

**MEMO**

**TO:** Anastasia Lukyanova (City of Powell River)

**FROM:** Erin Toop, Abby Scaletta (WSP Canada Inc.), David Cooper (Leading Mobility)

**SUBJECT:** Powell River Transit Analysis and Recommendations

**DATE:** February 23, 2022

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**INTRODUCTION**

In early 2020 the City of Powell River adopted the “Powell River Transit System Vision and Goals”. The City’s vision is for an efficient, convenient, reliable, accessible, and affordable public transit system that is well-used by the community, contributing to a sustainable, vibrant and equitable quality of life in Powell River. The goals that contribute to this vision are as follows:

- **Grow ridership:** Get more people on the bus by making the experience convenient and enjoyable.
- **Be direct and connect the community’s key centres:** Improve the system to be as competitive with automobile travel as possible by improving the directness and frequency of the transit system.
- **Work together effectively with other modes of transportation:** Transit system should integrate with other modes of transport (ferries, airports, regional busses, cycling, and walking).
- **Be efficient and cost-effective:** Maintain an efficient system, reduce cost and emissions per ride through increased ridership and more efficient routing.
- **Be safe and accessible to all:** Ensure that the system meets the needs of our ageing population by providing accessible buses, bus stops and other bus facilities and ensuring that handyDART service is available to those who are unable to use conventional routes.
- **Reduce community greenhouse gas emissions:** Help achieve the Official Community Plan (OCP) greenhouse gas emission reduction targets by shifting automobile trips to transit and other forms of active transportation, reducing emissions per trip through increased ridership, and incorporating zero-emission busses.
- **Be agile, technologically innovative and customer-focused:** Integrate modern technologies such as live bus tracking, trip planning apps, automatic passenger counting (APC) to enable better route planning and system optimization.
- **Connect communities from Lund to Saltery Bay, the Lower Sunshine Coast, the Lower Mainland, and Vancouver Island:** The City will work with the qathet Regional District and BC Transit towards a public transit system that connects the entire region, from Lund to Saltery Bay, to the Lower Sunshine Coast, the Lower Mainland, and to Vancouver Island.

In its current and pre-pandemic state, Powell River’s conventional transit system is meeting few of these goals. To test the benefits and limitations of new on-demand transit technology, and pursue technology innovations, the City launched a pilot of the Zunga Bus on-demand service in Westview, in early 2020. This timing coincided, unfortunately, with the onset of the COVID pandemic, which has affected transit ridership everywhere. However, the Zunga Bus has now been in place for over a year, and there is sufficient information and data to inform an assessment of the service.

WSP and Leading Mobility were retained by the City to investigate near-term opportunities to align with the goals above, through an analysis of the existing transit services, including conventional fixed routes, Zunga Bus and HandyDART service. The services were reviewed for key metrics such as customer legibility, service span, frequency, and ridership. Public transit serves customers best when it is legible (easy to understand and use), is available when they need to travel and is frequent enough to be convenient. When these elements are achieved, the customers benefit and the system can benefit from more ridership. The aim of the review was to determine the best

opportunities for fixed route transit and on-demand transit in Powell River, to leverage the benefits and appropriate uses of each different service type. This review was initiated by the City as an input to its upcoming transit system plan, which is anticipated to be launched by BC Transit in 2022. A City-led assessment of its transit system is critical, as the City is responsible for setting its transit service levels and having a primary role in the BC Transit system planning process.

This memo summarizes our analysis of the City of Powell River's public transit system, and recommendations around aligning the Zunga Bus on-demand service and conventional fixed route service with their operational strengths and best uses in the community. By leveraging on-demand transit and fixed route transit where and when they make sense, the City can serve customers more efficiently and effectively, reduce redundancy between the two services, and ultimately leverage the benefits of each transit service.

This memo provides:

- an overview of transit planning considerations for small communities and the best practice guidance for this transit review,
- an overview of existing conditions in the City, related to demographics, transportation networks land use plans and developments,
- a summary of the existing public transit services in Powell River, as of Winter 2021/22, and any known information about the public perception of these services,
- ridership analysis of all existing public transit services: fixed-route, Zunga Bus and HandyDART,
- analysis of Zunga Bus expansion options, and
- recommendations for the City, in alignment with the City of Powell River 2020 Transit Vision, Goals and Key Actions.

## 1. TRANSIT PLANNING OVERVIEW

The two core public transit modes in Powell River are fixed-route conventional bus and on-demand bus service, HandyDART is an analog form of on-demand service tailored to a specific group of customers. The Zunga Bus is considered digital on-demand transit.

Before the emergence of on-demand transit, conventional fixed-route bus service was widely applied in municipalities of all sizes, resulting in legacy bus systems in many small communities with a basic level of bus service for the residents who need it the most. When bus service is frequent, direct and reliable, it is convenient for people who rely on it and most likely to attract passengers who have the choice to otherwise drive. But when bus service is infrequent (more than 30 minutes between buses) or indirect (resulting in longer travel times between destinations) or unreliable (arrives early or late, resulting in missed rides), it is not seen as a reasonable option unless residents have no other choice. Infrequent and indirect transit services require significant wait times and travel times, which penalize transit customers who rely on the service to meet their daily needs.

In small communities the magnitude of travel is simply less than in larger centres. There are often some key destinations that generate enough passenger demand to justify fixed-route bus service, such as shopping centres, downtown areas and schools. However, there are significant portions of the communities in which there is not consistent or reliable enough travel demand to achieve a successful fixed-route bus service (Powell River's Route 3, for example).

For conventional local-level fixed-route bus service, transit providers typically aim for at least 10 passengers per hour, to justify the investment in the transit service. For more frequent fixed-route service such as a core transit spine through a community, ridership targets are typically 20 or more passengers per hour.

In fixed-route transit planning there are two key trade-offs in the context of small communities: directness vs coverage. Direct transit routes operate between key destinations or on primary corridors without deviation, to provide customers along the route with as direct a trip as possible to minimize travel time. Coverage transit routes

meander through the community to maximize the locations and number of people in the community that are within a short walk of a bus stop. While direct service is most attractive to users, it often does not provide transit access to large portions of a community. Coverage service provides access to the most people, but often does not attract users unless they have no other choice. In Powel River, all existing fixed-routes are mixing a combination of directness and coverage, and the forthcoming ridership analysis will show where and when this trade-off is achieving appropriate ridership and where and when it is not.

Digital on-demand transit service is an opportunity, in lower-demand contexts, to provide both coverage and directness. On-demand transit serves trips as they are booked, with no fixed routing or schedule, and can offer either door-to-door or stop-to-stop service, or a combination of the two. The limitation of on-demand service is that it cannot optimize wait times and travel times when passenger volumes exceed approximately 8 to 10 passengers per hour. There are ways to enhance the capacity of on-demand service such as restricting pick up and drop off locations, or scheduling service times at certain locations.

For the purposes of this review, we have used 8 to 10 passengers per hour as the threshold between fixed-route and on-demand service. The assessment of Powell River’s existing transit services is aimed at identifying under-performing fixed routes, or any consistent time periods such as evenings and weekends when fixed-route service does not meet an average of 8 to 10 passengers per hour, and on-demand transit is likely to be the more effective option.

In Powell River the Zunga Bus operating cost is \$65 per hour, while the conventional fixed route operating costs are \$110 per hour<sup>1</sup>. Matching the appropriate transit service with the appropriate levels of transit demand is key to achieving a cost-effective transit system and providing residents with a level of transit service that reduces the wait time and travel time penalty for existing and prospective customers.

The following table summarizes some key planning considerations for fixed route and on-demand transit, in the Powell River context.

<sup>1</sup> Conventional fixed route cost is based on data provided by BC Transit. Zunga Bus service cost is calculated based on 10 hours per day service with one bus in service and one spare bus. Costs were provided by the City:

<b>Zunga Bus Operating Cost per Service Hour (based on 10 hours/day)</b>	
<b>Item</b>	<b>Monthly Cost</b>
Salaries and Benefits	\$ 13,550
Amortized bus ownership costs (two busses, one in service + one spare)	\$ 1,800
On-demand software	\$ 1,475
Fuel	\$ 1,200
Call centre	\$ 1,000
Insurance	\$ 650
Materials & Supplies	\$ 200
<b>TOTAL</b>	<b>\$ 19,875</b>
Service hours	304
<b>Cost per service hour</b>	<b>\$ 65</b>

	<b>FIXED-ROUTE (CONVENTIONAL)</b>	<b>ON-DEMAND (ZUNGA BUS)</b>
<b>Appropriate Use(s)</b>	<ul style="list-style-type: none"> <li>Connecting major trip generators or hubs; longer-distance trips. Minimal meandering to provide coverage.</li> </ul>	<ul style="list-style-type: none"> <li>Covering a lower-density but continuously developed area where trip patterns are less obvious or predictable.</li> <li>Replacing under-performing fixed-routes, or supplementing fixed-routes at low demand times.</li> <li>Improving HandyDART service levels; eliminating the 24hr book ahead window.</li> </ul>
<b>Benefits</b>	<ul style="list-style-type: none"> <li>Has more capacity to move people can respond to ridership surges.</li> <li>Schedules and routes are consistent and predictable.</li> </ul>	<ul style="list-style-type: none"> <li>On-demand software collects data, informs future transit plans.</li> <li>Operational flexibility.</li> <li>Service can be scaled up and down.</li> <li>Wait times and travel times are often superior to coverage fixed-route service.</li> </ul>
<b>Limitations</b>	<ul style="list-style-type: none"> <li>Buses run according to schedule, even if empty.</li> <li>Typically cannot cover all parts of a community for a reasonable cost.</li> </ul>	<ul style="list-style-type: none"> <li>Size of coverage area is limited: not suitable for long distance travel patterns.</li> <li>Not suitable for high-demand situations.</li> <li>Cellular connectivity required.</li> <li>May be concerns about technology accessibility.</li> </ul>
<b>Ridership Target</b>	10+ passengers per hour	3-9 passengers per hour
<b>Powell River Service Cost</b>	\$110/hr	\$65/hr
<b>BC Provincial Subsidy</b>	47%	Up to 67% (based on Zunga Bus providing service to HandyDART customers, served with small buses)

## 2. BACKGROUND INFORMATION REVIEW

### COMMUNITY PROFILE

The community profile and demographic data is sourced from the Statistics Canada 2016 Census for the City of Powell River, which is designated as its own census subdivision. The statistics have not been modified to account for growth between 2016 and present year. **Figure 2.1** shows the boundary of the City of Powell River and the Powell River Region used for the following statistics.

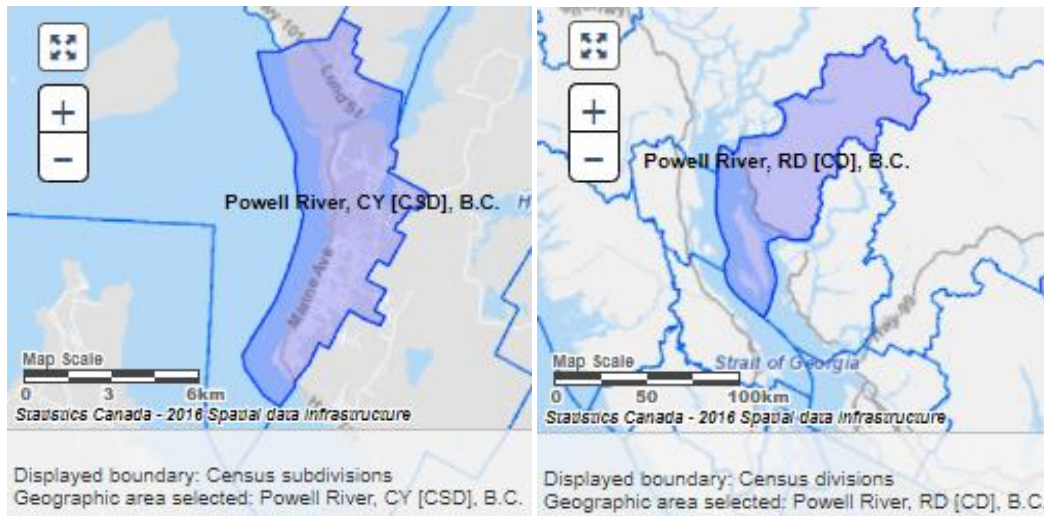


Figure 2.1: Statistics Canada Boundary for the City of Powell River (left) and the Powell River Region (right) (Source: Statistics Canada 2016)

The City of Powell River has a population of 13,942 over approximately 29 square kilometres (Statistics Canada 2021 Census). The Region of Powell River has a population of 21,496 over approximately 5075 square kilometres (Statistics Canada 2021 Census).

Four percent of the population identifies as Visible Minorities and 5% of the population identifies as Aboriginal (63% First Nations, 34% Métis, and 2% Inuit) (Statistics Canada 2016 Census). The median age of the City population is 52 years old, and the average age of population is 48 years old. The distribution of the age of population is shown in **Figure 2.2** with the most populous age bracket of 70 years and older and least populous age bracket of 20 to 29 years old.

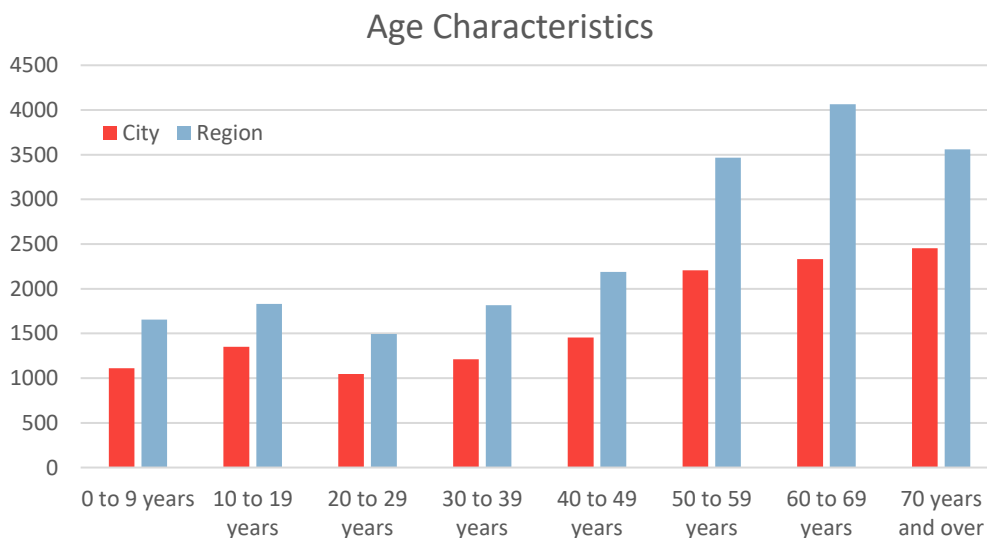


Figure 2.2: Age of Population in the City of Powell River (Data Source: Statistics Canada 2016)

The total labor force consists of 11,095 people (84% of the population) for both employed and unemployed individuals. Of the labour force, 6,220 people worked full-time or part-time (56% of the workforce). **Table 2.1** shows the median and average incomes for households and **Figure 2.3** shows the distribution of before-tax household income in Powell River in 2015.

Table 2.1: Median and Average Total Income for Households in 2015 (before-tax) (Data Source: Statistics Canada 2016)

INCOME TYPE	HOUSEHOLD SIZE	ANNUAL HOUSEHOLD INCOME BEFORE TAX
MEDIAN	All households	\$56,525
	One-person households	\$29,520
	Two-or-more person households	\$74,526
AVERAGE	All households	\$69,732
	One-person households	\$35,813
	Two-or-more person households	\$86,730

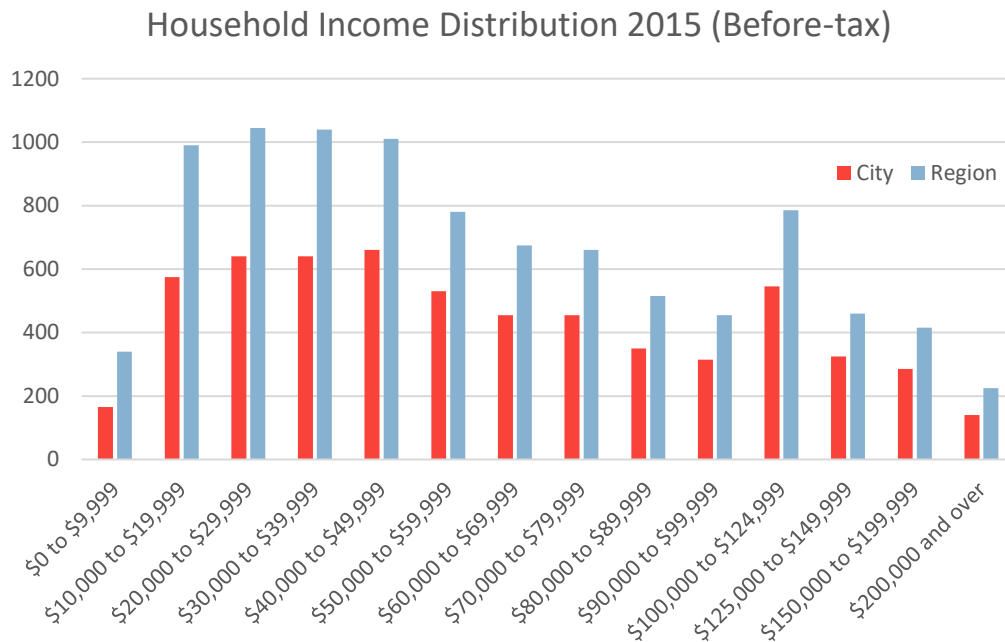


Figure 2.3: Household Total Income Groups in 2015 for Households (before-tax) (Data Source: Statistics Canada 2016)

## TRAVEL BEHAVIOUR

Figure 2.4, Figure 2.5, and Figure 2.6 show the commuting destination, mode share, and duration, respectively. Eighty-eight percent of commuting trips are within the City of Powell River with eight percent within the Region. Mode share in Powell River consists of 85% vehicles (either as a driver or passenger), 8% walking, and 2-3% for transit, bicycling and other modes (scooter, taxi, shuttle) combined. Seventy percent of commutes are less than 15 minutes and 87% are less than 30 minutes.

### Commuting Destination, 2016

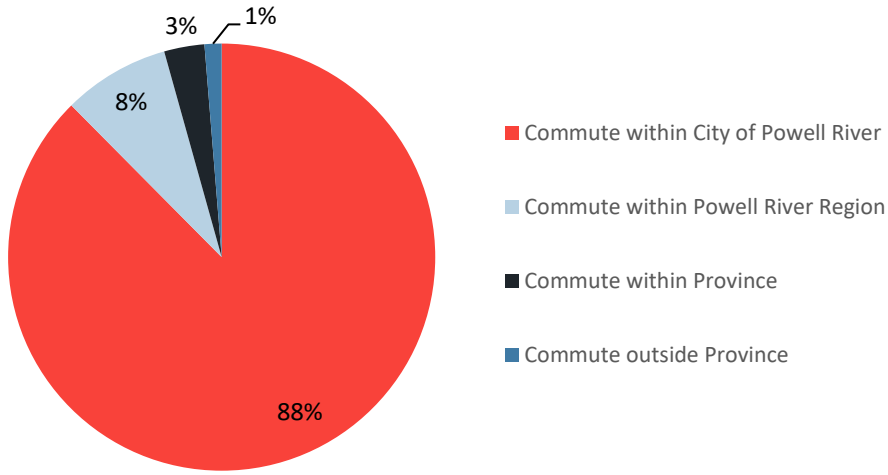


Figure 2.4: Commuting Destination for Powell River (Data Source: Statistics Canada 2016)

### Commuting Mode, 2016

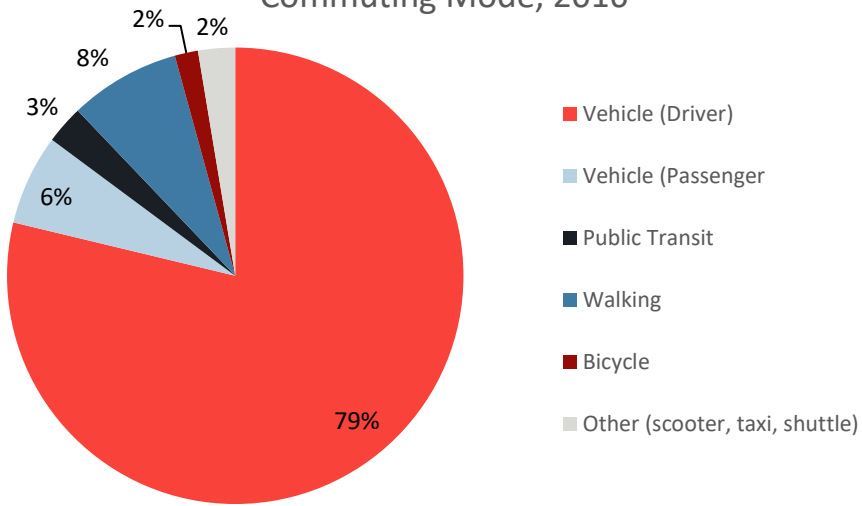


Figure 2.5: Commuting Mode Share for Powell River Labour Force (Data Source: Statistics Canada 2016)

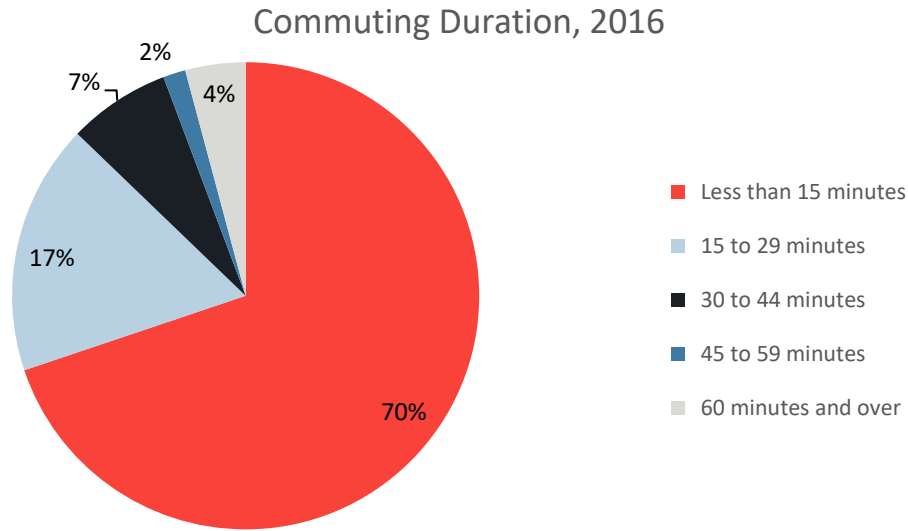


Figure 2.6: Commuting Duration for Powell River Labour Force (Data Source: Statistics Canada 2016)

## KEY TAKEAWAYS

The review of the City’s demographics shows some population groups that are often important transit markets:

- Lower income citizens – 44% of the City’s households have an income of less than \$50,000 (47% in the Region), with 23% of all households being less than \$30,000;
- Senior citizens – 36% of the City’s population is age 60 years or older;
- Students – 19% of the City’s population is under 20 years old;
- Indigenous people – 5% of the City’s population identifies as Indigenous; and
- Employed workforce – 47% of the City’s population works full-time or part-time and would be considered in commuting traffic.

The travel behaviour data shows that most people commute via vehicle and have commutes less than 15 minutes in duration. The quick commuting duration can be a barrier to mode shifting from single occupancy vehicle to transit.

## 3. EXISTING AND PROPOSED TRANSPORTATION AND LAND USE

### EXISTING TRANSPORTATION NETWORK

The main road network includes provincial and municipal roads. The current main north-south roadways are Marine Avenue (provincial Highway 101), Joyce Avenue (municipal arterial), and Manson Avenue (municipal arterial). The current major east-west roadways are Alberni Street (municipal arterial) and Duncan Street (municipal arterial). The existing and proposed network is shown in **Figure 3.1**.

The active transportation (walking and cycling) infrastructure varies throughout the city. Sidewalks exist in more commercial and mixed-use areas and are less prevalent in residential areas. There is an existing and proposed off-road pedestrian and cycling trails with reference to the long-term cycling network which has identified regional, primary, and secondary routes.

The marine transportation network includes the Westview Powell River terminal that provides ferry service to/from Comox (Little River) on Vancouver Island and Blubber Bay on Texada Island.



## **LAND USE**

The 2014 Sustainable Community Plan (Bylaw 2730) has a Schedule B for land use designations. The majority of land use within the City limits is low density/single family residential. There are designated employment lands to the north and east with industrial land use at the mouth of the Powell River. Major employment centres noted by the Long-Term Cycling Network (2014) and the WATT study. **Figure 3.1** shows the existing road network, destination land uses, and major areas of employment or destinations (schools, hospitals, etc.).

## **POWELL RIVER ENDING POVERTY STRATEGY**

The City completed an Ending Poverty Strategy in fall 2021, which is not directly a transportation plan, but access to affordable transportation is shown to have an important role in ending poverty. Through this plan Powell River residents were surveyed, and over 560 responses were received. Most of the respondents lived in Westview (33%) were female (75%) and between 30-44 (28%) or 45-59 (29%) years of age. Of all geographic areas where survey respondents live, there were the most Westview residents (approximately 70) who identified as experiencing challenges meeting the needs of their families each month. This is well-aligned with the current Zunga Bus coverage area.

Lack of affordable transportation options were cited as a barrier to accessing education and essential services and to generally making ends meet for survey respondents. The plan lists on-demand transportation as one of Powell River's assets to support people's wellbeing, and something that was identified as a positive by survey respondents. At the same time, unreliable public transportation in the City and Region was more broadly identified as a barrier to wellbeing.

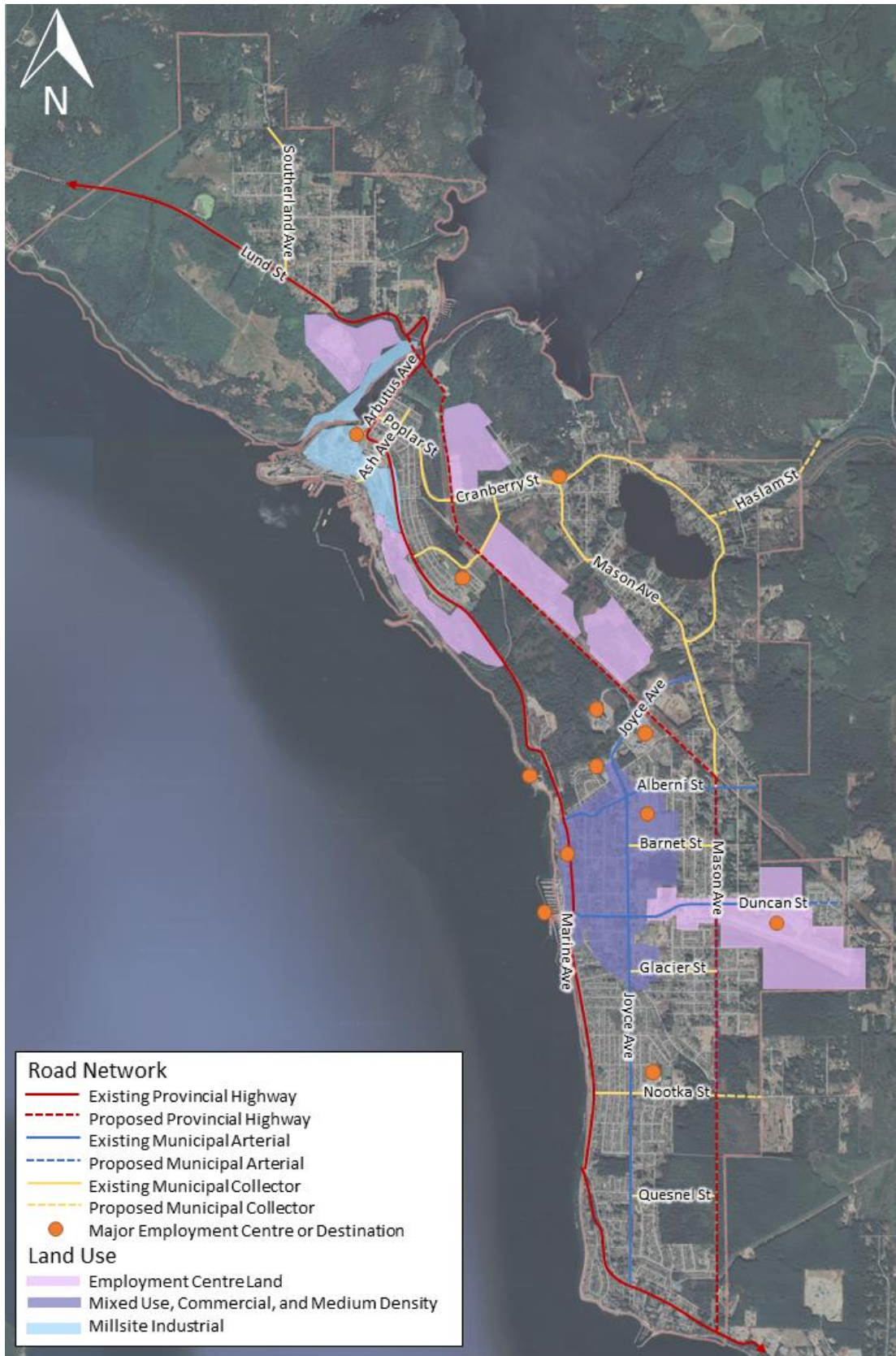


Figure 3.1: Road network, land use, and major employment centres/destinations

## EXISTING TRANSIT SERVICE

The City of Powell River delivers fixed route (conventional) and HandyDART transit service within BC Transit’s shared governance framework, however the City is in the unique position of being its own municipal transit service operator. More about the BC Transit shared governance model is discussed later in this memo.

This section summarizes the City’s existing transit services and includes some customer perception information found in the BC Transit 2015 Service Review document along with Canadian Urban Transit Association data reported annually by the City. The City is also a hub for the regional transit routes, which are referred to as the “paratransit” system in the 2015 service review and “Rural Transit” on BC Transit’s current route maps. These regional routes are not in the scope of this study, however they often duplicate the City’s service and there may be opportunities to coordinate and consolidate service, pending the outcomes of this review. An overview of all fixed transit routes in Powell River is shown below in **Figure 3.2**.

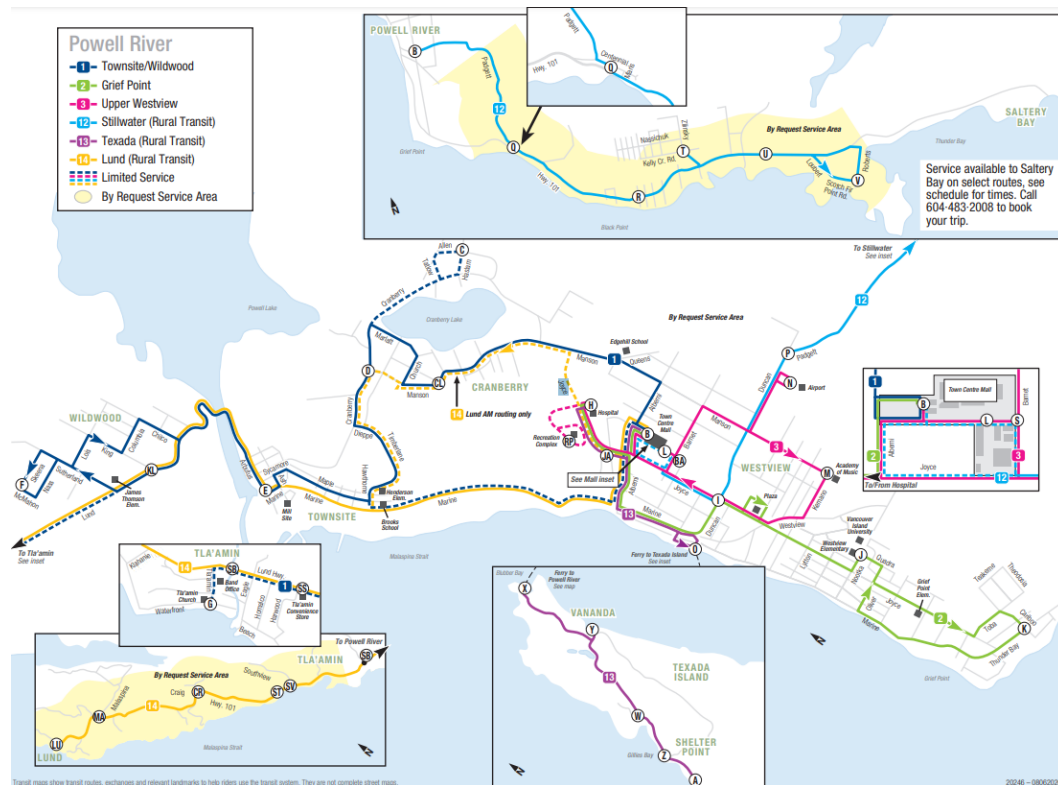


Figure 3.2: BC Transit Route Map, including City and Rural Transit Routes

## CONVENTIONAL FIXED ROUTES

The City has three fixed transit routes operating within the City of Powell River, the focus of this transit study. A summary of the amount of transit service offered on each route is shown below in **Table 4.1** for 2019, 2020 and 2021. The 2021 in service hours on each route are projected to the full year, based on data available from January to October. The majority of the City’s transit service is in Route 1 (50%), with Route 2(31%) and Route 3 (19%) making up the other half of the transit service hours together.

Table 4.1: In Service Hours by Route by Year

ROUTE	2019 IN SERVICE HOURS	2020 IN SERVICE HOURS	2021 IN SERVICE HOURS (PROJECTED)
Route 1 (including School Special)	5,345	4,569	5,374
Route 2	3,267	2,783	3,283
Route 3	2,048	1,859	2,058
Total	10,660	9,212	10,715

**Route 1** covers the City north of the Town Centre, including Cranberry, Townsite, Wildwood and five trips each weekday to Tla’amin. The pattern of Route 1 varies, with occasional spurs to collect passengers at timing point C for school trips, west of Cranberry Lake, and occasional routing through Marine Avenue on its return trip to the Town Centre, rather than following the main route back through Cranberry Centre. While this route provides coverage to several areas, it does this at the expense of route legibility and consistency. Route 14, the regional route, completes much of the same pattern, however it only operates two trips on Monday, Tuesday and Friday during the Winter/Spring schedule. Approximate headways of Route 1 are described below by day of week, in **Table 4.2**.

Table 4.2: Route 1 Hours of Operation and Headway

SERVICE DAY(S)	HOURS OF OPERATION	HEADWAY
Weekdays	AM Peak (7:00 a.m. to 9:00 a.m.)	30 minutes
	Midday (9:00 a.m. to 3:00 p.m.)	60 minutes
	PM Peak (3:00 p.m. to 4:00 p.m.)	20 minutes
	Evening (4:00 p.m. to 10:00 p.m.)	60 minutes
Saturdays	All Day (8:40 a.m. to 10:25 p.m.)	60 minutes
Sundays	All Day (8:40 a.m. to 5:50 p.m.)	60 minutes

**Route 2** covers the south end of the City, including Westview. In the weekday morning peak period noted below, the route begins southbound using the Marine Avenue and Joyce Avenue corridors, serving the Vancouver Island University and multiple grade schools. The route completes a one-way clockwise loop at the south end and traces itself back north starting at Oliver Street. At all other times the route begins with a spur to serve the hospital, prior to continuing with the remainder of the southern route. The exclusion of the hospital from this route in the morning peak is curious as it limits access to the hospital for both employment and healthcare purposes. Approximate headways of Route 2 are described below by day of week, in **Table 4.3**.

Table 4.3: Route 2 Hours of Operation and Headway

SERVICE DAY(S)	HOURS OF OPERATION	HEADWAY
Weekdays	AM Peak (7:30 a.m. to 9:00 a.m.)	30 minutes
	Midday (9:00 a.m. to 2:00 p.m.)	60 minutes
	PM Peak (2:00 p.m. to 6:00 p.m.)	45 minutes
	Evening (6:00 p.m. to 8:00 p.m.)	60 minutes
Saturdays	All Day (8:40 a.m. to 10:00 p.m.)	60 minutes
Sundays	All Day (8:40 a.m. to 5:50 p.m.)	60 minutes

**Route 3** covers the airport and the central part of Westview. It operates as a clockwise loop with spurs, travelling first to the airport, then south to Kemano Street before looping back on Joyce Avenue. With a spur at the end of the route, it serves the recreation complex on approximately every second trip (roughly every 2 hours), and the hospital on most trips. Approximate headways of Route 3 are described below by day of week, in **Table 4.4**.

*Table 4.4: Route 3 Hours of Operation and Headway*

SERVICE DAY(S)	HOURS OF OPERATION	HEADWAY
Weekdays	AM Peak (7:50 a.m. to 9:10 a.m.)	80 minutes
	Midday (9:00:00 a.m. to 2:30 p.m.)	60 minutes
	PM Peak (2:30 p.m. to 3:30 p.m.)	30 minutes
	Evening (3:30 p.m. to 9:30 p.m.)	60 minutes
Saturdays	All Day (9:20 a.m. to 9:15 p.m.)	60 minutes
Sundays	All Day (9:20 a.m. to 5:25 p.m.)	60 minutes

### FIXED-ROUTE SERVICE HOUR, RIDERSHIP AND COST SUMMARY

In 2019, the City of Powell River conventional transit system yielded total operating expenses of \$1,317,780, net operating cost of \$1,061,869 (Municipal: \$446,598, Provincial: \$615,271), and total operating revenue of \$255,911. The total transit service hours provided in 2019 were 11,739.

Transit vehicle hours have remained relatively stable over the past five years with an average of approximately 11,000 annual service hours delivered by the City, with a slight dip in 2020 resulting from the COVID-19 pandemic. From 2016-2019 annual ridership averaged 200,000 linked trips with a significant reduction in 2020 to 115,545 trips. The system wide service utilization (e.g., total regular service linked trips / revenue vehicle hour) was stable between 2016-2019 with approximately 18 passengers per hour. However, this dropped significantly to 11.2 passengers per hour in 2020 resulting from the impacts of the acute stages of the pandemic. **Table 4.5** details historical ridership trends for Powell River’s transit system.

*Table 4.5: System Wide Vehicle Hours and Ridership Performance*

YEAR	TOTAL VEHICLE HOURS	REGULAR PASSENGER SERVICE TRIPS	PASSENGERS PER REVENUE HOUR
2016	11,675	199,162	17.6
2017	11,008	203,157	17.7
2018	11,573	217,719	18.8
2019	11,739	211,893	18.1
2020	10,337	115,545	11.2

### HANDYDART

HandyDART is a door-to-door transit service that is accessible for people with permanent or temporary disabilities that prevent them from conventional transit. HandyDART transit service is a rudimentary on-demand transit model. Service hours are Monday 8:00 a.m. to 4:00 p.m., Tuesday-Friday 8:00 a.m. to 5:00 p.m., Saturday from 9:00 a.m. to 5:00 p.m., and no service on Sundays. The geographic coverage is within the municipal boundaries of Powell River. The passenger fare is \$2.25/ride which is the same as the Zone 1 fares.

In the HandyDART system, customers are given a 30-minute pick up window, in which the customer is expected to wait at the accessible door for their ride. Trips must be booked at least one day but not more than 14 days in advance.

## 2015 SERVICE REVIEW

BC Transit’s most recent Powell River transit system service review was completed in 2015, based on data collected in the years prior. We have not focused on repeating the summary of ridership data and trends in this memo, as more current ridership data are available, and they reflect the impacts of COVID-19. However, an on-board survey was completed in December 2013 and February 2014 for both the Conventional and HandyDART systems. The results of the onboard surveys are shown below in **Figure 3.3**, for the conventional system riders, and **Figure 3.4** for the HandyDART system riders.

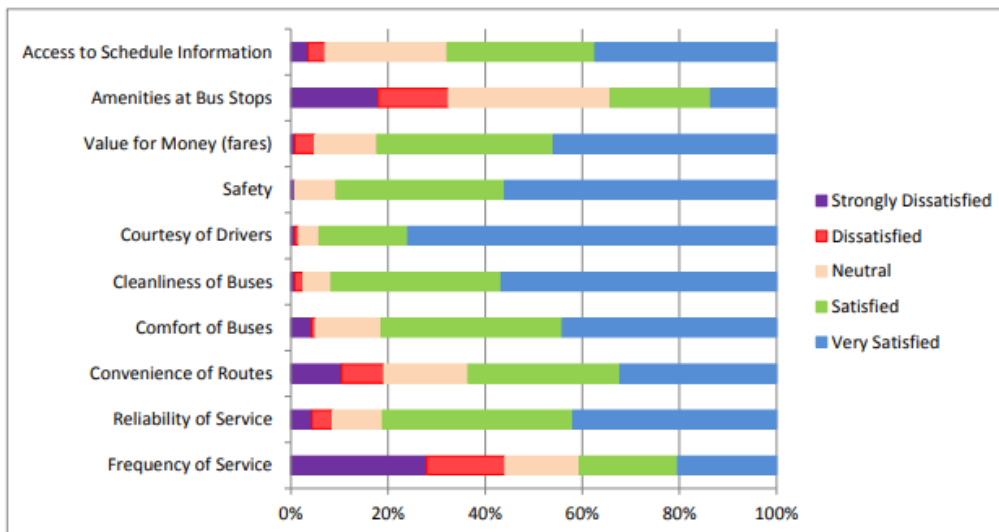


Figure 3.3: Conventional Transit Customer Satisfaction

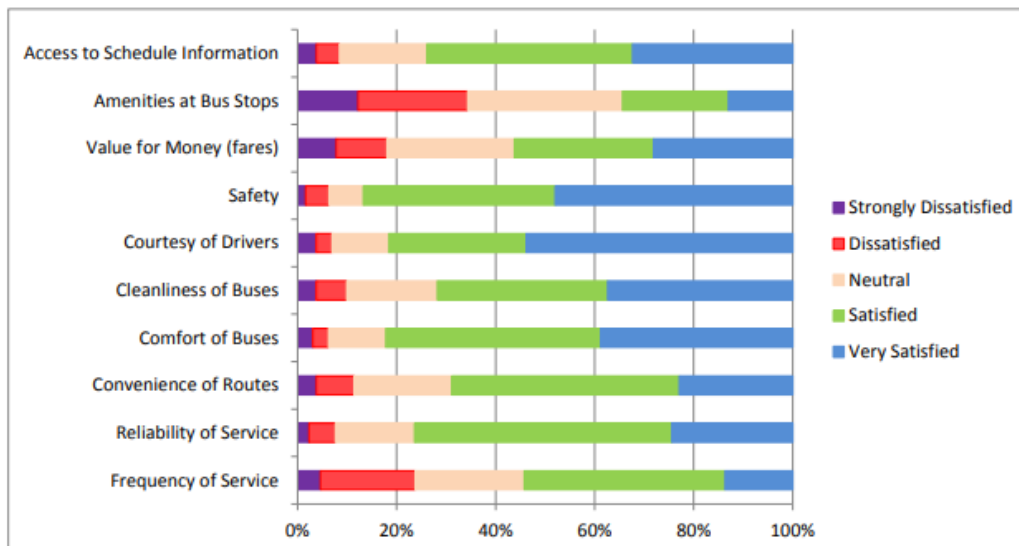


Figure 3.4: HandyDART System Customer Satisfaction

In both the conventional and HandyDART systems, the points of least satisfaction were the frequency of transit service and the amenities at bus stops. For the conventional system the frequency of service and convenience of routes were both notable issues and are both major service planning considerations.

## ZUNGA BUS

The Zunga Bus is the locally branded on-demand pilot for the City of Powell River, which currently provides door-to-door service. Zunga is the Powell River term for rope swing.



**Figure 3.5** shows the current service area for the bus, which covers central and south Powell River and does not currently include Wildwood and Cranberry. The technology used is Spare Labs Inc. and Zunga Bus service includes a service area of 15 km<sup>2</sup> with service hours on all days between 11:00 a.m. and 6:30 p.m. with a 30 min break from 2:30-3:00 to accommodate an operator break. The current fleet includes one bus with one spare. The City aims to include the second bus in service, as soon as an operator is hired and available. The target markets are youth and seniors, as well as people with mobility issues. The fare for Zunga Bus is the same as BC Transit at \$2.25/ride. Funding sources for the

on-demand transit include fare revenue and the Built In Canada Innovation Program. **Figure 3.5** shows the coverage area for the Zunga bus with reference to land uses, major destinations, and the current fixed-route transit network. The Zunga Bus covers the same service area as fixed routes 2 and 3. Ridership impacts of the Zunga Bus operation on these fixed routes will be explored in next steps.

With eight in-service hours every day of the week, the Zunga Bus requires approximately 2,900 annual service hours to operate on its current schedule.



Figure 3.5: Zunga Bus Service Coverage Area (Source: Zunga Bus)

## COMMUNITY PERCEPTIONS OF THE ZUNGA BUS

The Zunga Bus has received community feedback through app reviews, phone interviews, and community groups. The complete feedback can be found in **Appendix A**.

### Zunga Rider Feedback

At the end of each Zunga Bus ride, the users are asked to rate the drive as a “Thumbs Up” or “Thumbs Down” and provide an optional review. Of all rides, 99% of reviews were “Thumbs Up”. The summary of the optional reviews are as follows:

- There was a total of 116 comments. Within these comments there are 104 positive statements 14 negative statements, and two comments providing neutral feedback. Some comments had both a positive and negative statement;
- Most statements (47%) were of general praise, thanks, or support of Zunga Bus.
- The second most common statement (38%) was praise and appreciation of the drivers or professionalism of the service. There was one negative comment towards staff, asking drivers to wait until seated before accelerating;
- The remaining positive statements were for quick service (4.3%), convenience (3.4%), and on-time or prompt (3.4%);
- There were four comments requesting service hours and or service area be expanded (3.4%); and
- The negative statements were app or GPS issues (6.9%), two comments of no-show buses (1.7%), and one comment of a late bus (0.9%).

The reviews provided the following specific comments that provide specific messages of support, concern, and requests for Zunga Bus:

- Other notable comments:
- “Always awesome when I’m able to get a ride. Lately the evenings have been too busy to book me”;
- Regarding car seats and seatbelts, there were two requests for seatbelt extensions for larger passengers, one comment on the car seats not fitting properly for ages 0-3, and one comment praising the car seats / boosters on the bus;



- “I am of low income and a single father of a 5-year-old boy and the Zunga Bus really helps out with our transportation needs.”; and

- One person expressed concern of accessibility of those who do not have smart phones/computers.

In addition to the reviews from the app, the City also conducted phone interviews of 21 customers in December 2021. The summary of the results are as follows:

- All 21 interviews were supportive of the pilot program;

- Thirteen customers had issues with using the conventional transit system (long waits between buses, unreliable, and/or service hours) or had issues with or were not eligible for handyDART;

- Eleven customers cannot drive or do not have access to a vehicle and another two customers have limited access to a vehicle;

- Eight customers use Zunga for trips with their children either for school, running errands, or social interaction;

- Zunga Bus provided access to social interaction or social services for 12 customers, access to employment for 10 customers, and access to mental health support or medical care for five customers; and

- Ten customers requested expansion of service hours and/or service area. Most requests were for earlier hours.

### **Community Organizations**

The City received letters of support for the Zunga Bus from four community organizations within Powell River. The Youth Community Action Team, LIFT Community Services, First Credit Union, and the Inclusion Powell River Society all provided feedback from people that access their resources or partner organizations they work with.

The Community Action Team (CAT) is a community group with a mission “to strengthen the role and capacity of the community sector to improve mental health and address substance use for British Columbians”. YouthCAT is the youth chapter for the Community Action Team. YouthCAT has identified that lack of public transportation options in qathet negatively affects the youth they work with. This is due to barriers in transportation creating inaccessibility to services and social connections. YouthCAT gathered community input on Zunga Bus through an online Google Form, a meeting survey, and collected written testimonials. They also presented to council in support of Zunga bus. The community responses through YouthCAT are summarized as:

- There were three Google Responses providing feedback on Zunga Bus, eleven responses to the meeting survey on November 18, 2021, and three written testimonials;

- Multiple comments regarded long wait times between conventional routes and reliability create barriers to the conventional transit system;

- Generally, the eleven meeting responses were supportive, but most comments provided feedback about expanding service area (nine respondents) and/or service hours (one respondent);

- The Zunga Bus provided access to social activities and extra curricular activities, while being affordable; and

- All three written testimonials had mobility limitations and issues accessing the conventional bus system. Zunga Bus provided all respondents with reliable access to medical care.

LIFT Community Services is a social support service in the qathet region that strives to reduce social inequities.

According to an employee at LIFT, reliable transportation was a barrier for one client to access the services at LIFT. Zunga bus has provided access to an essential service and provided structure to their life.

First Credit Union works on initiatives to sustainable transportation and poverty reduction. Zunga bus has provided an environmentally friendly commuting option for employees of First Credit Union. First Credit Union is a partner with qathet Region’s Ending Poverty Strategy which recommends improvement of transit to enable affordable access to employment and education. First Credit Union supports Zunga Bus for poverty reduction in providing affordable access to employment, social services, and community.

The Inclusion Powell River has a mission to create a community where everyone belongs through supporting and engaging people of all ages and abilities. The organization has programs that work with people with developmental disabilities, supports for older adults, housing support, and more. The organization expressed support for the Zunga

bus as it “is making a significant difference in the lives of numerous citizens of Powell River, with and without disabilities”. The letter notes the quality of life improvement for those with disabilities that affect walking.

## ISSUES AND OPPORTUNITIES

**Figure 4.5** shows the existing transit network, employment/destination land uses, major attractors, and issues and opportunities. The destinations include schools, shopping, ports, hospitals, recreation centres, and other attractions. Some key issues and opportunities for both fixed-route and Zunga Bus transit services noted in our review are listed below.

### Issues:

- Willingdon Park creates a gap in mixed-land use and dense destinations. This limits connectivity and increases travel time to the Wildwood and Cranberry areas.
- Route 1 follows an unintuitive path with several potential deviations, to provide access to the Cranberry area.
- Customers have previously cited the frequency of service, bus stop amenities, and convenience of routes as the areas of least satisfaction.
- Frequency on all fixed routes is quite limited throughout most of the service span, except for grade school peak periods.
- There are multiple decentralized employment areas, which can be challenging to effectively serve with fixed routes.
- An aging population requires accessible and age-friendly transit options.
- A significant proportion of the City’s households had an income of less than \$50,000 per year, indicating a need for affordable mobility.
- Existing HandyDART level of service requires day-ahead booking, does not allow customers to trip chain, and is not available for some customers who require additional mobility support.

### Opportunities:

- Extensive community support to retain and expand Zunga Bus service, and support for on-demand transit through the End Poverty Strategy.
- The City has identified low-income residents as an important transit customer group, and 44% of the City’s households earned less than \$50,000 per year in 2015.
- Zunga Bus is serving some customers with mobility challenges, who fall through the cracks between the HandyDART and conventional bus systems in Powell River.
- Expansion of the Zunga Bus service hours and/or service coverage when an operator is available to move the second bus into service.
- Existing fixed route service is very oriented around grade schools and the university, demonstrating the importance of these transit markets. 20% of the population is under 20 years old.
- Key destinations and trip generators could help grow the transit market, if service to these areas is convenient, reliable, and frequent:
  - Commercial and town centre areas
  - Powell River Airport
  - Recreation Complex and Aquatic Centre
  - Vancouver Island University
  - Hospital
  - Comox and Texada Island Ferries
- Coordination with the regional transit (paratransit) system around Route 14 and Route 1, to provide equitable service to Tla’amin Nation.
- A long-term living facility and affordable housing is planned near Joyce Ave and Manson Avenue. These are both target markets and an opportunity to provide access.

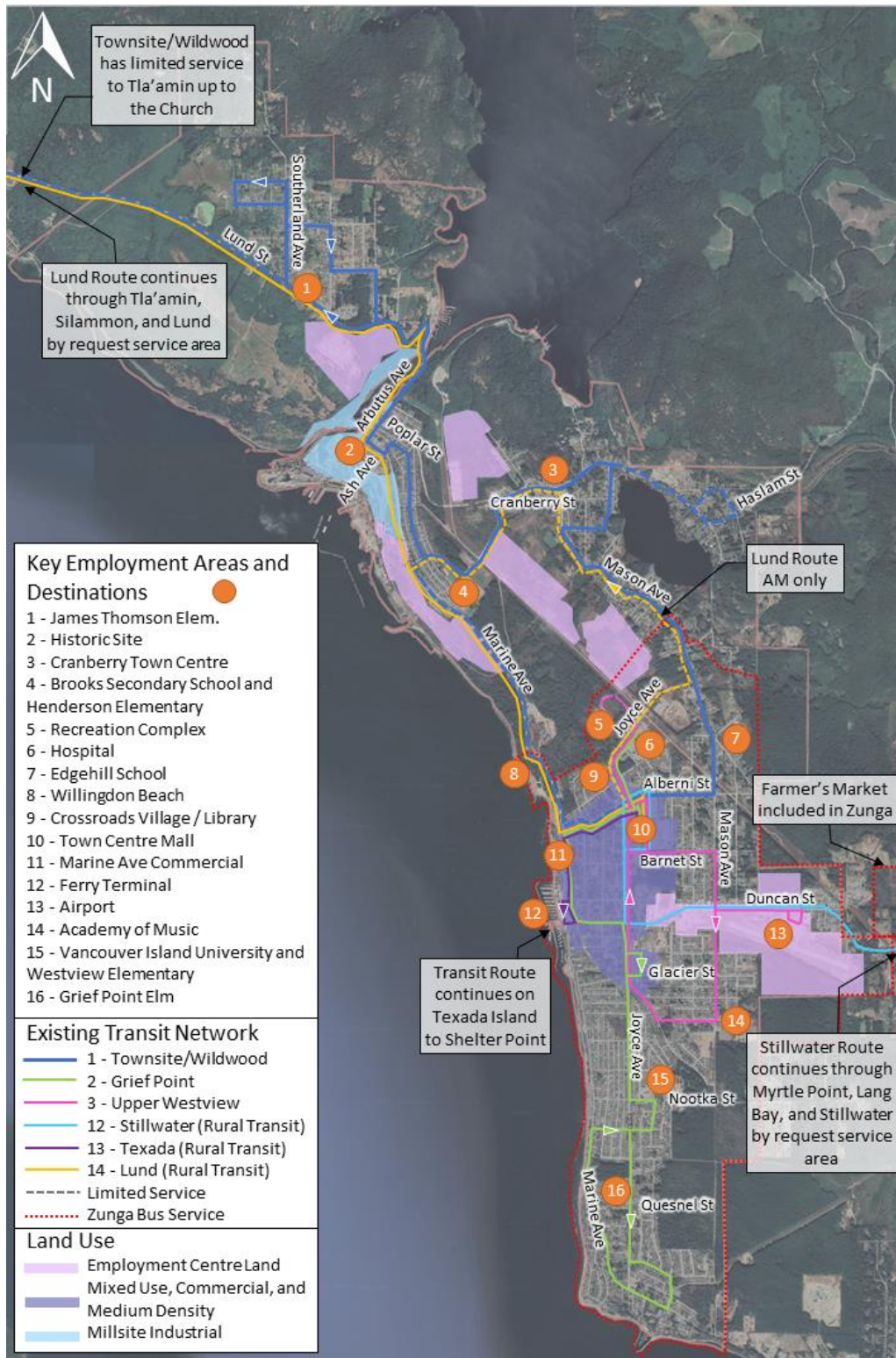


Figure 4.5: Existing Transit Network, Land Use, and Major Destinations

## 4. BC TRANSIT SHARED GOVERNANCE MODEL

### ROLES AND RESPONSIBILITIES OF BC TRANSIT

The City of Powell River is in BC Transit's Municipal Systems Program where there is a shared governance over Powell River's transit system. Key responsibilities by party are identified below:

BC Transit:

- Allocates Provincial operating and capital funding support
- Provision of transit fleet
- Transit planning and scheduling services (in consultation with municipalities)
- Capital planning
- Marketing Services
- Conventional transit services and custom transit service hours are established by BC Transit in consultation with the municipal government partner

City of Powell River

- Sets local funding
- Sets routes and service levels with BC Transit. Approves local service plan
- Maintenance and operations of the Transit Fleet
- On-street supervision for operations and incident management
- Establishes fares and receives all transit revenue through fare collection and ticket/pass sales. All revenue collected through the operations of the Transit System belongs to the municipal government provider to offset operating costs.
- Implementation of all on-street transit improvements and maintains bus stops, exchanges, shelters and benches

### UNIQUE POSITION OF POWELL RIVER

Within the BC Transit municipal systems program, Powell River has a unique service delivery model with operating transit service in-house while comparable sized transit systems elsewhere in British Columbia typically have a contracted service model with operations provided by a third-party entity. This unique service delivery model has allowed the City of Powell River to retain more autonomy over service decisions within the community, particularly with the launch of the Province's first On-Demand Transit service, the Zunga Bus. For the planning and deployment of the Zunga Bus, the City was able to leverage federal innovation funding and work with the On-Demand Transit provider Spare Labs directly to pilot this new technology and service delivery application. For the Zunga Bus the City determined the service area, operating time periods and parameters of the service. Additionally, the City was able to create a community minded distinctive brand for the service.

In late 2021, BC Transit initiated an On-Demand Feasibility Study to assess the viability of this service delivery model as a part of their service offering. BC Transit explored Cranbrook and Kelowna as pilot communities for a potential future On-Demand pilot. A potential launch schedule and implementation strategy is not known but it is anticipated that any future On-Demand service will be branded as a BC Transit service.

### BC TRANSIT DIGITAL ON DEMAND PLANS

To date, BC Transit has made no firm commitments about deploying on-demand transit service throughout BC communities. However, BC Transit has commenced a process of exploring a provincial framework for providing digital on-demand transit service, in which they are using the City of Cranbrook and the City of Kelowna as case studies. BC Transit's digital on-demand feasibility study is looking at four primary use cases for on-demand transit in BC communities:

- Replacement of low performing fixed routes with on-demand service,
- Expansion of digital on-demand services to new areas and time periods not currently served by transit or improving service to First Nations,
- Improvement of headways and accessibility for standard service, and
- Improving efficiency for handyDART.

These use cases are in alignment with this analysis, which focuses on replacement of low performing fixed routes and improving efficiency for HandyDART service. In the case of Powell River, service connecting the City to the Tla'amin community is likely not a candidate for on-demand as it is a longer distance trip, which tends to erode the service benefits of the on-demand model.

## 5. RIDERSHIP DATA ANALYSIS

The ridership data analysis includes assessment of the conventional BC Transit system (three regular routes, one special route), the Zunga Bus, and HandyDART services. The analysis includes utilization / ridership of routes with data provided from the City and BC Transit.

### CONVENTIONAL FIXED-ROUTE SYSTEM

The conventional BC Transit system includes three regular transit routes: Route 1 - Townsite / Wildwood, Route 2 - Grief Point, and Route 3 - Upper Westview; and one special route (Route 1 - Townsite / Wildwood School Special). The conventional system has data collected by the City that is accessible through the Tableau platform. Metrics provided include rides per day of week, average ridership, and 97<sup>th</sup> percentile ridership. The data provided by the City is for all of 2019, 2020, and for 2021 between January through October. Each route was analyzed looking at year over year changes and trends. On-demand transit may be considered as a substitution for a conventional route if average ridership is below eight passengers per service hour.

#### ROUTE 1 - TOWNSITE / WILDWOOD

**Figure 5.1, Figure 5.2, and Figure 5.3** show the average ridership by time of day for Route 1 - Townsite / Wildwood for 2019, 2020, and 2021 (January through October), respectively. From 2019 to 2020 the weekday service increased in frequency and the weekend service was extended earlier (7:00 a.m. from 8:40 a.m.) and increased frequency. From 2020 to 2021, one time of day slot was reduced for both weekday and weekend service.

In all years, Route 1 is the most utilized route (excluding the School Special). For the 2019 weekday analysis (**Figure 5.1**), there is a morning peak, mid-afternoon peak, and evening peak with average ridership ranging between 22 to 34 passengers. The route is less utilized in the evenings at 9:50 p.m. For the 2019 weekend analysis, the ridership is consistently above eight passengers and utilization declines at 9:50 p.m. on Saturdays. The 2020 weekday analysis (**Figure 5.2**) also has a morning, mid-afternoon, and evening peak with average ridership ranging between 15 to 25 passengers. A decrease in ridership may be attributed to travel behaviour changes due to the pandemic and more time slots being added which space out passengers throughout the schedule. Weekday ridership is below eight passengers around 8:05 p.m. For the 2020 weekend analysis, ridership is consistently above eight passengers on Saturdays and Sundays until 7:50 p.m. For the 2021 weekday analysis (**Figure 5.3**), the distribution and utilization of trips is similar to 2020 with peak ridership periods ranging between 14 to 26 passengers. Weekday ridership utilization declines at 8:05 p.m. The 2021 weekend analysis shows consistent utilization throughout the day and declines at 7:50 p.m.

Overall, this is a route with high utilization throughout most of the service day surpassing the eight-passenger threshold for the existing service times. Utilization declines on weekdays after 8:05 p.m. and on weekdays and 7:50 p.m. on weekends.

## **ROUTE 1 - TOWNSITE / WILDWOOD (SCHOOL SPECIAL)**

**Figure 5.4, Figure 5.5, and Figure 5.6** show the average ridership by time of day for Route 1 - Townsite / Wildwood (School Special) for 2019, 2020, and 2021 (January through October), respectively. Service hours are two busses at 3:15 p.m. and 3:25 p.m. to accommodate the school afternoon peak. Ridership utilization is high in all years ranging between 11 to 34 passengers. There is a decrease in ridership from 2019 to 2020 that may be a result of the pandemic.

## **ROUTE 2 - GRIEF POINT**

**Figure 5.7, Figure 5.8, and Figure 5.9** show the average ridership by time of day for Route 2 - Grief Point for 2019, 2020, and 2021 (January through October), respectively. From 2019 to 2020 the weekday service increased in frequency and the weekend service was extended earlier (7:00 a.m. from 8:40 a.m.) and increased frequency. There were no additional service changes between 2020 and 2021.

For the 2019 weekday analysis (**Figure 5.7**), ridership is consistently above eight passengers between 8:30 a.m. and 7:45 p.m. with a slight afternoon peak. Weekday ridership ranged between 8 to 25 passengers. The 2019 weekend analysis is consistently utilized between 9:40 a.m. and 5:55 p.m. with ridership between 7 to 19 passengers. For the 2020 weekday analysis (**Figure 5.8**), there is a morning peak, a mid-afternoon peak, and an afternoon peak with average ridership ranging between 8 and 18 passengers. Weekday ridership is consistently above eight passengers between 8:30 a.m. and 5:15 p.m. The 2020 weekend analysis is above eight passengers between 10:50 a.m. and 4:50 p.m. on Saturday (ranging between 7 to 12 passengers) and varied on holidays and Sundays (ranging between 4 to 17 passengers for the same time period). A variation in ridership may be attributed to transit schedule changes during the pandemic which shows alternative timings throughout the schedule. For the 2021 weekday analysis (**Figure 5.9**), the distribution and utilization of trips is similar to 2020 with peak ridership periods ranging between 10 to 14 passengers. Weekday ridership utilization declines at 4:35 p.m. The 2021 weekend analysis shows utilization of eight passengers or less for all time slots except for 12:50 p.m. and 2:50 p.m. on Saturdays (with nine and ten passengers, respectively). The decrease in ridership and hours of high utilization between 2020 and 2021 may be attributed to the Zunga Bus operating in the same service area.

Overall, this route has low utilization for weekdays before 8:30 a.m., after 4:50 p.m., and on weekends. Ridership may have reduced between 2019 and 2020 due to the pandemic and reduced further between 2020 and 2021 due to the Zunga Bus.

## **ROUTE 3 - UPPER WESTVIEW**

**Figure 5.10, Figure 5.11, and Figure 5.12** show the average ridership by time of day for Route 3 - Upper Westview for 2019, 2020, and 2021 (January through October), respectively. From 2019 to 2020 the weekday service increased in frequency and the weekend service was extended earlier (7:50 a.m. from 9:20 a.m.) and increased frequency. There were minor reductions to service hours on Tuesdays, Wednesdays, and Fridays between 2020 and 2021.

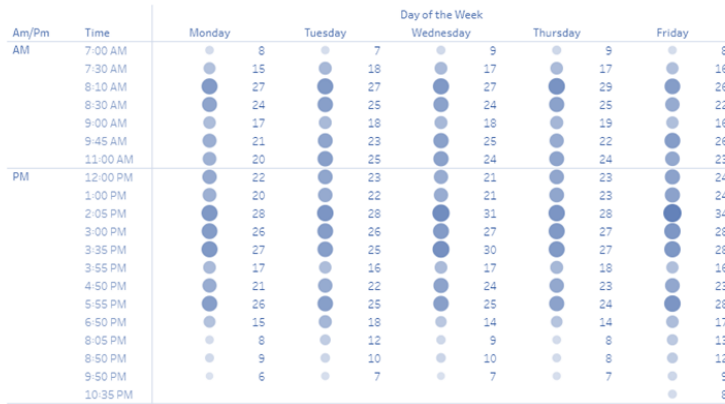
For the 2019 weekday analysis (**Figure 5.10**), ridership was mostly above eight passengers between 10:25 a.m. and 3:35 p.m. with lower utilization at 2:25 p.m. and 2:55 p.m. Weekday ridership ranged between 4 to 11 passengers. The 2019 weekend analysis has consistent ridership of eight passengers or less for all service hours with ridership between three to eight passengers (excluding holidays). For the 2020 weekday analysis (**Figure 5.11**), the ridership average for all timeslots was less than eight passengers except for Mondays at 3:35 p.m. with an average of eight passengers. The 2020 weekend analysis is also less than eight passengers for all time periods. A reduction in ridership may be attributed to travel behaviour changes due to the pandemic and more time slots being added which space out passengers throughout the schedule. For the 2021 weekday analysis (**Figure 5.12**), the distribution and

utilization of trips is similar to 2020 with peak ridership periods ranging between two to seven passengers. The 2021 average ridership for all time slots for weekdays and weekends is less than eight passengers and ranges from zero to seven passengers for all service hours. There is a minor decrease in ridership between 2020 and 2021 which may be attributed to the Zunga Bus overlapping in the same service area.

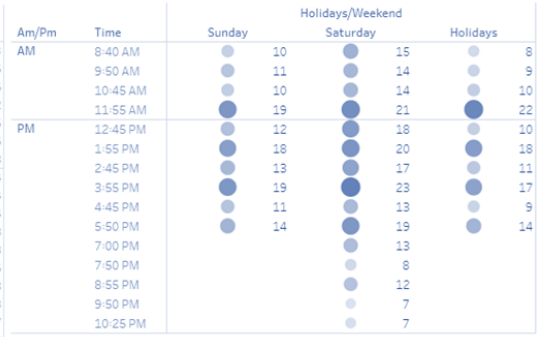
Overall, this route has the lowest utilization for weekdays and on weekends. Ridership may have reduced between 2019 and 2020 due to the pandemic and reduced slightly between 2020 and 2021 due to the Zunga Bus.

The data summarized in the following tables shows ridership for each bus run on each route by day of week. The size and darkness of the circles in the charts increase with increasing ridership levels.

2019 Ridership Analysis: Time of Day Average Ridership by Route  
Monday to Friday



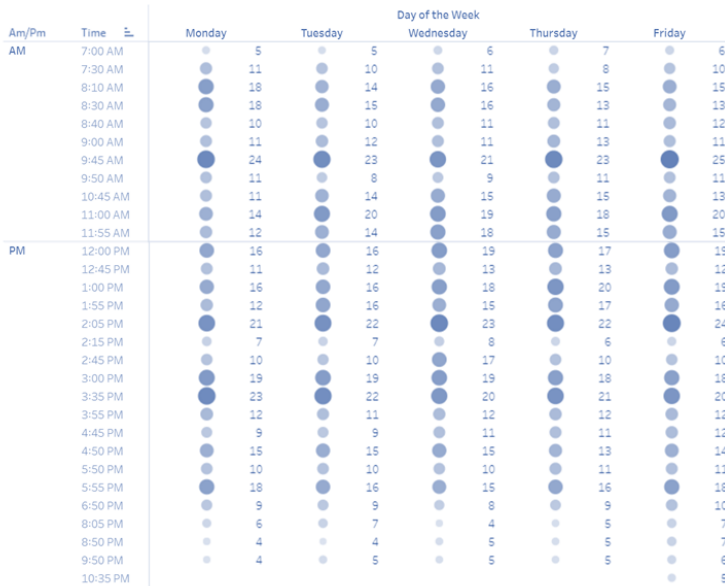
Saturday, Sunday and Holidays



Route 1 – Townsite/Wildwood

Figure 5.1: 2019 Average Ridership by Time of Day for Route 1

2020 Ridership Analysis: Time of Day Average Ridership by Route  
Monday to Friday



Route 1 – Townsite/Wildwood

Saturday, Sunday and Holidays

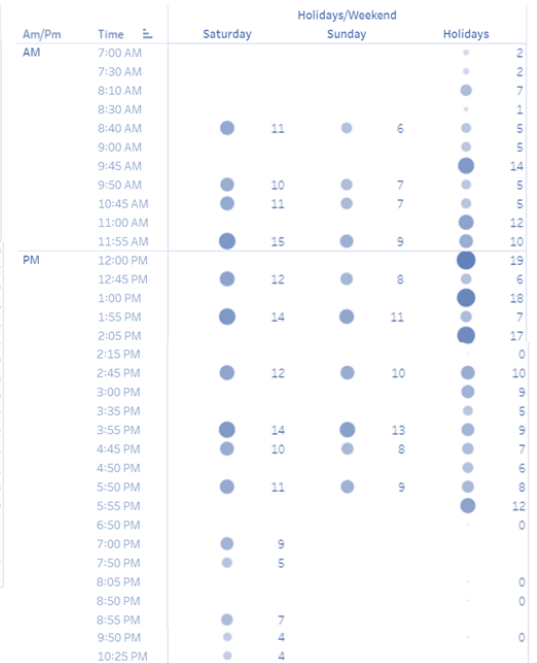


Figure 5.2: 2020 Average Ridership by Time of Day for Route 1



2021 Ridership Analysis: Time of Day Average Ridership by Route  
Monday to Friday

Am/Pm	Time	Day of the Week				
		Monday	Tuesday	Wednesday	Thursday	Friday
AM	7:00 AM	4	5	5	6	4
	7:30 AM	10	10	11	9	9
	8:10 AM	16	17	18	19	16
	8:30 AM	11	12	11	11	9
	8:40 AM	5			8	
	9:00 AM	13	14	13	13	11
	9:45 AM	23	22	22	25	23
	9:50 AM	6			6	
	10:45 AM	6			8	
	11:00 AM	16	20	17	17	19
	11:55 AM	12			11	
PM	12:00 PM	17	17	17	19	18
	12:45 PM	7			7	
	1:00 PM	18	18	18	20	21
	1:55 PM	13			11	
	2:05 PM	25	26	26	24	24
	2:45 PM	8			14	
	3:00 PM	15	17	15	17	17
	3:35 PM	20	19	19	20	19
	3:55 PM	10	10	9	10	10
	4:45 PM	7			9	
	4:50 PM	15	14	15	18	16
	5:50 PM	8			8	
	5:55 PM	17	16	16	14	17
	6:50 PM	7	8	8	7	9
	8:05 PM	5	5	6	6	7
	8:50 PM	4	4	4	4	5
	9:50 PM	4	4	5	5	5
	10:35 PM					4

Saturday, Sunday and Holidays

Am/Pm	Time	Holidays/Weekend		
		Saturday	Sunday	Holidays
AM	7:00 AM	-	0	
	7:30 AM	-	0	
	8:10 AM	-	0	
	8:30 AM	-	0	
	8:40 AM	11	4	6
	9:00 AM	-	0	
	9:45 AM	-	0	
	9:50 AM	10	6	6
	10:45 AM	11	7	6
	11:00 AM	-	0	
	11:55 AM	14	9	11
PM	12:00 PM	-	0	
	12:45 PM	10	8	7
	1:00 PM	-	0	
	1:55 PM	15	11	13
	2:05 PM	-	0	
	2:45 PM	11	9	8
	3:00 PM	-	0	
	3:35 PM	-	0	
	3:55 PM	14	10	11
	4:45 PM	9	7	7
	4:50 PM	-	0	
	5:50 PM	9	8	8
	5:55 PM	-	0	
	6:50 PM	-	0	
	7:00 PM	7		
	7:50 PM	5		
	8:05 PM	-	0	
	8:50 PM	-	0	
	8:55 PM	5		
	9:50 PM	4		
	10:25 PM	3		

Route 1 – Townsite/Wildwood

Figure 5.3: 2021(Jan-Oct) Average Ridership by Time of Day for Route 1

2019 Ridership Analysis: Time of Day Average Ridership by Route

Monday to Friday

Am/Pm	Time	Day of the Week				
		Monday	Tuesday	Wednesday	Thursday	Friday
PM	3:15 PM	33	34	32	32	32
	3:25 PM	27	26	26	27	23

Route 1 – Townsite/Wildwood (School Special)

Figure 5.4: 2019 Average Ridership by Time of Day for Route 1 (School Special)

2020 Ridership Analysis: Time of Day Average Ridership by Route

Monday to Friday

Am/Pm	Time	Day of the Week				
		Monday	Tuesday	Wednesday	Thursday	Friday
PM	3:15 PM	30	28	26	26	28
	3:25 PM	21	18	16	13	15

Route 1 – Townsite/Wildwood (School Special)

Figure 5.5: 2020 Average Ridership by Time of Day for Route 1 (School Special)

2021 Ridership Analysis: Time of Day Average Ridership by Route

Monday to Friday

Am/Pm	Time	Day of the Week				
		Monday	Tuesday	Wednesday	Thursday	Friday
PM	3:15 PM	21	21	22	22	21
	3:25 PM	13	11	14	14	12

Route 1 – Townsite/Wildwood (School Special)

Figure 5.6: 2021(Jan-Oct) Average Ridership by Time of Day for Route 1 (School Special)

2019 Ridership Analysis: Time of Day Average Ridership by Route

Monday to Friday

Am/Pm	Time	Day of the Week				
		Monday	Tuesday	Wednesday	Thursday	Friday
AM	7:30 AM	4	3	3	2	3
	8:00 AM	7	7	8	7	8
	8:30 AM	17	15	15	14	15
	9:05 AM	12	12	10	11	11
	9:50 AM	14	16	14	17	15
	10:50 AM	15	15	19	15	16
	11:50 AM	15	17	16	20	17
PM	12:50 PM	13	15	16	16	17
	1:50 PM	15	14	14	16	14
	2:30 PM	14	13	10	12	9
	3:15 PM	18	14	17	16	17
	4:05 PM	18	25	17	16	20
	4:35 PM	13	12	15	13	15
	5:15 PM	10	13	12	11	11
	5:45 PM	10	17	10	11	12
	6:55 PM	9	10	8	8	12
	7:45 PM	7	7	9	8	9
	8:55 PM					6
	10:05 PM					4

Saturday, Sunday and Holidays

Am/Pm	Time	Holidays/Weekend		
		Sunday	Saturday	Holidays
AM	8:40 AM	5	7	3
	9:40 AM	8	10	8
	10:50 AM	8	13	10
	11:40 AM	9	15	9
PM	12:50 PM	13	15	13
	1:40 PM	9	15	7
	2:50 PM	13	16	16
	3:40 PM	9	12	7
	4:50 PM	14	19	12
	5:55 PM	8	10	11
	6:40 PM		7	
	7:50 PM		10	
	8:40 PM		4	
	9:50 PM		6	

Route 2 – Grief Point

Figure 5.7: 2019 Average Ridership by Time of Day for Route 2

2020 Ridership Analysis: Time of Day Average Ridership by Route

Monday to Friday

Am/Pm	Time	Day of the Week				
		Monday	Tuesday	Wednesday	Thursday	Friday
AM	7:30 AM	3	2	3	3	3
	8:00 AM	6	5	6	5	5
	8:30 AM	15	12	13	11	11
	8:40 AM	5	5	5	4	5
	9:05 AM	9	8	9	8	10
	9:40 AM	8	7	9	8	8
	9:50 AM	9	10	10	13	10
	10:50 AM	9	9	11	11	11
	11:40 AM	7	8	8	8	9
	11:50 AM	9	12	12	13	13
	PM	12:50 PM	11	12	12	12
1:40 PM		9	8	10	9	8
1:50 PM		14	11	11	12	14
2:30 PM		17	17	14	15	11
2:50 PM		10	11	10	12	14
3:15 PM		10	12	12	12	12
3:40 PM		8	7	7	8	9
4:05 PM		16	18	15	13	14
4:35 PM		10	9	9	8	11
4:50 PM		8	7	8	8	9
5:15 PM		8	7	9	7	8
5:45 PM		7	8	6	6	8
5:55 PM		5	6	5	4	5
6:55 PM		5	8	5	6	9
7:45 PM			4	4	5	7
8:55 PM					4	
10:05 PM					3	

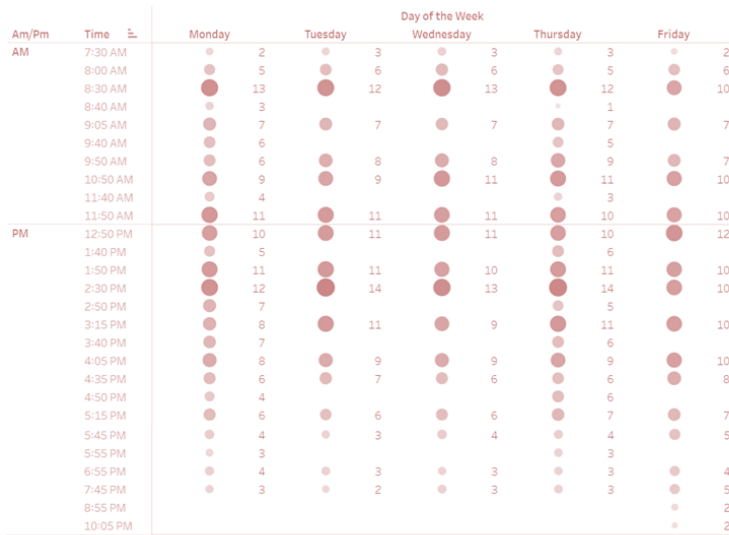
Route 2 – Grief Point

Saturday, Sunday and Holidays

Am/Pm	Time	Holidays/Weekend		
		Saturday	Sunday	Holidays
AM	7:30 AM			0
	8:00 AM			0
	8:30 AM			3
	8:40 AM	4	2	3
	9:05 AM			3
	9:40 AM	6	4	3
	9:50 AM			4
	10:50 AM	8	5	5
	11:40 AM	9	6	5
	11:50 AM			12
	PM	12:50 PM	10	8
1:40 PM		8	7	5
1:50 PM				17
2:30 PM				4
2:50 PM		12	8	6
3:15 PM				7
3:40 PM		7	5	5
4:05 PM				7
4:35 PM				6
4:50 PM		11	7	6
5:15 PM			12	
5:45 PM			2	
5:55 PM	6	5	4	
6:40 PM	5			
6:55 PM			0	
7:45 PM			0	
7:50 PM	5			
8:40 PM	3			
9:50 PM	2			

Figure 5.8: 2020 Average Ridership by Time of Day for Route 2

2021 Ridership Analysis: Time of Day Average Ridership by Route  
Monday to Friday



Route 2 – Grief Point

Saturday, Sunday and Holidays

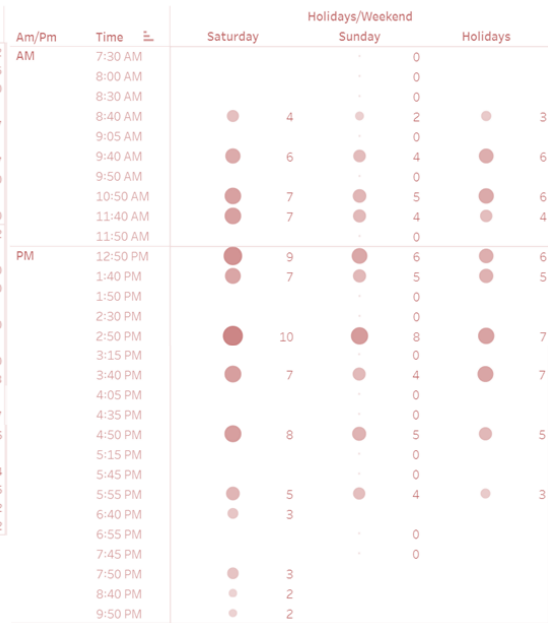
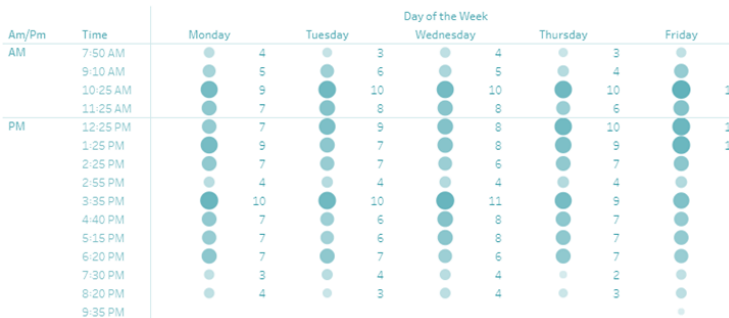
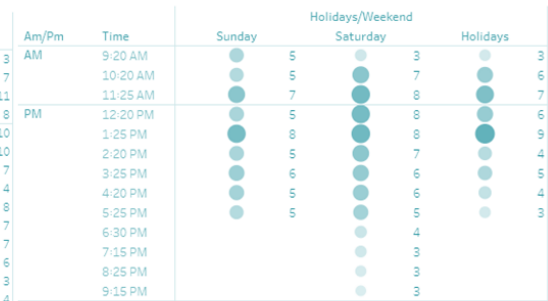


Figure 5.9: 2021(Jan-Oct) Average Ridership by Time of Day for Route 2

2019 Ridership Analysis: Time of Day Average Ridership by Route  
Monday to Friday



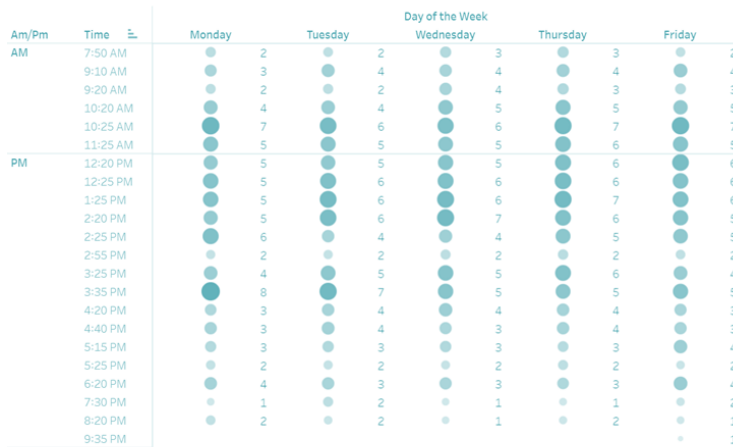
Saturday, Sunday and Holidays



Route 3 – Upper Westview

Figure 5.10: 2019 Average Ridership by Time of Day for Route 3

2020 Ridership Analysis: Time of Day Average Ridership by Route  
Monday to Friday



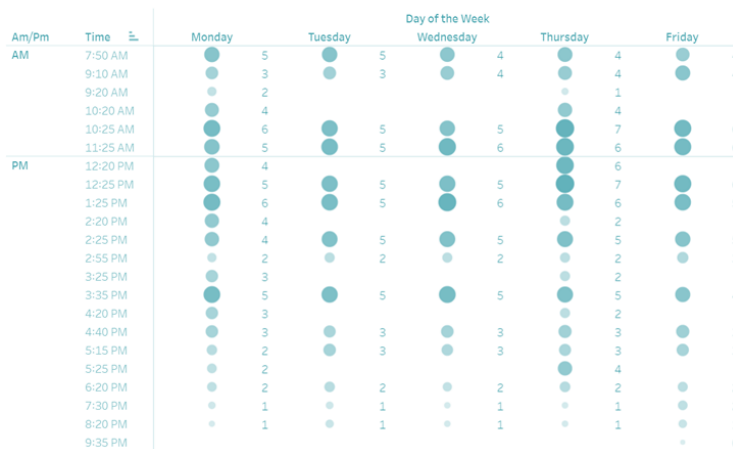
Route 3 – Upper Westview

Saturday, Sunday and Holidays



Figure 5.11: 2020 Average Ridership by Time of Day for Route 3

2021 Ridership Analysis: Time of Day Average Ridership by Route  
Monday to Friday



Route 3 – Upper Westview

Saturday, Sunday and Holidays

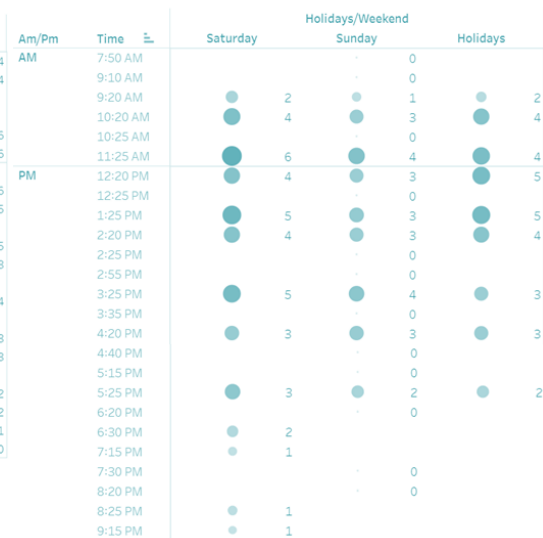
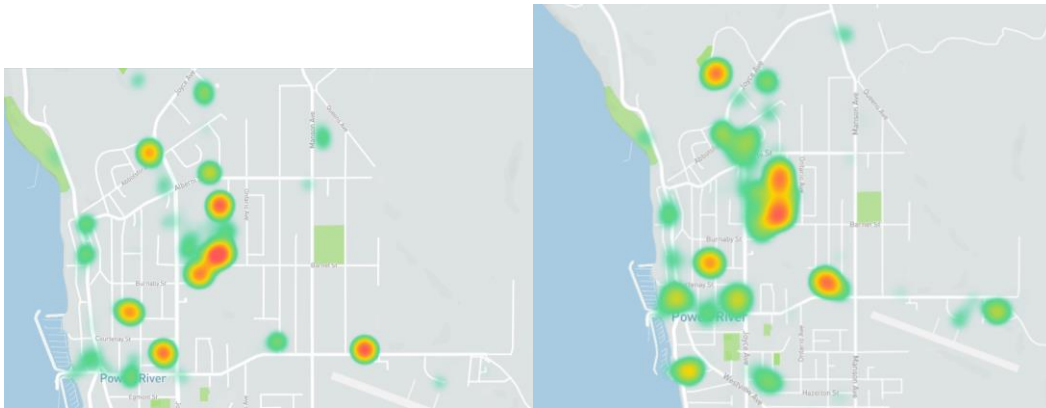


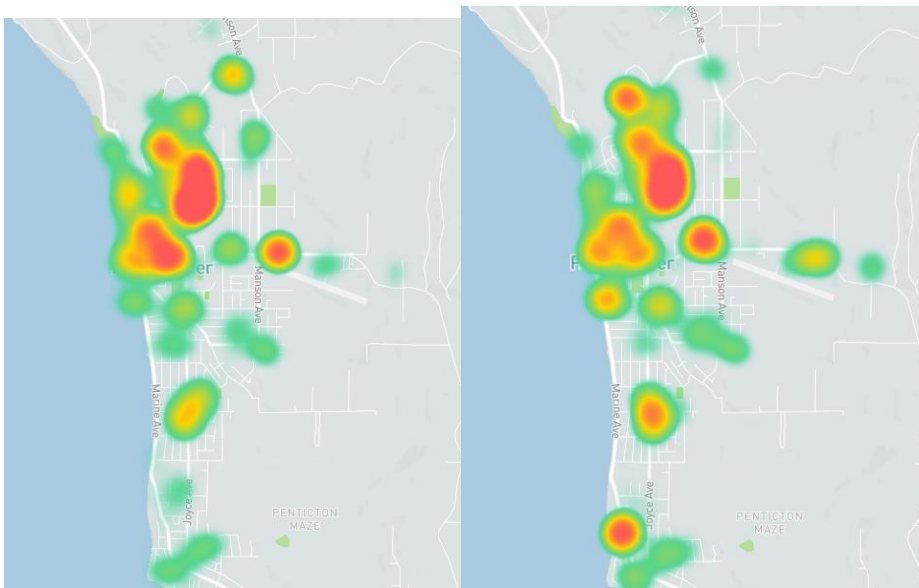
Figure 5.12: 2021 (Jan-Oct) Average Ridership by Time of Day for Route 3

## ZUNGA BUS

The data for Zunga Bus include both the number of discrete users and the number of rides per service hour. From January 11 to November 25, 2021 a total of 1373 user accounts were created with 472 users who took at least one trip, and 283 users who took more than one trip. User account creation peaked in early February and increased through the summer months. Approximately 55% of rides between April to September 2021 were pooled rides, which is a measure of vehicle utilization or efficiency and means that the application was able to serve multiple customers at the same time, travelling in similar directions. The data gathered by Spare Labs software for Zunga Bus trips includes a heat map of trip origins and destinations which can provide valuable information for conventional transit routes. **Figure 5.13** and **Figure 5.14** show the frequent pick-up and drop-off locations for the north and south areas of Westview, respectively. The heat maps show similar patterns between origins and destinations which may be due to most users requesting trips to/from their destinations instead of one-way or trip-chained trips. The hotspots include the Recreation Centre, the Town Centre Mall, Crossroads Village / Library, Airport, the commercial land use in upper Westview, Powell River Christian School, and Westview Elementary / Vancouver Island University.



*Figure 5.13: North Westview Heatmaps of Pick-up (left) and Drop-off (right) Locations*



*Figure 5.14: Central and South Westview Heatmaps of Pick-up (left) and Drop-off (right) Locations*

**Figure 5.15** shows the 2021 Zunga Bus ridership by week, starting in February 2021, with the weekly Covid-19 cases in British Columbia. The graph shows that although the number of weekly riders was slow to increase, it

appears very likely due to the timing of service launch being simultaneous with the COVID-19 wave in early 2021. As the service has become more established and as COVID cases decreased, the number of weekly Zunga Bus trips steadily increased until the start of the next COVID wave. The number of weekly Zunga Bus riders began to rebound following the peak of COVID cases in Week 40 in the chart below.

2021 Zunga Bus Ridership by Week vs BC Covid Cases

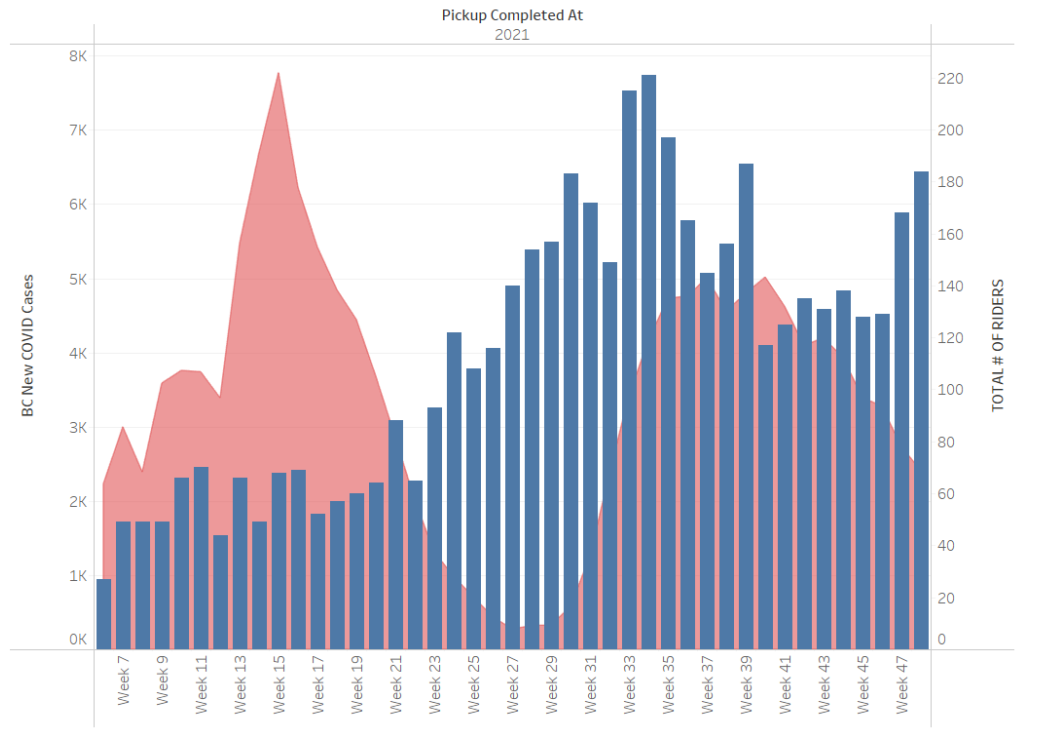


Figure 5.15: Weekly Zunga Bus Ridership and British Columbia Covid-19 Cases

Given the increasing trend in passenger volumes on the Zunga Bus through 2021, we have reviewed the average ridership data for July, August and September to understand the potential of the service, and to not focus on the two pandemic waves. The Zunga Bus driver break occurs from 2:30 p.m. to 3:00 p.m. daily, which explains the lower average ridership in the 2:00 p.m. hour. Aside from this, the early afternoon time is the busiest, on average, with a clear peak at 3:00 p.m., which tends to be a higher-demand time in Powell River but is also likely due to the service outage for the 30 minutes prior.

The maximum number of rides per hour that the Zunga Bus served in this time period is 22 passengers, which is a significant volume by most on-demand service standards and likely a result of several pooled trips. The maximum hourly volumes of 16 or more passengers occur infrequently but are most common in the 3:00 p.m. service hour as noted above, and have occurred at this hour on approximately 11% of weekdays. For most of its service hours, the Zunga Bus carries between 1 to 9 passengers.

Some municipalities have set on-demand transit average ridership targets in the range of three to six passengers per service hour. The Zunga Bus ridership is within this threshold most of the time.

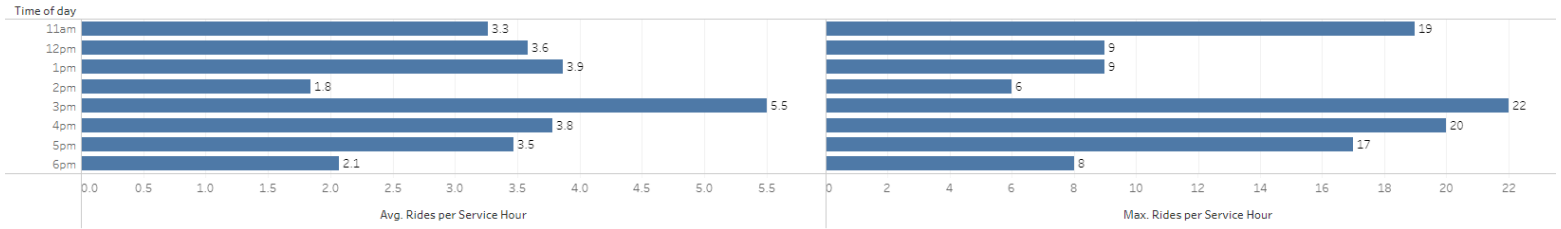


Figure 5.16: Average and Maximum rides per Service Hour (All Days)

Analysis of average Zunga Bus rides per service hour by day of week shows that Sundays see the least ridership, on average, while Thursdays see the most.

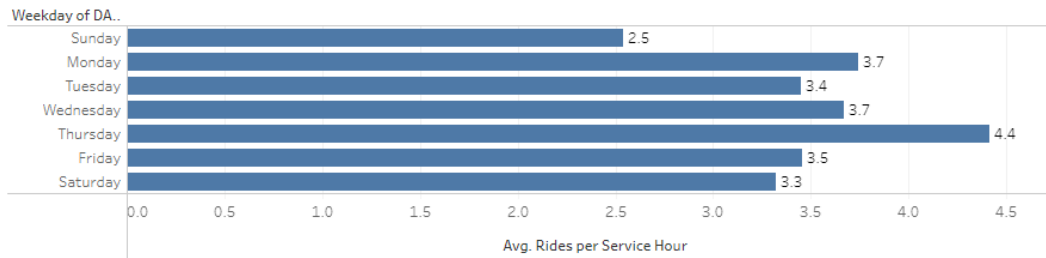


Figure 5.17: Average rides per Service Hour by day of week

## HANDYDART

The HandyDART system has ridership data for April through October 2021 and recorded a total of 3601 rides (an average of 514 rides per month). The average active registrants were 252 users for the same period. **Figure 5.18** shows the ridership by month from April to October 2021. Of the users, 70% of users are “ambulatory users” which means they do not require a wheelchair or attendant to ride; this includes those with mobility limitations and use of walkers or canes. Nineteen percent of users require a wheelchair and eleven percent require an attendant.

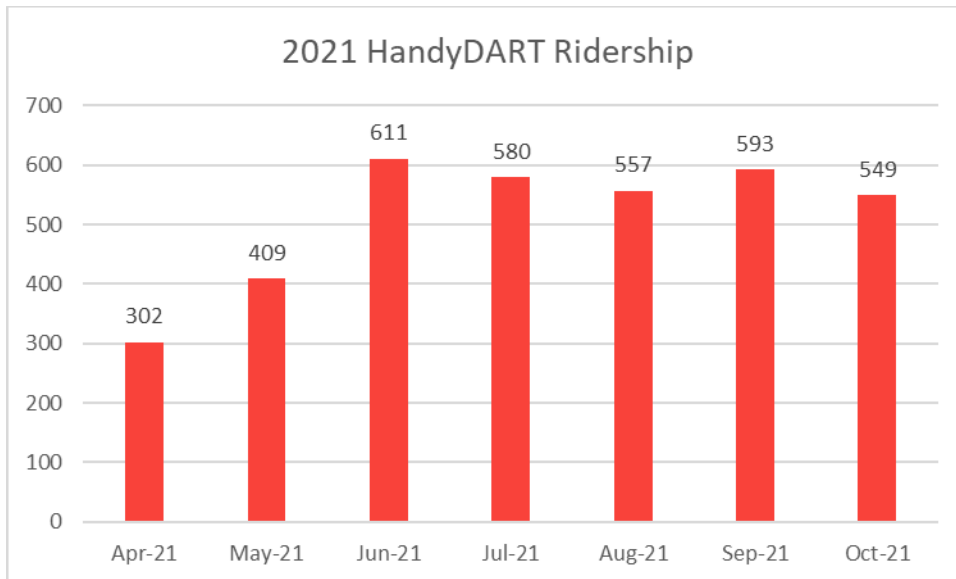


Figure 5.18: 2021 HandyDART Ridership

## KEY TAKEAWAYS

The key takeaways of the ridership data analysis for the conventional transit, Zunga Bus, and HandyDart services are as follows:



- Route 1 is the most utilized and has average ridership of 9 to 26 passengers between 7:30 a.m. and 8:05 p.m. for weekdays in 2021. Weekend ridership is also greater than eight passengers on Saturdays between 8:40 a.m. and 5:50 p.m. There was a slight decrease in ridership between 2019 and 2020 likely due to the pandemic. There was no change in ridership between 2020 and 2021.
- Route 1 (School Special) has high ridership utilization ranging between 11 to 22 passengers for 2021. There is a decrease in ridership from 2019 to 2020 that may be a result of the pandemic.
- Route 2 has low utilization for weekdays before 8:30 a.m., after 4:50 p.m., and on weekends. Ridership ranged between 6 to 14 passengers in 2021. Ridership reduced between 2019 and 2020 due to the pandemic and reduced further between 2020 and 2021, which may be due to the Zunga Bus.
- Route 3 has the lowest utilization for weekdays and on weekends ranging between four and seven passengers. Ridership may have reduced between 2019 and 2020 due to the pandemic and reduced slightly between 2020 and 2021, which may be due to the Zunga Bus operating in the same area.
- The Zunga Bus is busiest in the early afternoon. Some municipalities have set on-demand transit ridership targets in the range of three to six passengers per service hour. The Zunga Bus ridership is within this threshold most of the time. Analysis of average Zunga Bus rides per service hour by day of week shows that Sundays see the least ridership, on average, while Thursdays see the most.
- The HandyDART service has an average of 514 rides each month. Of the users, 70% of users are “ambulatory users” which means they do not require a wheelchair or attendant to ride; this includes those with mobility limitations and use of walkers or canes. Nineteen percent of users require a wheelchair and eleven percent require an attendant.

## 6. ZUNGA BUS EXPANSION ANALYSIS

The City completed an analysis of expanding the Zunga Bus zone in the Spare Realize platform, to understand the characteristics of an on-demand service with two buses and the ability of two buses to effectively serve different coverage areas. Four scenarios were tested, with the only change being the size of the Zunga Bus coverage zone, as shown in the first row in the table below and described in the column headings. As the size of the service area increases, so would the expected passenger wait times and passenger volumes. When the service area is expanded to cover Westview, Cranberry, Townsite and Wildwood, then the median wait time for a trip increases to 27 minutes, which is a lower level of service than the median 17-minute wait time provided in the existing coverage zone. Trip durations appear to remain consistent across all four scenarios.

While the 27 minute simulated wait time for customers may seem acceptable for citywide Zunga Bus coverage, the analysis does not consider the redundancy of existing transit routes, and particularly Route 1, which carries the majority of the City’s transit users. With the aim of eliminating redundancy between transit services prior to expanding the on-demand transit system, our recommendations will focus on maintaining the existing Zunga Bus coverage zone in the short term, while testing reductions in service on Route 3 (eliminating the route and shifting customers to the Zunga Bus) and potentially Route 2 (during select off-peak periods).



PERFORMANCE INDICATOR	WESTVIEW (EXISTING COVERAGE)	WESTVIEW + CRANBERRY	WESTVIEW + CRANBERRY + TOWNSITE	WESTVIEW + CRANBERRY + TOWNSITE + WILDWOOD
Coverage Area				
Daily Vehicle Hours	24	24	24	24
Daily Driver Shifts	2	2	2	2
Pooled Trips Ratio	67%	67%	73%	71%
Pickup on Time Percentage	91%	79%	83%	91%
Total Boardings	113	127	153	190
Average Passengers per Vehicle Hour	4.7	5.3	6.4	7.9
Average Travel Distance	4 km	4 km	5 km	5 km
Average Travel Duration	10 min	10 min	11 min	11 min
Maximum Wait Time	66 min	77 min	86 min	90 min
Median Wait Time	17 min	20 min	23 min	27 min
Cancellation Percentage	27%	23%	20%	20%

## 7. CONCLUSIONS AND RECOMMENDATIONS

In early 2020, the City adopted a vision for an efficient, convenient, reliable, accessible, and affordable public transit system that is well-used by the community, contributing to a sustainable, vibrant and equitable quality of life in Powell River.

The COVID pandemic has had an unforeseen impact on the City's transit ridership, but a review of Powell River's conventional bus system (Routes 1, 2 and 3) shows that the City's transit service was not aligned with the public transit system vision, pre-pandemic. Since the onset of COVID, the City has launched a pilot of the on-demand Zunga Bus service which has helped to improve the efficiency, convenience, reliability, and accessibility of public transit in the Westview neighbourhood, compared to Route 3, which operates only every 60 minutes or less in the same area. Response from the community and a review of ridership indicates that the Zunga Bus has been a success in both improved customer service and other transit performance measures such as convenience, accessibility, travel time and wait time.

On-demand transit is not a solution everywhere in the City of Powell River, as there is too much ridership on the City's Route 1 and sometimes Route 2 to be served "on-demand". However, there are opportunities to streamline Powell River's core transit services (Route 1 and 2) into a high frequency route that runs the full length of the City on a reliable half-hour schedule, significantly improving legibility for customers and providing almost double the frequency of the current route configurations.

The recommendations in this section are aimed at leveraging the Zunga Bus service where it is most appropriate and passenger demand is most conducive, and enhancing the fixed-route system to also improve efficiency, convenience, reliability and accessibility for those customers travelling outside of the on-demand service area. With the long term goal to increase transit ridership in Powell River, convenient, frequent and reliable fixed-route transit must be part of the City's transit system.

The following recommendations are developed based on principles which were developed collaboratively between the City and the consulting team:

- Improve the transit experience and level of service for customers
- Reduce transit service redundancy
- Simplify and streamline the transit experience in the near term
- Maximize the benefit of on-demand transit
- Align resources for future system enhancements in the longer term

The long-term transit system outcome we recommend for Powell River has three main components:

- a frequent transit spine through Powell River, which connects many of the City's key destinations with intuitive and reliable bus service.
- Zunga Bus on-demand service that covers all areas outside a 400m radius from the frequent transit spine, allowing seamless trips within the on-demand zone, or transfers between the on-demand zone and the frequent transit spine. This service would eventually migrate to a stop-to-stop model, for conventional transit customers.
- a HandyDART service that is integrated with Zunga Bus to provide citywide on-demand service for HandyDART customers, so they also receive the benefits of real-time convenient trip booking. Door-to-door service would be retained for all HandyDART customers and other customers with mobility challenges, as identified by the City.

The following actions are intended to be a progression, starting with balancing the amount of on-demand and fixed route service the City is providing, and then investing in an enhancement and streamlining of the primary fixed routes into a frequent transit route connecting the north and south ends of Powell River.

## SHORT TERM ACTIONS (0 TO 2 YEARS)

Keep one Zunga Bus in operation under the same service hours and operating conditions, while undertaking the following planning and administrative actions.

### PLANNING/ADMINISTRATIVE ACTIONS (0 TO 6 MONTHS)

- Assess stop level boarding and alighting data for all fixed routes, in the 2 to 3 months after the automatic passenger counters are installed to enable better route planning and system optimization (BC Transit is scheduled to install automatic passenger counters in Powell River in the spring of 2022).
- Identify under-utilized stops to inform adjustments and streamlining of fixed routes, and particularly Route 1 which does several small deviations into neighbourhoods that incur travel time penalties and operating costs. This could inform smaller short term adjustments to service, and the planning of the frequent transit route discussed in the medium term actions.
- Engage with the public and transit customers about potential changes to transit service:
- Ask customers about removing Route 3 and replacing it with enhanced Zunga Bus service in the current Zunga Bus coverage area (see short term service change, below).
- Test the perception from users about whether the Zunga Bus could be a replacement for fixed-route service at lower ridership times of day on the other fixed routes (Route 1 and Route 2).
- Ask HandyDART users about perceptions around the Zunga Bus and their perception of merging the HandyDART and Zunga Bus systems, whether for ambulatory HandyDART users only, or for both wheelchair and ambulatory users.

### PLANNING/ADMINISTRATIVE ACTIONS (0 TO 2 YEARS)

- Monitor BC Transit’s progress with the Provincial Digital On-Demand Transit Framework and lobby BC Transit to fund the Zunga Bus service at subsidy level similar to the BC Transit “paratransit” service in other communities, which is subsidized between 47% – 67% but not clearly defined in the Transit Act and up to the discretion of BC Transit on a case-by-case basis. The expectation would be that if the Zunga Bus has some HandyDART functionality, then the subsidy would be closer to 67%.
- Lobby BC Transit to retain the local branding of the Zunga Bus in this agreement.
- Continue to coordinate with the Tla’amin community and the Regional District to define responsibilities and governance around transit service provision to the Tla’amin area, and to improve service between Tla’amin and the City.

## SERVICE CHANGES (6 TO 12 MONTHS)

Following the completion of the first zero to 6-month actions above and pending whether the majority of customers support for testing the replacement of Route 3 with additional Zunga Bus service, we recommend the following actions. These actions culminate in eliminating Route 3 service and enhancing the Zunga Bus service to ensure adequate on-demand capacity is available for former Route 3 riders.

Increase Zunga Bus service hours to the equivalent of Route 3, as shown in the table below, for a total of 4,650 annual service hours. This is an increase of approximately 1,750 annual service hours over the existing service span of 2,900 hours. Initially, deploy the second Zunga Bus on weekdays in the 10:00 am to 4:00 pm window (1,600 additional service hours), as this is the highest ridership time on both Route 3 and the current Zunga Bus service. The second Zunga Bus may not be required through the whole service span, and particularly on Saturdays and Sundays. The best use of the two-bus fleet should be determined through monitoring ridership levels in the first months of service. The aim would be to meet or exceed the wait times and travel times provided by Route 3.

**SERVICE DAY(S) HOURS OF OPERATION ANNUAL SERVICE HOUR REQUIREMENT**

Weekdays	7:50 a.m. to 9:30 p.m.	3,600
Saturdays	9:20 a.m. to 9:15 p.m.	630
Sundays	9:20 a.m. to 5:25 p.m.	420
<b>Total</b>		<b>4,650</b>

- Identify a third vehicle in Powell River’s existing transit operations fleet, which may be a minivan or other smaller passenger vehicle, to use as a spare if either of the Zunga Buses is out of service.
- Eliminate Route 3 from Powell River’s conventional bus system, which is the equivalent of 2,100 service hours.
- A summary of the costs and revenues associated with these changes is shown in the table below.

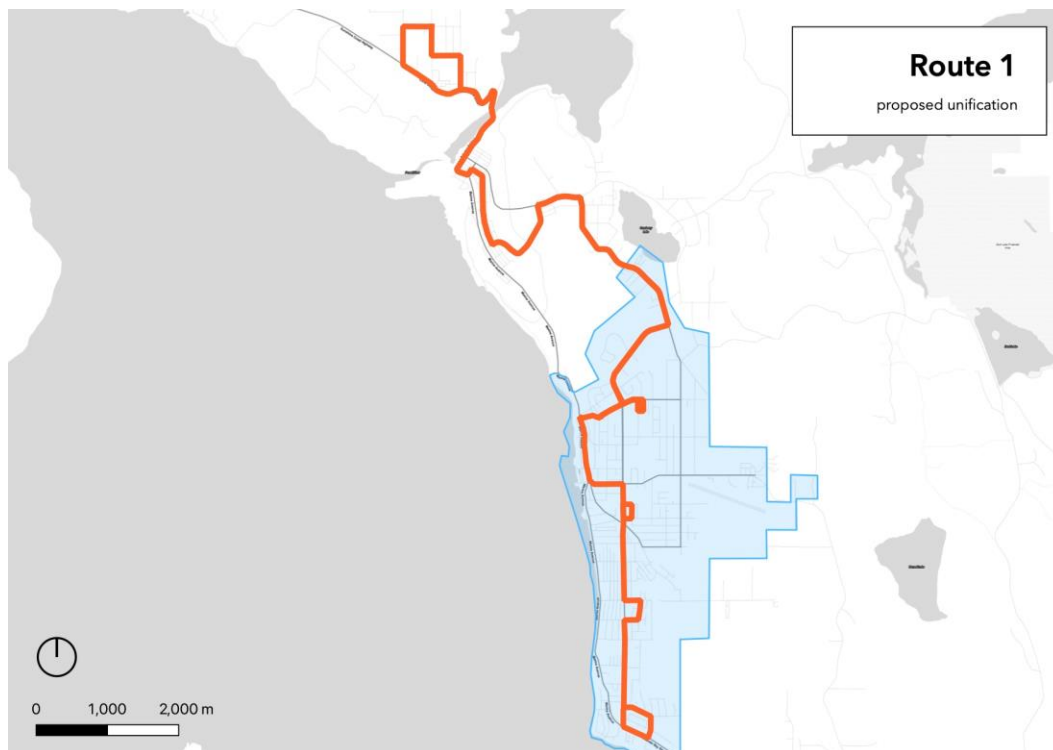
ZUNGA BUS SERVICE PROJECTS	DESCRIPTION	ANNUAL SERVICE HOURS	TOTAL SERVICE COST (BEFORE SUBSIDY)	INTERIM COST TO CITY (% CITY PAYS)	LONGER TERM COST TO CITY (% CITY PAYS)	POTENTIAL REVENUE	TOTAL COST TO CITY AFTER REVENUE
Existing Zunga Bus Service	On-Demand Service (11am-6:30pm, 7 days a week)	2,900	+ \$188,500	+ \$188,500 (100%)	+ \$62,205 to \$81,055 (33%-43%)	On-demand: 3 to 6 passengers per hour	
Conversion of Route 3 to Zunga Bus Service	Eliminate Route 3 – Westview, replace with Zunga Bus for all time periods	(-) 2,100 (elimination of Route 3)	- \$231,000	- \$122,430 (53%)	- \$122,430 (53%)	\$2.25 per passenger	
		1,750 (new Zunga Bus service during weekday evenings, Saturdays and Sundays)	+ \$113,750	+ \$113,750 (100%)	+ \$37,540 to \$48,900 (33% -43%)	Route 3: 8 passengers per hour \$1.25 per passenger: combination or cash fare and passes (CUTA, 2019)	
Addition of Second Zunga Bus during higher ridership time periods	Deployment of 2 <sup>nd</sup> Zunga Bus during higher ridership times (weekdays from 10am to 4pm)	1,600	+ \$104,000	+ \$104,000 (100%)	+ \$34,320 to \$44,720 (33% -43%)		
<b>Net New Service Hours and Costs</b>	Net network hours for the expanded Zunga Bus Service	<b>4,150</b>	<b>+ \$175,300</b>	<b>+\$283,900</b>	<b>\$11,700 to \$52,300</b>	<b>\$21,000 to \$63,000</b>	<b>\$31,300 to -\$51,300</b>

## SERVICE CHANGES (AFTER 1 YEAR)

- Pending the outcome of eliminating Route 3, and if the Zunga Bus continues to have excess evening capacity (whether because of lower demand or because an additional bus is added to the on-demand service), the City could move to eliminate the Route 2 service after 6:00PM on Weekdays. The City could also consider eliminating Route 2 service on Sundays and relying on the Zunga Bus to serve those customers. Changes to Route 2 service hours may be accomplished without changing the Zunga Bus coverage zone, as the whole Route 2 is currently within the on-demand zone.

## MEDIUM TERM ACTIONS (AFTER 2 YEARS)

- Implement a frequent transit route, which runs from Wildwood to Grief Point, using a combination of service hours and the alignments from Routes 1 and 2, but streamline the routing and allow the Zunga Bus on-demand service to provide coverage off-route. Wildwood is included in the service concept, pending review of bus stop data to better understand ridership. Coverage into Wildwood also provides the buses with a convenient turnaround location. A minimum 30 minute frequency is proposed in all operating time periods to 6pm on weekdays to provide a predictable and convenient transit option for Powell River residents connecting several key destinations within the community. A route of this frequency should attract more riders. The frequent transit route would be augmented with On-Demand transit service in communities beyond a 400-metre radius of a fixed-route stop. 3 buses required for this fixed-route service + 1 spare.
- A proposed route concept is depicted below, with Routes 1 and 2 combined, and the annual service hour and cost calculations are shown in the table below.



SERVICE PROJECT TOTAL	DESCRIPTION	ANNUAL SERVICE HOURS	TOTAL SERVICE COST (BEFORE SUBSIDY)	TOTAL COST TO CITY (53%)	POTENTIAL REVENUE	TOTAL COST TO CITY AFTER REVENUE
Existing Route 1 & 2 service Hours or Costs		8,700	\$957,000	\$507,200	\$195,800	\$311,400
Combination of Routes 1 & 2 to create a new crosstown high frequency service	30 minute frequency (weekdays from 6am-7pm, 9am-6pm on weekends)	8,300 - Weekdays (7am-6pm)	\$913,000	\$483,900	18 Passengers per hour \$1.25 per trip: combination of cash fare and passes (CUTA, 2019)	
		3,000 - Weekday evenings	\$330,000	\$174,900		
	45 minute frequency – weekday evenings	3,000 - Weekends (9am-6pm)	\$330,000	\$174,900		
		460 – Branch service to Tla’amin (3 weekday trips plus 1 additional trip on Fridays)	\$50,600	\$18,300		
		650 – Branch service to Cranberry Lake (weekday school trips)	\$71,500	\$37,895		
	Total: 15,410	Total: \$1,695,100	Total: \$889,900	Total: \$347,000		
Net New Service Hours or Cost		6,710	\$738,100	\$382,700	\$151,200	\$231,500

- Move the Zunga Bus to a stop-to-stop model for “conventional transit customers” rather than door-to-door to make the dispatching of rides more efficient and reduce perception of any competition with taxi business. Retain door-to-door service for HandyDART customers and other customers with mobility challenges. The City can identify different user groups through the on-demand app, and can determine eligibility criteria for the door-to-door Zunga service, beyond the existing HandyDART application.

- The City is expecting a third HandyDART bus to be incorporated in the Powell River system (the growing demand for HandyDART service and the need for a third HandyDART bus was identified in the 2015 BC Transit Service Review). Pending the input received from HandyDART users during engagement, consider using the HandyDART capital and operating funding for the third bus to expand the Zunga Bus fleet to three buses, and encourage ambulatory HandyDART customers making round trips in the Westview area to use the Zunga Bus service.
- Explore opportunities to electrify the transit fleet through BC Transit’s battery electric bus opportunity analysis and transition planning program, with a focus on the replacement of existing conventional fleet of five buses which is due for replacement in 2024 based off an 18-year vehicle lifecycle.
- The City commence discussions with the qathet Regional District and the Province to explore opportunities to enhance transit connectivity across the entire region from Lund to Saltery Bay and connections from the Sunshine Coast to the Lower Mainland by closing the gap through the extension of BC Transit service from Halfmoon Bay to Earls Cove.
- Depending on results of engagement, if there is a desire in the community, consider expanding the Zunga Bus coverage zone when there are three or more Zunga Buses available for service. Expansion of the coverage zone should not offer service that is redundant to the frequent transit route, but rather to cover areas off route. Changes in the on-demand coverage zone will be highly dependent on community input, results of the stop-level passenger data analysis, and the ultimate alignment of the frequent transit route. If the on-demand zone and the frequent transit route overlap spatially, then on-demand technology can be used to remove redundancy by pushing customers to transfer to the frequent transit route if their destination is within 400m of the route.

# APPENDIX A





## **ZUNGA BUS RIDER FEEDBACK**

**(collected via phone interviews with Zunga Bus riders)**

I don't go out a lot. If I didn't have Zunga Bus I wouldn't be going out at all. I am really overweight and cannot make it down the hill on Duncan Street easily to the Source Club. There is no bus route to take me down. A lot of the time I wouldn't be able to get up the hill. I now go to the Source Club almost every day because of the Zunga Bus. Walk down then take it up the hill. I was told I don't qualify for HandyDART.

### **Christopher, young adult**

We run an apartment building on Fernwood, I use it for my clients, they use it and it's been amazing. It's apartments on Fernwood. The housing is contracted through VCH. People with disabilities live there and they find it amazing. Some of them can't figure out the large bus and they cannot afford taxis. Some of the clients have dementia so it helps that they don't have to figure out the bus schedule and where and when to wait. Only one of them uses handyDART and it's quite inconvenient. Has to book the day before, it's not always available. Zunga Bus is a lot more flexible than handyDART. I love booking it on the app it's so much easier. I would absolutely like it to stay.

### **Rhonda, Fernwood apartments manager**

I don't have a car at the moment, use public transit. I use it to go and get my son to and from daycare and to get to work and back. The routes are much more direct on the Zunga Bus, it's very convenient. It allows me to do more things than before. I think you guys should get more of them!

### **Colton, 31**

I was wounded in Afghanistan twice and the second time I lost the ability to drive. I have to rely on public transit. I have PTSD, taking a big bus is not a good option for me. Zunga Bus has been life-changing. I mostly use Zunga for my medical appointments, it's at least four times per week. Occasional shopping. My partner drives and we usually do shopping together. Steve is a great driver. It absolutely allowed me to do more things than before. With Zunga, I don't just get out once a week or once a month. I can now do things every day now. I time all my activities to Zunga Bus. Everything I do is in Westview, Marine or shopping on Joyce. If you extend area, it's even better, it would open up more avenues for me. Our grandkids are coming down from Ontario, I want to take them shopping for their Christmas

gifts on the Zunga Bus. My partner works at Powell River Youth and Family and they are going to have a stock of Zunga tickets for people to use there. Zunga Bus has been one of the most life-changing events for me since I moved to Powell River. There are four of us in my row housing Complex on Joyce that take the Zunga regularly.

**Matthew Staley, 48**

I usually ride my bike, I am partially blind and cannot drive. Bicycle is my main way of getting around. The regular bus system does not work well for me to go the mall, sometimes the busses show up a bit early, a bit late, they are not frequent enough, they have a long route, it is faster to walk for half an hour to the mall than to take the bus. When I moved back to Powell River from Vancouver, I was shocked to find how antiquated our bus system is. I personally would not mind getting picked up by Zunga at a bus stop. A bus coming to a bus stop on demand is still amazing. I use the Zunga Bus to get groceries and for other trips that I cannot do on my bike. I was recently hit by a car backing out of the driveway while riding on my bike and I ended up with a leg infection. I have been getting to the hospital and back for treatments using the Zunga Bus. The Zunga Bus has reduced the stress of my injury immensely and helped me heal. My partner drives me as much as she can, but she has a full-time job. Sometimes I had to call a friend for a ride. Zunga Bus is a great service and I believe Zunga Bus is the future! I'm in full support of the Zunga Bus. It has been amazing for me.

**Kieran Fogarty, 36 years old**

I use it all the time when I'm able. Don't know how I'd get around without it. So handy and so convenient. I don't drive and have trouble walking. I use it to meet friends at Starbucks, regular things. I'd for sure like the Zunga Bus to stay. I'd be stuck at home otherwise.

**Pat Mayers, 72 years old**

I'll do anything I can for the Zunga Bus to stay. I cannot get my license until I am 17. Until I got my license, I used it to get to summer job and back every day. I cannot get my parents to always drive me. I drive now but when my car broke down the first thing I used was the Zunga Bus. It allowed me to get to work and see friends. I want it to reach Wildwood and run later. I cannot see how the City could get rid of the service, in my experience it's been fantastic.

**Ryder, 17**

Very very helpful. I think it should have been here years ago and it would be crazy to cancel! We need it morning and later. I would take it in the morning to take my boy to school. I use it for everything, get to work and back, get home from shopping with bags. With the big bus, you don't know when it's coming, you could be there and it's gone ten minutes ago and now you have to wait an hour. I would really like Zunga Bus to continue.

**Ronald Head, 58**

I mostly use it to get home from work. I have taken it in the past for pleasure as well. This way I don't have to walk in the dark. I seldom use BC Transit bus. I did try it, I just never knew when it was coming, hard to figure out the schedule. I have PTSD so I try not to drive, use other modes of transportation. Zunga Bus has been a huge blessing it's been very helpful. I think it's a real asset in the community. It would be really good if they had morning hours. I think if people understood how it works, they would use it even more. You could have a public form and explain it to people. There is a spot in the mall where you can set up a display on the Zunga Bus. For a long time, I thought it was only for people in wheelchairs. I didn't realize that you are allowed to get it for other needs too. A lot of people still don't understand it. I would like it to stay 100%. It's unfortunate if it ends in April because people are just starting to understand it now.

**Jennifer, 55**

I love the Zunga Bus. I am a busy mom and it has cut down my driving in half. My two older kids (13 and 16) have special needs and go to Inclusion programming. I book the Zunga Bus for them to take them to activities. It's given me more time and made my life much easier. I also have a 3 and a 6-year-old and previously they would have to come along for the drive with me to drop off the older kids. Because my older children have special needs, I am not comfortable putting them on the large busses and letting them navigate the streets on their own. Zunga Bus is very convenient because I can organize it the same day via the app. I would like it to expand to morning hours so my daughter can take it to her day care.

**Jennifer Muskee**

Zunga Bus was super helpful for our camp. We used it every week with the camp kids in the summer. It allowed us to have transportation. We had a day camp with the French Club for kids ranging between 5 and 12 years old and Zunga Bus was super helpful.

**Rachele, French Club camp leader**

I use it to go to the mall. For me it took away the anxiety of worrying about when the next bus is going to come and timing it when I'm done shopping vs having to figure out when the next bus is going to arrive. Big busses are very infrequent. I don't have to walk as far with my kids with Zunga, very convenient. Ability to pay with my card means that sometimes when I don't have cash Zunga Bus is my only option. I would really like to see it stay. One thing I would change is driver break time being at 2:30. Kids get out of school at 2:35-2:53. There have been a few times when I needed to get kids from school but the bus driver went on the break. Earlier times would be nice as well.

### **31-year-old mother of two**

Zunga Bus has definitely been really helpful. Comes in handy a lot of times when I have to go to places. Overall, it's really good and helpful. I wish it had longer hours, morning and later at night. It would be great to expand the area. I use it to get to work, go around places and meet friends. Big busses only come in certain hours and sometimes they don't work for me.

### **Steven, 17 years old**

We want it to stay! I have five kids. It's a lot of help for us financially and it's just there for me. I don't have access to a car. If it would start at 9 that would be such a big help. A lot of people get off work at 7 so it would be great to have it run later. I get off work at 5 and then I get home and then I go grocery shopping so I have to be in and out of the store to catch the Zunga Bus home. Schedule for the big busses doesn't line up for me. Ruth is super friendly, Dave is very friendly, drivers are awesome and they know my kids.

### **Roxanne, 38 years old**

I use Zunga Bus for everything, I don't drive. I use it for work, to go to town, I have a toddler. It allowed me to do more things than before, before I often chose to stay at home as there are no transportation options. Now the Zunga Bus encourages me to go out more. Go shopping more, do more things with the kids. It's really sad that they are considering ending the bus. I would love if it started in the morning. I hope it stays! I always use it with my mom, three-year-old toddler and a 66-year-old mom. Sometimes I use the app to book rides for my 66-year-old mom when she goes to town.

### **Darl, 34**

The Zunga Bus is my main go-to for transportation when boyfriend is not home and has the car. We have one vehicle in the household. I use Zunga Bus for shopping and to get to work. It's easier than the big city bus, the big bus takes a very long time. Earlier morning and later night would be helpful for Zunga. It allowed me to go out now that I have transportation options. I used to not go out because I had no transportation.

**Merissa, 33**

I loved the Zunga Bus. I no longer live in the area where I'm able to use it so I'm very disappointed! The big bus has pretty long wait times and Zunga Bus worked so much better for me. I am a huge advocate for sure. Please bring Zunga Bus to Townsite! I use it a lot for shopping, appointments, especially if I need to be there at a certain time and the big bus requires transfers etc. and I can just time the Zunga for the time I need to arrive, doctors, hospital, councilor. When I lived in Westview, I used it all the time. I don't have access to a car. Heck yes, I'd like it to stay and go to Townsite! I think it's a great idea.

**Brittany, 33**

I don't drive, I need transportation to go everywhere. City busses run every hour, so if you miss it you have to wait for a long time. Zunga Bus is on-demand so it's very convenient for me. I don't work right now, I go to the playground at Willingdon beach with my kids, go shopping to friends' houses. I went out more than usual because of the Zunga Bus. My husband drives but he is at work during the day. I really want Zunga Bus to stay. Morning hours would be nice, a little earlier would be more convenient for me. Hopefully, it keeps going.

**Kelly, 43, mother of two kids**

I don't drive, just bus, Zunga Bus and walking. I've used Zunga Bus to go to gym and occasionally work. Nice to call it out, big bus takes much longer and you have to wait. I would like the hours to be earlier and later. I would like it to continue.

**Max, 20**

I don't drive and it's a really big help. We have one vehicle and my husband drives and is gone to work. I work in FreshCo, Zunga Bus is so much more convenient. I use it with the kids going after work to shop. With the Zunga Bus I can preplan and schedule ahead of time. It's very convenient, I can do more than I did before. I would of course like Zunga Bus to stay. The drivers are so professional, it's a family

team and they are very friendly, you really feel at ease. It's a good project and good service. It's very sad if the Zunga Bus stops.

**Cynthia, 42**

I love it, I use it every day to get home from work. If it was available in the morning, I would use it to go to work. It has allowed us to reduce to one vehicle. It's made a big difference in my life to reduce my footprint in the world and it's something that's important to me. I think they should not require Class 2 for drivers they could hire more drivers. I know that your ridership would increase with the second bus. If the pilot ends, I would personally be very sad. I am at a location where two large busses are required; big bus hours don't allow me to come to work. I could go home but it would take over an hour to get home. If I want to go somewhere after work Zunga Bus allows that, I don't have to have a second vehicle. I use it on the weekend as well. I would 100% like it to stay.

**Jocelyn, 55**



inclusion  
powell river

# INCLUSION POWELL RIVER

Feb. 1, 2022

City of Powell River

6910 Duncan St, Powell River, BC V8A 1V4

To Whom It May Concern:

Inclusion Powell River is writing in support of continuance of the Zunga Bus. This incredible door-to-door service is making a significant difference in the lives of numerous citizens of Powell River, with and without disabilities. This service makes it possible for individuals to truly participate in the life of the community. As you can well imagine for those with some limitations in their ability to walk distances this service is a life saver and enhances the quality of life and the health and well being on all levels for these individuals. We thank you for implementing this service and ask you to continue offering it in the future.

Yours sincerely,

Lilla Tipton, CEO

Inclusion Powell River Society

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inclusion Powell River

#201 4675 Marine Ave  
Powell River, BC  
V8A 2L2

604-485-6411  
info@inclusionpr.ca  
www.inclusionpr.ca

## Support for Zunga Bus pilot project

Tara Chernoff <Tara.Chernoff@firstcu.ca>

Sat 2021-12-18 12:18 PM

To: Daniella Fergusson <dfergusson@powellriver.ca>

Cc: Anastasia Lukyanova <alukyanova@powellriver.ca>; Linda Bowyer <Linda.Bowyer@firstcu.ca>

Dear Ms. Ferguson,

First Credit Union is a local, member-owned business invested in increasing the positive impact we have on people, our planet, and the prosperity of our communities. I am writing on behalf of our organization to express our support for the Zunga Bus pilot project and thank you for offering such an innovative, inclusive, environmentally-friendly transit option to our community.

Over the past few years, we have been working on various initiatives that align with the goals of the Zunga Bus pilot project, including reducing GHG emissions from employee commuting and poverty reduction initiatives. The Zunga Bus provides an affordable, environmentally-friendly option for our employees to commute to work and travel between our Joyce building and administration office for meetings. Having this on-demand bus service available to employees during the day means that they can more easily bike, walk or carpool to work and quickly and efficiently get to meetings while minimizing vehicle emissions. One of our employees uses the Zunga bus to travel home three to four days a week. In addition to being a convenient and affordable mode of transportation for our employees, we recognize it as a tool to help reduce poverty in our community.

First Credit Union is a lead partner in the qathet Region's Ending Poverty strategy. One of the recommendations from the report released in October 2021 was to "work to improve and expand public transit services to enable affordable and convenient access to employment and educational opportunities" (p. 44). The Zunga Bus supports this recommendation and can significantly improve community members' quality of life by removing the reliance on private vehicle ownership, providing greater accessibility to social services, connecting community members to medical appointments, employment opportunities, etc.

Again – many thanks to you, and City Council for showing tremendous leadership in our community by providing such innovative solutions for our local businesses and community members.

Warm regards,

Tara

Tara Chernoff (she/her) | **VP Social Impact & Marketing**  
4448A Marine Ave, Powell River, BC, V8A 2K2  
T: 604-489-2006 M: 604-223-0295 E: Tara.Chernoff@firstcu.ca  
First Credit Union [www.firstcu.ca](http://www.firstcu.ca)



As a resident of the qathet Regional District, I give thanks and show my respect to the Tla'amin people on whose traditional territory I make my home.

*IMPORTANT: This message contains confidential information and is intended only for the addressee(s). If you are not the named addressee you should not disseminate, distribute or copy this e-mail.*



## Fwd: Life-changing results

Anastasia Lukyanova <ana.lukyanova@gmail.com>

Mon 2021-12-13 10:29 AM

To: Anastasia Lukyanova <alukyanova@powellriver.ca>

----- Forwarded message -----

From: **Shane Morrissey** <[shane@liftcommunityservices.org](mailto:shane@liftcommunityservices.org)>

Date: Mon, Dec 13, 2021 at 9:30 AM

Subject: Life-changing results

To: [info@zungabus.ca](mailto:info@zungabus.ca) <[info@zungabus.ca](mailto:info@zungabus.ca)>

Hi Zunga Bus,

I just wanted to touch base and give an update on one of our mutual clients. Thanks to the Zunga Bus they've been able to make clinic appointments for responsible pain management! It's given this person structure to their life by overcoming the transportation barrier. The ability to regularly attend their daily clinical appointments has demonstrated a massive change in their attitude, autonomy, and daily living habits. It is hard to describe that massive impact providing this one link has had.

Our client had been registered for the clinical appointments for some time but could not secure regular transportation until the staff at Zunga were extremely collaborative and understanding and have set up routine stops daily. The Zunga's punctuality and consistency has not gone unnoticed, and as of yesterday we have secured a second client to use the service so they can make imperative clinical appointments!

Anyway, from one social service provider to another we just wanted to say thank you!

Shane Morrissey



**The Community Action Team and Youth Community Action Team presents:**  
**Report in support of the Zunga Bus**

## **Introduction**

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The Community Action Initiative (CAI) has a vision that Community-based agencies are essential partners in addressing mental health and substance use in BC and a mission to strengthen the role and capacity of the community sector to improve mental health and address substance use for British Columbians. The Powell River Community Action Team upholds this vision by centering the needs of those affected by overdose response policy and programs with the decision makers of overdose response policy and programs.

The Youth Community Action Team (YouthCAT) is a Sub-CAT with the vision of inclusive and honest conversations centering the voices of the youth of qathet and ensuring youth input is uplifted through community forum channels. The YouthCAT is for youth and by youth with partnerships with those who work in services designated for youth in qathet.

Focusing on the social determinants of health for youth and adults navigating a dual health emergency in qathet, increasing accessibility of services and social connections are key to increasing health outcomes. Lack of public transportation options in qathet has been an issue identified by almost all youth the YouthCAT has interacted with. To provide preventative overdose response, all public infrastructure which are sound in increasing positive health outcomes and increasing social connection must be generously considered. The Zunga Bus on-Demand Transportation has proven to be a viable model to address accessibility and mobility issues where its service is available.

## **Community Input**

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### **Responses from “Petition to keep Zunga Bus in qathet and expand service areas and times” Google Forms distributed through The Community Action Team’s Facebook**

6 signatures were collected. Their residences were Allen Avenue, Cumberland Place, Drake Street, Egmont Street and Rutland Crescent.

3 responses were collected from the question “Why would the Zunga Bus be useful in your area? / Why is the Zunga Bus useful to you?”

1. I do love our public transit, but the schedule isn't great for getting to work and back (for example, if I can't get off work until 5pm, I don't get back to Cranberry till 6pm). It's faster to walk from Cranberry to VIU than it is to take public transit. Zunga is the way of the future!
2. Zunga is a lot more reliable than BC transit, having an on demand service has been greatly beneficial to getting me to different work programs and to and from town for errands.
3. I see the Zunga Bus up and down my road many times during the course of the day, and believe it to be a great resource, not just for those on a limited income, but for the community as a whole

### **Responses from YouthCAT meeting Survey November 18th**

Question Asked: “Zunga Bus: What do you like about the service? What do you not like about the service? How could it be improved? How does or could the Zunga bus improve your life in qathet?”

Responses: 1. I love that the zunga bus provides transit to people who can't access bus stops. I live in Cranberry and I would love it if service was extended to there.

2. Would like more evening hours to provide rides from sports or extracurricular hours, as well as safe rides from evening hangouts.

3. My friends use the bus alot and I would be really sad to see them lose that service.

4. Accessibility from out of town more. I like how it's an easy and cheap form of transport. I don't like how it doesnt go all around town and Brooks if I miss the city bus it would be great. My sister could get to school if they started going over to westview if my parents aren't available to drive.

5. I like that it is a more environmentally friendly option . Zunga buses need to be more accessible, go to more places, more busses even as well. Great concept, should just go farther than westview.

6. Pro: Easy to plan / Book rides

Con: No north access

Could help me get to clubs and volunteer activities. Really need a transportation option for the back of cranberry, as currently I feel very unsafe getting home using public transportation especially without natural light.

7. It is a bus I never used because it doesn't go to the townsite. But if it did go to the townsite I would use it and prefer it to the city bus.

8. Needs a bigger range. And more descript break times. It helps me get around.

9. I like that it is smaller. It needs more range to the north of town.

10. I like that it is a bus, I wish it had a bigger range.

11. I love the idea- I love what it could do and the convenience it could provide. That being said, I don't believe the pilot project accurately showed how useful it could be. I personally couldn't utilize it as the range was too small. I use the bus most days of the week and I could definitely see myself using the zunga bus a lot.

\*All Youth were paid an honorarium of 20\$ for their time participating in the meeting and answering the survey.\*

## **Written Testimonials**

From a Youth who attends Brooks Secondary:

Hello My name is Parker Holthuysen and I live in Powell River. I have benefited greatly from the zunga bus' services. I have P.O.T.S, autism, and mobility issues; the zunga bus helps me greatly by bringing me to doctors appointments and to school at oceanview. The city bus is confusing and overwhelming for me and cannot always get me to where I need to be on time. I do not have the money for a car or the time to learn how to drive. I've relied on the zunga bus heavily multiple times a week since the program started and have gotten some of my friends to use it occasionally too. One time I used it to get my brother to the walk-in clinic when he sprained his ankle and didn't want to call an ambulance. I would like for the zunga bus to have a larger range and more drivers so I may get to wildwood and cranberry in a timely manner. Thank you.

From a Youth Living on their own and Working Full time in qathet:

My name is Cate Miner. I live nearby and can easily walk most places. Unfortunately I have some mobility issues that can make it difficult for me to walk for more than 5 minutes if they're flaring up. On those days I use the Zunga bus to get to and from work or to do my grocery shopping because even walking from the bus stop to my house can be painful. Recently I had an appointment at the hospital and had planned to take BC transit most of the way there and walk the rest. The bus was over 10 minutes late and if it weren't for the Zunga bus I would've entirely missed my appointment. I can't always rely on BC transit because of service issues and consistently being late in Westview so I've started relying more on Zunga Bus because without them I would be unable to seek the medical care I need. Losing this service would leave me more vulnerable and with less mobility in qathet.

From a resident of Supportive Housing:

My name is John Ferrier,

I am dealing with chronic pain resulting from several injuries. I've had 3 brain injuries and several muscle-skeletal Injuries.

I deal with chronic pain every day which makes it very hard to do a lot of things, including walking. I was recently put on a program which gives me the medication I need to deal with severe pain that I am left dealing with on many days.

I receive my medication at the iOAT clinic 3 times a day, but I have to get myself there to pick it up. Since I cannot drive due to my brain injuries, and the buses don't get me there in a timely fashion and would prove to be unsuitable in getting me there and home. Leaving me in a situation where I would be left without most of my doses of my pain medication.

When I heard about the Zunga Bus, I phoned and scheduled a ride every time my next dose was ready to take. To my surprise they were able to give me a ride and picked me up perfectly timed with my medication dosage schedule.

For my needs, the Zunga bus is a godsend. Without it I would be lucky if I was able to get one dose twice a day. I am so grateful for this service.

I know I am far from the only person that needs this type of service. I cannot stress this enough. It would be very helpful to many more people if it went farther out of town.

## **YouthCAT Presents a Delegation to City Council**

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Hi, my name is Rachel Driedger and I along with Cate Miner are the Co-chairs of the YouthCAT. We are here today as members and representatives of the Youth Community Action Team. To provide some context, The Youth Community Action Team is a sub Cat of the Powell River Community Action Team. We have been met bi-weekly since mid-August and have been able to gather information and have open, honest conversations around what qathet region and the city of Powell River is lacking in terms of infrastructure, activities and services as well as youth input on improving current services, programs and public infrastructure. Our focus is on the social determinants of health for youth and improving outcomes for youth navigating a dual health emergency in qathet.

Presented for council is a visual layout of how the Zunga bus can and does improve public transportation and socio-economic outcomes for youth in qathet (see Figure 1). These benefits extend to all existing users of the service as well as, if service is extended, to new users. Public transportation has a user group made up of residents and visitors unable to afford costs of private vehicles or without access to private vehicles, those unable to operate personal vehicles, those with mobility issues as well as those concerned with their personal carbon footprint and seeking alternatives to private transportation. Youth, seniors, people with disabilities, low income residents and tourists are some examples of those who are current and potential users of public transportation. Improving public transportation improves access to public spaces, work and education opportunities, amenities and social connection. The Zunga bus has proven to be a useful model for Powell River and shown potential for improving mobility to the qathet region.

I would like to poll council members on how many you took public transit to work today? How many council members have taken public transportation within the last month? We believe this is important contextual information and the show of hands (or lack thereof) provides transparency for the public about those making the decisions as well as highlights the importance to listen to the individuals and groups who use these services and are directly affected by the decision made by council.

Our stance on this pilot is that it should be extended. Having an on demand micro-transit system has been greatly beneficial to the westview area of the Qathet region. It has served the community well during its pilot. Today I'll be presenting our youth's perspective on the Zunga bus.

Our youth have expressed their appreciation for this service as they view it as a convenient, low-cost and environmentally friendly form of transport that is more reliable than our regular transit system. It is beneficial to people who have a hard time accessing bus stops, the app is user friendly and appreciated by people who have a hard time calling to ask for rides. It is used to get to and from appointments, work and extracurricular activities because it relieves other household members of time and financial burden of transporting their family members and trying to plan those outings around BC transit schedules can be quite difficult.

Our youth are asking for service range extension as some of them live in Cranberry, Townsite and Wildwood and cannot always access the service. Should the service be extended to a larger area and ridership would go up and many more people would benefit from this service.

In addition to adding range to the zunga bus, extending the hours into the evening would be beneficial to safely transport youth after extra curricular activities and visits with friends. Many youth miss out on opportunities because they cannot access safe transport after 6:30pm and many feel uncomfortable taking BC transit.

I have two testimonials I would like to present today, one from a peer named Parker and the other from myself.

-testimonials included above-

There is a clear demand for this service and in its short life has already positively impacted so many lives within the community. Getting rid of this service would be harmful to its users and the community.

This on demand service provides accessibility to programs and services targeted to improve health, economic and social programs. The Zunga bus on demand transportation services are most relevant to the Community Action Team and its efforts to provide meaningful response in qathet to the illicit drug toxicity health emergency (see Figure 2) is the increased access to the Overdose Prevention Site and Injectable Opioid Agonist Treatment Clinic space. These spaces provide a positive impact to the community by providing harm reduction services and supplies that are based on medical evidence to improve health outcomes for folks.

From the Strengthening Communities Grant, \$53,000 awarded for transportation support will be offered to the Zunga bus on the contingency that the service continues. We hope this amount can be used to offset some of the costs for the city and ensure that the community is able to reap the benefits that this service provides.

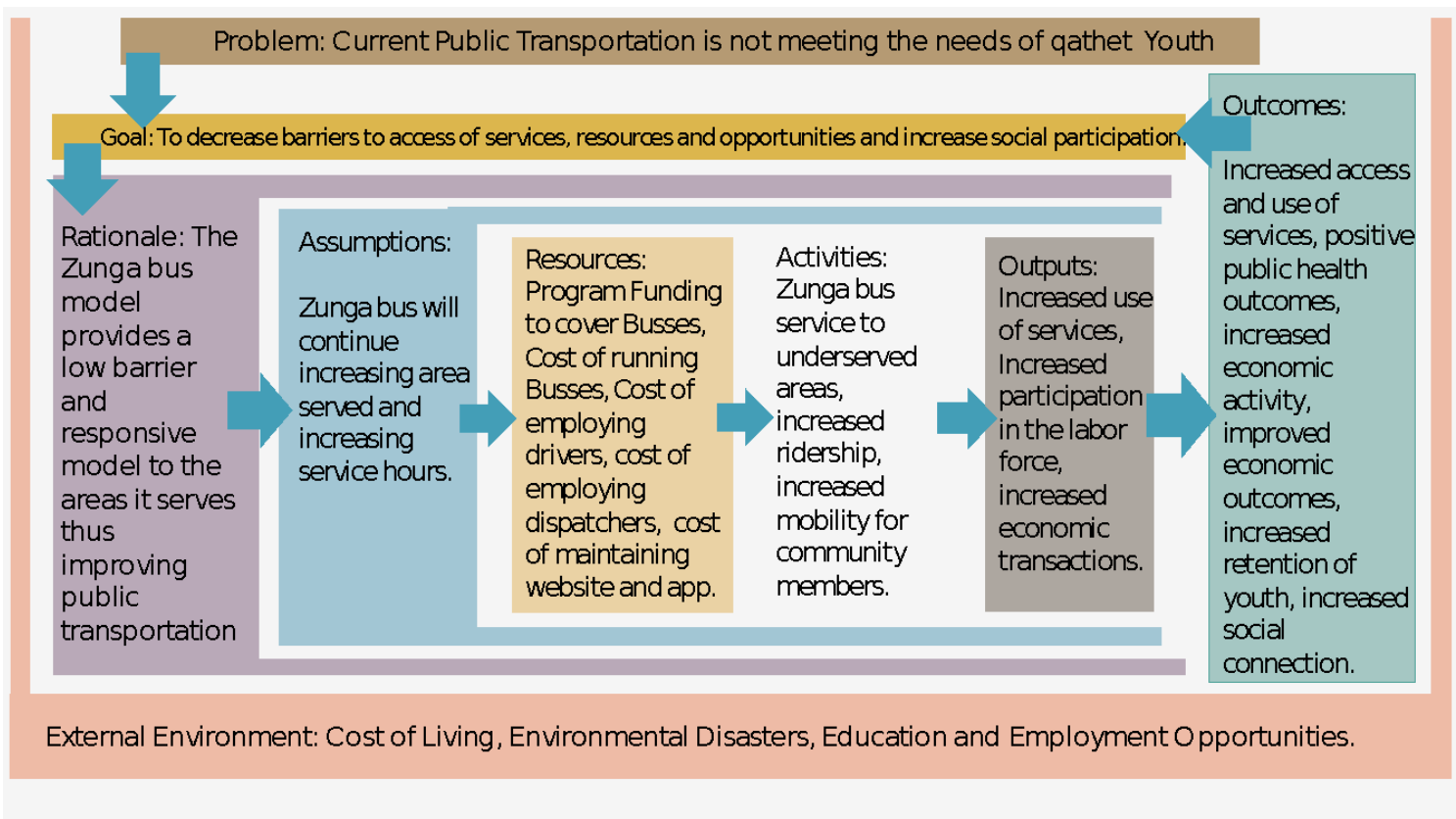
## **Conclusion**

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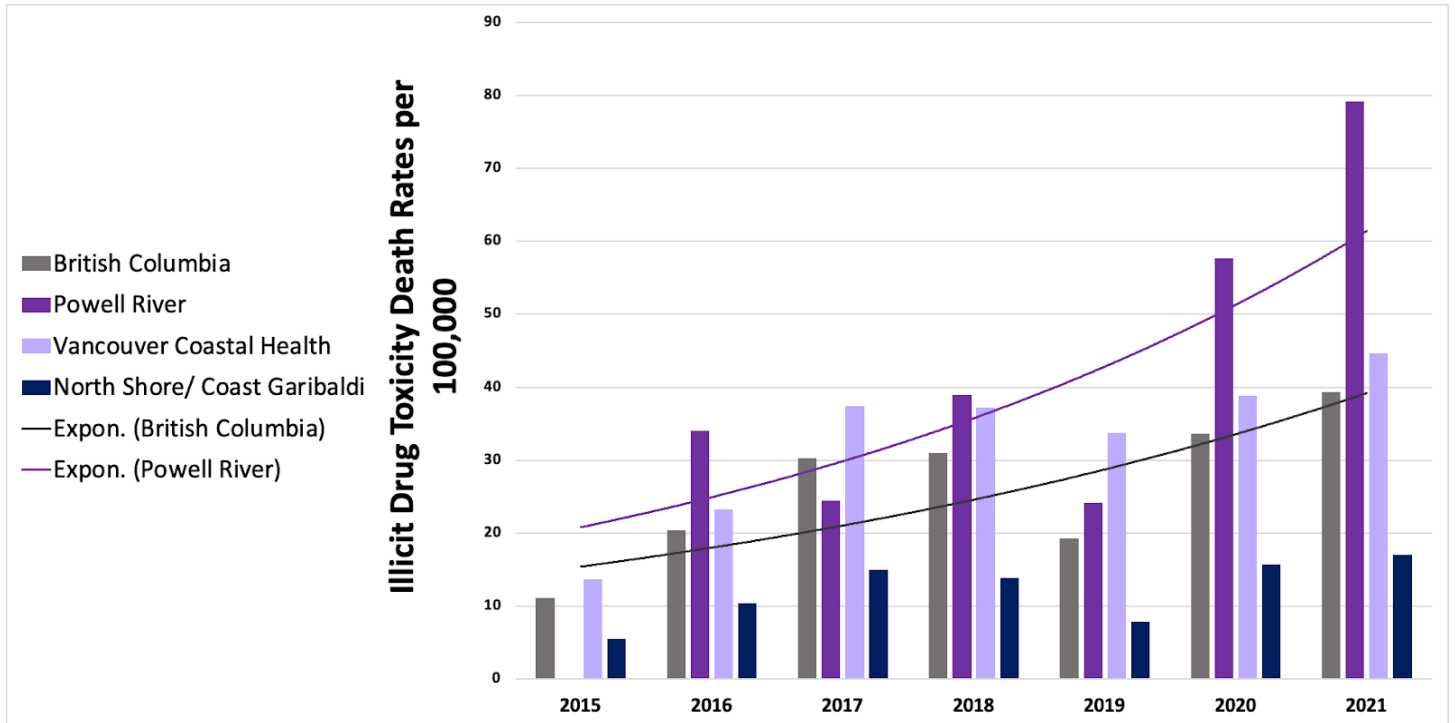
We look forward to the City prioritizing public transportation in their budget. We look forward to the City prioritizing youth in their budget and as the youth CAT are excited to provide input along the way of the budget revisioning.

The CAT and YouthCAT see this investment in public infrastructure to be a high reward investment for the whole of the community economically and socially (See Figure 3). The return of investment should be calculated to include the immediate increase of economic activity and use of services, increased health outcomes as well as the potential for retaining and attracting more working and younger residents.

# Logic Model of Zunga Bus Model Improving Public Transportation and increasing social inclusion for the youth of qathet (Figure 1)



## Most Recent Illicit Drug Toxicity Death Rates for Powell River (Figure 2)



\*Due to small numbers and ongoing investigation, numbers for 2021 should be interpreted with care.

Powell River is a part of Vancouver Coastal Health Authority as well as North Shore/ Coast Garibaldi Health Services Delivery Area.



@pr\_youthcat and @pr\_communityactionteam Instagram post on Public Transportation (Figure 3)

# Public Transportation



Public transit has overlapping benefits that can be categorized between efficiency, equity, economic, health and environmental.

Equity benefits are seen as increased accessibility to public services, education and employment opportunities.

Public Transit is vital to a healthy and happy society.

# Improved Transit Service<sup>1</sup>

- Increased comfort and convenience for existing users
- value of having option to use

## Increased Transit Travel

- Increased mobility
- Improved Health Outcomes
- Supports Public Service

## Reduced Automobile Travel

- Improved Environmental outcomes
- Reduced chauffeuring burdens
- Increased traffic safety

## Transit Oriented Development

- Reduced Crime
- More Efficient Development
- Improved Accessibility
- Farmland and habitat preservation



# Evaluating Transit Service

- Ease: Is the system easy to use?
- Effectiveness: How well does the system help users complete a task? Does the product serve its purpose well?
- Comfort: Do users feel safe, secure, and relaxed when using the service?
- Aesthetics: Does the product appeal to users?<sup>2</sup>

# Economic and Business Gains

- Investment in Public Transit has been seen to provide a return of 35-55%. This means benefit/cost ratio of 1.3-1.8.<sup>3</sup>
- Businesses gain access to a larger labour market, while residents gain more access to labour opportunities and amenities.
- Productivity gains are seen through less roadway congestion and more household time and income (less time spent waiting/driving).<sup>4</sup>

## Environmental Improvements

- Reduced solo driving reduces vehicle emissions and improves air quality.
- Smaller transit vehicles release less carbon emissions.

## Improved Health Outcomes

- Shifting trips from cars to transit reduce traffic-related injuries and deaths.
- Improved access to public and health services