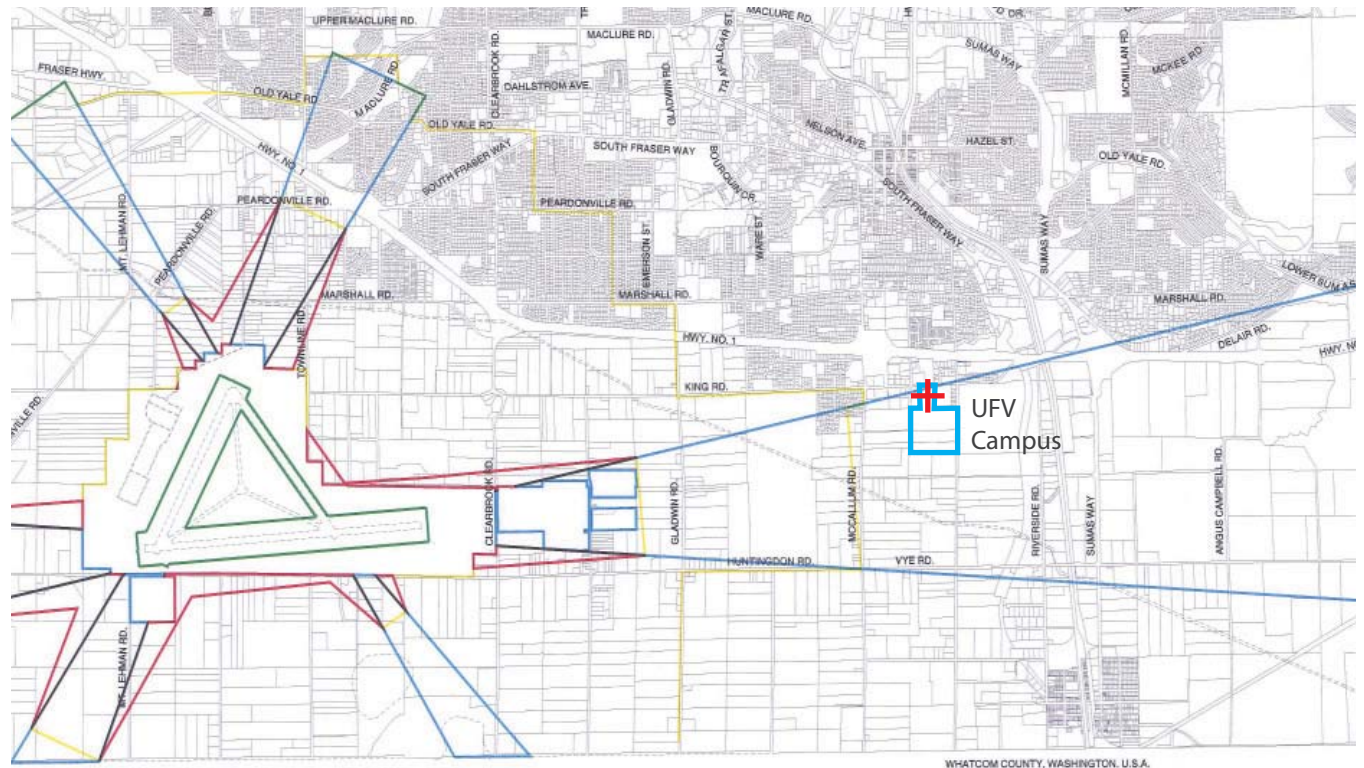


Figure 9 - Estimated airport building height restrictions on campus (at red cross below)



- RUNWAY STRIP - RWY 07/25 AND RWY 01/19: 150 METRES EACH SIDE OF RUNWAY CENTRELINE EXTENDING 60 METRES BEYOND RUNWAY END
- APPROACH SURFACE - RWY 07/25: 2%; RWY 01/19: 2.5% (MEASURED PERPENDICULAR FROM END OF RUNWAY STRIP; USE AIRPORT REFERENCE ELEVATION (50.6 METRES ASL) AS BASE ELEVATION)
- TRANSITIONAL SURFACE - 14% (1 IN 7) (MEASURED PERPENDICULAR FROM EDGE OF RUNWAY STRIP; USE AIRPORT REFERENCE ELEVATION (50.6 METRES ASL) AS BASE ELEVATION)
- OUTER SURFACE - 95.6 METRES ASL OR MINIMUM 9 METRES ABOVE GROUND ELEVATION WHICHEVER IS HIGHER

NOTE - IF HEIGHTS OF PROPOSED STRUCTURES ARE CLOSE TO THE MAXIMUM ALLOWABLE HEIGHT AS CALCULATED BASED ON THE ABOVE INFORMATION, CONSULT WITH AIRPORT MANAGER

Figure 10 - Airport zoning

4.3 UDistrict Demographics

The following demographic information is based on the 2011 Census and the 2011 National Household Survey. The Dissemination Area boundaries from these surveys do not align exactly with the UDistrict neighbourhood boundary. Therefore, this information should be considered as an approximation of existing conditions in the UDistrict.

BUSINESSES

Based on business licenses issued between June 2014 and June 2015, there are currently 40 active businesses with approximately 340 employees in the UDistrict.

CHURCHES

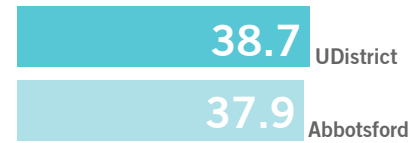
There are four church organizations that own either one or multiple properties in the UDistrict. These include:

- Central Heights Church
- Canadian Reformed Church
- Congregation of Jehovah's Witnesses
- Seventh-Day Adventist Church

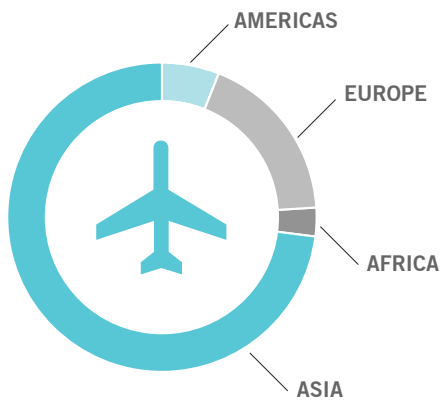
POPULATION



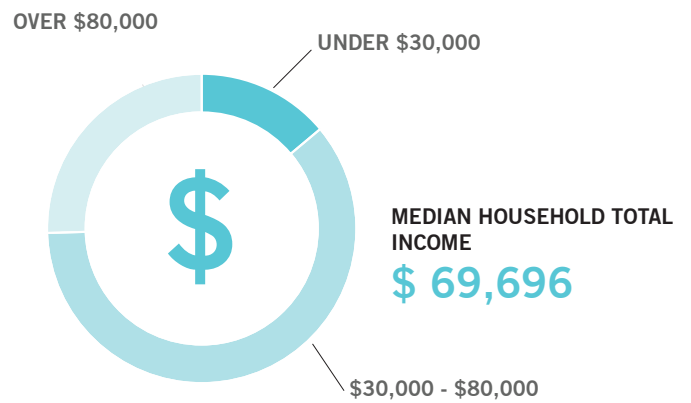
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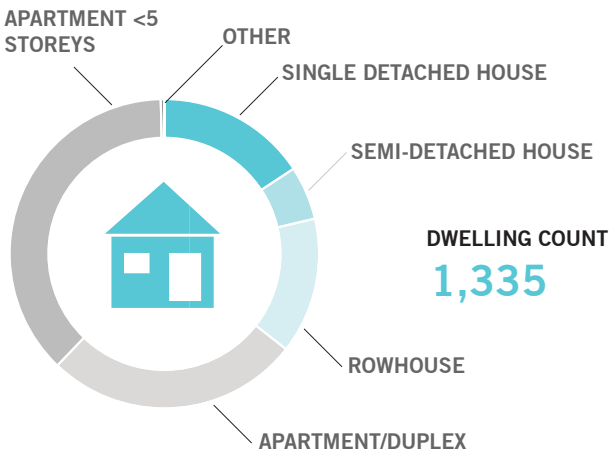
IMMIGRATION



INCOME



DWELLING TYPE



HOUSEHOLD SIZE

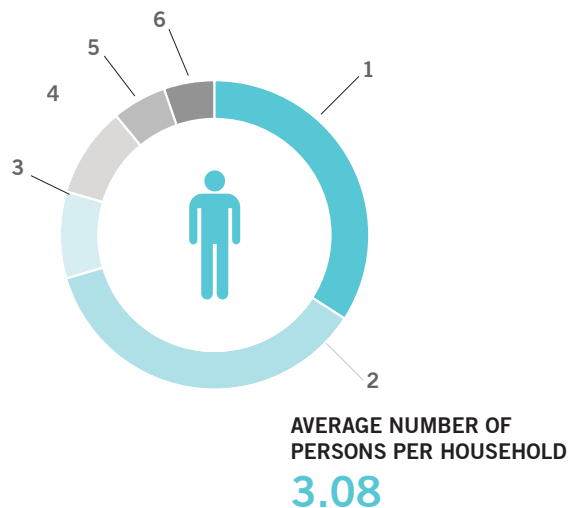


Figure 11 - Statistics Canada information - Abbotsford (2011)

4.4 Market Overview

Local and regional market conditions will significantly influence the type, intensity and timing of new development in the UDistrict. The development projections outlined in Section 4.5 provide an estimate of the amount of development that can reasonably be expected in the UDistrict. These projections are based on projected population growth (in the City and the UDistrict) and current and future market conditions as described below.

4.4.1 Population Projections

CITY OF ABBOTSFORD

The graph below includes population growth based on BC Statistics April 2014 projections. The population projections indicate a decreasing 5-year growth rate over the next 30 years to 2041.

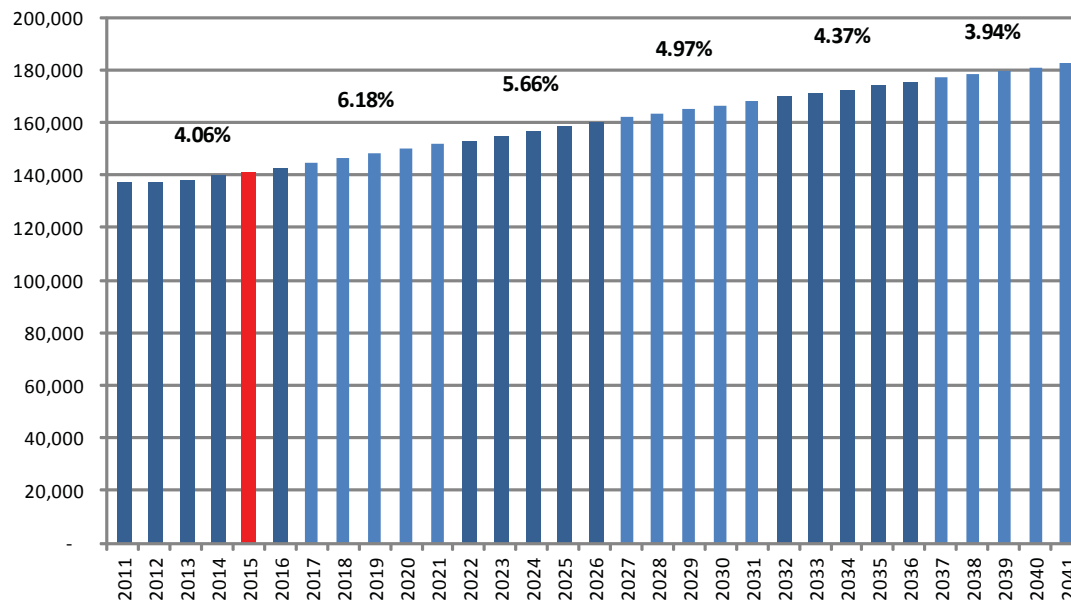


Figure 12 - City of Abbotsford Population Growth Projections (2011-2041)

UDISTRICT

The UDistrict population is expected to increase from an estimated 3,200 in 2011 to 5,650 in 2040 for a total increase of 2,450 new residents.

Population projections	2011	2030*	2040*	New Residents
UDistrict Population (low growth scenario): *Source Urbanics 2011	3,200	4,350	5,650	2,450

Figure 13 - UDistrict growth projections

4.4.2 Current Housing Market

There is currently a strong housing market in Abbotsford with gains in benchmark price for all housing types between 2005 and 2015.

The benchmark price across all housing types in Abbotsford has increased by 34.3% since 2005. Between 2014 and 2015, the highest gains in benchmark price have been seen in apartment dwellings at 9.1% followed by townhouses

with a 6.7% increase.

Historically, single family detached housing has seen the most movement in benchmark price over the last ten years. As of March 2015 the benchmark price in Abbotsford for detached homes was \$588,500, for townhouses it was \$299,700 and for apartments it was \$190,800.

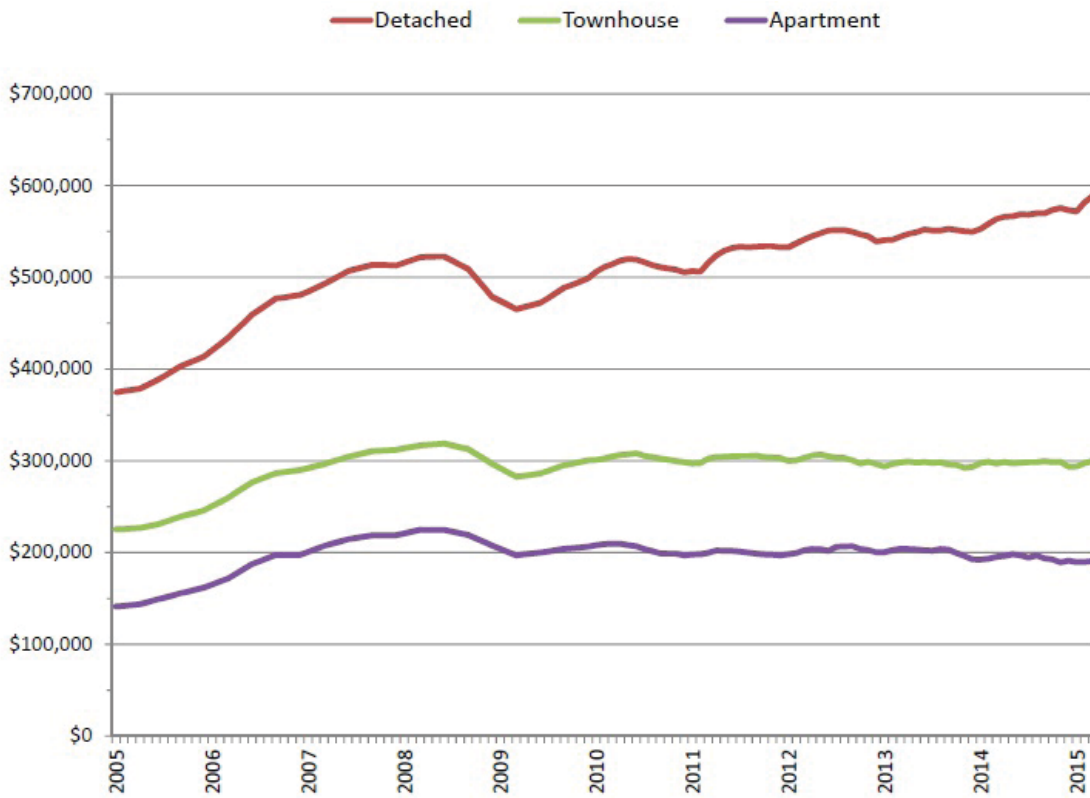


Figure 14 - MLS Home Price Index Benchmark Prices, Fraser Valley

4.4.3 Future Housing Market

The majority of current applications for new home inventory in Abbotsford are for low-rise and townhome product, reflecting the strong demand for multi-family developments in the area. Some of the multi-family developments now selling in Abbotsford include:

- Brighton at Westerleigh by Polygon Homes – 118 townhomes
- Hudson’s Loft 2 by Diverse Properties – 67 apartments
- Marshall Mews – 22 townhomes

- Sandstone Ridge – 22 townhomes
- Aston Row Homes – 64 townhomes

Within the UDistrict there is a single wood-frame, mid-rise development currently in the development application phase. The site is located at 1563 McCallum Road at the intersection of King Road. The site is proposed to be developed with a six-storey, mixed use building containing 94 residential units and 9,927 sq.ft. of ground floor commercial space.

4.4.4 Commercial Market

Within the last five years South Fraser Way has emerged as a busy retail centre anchored by Seven Oaks Mall and West Oaks Mall, with more than 1,000,000 sq.ft. of retail space combined.

The newest shopping centre to open in the City of Abbotsford is known as ‘High Street’ in the neighbourhood of Mt. Lehman, at the western edge of the City. The centre was completed in Fall 2014 and is anchored by London Drugs and Walmart. In total, the ‘High Street’ shopping centre adds approximately 600,000 sq.ft. of commercial space to the City.

With strong competition emerging between large regional shopping centres in the City, the UDistrict is envisioned to develop as a primarily local serving retail village. Commercial retail and service uses will serve the growing University campus and surrounding residential base. Commercial space will be accommodated within mixed use buildings that are oriented towards the street in a walkable community.

There is potential to accommodate a hotel with the UDistrict area based on forecasted population growth. The UDistrict’s proximity to the Abbotsford International Airport, University of the Fraser Valley, and the Abbotsford Centre are positive influences on a potential hotel.

The majority of hotels in the City of Abbotsford comprise mid-scale, chain operators. There are a number of hotels in proximity to the UDistrict. The largest and newest hotel entrant is the Sandman Hotel & Suites which opened circa 2013 with 139 rooms. Based on the lack of high-end hotels in the City, Urbanics Consulting recommends pursuing a high-end hotel operator for the UDistrict area.

4.4.5 Industrial Market

Industrial development in the City of Abbotsford is situated around the fringe within established industrial/business districts such as Riverside Industrial Area, Clearbrook Industrial Area, Mt. Lehman Industrial Area and the Abbotsford International Airport. According to Colliers International, the total inventory of industrial space in Abbotsford is currently 7,547,631 square feet.

The UDistrict is well positioned to attract research and development related businesses given the presence of a University and the anticipated synergy between them.

4.5 UDistrict Development Projections

In the chart below we have provided an estimated market demand forecast for residential, commercial (including hotel), and industrial sectors. The projections indicate the total warranted market demand by the years 2030 and 2040 and have been adapted from the market analysis report completed by Urbanics Consulting in 2011. Key findings include:

- There is strong support for new residential development that is focused on multi-family, housing types like townhouses and low- to mid-rise apartment buildings;
- Commercial uses (including food, beverage, retail, service commercial, and office) will primarily be accommodated in ground level retail including grocery stores, restaurants, and general retail; and
- The UDistrict is well positioned to attract research and development related businesses given the presence of the UFV campus.

Land Use Type	2030	2040
UDistrict Population	4,350	5,650
Townhouse (units)	250	420
Apartment (units)	420	800
Commercial (f ²)	174,600	205,600
Business Park/ Industry (f ²)	120,600	140,230
Hotel (rooms)	92	100

Figure 15 - Total Warranted Market Demand Forecast

It is important to note that market demand forecasts are influenced by a number of factors including infrastructure investments (particularly transportation), marketing efforts and competition in the marketplace. The UDistrict is well positioned to enhance its market share with a robust marketing program that highlights the superior amenities associated with a University campus.

As part of the Abbotsford process, staff engaged Colliers International to undertake a market analysis of the retail / commercial needs of the whole city, with a focus on the UDistrict area. This resulted in a projection of 80,000 square feet of retail / commercial for the neighbourhood. This is substantially lower than the findings of the 2011 Urbanics report. During Stage 2, staff will study the differences between the two reports and establish a refined market projection for retail needs within the UDistrict.

5 SITE ANALYSIS

This section describes the existing site conditions that will influence the development of land use, mobility and public realm policies in the UDistrict.

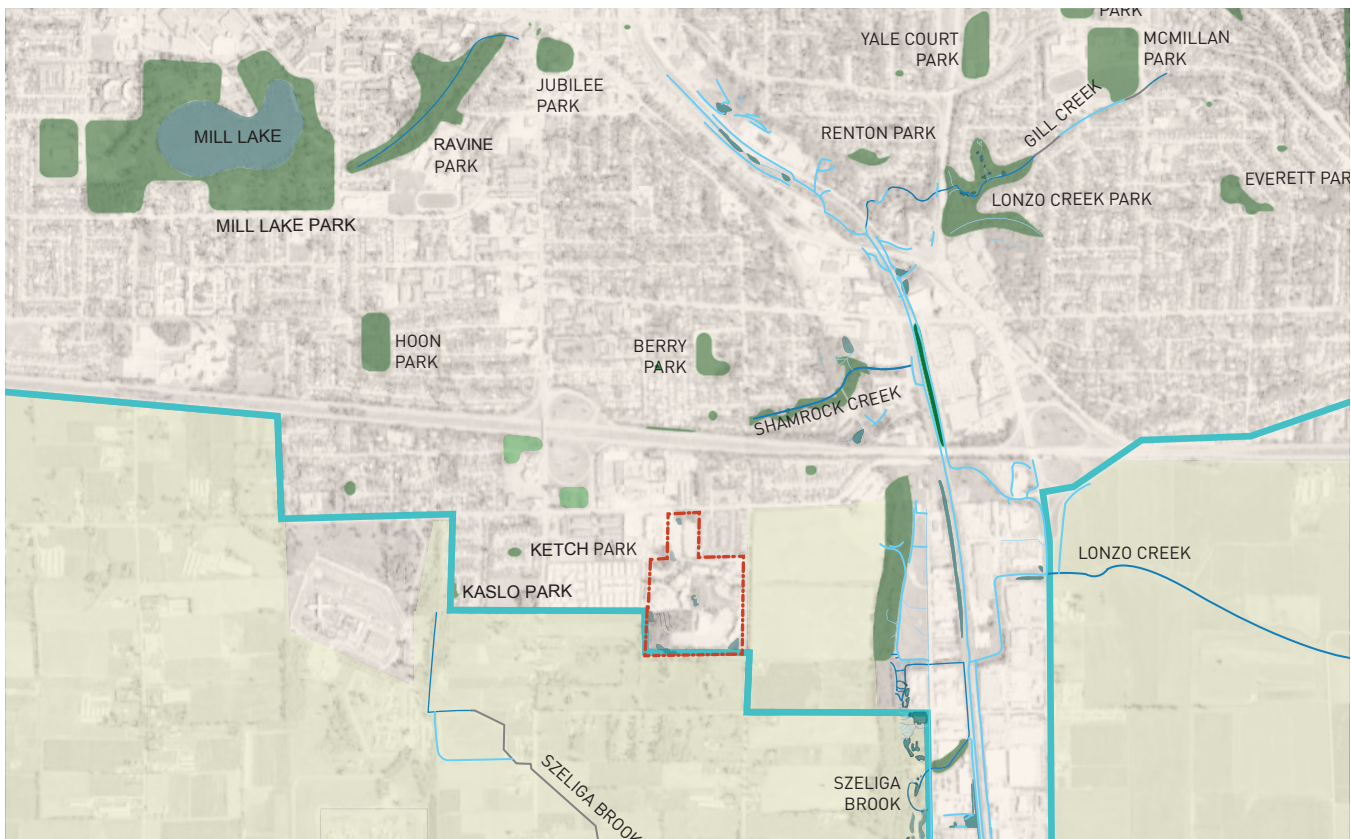
Key Findings: Soil and topographic conditions would support on-site stormwater infiltration. There is a need for additional parks and gathering spaces in the UDistrict and better pedestrian connections throughout. There are a number of 'locked' land uses including large stratas; however, there are also significant opportunities to intensify existing developed areas.

5.1 Environmental Context

The UDistrict is situated in the Lower Fraser River watershed with the Fraser River, the longest river in British Columbia, approximately 10km to the north. Ketch Park and Kaslo Park (two small neighbourhood parks) are the closest parks to the UDistrict neighbourhood. Shamrock Creek, Lonzo Creek and Szeliga Brook are the nearest waterbodies.

While the majority of the wildlife found in the ecoregion is quite common (i.e. black-tailed deer, coyote, raccoon, shorebirds and waterfowl), a notable exception is the Townsend's mole, a red-listed endangered species. A portion of the UFV campus has been identified as critical

habitat for the Townsend's Mole in the proposed recovery Strategy for the Townsend's Mole in Canada prepared by Environment Canada. It prefers medium-textured silt loam with good humus as found in fields, meadows, lawns and manured pastures where earthworms are abundant. The Townsend's Mole's extent of occurrence in Canada is about 20 square kilometers and the area of occupancy is only 13 square kilometers. The adult population is estimated at 420 to 480 individuals. Most of its range is currently within the ALR.



LEGEND

- | | | | |
|---|--|--|---|
| Campus boundary | Waterbodies / Wetland | City Park | Natural Area |
| ALR lands | Natural Watercourse (Minor) | Channelized Watercourse (Piped) | |
| Urban Development Boundary | Natural Watercourse | Channelized Watercourse (Non-piped) | |

Figure 16 - Parks context: adjacent parks, waterbodies, ALR

5.2 Physical Conditions

5.2.1 Topography

A major ridge line to the east of the site represents the major topographical feature in the area. The rest of the site has minimal topography, sloping gently south and southeast from the centre of the campus from an elevation of approximately 68m toward the edges of the site. The lowest point on site is the drainage ditch at the eastern edge of the site at approximately 28m elevation.

5.2.2 Aspect + Views

The neighbourhood has minor, broken views to the north and east mountains. There are key locations, however, where the views are excellent. These include views of Mount Baker from the intersection of King and McKenzie Roads, and views to adjacent agricultural land to the west

from the intersection of Gillis Ave and College Drive. The views you don't have in the UDistrict are equally important as those you do. Buildings, large trees and hedges at adjacent properties block key views to ALR Land and Mount Baker from most locations.

5.2.3 Soil

Soil mapping information from Agriculture Canada shows soils on site are characterized by gently undulating 15 - 50 cm of medium textured deposits over glacial till which are moderately well drained to well drained. The resulting soils should generally support on-site stormwater infiltration.



Figure 17 - Physical conditions: topography and views

5.3 Open Space

5.3.1 Stormwater

The UDistrict Neighbourhood itself does not contain any streams but it does have a number of stormwater features within the UFV campus lands. These stormwater features could be expanded throughout the UDistrict given the relatively permeable soils found throughout the UDistrict.

5.3.2 Agricultural Lands

Bounded on three sides by agricultural land uses, the UDistrict is perfectly situated to create a landscape typology that integrates farm life, city life and campus life.



Figure 18 - Existing agricultural lands to the east of McKenzie Road

5.3.3 Forested Lands

Stands of mature trees of both ornamental and native species can be found on site, mainly on the UFV Campus. These specimens are providing not only character and spatial definition for the site, but also contribute to ecosystem services such as:

- Mitigation of urban heat island effect and climate regulation
- Air quality regulation
- Provision of habitat for insect and avian species
- Soil stabilization
- Carbon sequestration
- Maintenance of soil fertility

5.3.4 Outdoor Gathering Places

Existing gathering spaces are primarily focused on the UFV campus with several minor activity areas at the commercial node on McCallum and King and the entrance to the Abbotsford Centre.

The majority of the UDistrict - when the UFV campus is not considered - is lacking in outdoor gathering places; the open spaces can be characterized by sidewalks, parking lots and residential parcels whose landscapes consist of mainly trees and lawn. Adjacent agricultural lands are rural in character and while not public gathering places, provide visual relief from the urban setting.

The university campus has a larger degree of outdoor amenities, including courtyards, open lawns and a plaza at Abbotsford Centre.

The UDistrict would be greatly improved by the addition of a connected open space network of public greenways and parks of varying scales and programs relating to adjacent land uses. These open spaces would contribute to the aesthetic enjoyment, opportunities for recreation and places for celebration of culture.

5.3.5 Pedestrian Circulation

Public sidewalks in the UDistrict are located along both sides of King Road and University Way and on one side only of McCallum Road, College Drive, McKenzie Road and Gillis Ave.

City bus stops are located along King Road east of Kipling Street, east of McCallum Road, east of Salton Road, east of King Crescent and at the bus loop between Buildings A and G. The University has shuttle bus service between campuses.

While there is a cycle turning lane at the intersection of College Drive and Kind Road, there are no other dedicated bike lanes or trails.

The University campus has a finer grain of pedestrian circulation varying in character providing a higher level of amenity. Bike racks are located at the Abbotsford Centre and at the west side of the parking lot at Building A. The bus loop at Building G has bike lockers and racks.

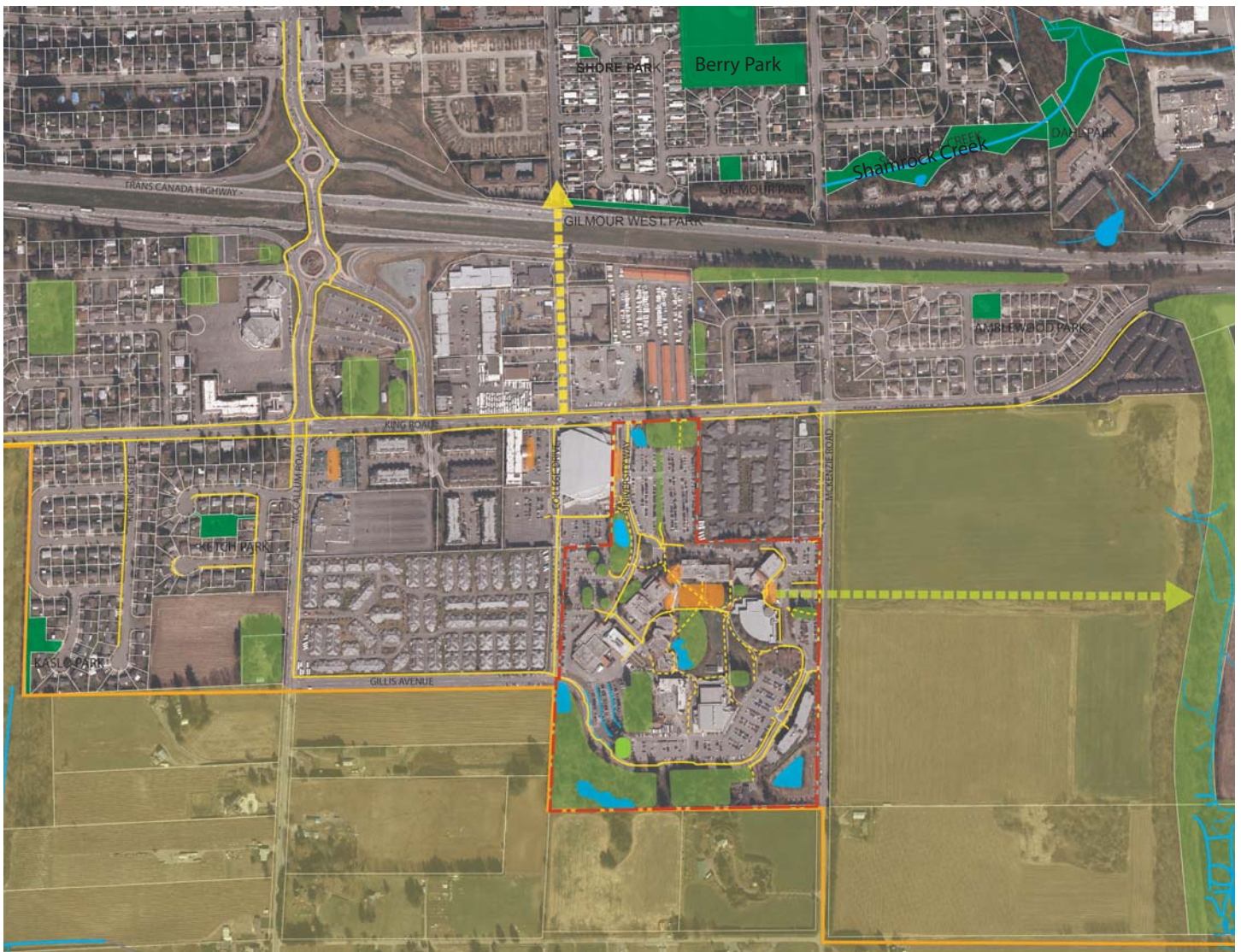
5.3.6 Parks

The nearest City park with sports fields is Berry Park to the north, which feature a baseball diamond, lit sports fields, basketball courts, walking trails and playground equipment.

Open greenspaces can be found at Shamrock Creek and along Riverside Road. The forested ridge to the east of the ALR lands has informal walking trails and could be

linked more strongly to the UDistrict community and the campus.

This area of the City may be deficient in park space, and would certainly benefit from the addition of more programmed park space.



LEGEND

- | | | | |
|----------------------------|--------------------------|----------------|---------------------------------|
| Campus boundary | Stormwater | Forested Lands | Potential pedestrian connection |
| ALR lands | Outdoor gathering places | Sidewalk | Potential trail connection |
| Urban Development Boundary | Park | Walkway | |

Figure 19 - Existing Open Space Diagram

5.4 Built Form

The UDistrict neighbourhood largely falls into four dominant land use types: Residential, Commercial, Industrial and Civic/Institutional. They are described in more detail below.



Residential

Residential land uses are the dominant use within the UDistrict. They include single family homes and a number of multi-family sites including two strata developments (gated communities) immediately adjacent to the university campus.



Industrial

The area north of King Road has a large industrial area with a mix of low intensity, service and storage-oriented industrial land uses. Many of these buildings are aging and the properties could have significant redevelopment opportunities.



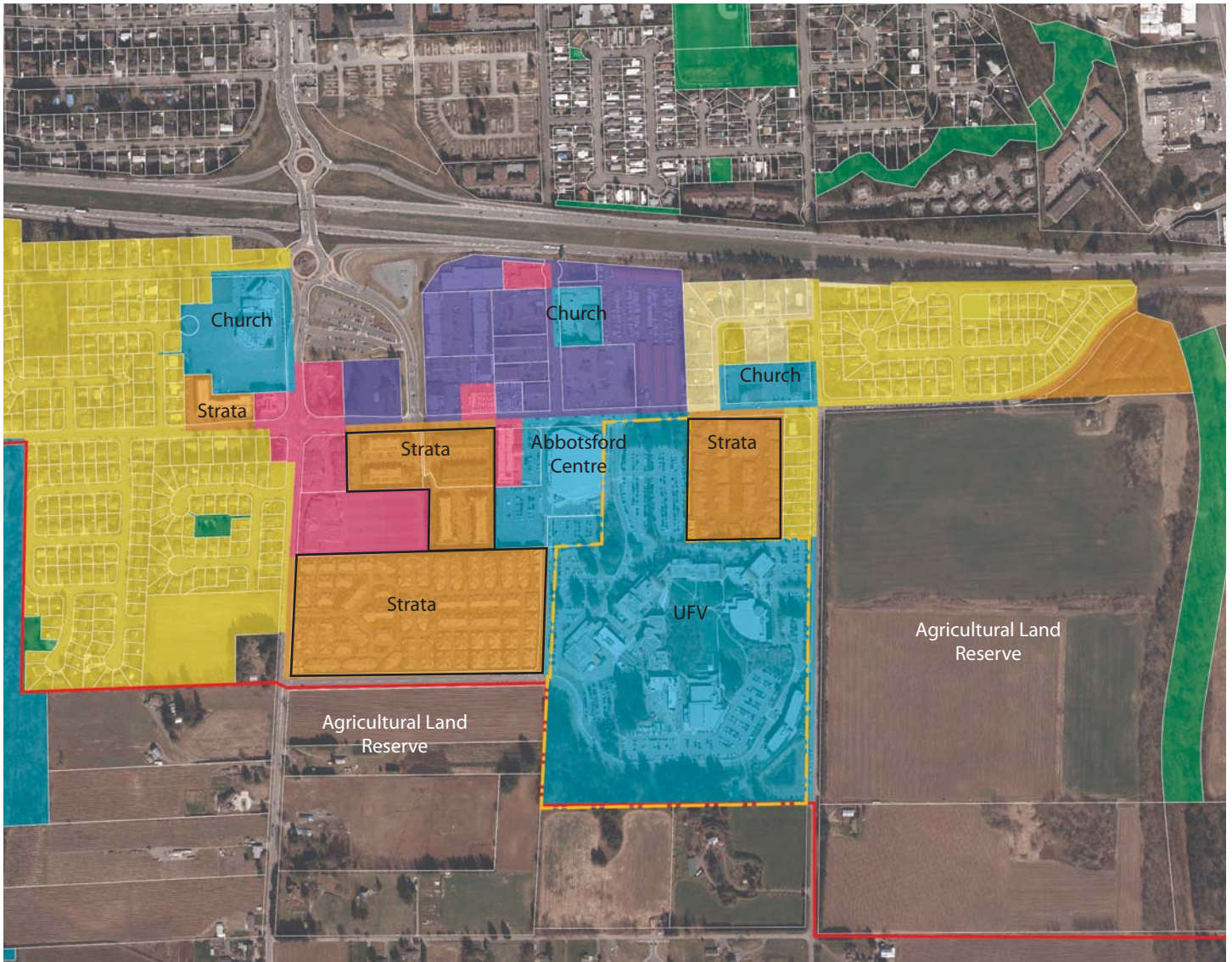
Commercial

Commercial uses are primarily focused along King Road with the exception of a cluster of retail uses along the highway and the old theatre site on McCallum which is currently not in use.



Civic/Institutional

The final major land use in the UDistrict is civic/institutional. This includes a number of churches, the Abbotsford Centre and the university.



LEGEND

- Campus boundary
- Urban Development Boundary
- Urban Estate Residential
- Single Family
- Multi-family
- Community Commercial
- General Industrial
- Civic/ Institutional
- Green Space
- Fenced area

Figure 20 - Residential land use

6 MOVEMENT

This section describes the existing transportation infrastructure and movement patterns related to walking, cycling, transit and vehicle access and parking.

Key Findings: There are gaps in the walking and cycling networks that discourage pedestrian and cycling activity within and to the UDistrict. Transit is well-used and could be strengthened by having transit infrastructure more closely integrated with new development. Vehicle use could be moderated with a more balanced approach to parking and alternative transportation modes.

6.1 Introduction

Figure 21 illustrates major streets within the UDistrict. Highway 1 runs along the northern extent of the site with a single crossing at the McCallum interchange. King Road is the only major east-west connection, providing access to minor north-south street connections at College Drive, Salton Road, University Way and McKenzie Road.

opportunities. The following sections describe the existing pedestrian, cycling, transit and vehicle infrastructure within the UDistrict.

Managing transportation demands going forward in the UDistrict will be one of the key strategies in creating a new mixed use and compact community that is focused toward walking and cycling activities along with expanding transit

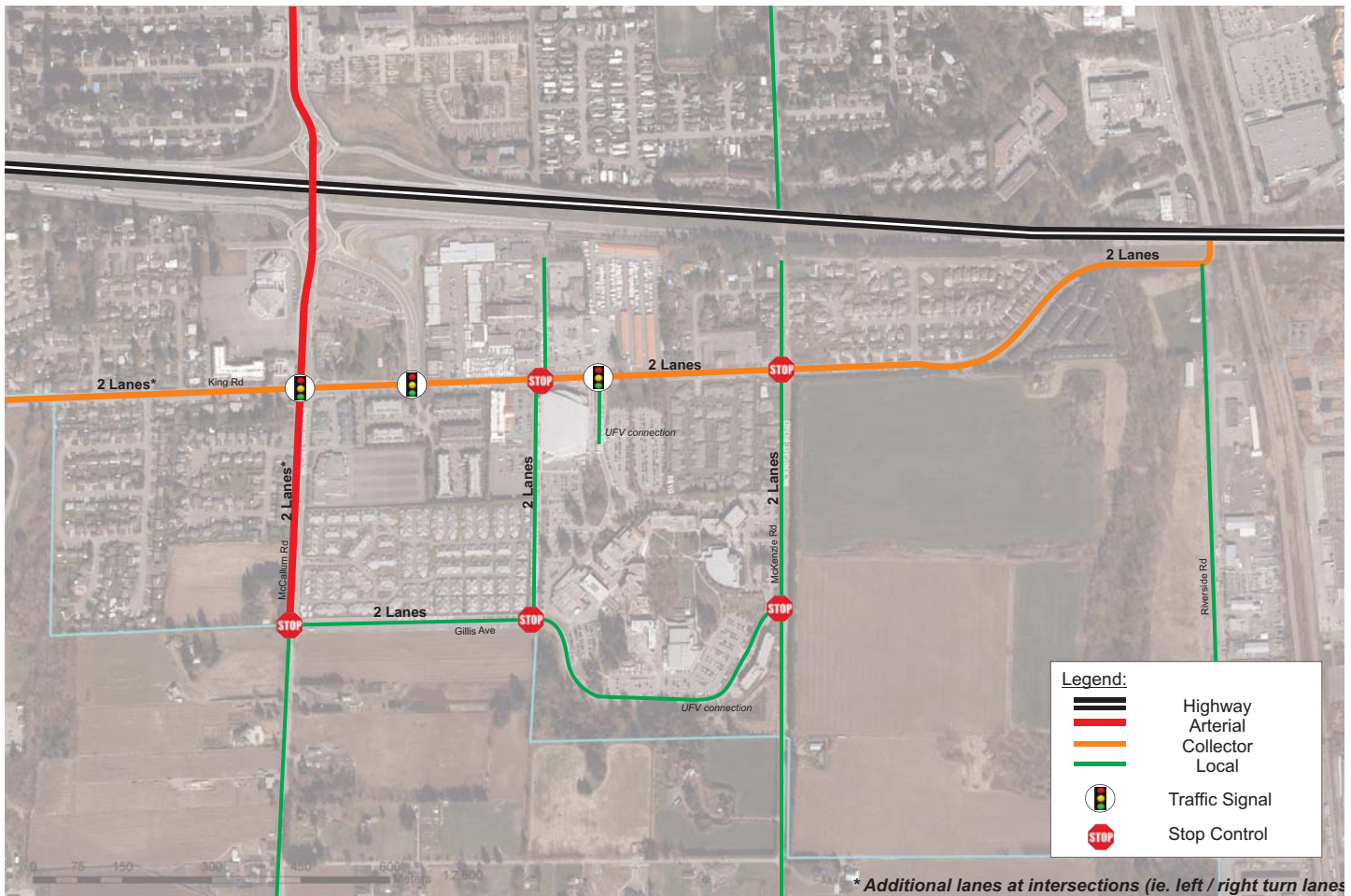


Figure 21 - Road Configuration

6.2 Pedestrians

In general, small number of connections, large block sizes, and limited street-fronting buildings currently found in UDistrict does not encourage walking.

Street edges along King Road are generally suburban in nature, characterized with narrow sidewalks and a limited number of buildings directly fronting the sidewalk (i.e. eyes on the street).

East-west street corridors should be developed more fully between McCallum Road and McKenzie Road along Gillis Avenue; the midpoint between McConnell Road and King Road. Although King Road is already a continuous connection, it needs to be more pedestrian-friendly (wider sidewalks, boulevard, street parking).

North-south street corridors exist at McKenzie, College Drive / Salton Road (although not directly aligned), and McCallum Road, where only the latter extends across Highway 1.

Permeability for pedestrians through the UFV campus is generally good, but the consistency and structure of facilities is varied and does not support strong way finding or sense of place.

Street intersection layouts along the main arterial connections, King Road and McCallum Road, are biased to the flow of vehicles rather than pedestrians (or cyclists). Streets using more compact urban designs would assist with readdressing priorities.

Traffic lights with controlled crosswalk facilities are located at University Way, King Connector, and McCallum Road with the latter one having slip roads on the north side, which are not particularly pedestrian-friendly.

Pedestrian street volumes in the UDistrict are generally low, reflecting the suburban auto oriented design.



Figure 22 - Existing streetscape condition along King Road at University Way (looking west)

6.3 Cycling

Existing bike facilities in the UDistrict are limited and somewhat disconnected. While there are bike facilities incorporated into the McCallum Interchange, the route is perceived as unsafe.

Street bicycle lanes are located on McCallum Road including facilities associated with the new roundabouts at the Highway 1 interchange. King Road has bicycle lanes on some sections, but gaps exist that would need to be addressed in future work or a parallel system would need to be developed.

More generally there are no bike facilities located off-street or along lower volume streets, which are inherently the preference for less experienced cyclists. Lack of street permeability currently limits these opportunities within the UDistrict.

Bicycle volumes on McCallum Road and King Road are low in the peak periods, suggesting the existing limited bicycle

facilities together with the land use in place do not support cycling activities in the area.

Similar to pedestrians, a strong north-south connection across the highway is needed away from the more challenging roundabouts at McCallum Road, especially for less experienced cyclists.

Challenges

- Designated bicycle routes in the UDistrict have gaps and are focused on the higher volume vehicle corridors
- Lack of street permeability limits the opportunity to create low volume routes parallel to more heavily used streets (e.g. arterials)
- Cyclists entering UFV from King Road need to travel through the university's parking lots



Figure 23 - Bicycle Routes

6.4 Transit

Routing of transit and bus stop facilities are highlighted, and the two main destination points located within the UDistrict are at the UFV hub (McKenzie Road) and the McCallum Road Park & Ride. UDistrict transit routes are summarized in the following table.

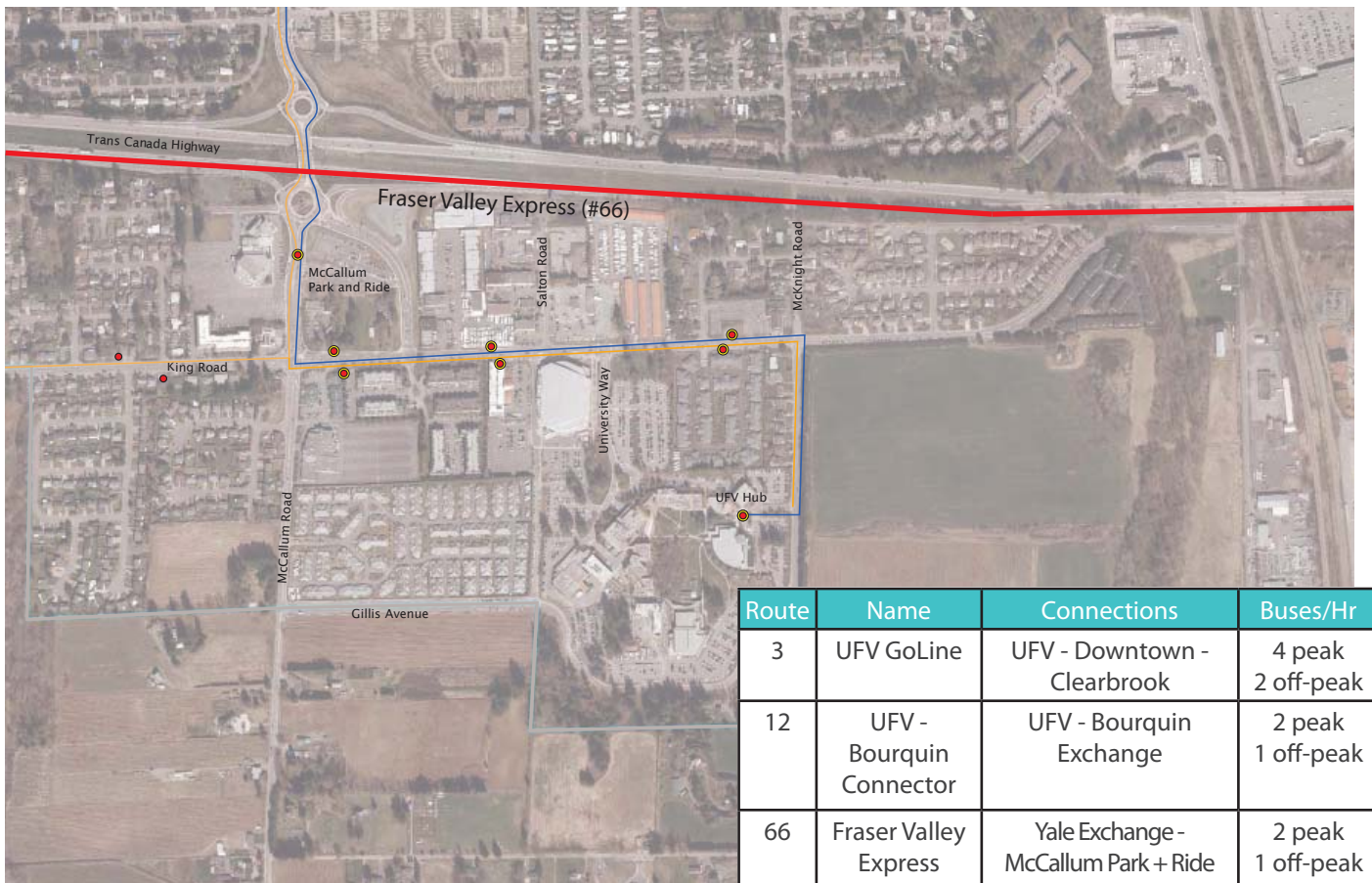
The McCallum Park and Ride is served by #66 express service operating on Highway 1 and at its west (Carvolth) terminus, passengers can connect to buses accessing the Braid Street SkyTrain Station (Lougheed in 2016).

Local routes #3 and #12 connect to important exchanges within Abbotsford, where the downtown one has 9 onward connections and the Bourquin Exchange has 14 onward connections. These interchanges expand significantly the penetration for the UDistrict passengers, and it highlights the importance on focusing additional service frequencies to these exchanges, which in turn lowers wait times between connecting services.

A more centrally located UDistrict exchange could accommodate all the current routes (#3, #12, #66), providing more choice and a more community-focused hub.

Challenges

- The transit exchange is currently located at the east edge of the UDistrict and consideration should be given to a more visible / central location better serving the community and creating a focal point
- Ensure that the #66 (Highway 1 Express Route) is more closely integrated with local services (#3, #12) at the UFV campus
- Consideration will need to be given to expand transit facilities in the longer-term as the UDistrict grows



Route	Name	Connections	Buses/Hr
3	UFV GoLine	UFV - Downtown - Clearbrook	4 peak 2 off-peak
12	UFV - Bourquin Connector	UFV - Bourquin Exchange	2 peak 1 off-peak
66	Fraser Valley Express	Yale Exchange - McCallum Park + Ride - Carvolth Exchange	2 peak 1 off-peak

- Regular Bus Stops
- High Frequent Bus Stops
- High Frequency Bus Routes
- Other Bus Routes

Figure 24 - Transit

7 INFRASTRUCTURE

This infrastructure assessment is intended to provide background information on the water, sanitary and storm systems within the City of Abbotsford's UDistrict Neighbourhood. It is limited to a basic description of the existing servicing arrangement in the UDistrict neighbourhood.

Key Findings

- Water: with the City's conservation program, we can expect two or more decades of projected growth before capacity is exceeded
- Sanitary: there are a number of potential capacity bottlenecks in the UDistrict neighbourhood that will need to be considered throughout the planning process
- Stormwater: Planning will need to address surface runoff + water quality

The UDistrict Neighbourhood encompasses approximately 365 acres around the University of the Fraser Valley, with 165 acres of potentially re-developable land and a current population of approximately 3,200 residents. The current state of water, sewer and stormwater systems within the UDistrict Neighbourhood are described in the following sections, along with key issues that have been raised from previous work completed by the City.



Figure 25 - Water system schematic

7.1 Water Servicing

Abbotsford’s water is supplied from a regional system comprised of two surface water sources, 19 groundwater wells, two water storage reservoirs and 86 km of water transmission mains (pipes). Water for Abbotsford is transmitted through the City’s distribution system, a network of pipes, which connect to the homes and buildings of all customers. The UDistrict Neighbourhood, including approximately 10 km of water mains and 73 hydrants, is connected to the City’s water distribution system. The water system in the neighbourhood is divided into two parts. West of McKenzie Rd, the water system is fed from the north at Salton Rd, and from the west at Hawthorne Ave and at King Rd. East of McKenzie Rd, the water system is fed from a single pipe at King Rd.

The main campus has 1.8 km of mains and 14 hydrants. The primary direction of feed to the area is from the north, with one connection at College Dr. and two off of McKenzie Rd.

A schematic plan of the existing water network can be found in Figure 26.

The City’s water conservation program, including universal metering, is credited with a significant decline in demand. With reduced demands, the City expects two or more decades of projected growth before the existing capacity is exceeded. Local improvements may still be required to provide adequate fire protection, and service in response to specific development or growth in the neighbourhood.

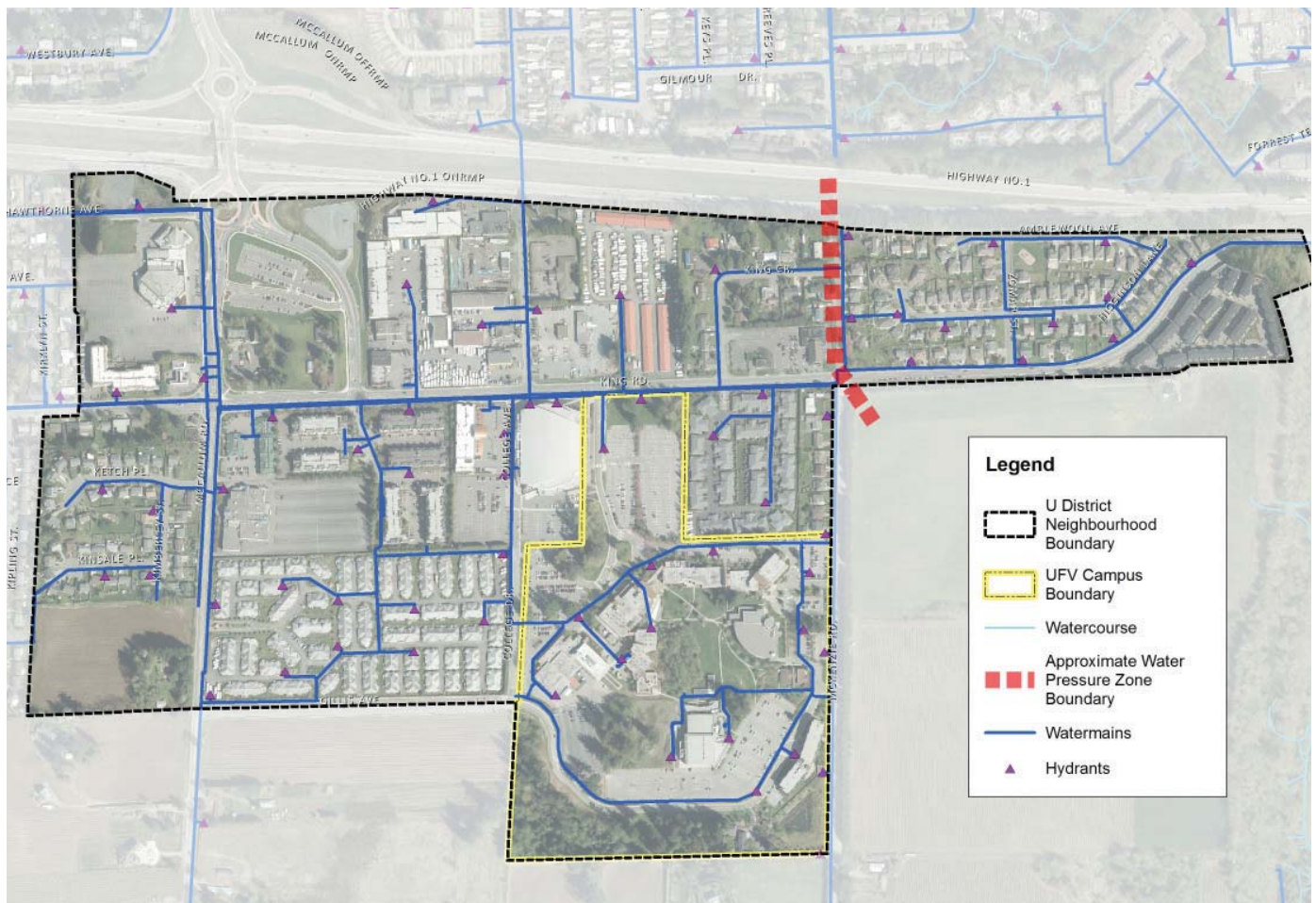


Figure 26 - Existing infrastructure

7.2 Sanitary Sewer Servicing

There are two main components to Abbotsford's sanitary sewer (wastewater) system: collection and treatment. The City's collection system includes approximately 530 km of mains and 33 pump stations. Wastewater is collected and carried through Abbotsford's pipes and pump stations, where it is conveyed north to the Joint Abbotsford Mission Environmental System (JAMES) Plant for treatment.

The UDistrict Neighbourhood is a part of Abbotsford's sanitary sewer collection system, and includes 8.5 km of sanitary mains, 129 sanitary manholes and 2 lift stations (one public and one private). The UDistrict Neighbourhood splits into three main sanitary catchments flowing to the Hawthorne Pump Station, King Pump Station and Riverside Drive trunk sewer main (located east of UDistrict), which ultimately drains to Lonzo Pump Station.

A schematic plan of the existing sanitary sewer network can be found in Figure 27 (Riverside Drive trunk sewer main not shown).

When looking specifically at the UDistrict neighbourhood,

a number of potential capacity bottlenecks in the system were identified downstream of the Hawthorne and King pump stations. These could be sensitive to a significant population increase in the area, and strategies may need to be developed to route flows away from these locations. Of specific note, the trunk sewer running through the Shamrock Creek ravine is of geotechnical concern, and a strategy to divert flow away from this facility may be needed.

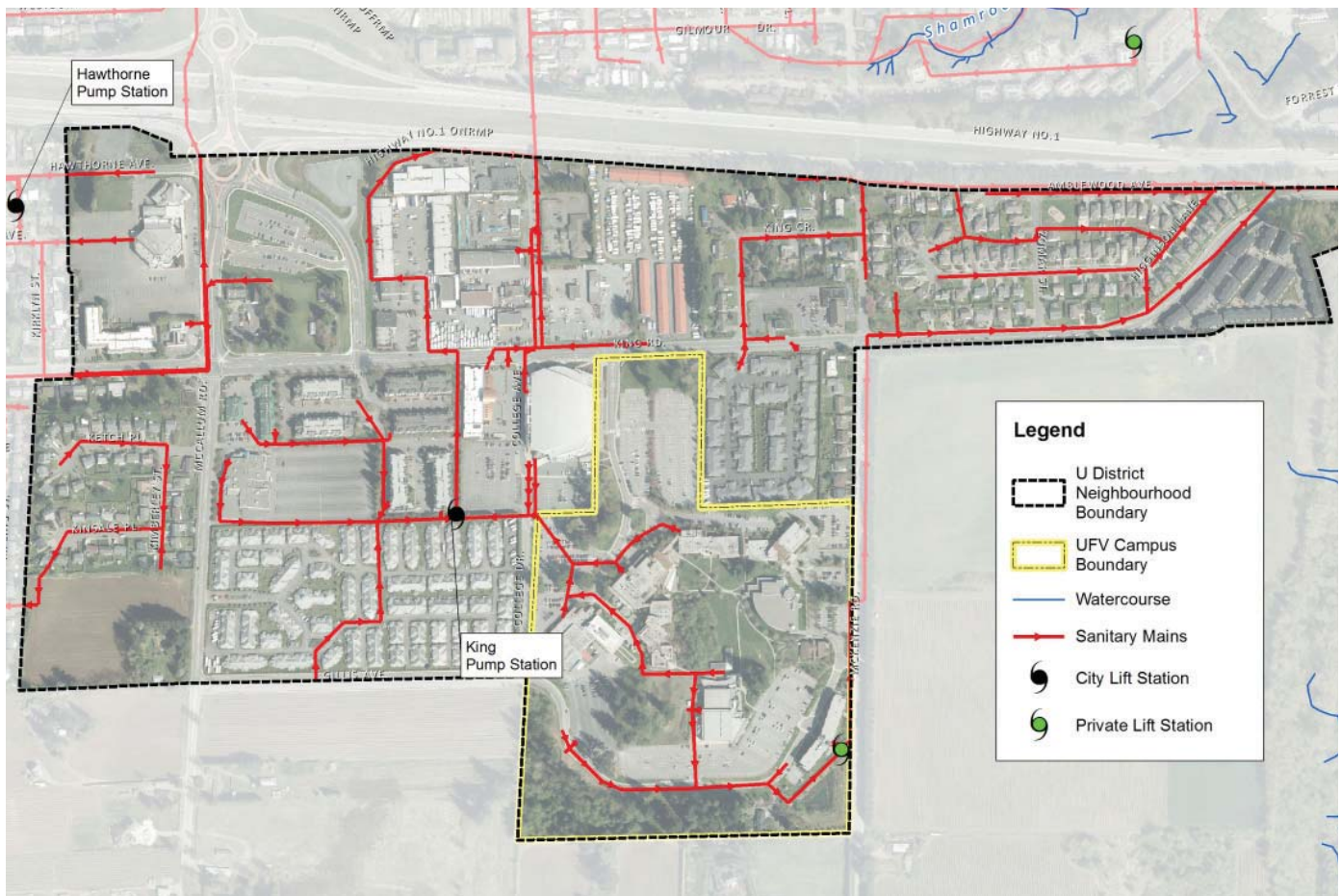


Figure 27 - Existing sanitary infrastructure

7.3 Stormwater Servicing

Drainage within the City of Abbotsford is being planned at the watershed level. The Marshall Creek Watershed encompasses the eastern portion of the City, including the UDistrict Neighbourhood. Marshall Creek, also known locally as Lonzo Creek, runs to the east of the UDistrict Neighbourhood. The UDistrict Neighbourhood is within the uplands portion of the Watershed and the land slopes eastward toward Marshall Creek, which drains to the Sumas River, combines with the Vedder River and then discharges into the Fraser River.

The UDistrict Neighbourhood is within the Upland Plateau of the Abbotsford Aquifer, one of four distinct hydrogeological areas within the Marshall Creek Watershed. The eastern edge of the Abbotsford Aquifer, which runs parallel to Highway 11 (Sumas Way), is a regional discharge zone. This area contributes a large volume of high-quality, constant-temperature groundwater, through a series of springs and seeps, into the mainstem of Marshall Creek. This groundwater has a relatively long sub-surface residence time. Most precipitation infiltrates rapidly into the sand and gravel deposits that make up the aquifer, meaning

that there will be little stormwater runoff contributed to the creek from the aquifer surface.

Within the Watershed, hydraulic structures include 323 culverts, of which 155 are located on main drainage paths. There are a series of bridges and privately owned creek crossings as well. Detention facilities include 25 surface ponds, 25 underground tanks, 11 underground oversized pipes, 4 ditches, and 19 trenches.

The network of stormwater facilities through the UDistrict Neighbourhood include 12 km of storm mains and 245 storm manholes. These connect up to the City's larger system. Additionally, a number of ponds, tanks, and infiltration facilities have been identified. The drainage direction from the UDistrict Neighbourhood is split, with some of the area draining north toward Highway 1 and some draining south toward Marshall Creek. There is also a rainfall station and two flow monitoring stations immediately east of the UDistrict Neighbourhood.

A schematic plan of the existing drainage system can be found in Figure 28 (Marshall Creek not shown). A plan of the Marshall Creek watershed can be found in Figure 29.

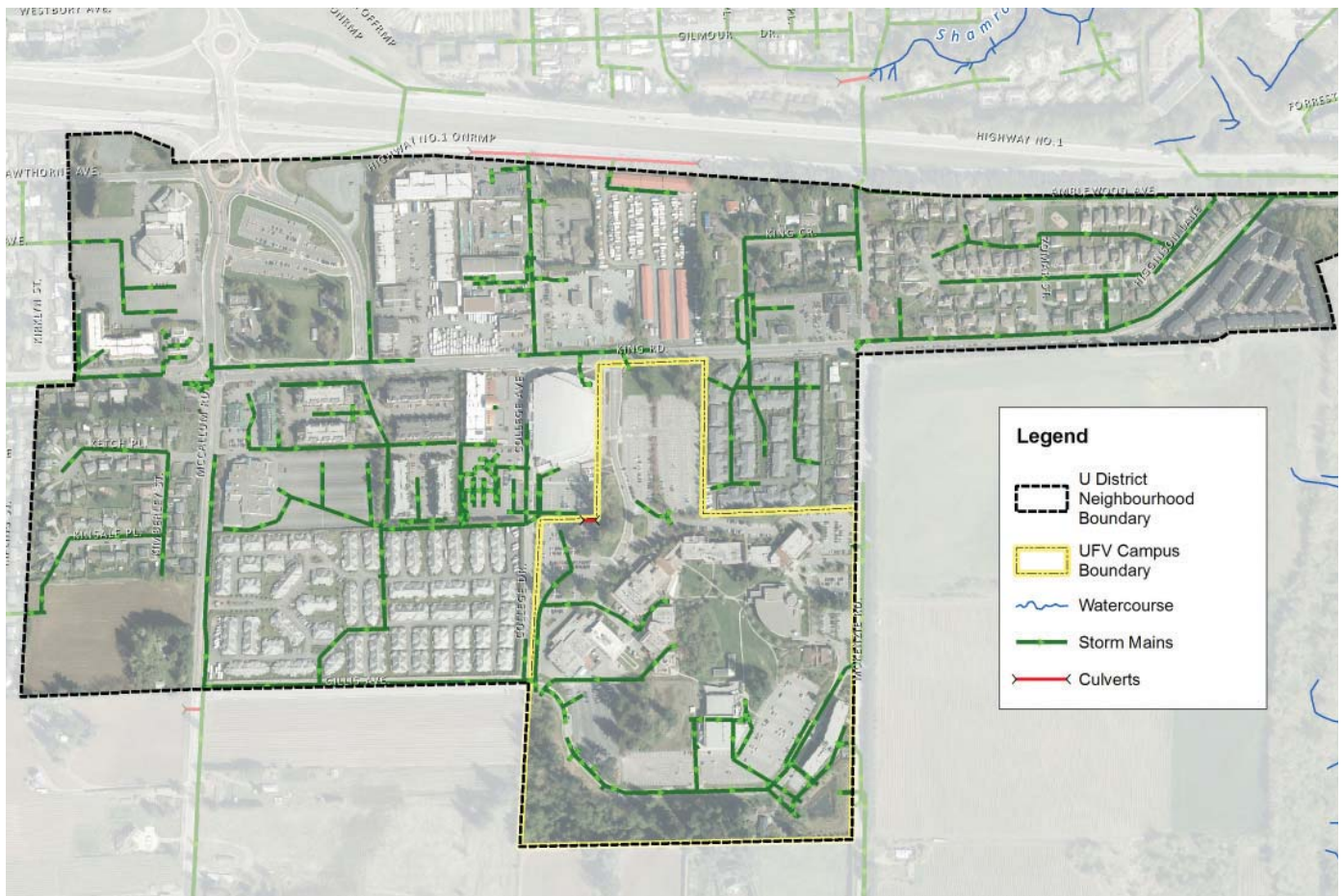


Figure 28 - Existing stormwater infrastructure

Items for consideration in the UDistrict Neighbourhood from the Marshall Creek ISMP (2006) include:

- soil type for the area, which is underlain by gravel/sand and till;
- slopes are primarily less than 10%;
- forest cover plays a critical role in sustaining hydrologic functions at a watershed-scale. West of Highway 11, mixed and deciduous forested areas are limited to 2% within the Watershed, mainly along the ridge west of Riverside Road (just East of the study area);
- flooding was not noted as an issue in this area, as it is within the Upland Plateau of the Watershed
- on-site stormwater source control measures should be considered for new development; and

- effective impervious area and riparian forest integrity have to be maintained at existing 2002 levels for the watershed as a whole, even as the watershed develops (to achieve “no net loss”)

To achieve “no net loss”: there are a series of main factors to consider: effective impervious area into streams, riparian area corridor, water quality, and in-stream habitat. With respect to the UDistrict Neighbourhood, effective impervious area and water quality are likely the most relevant.

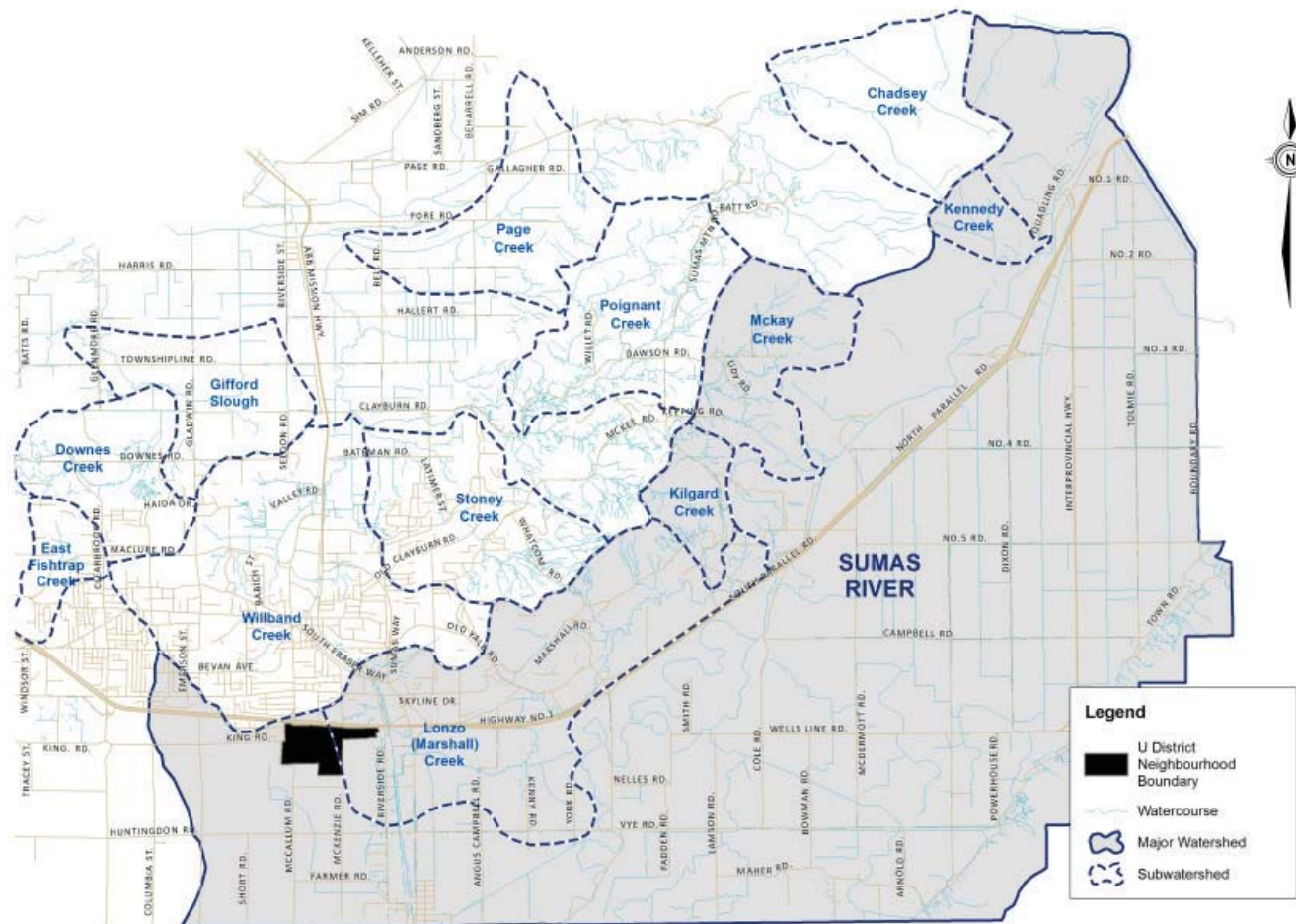


Figure 29 - Existing watershed

7.4 Sustainability

The long term economic benefits of sustainable development are widely recognized by municipalities across the country. The city's Community Sustainability Strategy (CSS) outlines a vision of a community that is healthy, a natural environment that thrives, a local economy that is prosperous, and neighbourhoods that are compact, connected and complete. One of the strategies within the CSS to achieve this is to "encourage neighbourhood-level planning". The UDistrict is the first neighbourhood plan for the city and represents a great opportunity to explore sustainable practices, such as innovative stormwater methods, designing streets for walking, cycling and transit, and providing different housing types to cater to diverse housing needs.

As part of creating a complete neighbourhood, the university campus presents a great opportunity to integrate with the surrounding neighbourhood. UFV has been a leader with site-wide stormwater management methods, environmental stewardship, as well as having an ambitious program delivering green buildings, such as LEED certification.

As part of the planning process, both the City and the university will explore opportunities to build on past success and fulfill their respective goals.

8 PRECEDENTS

The precedents in this section illustrate aspirational elements of contemporary neighbourhoods from across North America and Europe. While each community has its own unique context and not all elements may make sense in Abbotsford, they each contain ideas that can be incorporated into a successful UDistrict Neighbourhood Plan.

Key Findings: Projects in similar contexts have been able to achieve 1) a high quality public realm, 2) a compact, mixed-use built form and 3) a more walkable, transit-oriented community. Lessons learnt from these projects can help to create an aspirational and implementable UDistrict Neighbourhood Plan.



Vauban

Freiburg, Germany

Planned by The City of Freiburg

Project Description

Since the initial planning stages, Vauban has emerged globally as a demonstration and experimentation site of innovative communities, where safe, public streets become an inviting realm for building community. Children play in the safety of the car-reduced streets, linear park networks and public gathering spaces.

Innovations include priority for non-car access, water and waste recycling, building for solar and passive design, and a “learning while planning” principle which enabled and encouraged citizens to become actively involved throughout the planning process. The integration of tram and bus service within Vauban and to the rest of Freiburg has enabled many residents to become radically less car-dependent than elsewhere. Car-ownership within Vauban remains far lower than Freiburg, and Vauban has attracted a high proportion of young families.

Project Relevance

- **Environment:** Community and environment are supported by integrating ecologically rich open spaces that create access to nature and places to socialize. Affordability is supported by reducing water and energy consumption and hence costs with rainwater collection, an ecological sewage system that turns waste into heat and power, and solar energy being used to heat water.
- **Community:** Citizen engagement in the planning process, co-housing and public spaces for socializing foster the community living at Vauban. Vauban has become known as the ‘District of short distances’ since food coop, recreation areas, shopping centre, farmer’s market, school, kindergartens, businesses, are all accessible within walking and cycling distance.



Portland State University

Portland, Oregon

Planned by the Campus Economic and Planning Advisory Committee, Sasaki Associates, Sera Architects + Kittelson & Associates

Project Description

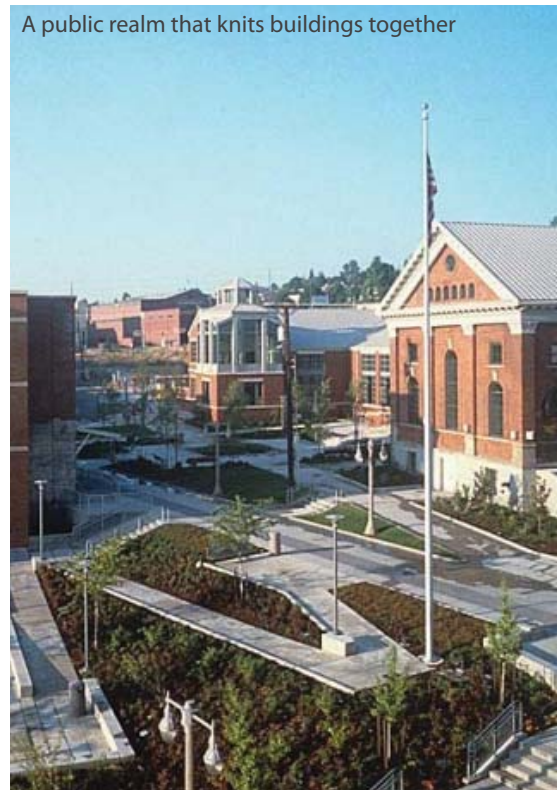
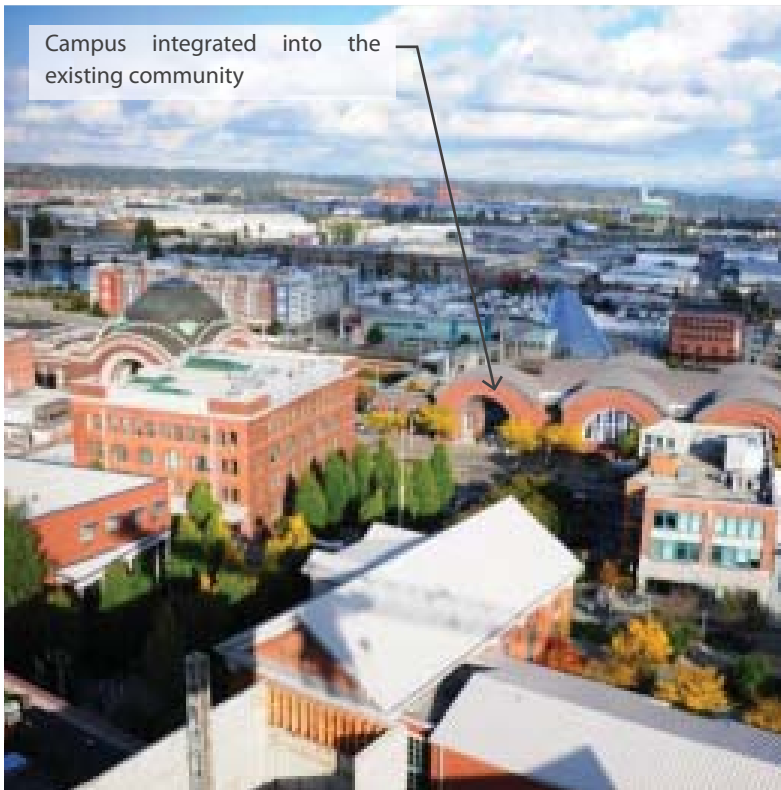
Portland State University (PSU) built on its distinct urban setting in Downtown Portland. It is integrated into the urban fabric in a way that fuses campus and community life. The University is anchored by a linear Greenway that links the centre of campus with adjacent areas. Most buildings are 4-8 storeys, matching the surroundings.

Mixed and shared uses showcase the research taking place at the university in the every day life of the city. Interdisciplinary collaboration is promoted by combining research and instruction with business uses, and sustainable businesses are provided the opportunity to co-locate and collaborate on campus.

This integration between city and campus is achieved by blurring the boundaries between public and private. Open spaces become a place to celebrate the benefits of sustainable design. Building transparency makes the academic and social life of the University visible, and engages the community.

Project Relevance

- **Integration with Transit:** Transit corridors become the anchor for new housing.
- **Integration with the City:** Transparent ground floor and mixed uses of research, instruction and business make university life and city life one.
- **Open Spaces:** Parks are designed for student life and public recreation, and help connect existing green spaces.
- **Partnerships:** Projects are developed jointly between the University and private developers to increase student housing.



University of Washington Tacoma

Tacoma, Washington

Project Description

The University of Washington Tacoma's initial vision for a new higher education campus located in the Warehouse District of downtown Tacoma positioned UW Tacoma to be an active participant in the redevelopment of a vital urban district.

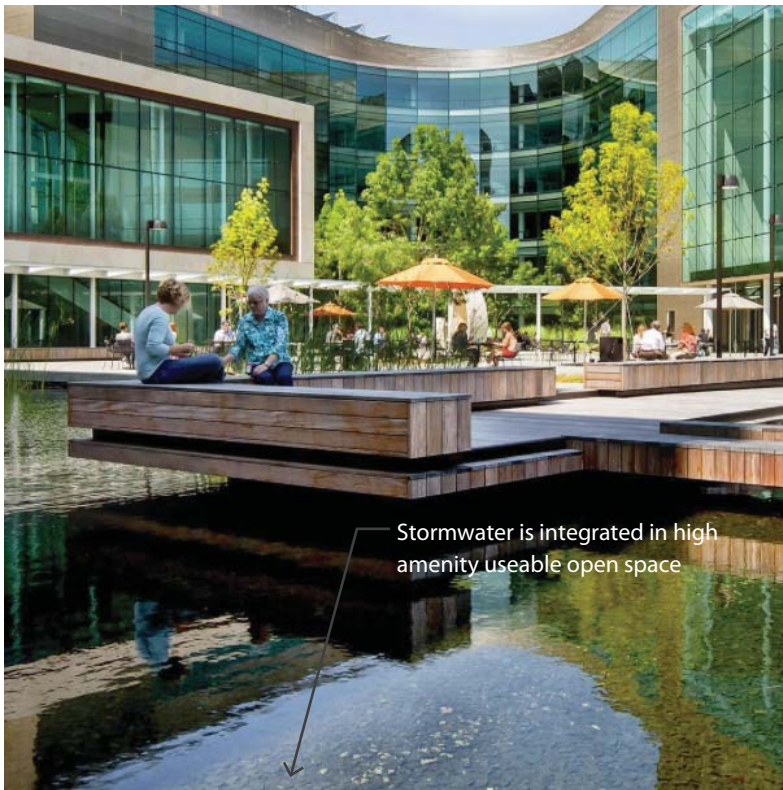
UW Tacoma continues to expand its programs and services and is now a four-year institution with student housing and associated support services such as recreation and a student centre. It has aimed to enhance a sense of community both on and off campus by providing:

- A central open space (the 'heart' of the campus) and various smaller green spaces;
- Pedestrian connections to the adjacent community
- An integration of uses (between residential, student life and academics);
- Housing facilities accommodating 12% of the student population;

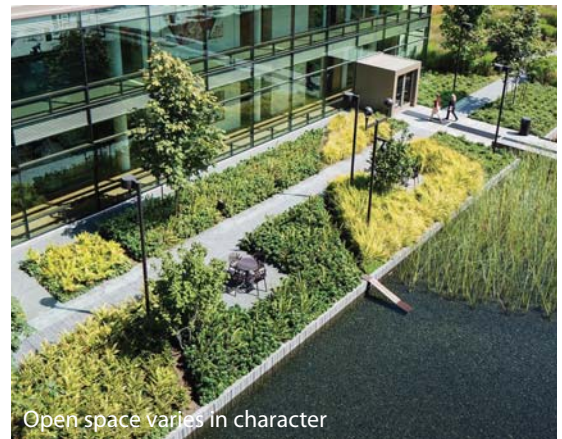
- Safer routing of vehicular traffic;
- Careful consideration of accessibility; and
- Opportunities for retail and private development

Project Relevance

- **Campus as a catalyst for growth:** expansion of the UW campus was significant in the neighbourhood's revitalization.
- **Campus + Community Integration:** both the University and the City of Tacoma have planned and benefited from the integration of the campus fully into this historic community. Strengthening connections by both groups has been key to its long term success.



Stormwater is integrated in high amenity useable open space



Open space varies in character



A variety of scales of gathering places are provided

Bill and Melinda Gates Foundation

Seattle, Washington

Landscape Architects - Gustavson, Guthrie, Nichol

Project Description

This LEED Platinum project was completed 2011 and is the world's largest non-profit LEED Platinum building.

A variety of strategies for dealing with water have been employed to protect the local watershed from contamination and pollution. Run off from hardscapes is collected, stored and treated before being infiltrated on site. Treated stormwater is used for water features and irrigation. This project plants and trees which are native, non-invasive and adapted for low water use.

The open space has been designed as an extension of indoor space. Gathering places of various scales are intended to offer a places for outdoor work for teams and individuals.

Project Relevance

- **Amenity:** Stormwater is integrated as part of the open space amenity, creating beautiful outdoor spaces.
- **Water:** Runoff is considered a resource and is used instead of potable water for water features and irrigation.
- **Gathering:** The open space network provides additional locations for meeting and studying.

D. CAMPUS ANALYSIS

9 UFV PLANNING CONTEXT

The Abbotsford Campus Master Plan is primarily a physical plan for future development on the Abbotsford campus. This physical plan however needs to consider and respond to the educational planning and strategic visioning work undertaken by UFV and summarized below.

Key Findings: UFV's strategic directions need to be supported with a master plan that improves student experience and learning outcomes. This could include common/learning spaces, lifestyle options and social opportunities

The University of the Fraser Valley was rated the best small public university in British Columbia by the Globe and Mail's annual Canadian University Report (2008). It has since continued to expand its programs and services and continues to be at the forefront of post-secondary education in the lower mainland.

UFV Strategic Goals, Priorities + Principles (2015)

STRATEGIC GOALS:

- Provide the best undergraduate education in Canada
- Be a leader of social, cultural, economic, and environmentally-responsible development in the Fraser Valley; and
- Be innovative, entrepreneurial, and accountable in achieving our goals

STRATEGIC PRIORITIES IN THE 2011-2015 EDUCATION PLAN

1. Student Recruitment, Retention, and Success
2. Enrolment Management
3. Indigenization
4. Internationalization
5. Environmental Sustainability
6. Indo-Canadian and South Asian Studies
7. Peace Studies
8. The Integration of Research and Teaching
9. Strengthening the Culture of Teaching + Learning
10. Community Partnerships, Forums, Events, and Conferences
11. Interdisciplinary and Cross-Departmental/Faculty Cooperation
12. Recruitment and Retention of Faculty
13. Creative Resourcing
14. Agriculture

STRATEGIC ENROLMENT MANAGEMENT AREAS OF PROGRAM FOCUS

- Health and Wellness
- Agriculture and the Environmentally Responsible Development of the Fraser Valley; and
- Digital Media Technologies

INSTITUTIONAL LEARNING OUTCOMES

In 2011-12, UFV became the first post-secondary institution in BC to identify its Institutional Learning Outcomes, the abilities that all students can demonstrate when they graduate. Learning outcomes provide a standard by which to reinforce the activities that enable UFV to achieve their goal of providing "the best undergraduate education in Canada":

- Demonstrate information competency
- Analyze critically and imaginatively
- Use knowledge and skills proficiently
- Initiate inquiries and develop solutions to problems
- Communicate effectively
- Pursue self-motivated and self-reflective learning
- Engage in collaborative leadership
- Engage in respectful and professional practices
- Contribute regionally and globally

10 SITE ANALYSIS

This section describes the existing site conditions that will influence the development of land use, mobility and public realm directions in the Abbotsford Campus Master Plan.

Key Findings: There are opportunities relating to topography and views and the enhancement of existing open spaces and university facilities on campus. The greatest opportunity for integrating the campus with the community exists within the northern portion of the campus lands adjacent to King Road.



10.1 Physical Conditions

10.1.1 Topography, Soil, Aspect + Views

The campus is bounded by King Road to the North, McKenzie Road to the east, Gillis Avenue to the South and College Drive to the west and is approximately 20 hectares in size.

The highest point on campus is immediately north of Building A, the lowest point is at the south east corner of the site at the stormwater pond creating a general gentle slope to the south east. There are areas of noticeable topography on campus:

- The transition in grade from the plaza between Buildings A and B to the sidewalk to the north west and to the lower plaza at Building B
- The treed berm between buildings G and A

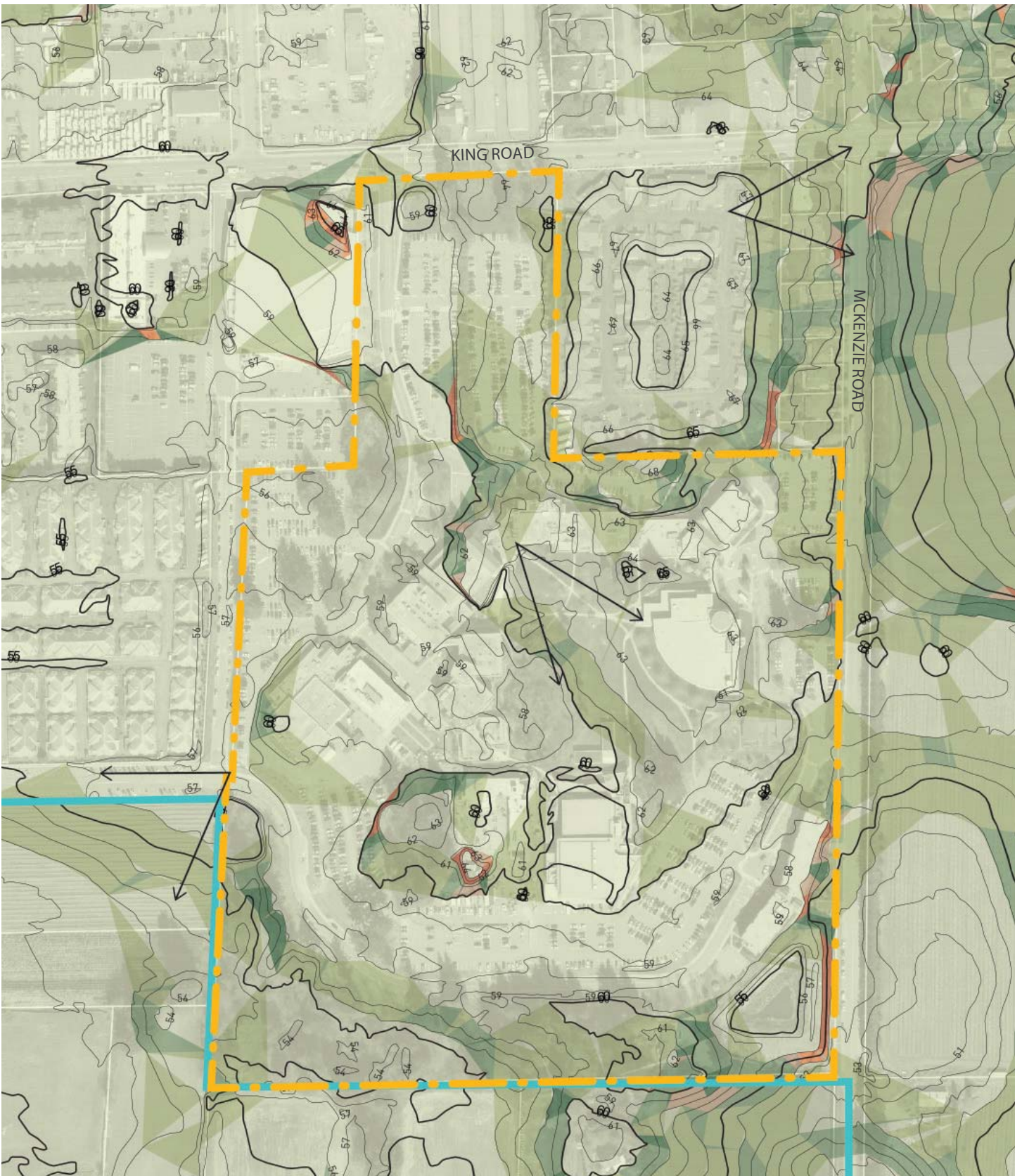
These grades in the open space will require consideration in the master planning process to ensure that all routes are accessible.

The site has good soil and is well draining, as evidenced by drainage structures that take advantage of opportunities for on site percolation of storm water.

Existing views to Mount Baker are highly valued but limited. The best views of Mount Baker are from the intersection of King Road and McKenzie Road, and from the central courtyard. The best view to working agricultural lands is at the intersection of Gillis Avenue and Campus Drive. These major views, especially the view to Mount Baker, could be used as an organizing principle for the campus.

Internal views from buildings to the interior central courtyard are pleasant and feature mainly open lawns and large trees.

The topography within the large parking area off of King Road provides an opportunity to explore 'tuck-under' parking options that could reduce the cost of structured parking in this key location.



LEGEND

Campus boundary	Contour (1m)	Slope (0-5%)	Slope (15-20%)	Slope (25-30%)
Views	Contour (5m)	Slope (5-10%)	Slope (20-25%)	Slope (30+%)
Urban Development Boundary		Slope (10-15%)		

1:3,000

Figure 30 - Physical Conditions: topography and views

10.2 Open Space

10.2.1 Waterbodies

Waterbodies on campus are a series of surface storm water drainage features:

- Armoured ditches at the south edge of campus (Gillis Road)
- Large pond features at the intersection of King Road and College Drive, the south end of College Drive and a dry Detention pond at the SE corner of the site
- Fen at the east side of Building D

The large fen (storm water feature) is a significant landscape feature and celebrates the site's hydrology. This, together with ponds and swales are evidence of the University's commitment to green infrastructure.

10.2.2 Agricultural Lands

The University has programs in Agriculture and an Agricultural Centre of Excellence at its Chilliwack campus. The university is interested in potentially expanding its agricultural programs to the Abbotsford campus. Creating visual connections to adjacent working fields would be a powerful way to connect the campus with its community and context. Bringing agricultural landscape typologies onto the campus would be a way to showcase teaching and learning while respecting historical land uses.

10.2.3 Mature Trees

Campus open spaces are mainly characterized by manicured lawn punctuated by trees. The campus enjoys a valuable collection of mature trees of both native and ornamental species. Approximately 31% of site (6.3 hectares) is covered by tree canopy. For comparison the city of Vancouver has only 18% canopy cover. These large, healthy, mature trees create scale and character and are a defining part of the existing open space.

The campus landscape also accommodates patches of mature native conifers with associated understory planting. Existing mature stands of trees with underbrush help create a unique open space atmosphere for the campus, and speak to its location at the edge of the city.

The Research/Woodlot contains numerous mature trees and is protected from development by a covenant.

10.2.4 Outdoor Gathering Places

Social activities and gathering places are accommodated in large lawns, and outdoor terraces associated with Buildings A, B, and D. An additional plaza place is located at the main entrance to Abbotsford Centre.

The campus would benefit from stronger entrance experiences, imaging of districts, and well-placed landmarks to help make it a memorable place. Outdoor gathering places strategically located at activity nodes and connected to adjacent indoor social spaces could be an integral part of this strategy, in addition to providing a canvas for the celebration of arts and culture.

As this is a university landscape, there is an opportunity to explore the use of the landscape as a teaching tool, through integrated technology and displays of student work and research.

10.2.5 Major Pedestrian Circulation

Pedestrian circulation is handled by concrete sidewalks adjacent to roads, parking lots and in the interior courtyard of the campus.

Campus pedestrian routes are connected to UDistrict by sidewalks. The larger, District pedestrian network lacks greenways and dedicated bike routes.


10.2.6 Community Interface

At edges – University Way and Gillis Avenue - the campus is largely ringed by surface parking lots.

Adjacent ALR lands to east and south are separated from the campus with shelter belts of mature trees.



LEGEND

- | | | | |
|---|--|--|---|
|  Campus boundary |  Waterbody |  Major vegetated area |  Potential pedestrian connection |
|  ALR lands |  Outdoor activity |  Sidewalk |  Potential green connection |
|  Urban Development Boundary | |  Walkway | |

1:3,000

Figure 31 - Existing Open Space Diagram

10.3 Existing Facilities

10.3.1 Common Spaces

The Library, Cafeteria, the Student Union Building (SUB) and the Canoe (the campus pub located within the SUB) are important common spaces for students, faculty and staff to gather on campus. All three of these spaces are located around the central green and have the potential to enliven the campus core and create a vibrant central gathering space. The relationship between the Cafeteria, the Canoe and the central green could be strengthened with stronger physical connections between these three spaces. The SUB is blocked from the central green space by temporary Faculty Offices that could be relocated in the future. The outdoor space associated with the Cafeteria is somewhat sunken and could have better visual and physical connections to the central green.

These spaces remain important to developing a vibrant public and private realm on campus.

10.3.2 Instruction

Building A, C and D have a large amount of classroom space as well as some administration functions.

In addition to instructional spaces, Building A currently contains Employee Services, Finance + Administration and Payroll.

Building C (in addition to instructional space), contains Business Administration and Visual Arts (The Cascade and the Student Union are both moving over to the newly completed Student Union Building).

Building D has classroom space, fashion studios and computer labs in addition to print services and shipping and receiving.

10.3.3 Student Support

Building B and the new Student Union Building (see 10.3.7) have a large number of student support services. Building B is home to Admissions and Records, the Cafeteria, Information Centre, Student Services and the Faculty Reception.

10.3.4 Administration

Administration uses are largely concentrated in Building A and B, and the Faculty Offices building to the south of the central green. A retrofit of U-House is being explored for other uses such as a conferencing space.

10.3.5 Recreation + Athletics

The Student Activity Centre (SAC) houses a regular-sized gymnasium, has seating for about 350 spectators, a fitness centre, and change rooms with showers. The gymnasium is scheduled for athletics, open gym times, intramurals, group fitness classes, and UFV special events.

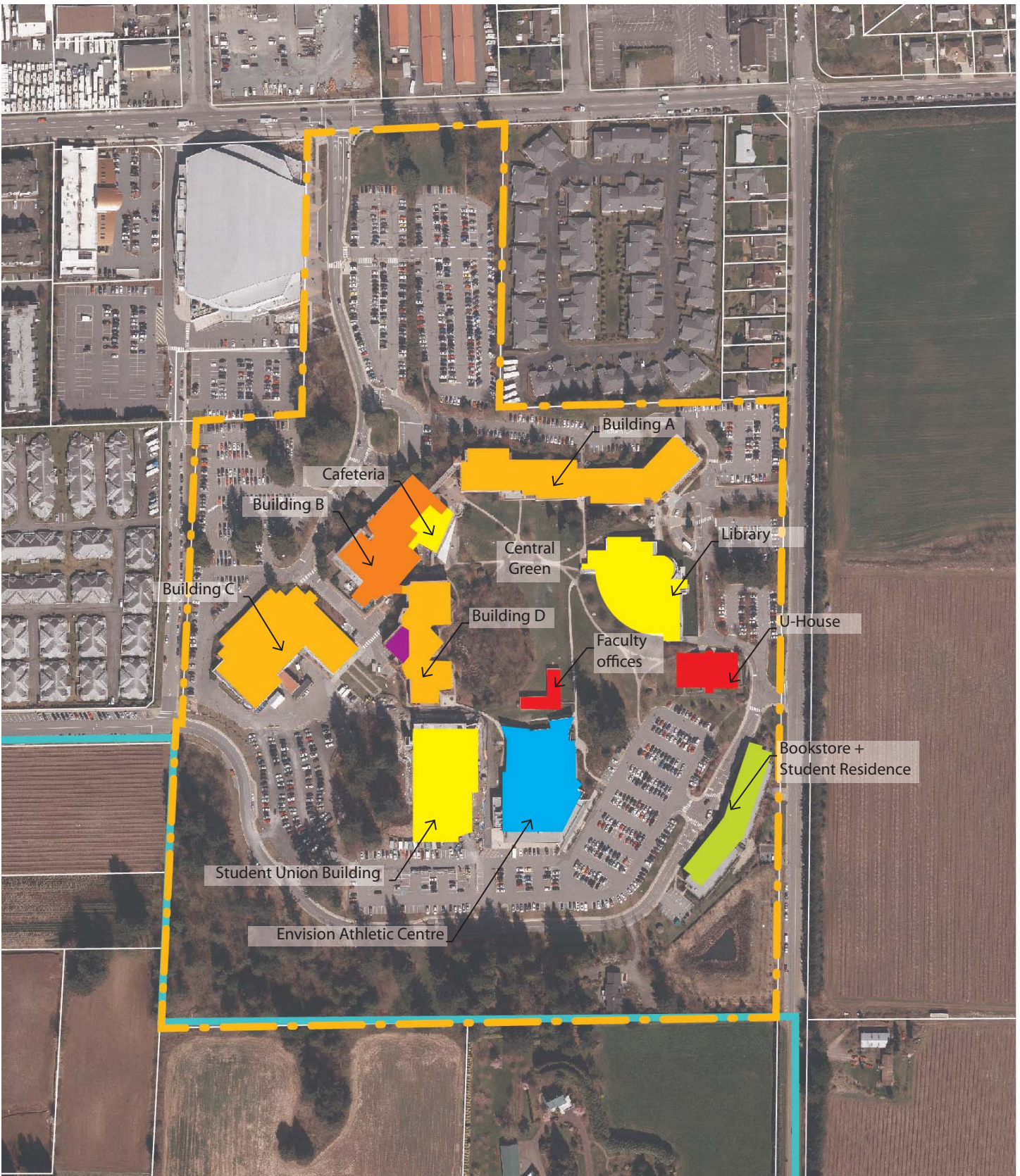
The Envision Athletic Centre houses a 21,500 square foot double court gymnasium and features retractable seating for up to 1,500 spectators. The size of the venue gives UFV the capacity to host major events and works well for organized multi-sport games.

10.3.6 Residences

UFV Baker House Residence is home to approximately 200 UFV students. Each suite has two separate bedrooms with a shared common area including a mini kitchen and bathroom. The UFV bookstore is in the ground floor of this building.

10.3.7 Student Union Building (SUB)

The new Student Union Building was recently opened in May 2015. It will house the Student Union, Student services (student life, career centre, etc.), the Cascade (the student newspaper), CIVL Radio (the student radio station), the Aboriginal Research Centre, clubs and association rooms, meeting rooms as well as several food services (coffee shop, restaurant, student lounge and pub). The building is designed to achieve LEED Gold certification.



LEGEND

- UDB
- Campus boundary
- Common Space
- Instruction
- Admin + Conferencing
- Shipping + Receiving
- Residences
- Student Support
- Recreation + Athletics

Figure 32 - Existing Facilities

10.4 Movement

District-wide movement networks were described in more detail in Section 6 above and indicated that University Way at King Road is the preferred access to the campus (55%), followed by McKenzie Road (35%) and finally Gillis Road (10%).

This section represents a more focused analysis of movement within the UFV campus with a focus on parking. A number of transportation challenges have been identified at this stage of the review process, and these are presented below:

Pedestrians

- Limited opportunities for students to live close to the campus (i.e. within 1,600-metres/20-min walk).
- University buildings are set back from the main pedestrian access at King Road and people have to walk through a ‘sea of parking’.

Cycling

- Bicycle storage facilities could be enhanced to higher standards at UFV.
- More use of the UFV parking should be made during weekends and summer months to generate activity and income.
- Increasing parking at UFV to accommodate growth will generate more vehicle movements and put added pressure on the street network.

Transit

- Much of the UFV student population and staff do not have a direct bus connection to the campus and perhaps this can be addressed with a stronger downtown shuttle or to other exchanges.

10.4.1 Transit

In addition to transit service provided by BC Transit, UFV students were proactive to introduce a shuttle service that runs between the Abbotsford and Chilliwack campuses, contributing to lower reliance on the need to drive. This service was started two years ago and originally moved 500 students per week. It has grown in popularity and currently accommodates 2,500 students per week.

10.4.2 Parking

Formal and informal parking locations for the university are located on and off campus as illustrated in Figure 34. The estimated number of parking spaces within these surveyed areas is 2243.

Parking Location	Parking Spaces	Comments
C	125	Employee Permit
D	250	Student
E	407	Student
F	97	Student
G	155	Student / Employee Permit
H	429	Student
I	150	Student
UFV Sub-Total	1,613	
A	59	Phoenix Restaurant
B	213	Shared with arena
Gillis	239	Pay parking - shared with arena
McKenzie	84	Off-campus, on-street
King	35	Off-campus, on-street
TOTAL	2243	

Figure 33 - Total parking supply on or near UFV campus

A breakdown of the supply is shown in Figure 33 highlighting that around 452 spaces are shared with the arena (given its parking demands are generally evening and weekends). Parking location ‘H’ at the north end (King Road) and Location ‘E’ at the south end are the two largest parking blocks, accommodating close to 45% of the supply.

Parking demand at UFV is summarized in Figure 35 and 36 (survey April 2015) and it indicates there is sufficient capacity to accommodate current demands although this could be higher in the first semester. It also confirms demand is fairly consistent over a weekday daytime period (10am to 3pm).



*based on surface area / length calculations

Figure 34 - Total parking supply on or near UFV campus

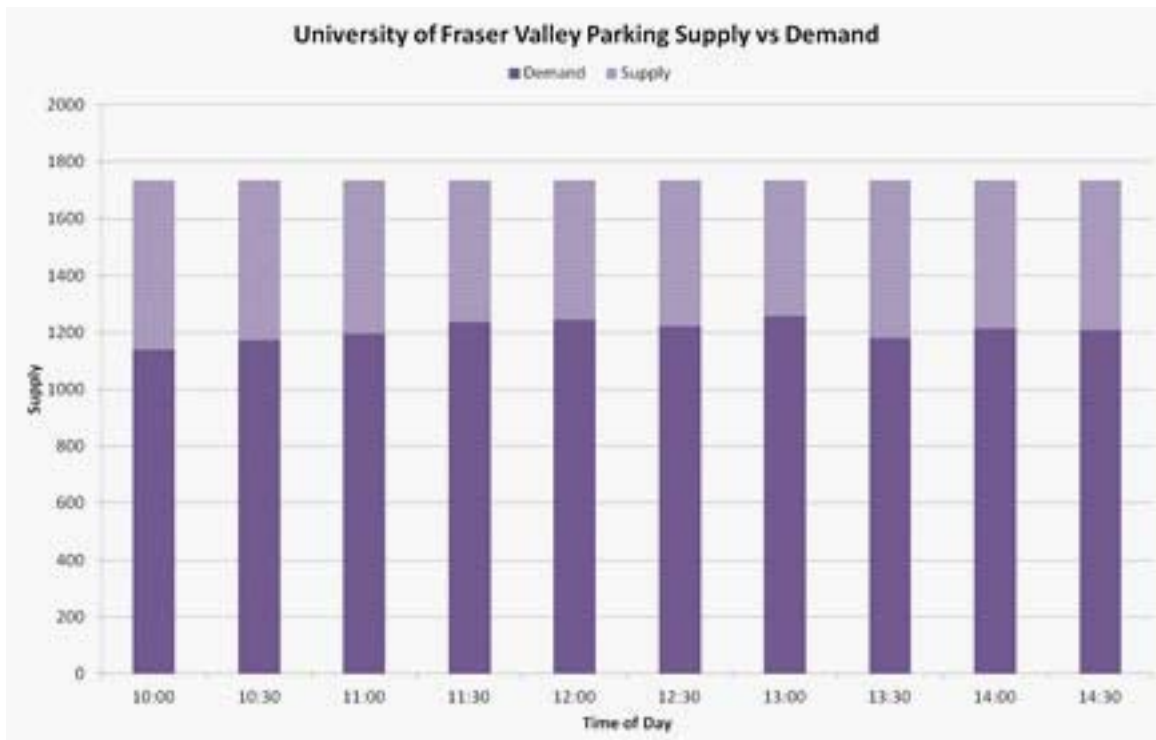


Figure 35 - UFV parking supply and demand for selected areas

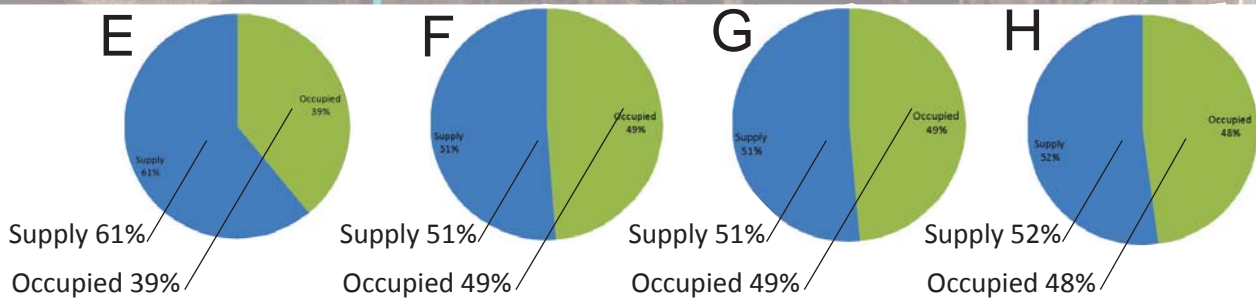
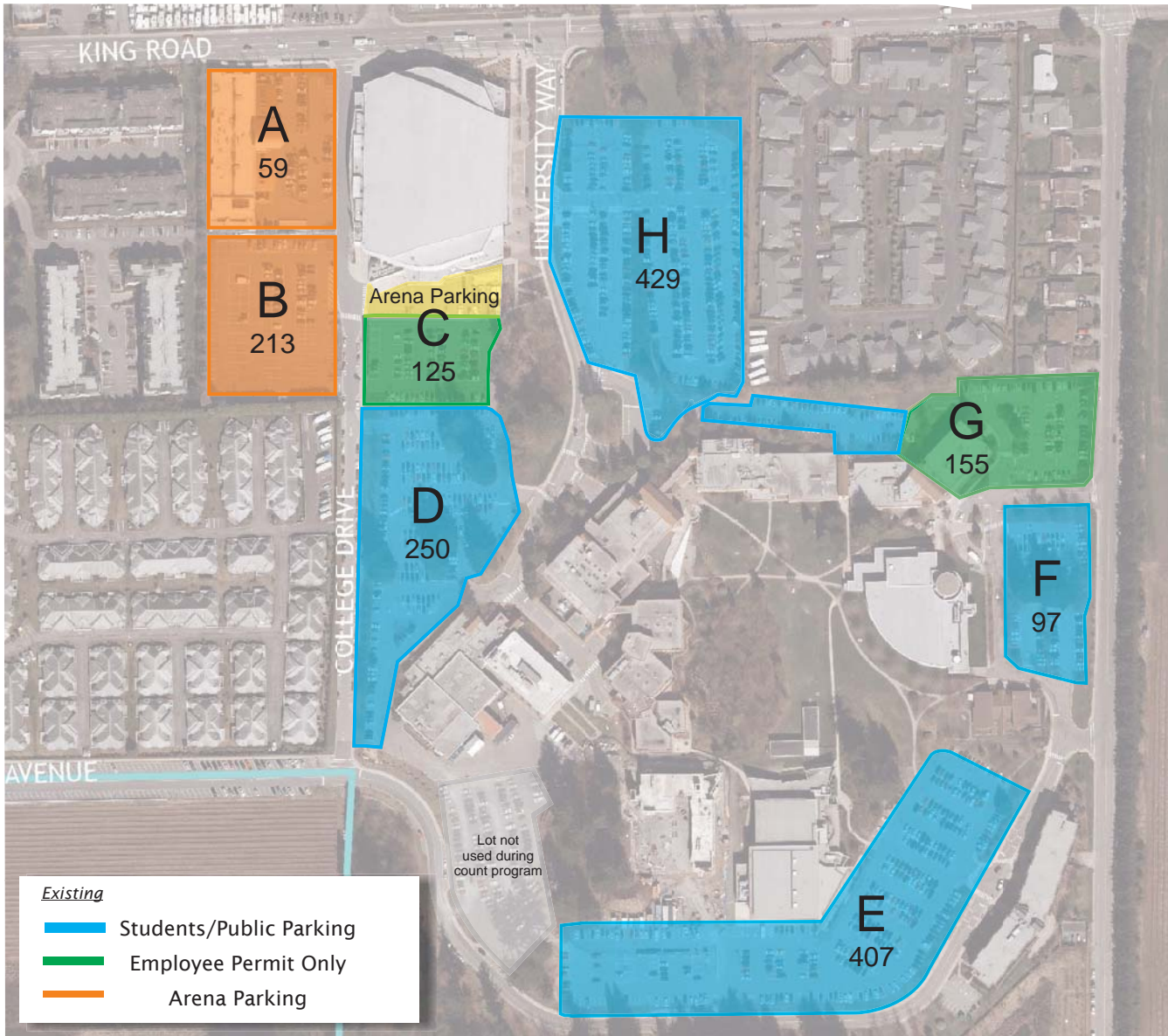
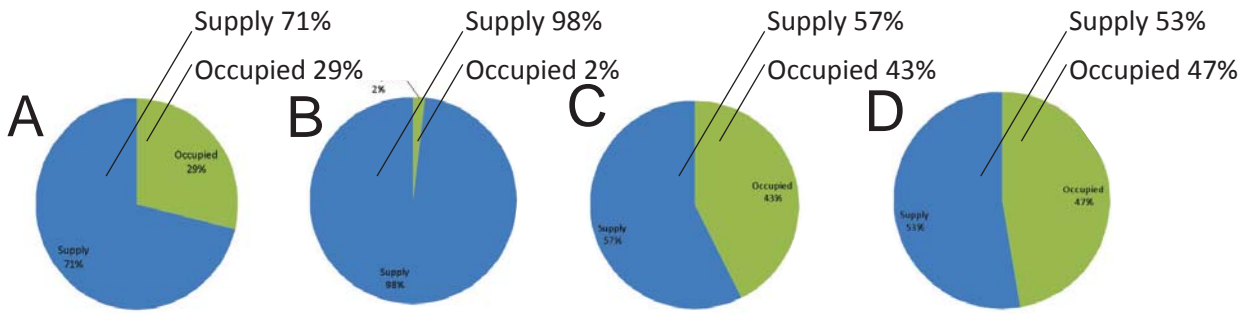


Figure 36 - UFV parking supply and demand for selected areas

10.5 Infrastructure

The UDistrict Neighbourhood includes the UFV Abbotsford Campus. As of 2011, there were approximately 5,500 students in attendance. By 2040, it is expected that approximately 1300 additional students will be attending UFV on the Abbotsford Campus. As with the UDistrict Neighbourhood population projections, growth assumptions for UFV will need to be compared to water, sewer and stormwater model projections. Model updates may be needed, depending on the selected scenarios, to inform future system upgrade needs and potential issues.

The current state of water, sewer and stormwater systems within the UFV Abbotsford Campus are described below, along with key issues that have been raised from previous work completed by the City. General information about the City's systems, and their relation to the UDistrict Neighbourhood, is described in Section 7.

10.5.1 Water Servicing

UFV's water system includes 2.1 km of water mains and 17 hydrants which connect to the larger City of Abbotsford distribution system. The UFV Abbotsford Campus includes a single looped watermain system with three feeds from the City. One enters the Campus from College Drive to the west. Two feeds come off of McKenzie Road at the north east corner and the south east corner of the Campus. There are also some fire hydrants adjacent to the parking lots at the north end of the Campus that are fed off of King Road, but they do not tie into the water distribution loop that provides potable water and fire protection to the main Campus. The City has a design for the installation of 3 meter chambers to service the main campus.

10.5.2 Sewer Servicing

UFV's sanitary sewer system includes 1.4 km of sanitary mains, 24 manholes and 1 lift station (private), which connect to the larger City of Abbotsford collection system and the regional treatment plant.

The lift station, owned by UFV, is on the east side of campus and pumps into a gravity sewer draining north to Riverside Drive. The campus has a network of private sewers and one pump station, which feeds into the municipal sewer at the King Pump Station (See figure 27).

10.5.3 Stormwater Servicing

UFV's stormwater management system includes 2.3 km of storm mains and 60 manholes which connect to the larger City of Abbotsford collection system. There are four detention ponds and one underground detention tank. The drainage from the site drains in three different directions. The western area, which includes two of the detention ponds, drains via a storm sewer to the west along Gillis Avenue and then south along McCallum Road, discharging into Marshall Creek. The southern and eastern area, which includes one detention pond and the detention tank, drains via a storm sewer to the south along McKenzie Road and then to the east along the unconstructed portion of McConnell Road, discharging into Marshall Creek near Riverside Road. The northern area, which includes the last detention pond, drains via a storm sewer to the west along King Road, then north along Salton Road, and then east along Highway 1 into a north tributary of Marshall Creek.

Similar to the rest of the UDistrict Neighbourhood, soils within the UFV consist of gravel/ sand and till.

11 TRENDS IN POST SECONDARY EDUCATION

With a continually changing economic, socio demographic and environmental climate, 21st Century institutions of higher learning must evolve and respond to a continually unpredictable future. Strengthening and sustaining resources, community, and the environment, institutions must optimize their greatest assets, accomplish academic goals, and thrive in teaching, learning, research, and community engagement. The following describes some of the latest trends in higher education in the context of issues discussed for UFV that should help to inform the UFV Abbotsford Campus Master Plan.

Changing Demographics

- Population growth
- Wider range of students
- More traditional Students (enrollment directly after high school) for community colleges

Enrollment trends point to increasing diversity and growth in all student types. At the same time a growing number of students are returning to college as adult learners. “By 2019, the percentage of those over 25 is expected to increase by more than 20 percent,” while an increasing number of 18-24 year olds are attending 2-year and 4-year institutions¹. While the above trends are specific to the U.S., Canadian postsecondary enrollment has also experienced growth in recent years and increased diversity. Institutions faced with such growth and varying student needs have embraced the call for a range of approaches to teaching and support including addressing preparation gaps, increased access to admissions and college counselors, greater efficiency in the use of space, and flexibility to support a range of pedagogies.

Evolving Ways of Learning

- Active engagement
 1. Group work
 2. Hands on
 3. Outside the classroom
- More SF/Student

Recent advances in brain science and learning research have revealed insights into how people learn and pointed to the many ways to students assimilate content. The ‘digital-native’ generation in particular has developed unique modes of assimilating and comprehending information. The design of learning spaces has evolved to embrace these new learning modes. A full range of

learning space-types can be supported with environments that range from traditional classrooms to active, problem-based spaces, to adaptive learning environments that flex and flux. This range must also support use of the latest technology for hybrid curricula, instant feedback, and immersive simulation environments. The best approaches have offered strength in flexibility for future advancements, and to support current and evolving understanding of how best to accomplish learning intentions and outcomes. This typically translates to increased area per student with the ability to support active and problem-based spaces learning, along with flexibility.

Doing More with Less

- Reduced public funding
- Over-utilized space
- Peak period expansion

Faced with reduced funding and pressures to lower the overall cost of education, both public and private institutions are encountering a future of having to do more with less. The combination of increased financial pressures and an expanded understanding of student needs requires careful study of the physical spaces to ensure the best use of dollars for the most effective outcome.

Adaptive re-use is one of the most effective strategies when opportunities are appropriately identified. The repurposing of an existing building can also support a university’s sustainability goals and reduce capital costs. Existing buildings on many campuses have been rejuvenated by integrating modern technology, and repurposed to include more efficient and flexible use of space. Informed strategic decisions can help to provide solutions that anticipate the future in a flexible and adaptable way that reflects judicious use of resources.

Use of Technology

- Lectures on-line
- Technology in the classroom
- Remote collaboration
- Technology as enabler, not the focus
- Importance of campus in our hi-tech world

The use of technology is only expanding opportunities for access to on-line lectures so that class time can be focused on discussion, expanded immersion opportunities in the classroom, and collaboration across other faculty and students in remote locations. This requires spaces

¹http://nces.ed.gov/programs/digest/d13/tables/dt13_302.60.asp

that support changing equipment and evolving curricula adapted to transformational and technologically-supported learning approaches. In every case, it is most important the focus remains on education outcome.

At the same time, with greater opportunities for on-line learning, a physical, place-based campus becomes critical to framing the experience of students, faculty, and staff. Institutions see that the campus must be a place where the community thrives by being there, feels at home, and experiences meaningful connections with the institution that provide a seamless and integrated experience around learning and discovery. The physical campus, both buildings and open space must be the cornerstone to technologically support learning opportunities giving form to the values, history, and traditions of the institution and providing the setting for the holistic student experience.

Blurred Boundaries

- Across disciplines
- With community
- With industry

Teaching, learning, research and community engagement are at the heart of most academic institutions. The importance of interdisciplinary work across disciplines for learning and research, and community and industry engagement are only increasing and driving the need to bridge traditional barriers. Developing deliberate ways to collaborate between disciplines and constituents is being called for at every institution with which we work. The campus and its edges are where all can come together. This emphasizes the importance of formally coming together in traditional learning environments, and informally for “casual collisions” outside of the classroom. Often collaboration encompasses external partnerships with businesses, agencies, and associations to expand learning, research, and collaboration opportunities. The trend toward public/private development is an extension of these partnerships and has helped institutions meet facility needs that otherwise would not be possible.

Blurring traditional program and physical boundaries both within the campus and at the edges strengthens the co-curricular student experience by bridging the educational spectrum classroom to informal learning spaces to community and industry engagement.

Flexibility / Nimbleness

- Evolving understanding of how we learn
- Evolving disciplines
- Evolving industry / community needs
- Evolving technology

Among all the trends mentioned above, flexibility in the physical environment and the long term plan is the most important message. The planning and design strategy must support a fluid environment where pedagogy, technology, and new ideas are continually evolving and blur traditional spatial and departmental boundaries and community and industry relationships. Flexible and adaptable environments – both formal (inside the classroom) and informal (outside the classroom) – must support the dynamic nature of teaching, learning, and discovery. Spaces must intentionally foster collaboration, serendipitous encounters, teamwork, and active learning.

12 UFV ABBOTSFORD CAMPUS NEEDS ASSESSMENT

12.1 Introduction

The following section is a high level space needs assessment of University of the Fraser Valley's academic and administrative functions. The outcome is a high level master space program that describes long range space requirement estimates by function and space type. The long range planning horizon is 25 years to 2040 with an interim planning horizon of 15 years to 2030. The space needs analysis involved the collection and analysis of current student enrolment and existing teaching and support spaces on the Abbotsford campus. The projected future requirements were developed for the Abbotsford campus only.

The following tasks were undertaken in the development of the Needs Assessment:

- Existing space database was developed from floor plans and room data obtained from UFV's Facilities and Project Management department and was used to compare existing to projected future space requirements.
- Fraser Valley College Region population projections prepared by BC Stats were used to determine growth in enrolment, and faculty and staff.
- Future space needs calculations were prepared based on BC University Space Standards, and on the consultant's post-secondary experience.
- Future space needs were developed based on future enrolment, faculty and staffing projections and presented as a summarized master program.

12.2 General Assumptions

The following guiding principles, which are critical in assessing UFV's Abbotsford campus space needs:

- Flexible learning
- University/Community intersection
- Technology enabled
- Learning happens everywhere

The primary focus of this analysis was on the quantity of space by type and use. A physical assessment was not conducted during the study.

- The space needs calculations used the BC Universities Space Manual dated February 2003. The space standards were used as a guideline along with the expertise of Perkins+Will consultants.

- The long term planning horizon for this analysis is over 25 years to the year 2040 with one interim horizon of 15 years to the year 2030.
- The population increases used to project both enrolment and faculty/staff numbers are 8.0% for the first 15 years and 11.8% over the next 15 years to 2040. Population growth rates were derived from BC Stats for the Fraser Valley College Region and used total population numbers for ages 15-19 year olds up to 25-29 year olds. These age ranges are representative of the student population. No additional growth factors were applied.
- Enrolment is based on Student Full Time Equivalents (FTEs). This value includes both full time and part students enrolled at the Abbotsford campus only.
- For laboratory and studio space calculations, it was assumed an average of 15 weekly student laboratory contact hours.
- Past enrolment growth trends were of limited value in projecting future enrolment as the growth rate was flat over the past six years due to fact the University is at full or over capacity.
- Faculty office space needs were allocated based on a more collaborative workplace model that incorporates both enclosed and open office spaces, collaborative work space/meeting rooms, and resource rooms within each faculty.
- Research Laboratory space requirements were based on the estimated number of faculty who would be engaged in research. It was assumed 25 percent of faculty will be involved in some type of research activities that require specialized or dedicated research space. would be engaged in research. It was assumed 25 percent of faculty will be involved in some type of research activities that require specialized or dedicated research space.

12.3 Current State

University of the Fraser Valley'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

The following table shows total student FTEs at the Abbotsford Campus over the past six years.

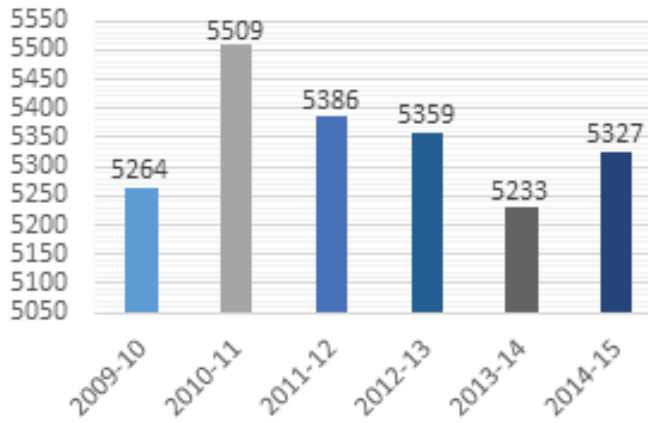


Figure 37 - Abbotsford Campus Student Enrollment (in FTEs) for the past six years

12.3.1 Current Faculty and 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. The estimate assumes that 82% of total UFV faculty and staff are based at the Abbotsford campus.

12.3.2 Existing Facilities

FIS room data and drawings for the buildings on the campus were provided by Facilities and Project Management department. The use and/or assignment of rooms was identified with the help from Facilities and Project management staff. A database was developed of all rooms, assigning space categories based on the BC University Space Guidelines. Only net assignable areas are included in the analysis, which is defined as the useable area of buildings and does not include circulation space such as corridors, mechanical area, building walls, etc.

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

Code	Space Category	Current Space (m ²)	% of Total
C1	Classroom Facilities	3,991	8.3%
C2	Laboratory Undergraduate	5,180	10.8%
C3	Research Laboratory Space	362	0.8%
C4	Academic Departmental Offices + Related Space	2,792	5.8%
C5	Library Facilities + Study Space	1,991	4.2%
C6	Athletic / Recreation Space	2557	5.3%
C7	Food Service	906	1.9%
C8	Bookstore + Merchandising	699	1.5%
C9	Plant Maintenance	285	0.6%
C10	Administrative Office + Related Space	6,611	13.8%
C12	Central Services	379	0.8%
C13	Health Services Facilities	31	0.1%
C14	Common Use + Student Activity Space	2,415	5.0%
C15	Assembly + Exhibition Facilities	163	0.3%
C16	Non-Assignable (Circulation, Plant, Washroom, etc.)	15,010	31.3%
C17	Residential Space	4,517	9.4%
Grand Total		47,890	100.0%

12.4 Future State

12.4.1 Key Directions

The future state master program is informed by University of the Fraser Valley's Strategic and Education Plans and through discussions with Vision 2025 committee members. Two of the key drivers for development of the University is the opportunity to more fully integrate into the surrounding community through the combined UDistrict planning effort and the need to increase capacity to meet current and future demand.

Campus/Community Intersection:

The following lists opportunities to increase ties with the greater community through amenities that can link both campus and surrounding neighbourhoods:

- 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.
- Health and Wellness – linking bike, walking trails and active park space on campus with surrounding community trails, preserving natural landscape as much as possible. A Health and Wellness centre perhaps staffed by nursing students for students, and community use.
- Daycare centre run by outside operator for use by University staff, students and families in the surrounding community.
- Conference Centre/Performance Space – can be used by both University for lectures, theatre program, and continuing education programs, and by community for conferences. The Conference Centre would have breakout rooms, lounge space and food services
- Food Services – retail food services should be provided across the campus and in particular where campus and community intersect.

Learning Environment:

Generally, the Abbotsford campus will continue to provide the current mix of programs. There is an emphasis on Liberal Arts, Science, and Professional Studies, and Access and Open Studies programs. The learning environment and the delivery of classes will change with evolving 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 on-line. 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, digitally equipped spaces for student and faculty drop-in.

Class sizes are not going to increase significantly in the future. A mix of smaller classrooms with a small number of larger classrooms that are technology enabled will be required. All classrooms must be similarly equipped with movable furnishings 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.

The Library will continue the metamorphoses into a Learning Commons. Students will utilize the library for both research including on-line, and for study space. Librarians will increasingly play a role in assisting students with locating information, doing research, and transferring knowledge.

Student population:

Growth in student population is based on overall population growth of the region over 15 and 25 year planning horizons. The exception is an additional increase in International Students, which stands currently at 6.5 percent of the student population. UFV plans on attracting more International Students in the future, increasing the share of international students of the total student population. International 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 student services such as a larger bookstore, variety of food service options, increased student services such as advising, recreational facilities, Health and Wellness Centre and increased “crush” 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. 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 development of new technologies. 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 Abbotsford campus with its adjacency to the ALR lands, is poised to address these issues. 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.

12.4.2 Future Faculty and Staff

Faculty and staff are projected to increase from current 822 to 917 FTEs by 2030 and 1191 FTEs by 2040 to support the numbers of students attending Abbotsford campus in the future. The total includes excluded/management staff, faculty and non-faculty employees. Administrative staff at the Abbotsford campus will continue to provide administrative functions for all other campuses from this location, which will require 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 be the basis to forming the 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.

12.4.3 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 the total number of students would likely reside on campus. The housing is planned as dormitory style housing.

12.4.4 Future Enrolment Projections

This more detailed analysis supersedes the student projections outlined in the Urbanics 2011 market report. Figure 38 summaries the projected future enrollment by faculty/University for the two planning horizons, 2030 and 2040 for the Abbotsford campus only. Increases in enrollment are based on the assumptions stated above. The number of student FTEs are estimated to be 5892 by 2030 and 6865 by 2040. These projections include International Students (Note the UDistrict student projections are based on headcount not FTE, hence the differences in numbers of students).

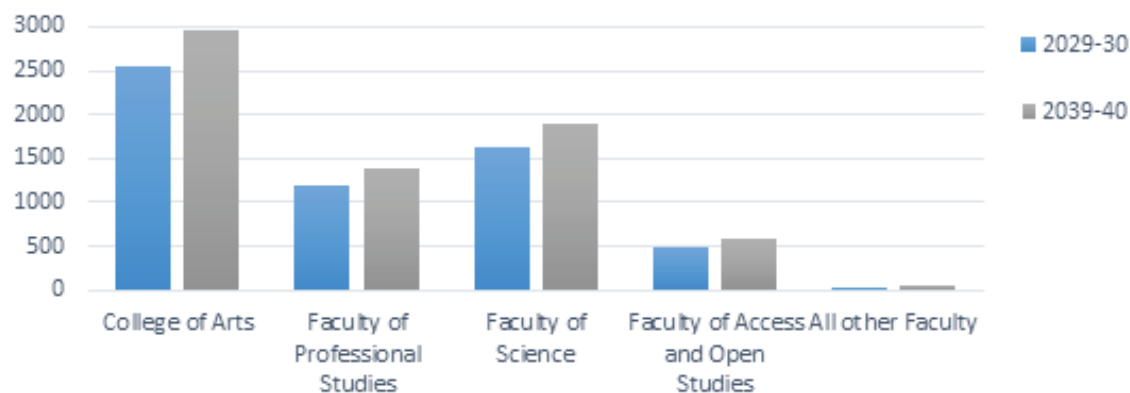


Figure 38 - Future projected enrollment

12.4.5 Master Space Program

The outcome of the space needs analysis is a master program for the University of the Fraser Valley’s Abbotsford Campus, which is summarized in the following table. The project space requirements are based on the stated assumptions and specifics outlined above, and provide for the university’s future needs. The table is organized by component and shows existing and projected space requirements by planning horizon year.

The methodology used to project space requirements was based on the BC Universities Space Standards. Using either projected Student FTEs or Faculty FTEs, Laboratory Weekly Student Contact Hours, and Library Collection numbers as inputs, space requirements were calculated. 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 grow from 47,890 m² to 111,096 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	6669	6950	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	8637	11222	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 increased on-line course development
	Office and support				
	Data Centre				
Subtotal, Academic Spaces		13,034	24,984	29,500	
2	Administration	3,204	6,600	7,800	Administration includes all non-academic office and support spaces and meeting spaces across the campus.
	Administration Offices				
	Office Support Spaces				
Subtotal, Administration		3,204	6,600	7,800	

Figure 39 - Master Space Program

Program Components		Existing Space	Projected Space Total 2030	Projected Space Total 2040	Comments
		NSM	NSM	NSM	
Component Space Allocations					
3	Student Support Services and Amenities				
	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.
	Cafeteria				
	Restaurant				
	Retail Food Services				
	Student Services	3,184	6,425	7,840	Student Services are calculated based on FTEs of students.
	Student Union				
	Student Life				
	Study Space				
	Advising Services				
	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, Student Support Services and Amenities	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
	Library Collections				
	Study Space				
	Library Offices and support spaces				
	Subtotal, Learning Commons	2,051	3,500	4,500	
5	Facility Operations	707	1,000	1,250	Facility operations include plant 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	14,141	16,476	Campus Housing is based on 12% of total student population living on campus. This will predominately house International Students
	Dormitories				
	Subtotal, Campus Housing	4,544	14,141	16,476	

Figure 40 - Master Space Program (cont'd)

Program Components		Existing Space	Projected Space Total 2030	Projected Space Total 2040	Comments
		NSM	NSM	NSM	
Component Space Allocations					
7	Research	924	1,602	2,081	Research space requirements are based on the following assumptions: 25 % of faculty will partake in research in the future.
	Research Laboratories				
	Support Spaces				
	Subtotal, Research	924	1,602	2,081	
8	Specialty Facilities				
	Digital Hub	0	1800	1800	Space includes offices, workrooms, data Centre, meetings rooms, lobby and other support areas
	Food Security Centre		500	500	Research labs, classroom, but excludes green houses and other outside areas associated with the Centre
	Conference Centre/Performance Space/Gallery	78	1550	1550	Includes conference hall/performance space with stage, and backstage areas, seating for 200, bistro, gallery space, 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	8,855	9,175	
9	Vacant Space (Pending Renovations)	415	-	-	
	Total, Master Program Areas	33,050	69,082	80,797	
	Component Gross Areas	-	86,352	100,996	Includes factor for departmental circulaiton, interior wall thicknesses, and mechanical requirements
	Sports Field Allowance (sm)	-	10,800	10,800	Exterior space (excluded from total area)
	Building Gross Areas	47,890	94,987	111,096	Includes factor for building circulations, exterior wall thicknesses, etc.

Figure 41 - Master Space Program (cont'd)

13 PRECEDENTS

The precedents in this section illustrate aspirational elements of contemporary campus master plans. Lessons learned from other projects can help to inform the final UFV Abbotsford Campus Master Plan.

Key Findings: Projects in similar contexts have been able to integrate the natural environment, integrate with agricultural uses, connect with the surrounding community and develop innovative facility models that offer a rich mix of uses and a vibrant public realm for students, faculty and staff.



Campus master plan creates axial relationship with terminus at significant mountain view beyond



Campus carved from existing forest



University of British Columbia

Vancouver, British Columbia

Master Plan - Sharp and Thompson Architects

Project Description

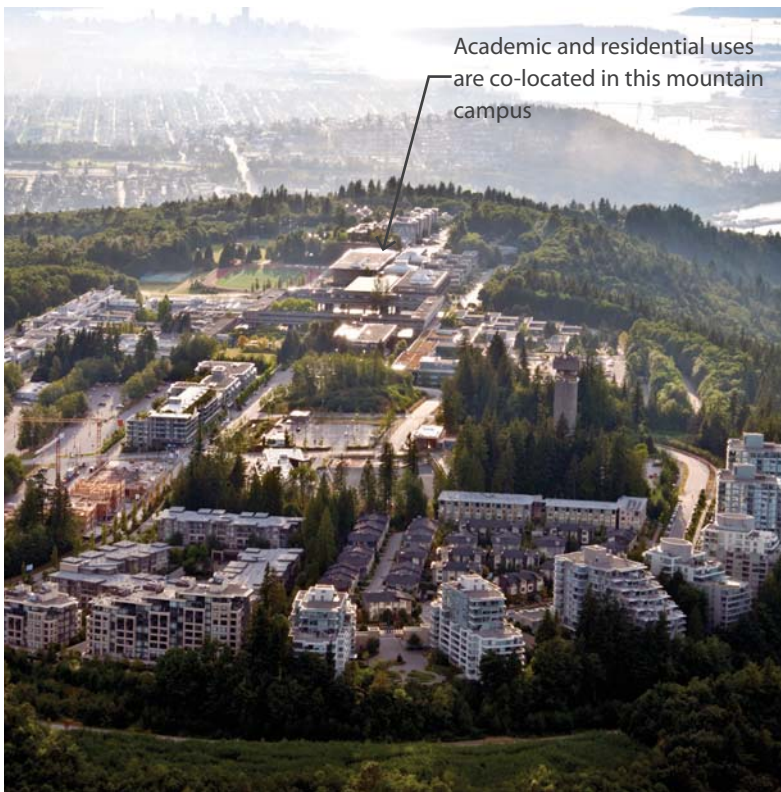
This 763 hectare campus is surrounded by undeveloped lands. Large stands of mature trees are found on campus in several key locations. Residential neighbourhoods are integrated into the fabric of the campus complete with schools, parks, plazas and retail centres.

The Campus Plans calls for the open space to accommodate research and pilot projects and use of the campus as a living laboratory.

A 24 hectare land reserve at the south end of campus is home to the UBC Farm which is used by students for research and teaching. Several UBC degree programs include activities at the Farm as part of their course offerings. Social events are also hosted at the farm including a popular farmers' market, weddings and concerts.

Project Relevance

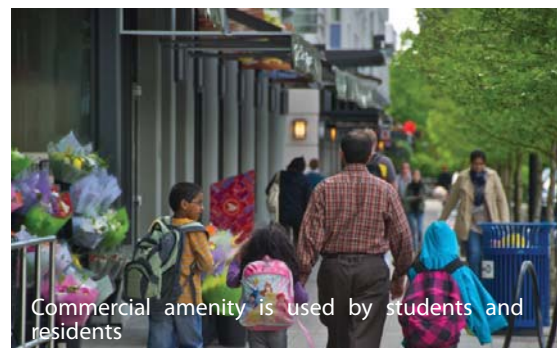
- **Views:** The campus capitalizes on its view to the north shore mountains and uses an axial view as its major organizational principle.
- **Nature:** Mature trees of native and ornamental species are retained where possible.
- **Agriculture:** Agricultural lands are intermingled with academic and residential uses creating a more dynamic and interesting campus.



Academic and residential uses are co-located in this mountain campus



Open space provides opportunities for mingling



Commercial amenity is used by students and residents

Simon Fraser UniverCity Public Realm, Town and Gown Square

Burnaby, British Columbia

Landscape Architects - PWL Partnership

Project Description

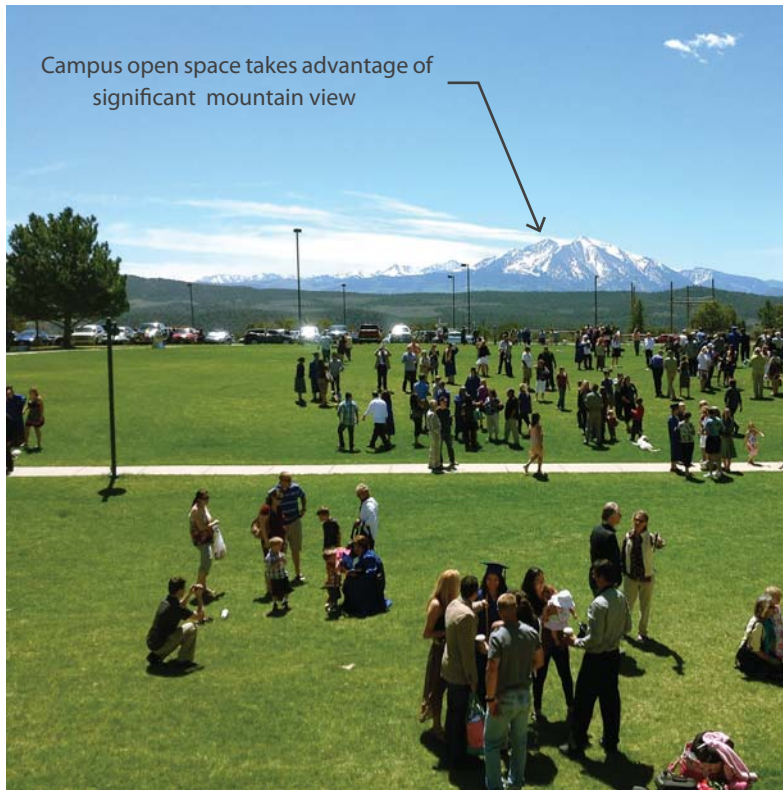
SFU's Burnaby campus is co-located with a residential neighbourhood at the top of Burnaby Mountain surrounded by natural forest.

In addition to providing its students a first class education, SFU provides an award-winning, dynamic campus. UniverCity is a complete community with transit, shopping, entertainment, parks and an elementary school readily available for residents. University High Street provides both residents and students with commercial amenities including restaurants, stores and a grocery market, creating opportunities for social interaction.

Town and Gown Square on campus provides a physical and social connection between the residential communities, the existing university campus, and the surrounding forest landscape. It is a venue for festivals, farmers markets, public performances, academic discourse, informal gatherings, and tours.

Project Relevance

- **Integration of campus and community:** Successful integration of residential and academic land uses with shared social spaces and retail amenity.
- **Biodiversity:** Mature trees have been retained to provide both ecological benefits and landscape character.



Campus open space takes advantage of significant mountain view



Sports field adjacent to undeveloped landscape



Teaching agriculture in the campus landscape

Colorado Mountain College

Glenwood Springs -Spring Valley - Edwards Campuses, Colorado
Master Plan - DPA Architectural Group

Project Description

Colorado Mountain College is an associate degree granting, multi-campus organization with an emphasis on career, technical and outdoor recreation programs. Approximately 20,000 students take courses through the college annually on its 11 campuses and online.

Spring Valley Campus is located in a rural setting with terrific views to undeveloped land and mountains beyond. It is truly 'a campus in the country' and achieves this atmosphere in several ways.

Project Relevance

- **Views:** The campus is oriented to capture significant forest and mountain views.
- **Views:** Rather than screening offsite views, they are left unimpeded by built form or vegetation. This creates a sense of place by celebrating site context and regionality.
- **Gathering places:** Outdoor workshops teaching students how to grow food connect rural, agricultural character with the campus landscape.



Bates Technical College

Tacoma, Washington

Master Plan Update - Perkins + Will

Project Description

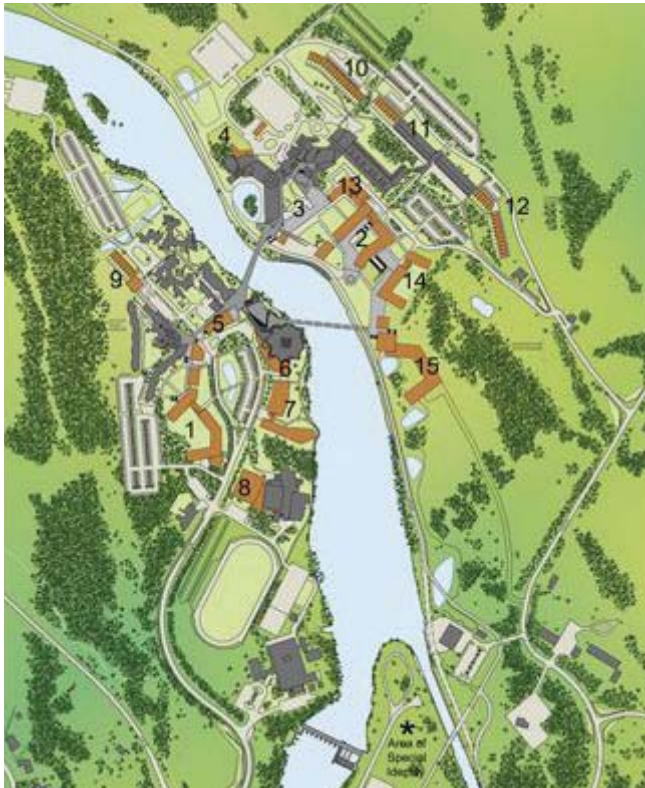
The master plan included a detailed study of future trends and growth for each of the college's programs in the context of site, facility and campus needs.

Interviews with college representatives were facilitated to learn current and future requirements while examining the site and building conditions of each campus. Ideal locations for each of the programs were identified in the context of all three campuses, along with strategies to maintain a consistent identity at each of the very different locations. Short- and long-range plans included identification of project priorities with phasing, capital funding requirements and the level of flexibility required to meet the college's continually evolving needs.

Four years later, the master plan was updated by documenting completed projects, the space requirements for new programs and an update to the 10-Year Capital Plan.

Project Relevance

- **Integration of campus and community:** Master plan to successfully integrate residential and academic land uses along with public space and retail
- **Planning for growth:** Long-term plan to ensure future needs of a growing, mid-sized post-secondary institution will be met
- **Accessibility:** The master plan ensures access to and within the campus, maximizing non-vehicular travel, emphasizing routes for all pedestrians, and promoting the design of environments to be usable by all people, to the greatest extent possible, without the need for special arrangements or adaptations.



Trent University

Peterborough, Ontario

Master Plan - Baird Sampson Neuert Architects

Project Description

Baird Sampson Neuert was commissioned by Trent University to undertake a number of projects including a Master Plan Update for the main campus (Symons Campus), renovations to the main library (Bata Library) and renovations to Champlain College, an architecturally significant complex of residence and academic facilities designed in the sixties by the noted Canadian architect Ron Thom.

Project Relevance

- **Building Re-use:** The master plan incorporates strategies for the renovation and re-use of existing buildings to accommodate current needs and future growth.
- **Community Connectivity:** The master plan aims to enhance gateways at major intersections leading to campus and create stronger connections between the campus and the City of Peterborough.
- **Smart Growth:** The plan anticipates alternative development standards and works to create a liveable and connected campus.



MIT Media Lab

Cambridge, Massachusetts

Maki and Associates

Project Description

The Media Lab has expanded into a new, six-floor structure with approximately 163,000 square feet of laboratory, office, and meeting space designed by the Tokyo-based architectural firm of Maki and Associates. Together with the existing Wiesner Building (designed by MIT alumnus I. M. Pei), the complex will serve as a showplace for new concepts in design, communications systems, and collaborative research. The goal is to ignite a new energy and connectivity within the two-building complex, and then extend this energy beyond its walls — to the institutions sponsors and to the world at large.

The complex also houses the List Visual Arts Center, the School of Architecture + Planning's Program in Art, Culture and Technology, and MIT's Program in Comparative Media Studies.

source: <https://www.media.mit.edu/about/building>

Project Relevance

- **Multidisciplinary Environment:** Building programming focuses on collaboration and cross-pollination of ideas between disciplines and user groups.
- **Building Re-use:** The new building incorporates and existing campus facility within the redesign.

E. KEY FINDINGS/NEXT STEPS

14 ENGAGEMENT OUTCOMES

Stage 1 included public and stakeholder engagement events intended to raise awareness about the joint UDistrict planning process and gather information to inform concept options developed in Stage 2. The results of these events are summarized below.

14.1 Public Launch

WHAT WE DID IN STAGE 1

On April 8, 2014, the City of Abbotsford and the University of the Fraser Valley launched the UDistrict project. The purpose of the launch event was to raise awareness about the process and opportunities for involvement, communicate background research and work completed to date, and to gather information from participants to inform the concept options. The event was promoted by over 1,600 postcards, posters, numerous newspaper articles and advertisements, radio announcements, e-newsletters, and social media.

The April 8 launch event began with a media announcement, followed by two interactive booths – one on the UFV Campus Green and the other at the Abbotsford Centre. Approximately 180 people attended the events. The launch event was complemented by an online questionnaire, which ran from April 8 to April 22. The questionnaire received 60 responses.

WHAT WE HEARD IN STAGE 1

Both the interactive display boards and the online questionnaire asked participants to review information and provide feedback on A) Land Use, B) Green Network, C) Public Realm, and D) Mobility. In each theme, participants were asked to use a sticky dot to show their priorities among given opportunities, and then share why they felt that way using a sticky note. The questionnaire also asked the same questions.

Generally, the qualitative feedback showed a desire to see a walkable, mixed-use, and complete community in the UDistrict where residents, students, faculty, and staff can live, work, shop, and play. A strong sense of place was important to participants. Priorities for the future included adding grocery store, local retail, “third places” (cafes and other areas to study, relax, and socialize), and fitness and childcare facilities to the UDistrict. Respondents expressed a desire to make the UDistrict a walkable, transit-friendly place with better parking and a safer environment for people walking and on bikes. Preserving existing natural areas and agricultural land was also raised.

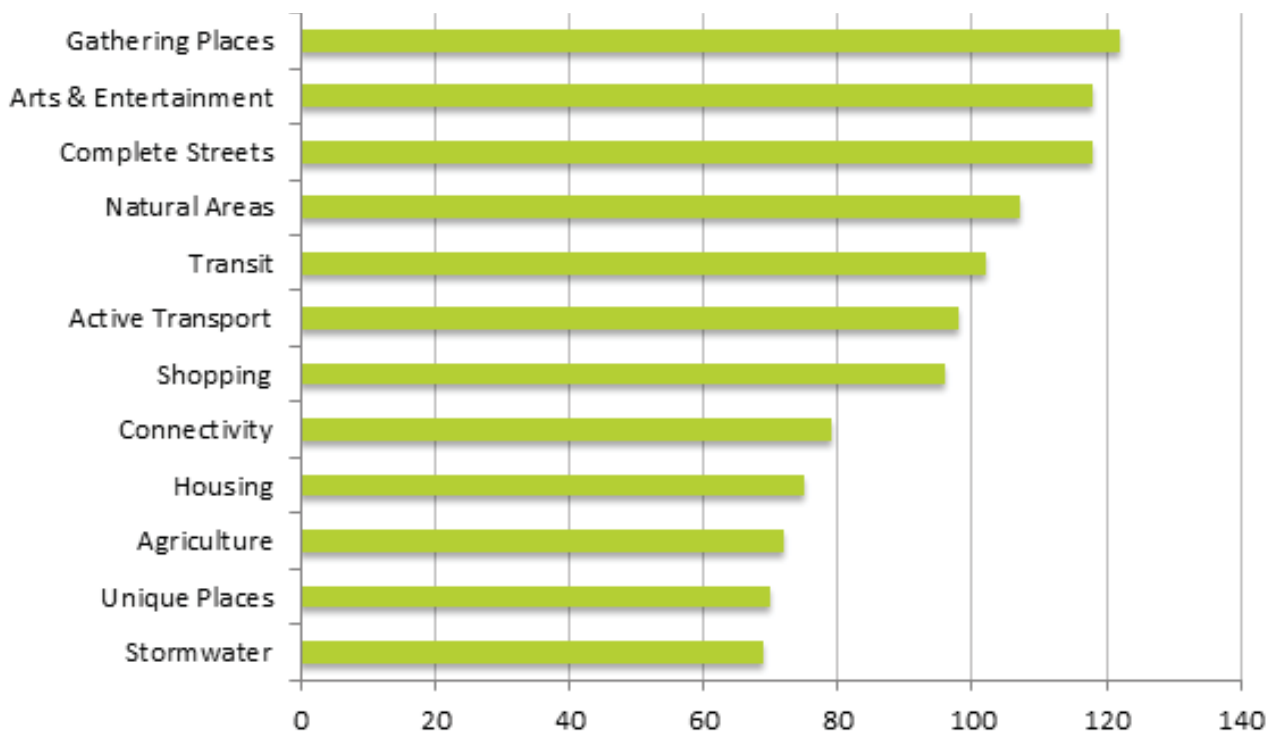


Figure 42 - Summary of feedback on priorities (number of responses)

15 DRAFT GUIDING PRINCIPLES

The following draft guiding principles have emerged out of the work completed in Stage 1. These ideas build off the work done in the UDistrict Vision as well as the detailed background analysis and preliminary public/stakeholder engagement. They are summarized below.



1. **Create a Compact, Transit-Oriented Neighbourhood:** Concentrate campus development to physically connect with the community. Focus new community development to support transit and retail and put residents and students close to daily needs.



2. **Bring the Community + Campus Together:** Invite the community onto the campus and create strong physical and programmatic linkages to the community. Support university life within the community by providing housing, services and amenities that create a vibrant university village supporting the campus.



3. **Support Neighbourhood Life:** Introduce a rich mix of uses, linked by pedestrian and cycling paths and organized in distinct precincts to heighten neighbourhood life and offer a diverse experience for residents, students, and visitors.



4. **Support Learning Everywhere:** Support flexible, engaging learning opportunities throughout the campus and the community including innovative teaching spaces and flexible common spaces.



5. **Integrate Agriculture and the Natural Environment:** Enhance existing agricultural and natural areas and more deeply integrate them into new and existing development.



6. **Demonstrate Innovation:** Look for new ways of demonstrating how community and campus can support each other in a creative, interactive environment and create meaningful partnerships between business, the community and academia.



7. **Manage Parking:** Allow for a balanced approach to parking that supports retail and a vibrant, pedestrian-oriented campus and community.

16 NEXT STEPS

This report: Stage 1: Background Report represents the completion of Stage 1. The anticipated timeline for Stage 2 is outlined below:

STAGE 2: CHOICES + DIRECTION (JUNE-DEC '15)

The purpose of Stage 2 is to develop land use scenarios and campus concepts, evaluate these concepts and identify a preferred concept for each plan. This stage includes two integrated workshops bracketing one public event.

Workshop #1 June 1st, 2015

To assist the project team in the development of integrated land use and campus concepts for the UDistrict Neighbourhood Plan and Abbotsford Campus Master Plan.

Public Event #2 October, 2015

To present the high level community + campus concepts and solicit feedback on a preferred concepts

Workshop #2 November, 2015

To assist the Consultant Team in identifying a Preferred Concept for both the Community and Campus

Presentation December, 2015

The project team will present the Draft Preferred Concepts to City Council and the UFV Board of Governors for permission to proceed with the preparation of the draft plan in Stage 3.

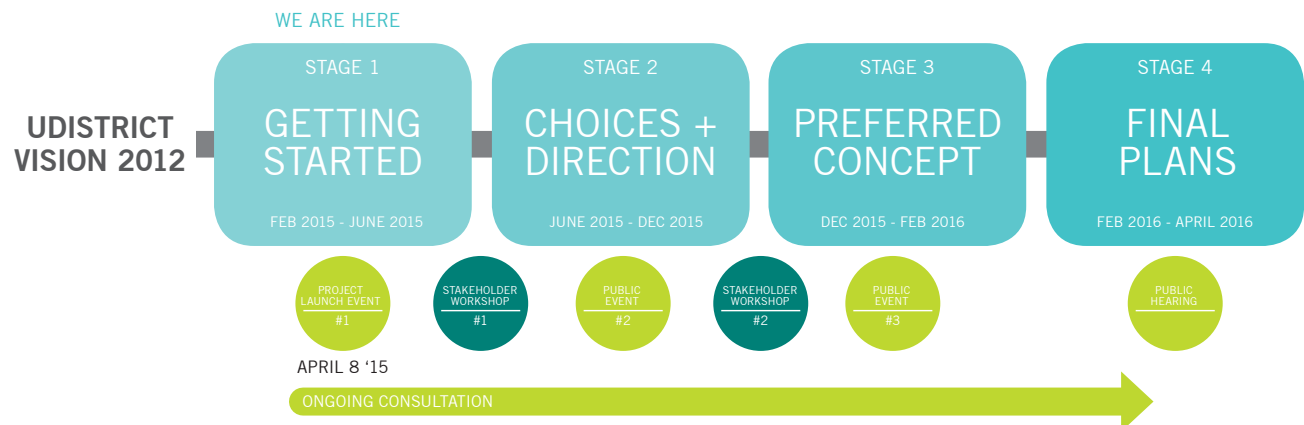


Figure 43 - Process diagram