Area F Feasibility Study

Regional District of Nanaimo

Parksville – Qualicum Beach via Coombs Feasibility Study

Phase 1

REGIONAL DISTRICT OF NANAIMO | BCTransit

Contents

1. Introduction

The purpose of this service discussion document is to describe the potential service options and resources required to implement a transit route between Parksville, Coombs and Qualicum Beach thus connecting Area F to transit routes throughout the Regional District of Nanaimo (RDN).

2. Background

In November 2016, the Regional District of Nanaimo Board provided direction to include transit service to Electoral Area F as a medium-long term priority. In 2018, interest was reignited from the City of Parksville and the Town of Qualicum Beach to provide transit service within Electoral Area F, specifically the communities of Coombs and Errington (Figure 1: Study Area).

A phased approach is being undertaken for this Feasibility Study. This Service Discussion Document is the first phase, providing a high-level understanding of ridership demand, transit service options, and resources needed. Phase II of the Feasibility Study will provide detailed costing, infrastructure requirements, public engagement, and local government approval. The Transit Select Committee and the Regional District of Nanaimo Board will be provided with regular updates throughout the project.

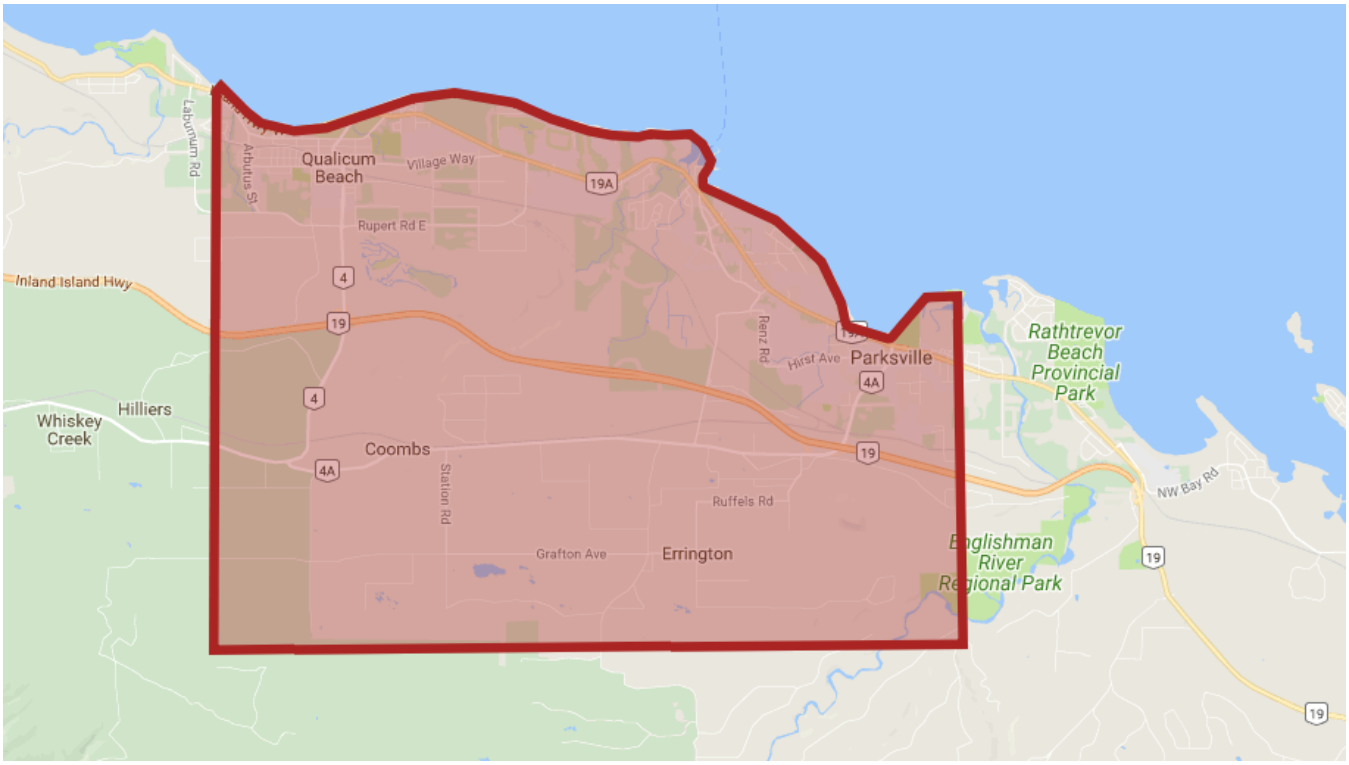

Figure 1: Study Area

3. Objectives

The objectives of the Area F Feasibility Study, as discussed and reviewed with the local partners, are listed below. The objectives serve to define the expected role of transit in the region in terms of service levels and form the basic requirements any proposed transit system

must fulfill in order to be acceptable to the regional district, local municipalities and First Nations communities.

1. Identify the transit market based on demographic data and existing transportation services.
2. Develop service options and outline associated costs. Service options will be consistent with the area's population and land use patterns.

4. Transit Market

Community profiles are useful in determining the size and characteristics of the potential transit markets. Various factors impact transit ridership, including sociodemographic characteristics, individual travel patterns, land use and development patterns, comparable travel times with the private vehicle, parking prices, access to key destinations, transportation network design, existing transportation options, fare prices, and fuel prices.

4.1 Community Overview

Population and Employment Statistics

Electoral Area F, located southwest of Parksville and Qualicum Beach, is comprised of the communities of Coombs, Errington and Hilliers. These communities are connected by Highway 4, a north-south corridor and Highway 4A, an east-west corridor. The community of Coombs has a resident population of 1,500[1] and boasts a bustling market [2] that attracts tourists, primarily in the Spring and Summer. Parksville has population of 13,057 and Qualicum Beach has a population of 9,411. These communities also generate tourist activity during the Spring/Summer. Figure 2 below provides population and employment statistics.

[1] Statistics Canada, 2016.
[2] Coombs Country Market operates March – December, with peak season in the spring and summer.

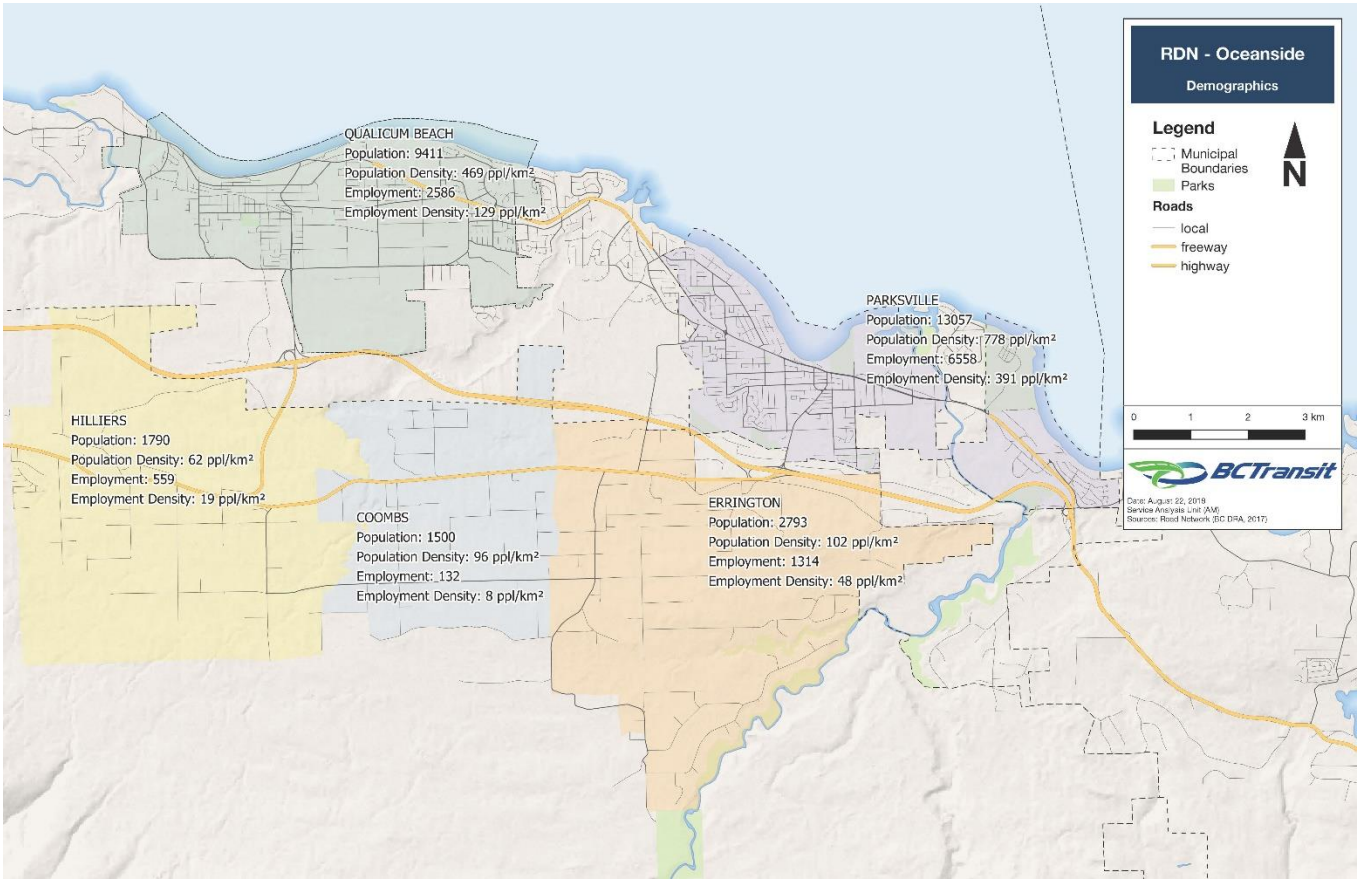

Figure 2: Population Map

Population Distribution of Age

The propensity to use transit varies with age and key changes in age groups can have significant impacts on the future of transit. Specific age groups, such as those under 19 or over 75 are more likely to rely on transit.

The communities of Parksville, Qualicum Beach, Coombs and Errington have a similar age distribution. In these communities, the majority of the population is above the age of 60; 32% of the population is between 60-74 and 22% of the population is above 75. Research indicates that older seniors (75+) make less trips overall compared to other age groups, however tend to be very dependent on transit. They are likely to desire door-to-door service. Recent data suggests that seniors are the fastest growing segment of the population a trend that will be more prominent in areas with an existing high proportion of seniors.

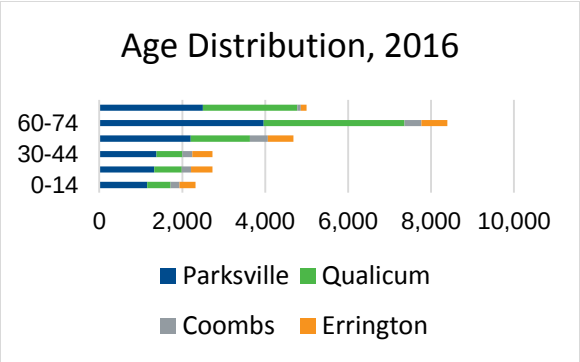

Figure 3: Age Distribution

4.2 Land Use Patterns and Key Destinations

Transit routes that align with population density generate high levels of ridership throughout the entire duration of the trip. Based on evidence across North America, development that is concentrated in nodes but not contiguous generates less overall ridership as the bus will not pick anyone up for the majority of the trip. There are approximately 125 people/km2 and 93 jobs/km2 on Highway 4, less than the guideline of 1,000 people per square kilometer*(see Figure 4: Catchment Area).*

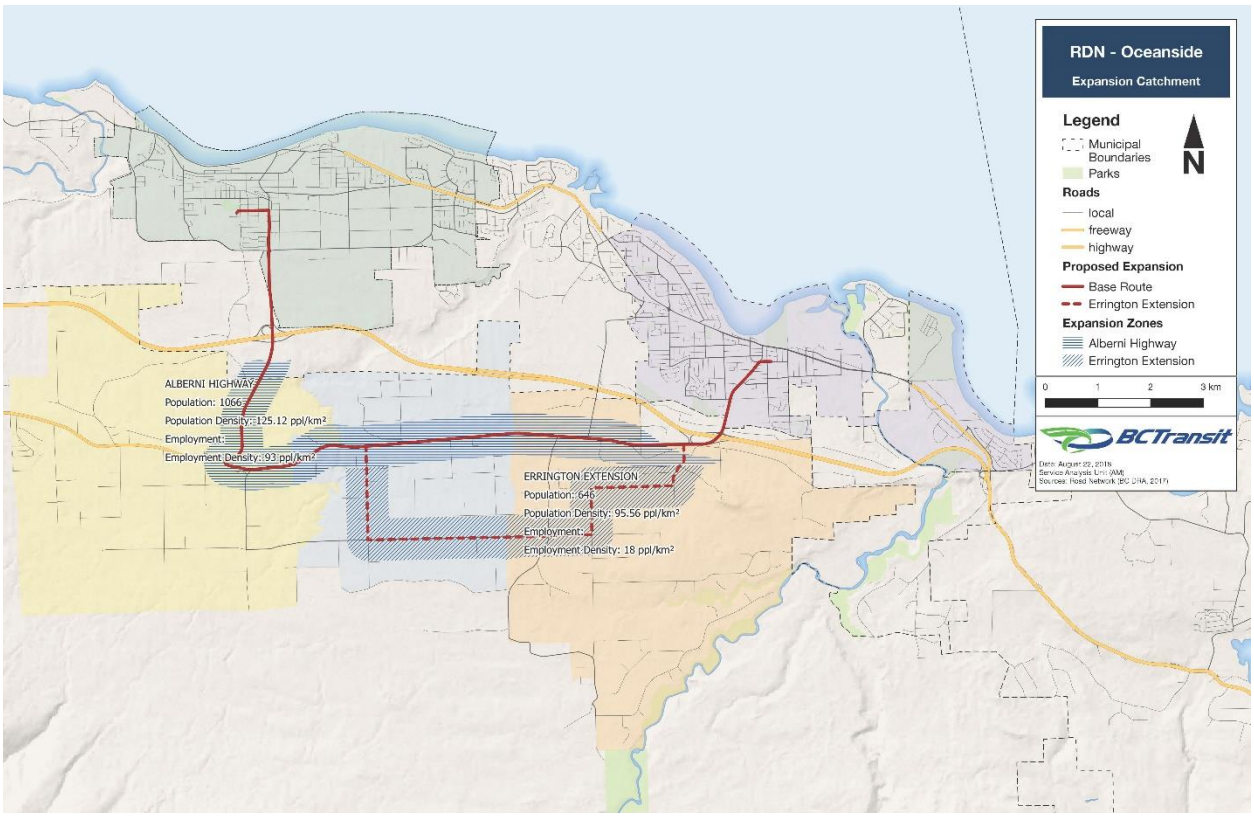

Figure 4: Catchment Area

Key Destinations
This transit line may be an attractive option for tourists in the Region, key destinations along the proposed transit route include the following:

Qualicum Beach:

Figure 5: Qualicum Beach

Oceanside Health Centre: Located in Parksville, provides a variety of health services for residents in this area. New routing between Parkville and Qualicum via Electoral Area F could connect residents to the Health Centre

Figure 6: Oceanside Health Centre

Errington: Residential and farming community, East of Coombs on Highway 4A.

Parksville: Parksville is comprised of a large retirement community and is well-known for its long sandy beaches.

Coombs: Coombs is small community on Highway 4A. The community attracts tourists with the Old Country Market operating March – December from 8:00 am to 8:00 pm. The market features goats living on a roof, Butterfly World, and historic storefronts.

4.3 Estimated Transit Ridership

There are approximately 28,000 people who live in the communities in the Study Area. Based on ridership patterns of similar transit routes such as 99 Deep Bay, ridership is likely to be dispersed throughout the day. In short, customers will use this service for all types of trips rather than for the purpose of commuting to work in peak morning and afternoon hours. Therefore, service options will be developed to meet ridership demand.

The community population, land use patterns, and low density along Highway 4/4A suggest that this transit line will be relatively low in productivity at an estimated 3 rides per hour, below the target of 20 rides per hour as per the guideline set forth in the Transit Future Plan (2014). [3]

5. Service Options

Service options are designed to meet the level of ridership demand and needs of customers. The service description of each option identifies the following:

Conventional Transit

Conventional transit operates mainly in urban areas and uses standard sized buses (35 feet long or more) or high capacity buses in dense urban areas. Trips operate on fixed routes and follow schedules.**Flexible Transit** or **Flex-Routed Transit** is built on a fixed route; however extra time is scheduled into trips. This extra time enables the bus to go off route within 2 kilometres to provide door-to-door pick up and/or drop off.

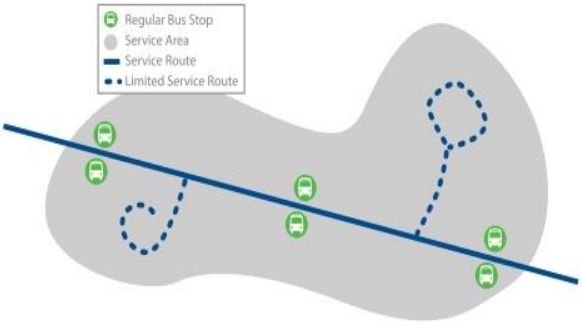

Figure 7: Flex-Routed Transit

Given the relative high cost of providing HandyDART service, it is important to ensure that customers are matched with the type of transit service needed. This helps to ensure that limited resources are allocated appropriately and available for those that require the service. In order to meet the needs of the ageing demographic, alternative service delivery model, such as Flexible Transit will be considered.

The benefit to this flexible transit model is that it provides the predictability of scheduled service for the general population while also being providing a higher level of access.

Definitions

- Service Hours - Estimated number of annual hours that will be utilized based on the time to complete one round-trip and any recovery time.
- Ridership - Estimated annual ridership based on ridership levels on routes in other, similar transit systems.

[3] Transit Future Plan (2014) https://bctransit.com/servlet/documents/1403641050837

- Vehicle Requirements - Estimated number of vehicles required to operate the service option.
- Estimated Cost - Expected annual cost based on a standardized operating cost per service hour and estimated vehicle costs, off-set by passenger revenue.

Service Options

The two transit service options, as outlined below, seek to provide a minimum level of service to residents between Qualicum Beach, Coombs, Errington, and Parksville. The options provide high level cost estimates, two vehicle type (light-duty and heavy-duty) options, frequency, and span. All trips would operate approximately between 8:00 am and 8:00 pm.

Proposed Transit Line

This route will operate bi-directionally between Parksville and Qualicum, serving Coombs via Highway 4.

Trip Connections

Connections would be available in Parksville and Qualicum Beach. Route 88 services Parksville locally, and Routes 98 & 97 service Qualicum Beach locally. Route 91 provides service to & from Nanaimo, and Route 99 provides service to Deep Bay.

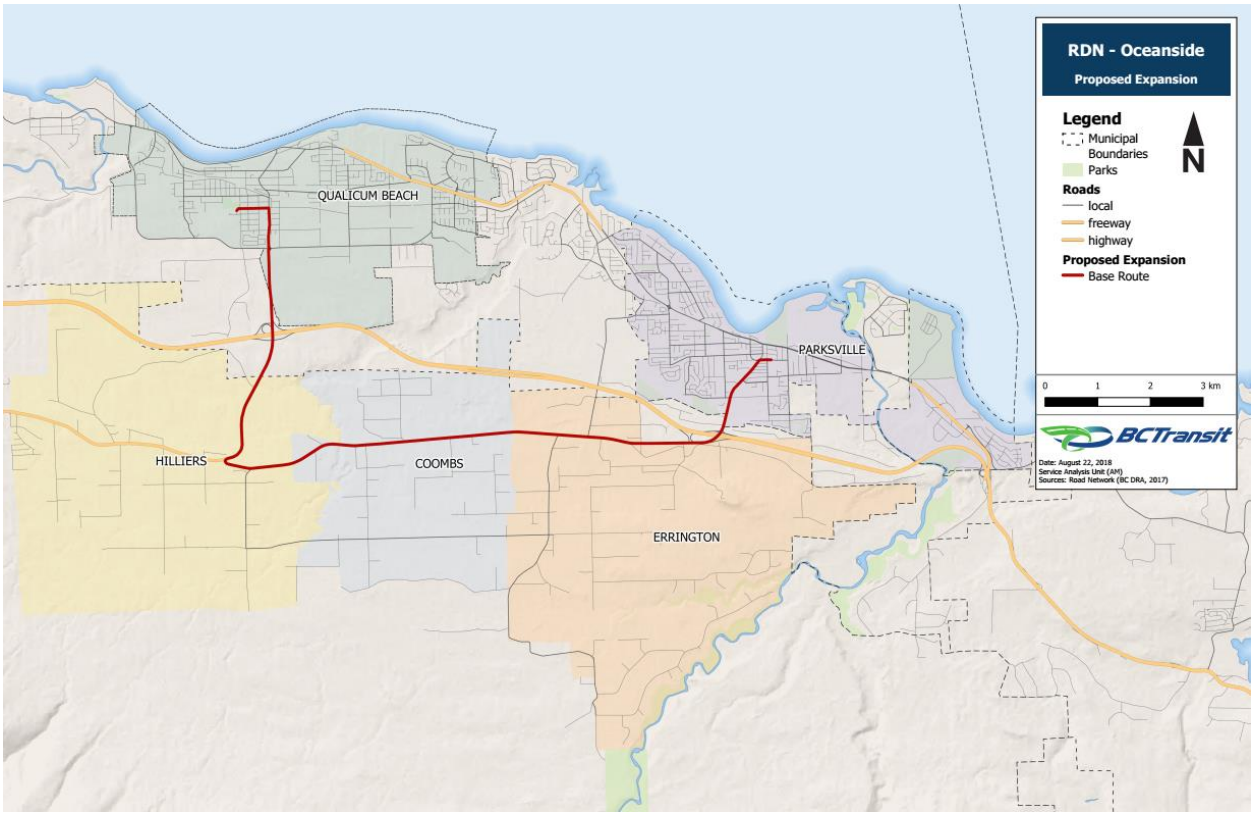

Figure 8: Route Option 1

Service Option 1

Conventional- Monday to Sunday

This option provides transit service Monday through Sunday between Parksville, Coombs (along Highway 4) and Qualicum Beach on a fixed-route.

Service Option 2

Flex-Route Paratransit Service- Monday to Sunday

This option provides service to Parksville, Coombs and Qualicum with on-demand service to Errington. This service option operates using a conventional route and schedule, with time built into the schedule for the bus to deviate from the route up to 2 kilometres (Figure 9: Route Option 2).

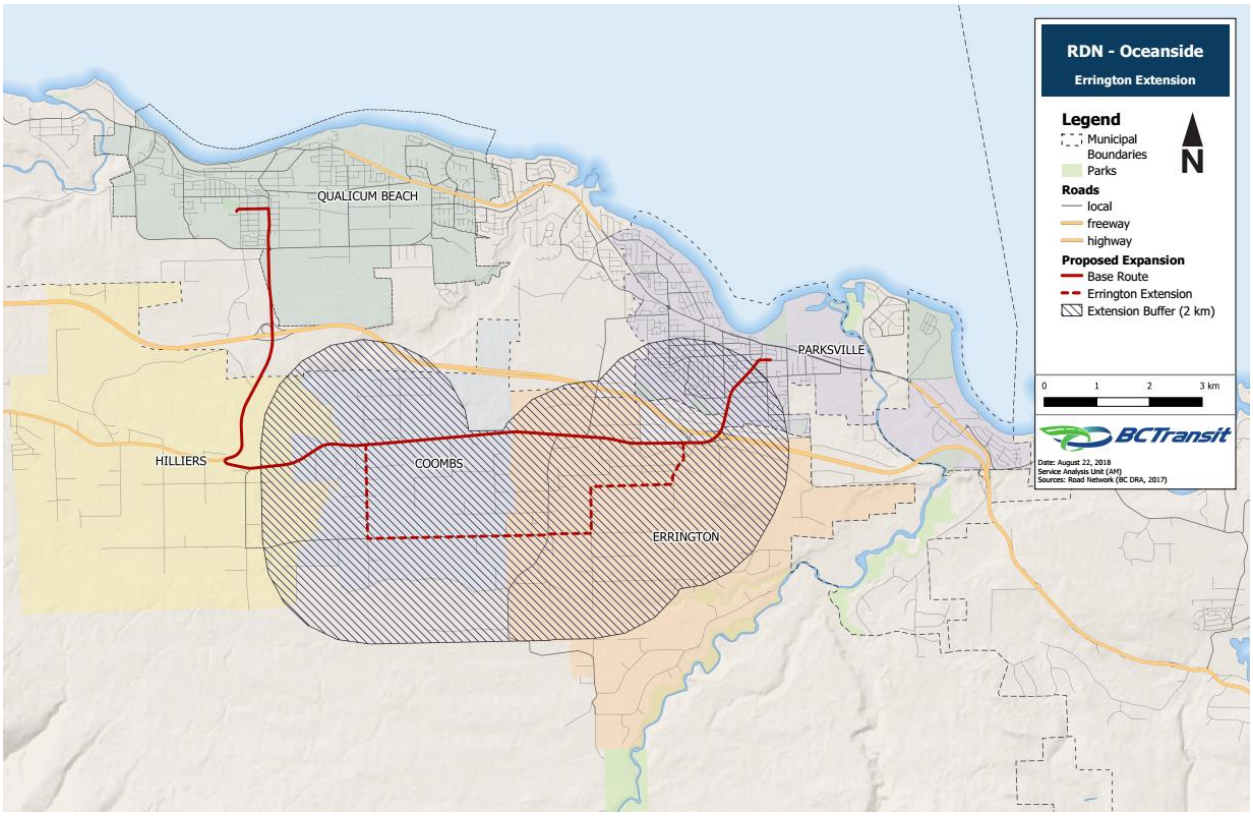

Figure 9: Route Option 2

6. Fleet and Infrastructure Options

Infrastructure Requirements

Facility Capacity Requirements: An evaluation of the capacity requirements at the RDN maintenance and operations facility will need to be conducted to ensure additional buses can be accommodated.

Bus Stops and Pullouts: A more detailed service plan will be developed in Phase II to

determine potential stops and their associated infrastructure requirements, such as pull outs, on Highway 4/4A.

Vehicle Requirements

BC Transit's fleet is shared across the province and lease-fees are standardized by bus classification. Light-duty vehicles, such as the ARBOC are leased at a lower rate than heavy-duty vehicles, such as the CNG New Flyer. Different bus types also have varying environmental impacts: light-duty vehicles produce less GHG emission than heavy-duty vehicles.

Service Options (*Section 7)* were costed with two different types of buses. Given that ridership per trip is expected to be approximately 3-5 trips per ride, coupled with environmental and financial impacts, BC Transit recommends utilizing an ARBOC for this transit service.

CNG New Flyer

The 40' CNG New Flyer bus is used throughout the Regional District of Nanaimo's Transit System. It is a heavy duty bus that can accommodate 36 seated passengers plus standees and 2 wheelchairs.

Figure 10: CNG New Flyer

ARBOC

The ARBOC is a light duty bus that seats 16-20 passengers and from 3-6 wheelchairs. This bus cannot accommodate standees. This bus is commonly used in custom and paratransit systems across the province.

Figure 11: ARBOC

7. Summary of Service Options

The two transit service options, as outlined above, seek to provide a minimum level of service to residents between Qualicum Beach, Parksville, Coombs, and Errington. The options provide high level cost estimates, vehicle requirements and options, frequency, and span.

Service Options	Buses Required	Total Hours	Estimated Ridership	Estimated Total Annual Cost (ARBOC)	Estimated Local Share Cost (ARBOC)	Estimated Annual Cost (CNG New Flyer)	Estimated Local Share Cost (CNG New Flyer)
Option 1: Weekday and weekend service all year	1 bus 1 spare	4,000	6,000	$447,990	$272,600	$448,617	$273,200
Option 2: Flex-Routed Paratransit	1 bus 1 spare	3,000	3,000	$354,049	$222,500	$354,676	$223,100

8. Next Steps

It is recommended that the Regional District of Nanaimo receive this report for information to update the working list of RDN Service Improvement Priorities. Upon direction from Regional District of Nanaimo, BC Transit will proceed with Phase II of this Feasibility Study. Phase II will include refinement of service options, more detailed costings, infrastructure requirements, and a cost sharing strategy. Public engagement and stakeholder meetings with surrounding communities will be also be facilitated.