

2022

UFV Transportation Demand Management Strategy



Table of Contents

Executive Summary	4
Introduction	6
The Need for Transportation	8
Makes a Good Transportation System?	12
Methods of Transportation	13
Hybrid Workplace Pilot Program	14
1.0 Walking	15
2.0 Cycling	19
3.0 Shared Vehicles	23
4.0 Transit	27
5.0 The SFCR	31
Summary	35
Recommendations	36
Conclusion	37
Additional Resources	38
References	41
Appendices	45

Acknowledgments

The University of the Fraser Valley is situated on the territory of the Stó:lō peoples, and near the Matsqui, Sumas First Nation, Swoowahlie, and Tzeachten peoples. We express our gratitude and respect for the honour of living and working in this territory.

Primary Author: Katan, H

Report collaborators include:

Aguilar, D., Bourget, N., Goudsblom, M. and Martel, J.

Cover image of UFV Bus Stop by Jennifer Martel

Executive Summary

Without access to a car or driver's license, the commute to UFV can become longer and more difficult. Cost, access, time, and comfort all factor into whether a student or staff member is more or less likely to use a particular method of transportation. By promoting the use of alternative transportation away from single rider personal vehicles, UFV can improve its sustainability by improving its contribution to Green House Gas (GHG) reduction targets. UFV has the chance to change the methods used and attitude toward transportation at UFV. Sustainable transportation can include walking,

cycling, carpooling, driving electric, taking public transit, and many more options.

UFV's Transportation Demand Management Strategy Report outlines the University of the Fraser Valley's (UFV) options for more sustainable and accessible transportation solutions. UFV is currently predominantly a commuter University. The following recommendations outline steps UFV can do to make the commute to/from and around campus in a sustainable, accessible, safe, and healthy way.

Report Recommendations:

1. Survey employees on their transportation habits and needs.
2. Widen Abbotsford campus pathways.
3. Encourage employees to use Manulife Vitality.
4. Purchase a fleet of UFV e-bikes for students and staff to use.
5. Become a certified bike friendly business with HUB.
6. Partner with Liftango for carpooling solutions.
7. Provide support to the provincial government and TransLink for the proposed South Fraser Community Rail Line.
8. Develop a 10 minute walking map to highlight nearby local businesses within the community.
9. Implement a three-phase plan of sustainable transportation goals. Use clear language that will hold the UFV accountable to meet those goals.
10. Hire a transportation manager or specialist to facilitate action.
11. Update UFV's transportation webpage to include: links to relevant reports and references, tips for students organized by transportation type, and maps for walking, cycling, shared vehicles, bus transit, and google live traffic.
12. Collaborate with, support, and give feedback to municipalities (Abbotsford, Chilliwack, and Mission) and other actors See 'Strengths and Weaknesses' that align municipality and BC Transit transportation plans with UFV's TDM. For more report highlights see Appendix A to E.



unsplash.com Possessed Photography

Introduction

Transportation is changing as gas prices rise. Views around urban sprawl, necessary commutes, and fossil fuels have been evolving; more so, as the COVID-19 Pandemic has allowed people to stop and reflect on what their priorities are.

The Fraser Valley transportation system is currently too infrequent and unreliable (City of Abbotsford, 2018). All the actors in the Fraser Valley transportation system need to collaborate to develop an interlaying network of short and long-distance transportation to create a sustainable and accessible to all Transportation Management Strategy.

Enhancing sustainable transportation to and from UFV also aids the university in its work to align with the United Nations (UN) Sustainable Development Goals (SDGs). Sustainable transportation aligns with SDG 3: Good health and well-being, SDG 7: Affordable and clean energy, SDG 8: Decent work and economic growth, SDG 9: Industry, innovation, and infrastructure, SDG 11: Sustainable cities and communities, SDG 12: Responsible consumption and production, and SDG 13: Climate action of the United Nations Sustainable Development Goals (SDGs).

Figure 1
UN SDGs 3, 7-9, 11-13.



Note. From "Sustainable Development Goals. Communications materials" by United Nations, 2015 (<https://www.un.org/sustainabledevelopment/news/communications-material>). In the public domain.

UFV's Office of Sustainability is using the Sustainability Tracking, Assessment & Rating System (STARS) as a transparent, self-reporting framework to track and measure UFV's sustainability performance against other universities. Seven of the available eighty-five points can be gained from sustainable transportation practices. The STARS 2.2 Technical Manual outlines how points are awarded in the categories of Operations (OP) 15: Campus fleet (1 point available), OP 16: Commute modal split (5 points available), and OP 17: Support for sustainable transportation (1 point available) (pp. OP-14 p.4 – OP-17 p.2). See Appendix G for more information. Below are the five positive recognition levels provided by STARS:

Figure 2
STARS seals.



Note. From "The Sustainability Tracking, Assessment & Rating System (STARS)" by The Association for the Advancement of Sustainability in Higher Education (AASHE), n.d., (<https://stars.aashe.org/about-stars/>). In the public domain.

Good transportation requires listening to the user of the system and realizing what works best for them. Jarrett Walker is an independent consultant in North America and writes on transit in his book *Human Transit: How Clearer Thinking about Public Transit Can Enrich Our Communities and Our Lives*. After speaking to transit users, Walker (2011) developed an ordered list of demands for a good transit system. Walker's framework for a good transportation system creates the framework for this report to analyze other transportation methods, such as cycling.

This report begins by exploring frameworks, and existing reports, then using the framework suggested by Walker explores walking, cycling, shared vehicles, bus/shuttle transportation, and the proposed South Fraser Community Rail Line. Finally, the report provides a list of recommendations for UFV to implement.

Note: This is a working and dynamic document that will continue to be changed as priorities and key people change.

The Need for Transportation

unsplash.com Joseph Chan

The need for transportation can be better understood by examining the amount of people travelling to UFV, where they are coming from, and which methods of transportation they are choosing.

Table 1
2019-20 UFV population numbers.

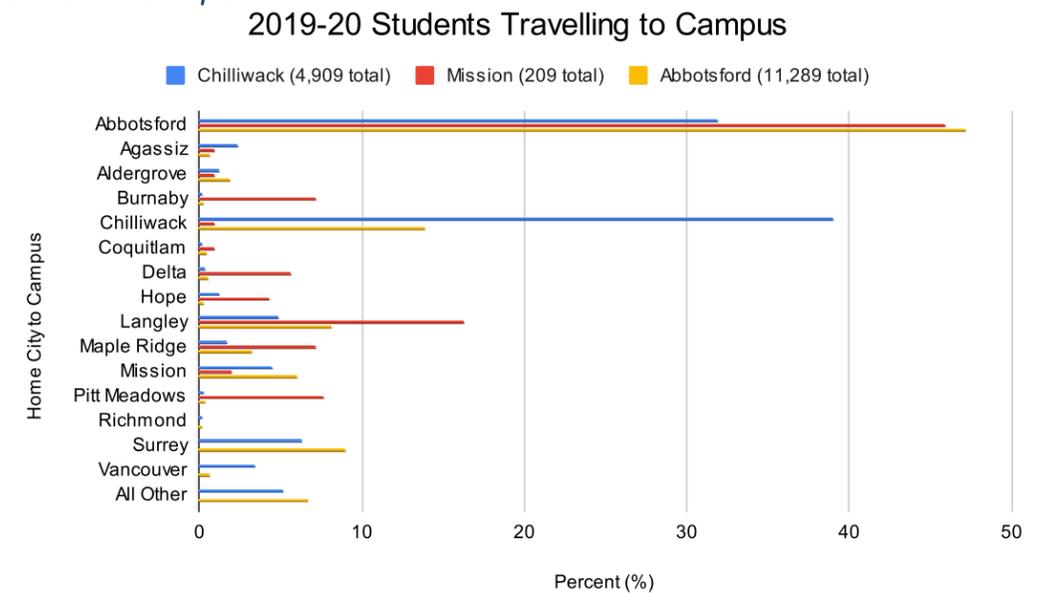
Fiscal year 2019/20	Students	Faculty members	Staff members
	15,676	804	860

Note. Data source ufv.ca/irp/quick-facts

Where are UFV Students are Coming From

In the 2019 – 2020 academic year: A total of 11,289 students traveled to the Abbotsford campus for at least one course. The greatest number of students come from the Abbotsford (47.2%) and Chilliwack (13.9%) areas. From the 4,909 students who traveled to the Chilliwack campus; 32% come from Abbotsford and 39.1% come from Chilliwack. 209 students traveled to the Mission campus; 46% from Abbotsford and 16.3% from Langley. In a recent email communication from James Mandigo, UFV Provost and Vice-President, during the 2021 Sumas flooding, stats were released on students commutes to face-to-face learning. Up to 66% of students at the Chilliwack campus do not live in Chilliwack and 25% of students at the Abbotsford campus live in Chilliwack, Hope, Agassiz, or Mission.

Figure 3
2019-20 Students Home City Percentages Traveling to Abbotsford, Chilliwack, and Mission Campus.

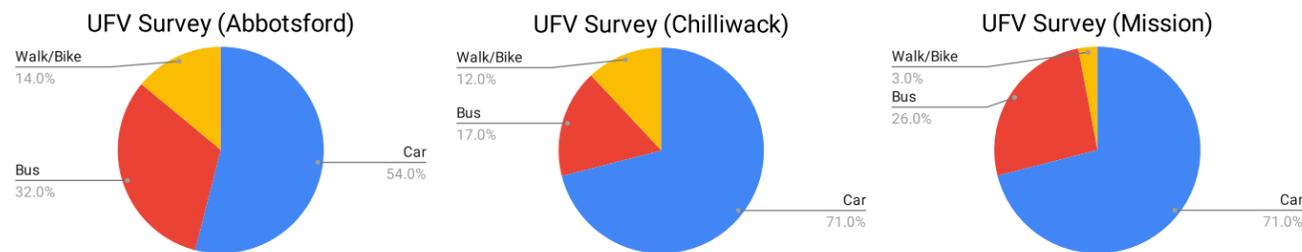


Note. Student address is based on their mailing address for the fiscal year. 16.4% of students travelled to more than one of the three campuses in 2019 – 2020. UFV student data provided by Aidan Gibbons.

Students Main Method of Travel

According to a BC Transit Survey at the Abbotsford campus, students from Abbotsford commuting to the Abbotsford’s campus showed a more distributed variety of travel methods; 54% used a car, 32% bused, and 14% walked or biked (2013, pp. 26). Students from Chilliwack commuting to the Chilliwack campus mainly used a vehicle as transportation; 71% used a car, 17% bused, and 12% walked or biked (BC Transit, 2012, pp.18). Very few students from Mission commuting to the Abbotsford campus reported commuting by bike or walking; 71% used a car, 26% bused, and only 3% walked or biked (BC Transit, 2013, pp.26).

Figure 4
UFV Method of Transportation Survey.



Note. The above left and right pie graphs are from BC Transit, 2013, pp.26 and above middle sourced from BC Transit, 2012, pp.18.

In 2020, 529 middle-year students completed a survey on what methods of transportation they use to get to UFV (CUSC-CCREU, 2020). The greatest method was using a vehicle (alone) at 71%.

In 2021, 277 graduating students completed a survey on what methods of transportation they use to get to UFV (CUSC-CCREU, 2021). Using a vehicle (alone) was the main method of transportation at 69.7%. Remote, off-campus schooling is up to 12.1% in 2021, whereas it was less than 1% in 2020 among middle-year students.

BC Transit: U-pass Utilization

The BC Transit (2013, pp.26) report found that 77% of students from Abbotsford and Mission made use of the transit U-pass with the majority using their pass at recreation centers. The two main reasons cited for not utilizing transit was the length of the trip and indirect routing. This report identified four important UFV transportation improvements (2013, pp.26):

1. “Faster Shuttle trips to/from the University of the Fraser Valley,
2. Longer [Shuttle] hours of service and service in more areas,
3. [Improve] Abbotsford to Chilliwack Shuttle connection, and
4. [Improve] Abbotsford to Surrey (TransLink) connection.”

The BC Transit (2012, p.18) report found that 56% of UFV Chilliwack residents do not use the U-pass because of a lack of service between the Chilliwack and Abbotsford campuses. The lack of access to transit was the main reason for not taking transit.

Overall, students were much more likely to drive to campus than any other method of transportation. Distance between campuses is too great to walk, or bike and the shuttle between Chilliwack and Abbotsford does not have enough reach or frequency. Note, there is no data on employee transportation. Employees should be surveyed on their transportation habits and needs to fill in this knowledge gap.

What Makes a Good Transportation System?

Walker (2011, pp. 24-33) identifies the following seven demands for an effective transit service:

1. "It takes me where I want to go.
2. It takes me when I want to go.
3. It is a good use of my time.
4. It is a good use of my money.
5. It respects me in the level of safety, comfort, and amenity it provides.
6. I can trust it.
7. It gives me the freedom to change my plans."



Methods of Transportation

In this section, transportation systems, techniques, and solutions are evaluated to fit the needs of the members of the UFV community.

Hybrid Workplace Pilot Program

From September 2021 to July 31, 2022, UFV has launched a Hybrid Workplace Pilot Program. Participating employees are to work part-time at home and part-time in the office. This program is intended to identify opportunities, barriers, productivity, engagement, and the environmental impact associated with hybrid work. Those that qualify, are expected to communicate regularly and respond to a series of surveys to help shape future programs.



1.0 Walking

Walking is a great fitness option that is gentle and low-impact on the knees, ankles, and back. Walking groups can be great for mental health awareness and improvement (TransLink-e). Walking groups can increase the student or staff member's connection with their space and are great for making new connections (TransLink-e). For various ability and accessibility options, the individual can try Google's improved walking functionality (TransLink-e). Walking is also great for ideas, creativity, and memory. See the BETTER article in 'Additional Resources' for more information.

Strengths	Weaknesses
Walking is the most environmental form of transportation; zero emissions	Walking safety at UFV campus and outside of campus can be improved (e.g. lighting, visibility and separation from vehicles)
Walking is free	The distance/time for students/staff to commute to UFV is too far to walk for most
Walking can create physical and mental well being	Poor weather (e.g. rain) can ruin the enjoyment of walking
Walking can reduce sick days (TransLink-e)	Physical limitations can make walking not accessible
Walking can improve productivity and enhance creative thinking and problem-solving skills (TransLink-e)	
Those who walk to work/school are more likely to enjoy their commute over those who drive (TransLink-e)	
Walking, sense of direction (e.g. signage and maps) on UFV campuses is fairly clear	

Commuter Incentives

UFV can boost walking culture in the workplace, and among students, by creating a 10 minute nearby locations walking map on which local businesses within the community can be highlighted and visited by students/staff that may not be from the area. Even if students are from the area they may be unaware of different amenities that are within walking distance of the campus.

Wellness Routes

UFV has developed 'Wellness routes' that outline

daily activity and walking routes around the Abbotsford campus. The routes promote student and staff feedback at campusrec@ufv.ca. UFV also asks people to share their progress on [facebook](#) or twitter, and use the #UFVgetssteps. Learn more about UFVs Wellness route: [Wellness route, Abbotsford Campus](#)

Peer Competition

Peer competition to track and reward different objectives can be another fun way to develop incentives and interest in walking. A tracking or health app and/or personal fitness watch



unsplash.com Sincerely Media

can be a great way to keep track of your steps (TransLink-e). Permanent UFV employees have access to Manulife Vitality. A fitness tracking service that uses a smartwatch or phone to track daily physical activity. Gift cards are available to be won each week that fitness goals are met (Manulife).

Infrastructure

Walking infrastructure can include walkway drainage, lighting, and walkway width. Walking after dark can feel unsafe; especially without sufficient lighting. Other considerations should include widening pathways.

Wider Pathways

Widening the pathways, with a smoother surface, on UFV campuses will enable people to pass more easily without getting too close. The current pathways, between buildings, often are too thin to pass a single person walking in the opposite direction without stepping onto the grass. Wider and smoother pathways would be more accessible to people in wheelchairs, people with strollers, and people in larger groups.

Walk Lines

Walk lines and movement lines should be kept in mind. People do not always move through a space as predicted. Observation is key to see how people use a space and find improvements. Classes can observe and record people's movements throughout the UFV campuses. Students will look for deficiencies and repetition in the observed movements. Surveys are a great tool to hear feedback on students' perceived movement around and to UFV.

Seven demands for an effective transit service according to Walker (2011, pp. 24-33):

1. It takes me where I want to go.
 - Walking limits the distance of where someone wants to go.
2. It takes me when I want to go.
 - + Walking is often available; under most conditions.
3. It is a good use of my time.
 - ± Walking often takes more time; however, the time spent walking can be used for problem solving, creativity, and mind relaxation.
4. It is a good use of my money.
 - + Walking is free.
5. It respects me in the level of safety, comfort, and amenity it provides.
 - Walking safety and amenities depend on the city. It can often be uncomfortable.
6. I can trust it.
 - + Walking is often an option; under most conditions.
7. It gives me the freedom to change my plans.
 - The time it takes to walk will often restrict plans changing.

2.0 Cycling

Cycling is a sustainable form of exercise and transportation. E-bikes are a better solution to make cycling more accessible.

Strengths	Weaknesses
UFV currently offers \$5 monthly bike locker rental fees	Poor weather (e.g. rain) can ruin the enjoyment of cycling
UFV currently offers a bike repair station/tools	The distance/time for many students/staff to commute to UFV is too far to cycle
Cycling is a convenient form of transportation (with access to a bike)	Cycling safety and infrastructure at UFV and outside of campus can be improved (e.g. lighting, visibility, bike lanes and separation from vehicles)
Cycling is cost-effective	Cycling direction (signage and maps) can often be lacking at UFV and outside of UFV
Cycling is a great form of exercise	Bike theft is a concern
Cycling is an environmentally friendly option	Hills and difficult terrain can make bike rides more strenuous
Cycling provides micro mobility or flexibility (TransLink-d)	

Commuter Incentives

A new cyclist will often start with 1 to 5 km rides. Riding with an electric (e-bike) can increase this distance. The option of pedal assist or using a throttle to move without pedalling makes going uphill easy (City Beautiful, 2021). Most e-bikes travel between 40 to 89 km per charge and could replace short-distance car rides (2021). An e-bike is the fastest way to get people into electric transportation (2021).

Cycle Champions

UFV may identify 'cycle champions' in the workplace, or among students (TransLink-d). The cycling champions can share tips, educate and promote cycling to UFV. Tips that may include, how to combine bikes and transit for a wider range of movement (TransLink-d). Non-profits like HUB Cycling can be scheduled to host cycling events. Cycling buddies are a great

way to improve interest in cycling to campus (TransLink-d).

Infrastructure

Most bike infrastructure includes end of trip facilities (i.e. places to park or store the bikes), bike pathways, bike signage, bike tools, and bike services. As UFV resides in a rainy region, a safe, secure, and dry facility to park the bikes is important. Other bike storage options include bike racks, bike enclosures, and bike lockers. The company Urban Racks, offers a variety of bike rack solutions and bike repair stations, including a smart bike dock and a large bike parking shelter the "Urban Parkiteer" (Urban Racks). UFV currently has bike lockers (below left) that are able to be rented for \$5.00 a month, and free bike racks. TransLink's bike parkades costs \$1.00 a day, and up to \$8.00 per month (TransLink-a). UFV also has a tools and bike repair station.



Jennifer Martel

UFV Abbotsford Campus Thin and Uneven Pathways



unsplash.com Himmway Bikes

UFV Bike Rideshare

A fleet of UFV rideshare bikes can open up access to those that do not have the space, money, or frequent enough use to own a bike. UFV may also purchase Electric bikes to enable the students and staff to travel farther than they would on a peddle bike. A UFV fleet of e-bikes is a great way to introduce people to them, which may convince some people to buy their own after testing out a UFV e-bike.

A one-year pilot project is inviting businesses to purchase a maximum of five e-bikes, for a \$1,700 rebate on each cargo e-bike purchased. Other rebates on e-bikes are available if the university was interested in purchasing a small fleet of e-bikes for the Abbotsford and Chilliwack campuses (TransLink-d).

Freshen up

Change room and shower facilities are important when providing bike infrastructure (TransLink-d). Allowing bike users to clean or change before class, or work, will improve peer experience for those around the bike users. Showers are available in E building.

UFV Bookstore

The bookstore could sell bike tools and accessories to promote a UFV bike culture and/or a bike club.

Directions

UFV should provide cycling maps of the campuses and of the surrounding cities.

Bike Friendly Business

UFV can become a certified Bike Friendly Business (HUB). This certification is an annual agreement that UFV would optimize bike facilities and engagement (HUB). UFV, as a business, would choose its cycle goals,

Seven demands for an effective transit service according to Walker (2011, pp. 24-33):

1. It takes me where I want to go.
 - Biking limits the distance of where someone wants to go.
2. It takes me when I want to go.
 - + Biking is often available; under most conditions.
3. It is a good use of my time.
 - ± Biking often takes more time; however, biking is also a great form of exercise.
4. It is a good use of my money.
 - + Biking is free with the ownership of a bike; or cost-effective with a small fee to rent.
5. It respects me in the level of safety, comfort, and amenity it provides.
 - ± Biking safety and amenities depend on the city. It can often be uncomfortable.
6. I can trust it.
 - + Biking is often an option; under most conditions.
7. It gives me the freedom to change my plans.
 - The time it takes to bike will often restrict plans changing.



3.0 Shared Vehicles

Shared vehicles and shared transportation mitigate an individual's carbon footprint and is a great way to encourage connections at the university.

budget, and time commitment and HUB will assist in reaching those goals (HUB). With the Bike Friendly Business certification, UFV can receive media recognition (HUB). Find out how to get certified here: bikehub.ca

Strengths	Weaknesses
Shared vehicles offer inter-campus travel	Some live in difficult to reach regions (e.g. rural) for shared transportation
Shared vehicles reduce an individual's carbon emissions	Coordinating or arranging rides with others can often be difficult (e.g. different schedules or they live in different directions)
Shared vehicles enable new connections to be made and strengthen the sense of community	COVID-19 worries, or just uncomfortable, with sharing a vehicle
Shared vehicles are an improved utilization of infrastructure (e.g. reducing vehicles in traffic)	
Shared vehicles provide better access to the built environment	
Carpooling may be the best solution for the greatest number of students to get to campus	
UFV currently offers 4 carpool priority parking stalls in lot 6b	
UFV has the opportunity to work with Liftango to develop a carpooling system that can connect and reward people for carpooling as well as track data on carpool use at UFV	
UFV can encourage carpooling by offering priority parking for carpooling, discounted parking rates (monetize the cost of parking), or parking vouchers	

Commuter Incentives

Carpooling and ridesharing enables students and staff to arrange transportation with others by connecting trips. Shared transportation reduces a single person's carbon footprint. Carpooling reduces an individual's parking cost and is equitable for those without access to a car. Carpooling is also great for team building, as well as reducing parking demand and road congestion. UFV currently provides four parking stalls for carpool parking in lot 6b.

Infrastructure

UFV can encourage carpooling by offering priority parking for carpooling, discounted parking rates (monetize the cost of parking), or parking vouchers (TransLink-b). To simplify carpooling, UFV can subscribe to a free or paid carpool app. App options include: Liftango, Poparide, and RideShark (TransLink-b).

Liftango

The Liftango app is great for vehicle routing and scheduling. It is optimized for urban and



unsplash.com David Emrich

rural transit. Shift change simulation can better prepare carpooling for regular class hours and times of movement. Liftango has customizable zone design and seat reservation services. See liftango.com/carpool for different carpool platforms to match and arrange carpooling.

Liftango worked with Monash University to develop a pay by phone system. In doing so, it used free parking as an incentive launch and found it important to validate carpooling (Liftango-b).

Liftango also worked with the University of Newcastle. A university just under 40,000 in size with three campuses, which is comparable to UFV (Liftango-c). The university wanted to encourage more carpooling to solve their issue of limited parking stalls (Liftango-c). By offering free parking to carpoolers the university and Liftango were able to market, seamlessly integrate, test and measure the results (Liftango-c). After free parking was implemented, the University of Newcastle saw usage increase by 38% per month (Liftango-c).

Jacob Greig at jacob@liftango.com is UFV's main point of contact for Liftango.

RideShark

Provides incentives, gamification, and rewards for carpooling (RideShark). However, Liftango seems to be the better solution to work alongside UFV. Find out more about [RideShark Campus Solutions](#)

PlugInBC Rebates for Fleets and Organizations

UFV can purchase a fleet of electric vehicles to offer to the staff and administrators to

Seven demands for an effective transit service according to Walker (2011, pp. 24-33):

1. It takes me where I want to go.
 - + Shared vehicle networks can take the user most places they want to go, with some restrictions.
2. It takes me when I want to go.
 - Shared vehicles networks are not always available; prime travel times are best when sharing vehicles.
3. It is a good use of my time.
 - ± Shared vehicle networks can often take longer than a direct route; however, it is much faster than walking or biking.
4. It is a good use of my money.
 - + Sharing vehicles can save money on parking and fuel.
5. It respects me in the level of safety, comfort, and amenity it provides.
 - ± Sharing vehicles can be relatively safe and comfortable if the driver is from a trusted network of professionals or friends.
6. I can trust it.
 - ± Sharing vehicles networks should be available to be on time regularly.
7. It gives me the freedom to change my plans.
 - ± Sharing vehicle networks should have the possibility to choose, or change from a variety of routes and destinations.

4.0 Transit

commute to work and carpool with.

PlugInBC Rebates include:

- Zero-emission motorcycles (\$2,000)
- Low-speed vehicles (15.9 kWh and below \$2,000, 16 kWh and above \$5,000)
- Cargo e-bikes (Max. \$1,700)
- Zero-emission utility vehicles (Max. \$2,000)
- Zero-emission on-road medium and heavy-duty vehicles (Max. \$100,000 or 33% of the purchase price, whichever is lower)

Uber Pool

Uber Pool is temporarily suspended in several regions due to COVID-19.

Route Planning

- App options include: Liftango, Poparide, and RideShark
- Google Live Traffic Maps: [Abbotsford](#), [Chilliwack](#), and [Mission](#)

Bus and UFV Shuttle transportation is a great way to have a scheduled transportation option and mitigate an individual's carbon footprint. However, traffic and a lack of frequency prevent many from using these services.

Strengths	Weaknesses
<p>BC Transit Buses: Decrease an individual's carbon footprint from shared transportation</p> <p>Bus fare cost is less than commuting with car, and free with the U-pass system</p> <p>The City of Abbotsford (2018, pp.49) plans to make a high frequency transportation route between Highstreet, Abbotsford and UFV, Abbotsford</p> <p>Campus Shuttle: Abbotsford to Chilliwack, and Chilliwack to Abbotsford campus travel</p> <p>Accessible to all students; including wheelchair shuttle runs</p>	<p>BC Transit Buses: The lack of bus stops</p> <p>Not frequent enough bus service (City of Abbotsford, 2018, pp.46)</p> <p>Too many bus connections to get to the destination</p> <p>Travel time is longer due to frequent stops</p> <p>Not reliable; can often get caught in traffic</p> <p>Buses can often be late due to traffic, and the users may miss their connecting bus</p> <p>Campus Shuttle: No shuttle to Langley</p> <p>Not frequent enough service; 2 shuttles running each hour</p> <p>Not reliable, often will get caught in traffic</p> <p>Standard fee of \$27.23</p> <p>Because students are priority, capacity for employees is reduced</p> <p>Some students using the shuttle from Abbotsford to Chilliwack are late to class every time because of the shuttle schedule</p>

Commuter Incentives

BC Transit Bus

Access to BC Transit Buses can be used as a recruitment and retention tool (TransLink-c). Bus services are also a cost-saving alternative to parking infrastructure (TransLink-c). With increased bus infrastructure, the gift of [Compass for Organizations \(CFO\)](#) can help pay for a

percentage of employee bus fares (TransLink-c). A subsidized transit pass can encourage more to use transit (TransLink-c).

Campus Shuttle

On June 14, 2021, a UFV press release announced that two shuttles would commence at 8:00 AM and conclude at the last bus pickup at 5:40 PM. Shuttles will run each hour. UFV



hopes to secure a permanent shuttle contract, which would allow the increase of shuttles and frequency over time. Find out more at info@ufvus.ca

The UFV shuttle service is also on Twitter @UFVShuttle with accident updates.

Right now, Americans drive because it's the most convenient option. But that also means you don't actually need to transform a whole country to get more people to ride public transit. You just need to make it convenient enough that they want to.

– Nina Limbeck, Social Worker (Limbeck, 2020, 8:25-39)

Infrastructure

An increased frequency of buses and better access to them will be needed in order for busing to be a viable transportation alternative. Students and staff cannot wait an hour or two for a bus for it to be late and they miss their connecting bus. **The City of Abbotsford (2018, pp.46) is developing a high frequency bus route between Highstreet, Abbotsford and UFV, Abbotsford.**

Route Planning

[UFV Campus Shuttle](#): For PDF schedules see Appendix F.

[BC Transit \(Regions\): Central Fraser Valley Transit System, Chilliwack, and Hope.](#)

Seven demands for an effective transit service according to Walker (2011, pp. 24-33):

1. It takes me where I want to go.
 - ± Buses should be able to take users to many places; however, buses and shuttles are restricted to their operation routes.
2. It takes me when I want to go.
 - Buses are restricted to their route schedules and (in the Fraser Valley) can often be late.
3. It is a good use of my time.
 - ± Buses take longer than a direct route; however, time can be spent reading, problem solving, or relaxing the mind.
4. It is a good use of my money.
 - + Bus transit is cost-effective compared to owning a vehicle.
5. It respects me in the level of safety, comfort, and amenity it provides.
 - + Buses are relatively comfortable and safe.
6. I can trust it.
 - Buses in the Fraser Valley can often be late or unreliable.
7. It gives me the freedom to change my plans.
 - Buses are restricted to routes and route schedules. Plans would be influenced by those schedules if busing is the main form of transportation.

5.0 The SFCR

The South Fraser Community Rail line (SFCR) is a proposed commuter train that would connect the South Fraser Valley, Surrey to Chilliwack.

Strengths	Weaknesses
The SFCR would connect South Fraser communities (Surrey to Chilliwack)	The SFCR is not yet approved for development
The SFCR is quiet and emission-free because it runs on hydrogen power	The success of the SFCR stations also rely on the bus (and other transportation) infrastructure out of the stations
Multiple SFCR stations (create a spine) and more buses can operate out of the stations (in a rib system) allowing for better connectivity and access	Wait times between trains are not listed
The SFCR is free to ride	
The SFCR trains are passenger friendly and comfortable	
The SFCR would provide an economic boost to South Fraser communities	
The SFCR has the ability to attract tourism	
The SFCR is a faster solution than > year 2051 Highway #1 expansion	
The SFCR gets passengers out of traffic	
Free Transit (City Beautiful, 2018) The US found a 50% increase in transit when transit was free. Which means less people on the road, which reduced GHG emissions	
Free transit is faster and easier	
“Essential public services such as roads, bridges, fire, police, and parks, are all paid by taxes; transit has the potential to also be paid by taxes”	
“We don’t ask roads to make a profit, why ask transit?”	
“Car ownership and access is a barrier that free transit eliminates”	

limited access to transport is a key challenge to eradicating poverty and promoting sustainable economic development.

– Sustainable Mobility for All

Commuter Incentives

In 1910, 99km of tracks were developed to open the Fraser Valley, at the cost of \$3 million

in the day (SFCR). Passengers paid \$3 to ride (SFCR). In 1950, the interurban corridor was decommissioned for passenger use, but the rail



unsplash.com David Herron

line was protected for passenger rights in 1988 and saved for potential passenger use at any time (SFCR). Former BC Premier Bill Vander Zalm explains how expanding the sky train into the trees and large landmass of the Fraser Valley will not work (BC Interurban RAIL Series).

[Find out more...](#)

On May 20, 2021, it was proposed to reactivate a freight train corridor for passenger trains in a project known as South Fraser Community RAIL (SFCR). New hydrogen-powered, Canadian-designed, trains to travel 99km between Pattullo Bridge (Surrey) to Chilliwack. Hydrogen-powered trains allow for a low level of noise and CO2 emission-free passage (SFCR).

Since the rail tracks are already developed and well maintained, only the cost of the trains, and train stops, need to be paid for (SFCR). Current track infrastructure eliminates the need to clear cut (SFCR). Loading and unloading the train will be smooth and quick as passengers' ride for free (SFCR). All passenger fees will be paid through taxes, which enable the train to be accessible to all (SFCR).

These Canadian hydrogen trains are currently being used in Germany, Holland, and the UK (SFCR). The SFCR enables passengers to escape traffic. Other public transportation, such as a bus, will still get caught in that traffic. Ordering a few trains and installing train station canopies will be much faster than a one-lane highway expansion in 2025 or later (SFCR). This train system also meets the Green party's need for environmental solutions, and the NDP's need for Clean BC Canadian technology (SFCR).

While UFV may not be making the decision on if the rail line goes through, UFV should strongly show its support for the SFCR to both the

Seven demands for an effective transit service according to Walker (2011, pp. 24-33):

1. It takes me where I want to go.
 - ± The SFCR will open up travel within the South Fraser Valley (Surrey to Chilliwack). Busing, or other transportation, will be needed to get from the train station to the desired location.
2. It takes me when I want to go.
 - ± Trains are supposed to come regularly, actual time between trains is unknown.
3. It is a good use of my time.
 - ± Buses take longer than a direct route; however, time can be spent reading problem solving, or relaxing the mind.
4. It is a good use of my money.
 - + The SFCR is free.
5. It respects me in the level of safety, comfort, and amenity it provides.
 - + The SFCR will use comfortable and quiet hydrogen powered trains.
6. I can trust it.
 - ± The SFCR operates outside of the road network and therefore should operate on time.
7. It gives me the freedom to change my plans.
 - + The SFCR should open up travel in the South Fraser Valley.

Summary

provincial government and TransLink.

The Numbers

- » The SFCR is projected to cost less than 10% of a SkyTrain extension
- » The SFCR would serve 10x the population of a SkyTrain extension
- » The SFCR would serve 1.2 million residents, 14 post-secondary campuses (including UFV Abbotsford and UFV Chilliwack), Abbotsford International Airport, and 16 cities and communities
- » The SFCR is projected to cost \$12,500,000 per km
- » The SFCR rail line would run 99 km between Pattullo Bridge and Chilliwack
- » The SFCR would cost passengers \$0.00
- » 1 SFCR train removes approximately 177 cars from Highway #1

Find out more at southfrasercommunityrail.ca

By analyzing all seven of Walker’s demands for an effective transit service in a summary table, no single transportation method stands out over others. A good transportation system relies on a variety of transportation methods rather than focusing on one. Therefore, UFV must consider actions to improve and provide many transportation options. UFV needs to collaborate, support and give feedback to municipalities, and other actors, for a more sustainable and accessible transportation system.

Table 2

Summary of evaluated seven Walker demands for an effective transit service.

Walker (2011, pp. 24-33):	(W)	(C)	(S)	(T)	(R)
1. “It takes me where I want to go.	-	-	+	±	±
2. It takes me when I want to go.	+	+	-	-	±
3. It is a good use of my time.	±	±	±	±	±
4. It is a good use of my money.	+	+	+	+	+
5. It respects me in the level of safety, comfort, and amenity it provides.	-	±	±	+	+
6. I can trust it.	+	+	±	-	±
7. It gives me the freedom to change my plans.”	-	-	±	-	+

Note. The symbols are as follows: (W) refers to walking, (C) is cycling, (S) is shared vehicles, (T) is bus/shuttle transportation, and (R) is the SFCR.

Future of Transportation

Although the University of the Fraser Valley cannot place too much focus on future transportation predictions, it is important to plan for future transportation issues and/or solutions. Looking at electric or hydrogen as potential future power sources and driverless or shared cars. Autonomous cars could be used with a transportation subscription, like Netflix or Spotify, where people would no longer need to own their own vehicles. This would alleviate vehicle ownership prices (BBC Click, 2019).

Recommendations

1. Survey employees on their transportation habits and needs.
2. Widen campus pedestrian pathways.
3. Encourage employees to use Manulife Vitality.
4. Purchase a fleet of UFV e-bikes for students and staff to use.
5. Become a certified bike friendly business with HUB.
6. Partner with Liftango for carpooling solutions.
7. Provide support to the provincial government and TransLink for the proposed South Fraser Community Rail Line.
8. Develop a 10 minute walking map to highlight nearby local businesses within the community.
9. Use clear language that will hold the UFV accountable to meet those goals.
10. Hire a transportation manager or specialist to facilitate action.
11. Update UFV's transportation webpage to include: links to relevant reports and references, tips for students organized by transportation type, and maps for walking, cycling, shared vehicles, bus transit, and google live traffic.
12. Collaborate with, support, and give feedback to municipalities (Abbotsford, Chilliwack, and Mission) and other actors. See 'Strengths and Weaknesses' that align municipality and BC Transit transportation plans with UFV's TDM. For more report highlights see Appendix A to E.

Conclusion

The Office of Sustainability has completed a study of transportation using Walker's Framework. The findings show that walking is not always suitable for most people when commuting to or from UFV. Most students and staff, live too far away to walk or bike to campus and will need a quicker and longer distance method of transportation. Connecting people and communities with multiple short and long-distance transportation options can provide a more comprehensive and sustainable transportation system at UFV.

Actions UFV could take include surveying UFV employees on their transportation habits and needs. Developing wider pathways which can help people move more freely around campuses without getting their feet wet. Promoting the use of Manulife Vitality should encourage employees to be excited about living a healthy lifestyle. Purchasing a fleet of UFV e-bikes that can better connect those who live near campus but are too far to walk. Becoming a certified bike friendly business, UFV's bike infrastructure needs can be better understood and improved, and more people can be encouraged to bike to campus. Partnering with Liftango for carpooling solutions can connect those who live too far to E-bike. With incentives, such as discounted parking, prioritized parking and prizes, there is an expected uptake in carpooling participation. Providing support wherever possible, if the SFCR is approved as it would create the largest change to the Fraser Valley transportation system. Developing a 10-minute walking map to highlight nearby local businesses within the community. Using clear language to hold UFV accountable and hiring a transportation manager/ specialist to facilitate action. A three-phase action plan needs to be developed to establish UFV's transportation goals and hold the university accountable for that timeline. The UFV Transportation webpage should be updated with resources for students and staff. Most importantly, UFV needs to collaborate, support and give feedback to municipalities, and other actors, for a more sustainable and accessible transportation system.

As transportation models continue to shift UFV needs to be able to work with municipalities to make sustainable transportation accessible to all UFV students, faculty, and staff.

Additional Resources

Transportation Literature	
Fraser Valley Transportation Study	BC Government – Fraser Valley Transportation Study
Transit-Oriented Communities	Transit-Oriented Communities: A Primer on Key Concepts 6 Ds of Transit-Oriented Communities: 1. Destinations 2. Distance 3. Design 4. Density 5. Diversity 6. Demand Management (TransLink-g, 2011, pp.5)
Good Transit	City Beautiful – Disney Transport is huge. But is it good transit? Access to a transit station or transit stop? Greater coverage of an area Vs. more frequent transit service High-frequency transit The span of transit Direct, transfer free? Transit outsourcing costs through taxes or advertising A transit system that is quickly legible
Other Universities	
University of British Columbia (UBC)	UBC Vancouver Transportation Status Report Fall 2019 UBC Technical - Transportation Demand Management
University of Victoria (UVic)	UVic - Campus Transit Plan

Vancouver Island University (VIU)	VIU - Integrated Transportation Demand Management (TDM) Strategy VIU - Sustainability Transportation Bike Lockers (price/info) Where to Park (bike parking map) Where to Ride (local cycle routes) Take a bus (Bus pass information, Transit Maps, Bus bike racks) Carpool (tips, carpools/rideshare) Walk (walking routes) Reports VIU - Nanaimo Campus Commuting Coming by Bus (passes, social media) Coming by Bike (Campus map, Bike lockers location, showers/change, cycling map, buy bike second hand, UFV bike store stuff) Coming on Foot (map) Coming by Car (Arrive early if you're driving, try carpooling/sharing a pass, Save time by parking farther away, Head to the overflow lot)
Thompson Rivers University (TRU)	Need to know -Transportation - Thompson Rivers University [YouTube] (0:13) Bike covers and bike racks near all main buildings Bike repair stations and buses have bike racks (1:07) parking pass, university rideshare, campus car sharing program
Walking Additional Resources	TransLink TravelSmart - Walking toolkit BETTER - Why walking is the most underrated form of exercise

References

Cycle Additional Resources	TransLink TravelSmart - Cycling toolkit Urban Racks - Innovative Bicycle Parking
Additional Shared Vehicle Resources	TransLink TravelSmart - Carpooling toolkit TransLink - TravelSmart - Parking Management toolkit Rideshare in Abbotsford Area Liftango Poparide RideShark
Additional Transit Resources	TransLink TravelSmart - Transit toolkit June 14, 2021 UFV Campus Shuttle Press Release Student Services - Shuttle Bus
Rail Additional Resources	South Fraser Community RAIL The Rail Choice Series Episode 1 [YouTube] The Rail Choice Series Episode 2: "Connecting Population Centers" [YouTube] The Rail Choice Series Episode 3: "A No Brainer?!" [YouTube] The Rail Choice Series Episode 4: "Making Community Rail a Reality" [YouTube] Rail for the Valley - Lower Fraser Valley British Columbia, Chilliwack to Surrey Interurban (2010)

BBC Click. (2019). A Vision of The World In 2040 - BBC Click [Video]. YouTube. <https://www.youtube.com/watch?v=-2q6sAZ-R8I&list=PLTzRaIUPvP3fCTWeN65nyHtVK6tOSvmbX&index=9>

BC Government. (2021). Fraser Valley Transportation Study. Ministry of Transportation and Infrastructure. <https://www2.gov.bc.ca/gov/content/transportation/transportation-reports-and-reference/reports-studies/lower-mainland/fraser-valley-transportation-study>

BC Transit. (2013). Transit Future Plan: Abbotsford-Mission | January 2013. FVRD. https://www.fvrd.ca/assets/About~the~FVRD/Documents/Transit/AbbotsforMission_Transit_Future_Plan.pdf

BC Transit. (2012). Transit Future Plan: Chilliwack Area | May 2012. FVRD. https://www.fvrd.ca/assets/About~the~FVRD/Documents/Transit/ChilliwackArea_Transit_Future_Plan.pdf

BETTER. Why walking is the most underrated form of exercise. Today. NBC news. <https://www.nbcnews.com/better/health/why-walking-most-underrated-form-exercise-ncna797271>

City Beautiful. (2021). E-Bikes Could Change Cities Forever [Video]. YouTube. <https://www.youtube.com/>

City Beautiful. (2020). Disney Transport is huge. But is it good transit? [Video]. YouTube. <https://www.youtube.com/watch?v=33aJsPSvRSk>

City Beautiful. (2018). Let's Make Mass Transit Free* [Video]. YouTube. <https://www.youtube.com/>

RideShark. Features: Incentives, gamification, and rewards. <https://www.rideshark.com/features/incentives-gamification-rewards/>

City of Abbotsford. (2018). Transportation and Transit Master Plan: Final Plan | June 2018. Plan for 200K. <https://www.abbotsford.ca/sites/default/files/2021-02/Transportation%20and%20Transit%20Master%20Plan.pdf>

City of Chilliwack. (2018). Transportation Plan Update: July 2018. Engineering and Land Services. <https://www.chilliwack.com/main/attachments/Files/2784/City%20of%20Chilliwack%20Transportation%20Plan%20Update%20-%20Final.pdf>

District of Mission. (2016). Transportation Master Plan. <https://www.mission.ca/wp-content/uploads/Transportation-Master-Plan.pdf>

HUB. Bike Friendly Business: Bike Friendly Business Certification. <https://bikehub.ca/bike-friendly-business/bike-friendly-business-certification>

Limbeck, N. (2020). Why American public transit is so bad | 2020 Election [Video]. YouTube. Vox. 8:25-39. <https://www.youtube.com/watch?v=-ZDZtBRTyel>

Liftango-a. Carpooling. <https://www.liftango.com/carpool>

Liftango-b. Case study: Monash University. <https://www.liftango.com/resources/monash-university>

Liftango-c. Case study: The University of Newcastle. <https://www.liftango.com/resources/newcastle-university>

Liftango-d. Shared. Connected. Sustainable. <https://www.liftango.com/>

Mandigo, J. (personal communication, November 19, 2021). *UFV transitioning to remote learning--campus will remain open next week*. UFV Provost and Vice-President

Manulife. Vitality. <https://www.manulife.ca/personal/vitality.html>

PlugInBC. (2020). Specialty Use Vehicle Incentive. <https://pluginbc.ca/suvi/>

RideShark. Campus Solution. <https://www.rideshark.com/campus-solution/>

RideShark. Features: Incentives, gamification, and rewards. <https://www.rideshark.com/features/incentives-gamification-rewards/>

South Fraser Community Rail. (2020). South Fraser Community Rail Proposal | A Hydrogen powered passenger train from Surrey to Chilliwack [Video]. YouTube. https://www.youtube.com/watch?v=zunLMJY_-al

South Fraser Community RAIL. Home. <https://southfrasercommunityrail.ca/>

South Fraser Community Rail. The Rail Choice Series | Episode 1 [Video]. https://www.youtube.com/watch?v=l-czM5Wf44U&list=PLYrD1q8UcHiMYiPMuu1d2R1VUWnk_jX76&t=125s

South Fraser Community Rail. The Rail Choice Series | Episode 2: "Connecting Population Centers" [Video]. YouTube. https://www.youtube.com/watch?v=OXLSZtOio3U&list=PLYrD1q8UcHiMYiPMuu1d2R1VUWnk_jX76&index=2

South Fraser Community Rail. The Rail Choice Series | Episode 3: "A No Brainer?!" [Video]. YouTube. https://www.youtube.com/watch?v=CysOzqgp68E&list=PLYrD1q8UcHiMYiPMuu1d2R1VUWnk_jX76&index=3

South Fraser Community Rail. The Rail Choice Series | Episode 4: "Making Community Rail a Reality" [Video]. YouTube. https://www.youtube.com/watch?v=aMa3Zw5FCns&list=PLYrD1q8UcHiMYiPMuu1d2R1VUWnk_jX76&index=4

STARS. The Sustainability Tracking, Assessment & Rating System. <https://stars.aashe.org/>

STARS. STARS® 2.2 Technical Manual. OP-14 p.4–OP-17 p.2. <https://stars.aashe.org/wp-content/uploads/2019/07/STARS-2.2-Technical-Manual.pdf>

Sustainable Mobility for All. (2021). *Universal Access*. <https://www.sum4all.org/priorities/universal-access>

TransLink-a. (2021) Bikes on Transit. <https://www.translink.ca/rider-guide/bikes-on-transit>

TransLink-b. Travelsmart Carpool Toolkit. https://www.translink.ca/-/media/translink/documents/rider-guide/travelsmart/travelsmart_carpooling_toolkit

Appendices

- pdf
TransLink-c. Compass for organizations. <https://www.translink.ca/-/media/translink/documents/rider-guide/travelsmart/compass-for-organizations-program.pdf>
- TransLink-d. TravelSmart Cycling Toolkit. https://www.translink.ca/-/media/translink/documents/rider-guide/travelsmart/travelsmart_cycling_toolkit.pdf
- TransLink-e. TravelSmart Walking Toolkit.
https://www.translink.ca/-/media/translink/documents/rider-guide/travelsmart/travelsmart_walking_toolkit.pdf
- TransLink-f. (2016). Using Bike Parkades [Video]. YouTube. <https://www.youtube.com/watch?v=A0pg1Rgkajk>
- TransLink-g. (2011) Transit-Oriented Communities: A Primer on Key Concepts. https://www.fvrd.ca/assets/About~the~FVRD/Documents/Transit/Transit_Oriented_Communities_Primer.pdf
- UFV. About UFV: UFV stats and facts. <https://www.ufv.ca/about/stats-and-facts/#:~:text=STUDENTS%20%20%2011%2C090%20%20%20Total%20number,of%20February%202020%29%20%203%20more%20rows%20>
- UFV. Hybrid Workplace Pilot Program. <https://www.ufv.ca/hr/working-at-ufv/hybrid-workplace-pilot/>
- UFV Student Union Society. (2021). Campus Shuttle Press Release. https://static1.squarespace.com/static/5fda5371cffa437533803481/t/60c8f9d40cbc42246ba86bbf/1623783892200/2021-06-14_CampusShuttlePressRelease.pdf
- United Nations. Department of Economic and Social Affairs. Sustainable Development. The 17 goals. <https://sdgs.un.org/goals>
- Urban Racks. Urban Racks: Innovative | Bicycle Parking. <https://urbanracks.com/allproducts/#productbikekeep>
- Walker, J. (2011). Human Transit: How Clearer Thinking about Public Transit Can Enrich Our Communities and Our Lives. ProQuest Ebook Central. Island Press. pp. 24 - 33

Appendix A City of Abbotsford - Transportation & Transit Master Plan Final Plan | June 2018

[City of Abbotsford](#)
[Transportation & Transit Master Plan](#)
[Final Plan | June 2018](#)

Key Goals

(15) Shifting towards walking, cycling, and transit

Walking

(19) Many will only walk up to 1km; a roughly 10-minute walk

(20) Improved pedestrian environment

Enhance pedestrian sidewalks and pathways, safety and accessibility, make walking more enjoyable

Issues

Distances are too far
Intersection safety
Lack of sidewalks or pathways
Speed and noise of traffic
Sidewalk conditions

Opportunities

Build more trails and paths
All sidewalks and paths are well-lit
Widen and improve existing sidewalks
Provide more crosswalks
Build more sidewalks

(21) Enhanced street treatments for major destinations, urban nodes (5 minutes of walking, 400 meters)

(24-5) Wide sidewalks
Boulevards and curb extensions
Street trees
Pedestrian amenities
Public art and historic features
Weather protection
Enhanced lighting wayfinding and enhanced pedestrian-scale signage
Urban parks and plazas
Establish pedestrian priority streets

- (29-30) Enhanced pedestrian safety
 - Pedestrian countdown timers
 - Lighting
 - Pedestrian activated pushbuttons
 - Marked crossings
 - Reduced crossing distance
 - Audible pedestrian signals
 - Accessible curbside letdowns
 - Pedestrian crossing time and clearance intervals
 - Rectangular rapid flashing beacons
- (31) pedestrian wayfinding and neighbourhood walking maps

Cycling

- (34) Issues
 - Lack of bike routes
 - Gaps in the bike network
 - Bike routes don't go where I need them to go
 - Intersection safety
 - Speed noise and motor traffic safety
- (34) Opportunities
 - Build bicycle lanes physically separated from traffic
 - Build more painted bike lanes
 - Build more bike routes on quiet streets
 - Ensure bike routes are maintained year round
- (39) Intersections: Coloured conflict zone markings, Dashed bicycle lane markings, Bike boxes, Enhanced bicycle signal crossings, cross bikes, protected intersections
- (41) Wayfinding, Bike parking
- (42, fig 2) Improve bike parking
 - Parking duration
 - Fixture types
 - Weather protection
 - Security
- (42) Recommendations
 - On street bike parking
 - On-street bike racks
 - Long-term bike parking
 - Temporary event parking
- (43) Cycling educational programs
 - Promotional events
 - Bike maps

Transit

- (46) Issues
 - Transit is not frequent enough
 - Transit does not go where I need to go
 - Too many transfers
 - Transit is unreliable
 - No benches or shelter
- (46) Opportunities
 - Make transit routes more direct and fast
 - Make transit more frequent
 - Provide more transit service on weekends and evenings
 - Provide more amenities at transit stops
 - Make it easier to walk to transit
- (46) Strategies
 - Enhance transit network (regional and Inter-regional travel, rapid, frequent, local travel)
 - Transit priority measures (all door loading, express only stops, increase stop spacing, optimize signals, signal pre-emption, que-jumpers, bus only lanes)
 - Improve transit customer service experience (benches and covers, litter/ recycle bins, customer information, transit system maps, real-time updates, public art)
- (55) Enhanced safety (accessible, public washrooms, lighting and visibility, safety information on buses and stops, customer service and wayfinding)

Streets Summary

- (58) Issues & Opportunity
 - Traffic congestion, Safety, No parking

Transportation Future

- (75) 4.5 New Technologies Summary
- (76) Electric vehicles (types of charging stations), Rideshare (bike sharing, car sharing, ride hailing), Intelligent transportation systems (ITS), Autonomous vehicles
- (77) Public charging stations, Abbotsford map
- (77) Encourage use of Electric Vehicles
 - Work with businesses and community partners to identify future charging stations
 - Develop policies to locate charging stations in desirable and visible parking
 - Change parking requirements to include provision of charging facilities at new residential/commercial locations
 - Incorporate more electric and alternative energy vehicles into cities fleet
- (78-9) Rideshare: Bike share, Car share, Ride hailing

- (80) Intelligent Transportation Systems, Autonomous Vehicles
- (83) Implementation and Monitoring strategy
- (95) Funding Strategies

Appendix B
City of Chilliwack - Transportation Plan Update
July 2018

City of Chilliwack
[Transportation Plan Update](#)
[July 2018](#)

“A city’s true vision lies not within a vision statement, but within its budget!”
 (2018, pp.H-5)

Safety

- (ES-2) Road safety improvements
 - Work with ICBC
 - Support/funding through the road improvement program
- Traffic offenses
 - Collaborate with RCMP enforcement activities
- Traffic Calming Policy for the City

Cycle

- (ES-5) (May 2017) Eliminating gaps on and between routes; Protection for cyclists from vehicle traffic
- Implementation plan
 - Protected facilities
 - Bike parking
 - Transit integration
 - Community engagement
 - Marketing
 - Education and enforcement
 - Maintenance and monitoring
 - Guidance for designing
 - Construction and maintaining bike facilities
- Based on state-of-the-art guidelines in North America (adapted)
- Cycle plan recommendations
 - Quick win projects
 - City-wide bike route signage system
 - Protected bike facilities (consultation with residents, businesses and other stakeholders)
 - Sardis Rail Trail extend south to the Vedder River and north to Hocking Ave

- Install more bike racks and implement secure bike parking (annual program)
- Priority bike projects into future capital plans
- Annual bike monitoring program

Parking

- (ES-3) Parking demand strategies
 - Marked parking spaces for all public-off street parking lots

Wayfinding

Wayfinding measures (effective and convenient) for the Landing center area (i.e. parking maps)

Transportation Recommendations

- (ES-4) Pedestrian and cycle plans to inform all new road projects
- Review bylaw setbacks, Cycle Plan and future revision to cross-sections in Land Development Bylaw (for finalisation of Transportation Plan Update)
- Use specific language examples for pavement width
- Example of cycle facilities and their space requirements
- Reduce lane widths to 3m (low speed areas)
- Example cross-sections of Cycle Plan for various bicycle facilities

Finance

Chilliwack transit is cost shared between the City and BC Transit
 FVRD decides on fares, routes, and service levels based on the public’s feedback and BC Transit information

Vehicle (alone)

- (C-7) Traffic calming devices
 - Speed bumps, speed humps, traffic circles, speed tables, raised intersections, raised crosswalks, etc.
- (E-1) Pavement life cycle
- (F-1) Parking Supply Inventory
- (F-3) Traffic and Parking Demand Management Strategies
 - Promote walking and cycling
 - Pay parking during peak times
 - Shift scheduling for high parking demand areas
 - Improving transit service
 - Encourage carpooling and car sharing
- (G-1) Road network - Functional classification & Future Improvements
- (H-1) Zoning setbacks and bylaws

Mobility Objectives

(H-2) Balanced, integrated, multi-modal transportation system that supports mobility at neighbourhood, city-wide, and regional/provincial levels

Mobility equality and access for all

Sustainable transportation to reduce greenhouse gas emissions

Integrate transportation planning/development for healthy community development

Improve public safety (negative impact of increasing traffic)

(H-3) Mobility Policies within the City's OCP

1. "Integrate the current road network plans, long term capital works, transit future plan, bike plans, walk/walkway capital work programs; and work toward a comprehensive healthy community transportation strategy that reinforces mobility choices and emphasizes a more balanced priority among various modes of transportation
2. Design roadways for multi-purpose, support vehicle traffic as well as walking, cycling, or any non-motorized slow moving personal transportation
3. Corroborate transportation investment with land use planning
 - a. Densify community cores, including downtown
 - b. Redevelop neighbourhoods that are ready for large scale residential replacement and reinvestment
4. Monitor the densification on process and mixed-use land development in community cores and the urban corridor, and established city-wide benchmarks for a balanced and realistic mix of motorized and non-motorized movements of people, goods and services in order to support the healthy community goals and the GHG reduction objectives
5. Improve and reinforce the established road network of the urban corridor that emphasizes the 3-main north-south routes: Yale-Vedder, Evans-Ashwell, and Chilliwack River Rd.-Young-Broadway (Map 13)
6. Elevate the capacities and design standards of the supplementary north-south routes, Prest Rd. and Lickman Rd. as per the City's 10-year capital work plan
7. Consider new secondary north-south routes within Sardis-Vedder, especially in the block between Vedder Rd. and Evans Rd.
8. Continue to improve urban Rd. connectivity, especially the east-west route links

9. Expand the local transit system in accordance with the Transit Future Plan's recommendations; consider this plan's servicing level as the minimum target and monitor the urban corridor's densification and mixed-use development for new transit attraction points and expansion opportunities

10. Improve the standards and connectivity of the bike route network with an aim to:

- a. Establish cycling w/in urban corridors as an effective alt. Trans. Mode, particularly for school trips and short distance travelling
- b. Develop an attractive, safe, city-wide recreational bike route system to promote outdoor activity, community health and tourism
- c. Link on- and off- rd. bike routes and hiking trails for effective outdoor rec. activities

11. Expand the sidewalk and walkway systems and improve their standards, designs and connectivity to encourage:

- a. Alternative transportation for school and regular short-distance trips
- b. Healthy living and a vibrant St. life in neighbourhoods that are associated with the downtown, community cores and other nodes in the urban corridor
- c. Active living in suburban neighbourhoods

12. Develop a mobility strategy for seniors, with a focus on alternative modes of transportation (including scooters), seniors' service locations and other frequent destinations, the locational relationship btw. Their homes and service provider/ shopper facilities, and assistance to driving seniors and to seniors at risk of shut-in due to very limited access to private and public transportation" (City of Chilliwack, 2018, pp.H-3)

Transportation related components

(H-4) Well-designed densification projects, sustainability checklist (public and private decision making), GHG emissions, air pollutants, energy consumed related to transportation, building/processes, waste, and agriculture

Community design

- Community interaction and inclusion
- Effective layout and density
- High connectivity of transportation systems (include roads, transit systems, and alternative transportation)
- Multi-modal mobility system priority to active transportation (cycling and walking promote health)
- Safe, comfortable, and attractive streets, public space, buildings and structures integrated, multipurpose park and green space system that

embraces recreation/nature oriented activities, enviro conservation, non-motorized trans., neighbourhood connectivity, view corridor/vista preservation, community character and healthy community development Comprehensive walkway and trail networks (healthy community and alternative transportation initiative)
Link schools, recreation, civic facilities, residential, Trans Canada Trail

Pedestrians

(M-4) Types of crosswalks: illumination, curb extensions, median island, flashing light crossings

References

(ES-6) Traffic volumes
(M-1) Mobility and safety

Appendix C City of Mission - Transportation Master Plan June 2016

[City of Mission \(Formerly the District of Mission\)
Transportation Master Plan
June 2016](#)

Phases (1-2)

1. Launching and Visioning
2. Understanding Existing Conditions
3. Planning
4. Prioritizing

Key goals

(2-2) Encourage people to live, work, and visit Mission
(2-5) Increasing existing transportation infrastructure
A broader range of transportation services
Improve bike and pedestrian infrastructure

Traffic Routes

(5-8) Abbotsford-Mission Route 31 Valley Connector, stops every 15minutes during peak times, 30min in off-peak
(5-9) West Coast Express
Fraser Valley Express (FVX) travels along Hwy. 1 and connects Agassiz-Harrison, Chilliwack, Central Fraser Valley, and Translink
(5-3) Frequent transit service connecting downtown, West Coast Express, the Junction, Mission Hills, waterfront, Abbotsford

Extra Information

(6-9) Roundabouts vs. Traffic Signals, roundabouts are safer

References

(3-9) Mission Topography
(4-13) On-street bike protection infographic
(A-9) Main survey concerns

Appendix D BC Transit - Transit Future Plan Chilliwack Area | May 2012

[BC Transit
Transit Future Plan
Chilliwack Area | May 2012](#)

“The most important transit movements in priority order:

1. Abbotsford-Chilliwack connection
2. Longer hours of service and service more areas
3. Faster trips to/from UFV
4. Abbotsford-Surrey (TransLink) connection (BC Transit, 2012, pp.18)”

Appendix E BC Transit - Transit Future Plan Abbotsford - Mission | January 2013

[BC Transit
Transit Future Plan
Abbotsford - Mission | January 2013](#)

Transportation Need

(2) Climate change, population growth, an aging demographic and mobility for individuals without access to private automobiles
Abbotsford/Mission projected to grow 50%, 85,000 more people, over the next 25 years
“The rest of the FVRD will add a predicted 55,000 people in the next 25 years. Surrey and Langley will have a larger population than Vancouver by nearly 1 million; which will increase vehicles in traffic and the number of trips taken (BC Transit, 2013, pp.2)”

Key goals

(2) Economically vibrant, healthy and sustainable communities
8% mode share target
Stronger link between transit plans, local land use and transportation plans

Ridership goal of 15 million annual passengers in 2036 (2.3 million in 2011)

Terms

(4) Rapid transit:

“High volumes of passengers between major destinations, exclusive or semi-exclusive right of way (15 minutes or better) (2013, pp.4)”

Frequent transit:

“Medium to high density corridors w/ convenient, reliable, and frequent transit service all day (15 min or better, 15 hours a day, 7 days a week), goal to travel w/x consulting a transit schedule, justify capital investments such as transit priority, right-of-way improvements, a high level of transit stop amenities, and corridor branding (2013, pp.4)”

Local transit:

“Connect neighbourhoods to local destinations + Rapid + Frequent transit, frequency and vehicle type based on demand and operating conditions on local roads (2013, pp.4)”

(5) Targeted Transit:

“Express service (direct, limited stops), Dial-a-Ride/par-transit (on demand, for low density), Custom/handyDART (door-to-door service for unable to use conventional service) (2013, pp.5)”

Inter-Regional and Regional Transit:

“Amenities onboard should focus on customer comfort and other premium amenities such as Wi-Fi (2013, pp.5)”

Implementation Strategy

(9) Immediate priorities:

“(Abbotsford and Mission) Improve efficiency and reliability, improve customer information and customer service, meet additional West Coast Express arrival and departure times (2013, pp.9)”

Short term Priorities:

“(Infrastructure) Increase Operations and Maintenance Center capacity, Establish the McCallum Exchange, Introduce the McCallum Park and Ride, Establish the Clearbrook Exchange, Mission Transit Exchange Review, (Abbotsford) Establish the Transit Network structure, Rapid Transit Phase One, (Mission) Establish the Transit Future Plan Network structure, improve transit service plan (Inter-regional and regional service) Introduce service connecting Abbotsford and Surrey via Highway 1, Introduce service connecting Abbotsford and Chilliwack (2013, pp.9)”

Medium Term Priorities:

“(Infrastructure) High Street Terminal, Identify and implement transit priority opportunities with short implementation timelines

(Abbotsford) Complete the Frequent Transit Network, Rapid Transit Phase Two, East Abbotsford Study,
(Mission) Establish the Transit Future Network structure, (Inter-Regional and Regional Service) Mission - Maple Ridge (2013, pp.9)”

Long Term Priorities:

“(Abbotsford) YXX - Industrial Study, Increase service levels on FTN corridors,
(Mission) Targeted Transit, Increase service, (Inter-Regional and Regional Service) Abbotsford - Langley via Fraser Hwy, Feasibility study for Hwy 7 service between Kent and Mission (2013, pp.9)”

Ongoing Initiatives

1. “Enhanced custom transit service
2. Address existing service and operational needs
3. Develop the Local Transit Network (LTN)
4. Match vehicle type to local demand
5. Improve customer information
6. Improve transit facilities
7. Make transit more accessible (2013, pp.16)”

Funding

(18) Abbotsford - Mission funding: combination provincial funding, local property tax, passenger fares, and advertising revenue
(111) Local Fuel Tax (pay at the pump to fund transit)
Community Pass (each household get an annual transit pass included in property tax bill
Parking tax
Capital Reserve
A Vehicle Levy

Strategic Plan Priorities (BC Transit's 2030 Strategic Plan (2010))

(23) Increase integration with other types of sustainable travel, such as walking and cycling
Influence land use and development patterns
Identify and establish priority corridors for transit
Enhance existing partnerships and develop new ones
Increase BC Transit's environmental, social and economic accountability

Two-phase Community Participation Consultation Strategy

(25) Identify and solicit targeted feedback from all major institutions, organizations and other key community groups

Variety of methods and means to stimulate participants and ensure a wide range of citizens are reached
 Ensure final results reflects the public's needs and desires by incorporating feedback into the plan

Transit Future Bus Comments

- (27) Connecting transit design and land-use, realigning the existing system structure
- Improvements to transits amenities
- Funding, cost, and fares
- Improvements to reliability and on-time performance

Regional Land Use

- (33) Increase transportation choice and reduce dependency on the single-occupant vehicles
- Discourage non-contiguous development within Urban Growth Boundaries
- Support opportunities for residents to live and work in the same community or region
- Protect air quality

Customer Infrastructure

All weather protection (e.g. bus shelters), benches, trash cans, bike racks, lighting for security

Improved Customer Information

- (108) Online trip planner (i.e. Google Transit)
- Real-time customer information
- Corridor and vehicle branding standards for RTN and FTN corridors
- Additional transit information at the stop level

Appendix F

UFV Shuttle Schedules

Abbotsford to Chilliwack and Chilliwack to Abbotsford

Appendix F
UFV Shuttle Schedules
Abbotsford to Chilliwack and Chilliwack to Abbotsford

CAMPUS SHUTTLE SCHEDULE

SEMESTER FALL 2021
EFFECTIVE DATES: SEPT. 1ST, 2021 - DEC. 22, 2021

LOCATION DEPARTURE ABBOTSFORD → **LOCATION ARRIVAL** CHILLIWACK

DT: Departure Time WA: Wheelchair Accessible #ofP: Number of Passengers ETA T&T: Estimated Time of Arrival Chilliwack Trades & Tech

MONDAY					TUESDAY					WEDNESDAY					THURSDAY					FRIDAY				
#ofP	WA	DT	ETA T&T	ETA CEP	#ofP	WA	DT	ETA T&T	ETA CEP	#ofP	WA	DT	ETA T&T	ETA CEP	#ofP	WA	DT	ETA T&T	ETA CEP	#ofP	WA	DT	ETA T&T	ETA CEP
24	♿	8:00 AM	8:35 AM	8:38 AM	24	♿	8:00 AM	8:35 AM	8:38 AM	24	♿	8:00 AM	8:35 AM	8:38 AM	24	♿	8:00 AM	8:35 AM	8:38 AM	24	♿	8:00 AM	8:35 AM	8:38 AM
20		8:40 AM	9:15 AM	9:18 AM	20		8:40 AM	9:15 AM	9:18 AM	20		8:40 AM	9:15 AM	9:18 AM	20		8:40 AM	9:15 AM	9:18 AM	20		8:40 AM	9:15 AM	9:18 AM
24	♿	9:20 AM	9:55 AM	9:58 AM	24	♿	9:20 AM	9:55 AM	9:58 AM	24	♿	9:20 AM	9:55 AM	9:58 AM	24	♿	9:20 AM	9:55 AM	9:58 AM	24	♿	9:20 AM	9:55 AM	9:58 AM
20		10:30 AM	11:05 AM	11:08 AM	20		10:30 AM	11:05 AM	11:08 AM	20		10:30 AM	11:05 AM	11:08 AM	20		10:30 AM	11:05 AM	11:08 AM	20		10:30 AM	11:05 AM	11:08 AM
24	♿	10:45 AM	11:20 AM	11:23 AM	24	♿	10:45 AM	11:20 AM	11:23 AM	24	♿	10:45 AM	11:20 AM	11:23 AM	24	♿	10:45 AM	11:20 AM	11:23 AM	24	♿	10:45 AM	11:20 AM	11:23 AM
20		12:30 PM	1:05 PM	1:08 PM	20		12:30 PM	1:05 PM	1:08 PM	20		12:30 PM	1:05 PM	1:08 PM	20		12:30 PM	1:05 PM	1:08 PM	20		12:30 PM	1:05 PM	1:08 PM
24	♿	1:15 PM	1:50 PM	1:53 PM	24	♿	1:15 PM	1:50 PM	1:53 PM	24	♿	1:15 PM	1:50 PM	1:53 PM	24	♿	1:15 PM	1:50 PM	1:53 PM	24	♿	1:15 PM	1:50 PM	1:53 PM
20		2:45 PM	3:20 PM	3:23 PM	20		2:45 PM	3:20 PM	3:23 PM	20		2:45 PM	3:20 PM	3:23 PM	20		2:45 PM	3:20 PM	3:23 PM	20		2:45 PM	3:20 PM	3:23 PM
24	♿	3:15 PM	3:50 PM	3:53 PM	24	♿	3:15 PM	3:50 PM	3:53 PM	24	♿	3:15 PM	3:50 PM	3:53 PM	24	♿	3:15 PM	3:50 PM	3:53 PM	24	♿	3:15 PM	3:50 PM	3:53 PM
20		4:25 PM	5:00 PM	5:03 PM	20		4:25 PM	5:00 PM	5:03 PM	20		4:25 PM	5:00 PM	5:03 PM	20		4:25 PM	5:00 PM	5:03 PM	20		4:25 PM	5:00 PM	5:03 PM
24	♿	5:00 PM	5:35 PM	5:38 PM	24	♿	5:00 PM	5:35 PM	5:38 PM	24	♿	5:00 PM	5:35 PM	5:38 PM	24	♿	5:00 PM	5:35 PM	5:38 PM	24	♿	5:00 PM	5:35 PM	5:38 PM
20		5:40 PM	6:15 PM	6:18 PM	20		5:40 PM	6:15 PM	6:18 PM	20		5:40 PM	6:15 PM	6:18 PM	20		5:40 PM	6:15 PM	6:18 PM	20		5:40 PM	6:15 PM	6:18 PM

CAMPUS SHUTTLE SCHEDULE

SEMESTER FALL 2021
EFFECTIVE DATES: SEPT. 1ST, 2021 - DEC. 22, 2021

LOCATION DEPARTURE CHILLIWACK → **LOCATION ARRIVAL** ABBOTSFORD

DT: Departure Time WA: Wheelchair Accessible #ofP: Number of Passengers ETA T&T: Estimated Time of Arrival Chilliwack Trades & Tech

MONDAY					TUESDAY					WEDNESDAY					THURSDAY					FRIDAY				
#ofP	WA	DT	ETA T&T	ETA Abby	#ofP	WA	DT	ETA T&T	ETA Abby	#ofP	WA	DT	ETA T&T	ETA Abby	#ofP	WA	DT	ETA T&T	ETA Abby	#ofP	WA	DT	ETA T&T	ETA Abby
20		8:00 AM	8:05 AM	8:38 AM	20		8:00 AM	8:05 AM	8:38 AM	20		8:00 AM	8:05 AM	8:38 AM	20		8:00 AM	8:05 AM	8:38 AM	20		8:00 AM	8:05 AM	8:38 AM
24	♿	8:40 AM	8:45 AM	9:18 AM	24	♿	8:40 AM	8:45 AM	9:18 AM	24	♿	8:40 AM	8:45 AM	9:18 AM	24	♿	8:40 AM	8:45 AM	9:18 AM	24	♿	8:40 AM	8:45 AM	9:18 AM
20		9:30 AM	9:35 AM	10:08 AM	20		9:30 AM	9:35 AM	10:08 AM	20		9:30 AM	9:35 AM	10:08 AM	20		9:30 AM	9:35 AM	10:08 AM	20		9:30 AM	9:35 AM	10:08 AM
24	♿	10:00 AM	10:05 AM	10:38 AM	24	♿	10:00 AM	10:05 AM	10:38 AM	24	♿	10:00 AM	10:05 AM	10:38 AM	24	♿	10:00 AM	10:05 AM	10:38 AM	24	♿	10:00 AM	10:05 AM	10:38 AM
20		11:20 AM	11:25 AM	12:08 PM	20		11:20 AM	11:25 AM	12:08 PM	20		11:20 AM	11:25 AM	12:08 PM	20		11:20 AM	11:25 AM	12:08 PM	20		11:20 AM	11:25 AM	12:08 PM
24	♿	12:15 PM	12:18 PM	12:53 PM	24	♿	12:15 PM	12:18 PM	12:53 PM	24	♿	12:15 PM	12:18 PM	12:53 PM	24	♿	12:15 PM	12:18 PM	12:53 PM	24	♿	12:15 PM	12:18 PM	12:53 PM
20		2:00 PM	2:03 PM	2:38 PM	20		2:00 PM	2:03 PM	2:38 PM	20		2:00 PM	2:03 PM	2:38 PM	20		2:00 PM	2:03 PM	2:38 PM	20		2:00 PM	2:03 PM	2:38 PM
24	♿	2:30 PM	2:33 PM	3:08 PM	24	♿	2:30 PM	2:33 PM	3:08 PM	24	♿	2:30 PM	2:33 PM	3:08 PM	24	♿	2:30 PM	2:33 PM	3:08 PM	24	♿	2:30 PM	2:33 PM	3:08 PM
20		3:30 PM	3:33 PM	4:08 PM	20		3:30 PM	3:33 PM	4:08 PM	20		3:30 PM	3:33 PM	4:08 PM	20		3:30 PM	3:33 PM	4:08 PM	20		3:30 PM	3:33 PM	4:08 PM
24	♿	4:00 PM	4:03 PM	4:38 PM	24	♿	4:00 PM	4:03 PM	4:38 PM	24	♿	4:00 PM	4:03 PM	4:38 PM	24	♿	4:00 PM	4:03 PM	4:38 PM	24	♿	4:00 PM	4:03 PM	4:38 PM
20		5:15 PM	5:18 PM	5:53 PM	20		5:15 PM	5:18 PM	5:53 PM	20		5:15 PM	5:18 PM	5:53 PM	20		5:15 PM	5:18 PM	5:53 PM	20		5:15 PM	5:18 PM	5:53 PM
24	♿	5:40 PM	5:43 PM	6:18 PM	24	♿	5:40 PM	5:43 PM	6:18 PM	24	♿	5:40 PM	5:43 PM	6:18 PM	24	♿	5:40 PM	5:43 PM	6:18 PM	24	♿	5:40 PM	5:43 PM	6:18 PM

*please note: changes in the bus capacity (#ofP) may be subject to change

Appendix G
STARS 2.2 Technical Manual

[STARS 2.2 Technical Manual OP-14 p.4 - OP-17 p.2](#)

The Stars 2.2 Technical Manual outlines a total of 7 points that can be gained from transportation. Which includes the following three credit categories:

1. OP 15: Campus Fleet
1 point available

A motorized fleet fueled by: hybrid (gas-electric or diesel-electric), electric (bicycles included), Natural Compressed Gas (NCG), Hydrogen, B20, or locally produced low-level biofuel.

$$1 \times (\text{Number of vehicles that meet a criterion (1-8) for power or fuel type}) \div (\text{Total number of vehicles in the fleet}) = (\text{Total points earned, Up to 1})$$

2. OP 16: Commute Modal Split
5 points available

Part 1. Student commute modal split
Commuting with more sustainable options such as: walking, cycling, vanpooling, carpooling, using public transportation, using the campus shuttle, riding motorcycles, riding scooters, driving zero-emissions vehicles, or a distance education option.

$$\text{Points earned} = A \times (B / 100)$$

A = Total percentage of students that use a more sustainable commuting option (0-100)
B = Points available for Part 1

Part 2. Employee commute modal split
Commuting with more sustainable options such as: walking, cycling, vanpooling, carpooling, using public transportation, using the campus shuttle, riding motorcycles, riding scooters, driving zero-emissions vehicles, or telecommuting.

$$\text{Points earned} = A \times (B / 100)$$

A = Total percentage of employees that use a more sustainable commuting option (0-100)
B = Points available for Part 2

3. OP 17: Support for Sustainable Transportation
1 point available

UFV would need to implement the following criteria:

- a. Has a bicycle-sharing program or participates in a local bicycle-sharing program. (0.20 points available)
- b. Participates in a car sharing program, such as a commercial car-sharing program, one administered by the institution, or one administered by a regional organization. (0.20 points available)
- c. Offers preferential parking or other incentives for fuel efficient vehicles. (0.20 points available)
- d. Has one or more Level 2 or Level 3 electric vehicle charging stations that are accessible to student and employee commuters.

- e. Has incentives or programs to encourage employees to live close to campus. (0.20 points available)
- f. Has other programs or initiatives to encourage more sustainable modes of transportation and/or reduce the impact of student and employee commuting. (0.20 points available)

For more information visit the [STARS 2.2 Technical Manual OP-14 p.4 - OP-17 p.2](#)

