

Nanaimo to Cowichan Express

Post Implementation Review



July 2023



Contents

Contents	2
Executive Summary	4
1.0 Introduction	9
Existing Service Design.....	9
2.0 Methodology.....	12
3.0 Engagement Results	13
4.0 Ridership Analysis.....	17
4.1 Ridership Productivity (Rides and Boardings per Hour).....	17
NCX productivity in the context of other interregional routes	17
NCX Productivity by Month.....	19
NCX Productivity by Quarter.....	20
NCX Productivity by Service Day	20
4.2 Ridership Forecast.....	22
4.3 Total Ridership.....	23
4.4 Ridership Origin & Destination	26
NCX Stops in Context with other Interregional Routes.....	26
NCX Passenger Activity by Regional District and Stop Location.....	27
NCX Passenger Activity by Stop Location by Quarter	28
4.5 Engagement Feedback on Route and Stop Locations	28
Chemainus Service	29
New Service Areas.....	30
4.6 Ridership Summary & Recommendations	31
5.0 Schedule Design	33
5.1 Existing Schedule Design	33
5.2 Transfer Opportunities.....	34
Transfer opportunities within Cowichan Valley Regional District.....	35
Transfer opportunities within the Regional District of Nanaimo	36
Transfer opportunities to other Interregional travel	36
5.3 Schedule Reliability.....	37
Highways Traffic Incident Planning.....	38
On-Time Performance Reports.....	38
Customer Service Notifications.....	39
Operator Comments	39
5.4 Engagement Feedback.....	40
Service Utilization.....	40
Ranked Service Improvement Priorities.....	40
Weekday Trip Times	40
Saturday Trip Times	41
5.5 Schedule Summary and Recommendations	42
6.0 Marketing and Communication	45
NCX Post Implementation Review	

6.1	Implementation Marketing and Communication Strategy	45
6.2	Customer Responses	45
	Questions Asked of Operators.....	45
	Customer Service Notifications.....	45
6.3	Engagement Feedback	46
6.4	Marketing Summary and Recommendation.....	47
7.0	Miscellaneous/Other	50
	Cowichan Valley Stopping Policy	50
	Fare Review.....	51
8.0	Summary & Recommendations	52
Appendix A	60

Executive Summary

This report presents the findings of a comprehensive review conducted on the Nanaimo Cowichan Express (NCX), an interregional transportation service introduced in March 2022 between the Cowichan Valley and Nanaimo. The objectives of this review are to evaluate the ridership performance of the NCX route, evaluate on-time performance, and consider the customer experience.

To ensure a robust evaluation, various tools were employed to facilitate public and stakeholder input alongside the analysis of performance statistics. A total of 232 online surveys were completed, providing valuable insights from residents in both the Regional District of Nanaimo (RDN) and the Cowichan Valley Regional District (CVRD) transit areas. An additional four responses were gathered by RDN Transit operators who regularly drive the route.

The ridership data and survey responses indicate a successful launch of the interregional NCX service. The top priority identified was to increase frequency during the week, highlighting that the service works for the average survey respondent, but more travel time options were desired. Connections to Victoria was the next most requested priority.

In addition to the following recommendations noted, the key items outlined from this post implementation review to consider for future service changes include:

- Expansion of service to offer more trip options on weekdays
- Introduction of Sunday service
- Improving customer information relating to connections to Victoria and key destinations in the Regional District of Nanaimo
- Evaluate opportunity of service to Chemainus as outlined in Table 1
- Investigate opportunity to change the pick-up and drop-off policy within the CVRD

The data and engagement results have been summarised in Table A (next page) along with recommendations for the NCX service. Although some alignment and route changes were explored, improvements to trip options and Sunday service are the recommended priorities as well as improving customer information.

Given the growing awareness of the service and anticipated growth in ridership, changes to the routing may be considered in the future with attention to the key origins and destinations.

Table 1: Executive Summary: Summary and Recommendations

Subject	Summary and Recommendations
<p>Ridership & Route</p>	<ul style="list-style-type: none"> • Performance Ridership is well within capacity and no service changes are required for the purpose of addressing critical performance levels. • Engagement Respondents did not prioritize alignment changes (Chemainus, additional coverage of the route), and there was not a clear majority regarding potential changes to the NCX alignment. Decisions concerning the alignment of the NCX should be postponed until ridership grows further (up to 30% year-over-year), new data tools enable a more thorough investigation of the linked origins and destinations of NCX riders, and a fare review is completed in the RDN and CVRD, which includes the 70 NCX. • Future Consideration Although there are no changes proposed to route alignment in this document, a future routing review process should take place within the next two years to review options. They include but are not limited to: new Cowichan Valley Regional District Hospital, Chemainus, South Parkway Plaza, and Vancouver Island University (VIU). <p>Cowichan Valley Regional Transit</p> <ul style="list-style-type: none"> • Examine opportunities to improve Chemainus residents' access to the NCX by exploring improved local connectivity between Chemainus and Ladysmith. <p>Infrastructure</p> <ul style="list-style-type: none"> • Work with Ministry of Transportation and Infrastructure (MOTI) to examine the possibility of stops near the signalized intersections at Chemainus Road and Mt. Sicker Road, or River Road after construction is complete. <p>New Data Tools</p> <ul style="list-style-type: none"> • Further monitoring of NCX ridership to identify key transfer stops within Nanaimo. New fare technology (referred to as UMO) may enable transit staff to identify high-volume transfers between the NCX and local Nanaimo routes.¹

¹ related considerations include the possibility of a new fare programs such as UPass adoption by the Vancouver Island University Student Union

	<p>University Integration</p> <ul style="list-style-type: none"> Collaborate with the VIU Student Union Society regarding any potential future interest in the NCX Service being routed to VIU.
<p>Schedule</p>	<p>Schedule Reliability</p> <ul style="list-style-type: none"> Implement operational adjustments to ensure on-time departures with a monitoring program in place to ensure operational compliance. <p>Weekday Schedule Design</p> <ul style="list-style-type: none"> Consider extending the NCX evening service span on Friday (when the passengers will be able to access onward connections to local Cowichan Valley Transit Routes). Further NCX service span extensions should be aligned with expansion of the service span of key local connecting routes within the CVRD. Service spans within RDN are adequate. <p>Saturday Schedule Design</p> <ul style="list-style-type: none"> Additional trips are not required to address capacity issues, and improving operating hours on Saturdays was prioritized at sixth out of eleven improvement priorities. If Friday evening service span is increased, aligning Saturday evening service span should be considered. <p>Sunday Service Design</p> <ul style="list-style-type: none"> Subject to funding and the availability of local connections within the CVRD and RDN transit systems, proceed with introducing Sunday service on the NCX. <p>Transfer Opportunities to/from Victoria</p> <ul style="list-style-type: none"> This report supports service adjustments to the Cowichan Valley Commuter Route 66 to enable riders originating in Nanaimo to make southbound transfers from the NCX to Route 66 in Duncan. Additional information should be provided for NCX riders to assist in this transfer. <p>Improve Transfer Opportunities</p> <ul style="list-style-type: none"> Within CVRD - Improve access to, and reach of, the NCX by adding connecting service from Routes 2 and 4 (within Duncan), and Route 34 (Chemainus/ Ladysmith) to enable northbound morning travel. Within RDN - Destinations within Nanaimo are well served. Additional customer information may be provided to support NCX riders use of the RDN transit system.

	<p>Highways Traffic Incident Plan</p> <ul style="list-style-type: none"> • BC Transit and the Operating Company (RDN) should collaborate on developing a traffic incident plan, which should include the following: <ul style="list-style-type: none"> ○ Engage with MOTI on methods to improve communication with the RDN and the public in relation to highway traffic incidents and future traffic management plans for 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.
<p>Marketing</p>	<p>Customer Information</p> <ul style="list-style-type: none"> • Identifying compatible transfer points to assist riders transferring between the NCX and RDN transit routes connecting to BC Ferries services at Departure Bay. • Make fare policies, fare product and fare cost information more readily available at NCX Bus Stops and wherever the NCX is promoted including vendors and eventually the new fare technology UMO. • Annotate specific trips that connect with Victoria-bound transit in the NCX schedule in the Rider’s Guide and on the web. • Consider annotating the specific trips that connect with the NCX in the schedule of the Cowichan Valley Commuter Routes 66 and 44 schedule in the Rider’s Guide and on the web. • Develop “onwards connections” information to direct NCX customers to RDN Transit Routes that connect to Departure Bay and Intercity services at Woodgrove Centre. • <u>Based on the information above explore developing an “Interregional” information standard to be used for eligible (limited stop) interregional routes across British Columbia for BC Transit.</u>
<p>Other</p>	<p>On/Off Stopping Policy</p> <ul style="list-style-type: none"> • Investigate the opportunity to permit getting on and off the bus at all stops along the NCX. • <u>Subject to continued limited stop service</u>, adopt the Schedule Poster format used by the Fraser Valley Express (See Figure 27) to provide NCX Customers with greater understanding of how the NCX interacts with the RDN Transit System and the CVRD Transit System. <p>Fares</p>

	<ul style="list-style-type: none">• Although not a priority based on public engagement, BC Transit will be leading a fare review in Fall 2023 for the NCX.
--	--

1.0 Introduction

On March 28, 2022, the Nanaimo Cowichan Express (NCX) transit service was introduced to the Regional District of Nanaimo (RDN), and Cowichan Valley Regional District (CVRD). The NCX is a regional, limited-stop service that is designed to connect Nanaimo, Cedar, Cassidy, Ladysmith, North Cowichan, and Duncan. The route was designed to be competitive with the personal automobile, dependable, and to provide passenger comfort and convenience. Funded through a partnership between BC Transit, the RDN and the CVRD (and operated by the RDN), the introduction of the NCX was intended to:

- Accommodate increasing public demand for interregional transportation service between Nanaimo, Duncan and Victoria; improve transit mode share, which will result in reduced carbon emissions and curtail some congestion increases associated with population growth;
- Improve access to the Vancouver Island University Campuses in Nanaimo and Duncan;
- Provide transportation options for the growing populations of both the RDN and CVRD;
- Accommodate growing demand from the public to access specialized services such as hospitals, health specialists and the courts; and,
- Broaden transit access to regional travel and tourist destinations.

As part of the implementation plan, it was determined that a detailed post-implementation review would be undertaken following the first year of operation in spring 2023 to examine operations and performance over the first year, solicit customer feedback, and identify potential adjustment and improvement priorities.

Based on the information collected in this analysis, and taking strategic goals into consideration, this report will provide recommended prioritization for future improvements of the NCX route.

Recommendations:

1. Ridership and Route
 - route alignment and stopping policy
 - service days offered, service span, service frequency
2. Marketing
3. Scheduling
4. Other/Miscellaneous

The ridership and route priority options may require additional operating resources, while other initiatives may be cost-neutral.

Existing Service Design

There are a total of eight stops in each direction on the NCX with 7 round trips on weekdays and 6 round trips on Saturdays (Figure 1 and Figure 2). The routing and schedule have been designed to integrate with the RDN and CVRD transit systems and leverage existing and new infrastructure along the corridor which includes new transit stops at Cowichan Commons and Ladysmith.

NCX Service and Ridership Review

Figure 1: NCX Routing and Major Stops

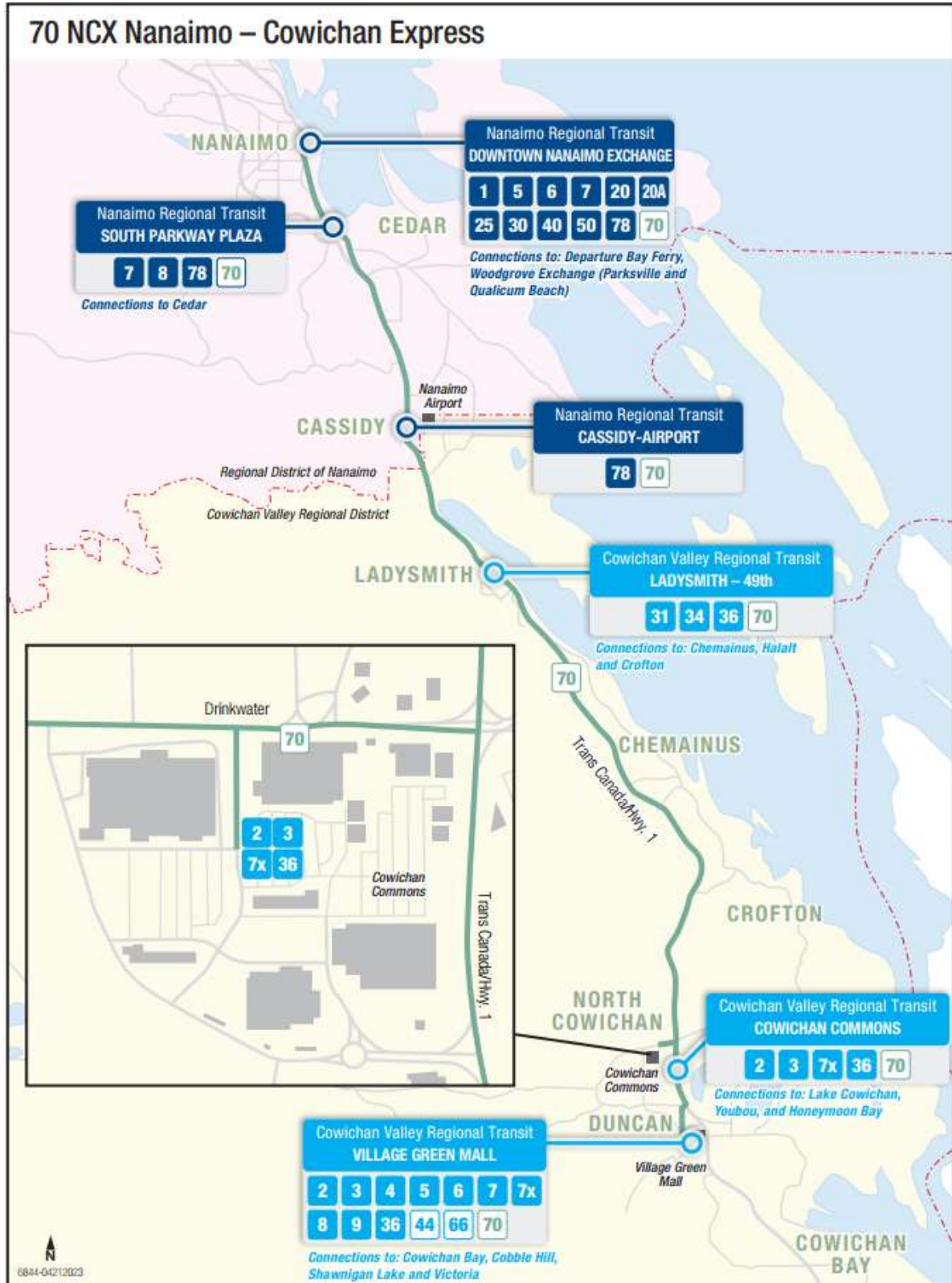


Figure 2: NCX Schedule

70 NCX							
Downtown Nanaimo Exchange	South Parkway Plaza	Nanaimo Airport (YCD)	1st Ave. and Trans Canada Hwy.	Cowichan Commons	Beverly Corners	Duncan Train Station	Village Green Mall: London Drugs
to Duncan							
Monday to Friday							
5:08	5:15	5:29	5:42	6:06	6:10	6:15	6:18
6:14	6:21	6:35	6:48	7:12	7:16	7:21	7:24
7:57	8:04	8:18	8:31	8:55	8:59	9:04	9:07
11:26	11:33	11:47	12:00	12:24	12:28	12:33	12:36
2:16	2:23	2:37	2:50	3:14	3:18	3:23	3:26
4:10	4:17	4:31	4:44	5:08	5:12	5:17	5:20
5:40	5:47	6:01	6:14	6:38	6:42	6:47	6:50
Saturday							
6:55	7:02	7:16	7:29	7:53	7:57	8:02	8:05
7:55	8:02	8:16	8:29	8:53	8:57	9:02	9:05
11:09	11:16	11:30	11:43	12:07	12:11	12:16	12:19
2:17	2:24	2:38	2:51	3:15	3:19	3:24	3:27
3:51	3:58	4:12	4:25	4:49	4:53	4:58	5:01
5:16	5:23	5:37	5:50	6:14	6:18	6:23	6:26

70 NCX							
Village Green Mall: London Drugs	Duncan Train Station	Beverly Corners	Cowichan Commons	1st Ave. and Trans Canada Hwy.	Nanaimo Airport (YCD)	Lawlor Rd. and South Parkway Plaza	Downtown Nanaimo Exchange
to Nanaimo							
Monday to Friday							
6:25	6:27	6:29	6:38	7:01	7:12	7:26	7:35
7:31	7:33	7:35	7:44	8:07	8:18	8:32	8:41
9:14	9:16	9:18	9:27	9:50	10:01	10:15	10:24
12:43	12:45	12:47	12:56	1:19	1:30	1:44	1:53
3:33	3:35	3:37	3:46	4:09	4:20	4:34	4:43
5:27	5:29	5:31	5:40	6:03	6:14	6:28	6:37
6:57	6:59	7:01	7:10	7:33	7:44	7:58	8:07
Saturday							
8:12	8:14	8:16	8:25	8:48	8:59	9:13	9:22
9:12	9:14	9:16	9:25	9:48	9:59	10:13	10:22
12:26	12:28	12:30	12:39	1:02	1:13	1:27	1:36
3:34	3:36	3:38	3:47	4:10	4:21	4:35	4:44
5:08	5:10	5:12	5:21	5:44	5:55	6:09	6:18
6:33	6:35	6:37	6:46	7:09	7:20	7:34	7:43

2.0 Methodology

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.
- APC Ridership Analysis - BC Transit reviewed the first year of boarding and alighting data collected by Automatic Passenger Counters (APC) units to examine bus stop utilization, ridership and ridership patterns based on trip time, day of the week, and season. On-time performance analyses were undertaken to acquire more detailed information on bus stop utilization, system ridership and schedule reliability.
- Operational Analysis - BC Transit undertook on-time performance analyses to acquire more detailed information on schedule reliability.
- Customer Survey – A customer survey was available online and onboard the buses to gauge feedback from existing customers on how the NCX is performing and identify opportunities for improvement. Non-riders were also encouraged to take the survey to better understand opportunities to encourage new ridership.
- Customer Feedback – Feedback that has been received through an online comment form since service implementation has been summarized and reviewed.
- Operator Feedback - Feedback that has been received through a hard copy survey completed by RDN Transit Operators since service implementation has been summarized and reviewed.

Figure 3: Hardcopy Survey

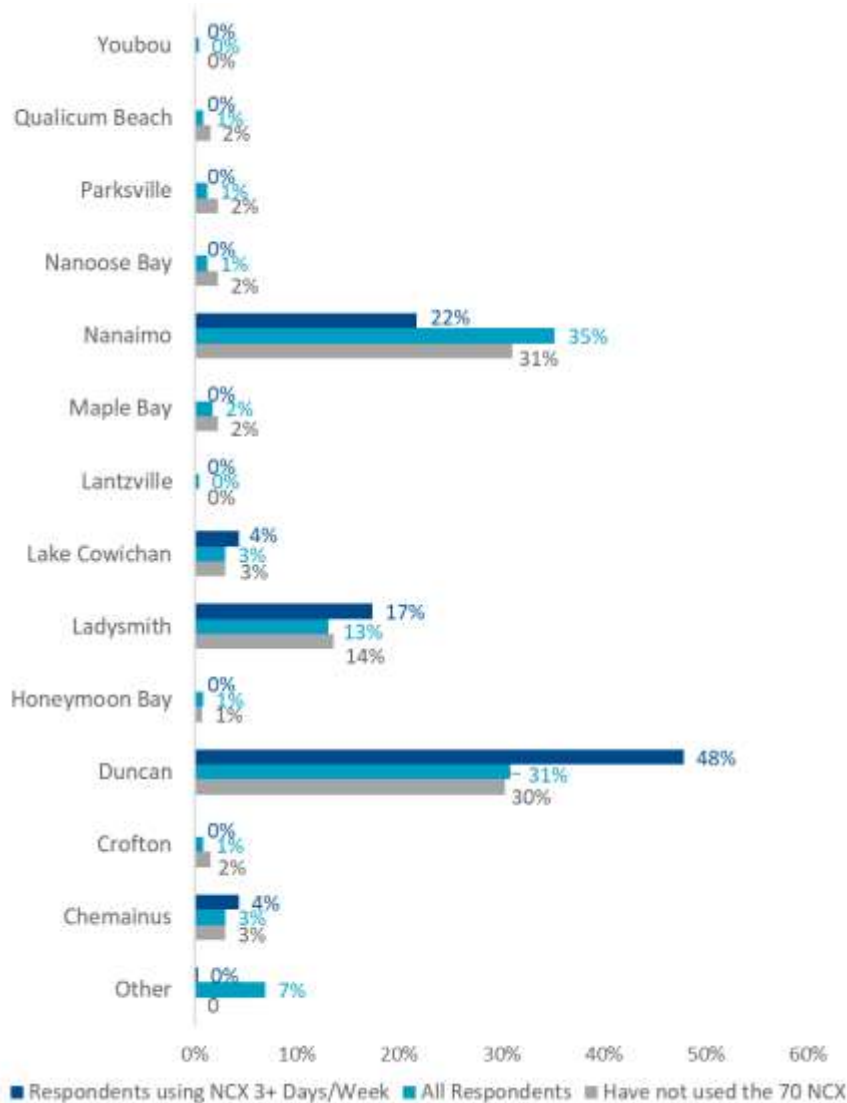
3.0 Engagement Results

A total of 232 surveys were completed. Figure 4 shows the location of survey respondents.

58 per cent of respondents are from the Cowichan Valley Regional District and 42 per cent are from the Regional District of Nanaimo. The top three communities represented are Nanaimo (35 per cent), Duncan (31 per cent), and Ladysmith (17 per cent)

Among respondents who are frequent NCX riders, 48 per cent live in Duncan; 22 per cent live in Nanaimo, and 17 per cent live in Ladysmith.

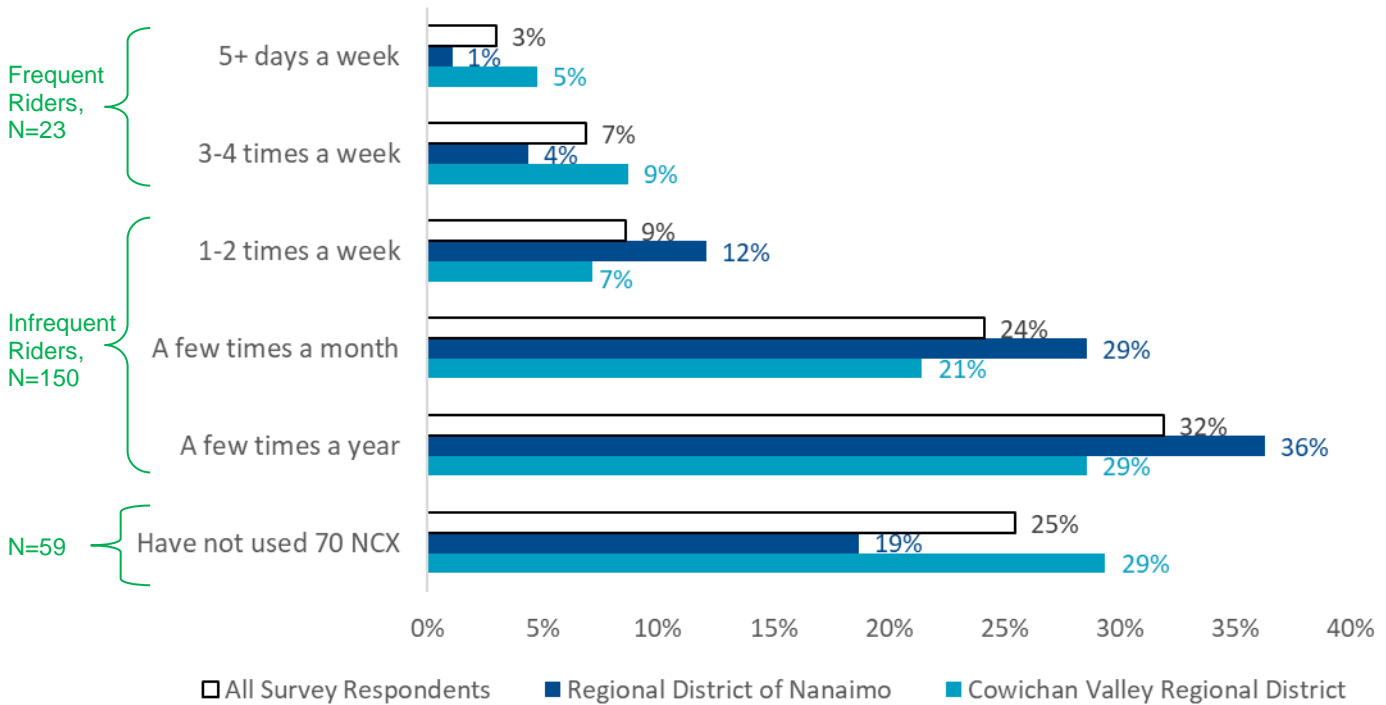
Figure 4: NCX Survey Respondent Locations



One of the key markets that BC Transit, the Regional District of Nanaimo, and the Cowichan Valley Regional District are seeking to capture are travellers who are regular commuters, but whom were previously (and may still be) making their journey by car. Supporting these commuters to make the shift to transit offers benefits in carbon reduction, addressing congestion, and offers households savings in transportation expenses.

Due to this, the responses to questions posed are being examined through the lenses of frequent NCX users (those who use the NCX three or more days of the week), the broader respondent pool (all respondents), and those who have not yet used the NCX.

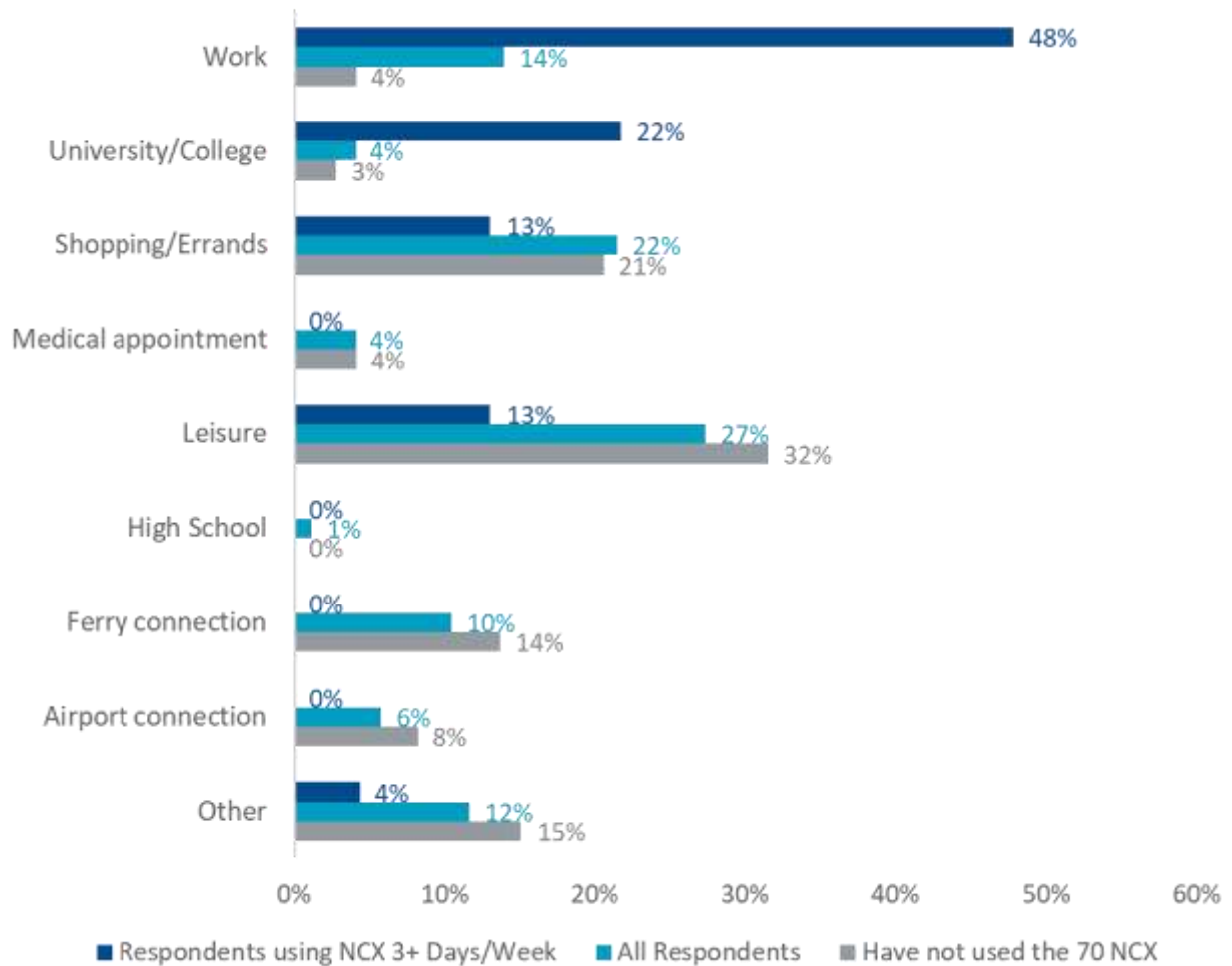
Figure 5: NCX Survey Respondent Level of NCX Ridership



Ten per cent of survey participants (23 respondents) ride the NCX three or more days per week. This group is referred to as frequent riders throughout this report. Although frequent riders are still a modest proportion of total individuals using the service, their combined impact on ridership is substantial –a single individual using transit for work commutes year round and whom works 5 days per week can generate 400 to 500 rides per year.

Sixty-four per cent of survey participants use the NCX less frequently - taking it either a few times per year, a few times per month, or 1-2 times per week (150 respondents). Twenty-five per cent of survey participants have not yet used the NCX (59 respondents). This demonstrates that the service is still gaining new riders.

Figure 6: Survey Purpose of trips using the NCX



- 70 per cent of frequent NCX riders use the service primarily for work (48 per cent) or University/College purposes (22 per cent), followed by 13 per cent for shopping/errands and 13 per cent for leisure trips. Most of the frequent NCX riders using service for work or university/college are residents of the Cowichan Valley Regional District (35 per cent and 17 per cent)
- Among All respondents who participated in the survey, 27 per cent use the NCX for leisure purposes, 22 per cent for shopping and errands and 14 per cent for work
- Among Respondents who have not yet used the NCX 32 per cent foresee themselves using it for leisure purpose, 21 per cent for shopping/errands, and 14 per cent for ferry connections

Figure 7: Ranked Service Improvement Priorities

Geographic Zones:

- Lantzville, Parksville and Qualicum Beach
- Nanaimo
- Ladysmith, Chemainus and Crofton
- Duncan
- Lake Cowichan, Honeymoon Bay, Youbou
- Maple Bay
- Other
- All Survey Responses

Survey respondents were asked to rank eleven service priorities in order of priority.

The outcomes of this exercise, grouped by geographic zone, are shown to the right.

Top three priorities based on all-respondents:

- 1. Improving operating hours during the week (3.9)**
- 2. Improved connections to Victoria (4.2)**
- 3. Adding Sunday Service (4.4)**

A low spread in priority scores between geographic zones indicates a high agreement between communities on the importance of the priority.

The top priority “Improving operating hours during the week”, also had the lowest spread between geographic zone – the highest score was 3.3, and the lowest 4.4, for a spread of only 1.1

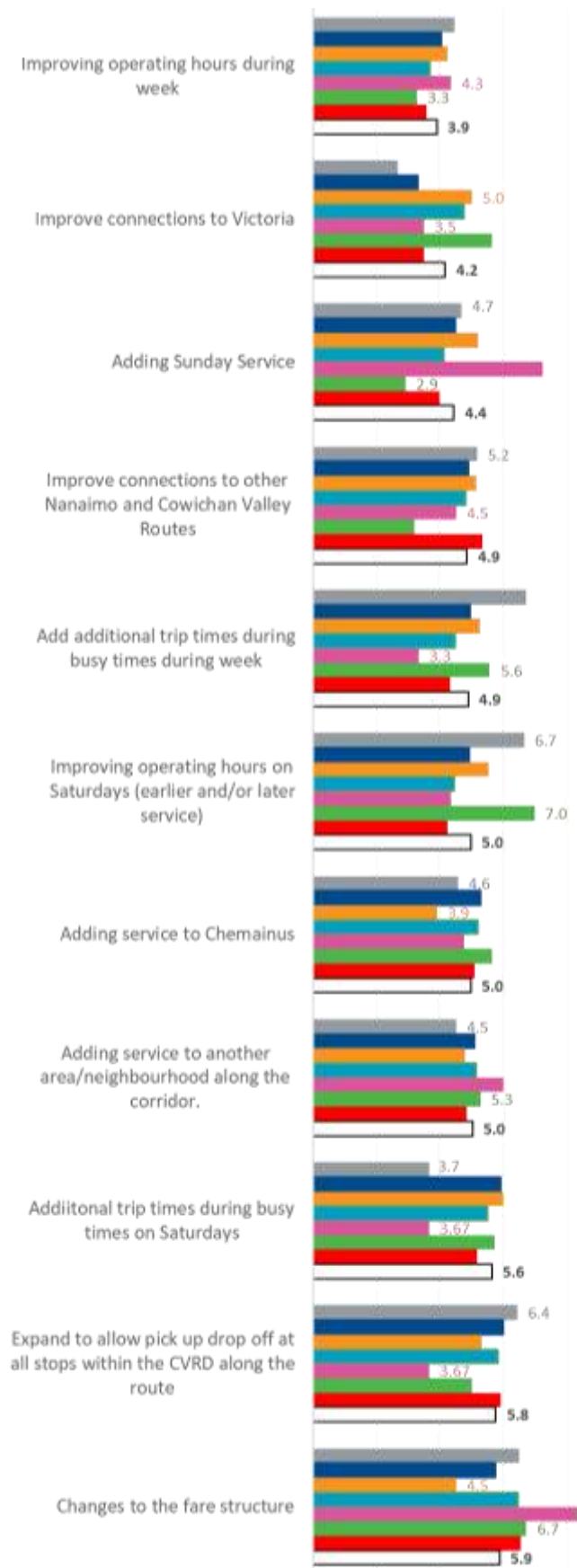


Figure 7 provides a summary of priorities when respondents were asked to rank eleven different service improvement options. There is a strong interest in improved operating hours during weekdays. This was consistently ranked highest among most geographic zones in the survey. There was also a high demand for improved connections from the NCX to Victoria – particularly from respondents living north of Duncan. Adding Sunday service to the NCX was also highly prioritized particularly among residents of Duncan, Lake Cowichan, and Maple Bay.

When examined priorities among ridership groups, the introduction of Sunday service was the highest priority of frequent NCX riders.

Survey respondents were also in alignment with expanding the service area within Nanaimo by extending the route to somewhere else within its bounds: 32 per cent of frequent NCX Riders, 31 per cent of all-survey respondents, 29 per cent of those who have not yet used the service requested this.

4.0 Ridership Analysis

Ridership data for BC Transit conventional routes is determined through two primary streams: fare revenue and Automatic Passenger Counter (APC) units on board of most vehicles.

Fare revenue is used to calculate passenger trips from an origin to destination, which may include more than one boarding. Fare revenue passenger trips form the official annual ridership figures for each transit system and are produced by BC Transit's finance department.

Route, stop and trip-level ridership is now provided by APC units mounted on most medium to high-capacity vehicles across BC Transit's fleet. APC units feature global positioning systems (GPS) technology. The integration with GPS enables more granular data showing where passengers are boarding and alighting, as well as which segments of each route have the highest passenger loads. APC units provide individual boarding data and sample about 80 per cent of trips. APC is best used to determine averages, such as average boardings per trip, average boardings by service day or season, or average daily boardings by stop. To generate total ridership, the APC data of sampled trips is extrapolated to unsampled trips.

4.1 Ridership Productivity (Rides and Boardings per Hour)

Ridership productivity, sometimes called effectiveness or performance, is measured in rides or boardings made by passengers for every hour of transit service offered. This is an industry standard metric used to benchmark transit ridership.

Monitoring productivity enables BC Transit to identify trends and compare the performance of transit routes with their peers. Productivity can also be used to guide transit service planning; for example, systems or routes achieving their benchmark rides or boarding per hour may require additional investments to ensure service continuity and prevent pass ups.

As most interregional routes serve longer distance travel with less passenger turnover, a comfortable upper range on productivity (when using 12.5m heavy duty buses) is about twenty-five rides per hour.

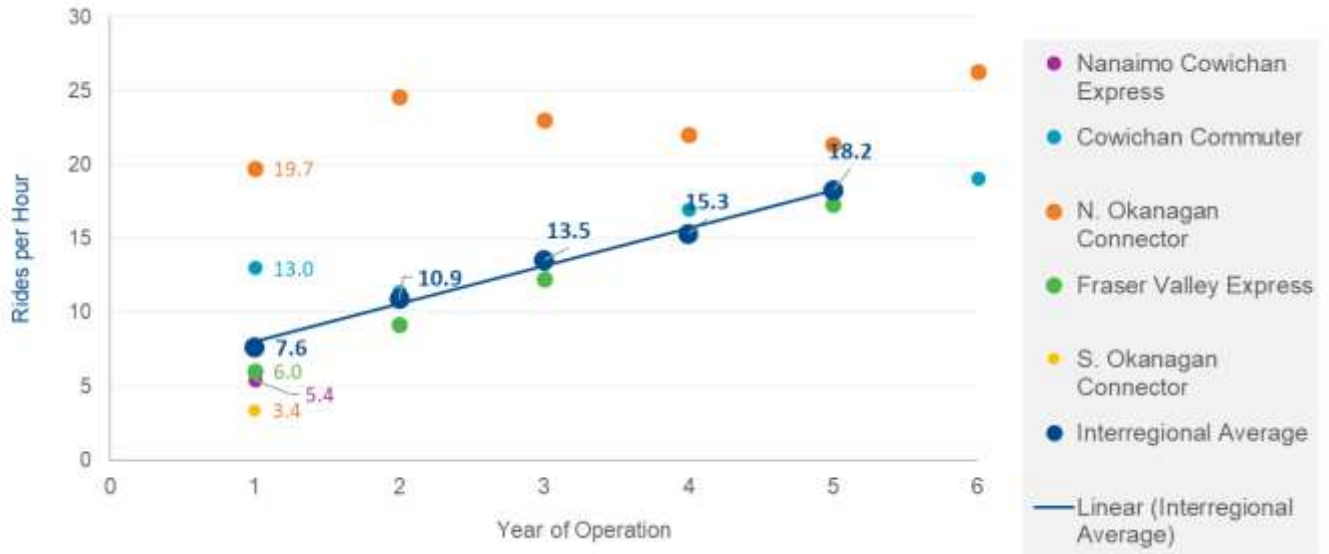
Route productivity is also particularly useful to identify the system-wide impacts of major investments in the transit network.

NCX productivity in the context of other interregional routes

BC Transit now offers four other interregional routes across the province and can determine the average productivity in the first years of these routes as shown in Figure 8.

Although local conditions and factors vary, this information provides an idea of how ridership evolves, and the length of time it may take for routes to achieve their full potential.

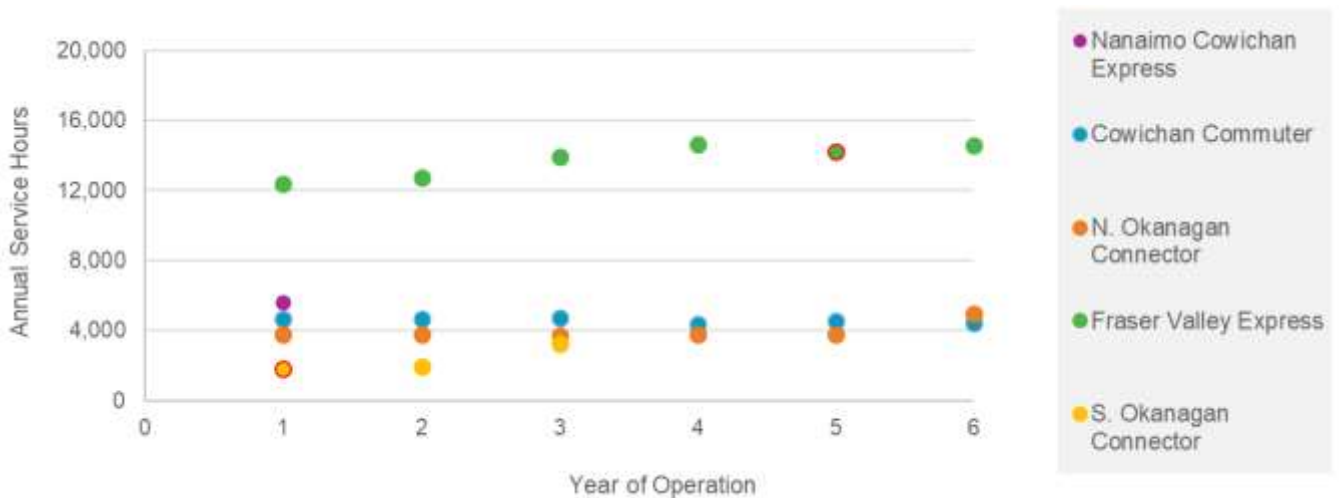
Figure 8: Route productivity of interregional routes in British Columbia



The NCX overall annual ridership productivity in year one is 5.4 rides per hour. This demonstrates that service is close to being on track with the projected ridership of six rides per hour over the first year.

5.4 rides per hour compares well with the first year of operation on the South Okanagan Connector at 3.4 rides per hour which operates between Penticton and Kelowna, and the Fraser Valley Express at 6.0 rides per hour which operates between Chilliwack, Abbotsford, and Langley in its first five years.

Figure 9: Annual service hours of interregional routes in British Columbia



Outside of the Fraser Valley Express, most existing interregional routes have similar total service hours in the first year (Figure 9) sitting around 4,000 hours. Average service investment for interregional routes in British Columbia per year is five per cent.

NCX Productivity by Month

Figure 10: NCX productivity (Reported Revenue Ridership and APC, 2022/23)

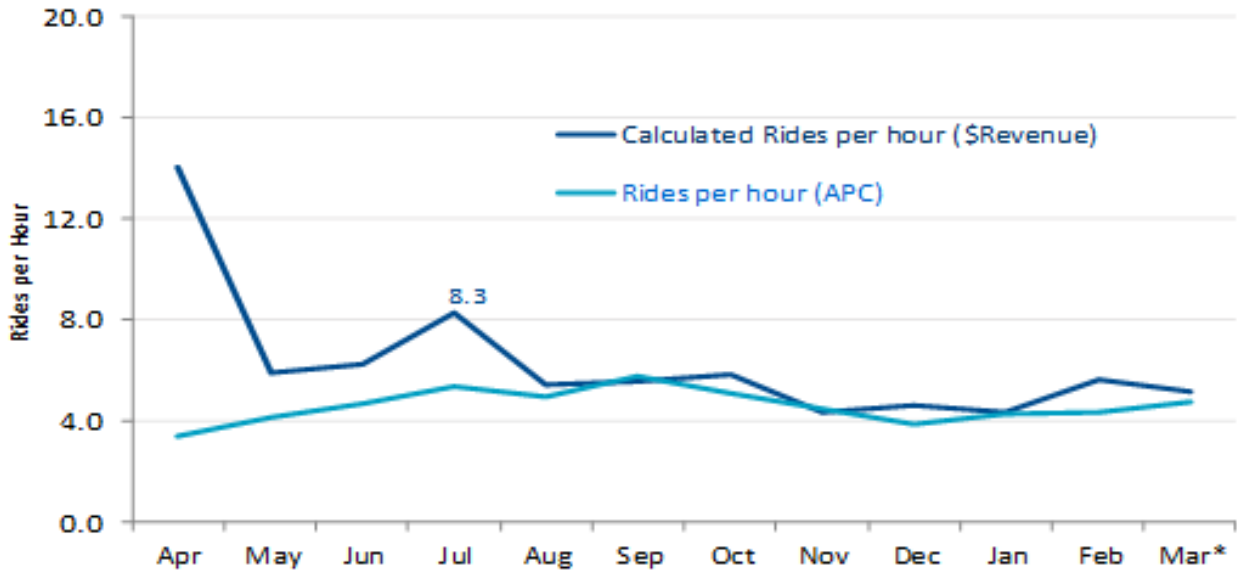


Figure 10 shows the evolution of ridership productivity over the first year of NCX service. The calculated rides per hour reflect the revenue patterns, and from September onwards coincide closely with the APC ridership reports.

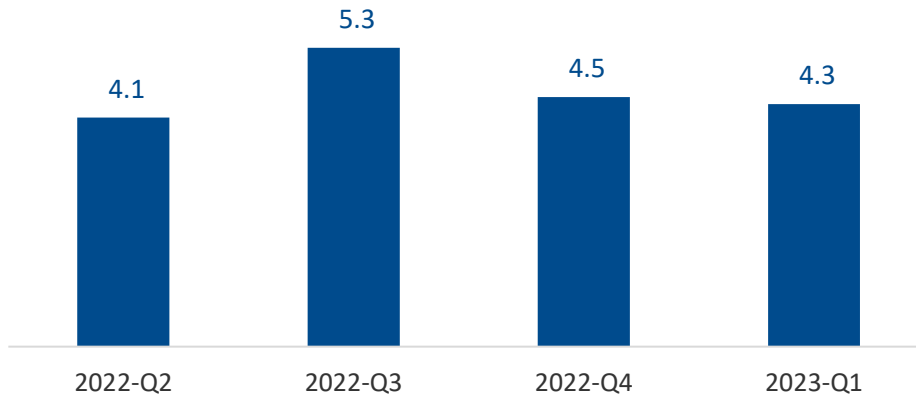
As of February 2023, the service is performing at 6 rides per hour (Calculated rides per hour). Examining trends from November onwards ridership and revenue has slowly increased. Examining APC ridership shows an increase of 30% between April 2022 and March 2023

Based on patterns from the past twelve months, summer periods will likely perform more strongly in the short-term future, while other non-summer months will continue a gradual rise in ridership and revenue of about 30 per cent year over year.

April 2022 has much higher Reported Revenue Ridership compared to APC ridership due to the fare products being distributed and stocked at this time. This led to an artificially inflated ridership number.

NCX Productivity by Quarter

Figure 11: Quarterly NCX productivity (APC, 2022/23)



Quarterly productivity data based on APC reinforces the summer peak trends indicated in Figure 10.

APC data also enables comparisons of the route productivity based on the day of the week. Figure 12 below shows how productivity has changed between weekdays and Saturdays over the course of the 2022/23 year.

NCX Productivity by Service Day

Figure 12: NCX productivity by service day and month (APC, 2022/23)



Figure 12 shows ridership on Saturdays has been higher than on weekdays. The exceptions to this are summer months of July and August, as well as March 2023²; September shows the highest peak of Saturday ridership.

Figure 12 data also shows a gradual increasing trend in weekday ridership in non-summer months. From April 2022 to March 2023, weekday ridership grew by 48 per cent from 3.7 rides

² Strong weekday ridership in March 2023 may in part be associated with the spring break period for both School District 68 Ladysmith-Nanaimo and School District 79 Cowichan Valley (March 13 to March 24)

per hour to 5.5 rides per hour. This aligns with observations made above based on the revenue in Figure 10. Ridership on non-summer months is showing a steady increase.

Moving forward, summer ridership will likely continue to be strong on both Saturdays and weekdays.

Ridership by Time of Day

APC data was used to analyze average boardings by each trip time and in each quarter (Figure 13 and Figure 14). Figure 13 shows northbound boardings and Figure 14 shows southbound boardings. Although overall travel volumes in both directions is similar, the profile of travel times is different based on the direction of travel.

Northbound (to Nanaimo) trips, from the inception of the NCX in spring 2022 to quarter 1 of 2023 show a more stable profile of boardings at each trip time. The most recent quarter has lows approaching 4 boardings for the 6:25 a.m. and 7:31 a.m. trips, to highs of about 8 riders in the afternoon peak time (3:30 p.m. to 5:30 p.m.). In summary, the standard deviation of average boardings is approximately 4 boardings.

Boardings to Nanaimo are highest on the 5:27 p.m. trip, closely followed by the 3:33 p.m. trip and 12:43 p.m and the lowest is the 6:25 a.m. and 7:31 a.m. trips.

Figure 13: NCX northbound average boardings by trip time (APC, weekdays 2022/23)

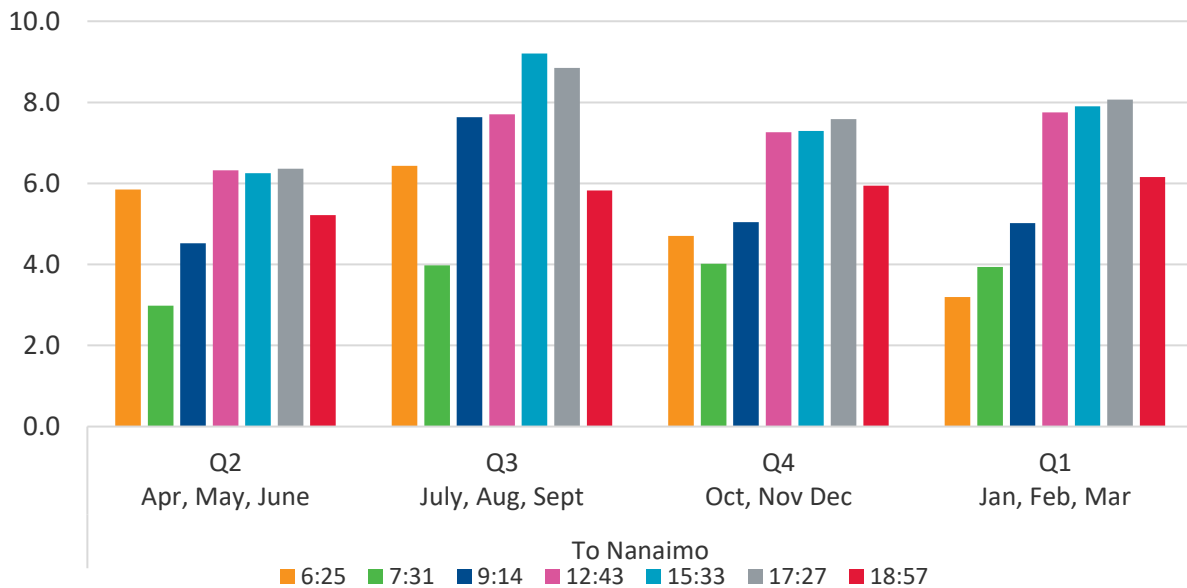
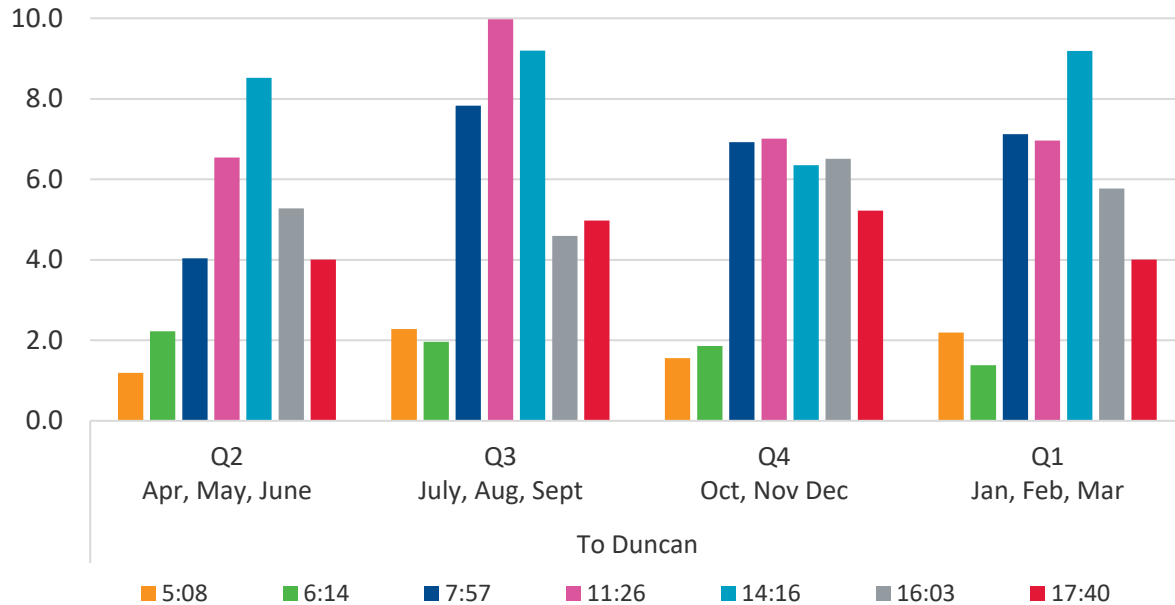


Figure 14: NCX southbound average boardings by trip time (APC, weekdays 2022/23)

Southbound (to Duncan) weekday trips, from the inception of the NCX in spring 2022 to quarter 1 of 2023 show a strong midday peak in the profile of boardings at each trip time as shown in Figure 14. The most recent quarter has lows approaching 2 boardings for the 5:05 a.m. and 6:15 trips, to highs of 9 boardings in for the 2:15 p.m. trip time before dropping to the about 4 boardings for the 5:40 p.m. trip time. In summary, trip loads vary by about 7 boardings across the span of service. Boardings to Duncan are highest at 11:26 a.m. and the 2:16 p.m. trip. These ridership profiles fit with the ridership groups (Figure 5) and trip purposes reported by all-respondents (Figure 6) in the engagement survey conducted in April 2023 being leisure and shopping/errands. The large volume of less frequent riders – 33 per cent whom use it 1 to 2 times per week or several times per month, report using the service most for leisure (22 per cent) and shopping and errands (27 per cent). Additionally, there was a southbound peak during the summer which exceeded the rides per hour in the northbound direction.

Riders using transit for work or university/college purposes typically generate boardings during peak hours, while riders using the service for leisure, shopping or social purposes are more likely to travel in the midday and afternoon. Most interregional routes have afternoon trips that depart the larger of the two communities (in this case Nanaimo) utilized by both the frequent rider commuters (presumed return trip) as well as returning leisure or shopping commuters.

4.2 Ridership Forecast

During the planning and design of the NCX 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 services in BC, primarily the Cowichan Valley Commuter (CVC) service that connects Duncan to Victoria. The CVC service achieved an average of seven rides per hour for the first year (2009) and this subsequently grew to nineteen rides per hour over the following five years (2014).

In comparison to the CVC, the NCX service was designed to meet a broader range of customers beyond purely commuters and, as such, includes a greater service span and number of trips per day. The NCX was forecasted to and currently produces six rides per hour over its first year. Like the CVC and other interregional services across the province, this would be

anticipated to grow over time. The demand for interregional ridership can be shaped by several factors including but not limited to:

- Parking fees at end-destinations
 - Many Cowichan Valley Commuter riders are destined to work destinations in downtown Victoria where pay parking is widespread
- UPass
 - The UBC Okanagan Student Union participates in a UPass program for the Kelowna and Vernon Regional transit systems, this UPass is also accepted on the North Okanagan Connector
 - VIU does not currently participate in the UPass program

4.3 Total Ridership

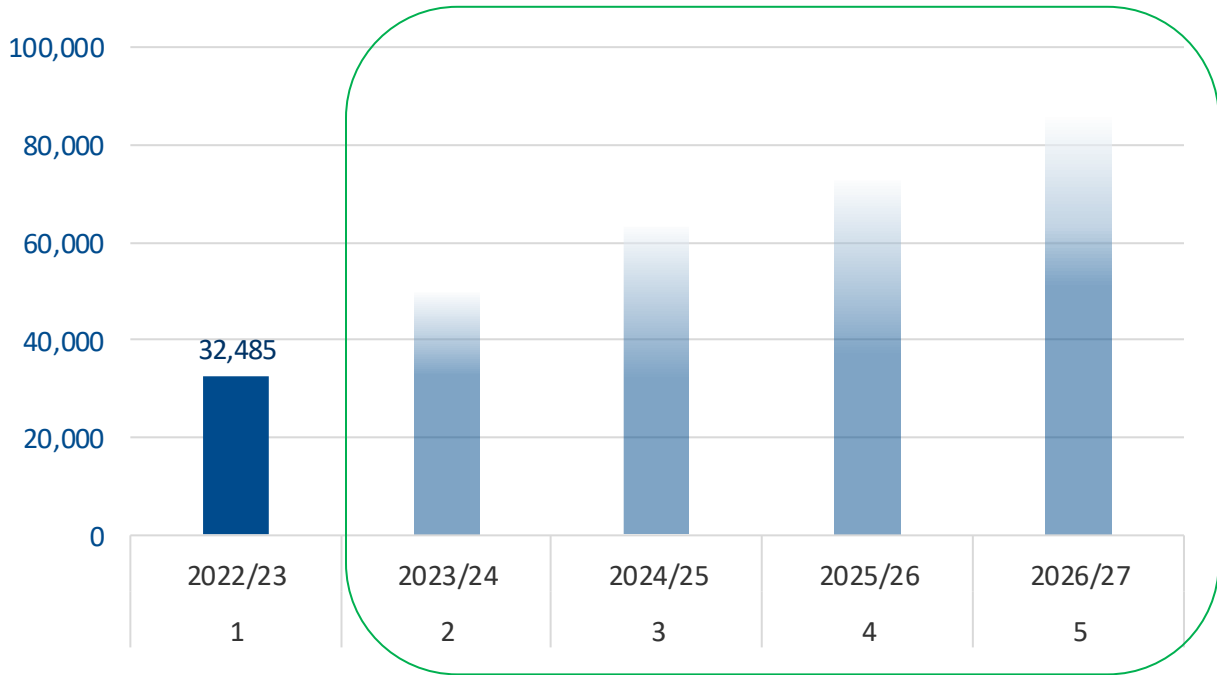
Total transit ridership is the simplest metric to monitor a transit system and enables a high-level understanding of the overall effectiveness of the system. Total transit ridership alone is a limited metric to measure the success of a transit system, but when used in combination with the service hours offered, population change, or total trips made by other modes total ridership can offer insights into productivity (rides per hour), rates of ridership (rides per capita), or the transit mode share in a community.

Reported revenue and farebox rider calculations were used to estimate ridership for the first 12 months of the NCX service. The NCX served 32,485 trips in the first year – Figure 15

Based on BC Transit's experience of the first five years of four other Interregional routes provided across the province, the NCX may see an average rise of about 12,000 passengers per year³ over the coming five years. The potential ridership trajectory shown in Figure 15 below is derived from the productivity data in Figure 8.

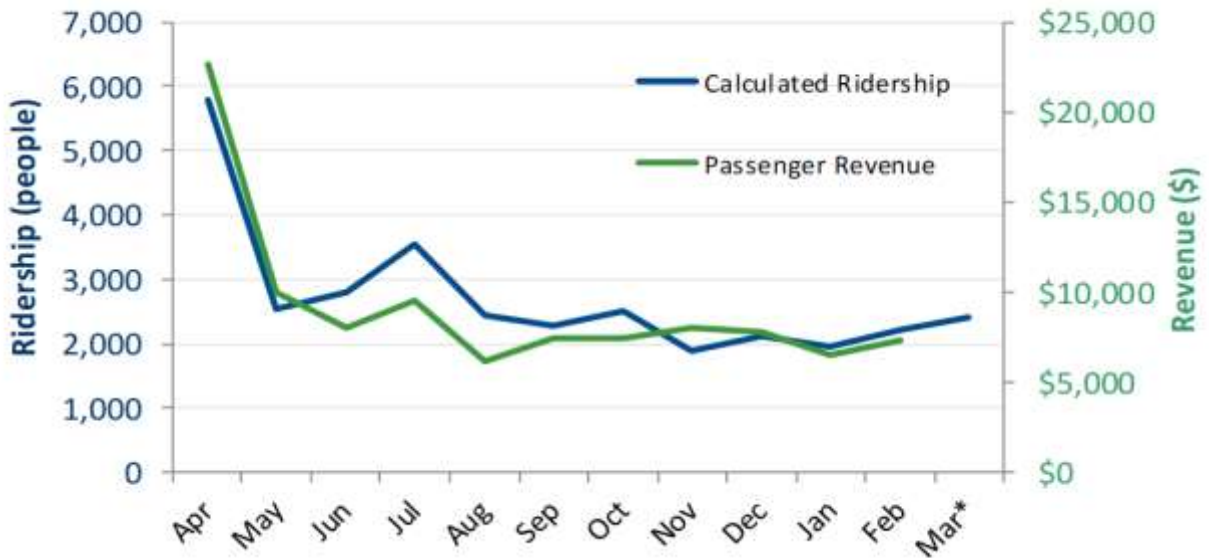
³ This forecast is speculative based on past performance of other interregional routes. Local conditions vary and actual growth may be more modest.

Figure 15: NCX ridership projection (Reported Revenue Ridership, 2022/23)

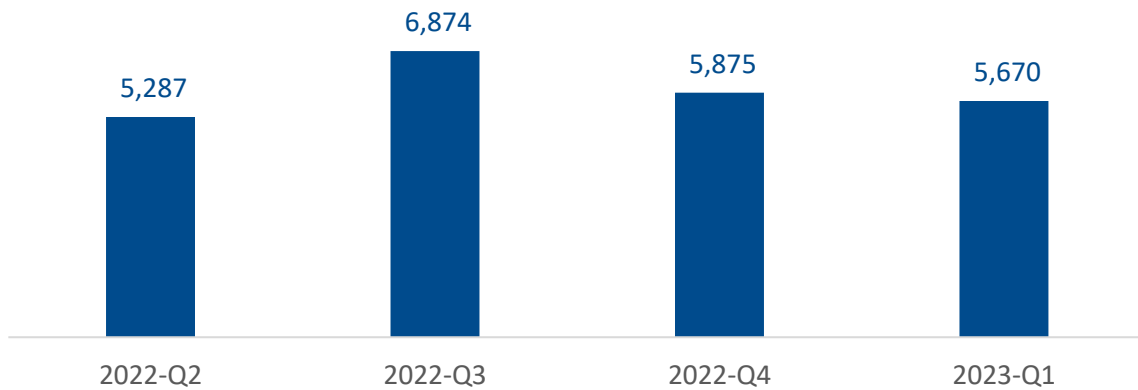


Revenue calculated ridership may also be used alongside APC data to show ridership over the span of the year. Figure 16 shows NCX monthly passenger revenue and calculated ridership throughout year 1 and Figure 17 shows APC NCX ridership by quarter.

Figure 16: NCX monthly ridership (Revenue Ridership, 2022/23)



Reported revenue shows peaks over the summer months, with a modest rise beginning in the fall and leading into the winter months. Like Figure 10, Figure 16 has very high ridership in April 2022 due to the fare products being initially distributed, which leads to artificially inflated numbers.

Figure 17: NCX Total quarterly ridership (APC, 2022/23)

Examining APC data by quarter also shows a strong peak in Quarter 3 of 2022 (July, August, and September). It is likely that over future years that the summer will continue to be a strong performance period for the NCX. This may be associated with higher leisure utilization and youth using the service on summer holidays. This can be assessed more holistically in the future with new fare technology data to supplement our ridership data.

Fare Revenue and Operating Cost Expenses

The transit system experienced variations between the budgeted and actual revenue throughout the last year. In the initial months, from April to July 2022, the transit system outperformed the budgeted revenue, demonstrating better-than-expected performance. However, starting from August 2022, the actual revenue began to decline, resulting in larger negative variances. The operating cost budget was reasonable, with the actual operating cost being 5.5% higher than budgeted.

The revenue streams contributing to the overall revenue displayed fluctuating performances. Farebox revenue consistently exceeded the budgeted amount, indicating a positive trend. Ticket revenue, on the other hand, exhibited mixed results, with some months exceeding the budgeted amount and others falling short. Notably, the monthly passes revenue showed significant negative variances in multiple months. This can be attributed to the budget being set based on other interregional routes which have much stronger post-secondary and office commuter ridership driving the revenue from monthly passes and to a lesser extent ticket sales up.

In summary, while the transit system initially enjoyed success with revenue surpassing expectations, it encountered challenges later on as the actual revenue fell short of the budgeted amounts. The discrepancy in total revenue primarily stemmed from underperformance in the monthly passes. The breakdown of monthly budget for each fare product as well as the monthly operating cost budget can be found in Appendix A.

4.4 Ridership Origin & Destination

There are a total of eight stop locations on the 70 NCX

- Village Green Exchange, Duncan
- Train Station, Duncan (stop pair)
- Beverly Street, Duncan (stop pair)
- Cowichan Commons, Duncan
- First Avenue and Trans-Canada Highway, Ladysmith
- Nanaimo Airport, Cassidy
- South Nanaimo, Nanaimo (South Parkway Plaza, stop pair)
- Nanaimo Downtown Transit Exchange

NCX Stops in Context with other Interregional Routes

Table 2: Interregional route statistics

Start Date	Service	Distance (kilometres)	Stops
2008/09	Cowichan Valley Commuter	62	20
2012/13	North Okanagan Connector	42	7
2015/16	Fraser Valley Express	85	7
2019/20	South Okanagan Connector	65	9
2022/23	Nanaimo Cowichan Express	52	8
	Average	7.8 km between stops	

Interregional services throughout the province typically have limited service stopping policies in order to prioritize competitive travel times with the automobile. As seen in Table 2 The Fraser Valley Express has the fewest stops with an average of 12 kilometres between stop locations. The North Okanagan Connector has about 6.0 kilometres between stop locations. Under its current design, the Nanaimo Cowichan Express stops every 6.5 kilometres.

NCX Passenger Activity by Regional District and Stop Location

Onboard APCs analyze bus stop utilization by recording boarding and alighting at each stop. Figure 18 and Figure 19 below show how stop activity is distributed across the NCX by regional district, stop location, and day of the week. This data reflects average stop usage across the first year of NCX operation.

Figure 18: NCX activity by Regional District (APC, 2022/23)

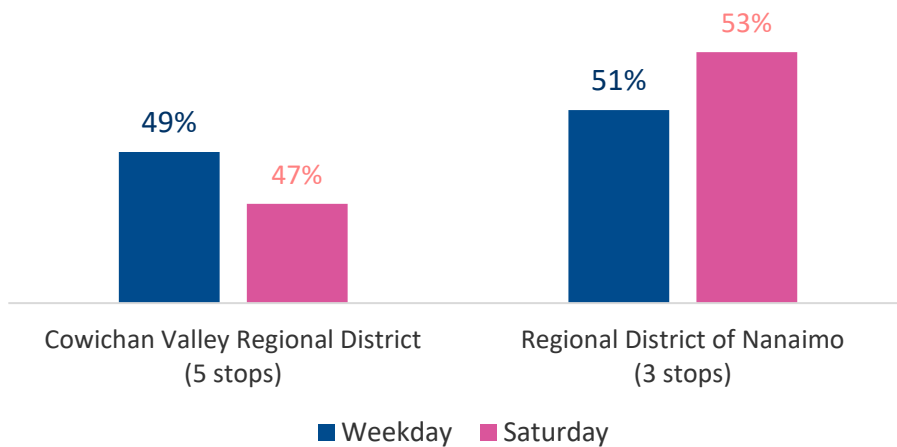


Figure 18 shows that although only three of the systems’ eight stops are within the RDN, these stops account for more stop activity than the five stops situated within the CVRD. This may be due to riders getting both on and off stops within Nanaimo, whereas stops in the CVRD are limited to either boarding or alighting.

Figure 19: NCX activity by stop (APC, 2022/23)

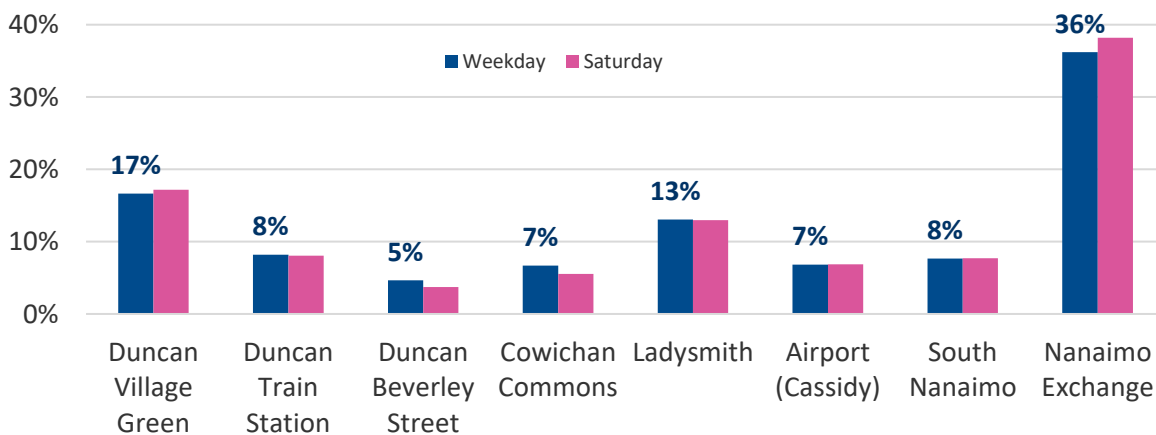


Figure 19 shows that the most boardings and alightings occur at the Nanaimo Downtown Transit Exchange (35 percent), followed by Duncan’s Village Green Exchange (over 15 per

cent), and Ladysmith (about 13 per cent). The locations with the lowest levels of activity are Beverly Street with fewer than five per cent of boardings and alightings, followed by Cowichan Commons (seven per cent), Airport (seven per cent), Duncan Train Station (eight per cent), and South Nanaimo (eight per cent).

Stop Activity by location does not vary markedly by day of the week. The Nanaimo Downtown Transit Exchange has the greatest variability at a modest two percent change between weekdays and Saturdays.

NCX Passenger Activity by Stop Location by Quarter

Figure 20: NCX passenger activity trends by quarter (APC, 2022/23)

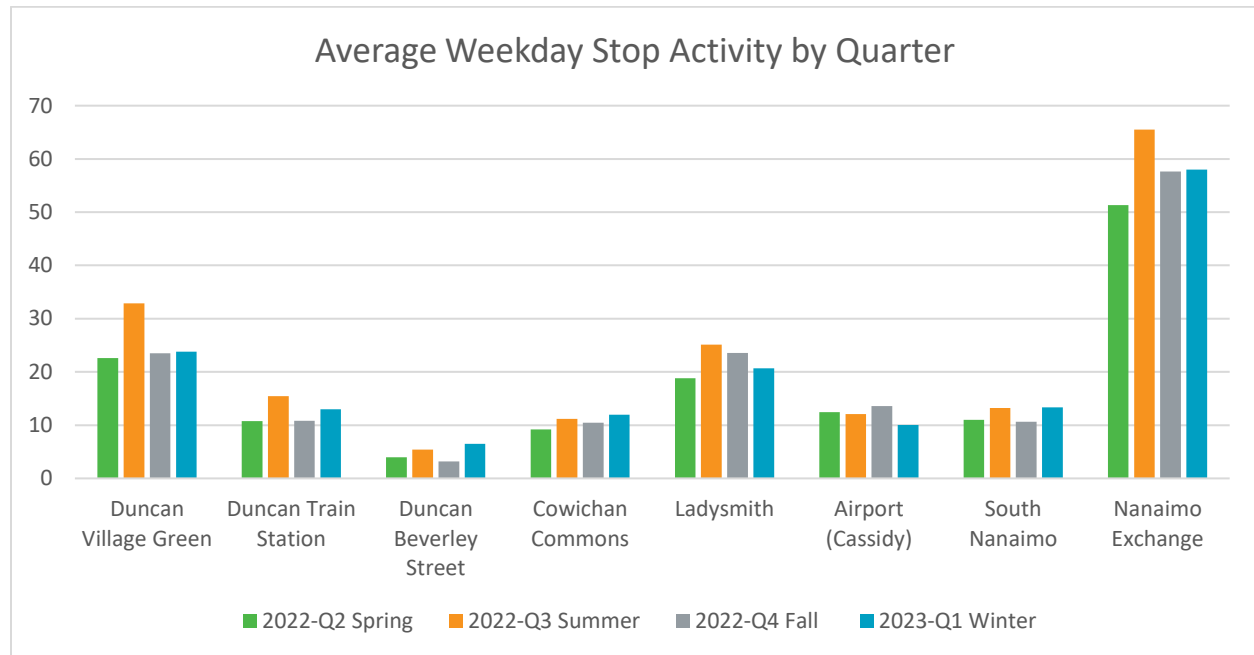


Figure 20 shows that most stops experience seasonal variability in passenger activity throughout the year. Second quarter (July, August, and September 2022) shows the most marked increases. Duncan’s Village Green stop has the highest relative increase in quarter two, and the Airport stop had no increase in quarter two. Q3 had the most variability across quarters in addition to the highest ridership.

4.5 Engagement Feedback on Route and Stop Locations

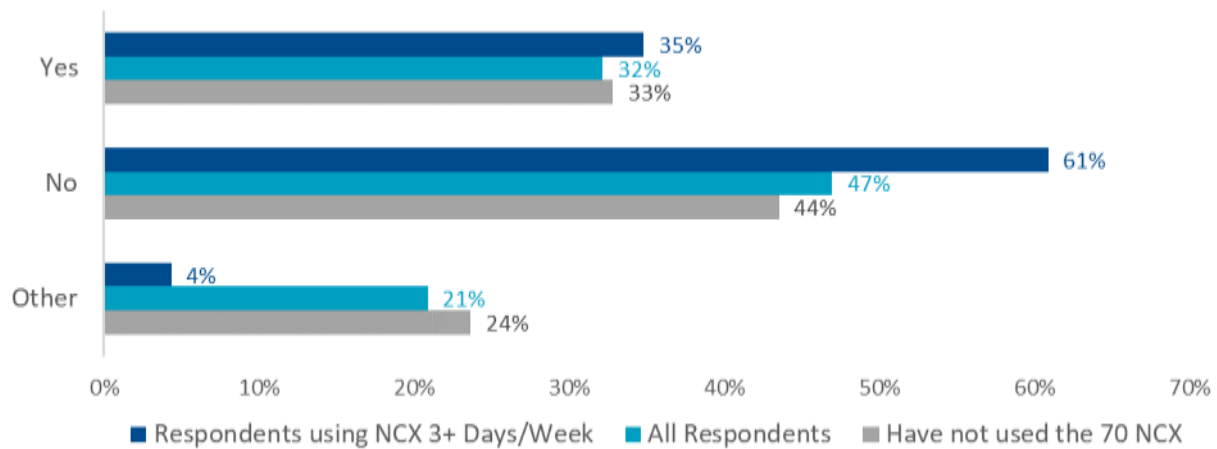
Figure 7 in this report (located in 3.0 Engagement Results) shows eleven potential service improvement priorities that were evaluated during the public engagement. Three of these service priorities are linked to new service areas or stops.

The three service-area and stop improvement options did not place highly across the eleven potential improvements:

- Adding service to Chemainus ranked seventh.
- Extending coverage to more areas ranked eighth.
- Changing the stopping policy on the NCX to service all stops in both directions along the CVRD alignment of the route ranked tenth.

Chemainus Service

Figure 21: Is adding service to Chemainus a priority for you?

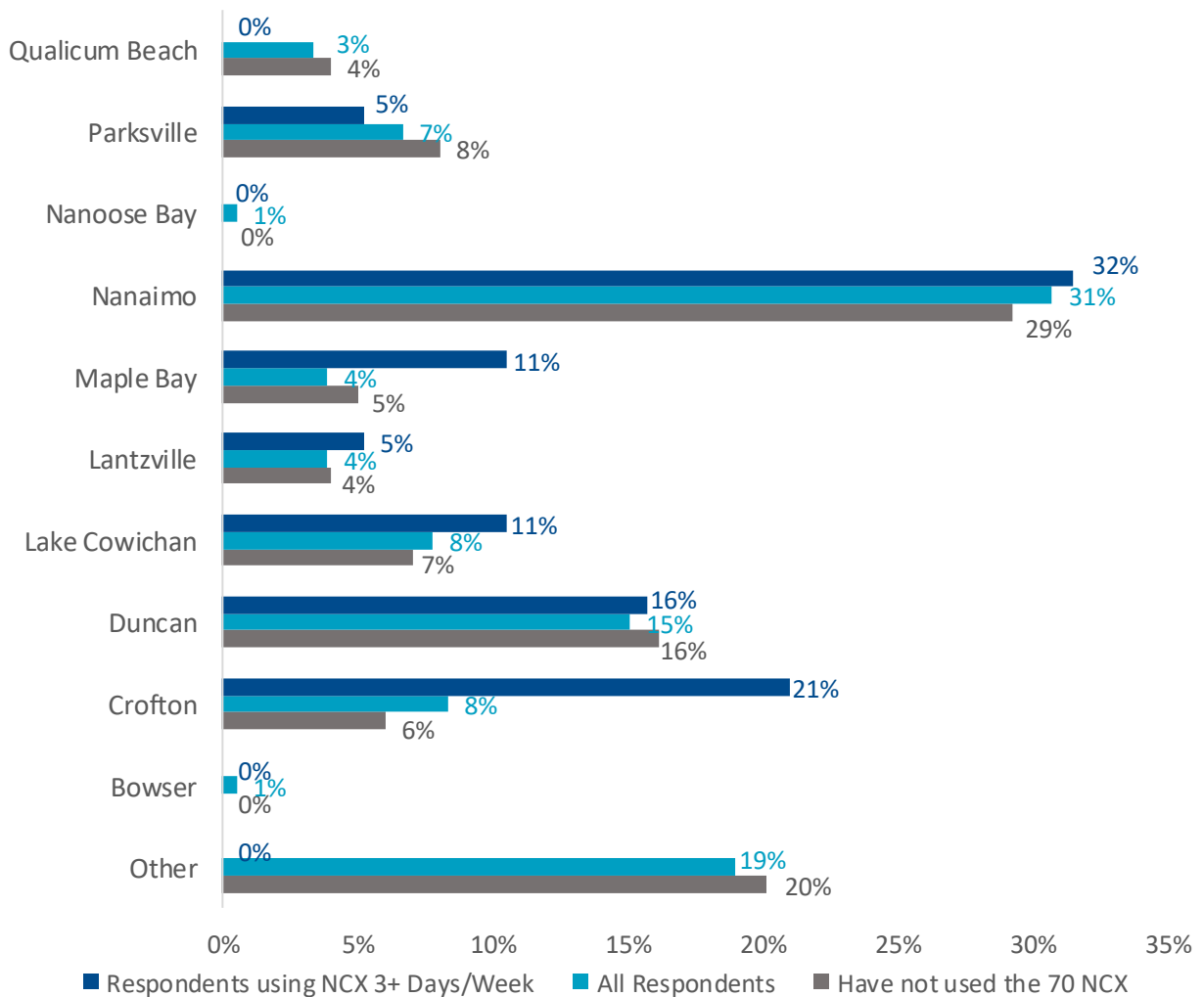


- In the ranking of eleven priorities, adding Chemainus to the NCX ranked as seventh.
- Frequent NCX Riders: Adding service to Chemainus is a priority for 35 per cent of the respondents using the NCX three days per week or more. 61 per cent of these riders feel that Chemainus should not be added to the NCX.
- All Respondents:
 - While all respondents were even less supportive of adding service to Chemainus than frequent riders (at 32 percent), only 47 percent responded that service should not be added to Chemainus.
 - Of those who said that Chemainus should be added, the highest proportion are residents of Nanaimo. Twenty-one percent of all respondents selected “Other.”
 - Among residents of Chemainus participating in the survey, 57 percent were supportive of adding service to Chemainus.
- Aside from frequent NCX users, about 20 per cent of survey participants indicated “other” instead of yes or no. These individuals made thirty-four suggestions for new service areas spanning about eighteen other locations. Of these, eight suggestions are in Greater Victoria, five were for the Departure Bay or Duke Point Ferry, and four were for the Nanaimo VIU campus.
- Operator feedback indicated support for adding a Chemainus stop.

In summary, although there was some support to add an additional stop along the NCX in Chemainus, there was more support for other priorities and an immediate implementation of a new Chemainus stop is not recommended. BC Transit, the RDN and the CVRD will investigate the opportunity for a new stop as outlined in Table 1.

New Service Areas

Figure 22: Please specify where you would like to see NCX service



- Frequent NCX riders (32 per cent), All-survey respondents (31 per cent), and those who have not yet used the NCX (29 per cent) indicated that NCX service should be added to cover more of Nanaimo.
- Frequent NCX Riders suggested Crofton (21 per cent) as another potential service area, while all-survey respondents indicated “other” (19 per cent) as the next priority after Nanaimo.
- Those who indicated “other” provided thirty-seven suggestions spanning twenty-three locations: Victoria (16 per cent), Coronation Mall (10 per cent), Departure Bay and Duke Point Ferry (eight per cent each).
- Operator feedback indicated interest in Comox, Alberni, Duke Point Ferry, and Schoolhouse Road.

4.6 Ridership Summary & Recommendations

The following summarises NCX ridership to date:

- **Total Ridership** - The NCX carried over 32,000 passengers in its first year. Ridership on weekdays has risen by 48% from April 2022 to March 2023. Based on other interregional routes, ridership may rise by as much as 12,000 passengers per year.
- **Ridership Performance** – As of March of 2023 the system was carrying 5.4 rides per hour and is close to reaching the target of six rides per hour. No trips are near reaching critical capacity.
- **Stop Activity Distribution** – Stop activity is uneven throughout the route alignment, with the most activity occurring at Nanaimo Exchange. Stop activity appears correlated with the most local transit connections, or those serving an entire community (as in Ladysmith).
- **Key Origin/Destination Points** - This engagement process did not investigate origin-destination pairs of survey respondents or how riders reach the NCX. In the future, new fare products may enable staff to examine linked origins and destinations as well as determine transfers made to or from local service.
- **Ridership by Season**- High summer ridership in 2022 shows that there may be a seasonal ridership pattern emerging. This pattern could persist in early years but will likely be eventually obscured as the regular customer base continues to grow.
- **Ridership by Time of Day** - During weekdays, ridership towards Nanaimo is more stable than ridership towards Duncan, and shows a modest level peak from 12:30 p.m. to 5:30 p.m. During weekdays ridership to Duncan has a very pronounced midday peak at either 11:30 a.m. or 2:15 p.m. and shows more variability quarter to quarter.
- **Main Trip purpose**
 - By frequency of use: For frequent riders is for work or education. Across the global survey response is for leisure or shopping.
 - By home regional district: The main trip purpose for NCX riders of the Regional District of Nanaimo is for leisure. The main trip purpose for NCX riders of the Cowichan Valley Regional District is for shopping/recreation.

Recommendations

- Performance levels are well within capacity and no service changes are required for the purpose of addressing critical capacity concerns.
- Engagement respondents did not prioritize alignment changes (Chemainus, additional coverage of the route, Cowichan stops), and there was not a clear majority support from most engagement participants regarding potential changes to the NCX alignment. Decisions concerning the alignment of the NCX should be postponed until new data tools or further surveying enable a more thorough investigation of the linked origins and destinations of NCX riders.
 - Realignment to serve Chemainus: Seventh ranked, and 32 per cent of respondents supportive. As an alternative to realignment, which would increase travel time for most riders and make transit less competitive to the car, this review suggests:

1. Examining opportunities to improve Chemainus residents' access to the NCX by exploring improved local connectivity between Chemainus and Ladysmith along with a supportive fare policy
 2. Work with MOTI on the possibility of stops near the signalized intersections at Chemainus Road and Mt. Sicker Road, which could also service Crofton residents, or River Road.
- Extending coverage of the NCX: Eighth ranked, and with strong agreement that extended coverage into Nanaimo would be beneficial. This review suggests:
 1. Further monitoring to NCX riders to determine if there is a singular most-used transit transfer among riders. New fare technology may enable transit staff to identify high-volume transfers to and from the NCX and individual local Nanaimo routes.⁴
 2. Identifying compatible transfer points to assist riders transferring between the NCX and Nanaimo regional transit routes connecting to BC Ferries services at Departure Bay.
 - Given proximity of the new Cowichan Valley Hospital to the highway, there is potential for future consideration to align the NCX to serve that destination. It should be noted that this would be most successful with a new stopping policy in place.
 - Investigate the opportunity to permit getting on and off the bus at all stops along the NCX.
 - In summary, no immediate alignment or stop changes are recommended.

⁴ related considerations include the possibility of new fare programs such as UPass adoption by the Vancouver Island University Student Union

5.0 Schedule Design

Transit schedule designs matter because they define accessibility to transit from a day of the week, time of day, and connectivity perspective. Additionally, schedule elements such as service frequency directly influence and shape the number of service hours and number of buses required to operate transit routes.

Express routes which offer limited stop service along direct alignment are often the most efficient from a schedule perspective and offer the added benefit of being most competitive with automobile travel times, as well as the most cost-effective to provide. Routes that are very direct also provide better equity for transit customers because travel times for these customers are more like travel times by auto.

By providing a reliable and convenient public transportation system, transit schedules benefit both individuals and communities.

5.1 Existing Schedule Design

The existing NCX schedule was designed with input from local partners and the public and includes seven round trips on weekdays and six round trips on Saturdays (Figure 2). There is no service on Sundays or holidays (other than Easter Monday and Boxing Day).

Table 3 below shows there is not a consistent pattern in what service days are provided on interregional routes in operation across the province. All operate on weekdays, four of five operate on Saturdays and two operate on Sundays.

Since interregional routes rely on local routes as feeders, an important consideration for interregional service days is the provision of local transit service. If a local network has limited availability on some days of the week – such as Sunday - the opportunities to access the Interregional route will be limited for customers. Table 3 below shows how the NCX compares to other existing interregional services.

Table 3: Interregional route service days

Start Date	Service	Weekdays	Saturdays	Sundays
2008/09	Cowichan Valley Commuter	✓	✓	-
2012/13	North Okanagan Connector	✓	✓	✓
2015/16	Fraser Valley Express	✓	✓	✓
2019/20	South Okanagan Connector	✓	-	-
2022/23	Nanaimo Cowichan Express	✓	✓	-

NCX Service Span

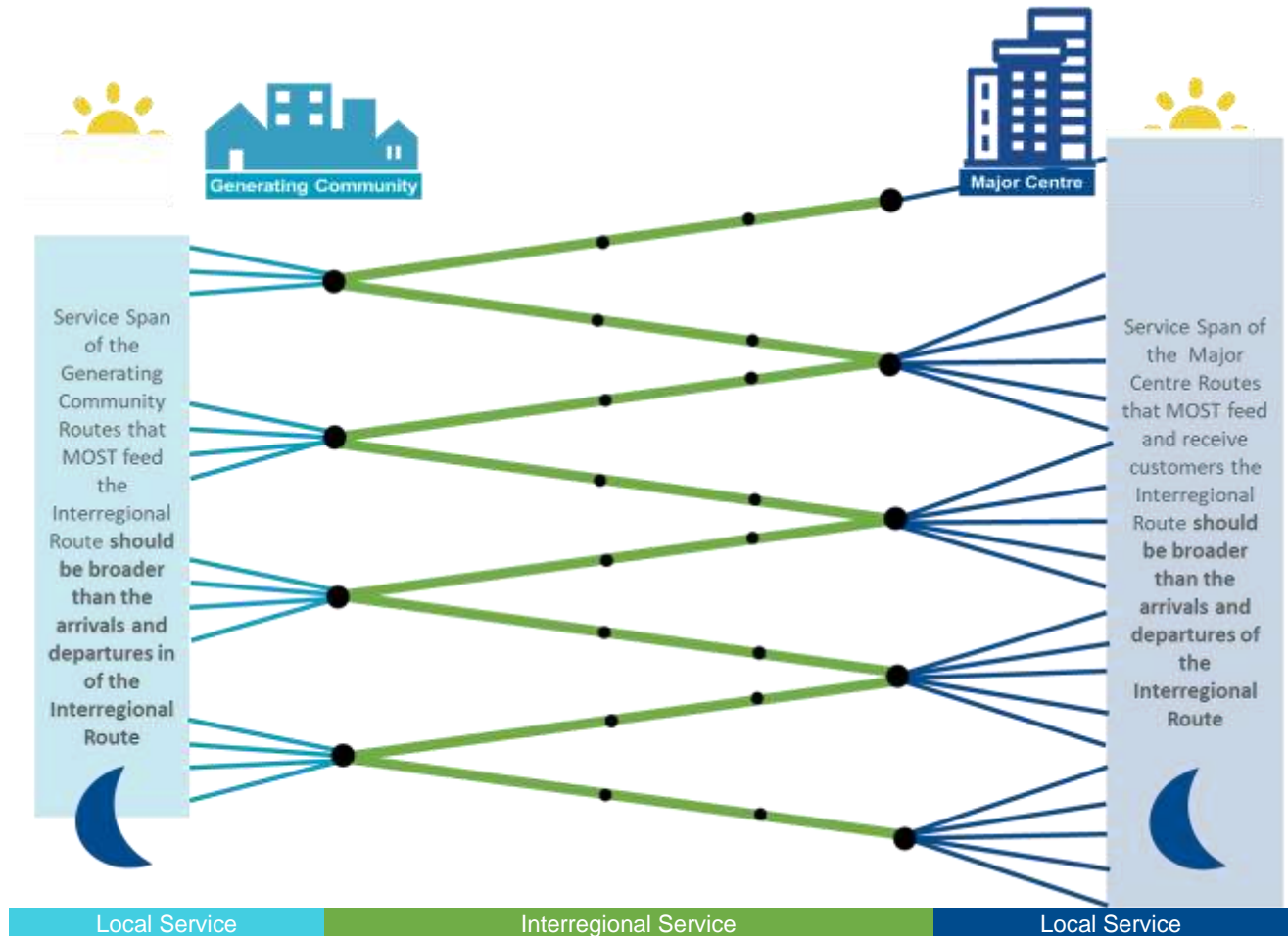
Service spans are the span of hours from which a service begins operating to when it stops operating. The service span is a defining characteristic of a route. Transit customers who regularly rely on an early first trip, or a very late last trip often rely on transit to access employment in industries with shifts. Maintaining service span stability is a priority when considering service reallocation or reduction. Additionally, workflow of the operations staff will

be impacted and therefore taken into consideration when planning the modification of service days.

Interregional Service Spans – A special case

One key consideration that is unique to interregional routes is the service spans of the adjoining local transit systems. Like other modes of passenger interregional travel, such as ferries, past surveying shows that most interregional riders rely on local transit to either access the interregional route or use local transit to reach their destination. **The service spans of the interregional route should be framed or bracketed by local transit service spans at both ends.**

Figure 23: Connectivity of service between local and interregional transit



Trip Times

The NCX was designed to have greater frequency at peak commute times, but also enable midday travel. As the customer base continues to grow, ridership on popular trip times will rise.

5.2 Transfer Opportunities

In Duncan, the NCX provides service to key employment and service centres at Cowichan Commons, downtown Duncan, and Village Green shopping centre. Additionally, NCX stops are situated near the Duncan VIU campus and Cowichan Community Centre. The NCX services all key transit exchanges in the Duncan area.

In Ladysmith, the NCX provides almost direct service to downtown via a short walk from the stop at First Avenue and Trans Canada Highway, and the NCX stop is in proximity to the 34 Ladysmith/Chemainus stop. Connection opportunities to Chemainus and Crofton (via Route 6 to Chemainus) are limited by the sparse schedule of the 34 Ladysmith/Chemainus (see below).

In Nanaimo, the NCX provides direct service to South Nanaimo and downtown Nanaimo. However, connections are required to access destinations such as VIU Nanaimo campus (via Route 40), Woodgrove Centre, neighbourhoods of Nanaimo, and other communities within the Regional District of Nanaimo such as Lantzville, Parksville and Qualicum.

Transfer opportunities within Cowichan Valley Regional District

- There are transfer options possible with many routes in the Cowichan Valley Regional Transit system either at Village Green Mall or Cowichan Commons.
- Duncan area residents using Route 2 (Mt. Prevost) have limited access to the weekday northbound NCX trips at peak morning commute times. The earliest potential transfer is at Cowichan Commons for the NCX trip departing at 9:27 a.m. however the window of time is only 2 minutes. Route 2 customers may also access the northbound NCX at Village Green Mall at 12:43 p.m.
- Duncan area residents using Route 3 have good transfer access to the NCX from Village Green. 7:31 a.m. northbound NCX departure from Village Green Mall on weekdays the 9:14 a.m. trip is also possible. This route also has excellent northbound NCX access for trips departing at 12:43 p.m. and 3:33 p.m.
- CVRD residents connecting from Route 7 Cowichan Lake have sufficient frequency to connect well with the NCX at Village Green or Duncan Train Station on weekdays, as well as at Cowichan Commons on the express routing on select trips. On weekdays the first potential NCX trip option to Nanaimo departs Village Green at 7:31 a.m. The last potential NCX trip southbound from Nanaimo departs Nanaimo at 5:40 p.m. Options on Saturday are more limited for round trip travel originating from the Cowichan Lake area but work well for round trip travel originating in Regional District of Nanaimo. This aligns well with the leisure-orientation of most NCX users from the Regional District of Nanaimo.
- Residents of South Cowichan have limited connectivity to the NCX, however previous travel analysis indicates this group is most heavily oriented to interregional trips destined south to Victoria.
- Residents of Ladysmith destined to Nanaimo for peak hours have a timed transfers with 31 Ladysmith/Alderwood at 7:01 a.m. and 9:50 a.m. and transferring from the NCX southbound have timed transfers to the 31 Ladysmith/Alderwood on trips departing Nanaimo Exchange at 2:16 p.m.
- Residents of Chemainus (and transferring from Crofton on Route 6), have access to Ladysmith via 34 Ladysmith/Chemainus. The two stops are situated in convenient proximity to one another; however, the limited schedule of Route 34 makes transfer for residents in Chemainus to connect to the NCX for peak hour or round-trip travel not viable. Travel analysis for residents of North Cowichan indicates that residents of Chemainus and Crofton, are more heavily oriented to interregional trips destined north to Nanaimo.

- Residents of Maple Bay headed to Nanaimo have access to the NCX through select trips from 8:38 a.m. to 5:37 p.m. during the week. On Saturdays, there are select connections with wait times under 30 minutes at Village Green Mall.

In summary, the improvement of local services within the Cowichan Valley Transit System through new and additional trips in the early morning peak has potential to significantly improve access for community members to the NCX for commuter and educational travel, while also improving options for local travel within the Cowichan Valley. Cowichan Valley Transit Routes 2, 4 and 34 currently have constrained connectivity to the NCX northbound service at peak times and would particularly benefit from improvements.

Transfer opportunities within the Regional District of Nanaimo

- The RDN Transit System is among the largest of BC Transit's services and offers riders a well-developed network. High frequency routes enable NCX riders' timely transfers to reach key local destinations.
- NCX riders destined to, or departing from the Nanaimo VIU campus may use 40 VIU Express to connect to the 70 NCX at the Downtown Nanaimo exchange. This route operates at high frequencies offering short wait time for transferring passengers.
- Transit customers seeking access to Nanaimo Regional Hospital may transfer from the NCX at Nanaimo Downtown Transit Exchange to Route 30 NRGH. Route 30 has excellent connection opportunities with the 70 NCX arrivals and departures.
- Customers seeking to reach Woodgrove Centre (through the Woodgrove Transit Exchange) may transfer from the 70 NCX at the Nanaimo Downtown Transit Exchange to Routes 20, 25, 40 or 50 to reach the Woodgrove Transit Exchange. Route 50 offers customers the fastest and most direct service.
- Customers seeking access to or from the communities of the District of Lantzville, City of Parksville or Town of Qualicum Beach can connect to these communities using the RDN's Route 91 Intercity. Route 91 departs from the Woodgrove Transit Exchange.

Transfer opportunities to other Interregional travel

- **Airport**
 - **Nanaimo International Airport:** The NCX connects to the airport on each trip but may not align with start and end work times for employees of the airport.
- **BC Ferries**
 - **Departure Bay:** BC Ferries services from Departure Bay connect to Horseshoe Bay north of Vancouver on the lower mainland. The RDN Transit System provides transit access to Departure Bay via Route 20, 20A and 25. NCX Customers may transfer at the Downtown Nanaimo Transit Exchange.
 - **Nanaimo Harbour:** BC Ferries services from Nanaimo Harbour connect to the northern Gulf Island, Gabriola. Nanaimo Harbour is situated about two hundred metres away from the NCX stop at Downtown Nanaimo Transit Exchange.

- **Duke Point:** BC Ferries services from Duke Point connect to Tsawwassen Terminal south of Vancouver. The RDN Transit System does not currently provide service to Duke Point.
 - **Chemainus:** BC Ferries services from Chemainus connect to Thetis and Penelakut Islands. Cowichan Valley Transit connects to Chemainus from Ladysmith via Route 34. Transit stops within Ladysmith for the NCX and Route 34 are near each other, however the low frequency of Route 34 service makes connections from the NCX challenging.
 - **Crofton:** BC Ferries services from Crofton connect to Vesuvius Bay on Salt Spring Island. Cowichan Valley Transit connects to Crofton from Ladysmith via Route 34 (Chemainus transfer to Route 6) and Route 6 (Crofton). Transit stops within Ladysmith for the NCX and Route 34 are near each other, however the low frequency of Route 34 service makes connections to Route 6 challenging.
 - **Mill Bay:** BC Ferries services from Mill Bay connect to Brentwood Bay, north of Victoria. Mill Bay Ferry is served by Cowichan Valley Regional Transit Route 8.
- **South (Capital Regional District)**

In the southbound direction the NCX schedule offers one weekday connection time at Village Green Exchange in Duncan with the final 66 Cowichan Commuter trip departing to Victoria at 6:25 a.m. In the northbound direction, the NCX schedule offers connections with the 66 Cowichan Commuter trips which arrive in Duncan at 5:12 p.m. and 6:42 p.m., connecting with the 70 NCX at 5:27 p.m. and 6:57 p.m. respectively.

The existing schedule design of the 66 Cowichan Commuter focuses entirely on early morning departures and is a constraint to supporting onward connectivity to Victoria for NCX riders travelling on weekdays. On weekends the NCX offers excellent connections with each trip of the 44 Duncan/Victoria. The Cowichan Valley Regional District is adjusting the 66 Cowichan Commuter schedule, which would improve opportunities to transfer with the 70 NCX.

- **North (Comox Valley Regional District)**

There are no BC Transit interregional service operating between the Regional District of Nanaimo and Comox Valley Regional District currently. The most southerly Comox Valley Regional transit Route is 10 Fanny Bay, and the most northerly Nanaimo Regional Transit Route is the 99 Deep Bay. People seeking bus travel north from Nanaimo may use the Vancouver Island Connector or Island Link services.

- **West (Alberni-Clayoquot Regional District)**

There are no BC Transit interregional services operating between Regional District of Nanaimo and Alberni Clayoquot Regional District. People seeking bus travel west from Nanaimo may use Tofino Bus services.

5.3 Schedule Reliability

Interregional services are among the most challenging services to schedule. In addition to standard travel time and peak congestion factors which occur within the common urban transit context, interregional transit has other situational challenges including but not limited to:

- Detours are not always possible when motor vehicle incidents occur
- Road and weather conditions along the interregional routes may vary significantly due to elevation changes
- Highway road construction and repairs can coincide with summer peaks

Because transit cannot predict all factors delaying a bus route, transit agencies instead focus on adjusting factors within the agency's control such as the allocated run time and recovery time for each trip. The broad variability in travel times means that interregional services require a generous allocation of time for each trip, with substantial recovery time at the end of each trip to ensure that the subsequent trip can depart on time.

Highways Traffic Incident Planning

Interregional routes can be vulnerable to highway conditions. To ensure smooth responses to incidents BC Transit and operating companies may collaborate on developing a traffic incident plan, which should include the following:

- Engage with MOTI on methods to improve communication with the operating company and the public relating to highway traffic incidents and future traffic management plans for the TransCanada Highway.
- Monitor and record the number of incidents and impacts to on-time performance.
- Formalize detour routes dependent upon traffic incident location.

On-Time Performance Reports

On-time performance or schedule adherence is a measure of how often a bus arrives at a timing point very early, early, on-time, late, or very late. BC Transit defines those time periods as follows:

- **Very early:** More than three minutes early
- **Early:** Between one minute early and three minutes early
- **On-time:** Between one minute early and three minutes late
- **Late:** Between three minutes late and six minutes late
- **Very late:** More than six minutes late

In the transit industry early departures on routes with low frequency pose the greatest risk to the customer experience since customers may miss their bus entirely⁵ and be prevented from making their journey. Delayed departures will delay arrival times and may impact connections to other routes. Fortunately, early departures can be addressed through operational adjustments.

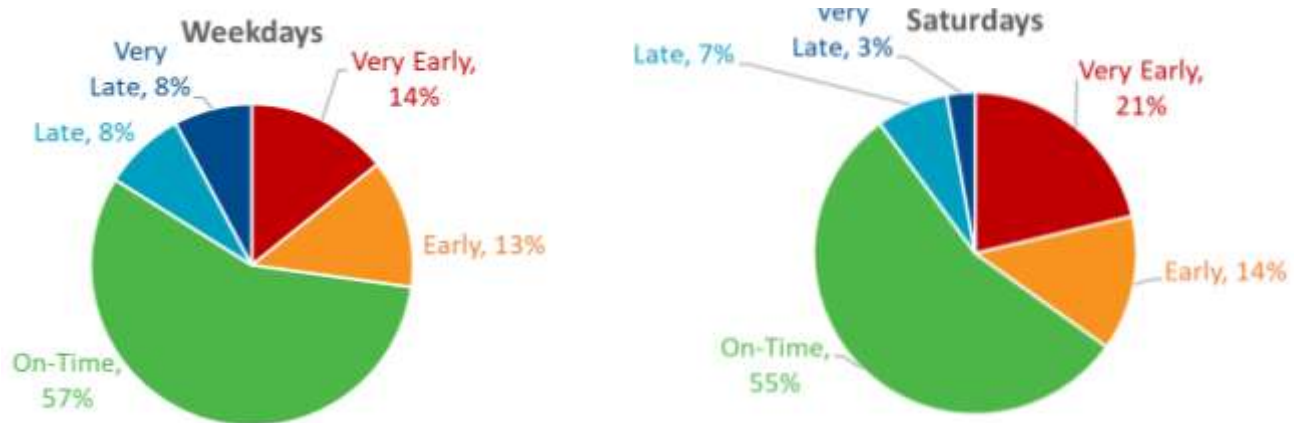
Late departures on a transit route may inconvenience customers but pose large risks to the broader transit system since delays can cause cascading impacts to multiple transit routes, and often required additional service resource and rescheduling to correct.

⁵ BC Transit Riders Guides encourage customers to be at their stop five minutes before scheduled departures

Consistent late departures within a transit system indicate that bus routes are taking more time to complete than the combined run time and recovery time allotted to them. In growing communities these delays are often due to increasing road congestion.

In transit systems where congestion is growing BC Transit recommends that service hours be increased by 1 per cent annually to invest in system on-time performance and schedule reliability as a response to increasing congestion and population. The NCX currently provides approximately 5,400 annual service hours; applying this 1 per cent increase would work out to an expansion of fifty-four annual service hours for each year specifically dedicated towards on time performance measures.

Figure 24: On Time Performance (OTP) Report - January 1, 2023, to March 31, 2023



Status	Weekdays	Saturdays
Very Early	14 %	21%
Early	13 %	14%
On Time	57%	55%
Late	8%	7%
Very Late	8%	3%

Figure 24 shows the on-time performance for the NCX in Quarter 1 of 2023 on weekdays and on Saturdays. 27 % and 35% of trips are departing very early or early on weekdays and Saturdays, respectively. This has potential to negatively impact transit customers, particularly those customers transferring from the local Cowichan Valley transit system to the NCX.

Operational adjustments to ensure on-time departures should be implemented with a monitoring program in place to ensure operational compliance.

Customer Service Notifications

None of the Customer Service Notifications related to the NCX have related to service reliability or on-time performance.

Operator Comments

NCX Transit operators were asked to comment on service reliability and did not raise any concerns. The only comment raised was that the timing points were too far apart, which is common on interregional routes.

5.4 Engagement Feedback

Service Utilization

- Respondents who are frequent NCX riders use the service most on Wednesdays (87 per cent) and Fridays (87 per cent), but also have a higher use on other days of the week than the global response.
- All respondents indicated that they most used the service on Fridays (56 per cent) and Saturdays (51 per cent) with the least use on Tuesdays.
- Respondents who have not yet used the service indicated that they would use it on Saturdays the most (25 per cent).

Future improvements on weekdays will support frequent NCX riders the most, however this group is still small. The larger proportion of respondents uses the NCX on Fridays and Saturdays and would also be likely to patronize a new Sunday service.

Ranked Service Improvement Priorities

Figure 7 in this report (located in Section 3: engagement results) shows eleven potential service improvement priorities that were evaluated during the public engagement. Seven out of the eleven priorities are related to scheduling the NCX and specific connections. The top three overall priorities by survey respondents are related to scheduling of the NCX and connections:

1. Improving operating hours during the week
2. Improved connections to Victoria⁶
3. Adding Sunday Service

The remaining four are:

4. Improve Connections to Nanaimo and Cowichan Valley Routes
5. Add additional trip times during busy times of the week
6. Improving operating hours on Saturdays
7. Additional trip times during busy times on Saturdays

Weekday Trip Times

- 74 per cent of respondents who are frequent NCX riders say that the weekday trip times work for them, while 66 per cent of all survey respondents say that the trips times work for them.
- 34 per cent of all survey respondents say the trip times do not work for them. Of these, about half are respondents who live in Nanaimo.
- Leaving Nanaimo: the most in-demand trip windows that do not already offer service are: 8:00 p.m. to 9:00 p.m.; 9:00 p.m. to 10:00 p.m., 6:00 p.m. to 7:00 p.m. and 3:00 p.m. to 4:00 p.m.

Residents of the RDN's highest priority trip window is from 11:00 a.m. to 12:00 p.m., however there is already a trip which departs Nanaimo at 11:26 a.m. Additional

⁶ Connections to Victoria are provided by 66 Cowichan Commuter (weekdays) 44 Cowichan/Victoria (Saturdays). These are distinct routes apart from the NCX.

awareness of the NCX schedule may be helpful. Residents of the CVRD’s highest priority is 3:00 p.m. to 4:00 p.m.

- Leaving Duncan: the most in-demand trip windows that do not already offer service are: 8:00 a.m. to 9:00 a.m., after 10:00 p.m., and 4:00 p.m. to 5:00 p.m.

Saturday Trip Times

- 65 per cent of respondents who are frequent NCX riders say that the Saturday times work for them, while 68 per cent of all survey respondents say that the trips times work for them.
- 32 per cent of all survey respondents say the trip times do not work for them. Of these, about one-third are respondents who live in Nanaimo.

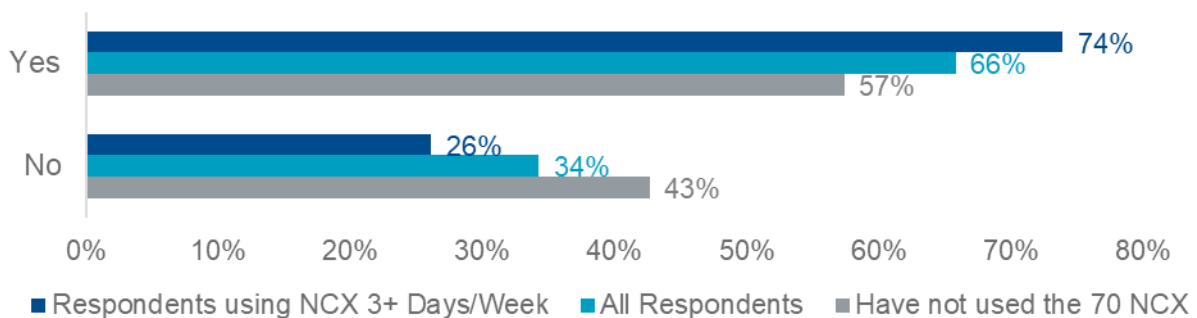
Leaving Nanaimo, travelling to Duncan

- Frequent NCX Riders: no clear preference
- All respondents: 8:00 a.m. to 9:00 a.m., with most people suggesting this living in Nanaimo, then a tie of 6:00 a.m. to 7:00 a.m.; 9:00 a.m. to 10:00 a.m.⁷; 10:00 a.m. to 11:00 a.m. (favoured by RDN residents) and 7:00 p.m. to 8:00 p.m. (favoured by CVRD Residents).

Leaving Duncan, travelling to Nanaimo

- Frequent NCX Riders: no clear preference
- All respondents: 3:00pm to 4:00pm followed by 8:00pm to 10:00pm.

Figure 25: Sunday Service



- When offered together with eleven other potential service improvement priorities, engagement participants ranked Sunday service as the third most important priority.
- 74 per cent of respondents who are frequent NCX riders say that Sunday service is a priority for them, almost half of these respondents are residents of Duncan. 66 per cent of all survey respondents say that it is a priority for them, of these about one-third live in Duncan, and one-third live in Nanaimo.

⁷ There are already departure times within 6:00 a.m. to 7:00 a.m. and 9:00 a.m. to 10:00 a.m.

- 26 per cent of respondents who are frequent NCX riders say that Sunday service is not a priority for them, while 34 per cent for all survey respondents say that Sunday service is not a priority for them.
- Operator feedback indicated desire for Sunday service, specifically for weekend commuters.

Sunday service preference

- There was not a clear preference for a Sunday service design. Considerations for the Sunday service design include potential alignment with the Saturday service, subject to the Sunday service span of key connecting routes in the local Cowichan Valley Regional Transit and the Nanaimo Regional Transit systems.

5.5 Schedule Summary and Recommendations

The following summarises the NCX schedule considerations to date:

- **Schedule Reliability** – The NCX is experiencing on time performance problems with 27 per cent to 35 per cent of trips departing very early or early. Operational adjustments to ensure on-time departures should be implemented with a monitoring program in place to ensure operational compliance.

The RDN and CVRD are encouraged to allocate funding for annual On Time Performance adjustments (1% per year, annually, inserted at the time of schedule changes). This investment will only be possible if the Province provides their share of funding.

- **Transfer Opportunities to/from Cowichan Valley Regional Transit** – Some local Cowichan Valley Regional Transit routes do not offer convenient transfers to the NCX from communities that have higher demand for the NCX. Routes 2 and 4 (within Duncan), and Route 34 (connecting Chemainus to Ladysmith), are the most challenged. The NCX does offer excellent connections to Route 7 on Saturdays, providing leisure-seekers originating in RDN opportunities to access the Cowichan Lake area.
- **Transfer Opportunities to/from Regional District of Nanaimo Transit** – Destinations and further access into Nanaimo were listed as a high priority for engagement participants. Nanaimo transit offers customers a robust and well-connected transit network that reaches most of the commonly named destinations. Further efforts to educate NCX customers, and potential NCX customers, about these connections would be helpful.

Transfer Opportunities to/from Victoria - Access to Victoria was a top priority for non-frequent rider survey respondents living in the RDN. On weekdays the existing schedule design of the 66 Cowichan Commuter is a constraint to onward connectivity to Victoria for NCX riders travelling south. On weekends the NCX offers excellent connections with each trip of the 44 Duncan/Victoria. The CVRD is considering adjusting the 66 Cowichan Commuter schedule to improve opportunities to transfer with the 70 NCX.

- **Weekday Schedule Design:**
 - Although additional trips are not required to address capacity issues, the top priority revealed in the engagement survey is improving operating hours during the week.

- The highest ranked trip windows (that are currently not offered) are a departure from Nanaimo between 8:00 p.m. to 9:00 p.m., and a departure from Duncan between 8:00 a.m. and 9:00 a.m.
- For the NCX evening span to be extended, the local Cowichan Valley Transit Service should be operating to meet NCX trips and enable NCX customers to reach their local destination. See Figure 23 for a concept.
- **Saturday Schedule Design:**
 - Additional trips are not required to address capacity issues, and improving operating hours on Saturdays was prioritized at sixth out of eleven improvement priorities. Saturdays tend to have modestly higher ridership than weekdays, and demand for later service will likely peak in the summer months.
 - The highest ranked trip windows not currently offered are a departure from Nanaimo between 08:00 a.m. to 9:00 a.m., and a departure from Duncan from 6:00 a.m. to 7:00 a.m.
 - For the NCX morning span to be extended, the local Cowichan Valley Transit Service should be operating to meet NCX trips. See Figure 23 for concept.
 - Additionally, should the weekday NCX evening service span be extended, it would be most consistent to also extend the Saturday evening service span.
- **Sunday Service:**
 - When offered together with eleven other potential service improvement priorities, engagement participants ranked Sunday service as the third most important priority.
 - There was not a clear preference for a Sunday service design. Considerations for the Sunday service design include potential alignment with the Saturday service, subject to the Sunday service span of key connecting routes in the local Cowichan Valley Regional Transit and the Nanaimo Regional Transit systems.
 - For the NCX evening span to be extended, the local Cowichan Valley Transit Service should be operating to meet NCX trips and enable NCX customers to reach their local destination. See Figure 23 for concept.

Recommendations

- Schedule Reliability – Implement operational adjustments to ensure on-time departures with a monitoring program in place to ensure operational compliance.
- Weekday Schedule Design:
 - Consider extending the NCX evening service span on Friday (when the passengers will be able to access onward connections to local Cowichan Valley Transit Routes)
 - Further NCX service span extensions should be aligned with expansion of the service span of key local connecting routes within the Cowichan Valley. Service spans within Nanaimo Regional Transit are adequate.
- Saturday Schedule Design: Additional trips are not required to address capacity issues, and improving operating hours on Saturdays was prioritized at sixth out of eleven

improvement priorities. If Friday evening service spans are broadened, then aligning Saturday evening service spans with them could be considered.

- Transfer Opportunities to/from Victoria. This report supports service adjustments to the Cowichan Valley Commuter Route 66 to enable riders originating in Nanaimo to make southbound transfers from the NCX to Route 66 in Duncan. Additional information should be provided for NCX riders to assist in this transfer.
- Sunday Service: Subject to the availability of local connections within the Cowichan Valley Regional Transit and Nanaimo Regional Transit System proceed with implementing Sunday service on the NCX.
- Improve Transfer Opportunities
 - Within the Cowichan Valley Regional Transit - Improve access to and reach of the NCX by adding connecting service from Routes 2 (Mt. Prevost) and 4 (Maple Bay) (within Duncan), and Route 34 (Chemainus/ Ladysmith) to enable northbound morning travel.
 - Within Nanaimo Regional Transit - Destinations within Nanaimo are well served. Additional customer information may be provided to support NCX riders use of the Nanaimo Regional Transit.
- Highways Traffic Incident Plan: BC Transit and the Operating Company (RDN) should collaborate on developing a traffic incident plan, which should include the following:
 - Engage with MOTI on methods to improve communication with RDN and the public relating to highway traffic incidents and future traffic management plans for 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
- Collaborate with the VIU Student Union Society regarding any potential future interest in the NCX Service, as well as future surveys to gauge student schedule/connection times. The purpose of this to assess the latent demand students would have for interregional service, as well as determining validity of a university transit pass program.

6.0 Marketing and Communication

6.1 Implementation Marketing and Communication Strategy

There was a considerable amount of community engagement conducted in 2021 as part of the development of the NCX service, which raised awareness of the service. This included a website, 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 2022 then included the following communication strategies:

- Media:
 - Media Advisories
 - Social media posts
 - Website notifications
 - Newspaper articles
- Onboard advertising
- Key bus stop location advertising
- Local partner website updates

6.2 Customer Responses

In addition to a corporate social media, BC Transit customers may make system or route specific inquiries to the operating company (through drivers and the telephone lines) or using the BC Transit system website. Following implementation of a major service change these streams are monitored to identify trends or commonly asked questions.

Questions Asked of Operators

NCX Operators were surveyed to ask what the most frequent customer questions are:

- Fare and day passes.
- Customers would like more bus service on Sundays. Difficult especially for those using the bus to get to/from work on Sundays.
- Can I get a free ride?

Customer Service Notifications

Inquiries made through the BC Transit website are called Customer Service Notifications and are delivered to the respective Local Government and BC Transit staff involved with each system.

In the first year of service twenty-nine notifications were made. These are shown in Figure 24. Of these:

- 25 per cent were questions relating to fare products and fare costs related to the NCX
- 19 per cent were related to connections or access to Victoria, including requests for direct service between Nanaimo and Victoria,
- 17 per cent were related to route planning assistance
- 8 per cent were inquiries related to reservations and tickets purchases
- 8 per cent were related to transit connections to regional districts north of the RDN.

- Other themes included access to VIU Campuses and Chemainus (six percent each), provision of bicycle facilities (five per cent) and clarifications on the Ladysmith Pick Up/Drop Off Policies and Ferry Connections (three per cent each)

Figure 26: Distribution of themes from customer service notifications, April 2022 to March 31, 2023

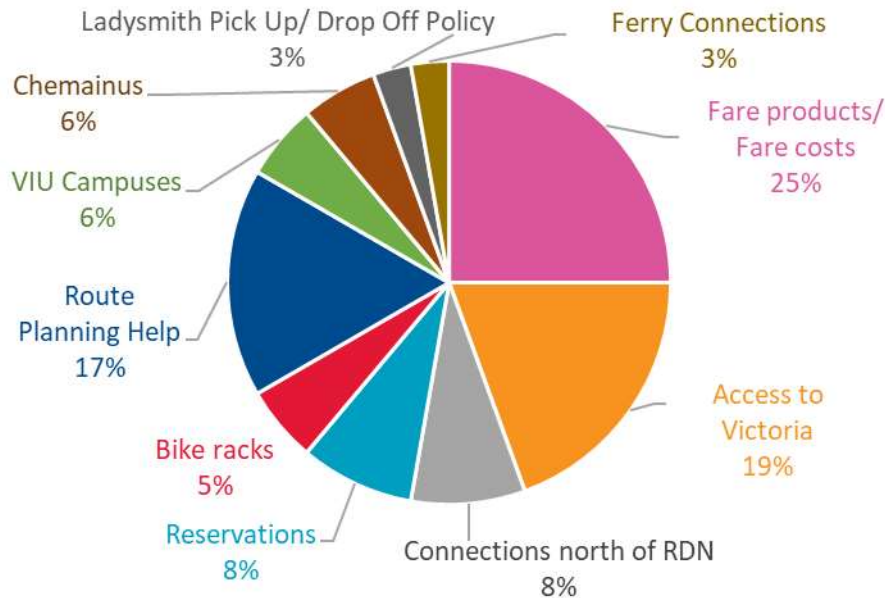


Figure 26 references utilization of feedback from the Customer Notification System. It is available to all transit systems in British Columbia. Through the BC Transit website, an individual may comment on various aspects of transit. The implementation of the NCX generated a very high proportion of inquiries related to fares, especially compared to the questions generated by a conventional service change within a transit system.

Questions relating to access to other regional districts and inquiries for reservations and tickets indicate interest from potential users who are not existing BC Transit customers, nor familiar with other BC Transit interregional services.

Recommendation:

Going forward, customer-facing information for the NCX should provide greater clarity concerning fares (see 7.0 Miscellaneous/Other).

6.3 Engagement Feedback

The Post Implementation Engagement showed an interest in transit access from the NCX to destinations in the RDN such as VIU and ferry terminals, as well as access to Victoria.

Connections to VIU and two ferry terminals already exist and are robustly served by the Nanaimo Regional Transit system. Connections between the NCX and the Cowichan Commuter services are also possible. This illuminates that additional customer information could be provided to support customers seeking to access these key destinations.

6.4 Marketing Summary and Recommendation

Implementation Awareness

Awareness of the NCX Implementation was supported by engagement in 2021 and a robust campaign in early 2022

NCX Specific Information Needs

Responses gathered from NCX operators, the Customer Notification System, as well as priorities indicated from the engagement provide clarity on topics and themes that should be explored further to provide additional customer information.

- Fare information should be more readily available (see 7.0 Miscellaneous/Other)
- Information on connections between Route 70 NCX and Cowichan Valley Commuter Transit routes 66 and 44 should be more readily available for residents of the RDN. Connections to Victoria were ranked as the second priority in the engagement survey and were also the second most common theme among customer notifications. Customers using smart phones can take advantage of trip planning tools, however these tools may not be as universally used by potential customer groups.
- Information on connections between Route 70 NCX and Nanaimo Regional Transit Routes serving ferries and other destinations in the RDN should be made more readily available.

Standardization for Interregional Customer Information

As evidenced from other systems who have implemented interregional routes, these routes have unique marketing and communication needs that should be centered around interregional implementations elsewhere in the province rather than the implementations within the adjoining local transit systems.

Implementation Campaign

Unlike service change campaigns within a single transit system, campaigns for interregional services are unique:

- Cover a broader area, usually spanning two different regional districts.
- There are often distinct operating companies who are impacted and will receive customer inquiries.
- There are a minimum of two local government partners directly involved in the process, but with other constituent municipalities also indirectly involved, as well as interest from MOTI Infrastructure as well as local First Nations.
- Information infrastructure such as new bus stop signs and new schedule posters often must be distributed to multiple agencies and areas for installation.

Customer-Facing Materials and Information

The information needed by customers to effectively use interregional routes is different from informational needs within a transit system.

- Interregional customers often need to rely on the local transit service to reach their destination from the interregional route or to access the interregional route from their origin. Making the distinction between these two service types aids customers in understanding how the services interact:
 - Distinct fare policies

- Which local system website or riders guide might be useful in accessing information
- Exchanges where they may transfer to/from local routes
- Interregional transit may be a gateway to future transit use - Customers using interregional routes may include infrequent customers, those who frequently drive and are “transit-curious”, or transient travellers making their way over a longer distance. Facilitating these customers’ understanding of communities that are serviced by the route, and connection to other communities supports a positive experience that may encourage future transit use.

In recognition of distinct marketing campaigns and information needs of Interregional transit customers BC Transit and Partners may wish to adopt a more consistent format and practices for customer-facing information relating to interregional routes that are express or limited stop.

Recommendations

- Make fare policies, fare product and fare cost information more readily available at NCX Bus Stops and wherever the NCX is promoted
- Annotate specific trips that connect with Victoria-bound transit in the NCX schedule in the Riders Guide and on the web
- Consider annotating the specific trips that connect with the NCX in the schedule of the Cowichan Valley Commuter Route 66 and Route 66 schedule in the Riders Guide and on the web
- Develop “onwards connections” information to direct NCX customers to Nanaimo Regional Transit Routes that connect to Departure Bay and Intercity services at Woodgrove Centre.
- Subject to continued limited stop service, adopt the Schedule Poster format used by the Fraser Valley Express (See Figure 27) to provide NCX Customers with greater understanding of how the NCX interacts with the Nanaimo Regional Transit System and the Cowichan Valley Regional Transit System.
- Collaborate with the VIU Student Union Society regarding any potential future interest in the NCX Service, as well as future surveys to gauge student demand. Opportunity to discuss a fare product tailored to the University as well.
- Based on the information above explore developing an “Interregional” information standard to be used for eligible (limited stop) interregional routes across British Columbia.

Concept Schedule Poster

Within local transit services the times of all routes serving a stop are listed on one poster.

Interregional Routes are displayed apart from local transit services and have stand alone schedule posters. The limited-stop or express nature of Interregional routes enables a different format to display schedule posters.

Figure 25 is an example of a custom schedule poster developed for the Fraser Valley Express, the interregional route which operates between downtown Chilliwack (Fraser Valley Regional District) and Burnaby’s Lougheed Skytrain station (Metro Vancouver)

Figure 27: FVX schedule poster: Lougheed Skytrain

Transit Info
604-854-3232
120053
bctransit.com

BC TRANSIT ROUTE 66 FRASER VALLEY EXPRESS (FVX)

This stop is served by the BC Transit route **66 Fraser Valley Express**. TransLink fare products including the Compass Card are not usable on this route, or within the BC Transit network in the Fraser Valley. A BC Transit FVX fare can be purchased onboard your bus.

FVX ROUTE

*TRIPS HEADING TO CHILLIWACK WILL BE PICKUP ONLY AT CARVOLTH
*TRIPS HEADING TO LOUGHEED STATION WILL BE UNLOADING ONLY AT CARVOLTH

FVX FARES

Cash		Tickets (10)		Monthly Pass	
All fares	\$ 5.00	All fares	\$ 45.00	Adult	\$ 100.00
Child, 12 and under	Free			Student/Senior*	\$ 85.00

*Reduced fare with valid I.D. for persons 65 or over and students in full-time attendance to Grade 12

TRANSLINK COMPASS PASS IS NOT VALID ON THE FVX
TRANSFERS ARE NOT ISSUED ON THE FVX

FVX SCHEDULE
All holidays have Sunday-level service for 66 Fraser Valley Express.

66 FVX to Chilliwack						
	LS	PA	HI	MC	L	VL
	Lougheed Station	Chilliwack	Chilliwack	Chilliwack	Chilliwack	Chilliwack
Monday to Friday						
6:26	6:45	7:00	7:18	7:36	7:54	8:12
7:11	7:30	7:54	8:03	8:21	8:29	8:36
7:41	8:00	8:24	8:33	8:51	8:59	9:06
8:11	8:30	8:54	9:03	9:21	9:29	9:36
8:41	9:00	9:24	9:33	9:51	9:59	10:06
9:22	9:41	10:05	10:14	10:33	10:41	10:49
10:33	10:52	11:16	11:25	11:44	11:52	12:00
11:48	12:07	12:31	12:40	12:59	1:07	1:15
12:48	1:07	1:31	1:40	1:59	2:07	2:15
1:48	2:07	2:31	2:41	3:00	3:08	3:16
2:38	2:57	3:21	3:30	3:49	3:57	4:05
3:26	3:46	4:10	4:20	4:39	4:47	4:55
4:24	4:46	5:12	5:23	5:42	5:50	5:58
4:54	5:16	5:41	5:51	6:10	6:18	6:26
5:26	5:48	6:12	6:21	6:40	6:48	6:56
6:10	6:30	6:54	7:03	7:21	7:29	7:36
7:11	7:30	7:54	8:03	8:21	8:29	8:36
8:11	8:30	8:54	9:02	9:20	9:28	9:35
8:47	9:05	9:29	9:37	9:55	10:03	10:10
Saturday						
9:00	9:18	9:41	9:50	10:09	10:16	10:23
10:15	10:33	10:56	11:05	11:24	11:31	11:38
11:30	11:48	12:11	12:20	12:39	12:47	12:54
12:45	1:03	1:26	1:35	1:54	2:02	2:09
2:00	2:20	2:42	2:51	3:10	3:18	3:25
3:15	3:35	3:57	4:06	4:24	4:32	4:39
4:30	4:50	5:12	5:21	5:39	5:47	5:54
5:45	6:05	6:27	6:36	6:54	7:02	7:09
7:00	7:20	7:41	7:50	8:08	8:16	8:23
8:15	8:35	8:56	9:05	9:23	9:31	9:38
Sunday and Holidays						
10:45	11:03	11:25	11:34	11:53	12:00	12:07
12:15	12:33	12:56	1:04	1:23	1:30	1:37
1:30	1:50	2:13	2:21	2:40	2:47	2:54
2:30	2:50	3:13	3:21	3:39	3:46	3:53
4:00	4:20	4:43	4:51	5:09	5:16	5:23
5:15	5:35	5:58	6:06	6:24	6:31	6:38

Where to call for information

Route overview with fare products information

Special stopping procedures (if applicable)

- Distinguishes the interregional route from other adjoining transit services and transit systems
- Denotes the relevant regional district boundaries
- Shows connections at each stop - and which transit system they correspond to

Fare details

Schedule with the current stop location column highlighted.

7.0 Miscellaneous/Other

During implementation of the NCX, two subjects required being addressed after engagement with both the CVRD and the RDN.

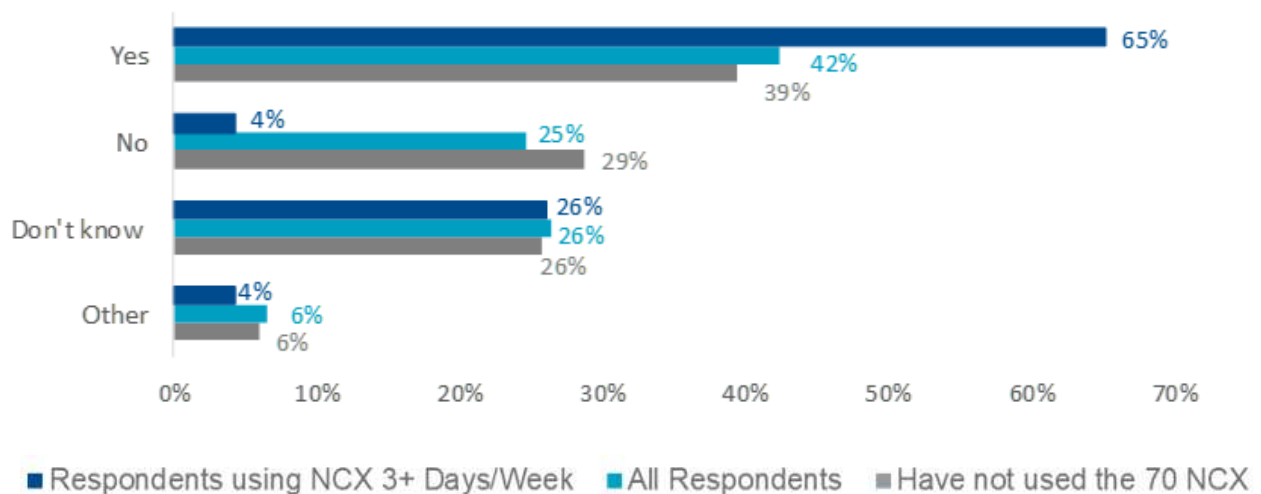
Cowichan Valley Stopping Policy

The NCX is a limited stop express service that skips local bus stops within both the RDN and CVRD. Within the RDN, the bus both picks up and drops off at each stop. In the CVRD specific stops are pick-up only, and other stops are drop-off only. This was intended to encourage a more express service. Through hearing from customers and stakeholders there was potential confusion for riders. Therefore, it was included it as a question in the public engagement survey.

The question posed in the survey is as follows:

“Should the NCX pick up and drop off transit riders at each of its bus stops when travelling in the Cowichan Valley?”

Figure 28: NCX stopping policy support



- In the ranking of eleven priorities, being able to ride the NCX between Cowichan Valley destinations (pick ups and drop offs in both directions within the CVRD) ranked as tenth.
- Frequent NCX Riders: 65 per cent of Frequent NCX Riders support having the NCX stop at local Cowichan Valley transit stops along the route. Of these respondents, over half live in Duncan, and about one-quarter live in Nanaimo, or in communities which the NCX does not pass through. Four per cent said that the NCX should not stop at local stops, and 26 per cent said that they did not know.
- All Respondents:
 - All respondents indicated 42 per cent, support of being able to access the NCX in both directions when travelling in the CVRD; with 25 per cent and 26 per cent indicating “no” or “I don’t know”.
 - Of those who said that who said “yes”, one-third live in Duncan, one-third live in Nanaimo, and one-fifth live in communities where the NCX does not pass through.

- Among residents of Duncan participating in the survey, 50 per cent were supportive, 30 per cent said “no”, 15 per cent “I do not know”, and five per cent “other”.
- Operators:
 - Some operators indicated that the stopping policy was confusing for riders, unsure of why they could not board or get off the bus within the CVRD.

Fare Review

BC Transit routinely completes reviews of fare structure in communities to ensure that the current fares reflect demand and needs appropriately of the community and local partners. In the upcoming fall (2023) there will be a full fare review completed for the NCX being led by BC Transit.

Recommendations

- Within the public engagement priority ranking question, the stop-policy priority was ranked tenth, with strong support from frequent NCX riders, but uncertain interest from other survey respondents. Serving all stops in both directions will extend the travel time. Operator feedback indicated stopping at all stops would be less confusing for riders. This review suggests evaluating new fare technology outputs to determine how existing NCX passengers are reaching the NCX within the CVRD, as well as collaborating with the operating companies to determine how to facilitate this change.
- Support the upcoming fare review in fall 2023. Other outcomes will be outlined within the final document.

8.0 Summary & Recommendations

Table 4 provides a summary of the data and engagement results which have been used to develop recommendations for the NCX service. Information from the public engagement and the service review provided information on alignment and route changes that can be further considered, the priority service changes recommended at this time are for improved trip options and for Sunday service as well as investigating changes to the pick-up and drop-off policy along the NCX. Based on strong interest in connections to other destinations, and evidence of interest in the NCX from individuals new to transit, there are also recommendations to improve customer information that would facilitate connections to local transit in each region as well as answer frequent questions.

Given the continued increase in awareness of the service and anticipated growth in ridership changes to the route alignment may be reconsidered in the future and with a better understanding of Origin-Destination trip pairs.

Table 4: Nanaimo Cowichan Express Summary and Recommendations - Detailed

Subject	Summary	Recommendations
Ridership & Route	<ul style="list-style-type: none"> • Total Ridership - The NCX carried over 32,000 passengers in its first year. Ridership on weekdays has risen by 48% from April 2022 to March 2023. • Ridership Performance – As of March of 2023 the system was carrying 5.5 rides per hour and is close to reaching the target of six rides per hour. No trips are near reaching critical capacity. • Stop Activity Distribution – Stop activity is uneven throughout the route alignment, with the most activity occurring at Nanaimo Exchange. Stop activity appears correlated with the most local transit connections, or those serving an entire community (as in Ladysmith). • Key Origin/Destination Points - This review did not investigate origin-destination pairs of survey respondents or how riders reach the NCX. In the future, new fare products will enable staff to examine linked origins and destinations as well as determine transfers made to or from local service. • Ridership by Season- high summer ridership in 2022 shows that there may be a seasonal ridership pattern emerging. This pattern could persist in early years but will likely be eventually obscured as the regular customer base continues to grow. • Ridership by Time of Day - During weekdays, ridership towards Nanaimo is more stable than ridership to Duncan, and shows a modest level peak from 12:30 p.m. to 5:30 p.m. During weekdays ridership to Duncan has a very pronounced midday peak at either 11:30 a.m. or 2:15 p.m. and shows more variability quarter to quarter. Patterns may still be stabilizing as new customers join the service. 	<ul style="list-style-type: none"> • Performance levels are well within capacity and no service changes are required for the purpose of addressing critical performance levels • Engagement respondents did not prioritize alignment changes (Chemainus, additional coverage of the route, Cowichan stops), and there was not a clear majority regarding potential changes to the NCX alignment. Decisions concerning the alignment of the NCX should be postponed until ridership grows further, and new data tools enable a more thorough investigation of the linked origins and destinations of NCX riders • Given proximity of the new Cowichan Valley Hospital to the highway, there is potential for future consideration to align the NCX to serve that destination. Engagement should be completed prior to any introduction of service through a routing review process to evaluate all options <p>Cowichan Valley Regional Transit:</p> <ul style="list-style-type: none"> • Examine opportunities to improve Chemainus residents' access to the NCX by exploring improved local connectivity between Chemainus and Ladysmith along with a supportive fare policy <p>Infrastructure:</p> <ul style="list-style-type: none"> • Work with MOTI to examine the possibility of stops near the signalized intersections at

	<ul style="list-style-type: none"> ● Ridership Trip Purpose <ul style="list-style-type: none"> ○ By frequency of use: For frequent riders is for work or education. Across the global survey response is for leisure or shopping/recreation ○ By home regional district: The main trip purpose for NCX riders of the Regional District of Nanaimo is for leisure. The main trip purpose for NCX riders of the Cowichan Valley Regional District is for shopping/recreation. 	<p>Chemainus Road and Mt. Sicker Road, or River Road after construction is complete</p> <p>New Data Tools</p> <ul style="list-style-type: none"> ● Further monitoring to NCX riders to determine if there is a singular most-used transit transfer within Nanaimo among riders. New fare technology may enable transit staff to identify high-volume transfers to and from the NCX and individual local Nanaimo routes⁸ <p>Customer Information</p> <ul style="list-style-type: none"> ● Identifying compatible transfer points to assist riders transferring between the NCX and Nanaimo regional transit routes connecting to BC Ferries services at Departure Bay
<p>Schedule</p>	<p>The following summarises the NCX schedule considerations to date:</p> <ul style="list-style-type: none"> ● Schedule Reliability – The NCX is experiencing on time performance problems with 27 per cent to 35 per cent of trips departing very early or early. Operational adjustments to ensure on-time departures should be implemented with a monitoring program in place to ensure operational compliance. ● Transfer Opportunities to/from Cowichan Valley Regional Transit – Some local Cowichan Valley Regional 	<ul style="list-style-type: none"> ● Schedule Reliability – Implement operational adjustments to ensure on-time departures with a monitoring program in place to ensure operational compliance ● Weekday Schedule Design: <ul style="list-style-type: none"> ○ Consider extending the NCX evening service span on Friday (when the passengers will be able to access onward connections to local Cowichan Valley Transit Routes)

⁸ related considerations include the possibility of a new fare programs such as UPass adoption by the Vancouver Island University Student Union

	<p>Transit routes do not offer convenient transfers to the NCX from communities that have higher demand for the NCX.</p> <ul style="list-style-type: none"> ● Transfer Opportunities to/from Regional District of Nanaimo Transit – Destinations and further access into Nanaimo were listed as a high priority for engagement participants. Nanaimo transit offers customers well-timed transit connections that reach most of the commonly named destinations. Further efforts to educate NCX customers, and potential NCX customers about these connections would be helpful. <p>Transfer Opportunities to/from Victoria - Access to Victoria was a top priority for non-frequent rider survey respondents living in the Regional District of Nanaimo. On weekdays the existing schedule design of the 66 Cowichan Commuter is a constraint to onward connectivity to Victoria for NCX riders travelling south. On weekends the NCX offers excellent connections with each trip of the 44 Duncan/Victoria.</p> <ul style="list-style-type: none"> ● Weekday Schedule Design: <ul style="list-style-type: none"> ○ Although additional trips are not required to address capacity issues, the top priority revealed in the engagement survey is improving operating hours during the week. ○ The highest ranked trip windows (that are currently not offered) are a departure from Nanaimo between 8:00 p.m. to 9:00 p.m, and a departure from Duncan between 8:00 a.m. and 9:00 a.m. ○ For the NCX evening span to be extended, the local Cowichan Valley Transit Service should be operating to meet NCX trips and enable NCX customers to reach their local destination. See Figure 23 for concept. 	<ul style="list-style-type: none"> ○ Further NCX service span extensions should be aligned with expansion of the service span of key local connecting routes within the Cowichan Valley. Service spans within Nanaimo Regional Transit are adequate <ul style="list-style-type: none"> ● Saturday Schedule Design: Additional trips are not required to address capacity issues, and improving operating hours on Saturdays was prioritized at sixth out of eleven improvement priorities. If Friday evening service spans are broadened, then aligning Saturday evening service spans with them could be considered ● Transfer Opportunities to/from Victoria. This report supports service adjustments to the Cowichan Valley Commuter Route 66 to enable riders originating in Nanaimo to make southbound transfers from the NCX to Route 66 in Duncan. Additional information should be provided for NCX riders to assist in this transfer ● Sunday Service: <u>Subject to the availability of local connections</u> within the Cowichan Valley Regional Transit and Nanaimo Regional Transit System proceed with implementing Sunday service on the NCX ● Improve Transfer Opportunities <ul style="list-style-type: none"> ○ Within the Cowichan Valley Regional Transit - Improve access to and reach of the NCX by adding connecting service from Routes 2 (Mt Prevost)
--	---	--

	<ul style="list-style-type: none"> ● Saturday Schedule Design: <ul style="list-style-type: none"> ○ Additional trips are not required to address capacity issues, and improving operating hours on Saturdays was prioritized at sixth out of eleven improvement priorities. Saturdays tend to have modestly higher ridership than weekdays, and demand for later service will likely peak in the summer months. ○ The highest ranked trip windows not currently offered are a departure from Nanaimo between 08:00 a.m. to 9:00 a.m., and a departure from Duncan from 6:00 a.m. to 7:00 a.m. ○ For the NCX morning span to be extended, the local Cowichan Valley Transit Service should be operating to meet NCX trips. See Figure 23 for concept. ○ Additionally, should the weekday NCX evening service span be extended, it would be most consistent to also extend the Saturday evening service span. ● Sunday Service: <ul style="list-style-type: none"> ○ When offered together with eleven other potential service improvement priorities, engagement participants ranked Sunday service as the third most important priority. ○ There was not a clear preference for a Sunday service design. Considerations for the Sunday service design include potential alignment with the Saturday service, subject to the Sunday service span of key connecting routes in the local Cowichan Valley Regional Transit and the Nanaimo Regional Transit systems. <p>For the NCX evening span to be extended, the local Cowichan Valley Transit Service should be operating to meet NCX trips and enable NCX customers to reach their local destination.</p>	<p>and 4 (Maple Bay) (within Duncan), and Route 34 (Chemainus/ Ladysmith) to enable northbound morning travel</p> <ul style="list-style-type: none"> ○ Within Nanaimo Regional Transit - Destinations within Nanaimo are well served. Additional customer information may be provided to support NCX riders use of the Nanaimo Regional Transit ● Highways Traffic Incident Plan: BC Transit and the Operating Company (RDN) should collaborate on developing a traffic incident plan, which should include the following: <ul style="list-style-type: none"> ○ Engage with MOTI on methods to improve communication with RDN and the public relating to highway traffic incidents and future traffic management plans for 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 ● Collaborate with the VIU Student Union Society regarding any potential future interest in the NCX Service, as well as future
--	---	--

		<p>surveys to gauge student schedule/connection times, UPASS</p>
<p>Marketing</p>	<p>Implementation Awareness</p> <p>Awareness of the NCX Implementation was supported by engagement in 2021 and a robust campaign in early 2022</p> <p>NCX Specific Information Needs</p> <p>Customer responses garnered from Operators and the Customer Notification System, as well as the priorities indicated in the Engagement Survey provide clarity on NCX topics and themes for which additional customer information should be provided</p> <ul style="list-style-type: none"> ○ Fare information should be more readily available ○ Information on connections between Route 70 NCX and Cowichan Valley Commuter Transit routes 66 and 44 should be more readily available for residents of the RDN. Connections to Victoria were ranked as the second priority in the engagement survey and were also the second most common theme among Customer Notifications. Customers using smart phones can take advantage of trip planning tools, however these tools may not be as universally used by potential customer groups. ○ Information on connections between Route 70 NCX and Nanaimo Regional Transit Routes serving ferries and other cities in the RDN should be made more readily available. <p>Standardization for Interregional Service Changes</p> <p>Over the course of interregional implementations there are distinctions that set interregional service changes apart from local service changes. The needs of interregional implementations are more likely to resemble interregional implementations elsewhere in the province than the implementations within the adjoining local transit systems.</p>	<ul style="list-style-type: none"> ● Make fare policies, fare product and fare cost information more readily available at NCX Bus Stops and wherever the NCX is promoted ● Annotate specific trips that connect with Victoria-bound transit in the NCX schedule in the Rider’s Guide and on the web ● Consider annotating the specific trips that connect with the NCX in the schedule of the Cowichan Valley Commuter Routes 66 and 44 schedule in the Rider’s Guide and on the web ● Develop “onwards connections” information to direct NCX customers to Nanaimo Regional Transit Routes that connect to Departure Bay and Intercity services at Woodgrove Centre ● <u>Subject to continued limited stop service</u>, adopt the Schedule Poster format used by the Fraser Valley Express (Figure 27) to provide NCX Customers with greater understanding of how the NCX interacts with the Nanaimo Regional Transit System and the Cowichan Valley Regional Transit System ● <u>Based on the information above explore developing an “Interregional” information standard to be used for eligible (limited stop) interregional routes across British Columbia.</u>

	<p>Unlike service change campaigns within a single transit system, campaigns for interregional services are unique:</p> <ul style="list-style-type: none"> ○ Cover a broader area, usually spanning two different regional districts. ○ There are often distinct operating companies who are impacted and will receive customer inquiries. ○ There are a minimum of two local government partners directly involved in the process, but with other constituent municipalities also indirectly involved, as well as interest from MOTI ○ Information infrastructure such as new bus stop signs and new schedule posters often must be distributed to multiple agencies and areas for installation. <p>The information needed by customers to effectively use interregional routes is different from informational needs within a transit system.</p> <ul style="list-style-type: none"> ○ Interregional customers often need to rely on the local transit service to reach their destination from the interregional route or to access the interregional route from their origin. Making the distinction between these two service types aids customers in understanding how the services interact: <ul style="list-style-type: none"> • Distinct fare policies • Which local system website or rider’s guide might be useful • Exchanges where they may transfer to/from local routes ○ Interregional transit may be a gateway to future transit use - Customers using interregional routes may include infrequent customers, those who frequently drive and are “transit-curious”, or transient travellers making their way over a longer distance. Facilitating these customers’ understanding the communities the route connects to and 	
--	--	--

	<p>connections to other communities supports a positive experience that may encourage future transit use.</p> <p>In recognition of distinct marketing campaigns and information needs of Interregional transit customers BC Transit and Partners may wish to adopt a more consistent format and practices for customer-facing information relating to interregional routes that are express or limited stop.</p>	
<p>Other/Miscellaneous</p>	<p>Stopping Policy</p> <p>Out of eleven priorities, being able to ride the NCX between Cowichan Valley destinations (pick ups and drop offs in both directions within the CVRD) ranked as tenth. 65 per cent of Frequent NCX Riders support having the NCX stop at local Cowichan Valley transit stops along the route. Of these respondents, over half live in Duncan, and about one-quarter live in Nanaimo, or in communities which the NCX does not pass through. Four per cent said that the NCX should not stop at local stops, and 26 per cent said that they did not know.</p> <p>Fares</p> <p>BC Transit routinely completes reviews of fare structure in communities to ensure that the current fares reflect demand and needs appropriately of the community and local partners. In the upcoming fall (2023) there will be a full fare review completed for the Nanaimo-Cowichan Express being led by BC Transit.</p>	<ul style="list-style-type: none"> • Although public engagement did not overwhelmingly support changing the pick up/drop off policy, it was supported by transit operators and stakeholders. Investigation of changing the policy should be pursued through conversations with the operating companies • Fare review to commence in fall 2023

Appendix A

Fare Revenue and Operating Cost Budget – April 2022 to March 2023

Month	Farebox		Tickets		Monthly Passes		Total Passenger Revenue				Total Operating Costs		
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Variance		Actual	Budget	Variance
22-Apr	\$2,609	\$2,721	\$15,120	\$3,628	\$4,865	\$11,790	\$22,594	\$18,138	(\$4,456)		\$47,663	\$48,626	\$963
22-May	\$3,337	\$2,753	\$4,320	\$3,671	\$1,610	\$11,930	\$9,267	\$18,353	\$9,086		\$79,680	\$49,830	(\$29,850)
22-Jun	\$5,254	\$2,866	\$608	\$3,821	\$1,855	\$12,418	\$7,717	\$19,105	\$11,388		\$51,724	\$51,245	(\$478)
22-Jul	\$6,898	\$2,737	\$675	\$3,649	\$1,960	\$11,860	\$9,533	\$18,246	\$8,713		\$53,608	\$50,392	(\$3,216)
22-Aug	\$4,415	\$2,866	\$473	\$3,821	\$1,260	\$12,418	\$6,147	\$19,105	\$12,957		\$55,224	\$52,270	(\$2,955)
22-Sep	\$4,482	\$2,640	\$608	\$3,520	\$2,380	\$11,441	\$7,469	\$17,602	\$10,133		\$47,694	\$49,554	\$1,860
22-Oct	\$3,580	\$2,737	\$810	\$3,649	\$2,450	\$11,860	\$6,840	\$18,246	\$11,406		\$40,845	\$51,279	\$10,434
22-Nov	\$3,246	\$2,753	\$2,700	\$3,671	\$2,100	\$11,930	\$8,046	\$18,353	\$10,307		\$50,805	\$51,527	\$721
22-Dec	\$3,873	\$2,946	\$2,228	\$3,928	\$1,435	\$12,766	\$7,536	\$19,641	\$12,105		\$53,499	\$53,685	\$186
23-Jan	\$3,849	\$2,866	\$1,350	\$3,821	\$1,295	\$12,418	\$6,494	\$19,105	\$12,611		\$56,672	\$53,313	(\$3,359)
23-Feb	\$4,308	\$2,528	\$1,350	\$3,370	\$1,435	\$10,953	\$7,093	\$16,851	\$9,758		\$55,127	\$49,200	(\$5,927)
23-Mar	\$5,164	\$2,978	\$1,418	\$3,971	(\$2,695)	\$12,907	\$3,886	\$19,856	\$15,970		\$59,485	\$56,709	(\$2,775)
TOTAL	\$51,014	\$33,390	\$31,658	\$44,520	\$19,950	\$144,690	\$102,621	\$222,600	\$119,979		\$652,025	\$617,629	(\$34,396)