Fraser Valley Express

Service and Ridership Review



February 2016



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Executive Summary

In April 2015, the route 66 Fraser Valley Express (FVX) was introduced to the Fraser Valley providing a regional, limited-stop service connecting Chilliwack, Abbotsford and Langley (Metro Vancouver). This report represents the results of a review of the FVX service to date, to gauge route performance, schedule adherence and customer feedback.

A range of tools were utilized to maximize opportunities for public and stakeholder input as part of the service review, in addition to analyzing service related performance statistics. A total of 481 onboard and online surveys were completed with good representation from Chilliwack, Abbotsford and Metro Vancouver.

Both the ridership data and survey responses indicate an extremely successful introduction to regional service in the Fraser Valley. The overall feedback was positive and passengers were pleased the service had been introduced with 80% of respondents indicating that the FVX routing met their needs. In addition, ridership has nearly doubled since implementation and is anticipated to meet, or exceed, the projected average of 6 riders per hour over the first year of service.

The key items to consider for future service change include:

- expansion of service on Sundays and holidays
- future use of westbound highway ramps at 202 Street to access the Carvolth stop
- implementing bus priority measures on Highway 1
- developing a Highway traffic management plan in collaboration with the MOTI.

The data and engagement results have been summarised in Table A along with recommendations for the FVX service. Only minor service changes are recommended at this stage to improve connections with TransLink service on route 555. Based on the consultation and analysis, the key service changes that should be considered in the future include expanding service to Sundays and holidays, extended evening service and improving frequency during key weekday periods. Given that the existing schedule currently utilizes the full revenue hour allowance and ridership continues to grow and change, reallocation projects should only be considered after at least a full year of service has been reviewed and there is significant evidence to support the changes.

Table A: Fraser Valley Express Summary and Recommendations

Subject	Summary	Recommendations	
Ridership & Route	 Total Ridership has nearly doubled since implementation and is anticipated to meet the projected average of 6 rides per hour over the first year. Ridership Distribution - evenly between Chilliwack, Abbotsford and Langley. Key Origin/Destination - Carvolth Exchange is the most popular stop location. Approx. 32% of Chilliwack respondents use FVX to access Abbotsford and approx 16% of Abbotsford respondents use FVX to Chilliwack Downtown. Ridership by Time of Day - during weekdays, ridership to Langley is generally evenly spread throughout the day with a decline into the evening. Main Trip purpose - for Chilliwack and Abbotsford residents is for work or shopping/recreation. The main trip purpose for Metro Vancouver residents 	 Given the generally positive engagement feedback, no route changes are recommended at this stage other than: Amend FVX routing to travel via the Trans Canada off-ramps on westbound service to Carvolth once these are constructed (expected completion 2019). Consider providing a shelter at Vedder at Luckakuck in the outbound direction. Consider enclosing the shelter at McCallum for better weather protection. 	
Schedule	 Key Engagement Feedback related to a desire for Sunday and holiday service, an increase in frequency of service and a desire for later service. Connections - although most riders access the FVX via a connection from another transit system, a considerable proportion (33%) of users have direct access either on foot or by biking. Following this, 14% are dropped off at an FVX stop location and the park and ride facilities are used by approximately 9% of survey respondents. Schedule Change Options – Based on the consultation and analysis, the key service changes that should be considered at some point in the future include expanding service to Sundays and holidays, extended evening service and improving frequency during key weekday periods. Schedule Reliability - when service is not impacted by traffic incidents on the Trans-Canada Highway, the schedule timing performs well. However, traffic incidents on the highway are a regular occurrence, generally once or multiple times a week. This has significant implications for on-time performance and reliable service. 	 Monitor ridership. Implement minor schedule changes to improve connections with TransLink service on route 555 at Carvolth Exchange. Engage with MOTI on future transit priority opportunities which could include onshoulder bus lanes for the TransCanada Highway as well as queue jump lanes. Engage with the MOTI on future highway ramp bus stops. BC Transit and the Operating Company (First Canada) to collaborate on developing a traffic incident plan, which should include the following: Engage with MOTI on methods to improve communication with First 	

		Canada and the public relating to highway traffic incidents and future traffic management plans for this section of the TransCanada Highway. Monitor and record the number of incidents and impacts to on-time performance. Formalize detour routes dependent upon traffic incident location. Formalize the methods of communication to alert drivers and customers to trip delays and cancellations.
Fares	• Customer Satisfaction – the survey results indicate that there is a generall high level of customer satisfaction related to the cost of FVX fares.	•
	 Fare Type - Cash fares are the most popular fare product followed by monthly passes and then tickets. Cash fares and monthly pass sales have increased since service was introduced, whereas ticket sales have remained consistent with a slight decline in recent months. This purchase pattern is 	
	generally consistent with the introduction of new transit service as passengers 'try' the service prior to committing to purchasing a monthly pas	 Consider undertaking a Fare Review that could include detailed analysis on potential fare integration options, fare zones,
	 Fares Purchase Location - most fare products are purchased from vendors in Chilliwack and Abbotsford, with 15% being purchased online. 	revenue distribution and revenue collection for transit service in the Fraser
	 Fare Integration - customer feedback indicates a desire for fare integration between the local and regional transit systems and a desire for fare zones that address a perceived inequality when the same fare is charged regardless of distance travelled. 	 Valley. Continue to work with the UFV Student Union Society (SUS) to determine if there is appetite to incorporate the FVX service
	 U-PASS is not currently valid on the FVX and the passenger survey indicate that there currently are only a limited number of University of the Fraser Valley (UFV) student riders. 	
Marketing	• Key marketing and communication strategies were used to both design and raise awareness of the FVX service in late 2014 and early 2015.	 Incorporate strategies to further help raise awareness of the FVX service in the
	• Awareness of the service is still increasing as demonstrated through the attraction of new riders, primarily through 'word-of-mouth'.	Annual Fraser Valley Transit Marketing Plan.

1.0 Introduction

In April 2015, the Fraser Valley Express (FVX) transit service was introduced to the Fraser Valley. The FVX is a regional limited-stop service that is designed to connect Chilliwack, Abbotsford and Langley (Metro Vancouver). The route was designed to be competitive with the personal automobile, reliable and provide passenger comfort and conveniences. Funded by a partnership between BC Transit, the City of Abbotsford and the City of Chilliwack and coordinated by the Fraser Valley Regional District (FVRD), the introduction of the FVX is intended to help:

- Accommodate growing demand from the public to access regional services such as hospitals, health specialists and the courts
 - Access to broader labour markets
 - Transit access to Abbotsford Airport (YXX) from the west
 - Transit access to regional tourist destinations
- Accommodate growing populations in the FVRD
- Accommodate increasing public demand for connections with Metro Vancouver
- Improve transit mode share, which will result in improved Fraser Valley Air Quality
- Improve access to the University of Fraser Valley (UFV) Campuses in Abbotsford and Chilliwack

There are a total of six stops on the FVX with 17 round trips on weekdays and 4 round trips on Saturdays (Figures 1 and 2). The routing and schedule has been designed to integrate with other transit systems and leverage existing and new infrastructure along the corridor which includes Park & Rides and the eastbound highway ramp at the 202 St. on the TransCanada Highway. It should be noted that there is currently no westbound highway ramp at 202 St., which requires a long deviation to access the Carvolth stop via 200 St. This facility will be constructed with recently announced TransCanada Highway improvements due for completion in 2019.

66 FVX (Fraser Valley Express) PITT MEADOWS 7 11 66 CHILLIWACK FORT 501 509 CA LANGLEY C62 66 P MISSION 66 66 P LANGLEY ALDERGROVE **ABBOTSFORD** 2 23 66 (P) 3 12 66 P P Park & Ride

Figure 1: FVX Routing and Stops

This route only stops at shown destinations.

Figure 2: FVX Schedule

66 FVX (Fraser Valley Express)

Service between Chilliwack, Abbotsford and Langley. At the Carvolth Exchange you can connect to TransLink service to Metro Vancouver. This route only stops at shown destinations.

66 FV	X			to	Langley	
	Monday to Friday					
A	VL	L	MC	HI	CA	
Downtown Exchange: Yale and Spadina	Vedder at Luckakuck	Lickman Park & Ride	McCallum Park & Ride	Highstreet Mall	Carvolth Exchange	
5:15	5:22	5:30	5:50	6:01	6:26	
5:45	5:52	6:00	6:20	6:31	6:56	
6:15 6:45	6:22 6:52	6:30 7:00	6:50 7:20	7:01 7:31	7:26 7:56	
7:30	7:37	7:00 7:45	8:05	8:16	8:41	
8:45	8:52	9:00	9:20	9:31	9:54	
10:00	10:07	10:15	10:35	10:46	11:09	
11:30	11:37	11:45	12:05	12:16	12:39	
12:45	12:52	1:00	1:20	1:31	1:54	
2:15	2:22	2:30	2:50	3:01	3:24	
3:20	3:27	3:35	3:55	4:06	4:29	
3:45	3:52	4:00	4:20	4:31	4:54	
4:15	4:22	4:30	4:50	5:01	5:24	
5:00	5:07	5:15	5:35	5:46	6:09	
6:00	6:07	6:15	6:35	6:46	7:09	
7:01	7:08	7:16	7:36	7:47	8:10	
7:45	7:52	8:00	8:20	8:31	8:54	
		Satu	ırday			
9:00	9:07	9:15	9:35	9:46	10:09	
11:45	11:52	12:00	12:20	12:31	12:54	
2:30	2:37	2:45	3:05	3:16	3:39	
5:15	5:22	5:30	5:50	6:01	6:24	

66 F\	/X			to C	hilliwack
Monday to Friday					
CA	HI	MC	L	VL	A
Carvolth Exchange	Highstreet Mall	McCallum Park & Ride	Lickman Park & Ride	Vedder at Luckakuck	Downtown Exchange: Yale and Spadina
6:40	7:03	7:11	7:30	7:39	7:47
7:10	7:33	7:41	8:00	8:09	8:17
7:40	8:03	8:11	8:30	8:39	8:47
8:20	8:43	8:51	9:10	9:19	9:27
8:59	9:22	9:30	9:49	9:58	10:06
10:15	10:38	10:46	11:05	11:14	11:22
11:25	11:48	11:56	12:15	12:24	12:32
12:58	1:21	1:29	1:48	1:57	2:05
2:05	2:28	2:36	2:55	3:04	3:12
3:45	4:08	4:16	4:36	4:45	4:53
4:46	5:09	5:17	5:37	5:46	5:54
5:15	5:38	5:46	6:06	6:15	6:23
5:48	6:11	6:19	6:39	6:48	6:56
6:30	6:53	7:01	7:21	7:30	7:38
7:30	7:53	8:01	8:21	8:30	8:38
8:30	8:53	9:01	9:21	9:30	9:38
9:05	9:28	9:36	9:56	10:05	10:13
	Saturday				
10:15	10:38	10:46	11:06	11:15	11:23
1:00	1:23	1:31	1:51	2:00	2:08
3:45	4:08	4:16	4:36	4:45	4:53
6:30	6:53	7:01	7:21	7:30	7:38

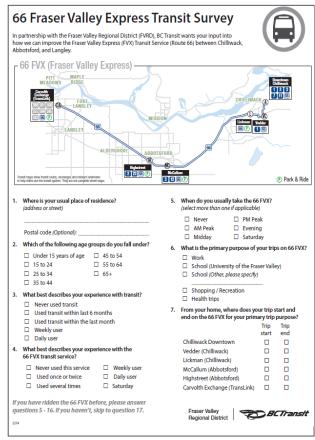
As part of the implementation plan, it was determined that a detailed analysis of the service would be undertaken in the fall of 2015 to gauge route performance, schedule adherence and customer feedback. Based on the information collected in this analysis, opportunities have been identified to improve the service. These recommendations include cost neutral options as well as options that will require additional resources. The recommendations focus on the following topics:

- Route and Schedule Design
- Fares
- Marketing and Communication

Methodology 2.0

A range of tools was used to maximize opportunities for public and stakeholder input as well as detailed service related performance statistics. Collection techniques included:

- Reported Revenue used to calculate ridership information
- Farebox Ridership BC Transit collected and analyzed farebox ridership information
- Onboard Ridechecks and Performance Analysis - Onboard ridechecks and ontime performance analyses were undertaken to acquire more detailed information on bus stop utilization, system ridership and schedule reliability
- Customer Survey A customer survey was available online and onboard the buses to gauge feedback from existing customers on how the FVX is performing and identify opportunities for improvement. Non-riders were also encouraged to take the survey to better understand opportunities to encourage new ridership.
- Operator Survey Transit Operators were surveyed to gauge feedback on how the FVX is performing and identify opportunities for improvement.
- Customer Feedback Feedback that has been received via the online comment form since service implementation has been summarized and reviewed.



3.0 Engagement Results

A total of 481 onboard and online surveys were completed. The majority of respondents were from Chilliwack and Abbotsford, with a significant number also from Metro Vancouver and a very small proportion from Mission and Agassiz-Harrison (Figure 3). Given this representation, where analysis by area is summarised within this report, it will only refer to Abbotsford, Chilliwack and Metro Vancouver. There was a good distribution of responses across age ranges with majority (60%) between the ages of 15 and 35, with 35% between the ages of 35 and 64 and 6% aged 65 and older.

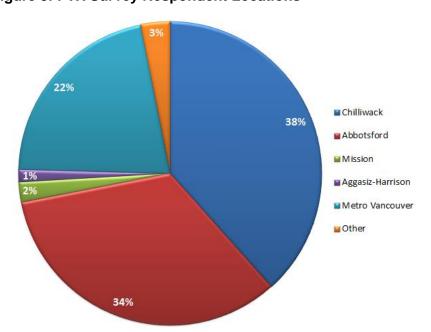
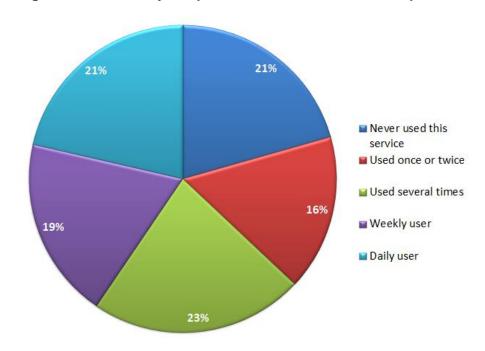


Figure 3: FVX Survey Respondent Locations

Figure 4: FVX Survey Respondent Level of FVX Ridership

Although the majority of the respondents were regular transit riders, taking transit either daily or at least once a week (69%) it should be noted that 21% of respondents had never used the FVX service before (Figure 4). This demonstrates that the service is still gaining new riders.



The overall feedback was extremely positive and passengers were pleased the service had been introduced with 80% of respondents indicating that the FVX routing met their needs. Figure 5 provides a summary of the engagement feedback when respondents were asked how service could be improved. This indicated a high demand for Sunday and Holiday service as well as increased frequency on both weekdays and Saturdays. There was also a high demand for integrated fares between the FVX and local transit systems (including TransLink service) as well as a potential zoned approach to fares to ensure greater equality between passengers travelling shorter distance and those travelling all the way from Chilliwack to Langley. There were also a high proportion of Chilliwack respondents requesting improved bus stop amenities, specifically a bus shelter on Vedder road.

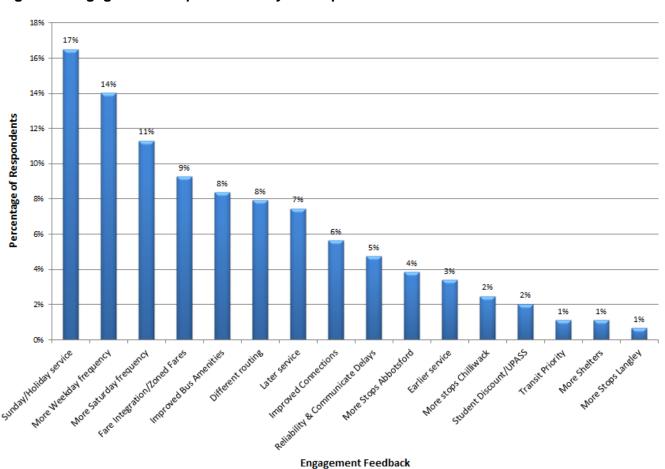


Figure 5: Engagement Responses – Ways to Improve the FVX

4.0 Ridership Analysis

4.1 Ridership Forecasts

During the planning and design of the FVX service ridership was estimated and used to forecast revenue. These projections were based upon local population and demographic information as well as examples of similar regional connector service in BC, primarily the Cowichan Valley Commuter (CVC) service that connects Duncan to Victoria. This service achieved an average of 7 rides per hour for the first year (2009) and this subsequently grew to 19 rides per hour over the following five years (2014).

In comparison to the CVC, the FVX service was designed to meet a larger range of customers, beyond purely commuters and, as such, included a greater service span and number of trips per day. Given that some of these additional trips would likely drive down the total rides per hour, the FVX was forecasted to produce 6 rides per hour over the first year. Similar to the CVC service, this would be anticipated to grow over time.

4.2 Total Ridership & Revenue Results

Reported revenue and farebox rider calculations were used to estimate ridership for the first seven months of the FVX service. Reported revenue shows that ridership and revenue has steadily increased over time, by almost two thirds since the service was introduced (Figure 6).

Figure 6: FVX Ridership and Revenue (from Reported Revenue, 2015)

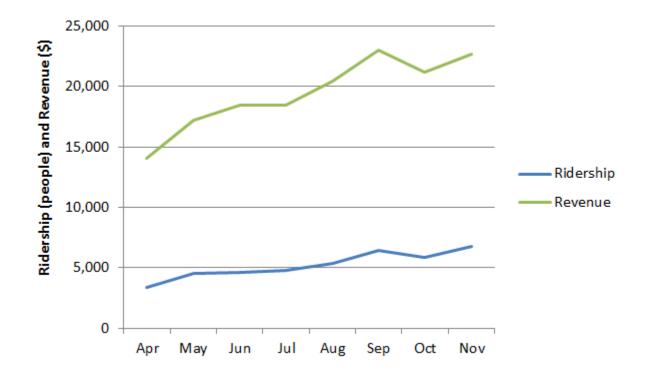
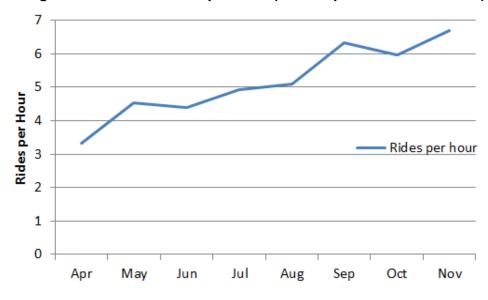


Figure 7: FVX Total Rides per Hour (from Reported Revenue 2015)



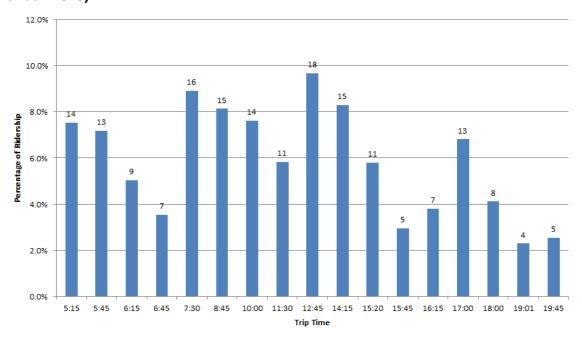
Rides per hour have also grown rapidly from 3.32 rides per hour in the first month to 6 rides per hour by October, 2015 (Figure 7). Albeit growth slowed during the summer months. ridership still continued to increase. This demonstrates that service is on track with the projected ridership, which forecasts an average of 6 rides per hour over the first year.

4.3 Ridership by Time of Day

There are a total of 17 round trips on weekdays and 4 on Saturdays. The onboard ride check information was used to analyze the ridership by time of day showing the percentage of daily ridership by trip in addition to the number of riders on each trip (data labels for Figures 8-12).

During weekdays, ridership in the westbound direction to Langley was generally evenly spread throughout the day with a decline in the evening. The most popular trip times are the 12:45pm and 7:30am with lower ridership on the 6:15am, 6:45am and 11:30am trips in the morning and throughout late afternoon and evening from 3:45pm onwards. The exception is the 5:00pm trip to Langley that shows a peak in ridership in this period (Figure 8).

Figure 8: FVX Weekday Westbound Ridership to Langley by Time of Day (onboard ride check 2015)



In comparison, there is a clear distinction in preferred trip times for weekday in an eastbound direction to Chilliwack. Peak ridership is on the 3.45pm trip (15% of total ridership per weekday in this direction), followed by the 4:45pm, 5:15pm and 10:15am trips with approximately 9% each (Figure 9).

Figure 9: FVX Weekday Eastbound Ridership to Chilliwack by Time of Day (onboard ride check 2015)

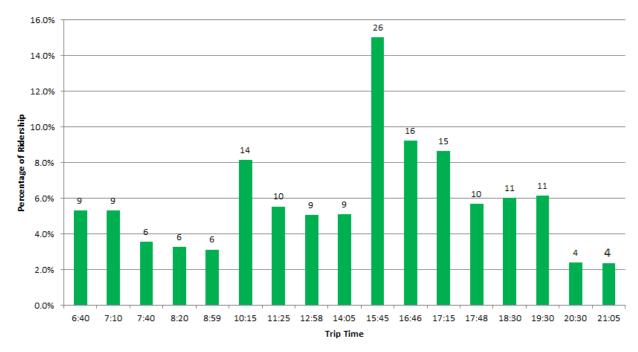
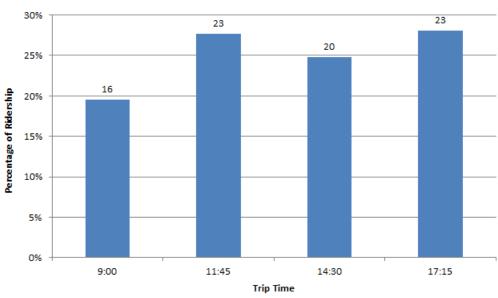


Figure 10 and 11 demonstrate that ridership on Saturdays is considerably higher per trip than on weekdays. Ridership to Langley on Saturdays is highest on the 11:45am and 5:15pm trip and lowest on the 9am trip (Figure 10). There is a peak ridership on the 6:30pm Saturday trip to Chilliwack, however ridership is generally consistent throughout the day (Figure 11).

Figure 10: FVX Saturday Westbound Ridership to Langley by Time of Day (onboard ride check 2015)



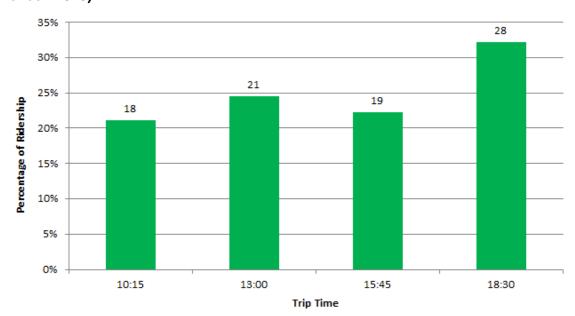


Figure 11: FVX Saturday Eastbound Ridership to Chilliwack by Time of Day (onboard ride check 2015)

4.4 Ridership Origin & Destination

There are a total of six stop locations on the 66 FVX:

- Downtown Chilliwack
- Vedder at Luckakuck, Chilliwack
- Lickman Park & Ride, Chilliwack
- McCallum, Abbotsford
- · Highstreet, Abbotsford
- Carvolth Exchange, Langley

4.4.1 Passenger Activity by Stop Location

The onboard ride check information was used to analyze bus stop utilization. This demonstrated that passengers are generally evenly distributed between Chilliwack, Abbotsford and Langley. The most popular stop is the Carvolth Exchange with more than 36% of weekday ridership either originating or destined for this location (Figure 12). This is closely followed by Downtown Chilliwack, McCallum and Highstreet, which each account for approximately 15-17% of passenger activity. With the additional 9% of passenger activity at Vedder and 5% at Lickman Park and Ride, it shows an even distribution of passenger activity across the three key communities of Langley, Chilliwack and Abbotsford.

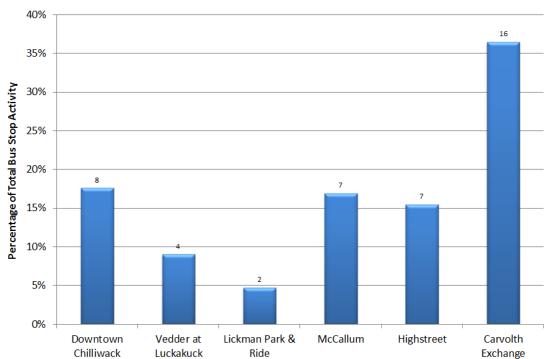
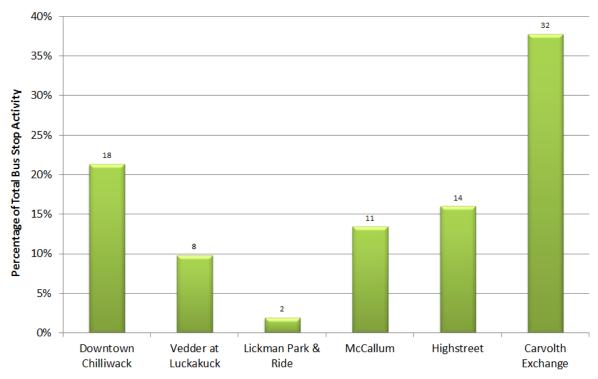


Figure 12: FVX Weekday Bus Stop Activity (onboard ride check 2015)





In comparison, there is a slightly higher passenger activity occuring in Chilliwack on Saturdays; with 33% of ridership compared to 29% from Abbotsford. However, considerably less passenger activity occurs at Lickman Park & Ride, implying this location may be primarily used by commuters. McCallum also saw a decrease of approximately 4% in activity on Saturdays leaving the Carvolth Exchange, Downtown Chilliwack and Highstreet as the key origin and destination stops (Figure 13).

4.4.2 Origin and Destination by Respondent Community

The online and onboard survey results were used to analyse the key origins and destinations by the respondent residential location or community. As Figure 3 in Section 3 previously showed, 38% (175) of respondents were from Chilliwack, 34% (153) were from Abbotsford, and 22% (98) of respondents were from Metro Vancouver.

Figure 14: FVX Origin and Destination Locations for Chilliwack Respondents

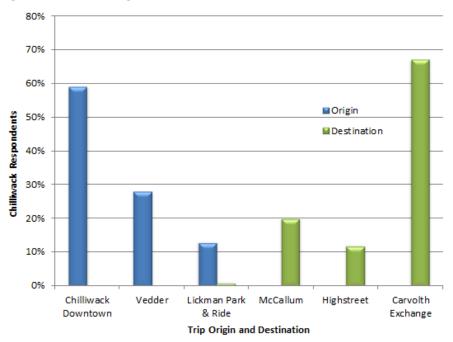


Figure 14 outlines that the majority of Chilliwack respondents travel from downtown Chilliwack to the Carvolth Exchange.
Approximately 32% of Chilliwack respondents use the FVX to access Abbotsford at the McCallum and Highstreet stops.

Figure 15 outlines that majority of Abbotsford respondents travel from McCallum (58%) to the Carvolth Exchange, with a signficant proportion also travelling from Highstreet (42%). Approximately 16% of Abbotsford respondents use the service to travel to Chilliwack Downtown.

Figure 15: FVX Origin and Destination Locations for Abbotsford Respondents

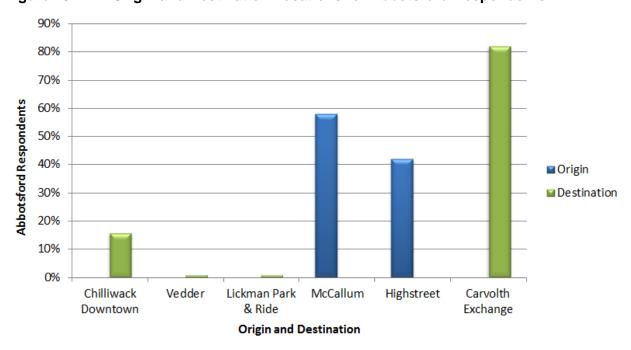


Figure 16 outlines that majority of the Metro Vancouver respondents travel from the Carvolth Exchange to Chilliwack (65%), primarily to downtown Chilliwack, with 35% travelling to Abbotsford, primarily McCallum.

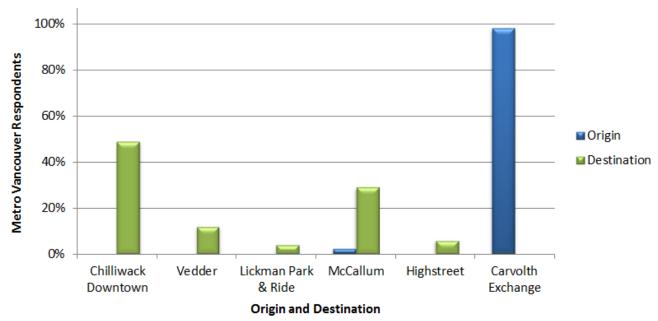


Figure 16: FVX Origin and Destination Locations for Metro Vancouver Respondents

4.5 Trip Purpose

Figure 17 provides a summary of the FVX trip purpose by respondent location based upon feedback from the online and onboard survey.

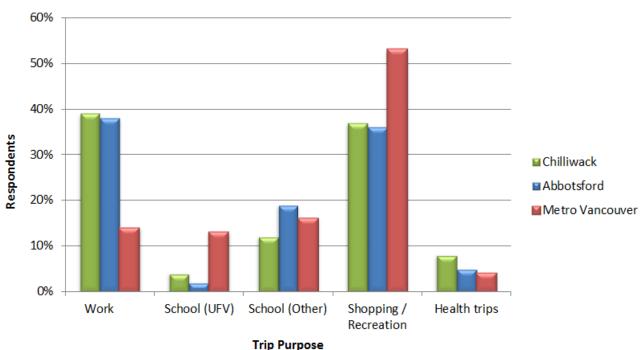


Figure 17: Trip Purpose by Respondent Location (Survey November 2015)

The majority of respondents from both Chilliwack and Abbotsford ride the FVX for either work or shopping/recreation. A smaller but still significant proportion from Abbotsford and Chilliwack use the FVX to get to and from schools (excluding the University of the Fraser Valley) with a much lower proportion for health trips.

In comparison, more than half of the respondents from Metro Vancouver use the FVX to travel to Abbotsford and Chilliwack for shopping and recreation, with a much smaller percentage using the service to commute to work. A higher proportion of respondents from Metro Vancouver also use the FVX to get to UFV in comparison to Chilliwack and Abbotsford, albeit this number is still small.

4.6 Engagement Feedback on Route and Stop Locations

80% of respondents indicated that the FVX routing and bus stop configuration met their needs. Only 7% of survey respondents provided feedback related to route changes or additional stop location requests. The main routing suggestion related to requests to extend the service further into Metro Vancouver, primarily to a Skytrain station. In addition, a few respondents suggested that the FVX route via Bourquin Exchange in Abbotsford and there were requests for a bus shelter at the Vedder outbound stop and also to enclose the bus shelter at McCallum for better weather protection.

4.7 Ridership Summary & Recommendations

The following summarises FVX ridership to date:

- **Total Ridership** FVX ridership has nearly doubled since implementation and is anticipated to meet the projected average of 6 rides per hour over the first year.
- Ridership Distribution is generally evenly spread between Chilliwack, Abbotsford and Langley.
- Key Origin/Destination Points Carvolth Exchange is the most popular stop location. Approximately 32% of Chilliwack respondents use the FVX to access Abbotsford and approximately 16% of Abbotsford respondents use the service to travel to Chilliwack Downtown.
- Ridership by Time of Day during weekdays, ridership to Langley is generally evenly spread throughout the day with a decline into the evening.
- Main Trip purpose for Chilliwack and Abbotsford residents is for work or shopping/recreation. The main trip purpose for Metro Vancouver residents is shopping and recreation.

Recommendations

- Given the generally positive engagement feedback, no route changes are recommended at this stage other than to amend service to travel via the Trans Canada off-ramps on westbound service to Carvolth once these are constructed (expected completion is 2019).
- Consider providing a shelter at Vedder at Luckakuck in the outbound direction to provide weather protection and improve customer satisfaction.
- Consider enclosing the shelter at McCallum for better weather protection and customer satisfaction.

5.0 Schedule Design

5.1 Existing Schedule Design

The existing schedule was designed with input from local partners and the public and includes 17 round trips on weekdays and 4 round trips on Saturdays. There is no service on Sundays or holidays (other than Easter Monday).

Based upon the existing demographics, the 2014 FVRD Trip Diary and public feedback, the schedule was designed to have greater frequency at peak commuter times and was designed to connect with the Route 555 at Carvolth, which provides frequent service to Lougheed Station and the Skytrain. The routing and schedule was also designed to leverage existing and new infrastructure along the corridor which includes the McCallum and Lickman Park & Rides.

In Chilliwack, the FVX provides direct service to downtown Chilliwack, Cottonwood Mall and Chilliwack Mall (at Vedder and Luckakuck). However, connections are required to access the UFV Chilliwack Campus (via Route 1) and other communities in both Chilliwack and Agassiz Harrison.

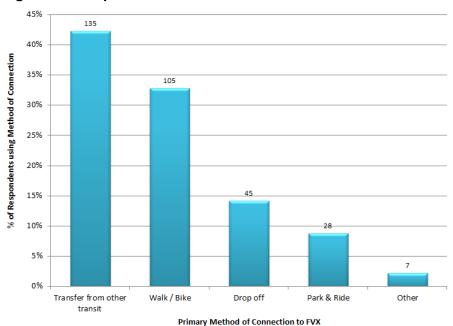
In Abbotsford, the FVX provides almost direct service to the UFV Abbotsford Campus via a short walk from McCallum and direct service to Highstreet. However, connections are required to access other communities in Abbotsford and the Bourquin Exchange.

The schedule was also designed to accommodate anticipated congestion on the Trans Canada Highway by the inclusion of significant recovery time, particularly during peak service.

5.2 Connections

Figure 18 shows the primary methods used to access the FVX. 42% of respondents indicated that they transferred from or to another transit system and over half of these transfers are to or from TransLink service with a roughly even proportion then from Chilliwack and Abbotsford (Figure 19).

Figure 18: Respondent Access to the FVX



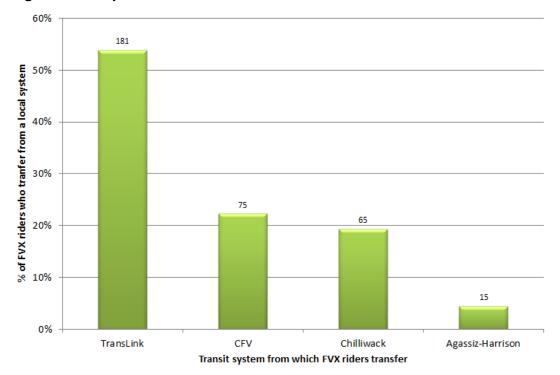


Figure 19: Respondent Access to the FVX

Although most riders access the FVX via a connection from another transit system, a large proportion (33%) of users access the service either on foot or bicycling. Following this, 14% are dropped off at an FVX stop location and the park and ride facilities are used by approximately 9% of survey respondents.

5.3 Schedule Reliability

The schedule has been designed to include generous recovery time to accommodate congestion at peak times. When service is not impacted by traffic incidents on the Trans-Canada Highway, the schedule timing performs well. However, traffic incidents on the highway are a regular occurrence, generally once or multiple times a week. This has significant implications for on-time performance and reliable service.

In the event of a traffic incident, the Ministry of Transportation and Infrastructure (MOTI) often closes a lane or even the complete travel direction of the highway until the accident is cleared, which results in FVX service either being re-routed via the Fraser Highway (when possible) or remaining on the Trans-Canada highway until traffic flows resume. There is currently no clear MOTI traffic management plan for this stretch of the Trans-Canada Highway to respond to incidents. Therefore, it is very challenging for transit service to efficiently respond and often results in a negative experience for customers.

There were several engagement comments related to service reliability and better communication regarding delays and trip cancellation due to traffic incidents. Currently, the driver will notify transit dispatch of a traffic incident via radio and, dependent upon the nature of the incident, the operator may re-route the next trip or cancel service if required. The operator will then alert customers via an online notification on the BC Transit FVX webpage. Passengers have the option of signing up for service alerts via text or email to get instant messages when notifications are posted. However, despite this approach to communication, the traffic incident has usually already affected the existing (and potentially, following) trip prior to customers receiving advance warning.

5.4 Engagement Feedback

The engagement responses indicated a strong desire for schedule changes with 52% of respondents indicating that the schedule did not meet their needs. This was further emphasized by 13% of the respondents who had not ridden the FVX before indicating the reason being that the schedule does not fit their travel needs. The primary reasons include:

- Desire for Sunday and holiday service (17%)
- Increased weekday frequency (14%)
- Increased Saturday frequency (11%)
- Later Service (7%)
- Improved Connections (6%)
- Improved reliability and communication when delayed (5%)

The existing schedule currently utilizes the full revenue hour allowance. Therefore, the introduction of Sunday and holiday service, increased frequency and/or later service would require either additional expansion hours or a reallocation of existing service hours. It should be noted that reallocation projects should only be considered after at least a full year of service has been reviewed and there is significant evidence to support the changes.

The TransLink Route 555 provides the most frequent service connecting to Metro Vancouver and the sky train. The FVX schedule was reviewed against the TransLink 555 schedule to identify any improvements to connections. Most of the 34 weekday FVX one-way trips connect well with the 555. However, 4 trips were identified that could better connect with the 555 with only minor cost-neutral schedule adjustments. These changes would not impact connections to local service in Abbotsford or Chilliwack other than 2 eastbound trips that would no longer connect with the Route 2 at Abbotsford Highstreet where there are 2-3 regular passengers unloading. Given the high level of ridership at Carvolth and Chilliwack and potentially high levels of connections to the 555, it is considered that these proposed changes would provide an overall improvement to service.

5.5 Schedule Summary and Recommendations

The following summarises the FVX schedule considerations to date:

- **Key Engagement Feedback** related to a desire for Sunday and holiday service, an increase in frequency of service and a desire for later service.
- **Connections** although most riders access the FVX via a connection from another transit system, a considerable proportion (33%) of users have direct access either on foot or by biking. Following this, 14% are dropped off at an FVX stop location and the park and ride facilities are used by approximately 9% of survey respondents. Some schedule changes were identified on 4 one-way trips to improve connections with TransLink service on route 555.
- Schedule Change Options Based on the consultation and analysis, the key service changes that should be considered at some point in the future include expanding service to Sundays and holidays, extended evening service and improving frequency during key weekday periods.
- **Schedule Reliability** when service is not impacted by traffic incidents on the Trans-Canada Highway, the schedule timing performs well. However, traffic incidents on the

highway are a regular occurrence, generally once or multiple times a week. This has significant implications for on-time performance and reliable service.

Recommendations

- Monitor ridership, including total growth in addition to high and low demand trips for any future reallocation opportunities.
- Implement minor schedule changes to improve connections with TransLink service on route 555 at Carvolth Exchange.
- Engage with MOTI on future transit priority opportunities which could include extending the existing on-shoulder bus lanes for the TransCanada Highway in addition to queue jump lanes.
- Engage with the MOTI on future highway ramp bus stops to streamline the route and provide potential to add additional stop locations with minimal impact to trip times.
- BC Transit and the Operating Company (First Canada) to collaborate on developing a traffic incident plan, which should include the following:
 - Engage with MOTI on methods to improve communication with First Canada and the public relating to highway traffic incidents and future traffic management plans for this section of the TransCanada Highway.
 - Monitor and record the number of incidents and impacts to on-time performance.
 - o Formalize detour routes dependent upon traffic incident location.
 - Formalize the methods of communication to alert drivers and customers to trip delays and cancellations.
- Continue to collaborate with the UFV Student Union Society regarding any potential future interest in the FVX service.

6.0 Fares

6.1 Existing Fare Structure

The existing fare structure for the FVX is outlined in Table 1 and is based upon a cash fare of \$5.00. The fare structure and costs were developed with input from public engagement in fall 2014. As the fare structure is independent of the transit fare structures of the local transit systems in CFV, Chilliwack and Agassiz-Harrison as well as TransLink, transfers from one system to another is not permitted.

Given the multiple fare products already in existence in the Fraser Valley, the FVX fare structure was designed to minimize complexity. In order to achieve this, there are only a limited number of fare products available. For example, discounted cash fares or tickets are not offered and there are no integrated fare products between the FVX and local service.

Table 1: Fraser Valley Express Fare Structure

Fare Product	Cost	
Cash (8 or under free)	\$5.00	
Tickets (book of 10)	\$45.00	
Adult Monthly Pass	\$100.00	
Student*/Senior* Monthly Pass	\$85.00	
Transfers are not issued on the 66 FVX		
* Reduced fare with valid I.D. for persons 65 or over and students in full-time attendance to Grade 12		

6.2 Fares Sales

FVX tickets and passes are available for purchase online or in person at the locations outlined in Table 2.

Table 2: Fraser Valley Express Vendors

Community	Vendor	
Online	Fraser Valley Regional District	
Langley	Marketplace IGA (20159 88 Av)	
Abbotsford Shoppers Drug Mart #205, Sevenoaks Shopping Centre (32900 S.		
	Save-on-Foods, Salish Plaza (46020 Yale Road)	
Mission	Mission Library (33247 Second Avenue)	
Chilliwack Fraser Valley Regional District Office (45950 Cheam Avenue)		
	Cottonwood Mall (45585 Luckakuck Way)	

6.2.1 Fare Product Sales

Cash fares have been the predominant fare product purchased since the FVX service was introduced. The use of cash fares has also increased considerably since service start-up

(Figure 20). Albeit a significantly lower proportion than cash, the use of monthly passes has also increased considerably... Whereas ticket sales were on par with passes when service was introduced, they have remained generally flat with a slight decline since August 2015 representing the least popular fare product. This pattern of fare product use is somewhat consistent with the introduction of new transit services as passengers 'try' the service prior to committing to purchasing a monthly pass.

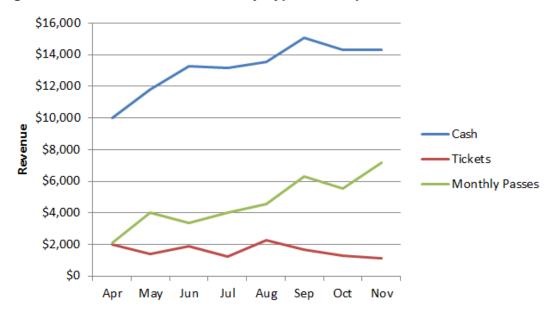


Figure 20: FVX Fare Product Sales by Type since April 2015

6.2.2 Fare Product Sales by Location

Fare product sale information confirm the November 2015 survey results showing that cash is the most popular fare type, followed by monthly passes and then tickets.

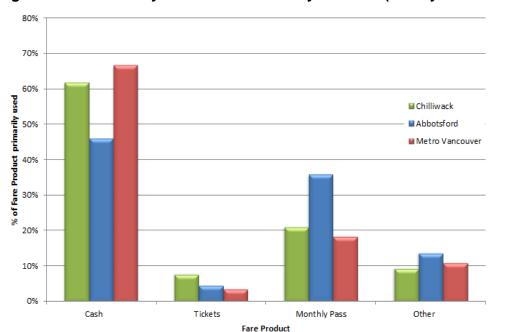


Figure 21: FVX Primary Fare Product Used by Location (Survey November 2015)

The survey shows that a considerably higher proportion of monthly passes are used as the primary fare product in Abbotsford in comparison to Chilliwack and Metro Vancouver. Of the three locations, Abbotsford had the lowest percentage of cash fare users (Figure 21).

Whereas initially, passes and tickets were primarily purchased at the FVRD offices, sales of passes and tickets has gradually increased in Abbotsford, Chilliwack and Metro Vancouver with a decline in products sold at the FVRD as new vendors have come onboard (Figure 22).

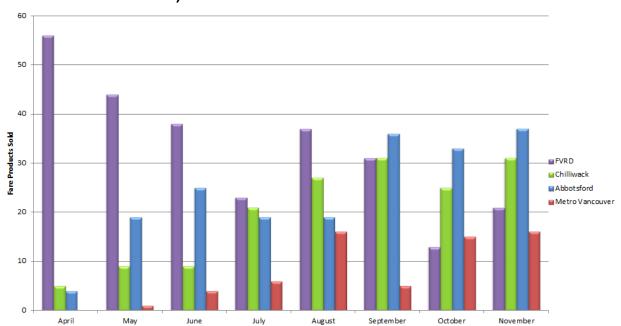
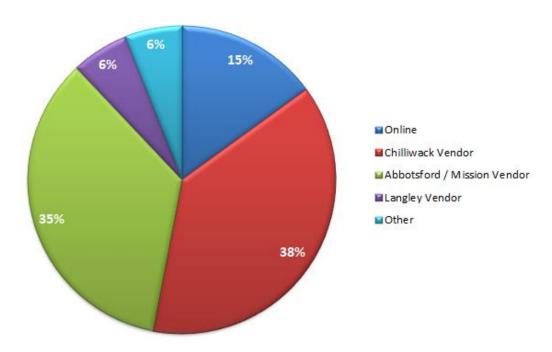


Figure 22: FVX Primary Fare Product Sold by Location (Vendor Sales information November 2015)

Figure 23: FVX Primary Fare Product Purchase Location (Survey November 2015)

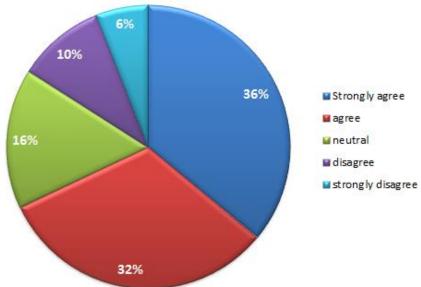
The survey also indicated that generally the same volume of fare products is purchased from vendors in Chilliwack and Abbotsford. Note that a significant proportion of fare products are also being purchased online from the FVRD (Figure 23).



6.3 Engagement Feedback on Fares

A large proportion of respondents agreed that the fares were reasonable given the extent and quality of service provided (Figure 24).

Figure 24: November 2015 Survey Responses when asked if the FVX Fares are reasonable given the Quality of Service Provided



Approximately 9% of respondents indicated that fare changes would improve the FVX service. Some of these comments related to a perceived inequality when the same fare is charged regardless of distance travelled e.g. from Chilliwack all the way to Carvolth versus Chilliwack to Abbotsford only.

However, much of the feedback also related to a desire for fare integration, both between local BC Transit services and the FVX in addition to integration with TransLink service. The fictional case study opposite is based upon the qualitative feedback provided in the November 2015 survey. This highlights the complexity of the existing fare structures when travelling within and between the various transit services in the Fraser Valley.

Case Study

Catherine currently travels from her home in Chilliwack to Downtown Vancouver for work using transit. She gets dropped off by her husband at downtown Chilliwack in the morning prior to start-up of the local transit service. She then uses her monthly FVX pass to board the 66 bus to Langley. At Langley, she then boards the 555 to connect to the skytrain using her Compass Card. In the afternoon, she uses her Compass Card and her FVX monthly pass to return back to Chilliwack, where she can then use her Chilliwack monthly pass on the local service to get back home.

Therefore, in order to travel to work by transit, Catherine requires three separate transit passes. She must ensure that she doesn't forget one of her passes each morning when she goes to work. It takes time and there is additional cost to purchase 3 different transit passes in three different locations each month.

She would occasionally like to stop over in Abbotsford on the way home to visit her mother and do some shopping at the Seven Oaks Mall. However, this would require her to also pay for an additional transit fare to ride the CFV transit system. She would love to be able to buy one pass, either online or from one location near her home that was valid on all systems in the Fraser Valley and Metro Vancouver.

Several barriers currently restrict the ability for fare integration between BC Transit and TransLink including the use of different technology and different funding models that would impact the ability to calculate revenue split between communities. However, within the Fraser Valley itself, there is the potential to improve the customer experience through the development of a combined Riders Guide and integrated fare structure for all local and regional (FVX) service. Similar projects have successfully been implemented in other transit systems in the province with positive results.

Several factors would need to be addressed should fare integration be pursued, including a standardization of transit policies (e.g. transfers, free rides, service days etc.), the need to coordinate base local fare products, and the need to agree to an acceptable revenue splitting model. However, this approach would provide a simple and more user-friendly environment leading to longer term cost savings and increased ridership.

6.4 Fare Summary & Recommendations

The following summarises the FVX fare considerations to date:

- **Customer Satisfaction** the survey results indicate that there is a generally high level of customer satisfaction related to the cost of FVX fares.
- Fare Type cash fares are the most popular fare product followed by monthly passes
 and then tickets. Cash fares and monthly pass sales have increased since service was
 introduced, whereas ticket sales have remained consistent with a slight decline in recent
 months. This purchase pattern is generally consistent with the introduction of new transit
 service as passengers 'try' the service prior to committing to purchasing a monthly pass.
- **Fare Purchase Location** most fare products are purchased from vendors in Chilliwack and Abbotsford, with a significant portion being purchased online.
- **Fare Integration** customer feedback indicates a desire for fare integration between the local and regional transit systems and a desire for fare zones that address a perceived inequality when the same fare is charged regardless of distance travelled.
- U-PASS is not currently valid on the FVX and the passenger survey indicates that there currently are only a limited number of the University of the Fraser Valley (UFV) student riders.

Recommendations

- Monitor fare product use.
- Establish links from the Abbotsford, Mission and Chilliwack municipal websites to that of the FVRD to promote online purchasing of FVX fare products.
- Consider undertaking a Fare Review that could include detailed analysis on potential fare integration options, fare zones, revenue distribution and revenue collection for transit service in the Fraser Valley.
- Continue to work with the UFV Student Union Society (SUS) to determine if there is appetite to incorporate the FVX service (or part thereof) into the existing U-PASS agreement.

7.0 Marketing and Communication

7.1 Existing Marketing and Communication Strategy

There was a considerable amount of community engagement conducted in fall 2014 as part of the development of the FVX service, which in itself raised awareness of the service. This included open houses, media releases (printed and radio advertisements and social media), online and onboard/hard copy surveys as well as on-board advertising.

The launch of service in 2015 then included the following communication strategies:

- Media:
 - Printed and radio advertisements
 - Website notifications
 - Social media updates
 - Newspaper articles
- Onboard advertising
- Key bus stop location advertising
- Local partner website updates
- 2015 UFV student orientation
- 2015 Abbotsford Air Show



An annual Fraser Valley Transit Marketing Plan is currently being developed in collaboration with local partners and stakeholders. This is due to be completed by March 2016, for implementation throughout 2016/17. This will identify key marketing strategies, events, resource requirements and action items intended to raise awareness of transit and increase ridership in the region.

7.2 Engagement Feedback

Of the 99 respondents who had not used the FVX before, nearly 30% identified the reason being that they did not know it existed. Marketing and communication is extremely valuable in raising awareness of a new transit service. However, with most new transit service, ridership takes time to establish as awareness is raised through 'word of mouth'. The FVX has demonstrated a considerable increase in ridership over the first 7 months of service, which demonstrates both that the service is seen as valuable (retention of existing customers) and awareness of the service is still increasing with the attraction of new customers as time progresses. Additional marketing efforts could assist in supporting this increase in ridership.

7.3 Marketing Summary & Recommendations

The following summarises the FVX marketing and communication considerations to date:

- **Key marketing and communication strategies** were used to both design and raise awareness of the FVX service in late 2014 and early 2015.
- Awareness of the service is still increasing as demonstrated through the attraction of new riders.

Recommendations

 Incorporate strategies to further help raise awareness of the FVX service in the Annual Fraser Valley Transit Marketing Plan and collaborate with local partners and stakeholders to implement these strategies throughout 2016/17.

8.0 Summary & Recommendations

Table 3 provides a summary of the data and engagement results, which have been used to develop recommendations for the FVX service. Albeit some schedule change options related to Sunday and holiday service were considered, only minor service changes are recommended at this stage to improve connections with TransLink service on route 555. Given the continued increase in awareness of the service and anticipated growth in ridership any major schedule change options could be reconsidered following a review of ridership growth after a year of service.

Table 3: Fraser Valley Express Summary and Recommendations

Subject	Summary	Recommendations
Ridership & Route	 Total Ridership has nearly doubled since implementation and is anticipated to meet the projected average of 6 rides per hour over the first year. Ridership Distribution - evenly between Chilliwack, Abbotsford and Langley. Key Origin/Destination - Carvolth Exchange is the most popular stop location. Approx. 32% of Chilliwack respondents use FVX to access Abbotsford and approx 16% of Abbotsford respondents use FVX to Chilliwack Downtown. Ridership by Time of Day - during weekdays, ridership to Langley is generally evenly spread throughout the day with a decline into the evening. Main Trip purpose - for Chilliwack and Abbotsford residents is for work or 	 Given the generally positive engagement feedback, no route changes are recommended at this stage other than: Amend FVX routing to travel via the Trans Canada off-ramps on westbound service to Carvolth once these are constructed (expected completion 2019). Consider providing a shelter at Vedder at Luckakuck in the outbound direction. Consider enclosing the shelter at
	shopping/recreation. The main trip purpose for Metro Vancouver residents is shopping and recreation.	McCallum for better weather protection.
Schedule	 Key Engagement Feedback related to a desire for Sunday and holiday service, an increase in frequency of service and a desire for later service. Connections - although most riders access the FVX via a connection from another transit system, a considerable proportion (33%) of users have direct access either on foot or by biking. Following this, 14% are dropped off at an FVX stop location and the park and ride facilities are used by approximately 9% of survey respondents. Schedule Change Options – Based on the consultation and analysis, the key service changes that should be considered at some point in the future include expanding service to Sundays and holidays, extended evening service and improving frequency during key weekday periods. Schedule Reliability - when service is not impacted by traffic incidents on the Trans-Canada Highway, the schedule timing performs well. However, traffic incidents on the highway are a regular occurrence, generally once or multiple times a week. This has significant implications for on-time performance and reliable service. 	 Monitor ridership. Implement minor schedule changes to improve connections with TransLink service on route 555 at Carvolth Exchange. Engage with MOTI on future transit priority opportunities which could include onshoulder bus lanes for the TransCanada Highway as well as queue jump lanes. Engage with the MOTI on future highway ramp bus stops. BC Transit and the Operating Company (First Canada) to collaborate on developing a traffic incident plan, which should include the following: Engage with MOTI on methods to improve communication with First Canada and the public relating to

		highway traffic incidents and future traffic management plans for this section of the TransCanada Highway. Monitor and record the number of incidents and impacts to on-time performance. Formalize detour routes dependent upon traffic incident location. Formalize the methods of communication to alert drivers and customers to trip delays and cancellations.
Fares	 Customer Satisfaction – the survey results indicate that there is a generally high level of customer satisfaction related to the cost of FVX fares. Fare Type - Cash fares are the most popular fare product followed by monthly passes and then tickets. Cash fares and monthly pass sales have increased since service was introduced, whereas ticket sales have remained consistent with a slight decline in recent months. This purchase pattern is 	Establish links from the Abbotsford, Mission and Chilliwack municipal websites to that of the FVRD to promote online
	 generally consistent with the introduction of new transit service as passengers 'try' the service prior to committing to purchasing a monthly pass Fares Purchase Location - most fare products are purchased from vendors in Chilliwack and Abbotsford, with 15% being purchased online. 	could include detailed analysis on potential fare integration options, fare zones,
be th	Fare Integration - customer feedback indicates a desire for fare integration between the local and regional transit systems and a desire for fare zones that address a perceived inequality when the same fare is charged regardless of distance travelled.	 Valley. Continue to work with the UFV Student Union Society (SUS) to determine if there is appetite to incorporate the FVX service
	 U-PASS is not currently valid on the FVX and the passenger survey indicate that there currently are only a limited number of University of the Fraser Valley (UFV) student riders. 	
Marketing	• Key marketing and communication strategies were used to both design and raise awareness of the FVX service in late 2014 and early 2015.	 Incorporate strategies to further help raise awareness of the FVX service in the
	 Awareness of the service is still increasing as demonstrated through the attraction of new riders, primarily through 'word-of-mouth'. 	Annual Fraser Valley Transit Marketing Plan.