RURAL ON-DEMAND TRANSIT FEASIBILITY STUDY FINAL REPORT

Report prepared by:

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To the attention of:

qathet Regional District

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Document Revisions Control

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1.0	Initial submission to qRD for review by Project Team	2024-01-26
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ACKNOWLEDGEMENTS

TERRITORIAL ACKNOWLEDGEMENT

The qathet Regional District is located on the Traditional Territory of the Tla'amin Nation. We recognize the significant contributions of Indigenous Peoples who have lived and worked on this land since time immemorial. We offer our sincere gratitude for their stewardship of these lands.

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CONTRIBUTIONS

The project team, qathet Regional District, and Tla'amin Nation would like to thank all the organizations and individuals who contributed to this study through participation in meetings and the open houses, written communication, and completing surveys. We would especially like to thank those who formed the on-demand working group:

- Carmen Galligos (Tla'amin Nation)
- Losa Luaifoa (Tla'amin Nation)
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Figure 1. Project Objectives and Tasks

Given that there is already a BC Transit paratransit service that operates within the qRD and Tla'amin Nation, this study assesses the existing service and investigates whether an on-demand service could operate alongside BC Transit service or replace it to improve service quality and transportation options for residents.

Current State of Transportation

Understanding the current state of transportation across the qRD was critical to conceptualizing scenarios that could meet resident needs. Several types of engagement were conducted with qRD staff, stakeholders, and the public through an online survey and four in-person open houses to develop this understanding. Some of the key themes that emerged from these engagements were:

- Desire for more transit service.
- Need for more affordable transportation options.
- Transportation options for seniors and those with lower incomes.
- Accessible transportation options.
- Access to healthcare.
- Access to employment and services.
- Active transportation.

Current Paratransit Assessment

Several elements of the existing BC Transit service were assessed, including the service quality, service statistics, and customer satisfaction. Considering all these elements, the existing BC Transit paratransit is performing relatively well. While the current schedule is quite limited, key measures indicate that the service is well utilized, and ridership is steadily recovering following the COVID-19 pandemic. The revenue cost ratio is low, but this is common for small transit systems, and especially understandable given the long routes being operated. Customers are generally satisfied with the service, though the on-request feature that allows customers to be picked-up or dropped off closer to their location is not well-used or well-known. The

main type of feedback on the service is related to wanting expanded service in terms of the days in service and the hours of operation.

Feasible Service Scenarios

Six preliminary service scenarios were analyzed, and several service configurations were simulated using the Blaise Transit simulation engine to assess their performance. Taking into consideration the simulation results and analysis, public engagement results, and staff and stakeholder input, three scenarios were considered feasible. It is expected that all three scenarios would continue to operate in partnership with BC Transit with the City of Powell River as the operator. No changes to the existing bus fleet would be necessary under these scenarios.

Status Quo

This scenario requires no changes to the current design and operation of the transit service in the qRD. BC Transit would continue to design the service and the City of Powell River would operate it. This scenario does consider an additional day of service to Texada Island, which the qRD and BC Transit have been pursuing.

Flex-Route with Digital On-Demand Transit Technology

This scenario would be similar to the existing paratransit service, but instead of a manual on-request feature (i.e., a user needs to call in to the call centre to request a deviation), a DODT booking and scheduling software would be implemented. Currently, customers need to call 24 hours in advance if they would like to add a deviation to a trip. Not all routes are eligible for deviations and a maximum of two deviations are possible per trip. Adding DODT software will streamline the process of adding a deviation while also allowing customers to make a request through an app or calling the BC Transit call centre when a trip is needed instead of having to call in advance. Furthermore, DODT software may be capable of accepting a limited number of walk-on deviation requests through the driver terminal.

While increasing deviations will help tailor the service for some customers, it may also make the schedule less rigid. For example, instead of a set time, the bus may be a few minutes earlier or later depending on how many deviations are added. This may introduce some unreliability for people who currently use the service and prefer a scheduled service. Specific policies around how many deviations are permitted, how far in advance someone can book, and capability of booking recurring deviation requests would need to be determined with the specific vendor in the implementation phase.

Stop-to-Stop Digital On-Demand Transit

This scenario completely replaces the existing service model with a stop-to-stop DODT model. This means that there is no scheduled service and that all trips require a customer to request when they want to travel or sometime before they wish to travel. Trips are then booked and scheduled using the DODT software, with an aim to pool customers through shared rides. Stop-to-stop means that customers may need to walk a short distance to be picked up by the vehicle or walk from a designated stop to their destination.

When trips are successfully booked, they can be more direct and align better with when customers want to travel. However, if many people are using the service, trip requests may be rejected or there may be long

wait times for a trip. This service may be difficult to access for people who do not have reliable access to a phone or smartphone since they depend on customers either calling in to an agent or using a smartphone application to request a trip.

The table on the following page highlights the financial outlook for these three scenarios.

Table 1: Financial outlook for status quo, flex-route with DODT technology, and stop-to-stop DODT.[1]

	Year 1	Year 2	Year 3
Status Quo			
Operating costs ($)	434,000	434,000	434,000
Anticipated provincial contribution ($)	247,000	247,000	247,000
Ridership	11,900	12,200	12,200
Fare revenue ($)	11,300	11,600	11,600
Total qRD cost ($)	187,000	187,000	187,000
Net cost per capita ($)	$27 per resident	$27 per resident	$27 per resident
Flex-Route with DODT Technology			
Operating costs ($)	440,000 – 444,000	440,000 – 444,000	440,000 – 444,000
Anticipated provincial contribution ($)	247,000 – 250,000	247,000 – 250,000	247,000 – 250,000
Ridership	12,400	12,900	12,900
Fare revenue ($)	11,800	12,200	12,200
Total qRD cost ($)	190,000 – 197,000	190,000 – 197,000	190,000 – 197,000
Net cost per capita ($)	$27 to $28 per resident	$27 to $28 per resident	$27 to $28 per resident
Stop-to-Stop DODT			
Operating costs ($)	330,000 – 406,000	330,000 – 406,000	330,000 – 406,000
Anticipated provincial contribution ($)	187,000 – 231,000	187,000 – 231,000	187,000 – 231,000
Ridership	14,000	14,700	14,700
Fare revenue ($)	13,300	14,000	14,000
Total qRD cost ($)	143,000 – 175,000	143,000 – 175,000	143,000 – 175,000
Net cost per capita ($)	$21 - $25 per resident	$21 - $25 per resident	$21 - $25 per resident

[1] The financial outlook is based on a number of assumptions. First, it is assumed that all three scenarios can operate within the existing or an updated BC Transit partnership. This will promote financial sustainability and lead to a provincial subsidy of approximately 56.9% (based on 2023-2024 expected subsidy). Increases in ridership were modelled based on a number of factors, including increases in service and reductions in travel times. Fare revenue is calculated using the 2022-2023 BC Transit reported revenue per trip of $0.95. Per capita calculations are made considering the rural portion of qRD and Tla'amin Nation populations that would be served by the rural service (i.e., Electoral Areas A, B, C, D, and Tla'amin Nation). This is 7,034 according to the 2021 census.

Implementation Considerations

Based on the results of this study, the current service delivery and governance model serves the qRD well. BC Transit, as the transit planner and scheduler, and the City of Powell River, as the operator, are great partners with the qRD. The only challenge with this governance model is that the process to change service or add service is lengthy, as demonstrated by the several attempts at adding an extra day of service to Texada Island. While there is an alternative service delivery model, it would involve the qRD taking on sole responsibility for funding the transit service, which is not recommended. BC Transit is currently in the process of starting a DODT pilot program and a process for existing systems (like qRD) to move to DODT is anticipated. It is recommended to pursue DODT in partnership with BC Transit once this process is developed.

In the meanwhile, to support the use of technology in transit service, as would be required for DODT, it is also recommended that the qRD continue to support improvements to Information and Communications Technology (ICT) infrastructure, particularly in underserved areas. With respect to vehicle requirements, the current fleet is expected to be sufficient for delivering any of the three scenarios. An additional vehicle, which is expected to enable the second day of service to Texada Island, will similarly improve the service quality for all three scenarios.

1 STUDY OVERVIEW

The qathet Regional District (qRD) and Tla'amin Nation have undertaken this study to assess the current paratransit service and determine whether digital on-demand transit (or on-demand transit) would be appropriate in Electoral Areas A, B, C, D, and Tla'amin Nation. This study began in July 2023 and was oriented around four key objectives and tasks:

Figure 2. Project Objectives and Tasks

Given that there is already a BC Transit paratransit service that operates within the qRD and Tla'amin Nation, this study assesses the existing service and investigates whether an on-demand service could operate alongside BC Transit service or replace it to improve service quality and transportation options for residents.

The remainder of the report is as follows. Section 2 summarizes the current state of transportation in the area, including an assessment of the existing paratransit service and public feedback. Section 3 details how service scenarios were developed and analyzed, as well as the financial analysis of each scenario. Section 4 describes the final recommended scenario and the implementation plan, while Section 5 outlines the next steps for qRD and Tla'amin following the completion of this study.

2 CURRENT STATE OF TRANSPORTATION

2.1 Existing Public Transportation

The qRD is situated on the Traditional Territory of the Tla'amin Nation on a coastal peninsula in British Columbia, between Jervis Inlet and Desolation Sound, and encompasses saʔyayɪn (Texada Island), qayɛqʷən (Savary Island), and xʷɛʔɛt̓ay (Lasqueti Island). Due to its unique landscape, transportation to the region is primarily facilitated by boat, ferry, or plane. The 2014 Powell River Regional District Regional Transportation Plan guides long-term planning for transportation in the region.

2.1.1 BC Transit

Paratransit Service

The qRD offers a limited rural transit service, aligned with the region's small population. Fully accessible buses are available for residents covering Roberts Road to Powell River (with limited service to Saltery Bay), Lund to Powell River, and Shelter Point on Texada Island to Powell River (Thursday service only).

These routes primarily operate on a predetermined route and follow a set schedule. Route 12 is one of three Rural Transit Routes that provides limited service from Powell River to communities south/east along Highway 101. Two mid-day trips on weekdays, and one Saturday trip extend east on Highway 101 to Saltery Bay Ferry Terminal. Service for this route operates Monday-Wednesday, Friday, and Saturday. Route 13 provides limited service from communities on Texada Island to Powell River. It operates two round trips per day, on Thursdays only. Route 14 provides service from Powell River to communities along Highway 101, including Tla'amin Nation. This route operates on Tuesdays and Fridays year-round, while during the summer months from late June/July to mid-October, additional service operates on Wednesday, Saturday, and Sunday.

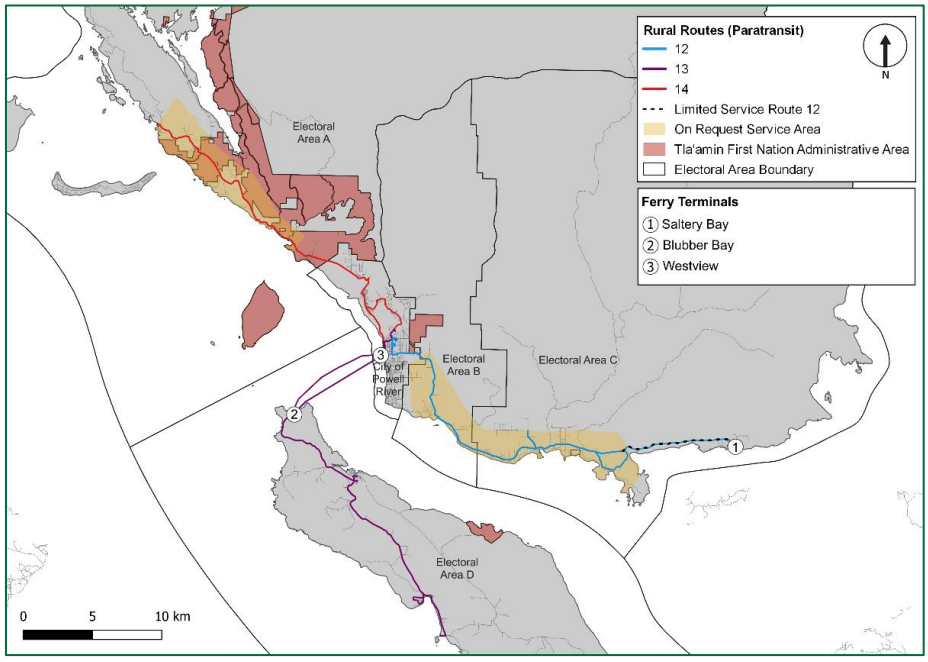

Figure 3. BC Transit Regional Paratransit Routes

As part of this Paratransit Service, an on-request service that picks up and drops off travelers at any location within the designated area is available on Routes 12 and 14. On-request service is limited to two requests per trip to maintain schedules. Priority is given to the first-to-call and those with mobility challenges.

Funding for this regional transit service comes from Electoral Areas A, B, C, and D along with a grant from the Province of British Columbia. Planning and administrative support for the service is provided by BC Transit. BC Transit currently contracts the City of Powell River to operate the rural paratransit routes.

Table 2. Powell River Regional Paratransit Service

Route	Frequency	Additional notes
Route 12 - Stillwater	Monday-Wednesday and Friday: 5 trips per day Saturday: 3 trips per day	Two trips each day go to Saltery Bay Ferry Terminal (arrives at 11:10 am and 2:00 pm Monday-Wednesday, Friday, and Saturday)
Route 13 - Texada	Thursday: 2 trips per day	-
Route 14 - Lund	Monday Tuesday and Friday: 2 trips per day	-

Urban Transit

In addition to the Rural Paratransit service, BC Transit also operates three fixed-route buses (Table 3) providing scheduled services to major destinations and residential areas in Powell River. The fixed-route service mainly serves the City of Powell River, offering limited service to Tla'amin (Route 1) and areas near the city.

Table 3. Powell River Regional Fixed-Route Service

Route	Frequency
Route 1 - Townsite/Wildwood	Everyday 30 minutes – 1 hour 30 minutes
Route 2 - Grief Point	Everyday 30 minutes – 1 hour 10 minutes
Route 3 - Upper Westview	Everyday 30 minutes – 1 hour 20 minutes

Accessible Transit and handyDART

The current services use a fleet of low-floor buses that provide accessible service on the transit system for those using scooters, wheelchairs, or for passengers that may have difficulties climbing stairs. In addition, handyDART services provide door-to-door shared service for those who are unable to take the fixed-route service within the municipal boundaries of Powell River. The handyDART services must be booked in advance and service is available between 8am to 5pm most days[2]. Since handyDART service is currently limited to the City of Powell River boundaries, it is not usable for most Tla'amin Nation residents and qRD rural residents.

[2] handyDART service hours are 8am to 4pm (Monday), 8am to 5pm (Tuesday to Friday), and 9am to 5pm (Saturday). There is no service on Sundays or public holidays. https://www.bctransit.com/powell-river/riderinfo/handydart

2.1.2 BC Ferries

The qRD is located on the Traditional Territory of the Tla'amin Nation on a coastal peninsula in British Columbia, and includes saʔyayɪn (Texada Island), qayɛqʷən (Savary Island), and xʷɛʔɛt̓ay (Lasqueti Island). Due to its unique landscape and location boat, ferry or plane is required to access the Regional District. BC Ferries offers service between Vancouver, the Sunshine Coast and Vancouver Island. Powell River has three ferry terminals, all of which belong to BC Ferries. The Westview Ferry Terminal is located near the city's downtown and provides service to Vancouver Island and Texada Island. The Blubber Bay Ferry Terminal is located on Texada Island. The Saltery Bay Ferry Terminal is located south on Highway 101, servicing trips to the Sunshine Coast. Movement to and from the region is, in most cases, dictated by the ferry schedules.

2.1.3 Zunga Bus

Zunga Bus is a pilot on-demand transit service operated by the City of Powell River. Zunga bus offers door-to-door service in most of its service area, which is limited to the Westview area within the city. The service is therefore not usable for most Tla'amin Nation residents and qRD rural residents, unless they happen to travel within that area. The pilot launched on Jan 1st, 2021, and is currently still operating, though its continued operation is not clear beyond March 31, 2024[3].

The rationale behind on-demand was that it was noted to be well suited for a low-density community like Powell River.[4] The City was successful in partnering with Spare Labs Inc, through the Built -in Canadian Innovation Program Grant. Spare Labs applied for funding and reached out to Powell River to launch the pilot service. The bus is wheelchair accessible and runs from 11:00 am to 6:30 pm daily. However, there have been challenges in accommodating mobility devices at the same time as ambulatory riders. Bookings are made via the Zunga Bus app or by phone, and fares are paid via card at the time of the booking or by cash on-board the vehicle. Fare is $2.25 per trip.

2.1.4 Sunshine Coast Connector

Sunshine Coast Connector is a locally owned and operated business in Sechelt and Powell River. This service provides scheduled bus services between Langdale and Earl's Cove Ferry terminals, one trip per day in each direction. The service operates seasonally, primarily during the summer months and around the winter holidays (end of December and beginning of January). Sunshine Coast Connector and Powell River BC Transit buses collaborate by transporting passengers between Langdale and Powell River. Sunshine Coast Connector moves passengers to and from Langdale and Earls Cove and BC Transit transports passengers to/from Saltery Bay Ferry Terminal to/from Powell River and Lund.

2.1.5 Tla'amin Community Transportation

Tla'amin Health offers a Shuttle Bus Service, which operates Monday-Friday, and is available to all Tla'amin residents. This service utilizes one 15 passenger van and operates from 8:30 am to 4:30 pm. Riders must contact health reception and schedule the date and time of travel prior to making the trip. In discussions

[3] https://www.mypowellrivernow.com/45333/news/zunga-bus-service-extended-to-march-31/
[4] Notes from the Regional Public Transportation Service Exploration Working Group Meeting held June 29, 2020

with Tla'amin stakeholders we heard that this van is a shared vehicle across several community services, and therefore is limited in its availability. For example, when summer camp is running, they then did not have access to this van and needed to use a smaller vehicle to service trips. This service is running as a necessity to fill the gap of the existing transit service not meeting the transportation needs of the Tla'amin people.

2.1.6 Local Taxis

Coast Taxi (previously Powell River Taxi) offers trips from Lund to Saltery Bay, seven days a week from 7:00 am to 12:00 am. Coast Taxi will also make trips to Texada if they are pre-booked well in advance. Like the paratransit service, taxis will not travel on forest service roads. Lund Water Taxi provides service to qayɛqʷən (Savary Island) and surrounding areas all year long. The Lund Water Taxi departs from Lund on the hour from 9:00 am to 6:00 pm and departs from qayɛqʷən (Savary Island) on the half hour. Orca Spirit Marine Services also offers a water taxi that services Powell River, though not on a regular schedule.

2.1.7 Air Transportation

While it is located on the mainland, Powell River is an isolated community, which is only accessible by ferry or by air. Both airplanes and seaplanes service the region. Powell River Airport (YPW) is located in the City of Powell River and operated by the city. Pacific Coastal airlines offers direct flights between Powell River and Vancouver South Terminal daily. Texada Airport is located on Texada Island. This airport is a community airport, owned and operated by the Regional District, and is paid for by the taxpayers of Texada Island.[5] KD Air offers daily flights to Qualicum Beach and Vancouver South Terminal. Harbour Air operates seaplane service between Powell Lake (on the north side of Powell River) and Canada Place in Coal Harbour (downtown Vancouver).

2.2 Community and Stakeholder Perspectives

Community input was important in understanding the current state of transportation in the qRD, as well as informing the community how on-demand could play a role in regional transportation. Community and stakeholder input also supplemented available data to provide more insight into current travel patterns and the overall current landscape of transit and transportation in the Region.

2.2.1 Discovery

As part of broadening our understanding of the current context, a document review as well as stakeholder engagement was conducted where interested parties were identified and either interviewed or sent questions.

[5] https://www.qathet.ca/services/transportation/texada-island-airport/

Table 4. Community Stakeholders Engagement Summary

Stakeholder	Interview	Written Response
BC Transit	x	
Northern Sunshine Coast Ferry Advisory Committee		x
Sunshine Coast Connector		x
BC Ferries	x	
Lift Community Services		x
City of Powell River	x	
Inclusion Powell River Society		x
Lund Community Society		x
Vancouver Coastal Health		x
Qathet Regional Cycling Association		x

The guiding questions that aided in this discovery included:

- What are the current transportation options?
- Are they adequate?
- Where are people trying to go and where are they coming from?
- What community priorities are unlocked/enabled by transportation?

2.2.2 Public Open Houses and Survey

Public engagement has been a cornerstone in the project approach, allowing the project partners to glean insights from the community itself. By actively involving community members in the dialogue, valuable perspectives on their needs and pain points were gained.

Public Survey

As part of this study, a survey was conducted between October 2-23 to hear directly from the community. The survey was online and paper copies were also made available at the qRD main office The survey asked participants about any transportation challenges experienced, and helped the project team to learn more about travel needs, experiences with the existing rural bus routes and input on future transportation

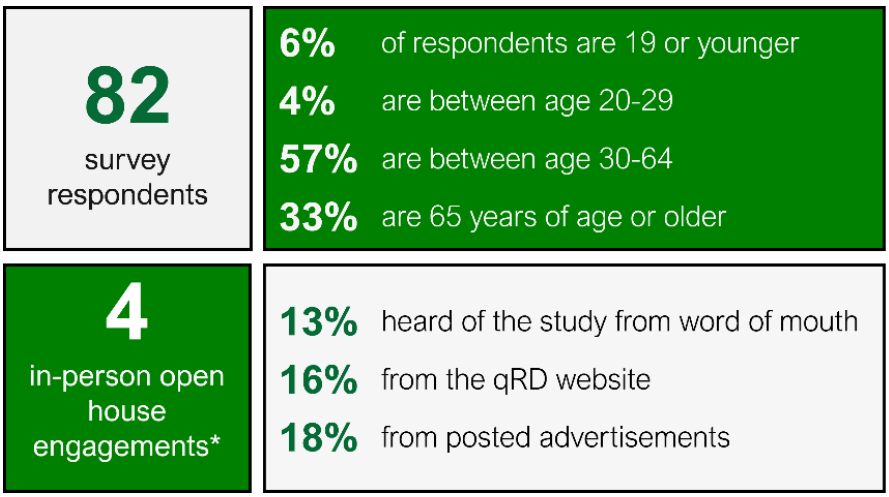

Figure 4. Summary of Survey Respondents

options like on-demand transit. Eighty-two individuals participated in the survey as part of the broader public engagement held. Figure 5 shows the distribution of where respondents live.

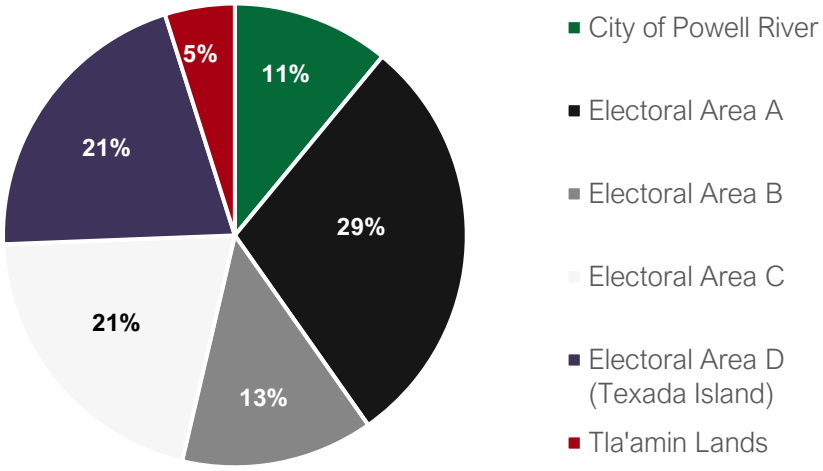

Figure 5. Survey responses to "In which area do you live?"

In-Person Open Houses

In-Person engagement allowed the project team to speak directly to the community to better understand community perspectives transit needs and travel patterns, while encouraging residents to take the online survey. This part of the engagement included four days of in-person engagement with two team members on-site. The open houses were located at one location per day (North of Town, Tla'amin Nation, South of Town, and Texada Island) and took place in the evenings. Engagement materials included poster boards with information about the engagement, as well as prompts that individuals could provide feedback on as seen in the Figure 7-11 below. The open house attendance was relatively low (about 20 individuals overall), which has been a common trend after the pandemic, particularly in more rural and remote areas.

NORTH OF TOWN	TLA'AMIN NATION
Monday Oct. 16, 5-7 pm Northside Community Centre 9656 Larson Rd	**Tuesday Oct. 17, 5-7 pm** Administration Building 4770 Klahanie Rd
SOUTH OF TOWN	**TEXADA ISLAND**
Wed. Oct. 18, 5-7 pm Lang Bay Community Hall 11090 Hwy 101	**Thursday Oct. 19, 5-7 pm** Texada Island Community Hall 4913 Gillies Bay Rd

Figure 6. Open House Sessions

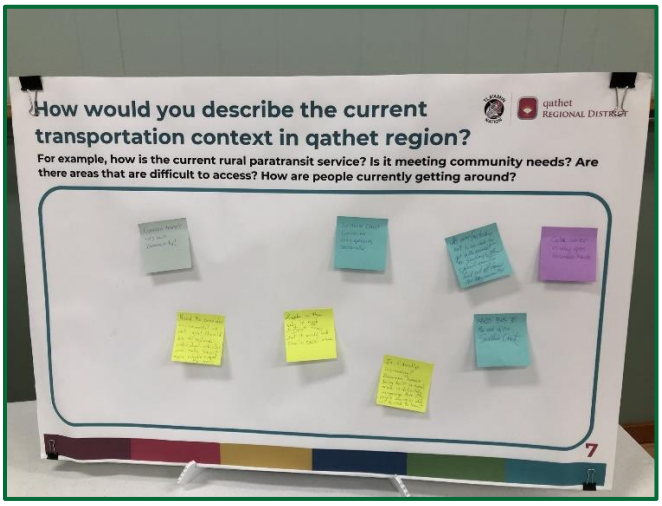

Figure 7. Current State of Transportation: Lang Bay Open House

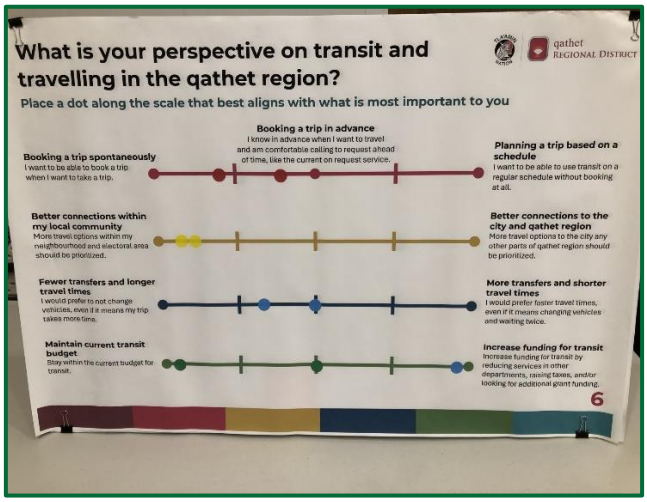

Figure 8. Transit and Travelling Perspectives: Texada Open House

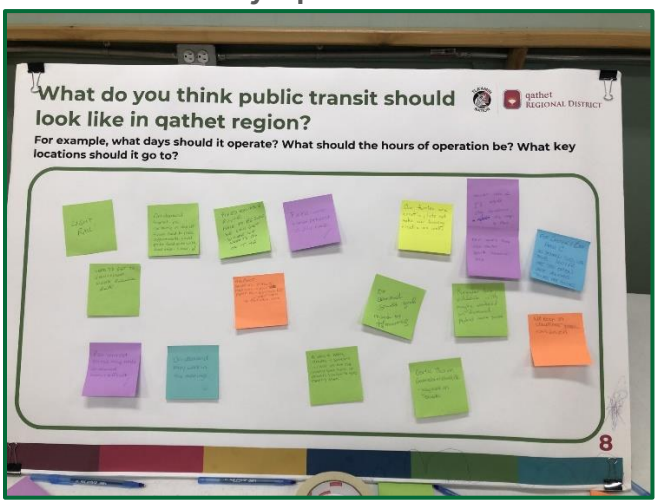

Figure 9. Transit Priorities: Lang Bay Open House

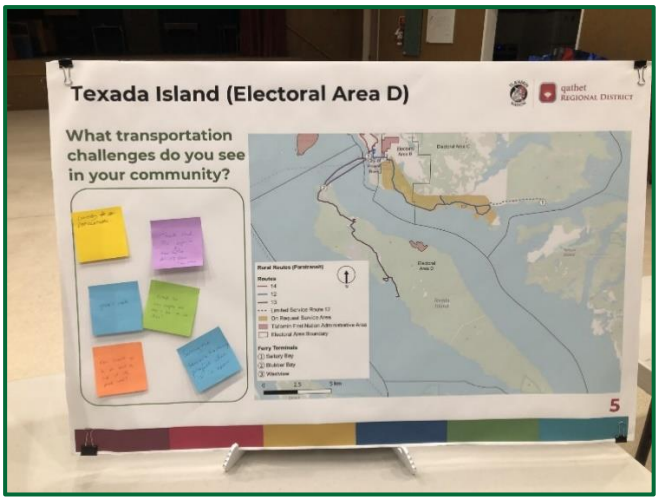

Figure 10. Transportation Challenges: Texada Island Open House

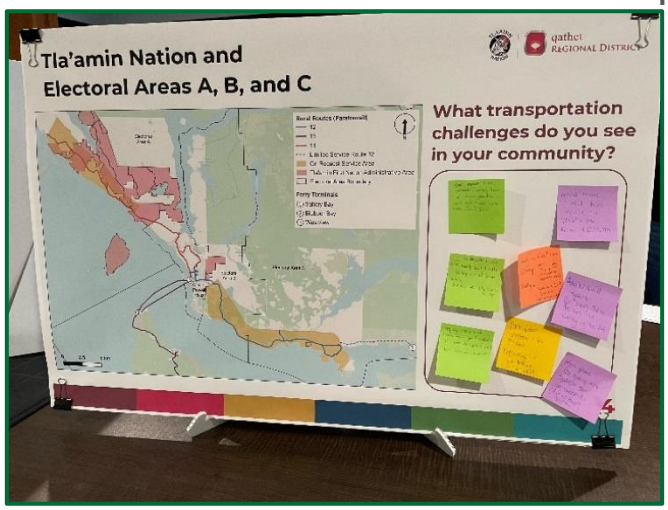

Figure 11. Transportation Challenges: Tla'amin Nation Open House

2.2.3 Key Findings

Transportation Habits and Transit Usage

When asked what the main purpose of their most frequent trip was, survey respondents indicated that the three most common trip purposes include shopping, work, and personal business (see Figure 12).

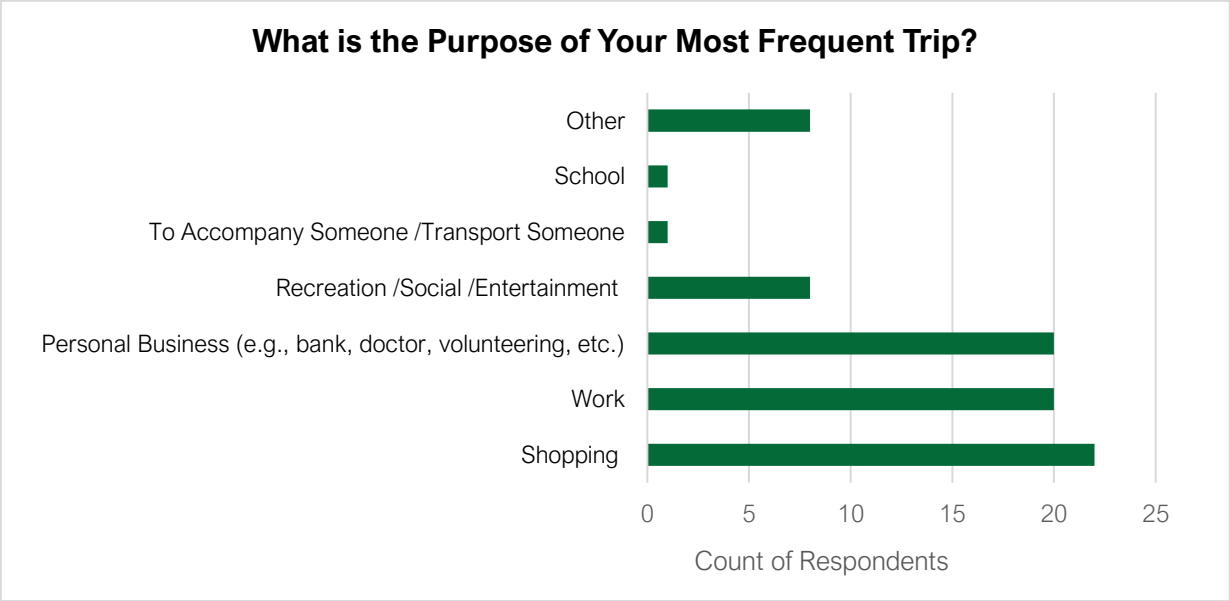

Figure 12. Survey responses to "What is the purpose of your most frequent trip?"

Table 5 provides additional insight into how respondents currently make their trips.

Table 5. Survey responses to "What are the three most common modes you use to make trips?"

Mode of Transportation	Survey Response
Drive alone in a private vehicle (single occupant vehicle)	52 (63.4%)
Travel in a private vehicle with at least one other person	55 (67.07%)
Take public transit	28 (34.14%)
Walk	17 (20.73%)
Bicycle	10 (12.19%)
Other	9 (10.97%)
Motorcycle/Scooter	1 (1.21%)
Taxi	4 (4.87%)

Living in a rural area that is geographically isolated usually requires residents to own a private vehicle. From the survey responses, most trips are made using private vehicle both as a single driver (63%) or with at least one other person (67%). While much of the responses reflect a high reliance on private vehicle usage, around 1/3 of respondents rely on public transit (34%) and walking (21%) to make their trips. This could

because the survey was advertised on transit buses and people who use transit may have been more likely to complete the survey.

Respondents have indicated that a lack of viable transportation options is a significant pain point. The survey revealed that 76% of respondents have had to cancel plans or appointments due to a lack of access to transportation, primarily in Electoral Areas A, C and Texada, as seen in Figure 13.

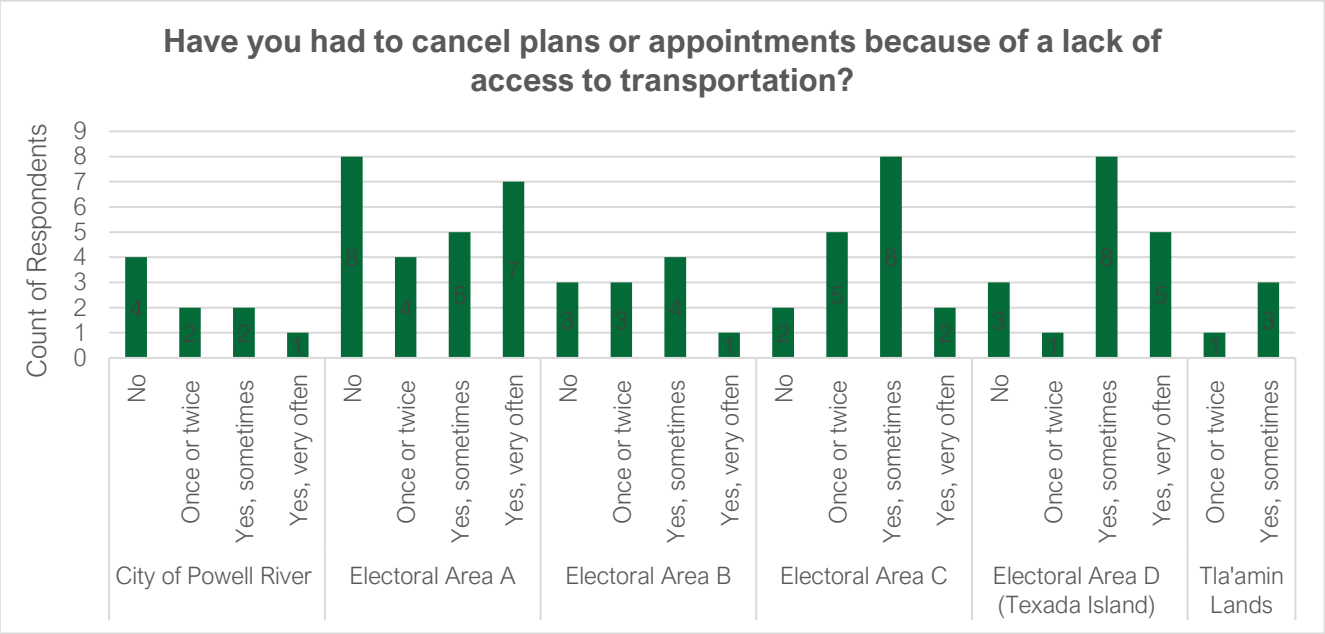

Figure 13. Survey Responses to "Have you had to cancel plans or appointments because of a lack of access to transportation?"

To service those in the rural areas of the qRD, BC transit offers a limited rural paratransit service. Almost half of the respondents (41.97%) indicated that they currently do not use the paratransit service. Approximately 18% of respondents indicated that they use the paratransit service at least once a week. Those who use the service less frequently make up the remaining responses. When respondents were asked why they do not currently use the rural paratransit service, the most common reason was that the operating times do not align with when customers would like to travel (64.61%). Other top reasons included better access to an alterative and that there are no stops close to where they live, at 35.38% and 29.23% respectively.

Desire for more service

During engagement, residents expressed an overall desire for more service. As it relates to the current paratransit service, 71% of respondents agreed that they would like to see increased service hours for paratransit services. Specifically, survey respondents indicated that they would like to see an increase in service, both as it relates to service hours, and an increase in the days of the week that the service runs. In general, providing more service can have positive effects for riders but is influenced by several factors. Riders are more likely to use the transit system if they can depend on the service arriving on time, or at times that are convenient for them. From the survey, 65% of respondents currently do not use the rural paratransit service because the operating times do not align with when residents would like to travel.

In addition, expanding service coverage to reach more areas and neighborhoods increases residents' access to transit. Key communities where customers would like to see an increase in service include Texada and Lund.

Beyond increased service, stakeholders expressed interest in exploring partnerships that facilitate the expansion of bus service and more frequent stops in and between Lund, Tla'amin, Texada Island, and Saltery Bay. At present, these communities do have access to transit options, however, service is offered on a limited basis.

As part of the paratransit service, the on-request service picks up and drops off travelers at any location within the designated areas along Routes 12 and 14. On-request service is limited to two requests per trip in order to ensure that the schedules are maintained, where priority is given to the first-to-call and those with mobility challenges. 84% of survey respondents indicated that they do not use the on-request feature. In fact, most respondents (68%) were not aware of the on-request feature prior to this survey. When asked why customers do not use the on-request feature, common themes were:

- The service is not available to them.
- The service is not needed.
- The service is not available at hours that it is needed.
- The service requires access to a telephone.

Transportation options for seniors and those with lower incomes

Transportation is a key component for social wellbeing and greatly influences social cohesion, access to employment, food security, and access to recreational opportunities.[6] In the community, geographic isolation is one of the defining characteristics. As the neighborhoods and communities that make up the region are geographically spread out, this exacerbates transportation challenges for those without private vehicles.[7] In the qRD, populations that continue to experience difficulties in accessing social offerings are seniors, people with lower incomes and those without reliable transportation.[7]

While rents are lower in outlying areas of the region, most jobs are located within the city making those earning a lower income choose between affordable housing or access to work.[7] With limited frequency, commuting using the transit system is unrealistic. Public transit is generally more cost-effective than owning and maintaining a private vehicle. Providing increased services can help individuals with lower incomes save money on transportation, leaving more resources for other essential needs.

The qRD has a significantly higher proportion of seniors within its population (27.7 % compared to the 18.3% in British Columbia[6]). Certain community members such as senior residents may face challenges in participating in active living due to physical and infrastructure limitations.[6] Individuals who live outside the city including seniors encounter obstacles such as limited public transportation options, and a scarcity of recreational options in outlying areas. For example, Electoral Area D, has a significant aging population, however transit options are limited to one service day per week, with limited trips. This makes the use of transit for some less reliable.

[6] Powell River Regional Social Planning Program Final Report (2017)
[7] A Community Social Plan for the Powell River Region

Access to employment and services

The City of Powell River is a hub for many services and serves as an employment center for qRD residents. Offering more expanded transit options has the potential to support those seeking employment, providing them with increased access to work. As it currently stands, minimal transit service in rural areas and long travel distances affect the practicality of alternative transportation options. For some, the limited schedules of the rural paratransit service make it difficult to rely on transit for making trips to work, school and recreational activities. For example, Route 13 (Texada) would allow for someone to travel only on Thursdays from Texada Island into the City of Powell River for a maximum of approximately 5 hours before catching a bus back to Texada.

Interest in Digital On-Demand Transit services

Of the survey respondents, 82% indicated that they would use on-demand transit if available. When considering the staffing and resources, however, only 16% said they would be interested in volunteering as a driver. Overall, when looking at a new or improved service, reliability, cost, and accessibility were the three most important factors to consider.

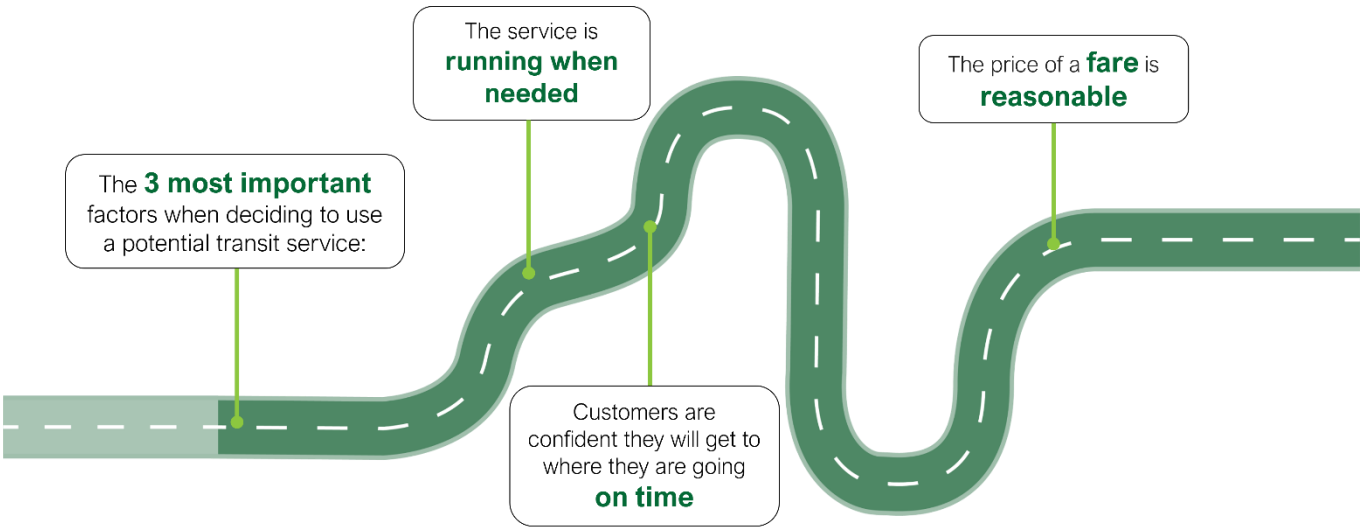

Figure 14. Factors Considered for a New or Improved Service

2.3 Current Paratransit Assessment

This section examines the performance metrics associated with the current paratransit service offered by BC Transit, as described in section 2.1.1, as well as the results of community engagement.

2.3.1 Service Quality Indicators

In assessing the quality of the service provided by BC Transit, there are three main indicators that were examined: ridership, frequency, and travel times.

Ridership indicates the total number of passenger trips that BC Transit delivered. There are a number of different reasons why ridership may increase or decrease, but it is influenced by the overall quality of the

service. The higher quality of service, the more likely someone will use it, which results in an overall increase in ridership. Other factors that impact ridership can include changes in population and changes in employment (e.g., greater number of people working from home).

Figure 15 shows the annual ridership on the qRD paratransit routes over the last five years. While there is a clear drop in ridership in 2020-2021, undoubtedly because of the COVID-19 pandemic, there is also a trend of recovering ridership. The 2022-2023 ridership numbers indicate a recovery of about 86% of pre-pandemic ridership.

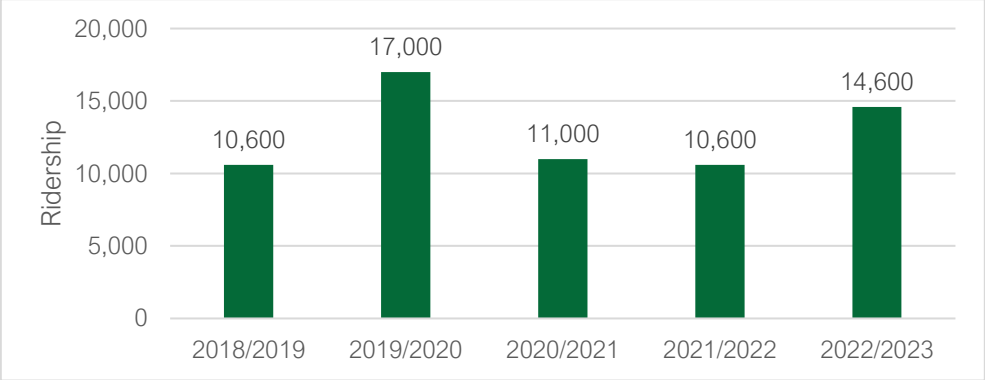

Figure 15. Annual Approximate Ridership for qRD Paratransit[8]

Examining ridership numbers on monthly basis (Figure 16), also shows an overall increase in ridership, with some large fluctuations from month to month. Figure 16 further illustrates the breakdown of ridership across the three paratransit routes. Route 12 accounts for the largest portion of overall ridership, followed by Route 14, then Route 13. This breakdown roughly aligns with the number of days each route is in service per week and the number of trips delivered on each route.

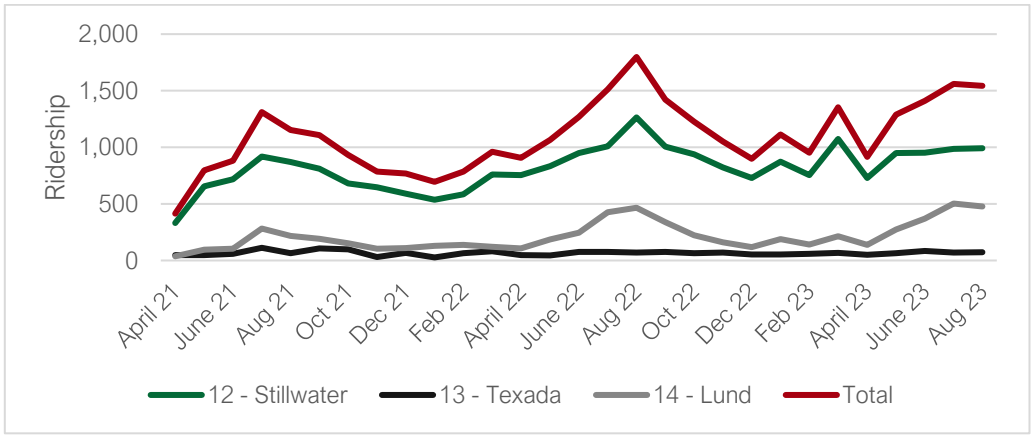

Figure 16. Monthly Ridership on Paratransit Routes[9]

Looking at the frequency of service for specifically the paratransit routes (Table 6), there are some notable

[8] Data source: 2022-2023 BC Transit Annual Performance Summary for qRD. Precise figures were not available and therefore data is approximate but still representative.
[9] Data source: BC Transit

gaps in the days of the week that have transit service and how frequent the service is on those days. For people travelling to and from Texada Island, there is a particular limitation in that there is only transit service available on Thursdays. BC Transit and the qRD are making efforts to add one other day of service for Texada Island, pending provincial government approvals.

Table 6. Paratransit Route Frequencies

Route	Frequency[10]	Days in operation						
		Mon	Tues	Wed	Thurs	Fri	Sat	Sun
12 – Stillwater	1 bus every 1-3 hours	X	X	X		X		
13 – Texada Island	2 trips a day				X			
14 – Lund	2 trips a day	X	X			X		

Using sample ridership data from 2022-2023 and travel patterns from the public engagement, ten different hypothetical days of passenger trips were developed. These ten days were considered to be a day when all three routes were operating and exemplified both minimum and maximum ridership days. Travel times were calculated based on these hypothetical days and the resulting average travel time was 95 minutes.

2.3.2 Service Statistics

Additional service statistics related to service hours, trips, and revenue cost ratio further shed light on the current paratransit service. These are presented in Table 7 and compared with other BC Transit systems and smaller systems that report to the Canadian Urban Transit Association (CUTA).

Table 7. Service statistics comparison

	qRD '21- '22 original[11]	qRD '22- '23 original[11]	qRD '21- '22 adjusted[12]	qRD '22- '23 adjusted[12]	BC Transit Tier PR3 average '22-'23[13]	CUTA average for population < 50,000 2022[14]
Service hours per capita	0.19	0.21	0.33	0.37	0.50	1.38
Passenger trips per service hour	4.38	5.22	4.38	5.22	5.08	8.8
Passenger trips per capita	0.82	1.09	1.44	1.93	3.09	13.2
Revenue cost ratio	3.88%	4.94%	3.88%	4.94%	9.11%	23%

[10] Based on BC Transit schedules reviewed Fall 2023
[11] Original and as reported in the 2022-2023 BC Transit Annual Performance Summary for qRD. The per capita statistics were found to include the City of Powell River population, as the city is part of the qRD.
[12] Numbers were adjusted from the 2022-2023 BC Transit Annual Performance Summary for qRD. Since this study focuses on the rural parts of the qRD, the per capita statistics were recalculated based on the rural portion of the qRD population.
[13] Data Source: 2022-2023 BC Transit Annual Performance Summary for qRD. Tier PR3 communities are understood to be a group of smaller transit systems that BC Transit considers fair comparators for qRD.
[14] Data Source: 2022 CUTA Canadian Conventional Transit Statistics.

BC Transit and the qRD are providing less service on a per capita basis when compared to similar BC Transit systems and Canadian systems with smaller than 50,000 population. Despite that, the passenger trips per service hour are slightly greater than the average trips per service hour of comparable BC Transit systems. Passenger trips per capita is less than the average comparators, indicating that the service is not used by a significant proportion of the qRD population. The relatively low revenue cost ratio also indicates that fares cover a small amount of the cost of operating the service. This is common among smaller systems. Additionally, given the vast geographic area of the qRD, the current service is expansive which contributes to the operational costs. Overall, while the service is relatively well utilized, the service statistics do not indicate that the service is at or over capacity.

2.3.3 Customer Satisfaction

Our understanding of customer satisfaction is primarily based on the stakeholder and public engagement results of this project (detailed in Section 2.2). BC Transit does track customer satisfaction quarterly but results for qRD residents are aggregated with other Tier 3 communities[15] and so it is difficult to gain specific insights for qRD.

Overall, current users of the service are very satisfied with the cost of the service and the quality of customer service. There is more of a mixed response related to how reliable and accessible the service is, though the majority of users responded either positively or neutrally to these elements of the current service.

An emerging theme from the feedback is that respondents would like to see an expansion of transit hours of operation and additional days of service. This was noted for all routes, though many respondents specifically commented on the very limited service for Texada Island. Many respondents also wanted to see changes to trip times to better align with when they want to travel. For example, some people noted that trip times do not align with a 9-5 workday, nor shift work, nor doing groceries in town and getting back home.

With respect to the existing on-request feature, it was used by 13 respondents (16% of respondents) and about a third of survey respondents were aware of the feature. When asked why people have not used the on-request feature, some of the reasons were that people did not have a need for it, their location is not within the area, or that people did not have a phone to call the request in. There was also some confusion about whether the on-request feature was the same as the Zunga bus or not.

2.3.4 Overall Assessment

Considering the service quality, service statistics, and customer satisfaction, the existing BC Transit paratransit is performing relatively well. Key measures indicate that the service is well utilized in comparison with other agencies and ridership is steadily recovering following the impact of the COVID-19 pandemic. The revenue cost ratio is quite low, but this is common for small transit systems, and especially understandable given the long routes being operated. Customers are generally satisfied with the service, though the on-

[15] https://www.bctransit.com/corporate-reports/customer-tracking-surveys

request feature is not well-used or well-known. The main type of feedback on the service is related to wanting expanded service in terms of the days in service and the hours of operation.

2.4 BC Transit Digital On-Demand Pilot

Independent of this study, BC Transit has been investigating digital on-demand transit and are preparing to pilot a new on-demand service in Kelowna in Spring 2024 with VIA Mobility as their technology provider. A key goal for BC Transit is to learn how on-demand technology integrates with their existing systems and processes related to planning, scheduling, and operations. BC Transit is optimistic about expanding on-demand within the Province under appropriate circumstances and are currently defining the process of determining candidates for future (Phase 2) implementations of on-demand. The timelines for Phase 2 implementations are likely no earlier than late-2025, after lessons are learned from 12 months of operating the pilot in Kelowna.

As BC Transit continues to define the process for implementing on-demand transit within the Province, there is an opportunity for the qRD to work together with BC Transit and within BC Transit's framework. While this may introduce longer implementation timelines and additional planning processes, it may enable more provincial funding which would make a potential on-demand service more financially sustainable.

3 DEVELOPING SERVICE SCENARIOS

The process for developing services scenarios is described in the following sections. This process involved assessing the community demographics and travel patterns, conducting several workshops with stakeholders, and identifying constraints on the service. After defining the scenarios, several rounds of analysis and simulation determined the technical feasibility and capacity of service options.

3.1 Community Demographics

Understanding the built form and demographics of the qRD is essential to developing an effective public transportation solution. For the qRD, there are several factors that are important to consider when it comes to addressing their transportation needs.

3.1.1 Rural Residents

The qRD is geographically characterized by large rural areas, with residential neighbourhoods including rural and suburban neighbourhoods. The rural areas and settlement areas outside the city are connected by long roads and highways such as Padgett Road, and Highway 101. These roadways often have limited lighting, narrow shoulders, and high vehicle speeds, and lack designated walking and cycling corridors. Residents living in Electoral Areas A, B, C, D and Tla'amin Nation often must take trips to the City of Powell River to access goods or services. With minimal transit service in rural areas and long travel distances, the practicality of alternative transportation is low. Rural residents therefore rely on their personal vehicle, private transportation services, or rides from friends and neighbours.

3.1.2 Lower Income Populations

Lower income populations tend to rely on transit more, as they are more likely to have unreliable private transportation. The average individual income in the region is lower than the provincial average and many comparable communities.[6] The distribution of low-income populations in Electoral Areas A-D and the Tla'amin Nation are shown in Table 8.

Table 8. Percentage of Low-Income Individuals

Electoral Area	% of population that is low-income[16]
A	17.2
B	11.1
C	3.3
D	20.6
Tla'amin Nation	13.8
BC Average	*10.8*

Electoral Area A and D have a significantly higher percentage of low-income residents as compared to other areas of the region. Additionally, nearly all electoral areas as well as Tla'amin Nation experience higher rates of lower income households than the provincial average, with the exception of Electoral Area C. Further

[16] Data Source: Statistics Canada 2021

engagement confirmed that these areas have some of the greatest need for increased transportation options, and shared instances of having to cancel plans or appointments due to a lack of access to transportation in these areas.

3.1.3 Seniors

Seniors are an important demographic to consider when determining public transit needs. As individuals age, their likelihood of needing a transportation mode that accommodates a growing prevalence of physical disabilities and transportation limitations increases. As a result, their reliance on public transportation options will also increase. The current distribution of seniors (those aged 65+) in Electoral Areas A-D and the Tla'amin Nation, is shown in Table 9.

Table 9. Population Aged 65+ and the growth rate of this population group

Electoral Area	% of population 65+ (2021)[16]	% change of population 65+ (2016-2021)[16]
A	31.6	23.1
B	31.5	20.5
C	33.7	32.4
D	42.9	24.1
Tla'amin Nation	22	25

The highest concentration of seniors is in Electoral Area D (Texada). The senior age groups over 65 years make up 42.9% of the population in Electoral Area D, with a median age of (57.1 years[16]) that is well above that of the qathet Regional District (49.6 years[16]) and the province (43.1 years[16]). In 2021, 31.5% of residents in Area B, were aged 65 or older, an increase of 23.1% from 2016, underscoring the ongoing aging population of Area B. This trend is attributed to the ongoing out-migration of young individuals pursuing higher education and employment opportunities, coupled with the in-migration of retirees. Similar to the general population trends across the country, the portion of seniors in the qathet Regional District is expected to increase. Therefore, the distribution of seniors within the region is an important consideration for developing viable public transportation options.

3.1.4 Persons with Disabilities

In addition, individuals with mobility challenges find the schedule and routes for public transportation inhibit their ability to participate in recreation at the facilities.[6] Such barriers to accessible transportation hinder people's access to service and participation in social offerings. BC Transit currently offers HandyDart Service within Powell River; however, this is not offered within the broader qRD.

3.2 Community Travel Patterns

Origin-Destination points were collected from the online public survey. Key origins that survey respondents recorded include Black Point, Gillies Bay, Lund and Texada, while key destinations include Marine Avenue, Town Centre Mall, Westview and the City of Powell River. The most common purposes for making trips among survey respondents included shopping, work and personal business. Figure 17 and Figure 18 on the following pages highlight the most common origins and destinations throughout the service area.

The settlement patterns in some areas such as Texada Island, are significantly different from more dense areas such as the City of Powell River. These differences pose several challenges for residents and travellers depending on where they live and are travelling to. As the qRD is mainly rural, some residential areas are more geographically isolated than others. Rural and suburban neighbourhoods are connected by long roads and highways but lack the proper infrastructure for alternative modes such as walking and cycling. Residents in certain electoral areas and the Tla'amin Nation often travel to the city for goods and services due to a lack of local options. Currently, the minimal transit service available in rural areas, paired with long distances makes alternative transportation impractical. As a result, rural residents heavily depend on personal vehicles, as reflected in the survey results, or assistance from friends and neighbors.

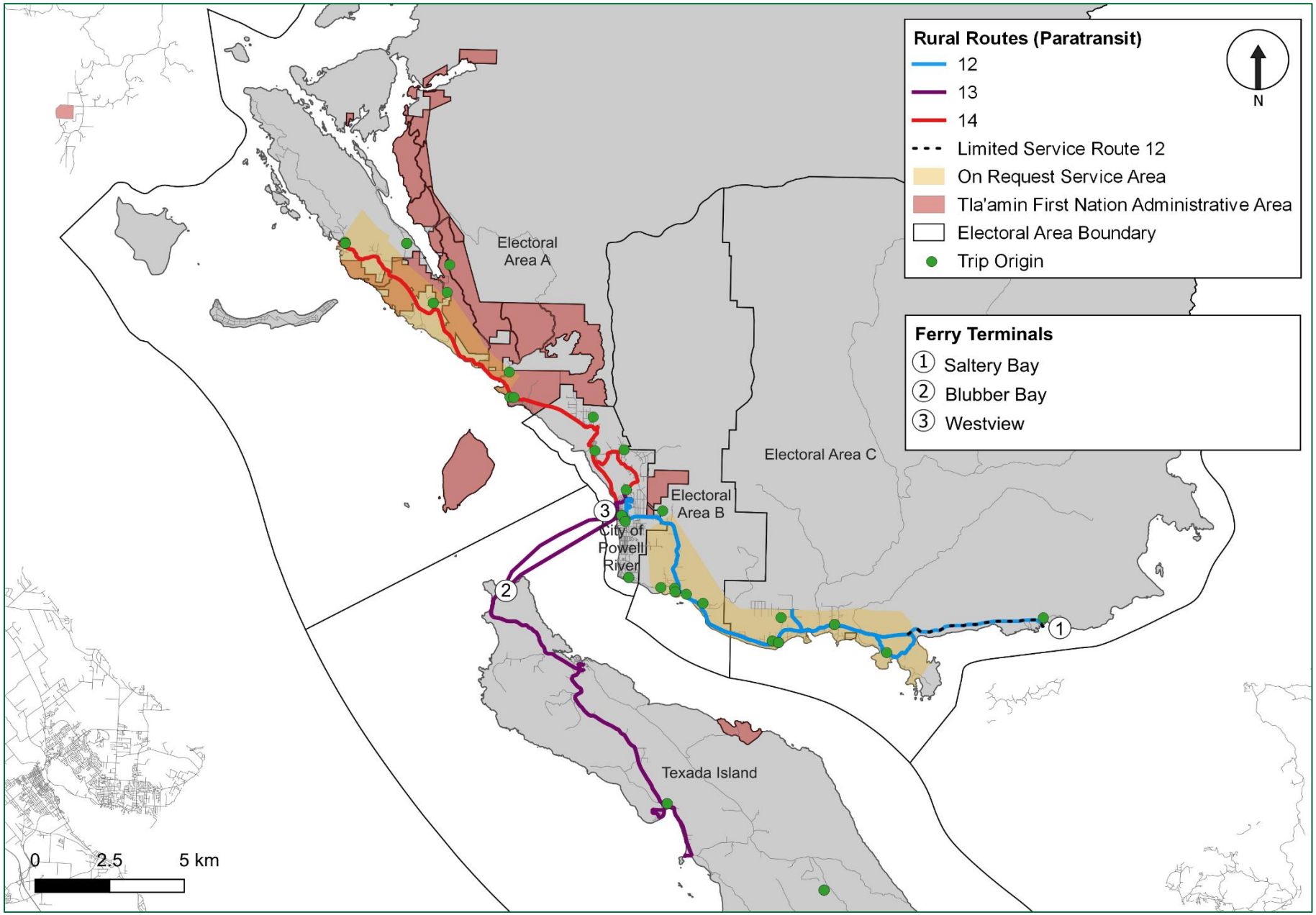

Figure 17. Key Origin Points in the qRD

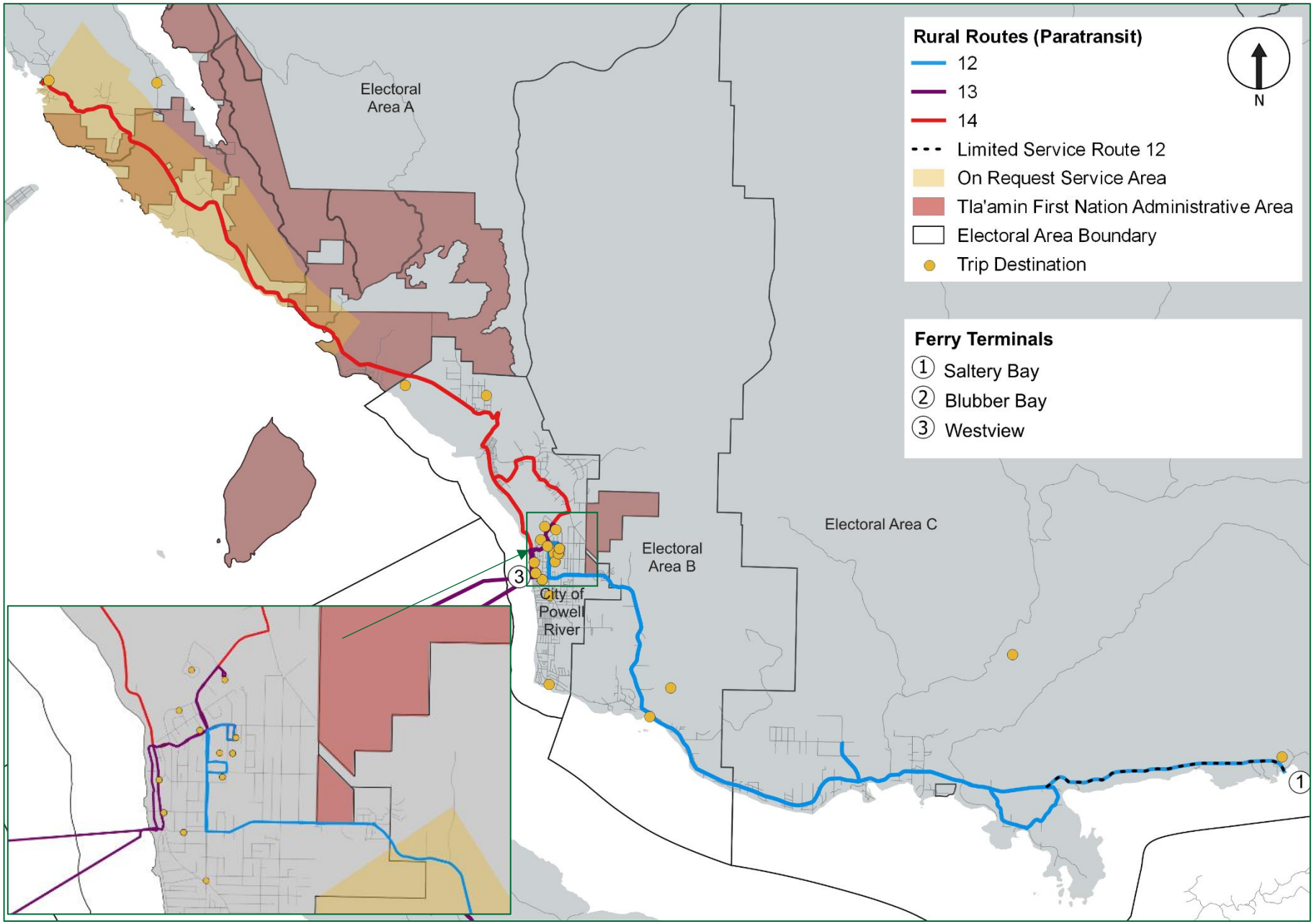

Figure 18. Key Destination Points in the qRD

3.3 Peer Review

Various configurations of on-demand transit exist, and the choice of configuration depends on the specific context of the implementation area. As on-demand transit becomes more widespread, new configurations emerge. As part of developing and assessing the service scenarios, a peer review was conducted to identify different configurations implemented elsewhere and assess their relevance for the qRD. The peer review explored the experiences of three peer community in BC, Alberta and New Brunswick that have implemented on-demand transit. These peers were chosen based on type of service, service area and geographic location.

This section, at a high-level, relays an agency overview and key or unique aspects of their system as it relates to on-demand services.

The agencies that were explored as part of this Peer Review scan include:

Table 10. Summary of Peers

Peer Agency	Location	Population
Cochrane On-Demand Local Transit (COLT)	Cochrane, AB	34,467 (2021)
Bowen Island Transit On-Demand	Bowen Island, BC	4,256 (2021)
Saint John Transit On-Demand FLEX	Saint John, NB	69,895 (2021)
City of Powell River Zunga Bus	City of Powell River, BC	13,943

Each of the peers were catalogued to identify the service history, operating characteristics and fares. The table below summarizes this information.

Table 11. Peer On-Demand Transit Operating Characteristics

	Cochrane On-Demand Local Transit (COLT)	Bowen Island Transit On-Demand	Saint John Transit On-Demand FLEX	City of Powell River Zunga Bus
Introduction of Service	2019	July 15 to September 15, 2019	2023	2021
Type of Service	Stop-to-stop (149 stops)	On-demand services supplemented the existing routes, which continued to provide regular transit service during the trial. Weekday Evenings: Fixed pick-up from Snug Cove Weekends: Flexible pick-up and drop-off	Stop-to-stop (within the zone) or transfer at common stops on fixed routes within the service zone.	Door-to-door service, in some cases uses designated stops
Service Area	Only within the Town of Cochrane	Bowen Island	The west side, north of Saint John Through-	Services the Westview area, with a few key

	Cochrane On-Demand Local Transit (COLT)	Bowen Island Transit On-Demand	Saint John Transit On-Demand FLEX	City of Powell River Zunga Bus
			way, including Milford, Randolph, Greendale, Quinton Heights and Island View Heights	spots in Townsite within city limits
Fleet	8 vehicles low-floor, 21-seat buses, up to 4 vehicles in revenue service	2 TransLink Mini-shuttle buses	6 Karzan e-JEST electric buses can fit up to 22 people (20-foot battery powered 15 life cycle bus)	Dodge Ram Promaster Vehicles
Service Hours	5:45 am to 8 pm on weekdays and 9 am to 3 pm on Saturdays	Weekdays: fixed pick-up at Snug Cove from 4:30 pm to 9:30 pm and on weekends flexible location pick up from 10:00 am to 5:30 pm	6:30 am until 6:30 pm on weekdays, and 10:00 am to 6:00 pm on weekends	11:00 am to 6:00 pm daily
Fare	$2.50 (single fare one way) (in-app or cash)	Fares are the same as the fixed route (2019 fare prices). Payment is through the Compass Card or on-board the bus; no payment option is available through the app.	$2.75/ride	$2.25/ride
Booking	Website, Call-in for phone bookings or through the COLT on-demand transit app	Web browser, Call-in for phone bookings or through Tap Ride mobile application	Mobile application or call a dispatcher to schedule a ride.	Riders can use the Zunga Bus mobile application or call in for phone bookings
Operations	Contract with Southland Transportation. RideCo provides the booking software.	Service provided through TransLink	Local service, provided through the Municipality	City of Powell River in cooperation with Spare Labs

Cochrane On-Demand Local Transit (COLT)

COLT, an on-demand local transit service, is operated in collaboration with Southland Transportation and RideCo as the booking software. Initially hesitant to implement fixed-route service due to high annual costs, Council approved an on-demand system, offering comparable services at a lower cost. The decision to opt for on-demand over a fixed route was influenced by studies indicating the cost-effectiveness of on-demand transit, with the potential for evolution into a regular fixed route, as on-demand grows. This service operates on-demand, responding to bookings instead of adhering to a fixed schedule. The on-demand model proved cost-efficient, especially in low-demand scenarios. The service follows a “stop-to-stop” approach with 149

designated stops in town, benefiting smaller communities like Cochrane by providing greater access to public transit options.

In communities like Cochrane, demand-responsive technology is considered a solution to fixed-route transit drawbacks, allowing personalised route planning through algorithms. The value of Dynamic Route Technology varies based on community size and rider preferences, proving particularly useful in rural and low-density areas.

Bowen Island Transit On-Demand

In 2019, TransLink conducted a two-month pilot project on Bowen Island, in BC, to assess the feasibility and customer experience of an online app-based booking tool for on-demand transit service. The goal of the pilot was to identify logistical and procedural issues, creating a framework for implementing flexible on-demand transit services in suburban areas. The on-demand service complemented existing routes and were used by 554 unique users totalling 1,200 trips and approximately 2,000 boardings during the two-month trial period.[17] The service was offered using three booking options (smartphone app, web browser or call-in), with the smartphone apps and web bookings being the most popular, accounting for over 76.3% of total bookings.[17] Results from a post-pilot survey showed positive reception of the service. Notably, 47% of users chose the on-demand service over their private cars, and 23% replaced fixed-route with on-demand transit services.[17] This on-demand service allowed TransLink to provide more convenient service in low-density, lower-demand service areas.

Saint John Transit On-Demand FLEX

In January 2023, Saint John Transit introduced FLEX on-demand service in specific areas of the West Zone, replacing routes with low-ridership and limited schedules. FLEX service aims to offer a more flexible approach, without fixed routes or schedules. Riders can use a mobile app or call a dispatcher to schedule rides, travelling between stops in the zone or transferring at common fixed-route stops. For this project, project planners were considerate that not everyone will be able to access the technology needed to book trips. Therefore, they have committed to working with suppliers and community groups to ensure the system remains accessible. They have also urged community support, indicating that if neighbours or residents are aware of individuals who would benefit from the FLEX service but lack access to a phone or mobile apps, those community members can assist by setting up an account and booking trips on behalf of others.

3.4 Visioning Workshop

Before preliminary scenarios were developed, a workshop was held with qRD staff, Tla'amin Nation staff, and stakeholders from BC Transit and the City of Powell River to better understand the current transportation context and establish key objectives for transit. Establishing these key objectives, or a vision for transit, provided a rationale for developing different preliminary scenarios.

[17] Transit On-Demand Pilot Program 2019 Bowen Island Report transit_on_demand_pilot-bowen_island_summary_report.pdf (translink.ca)

The following objectives were developed based on reflections on the current context, strengths of the current service, and opportunities to improve.

Good and accessible transportation option: The level of service available to residents should represent a good transportation mode option and be accessible.

Balance service quality and coverage with costs: Transit service should be designed to be as high-quality and broad coverage as possible within a reasonable cost. This recognizes that more personalized service with deviations is good from a customer service perspective but may increase costs.

Regional and modal connector: Transit plays an important role as a connector. It connects people within qRD, it provides rural residents a connection to the city, and it connects to other transportation services, like BC Ferries. Transit should be coordinated with other services when it is possible.

Responsible investment: Transit should operate in an efficient manner and should be financially sustainable to limit the financial burden on taxpayers.

3.5 Constraints on the Service

Through the various workshops and public engagement, several constraints for both the current and any future transit service were identified. These are related to the geography of the region, the current infrastructure, and current demographics of the region.

3.5.1 Geographical Constraints

The geography of the region is relatively expansive, and transit coverage for the region results in long trips. This generally means that the minimum resources to provide transit service (e.g., vehicles and drivers) may be higher than in smaller geographic areas. For a scheduled service with long trips, any delays that occur along the route will accumulate and result in significant delays later in the schedule. For an on-demand service that goes to where demand is, it may happen that all vehicles end up in one area of qRD when a request comes in from a different area, resulting in long wait times. For example, if multiple vehicles were bringing people to the Saltery Bay Ferry Terminal when a request came in from Lund, there would at least be 50-60 minutes for a vehicle to get to Lund from Saltery Bay.

Another important geographical constraint is the ferry between the mainland and Texada Island. For all customers travelling between these two areas, there is a need for the service to line up with the ferry schedule.

3.5.2 Current Infrastructure Constraints

Several additional constraints relate to the current road infrastructure and Information and Communication Technology (ICT) infrastructure. One constraint is that some of the roads in the qRD are Forest Service Roads (FSRs), meaning that the roads were made by the natural resource industry (e.g., forestry, mining). These roads are not maintained by the BC Ministry of Transportation and Infrastructure (MOTI). For BC Transit currently, travelling only on BC MOTI roads is a constraint, and this would likely remain a constraint for any government-run service for liability and insurance purposes. There are people who live along FSRs

and there are some newer neighbourhoods being developed connected by FSRs. Neither the current, nor a future transit service is likely to serve them.

Another constraint is related to the limited road network throughout the qRD. To go North or South of the city, Highway 101 is the only option, with Padgett Road connecting the airport south to the highway near Myrtle Point. From the Blubber Bay Ferry Terminal on Texada Island to travel to the rest of the island, there is also one main road for several kilometres. When comparing different types of transit services, namely fixed route and on-demand, a limited road network makes these routing options similar to each other. On-demand typically takes a variable route between origins and destinations, but in a constrained road network, it is likely that it will take regular routes between communities and look more like a flex-route service (similar to the existing BC Transit paratransit service with request zones).

The two final infrastructure constraints are the limited cellular service and internet access. The 2021 Connectivity Last Mile report indicated that significant progress had been made to improve internet access from 2009 to 2021[18]. At the time the report was written, there were still gaps for Electoral Areas A and the overall satisfaction of surveyed residents with respect to their internet service was 5.1 out of 10[18]. Looking at coverage maps for cellular service, there is relatively good coverage for 4G across the more populated areas of qRD and slightly less 5G coverage (see Figure 19). From the public engagement for the present study, we heard that residents did not feel confident in the reliability of their internet/cellular service. This may pose a constraint for any transit service that relies on someone phoning a call centre or using a smartphone app to book a trip. Additionally, on-demand transit software depends on cellular connectivity to vehicles to provide drivers with routing updates and instructions for transporting passengers. Spotty cellular connectivity is likely to introduce service reliability issues.

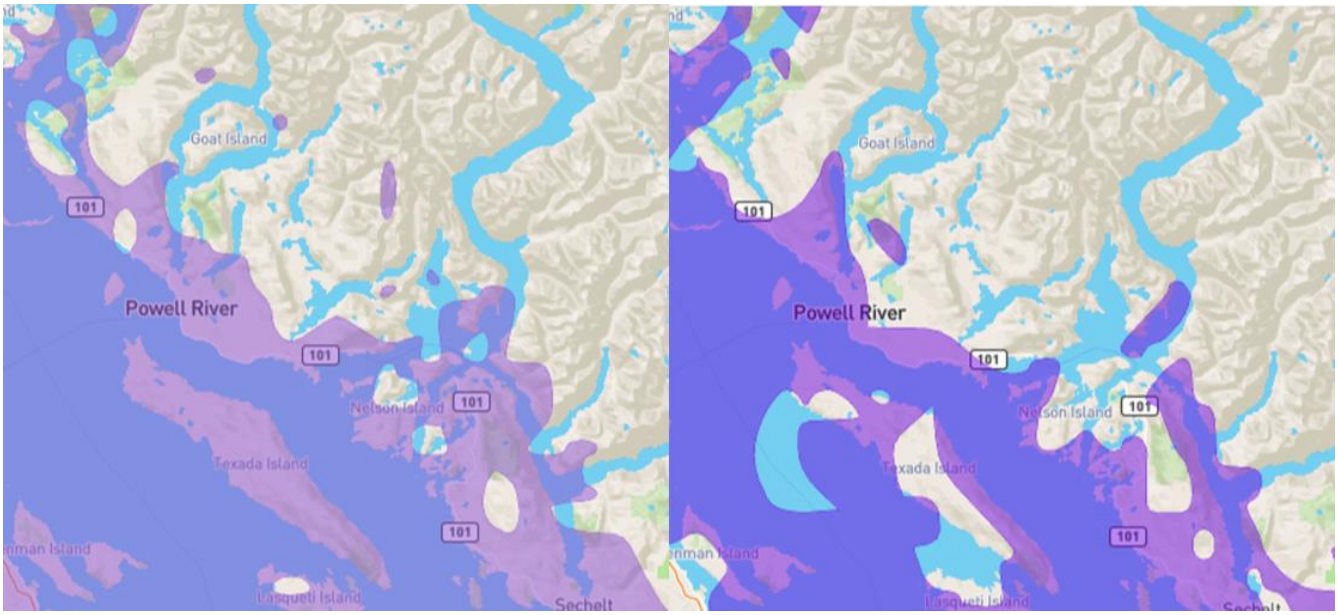

Figure 19: Cellular Service Coverage in the qRD, 4G (on the left) and 5G (on the right)[19]

[18] https://www.qathet.ca/wp-content/uploads/2021/08/Connected-Communities-The-Last-Mile.pdf
[19] Data source: Mosaik. Map source: Mapbox

3.5.3 User-related Constraints

In addition to the limits on ICT infrastructure, there are residents who choose to not own or are not comfortable with technology. Some residents expressed that they purposefully moved to a rural or remote location to be "off the grid" and not have access to technology. Even having reliable access to a phone was not a given for some residents. This sentiment was sometimes tied to a resistance against transit overall (e.g., 'I chose a rural lifestyle to be self-sustaining and do not expect nor want public transit services'), but not always. For example, some residents expressed that while they do not own a phone, they use the transit service and are grateful for an alternative transportation option. Therefore, it is important that current and future transit service does not rely on users having access to a phone or other technology.

3.6 Scenario Definition and Exploration

Through the previous workshop and discovery findings, several types of high-level scenarios were discussed as being of interest. This section describes the high-level scenarios and the anticipated implementation requirements. These concepts, and some preliminary cost estimations, were presented to qRD staff, Tla'amin Nation staff, and stakeholders including BC Transit during a workshop and the resulting discussion oriented further development and scenario simulation described in Section 3.7.

3.6.1 Scenario Descriptions

Six scenarios were developed as part of this assessment. The first four high-level scenarios were developed prior to the workshop. The last two (Early Morning and Evening Digital On-Demand Transit and Private Transportation) were added following the workshop based on feedback received from stakeholders.

Status Quo

This scenario requires no changes to the current design and operation of the transit service in the qRD. BC Transit would continue to design the service and the City of Powell River would operate it. This scenario does consider an additional day of service to Texada Island, which the qRD and BC Transit have been pursuing. The same amount of resources currently delivering the service would be used in this scenario (effectively 3 vehicles[20]). There would be no changes to the cost sharing structure between the qRD and the province.

Flex-Route with Digital On-Demand Transit Technology

This scenario would be similar to the existing paratransit service, but instead of a manual on-request feature, a DODT booking and dispatching software would be implemented. Currently, customers need to call 24 hours in advance if they would like to add a deviation to a trip. Not all routes are eligible for deviations and a maximum of two deviations are possible per trip.

Adding DODT software will streamline the process of adding a deviation while also allowing customers to make a request through an app or calling when a trip is needed instead of calling in advance. The extent to

[20] 5 vehicles shared between qRD paratransit and City of Powell River handyDART. An estimated 13 seated capacity based on current BC Transit fleet. https://www.bctransit.com/about/fleet

which this enhances the current service is dependent on how much flexibility there is in the schedule and whether customers will know about and be able to access the technology. Survey results indicated that the majority of people did not know about the existing on-request feature, and so a focus on marketing and education would likely be important in implementing this scenario.

While increasing deviations will help tailor the service for some customers, it may also make the schedule less rigid. For example, instead of a set time, the bus may be a few minutes earlier or later depending on how many deviations are added. This may introduce some unreliability for people who currently use the service and prefer a scheduled service.

Curb-to-Curb Digital On-Demand Transit

This scenario completely replaces the existing service model with a curb-to-curb DODT model. This means that there is no scheduled service and that all trips require a customer to request when they want to travel or sometime before they wish to travel. Trips are then booked and scheduled using the DODT software, with an aim to pool customers through shared rides. When trips are successfully booked, a resulting trip can be more direct and align better with when customers want to travel. However, if many people are using the service, trip requests may be rejected or there may be long wait times for a trip. This service may be difficult to access for people who do not have reliable access to a phone or smartphone. This service can operate between direct addresses, or to nearby "virtual stops" in a "stop-to-stop" configuration.

Fixed Route and Curb-to-Hub Digital On-Demand Transit

This scenario combines two different types of services: fixed route transit and a curb-to-hub DODT. The idea is that the fixed route would operate similar to the existing service but without making any deviations. Then, there would be complementary DODT service that would pick up customers who are not within walking distance of a stop and take them to the nearest stop in time to connect to the fixed route service. This curb-to-hub DODT service would increase the overall service coverage and would operate while the fixed route service operates. Figure 20 illustrates conceptually how this scenario would work.

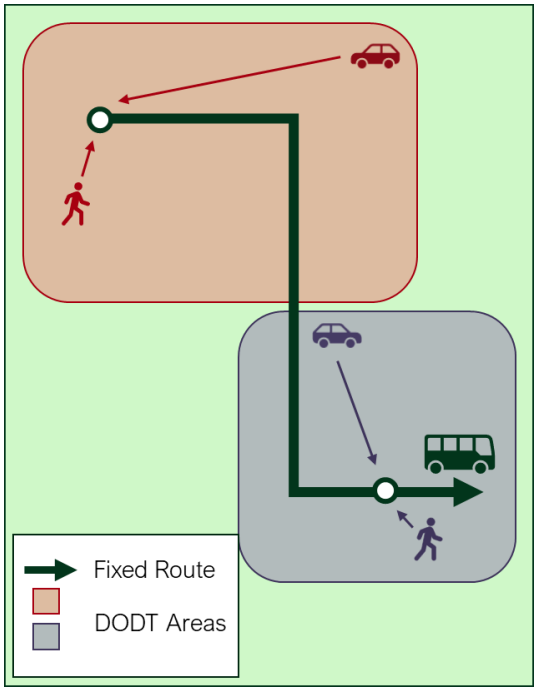

Figure 20: Conceptual Graphic of Fixed Route and Curb-to-Curb DODT

With respect to implementation, this scenario requires additional vehicles and drivers to operate the DODT service which significantly increases the overall costs. This scenario also introduces transfers for customers either to or from the DODT vehicles to the Fixed Route vehicles. The customer experience of transfers would become important in this scenario, with some additional thought to customer amenities at transfer locations (e.g., shelters, lighting, seating).

Early Morning and Evening Digital On-Demand Transit

This scenario involves introducing DODT service when the current transit service is not available, such as in the early mornings and in the evenings. This would allow customers to travel outside of the current operating hours, which would address a commonly heard piece of feedback during public engagement. The additional service would increase overall operating costs and potentially increase capital costs, depending on whether the additional service could be operated on the existing vehicles or not.

Private Transportation and Ride-Hailing

This scenario involves encouraging more private transportation options (e.g., Uber, taxi) to meeting the transportation needs that are not currently being met through public transit. While there are a number of ways private transportation options can be encouraged, it is likely that a subsidy or monetary incentive will be required in the qRD. This is because the current taxi industry in the region is not strong and Uber does not currently operate in smaller communities.

3.6.2 Workshop Results

A workshop was held with qRD staff, Tla'amin Nation staff, and BC Transit to discuss the scenarios and identify additional avenues for exploration and analysis for the study. In addition to the two additional

scenarios that were discussed above (Early Morning and Evening DODT and Private Transportation), two important considerations were raised.

- **Funding requirements and cost-sharing:** Under the current service delivery model, there is cost sharing between the qRD and the province for BC Transit service. Since BC Transit is still in the process of developing their DODT model (see Section 2.4), it is likely that the qRD would be responsible for additional funding requirements that do not align with BC Transit's current service model.
- **Appetite for increased spending:** It was noted that neither the qRD nor the province have a strong appetite for increased spending on public transit. While the qRD and BC Transit have been working on getting approval for a second day of service for Texada Island, the request has taken several years and attempts to move forward. Presently, the third attempt has been approved by the qRD and is pending approval from the province. This limited appetite for increased spending means that any scenario with an increase in operating costs is unlikely to be palatable unless a clear opportunity for sustained external funding is identified.

As part of the workshop, participants were asked about which scenario, if any, is the best. Most participants felt that the Status Quo and the Flex-Route with DODT Technology were the most realistic.

3.7 Scenario Simulation and Analysis

In order to gain additional insight into how different types of transit services would work in the qRD, Blaise Transit's simulation engine was leveraged. This section describes the simulation engine, the simulations that were completed, and the results.

3.7.1 Blaise Transit Simulation Engine

Blaise Transit's Simulation Engine works by determining the optimal set of routes for a fleet of vehicles to serve a set of passengers and their corresponding trip requests. The engine monitors several constraints, such as vehicle capacity, time windows, and road network constraints, and produces metrics regarding waiting time, travel time and number of requests completed (or denied). The simulation engine is built upon a continuous optimization method derived from operations research (OR), a scientific approach aimed at facilitating informed decision-making by identifying optimal solutions.

The simulation engine can be configured to simulate different types of transit services as well as with different stop modes. The different configurations that were used for this study included:

- **Transit models**
    - Fixed route: scheduled service with designated stops
    - Flex-route: semi-scheduled service that deviates based on customer demand. There is a further distinction between a flex-route that can skip the designated stops when it flexes or a flex-route that must meet all its designated stops along the route (i.e., skippable vs. non-skippable stops).
    - Fully on-demand: no scheduled service and no pre-determined route. Responds in real-time to passenger requests.

- **Stop modes (relevant for flex-route and fully on-demand only)**
    - Optimal stop: the simulation engine will select a pickup and drop-off stop within a pre-determined maximum walking distance of the passenger's origin and destination respectively. This allows passengers to be consolidated at common stops.
    - Door-to-door: the simulation engine will create a virtual stop at the closest pickup and drop-off point to the passenger's origin and destination respectively.

The configurations available through the simulation engine did not align perfectly with the scenarios identified in Section 3.6.1. However, the results were leveraged to provide further insight into how services would perform and inform the understanding of the different scenarios.

3.7.2 Simulation Descriptions

Simulations were conducted in two batches in order to build off of the insights from the first set of simulations. The specific configurations that were tested are listed below. All simulations were carried out with three vehicles, with some alterations to overcome a limitation in the simulation. In parentheses is the number of simulations that were done with that configuration.

- Fixed route, using the existing schedule (3)
- Flex-route, with door-to-door (D2D) deviations and non-skippable stops (4)
- Flex-route, with optimal stop deviations and non-skippable stops (4)
- Flex-route, with door-to-door deviations and skippable stops (4)
- On-demand, with door-to-door (7)
- On-demand, with optimal stop selection (13)

One of the limitations of the simulation engine is that it could not perfectly simulate trips that included the ferry between Westview and Blubber Bay. For the flex-route and on-demand trips that went to or from Texada Island, the simulation cut trips short at or near the ferry terminals. To overcome the limitation, additional simulations were developed based on whether they originated on the mainland or Texada. Trips to Texada were shortened to end at the Westview Ferry Terminal and trips from Texada were shortened to end at the Blubber Bay Ferry Terminal. Trips on Texada Island were delivered by a single dedicated vehicle while trips on the mainland were delivered with two vehicles.

Several ridership scenarios were built out based on the ridership on the existing service. They represented a mix of low, average, and high ridership days. In the second set of simulations, an additional high ridership scenario was created based on anticipated future ridership growth. The different ridership scenarios were simulated under various configurations to get a robust understanding of the limitations and opportunities of different operating schemes.

3.7.3 Results

Various quantitative results were exported from the simulation engine and further analyzed to result in the following results in Table 12. To define each presented result:

- **Total In-Transit Time:** The average amount of time a customer is on a vehicle.
- **Deviation Time:** The variation in time from when a customer wanted to travel and when they actually travel. For example, if a customer requests a trip for 3pm and receives a 3:30 trip, there is a 30 minute deviation.
- **In-Transit + Deviation:** The addition of the total in-transit time and the deviation time. This represents the total trip time.
- **Total Requests:** The total number of trip requests.
- **Rejections:** The number of assumed trip rejections[21].
- **Percent Rejected:** The proportion of requested trips that are rejected.
- **Total km travelled:** The total number of vehicle kilometres travelled to deliver all the trips in the simulation, including deadhead.

Table 12. Simulation Results for all routes, averaged across scenarios. Time in minutes

Scenario	Total In-Transit Time	Deviation Time	In-Transit + Deviation	Total Requests	Rejections	% Rejected	Total km travelled
Fixed route[22]	35.6	60.0	95.6	118.0	0	0%	682
Flex-route, D2D, non-skip	32.9	12.8	45.8	72.5	12	17%	1480
Flex-route, optimal, non-skip	28.3	7.9	36.2	72.5	4	5%	1346
Flex-route, D2D, skip	33.2	12.2	45.3	72.5	13	18%	1055
On-demand, D2D	30.5	6.3	36.8	66.6	0	0%	917
On-demand, optimal	26.7	8.2	34.9	81.4	0	0%	871

With respect to travel time, both flex-route and on-demand present travel time savings over fixed-route transit. This is largely due to the large fixed-route deviation time, which is a result of the limited schedule that requires passengers either wait for long periods between trips, or schedule activities at less-preferable times. The best-performing scenario with respect to travel time, on-demand with optimal stop selection, presents a 63% travel time improvement over fixed route. Flex-route services have the longest vehicle kilometres travelled and are the only service with trip rejections. Fixed route, as expected, had the lowest vehicle kilometres travelled and had the same vehicle kilometres travelled in all scenarios.

[21] The Blaise Transit simulations did not result in any rejections for any scenarios. A portion of trips that had deviations that were too long were assumed to be rejected by the customer.
[22] In-transit and deviation time for the Fixed Route scenario was calculated based on travel time analysis and not through the Blaise Transit simulations.

Given the results, it is expected that all modeled scenarios could be delivered with the existing available fleet. The only scenarios that would require additional vehicles are the Fixed-Route and Curb-to-Hub DODT and the Early Morning and Evening DODT scenarios.

3.8 Financial Analysis

The financial implications of each scenario except the Status Quo are relatively variable based on the cost of procuring vehicles and technology and the extent to which costs will continue to be shared with BC Transit. To ensure a fair comparison, some common elements were established:

- All scenarios assume 3,600 hours of service annually, except the Early Morning and Evening DODT. That scenario assumes an additional 1,500 hours of service.
- All DODT-related elements are not eligible for cost-sharing with BC Transit and the qRD is responsible for funding. While this may evolve with BC Transit moving forward on their pilot program, it is not guaranteed that qRD will gain access to cost sharing for DODT[23] should they choose to proceed with one of these scenarios before 2025.
- A range of costs per service hour are applied to all DODT service elements. These costs ($90 to $110 per service-hour) are in line with recent on-demand service provision contracts.
- Additional vehicles purchased for DODT are assumed to be smaller van conversions based on a Ford Transit or Dodge Promaster. These are estimated to cost about $200,000 and equipped with a lift or ramp and dedicated mobility device securement areas.

Table 13 indicates a range of the capital costs and annual costs. Additional, scenario-specific assumptions are listed in the footnotes.

Table 13. Annual Cost Estimation for Different Scenarios

Scenario	One-time Capital Costs ($)	Annual Total Costs ($)	Annual Costs to qRD ($)
Status Quo[24]	-	434,000	187,000
Flex-Route with DODT Technology[25]	-	440,000 – 444,000	190,000 – 197,000
DODT[26]	-	330,000 – 406,000	330,000 – 406,000
Fixed Route and Curb-to-Hub DODT[27]	245,000 – 295,000	764,000 – 840,000	517,000 – 593,000

[23] The City of Powell River set a local precedent by pursuing the Zunga bus pilot without sharing costs with BC Transit.
[24] Assuming that the additional day of Texada Island service is approved. Data source: BC Transit.
[25] Assuming that the flex-route operates exactly like the BC Transit service and an additional annual cost for DODT software, estimated at $6,000 to $10,000 that is funded by the qRD solely (i.e., assuming it is pursued without BC Transit).
[26] Assuming the same service hours as existing BC Transit (3,600 hours) and a per service hour cost of $90 - $110, which is aligned with recent implementations across Canada. This costing also assumes that DODT is pursued without BC Transit and therefore all costs are now funded by the qRD.
[27] Capital costs reflect an assumed purchase of an additional 2 to 3 passenger vehicles to operate the DODT Curb-to-Hub service. Annual costs assume BC Transit and the City of Powell River would continue to operate as a fixed route and that DODT will operate at the same time. Assumes a per service hour cost of $90 - $110.

Scenario	One-time Capital Costs ($)	Annual Total Costs ($)	Annual Costs to qRD ($)
Early Morning and Evening DODT[28] + Status Quo	245,000 – 295,000	575,000 – 605,000	328,000 – 358,000
Private Transportation[29] + Status Quo	-	672,000 – 870,000	425,000 – 623,000

Based on the financial outlook, the Status Quo remains the least costly option for the qRD. In terms of total costs, DODT may be less than Status Quo, but it is unlikely for BC Transit to share costs in the same way as the Status Quo. Therefore, DODT may only be financially beneficial for the qRD to pursue once DODT is part of BC Transit's service delivery model.

[28] Capital costs reflect an assumed purchase of an additional 2 to 3 passenger vehicles to operate the DODT service that would be taken on entirely by the qRD. Assumed 1,500 additional service hours annually at a per service hour cost of $90 - $110.

[29] Assuming similar subsidy and ridership as Innisfil Uber Transit. $6 - $11 incentive per trip and about 1.8 trips per capita annually. As reported in The Success of Innisfil Transit. By Chris Pangilinan, Head of Global… | by Chris Pangilinan | Uber Under the Hood | Medium

4 IMPLEMENTATION PLAN

There are potential financial challenges related to pursuing a different transit model without BC Transit and various constraints on a potential new service that need to be addressed before a new transit service model can be pursued. Therefore, this implementation plan highlights what conditions would need to be met in order to make the discussed scenarios feasible. A three-year financial outlook is built out for the most feasible scenarios and some recommendations on service delivery and governance are made.

4.1 Scenario Feasibility

There are a number of variables that make scenarios more or less feasible. Figure 21 places all six scenarios along a spectrum to highlight the feasibility of each relative to the others.

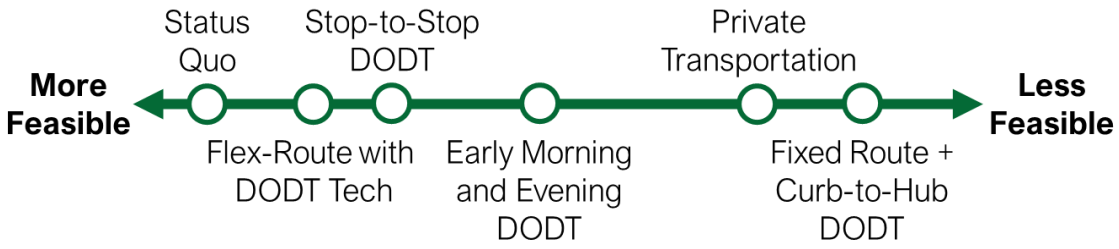

Figure 21: Relative Feasibility of Each Scenario

The following subsections highlight whether a scenario is currently feasible, under what conditions it could become feasible, and what the implementation requirements would be. These are discussed in the order of more to less feasible.

4.1.1 Status Quo

The status quo is the most feasible solution and is the benchmark from which other scenarios are assessed. BC Transit has an established, if sometimes challenging, process to design, implement and operate transit services such as the existing paratransit routes. However, it also enables financial support from the province, which makes the service more financially feasible. If the approval for an additional day of service is approved by the province, the fleet will also increase by one vehicle. This increase in the fleet will likely enable an increase in service span and/or frequency to better meet resident transportation needs.

4.1.2 Flex-Route with DODT Technology

Implementing DODT software and using it for the current service can potentially increase resident access to transit but is not currently feasible due to limitations with the BC Transit DODT pilot and the quality of ICT infrastructure. Under the following conditions, this scenario becomes feasible:

- BC Transit develops a process for systems to adopt DODT software that includes application for flex-route services. qRD and the City of Powell River are eligible for this process.

- Quality of ICT infrastructure improves such that the vast majority of residents can leverage the DODT software either through a smartphone app, website, or by calling a call centre.

The one additional implementation requirement is procuring and implementing the DODT software itself. This is contingent on the success of the BC Transit DODT pilot in Kelowna and any additional decisions on DODT service delivery by BC Transit. Should this solution be capable of meeting the service model described here, there may not be additional requirements for the qRD.

4.1.3 Stop-to-Stop DODT

This scenario is a slight variation of the Curb-to-Curb DODT presented in section 3.6.1 and better aligns with the best performing simulated service configuration in section 3.7.2. The main difference is that instead of customers getting picked-up or dropped off at their origin or destination, they would be required to walk a short distance to a designated stop. This will increase the overall productivity of the DODT service.

Similar to the other DODT technology scenarios, this scenario only becomes feasible when BC Transit develops a process for DODT provincially and the quality of ICT infrastructure in the region improves. The option for the qRD to implement on-demand without BC Transit may negate the first condition and is discussed in more detail in section 4.3.

Assuming this scenario is pursued with the support of BC Transit, it is likely that the same vehicles used to operate the existing service can be used to operate DODT. However, should the smaller more maneuverable vehicles be desired, these will significantly increase capital costs. Another requirement is the DODT software, which is consistent with the other DODT technology scenarios.

4.1.4 Early Morning and Evening DODT

This scenario involves adding DODT service in the early mornings and evenings when the existing service is not available. Like the other DODT scenarios, this will only become feasible when BC Transit develops a process for implementing DODT and when ICT infrastructure is improved so residents can take full advantage of the service.

The implementation requirement that is most variable is whether the additional service can or should be operated by the same vehicles used in regular service. While it is likely that the existing paratransit vehicles are sufficient, it may be of interest to have a smaller more maneuverable vehicle. This may reduce the cost of operating the service, but will increase capital costs. Further discussion with BC Transit and the City of Powell River is needed to identify the vehicle procurement requirements.

4.1.5 Private Transportation

This scenario will only become feasible when the taxi industry matures or if a ride-hailing company (e.g., Uber, Lyft, Y Drive) begins to operate in the area. It is unlikely that offering subsidies for private transportation companies will result in the attraction of new companies with sufficient experience unless there is a guarantee of a certain number of rides that represent a sufficiently large financial draw. Once the

taxi industry or other private transportation is mature, subsidizing rides outside of the transit service area or the operating times may effectively meet resident transportation needs.

4.1.6 Fixed Route + Curb-to-Hub DODT

This scenario is not currently feasible given its high costs and its requirement for transfer points for passengers. Bus stop amenities like shelters, lighting, and benches would need to be implemented across more of the qRD service area for this scenario to become feasible. A significant increase in ridership and demand would similarly be required to make this scenario feasible.

With respect to implementation, the requirements would be similar to the Stop-to-Stop DODT scenario. This includes a BC Transit-developed process for delivering DODT, improved ICT infrastructure, fare integration and transfer policies, and procurement of two to three new vehicles.

4.2 Financial Outlook

The three most feasible scenarios are: Status Quo, Flex-Route with DODT Technology, and Stop-to-Stop DODT. Since there are still barriers to the implementation of two of the three scenarios, a three-year financial outlook is built out without an expectation that they would be implemented immediately. If one of the scenarios is implemented, the financial outlook should at least be updated for inflation. These outlooks assume that provincial subsidy levels would be similar for each scenario[30] and accounts for increases in population[31] and ridership[32]. There are no anticipated capital costs for these three scenarios given that the existing fleet is sufficient to deliver the service and the cost of DODT technology is anticipated to be an ongoing operating cost.

[30] Provincial subsidy is effectively 56.9% for 2023-2024.
[31] Rural population for Year 1 is 7,034, increasing by 0.71% per year (i.e., 7,084 in Year 2 and 7,134 in Year 3), as aligned with gathet-Population-Projections-11-August-2019-.pdf. This includes Electoral Areas A, B, C, D, and Tla'amin Nation. The changes in population do not make a meaningful change to the municipal cost per trip.
[32] Increases in ridership were modelled based on a number of factors, including increases in service and reductions in travel times.

Table 14. Financial outlook for status quo, flex-route with DODT technology, and stop-to-stop DODT.[33]

	Year 1	Year 2	Year 3
Status Quo			
Operating costs ($)	434,000	434,000	434,000
Anticipated provincial contribution ($)	247,000	247,000	247,000
Ridership	11,900	12,200	12,200
Fare revenue ($)	11,300	11,600	11,600
Total qRD cost ($)	187,000	187,000	187,000
Net cost per capita ($)	$27 per resident	$27 per resident	$27 per resident
Flex-Route with DODT Technology			
Operating costs ($)	440,000 - 444,000	440,000 - 444,000	440,000 - 444,000
Anticipated provincial contribution ($)	247,000 - 250,000	247,000 - 250,000	247,000 - 250,000
Ridership	12,400	12,900	12,900
Fare revenue ($)	11,800	12,200	12,200
Total qRD cost ($)	190,000 – 197,000	190,000 – 197,000	190,000 – 197,000
Net cost per capita ($)	$27 to $28 per resident	$27 to $28 per resident	$27 to $28 per resident
Stop-to-Stop DODT			
Operating costs ($)	330,000 – 406,000	330,000 – 406,000	330,000 – 406,000
Anticipated provincial contribution ($)	187,000 – 231,000	187,000 – 231,000	187,000 – 231,000
Ridership	14,000	14,700	14,700
Fare revenue ($)	13,300	14,000	14,000
Total qRD cost ($)	143,000 – 175,000	143,000 – 175,000	143,000 – 175,000
Net cost per capita ($)	$21 - $25 per resident	$21 - $25 per resident	$21 - $25 per resident

4.2.1 Revenue and Fare Strategy

It is not recommended to change the revenue and fare strategy for any of the three most feasible scenarios compared to the current fare structure. In the case of the status quo and the flex-route with DODT technology scenarios, the service is either the same or similar to the current service and there are no significant drivers to change the fares. DODT is often described as a highly-personalized and customized

[33] The financial outlook is based on a number of assumptions. First, it is assumed that all three scenarios can operate within the existing or an updated BC Transit partnership. This will promote financial sustainability and lead to a provincial subsidy of approximately 56.9% (based on 2023-2024 expected subsidy). Increases in ridership were modelled based on a number of factors, including increases in service and reductions in travel times. Fare revenue is calculated using the 2022-2023 BC Transit reported revenue per trip of $0.95. Per capita calculations are made considering the rural portion of qRD and Tla'amin Nation populations that would be served by the rural service (i.e., Electoral Areas A, B, C, D, and Tla'amin Nation). This is 7,034 according to the 2021 census.

service which could justify an increase in fares. However, given the scenario is a Stop-to-Stop DODT, it is not recommended that fares be changed or increased for two main reasons. First, a Stop-to-Stop DODT service is not as personalized as a Curb-to-Curb DODT service and therefore customers may not agree with the justification for fare increases. Second, the DODT service would replace the existing service and increasing fares may create additional financial barriers to residents who rely on transit the most.

4.2.2 Grant Funding

While there are grant funding opportunities available from a variety of provincial, federal and non-profit sources, the vast majority of transit grant funding is directed at studies and capital investment. Some examples of available funding opportunities include the Green Municipal Fund – Transportation (GMF-T) and the Rural Transportation Solutions Fund (RTSF). The GMF-T funding is available for projects that have an anticipated reduction of greenhouse gas emissions, which may not be applicable to all the scenarios examined under this study. The capital stream of the RTSF may be an opportunity to purchase new vehicles or build additional infrastructure like bus shelters, but is not likely to be applicable for the three most feasible scenarios.

4.3 Service Delivery and Governance Considerations

Based on the results of this study, the current service delivery and governance model serves the qRD well. BC Transit, as the transit planner and scheduler, and the City of Powell River, as the operator, are great partners with the qRD. The only challenge with this governance model is that the process to change service or add service is lengthy and requires several levels of project and budget approvals, as demonstrated by the several attempts at adding an extra day of service to Texada Island.

One alternative to the current model is to follow what the City of Powell River did with the Zunga bus. This would involve taking on the responsibility to design and procure transit services outside of BC Transit. While this would increase the qRD's control over transit, it would at least double operating costs and add responsibility to more closely manage and even deliver transit service. Given current staff capacity and understanding the reluctance to increase spending, this alternative is not recommended. Though the public response to the Zunga bus has been positive, its large cost is leading to a possibility of it being cancelled. There would also emerge challenges related to transferring between a qRD and BC Transit service or a BC Ferries service, which could negatively impact the customer experience.

5 NEXT STEPS

This section outlines some near-term and long-term considerations for the qRD following this study. There are a number of influencing factors that may impact the desirability and feasibility of changing the existing transit service, some of which are external to the qRD and some that the qRD has more direct control over.

5.1 Near-term Preparations

With respect to near-term preparations, there are three key considerations. First, continue to liaise with BC Transit and monitor the progress of their DODT pilot and process for implementing additional DODT systems. Implementing DODT is likely to be more feasible for the qRD if it is done in partnership with BC Transit. Second, continue to support improvements to ICT infrastructure across the qRD. Since DODT relies on some communication technology, whether it is a smartphone app, website, or call centre, it is critical that residents have access to good quality ICT infrastructure. Third, continue to monitor political interest in DODT and appetite for increased spending on transit. If political will and appetite for spending increases greatly before it is feasible to pursue DODT with BC Transit, the qRD may implement DODT on its own.

5.2 Long-term Planning Decisions

In the long-term, there are some fundamental decisions to be made regarding transit and whether the qRD wants to pursue more traditional fixed route or flex-route transit service or DODT. While both are likely to be feasible with the support of the provincial government, they meet resident transportation needs in different ways. A scheduled service will be more predictable and people will be able to access the service without access to technology. DODT may offer more direct trips but wait times will be variable and there will be no routes nor schedules. For DODT, customers will need to book a trip using a phone, smartphone app, or website.

In terms of long-term sustainability, fixed route service has the most predictable costs and scales relatively well when vehicles have larger seating capacities. DODT does not scale as well and, if it becomes very well-used, can decrease in service quality (e.g., increased wait times and trip refusals) or require additional vehicles and drivers to maintain service quality. Ultimately, this decision will arise once DODT is a feasible option in the region, but should be considered thoroughly for its impact on the landscape of transit in the qRD.