Transit Future Plan

REGIONAL DISTRICT OF NANAIMO | February 2014

REGIONAL DISTRICT OF NANAIMO | BCTransit

TRANSIT future

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TRANSIT *future*

Executive Summary

Transit has tremendous potential to contribute to a more economically vibrant, livable and sustainable community. The need to realize this potential in the Regional District of Nanaimo (RDN) is increasingly important due to factors such as climate change, population growth and an aging demographic. Projected future growth in the RDN will place increasing pressure on the existing transportation system.

To address the factors noted above, the RDN has developed a Regional Growth Strategy which establishes a policy framework and guidelines to move towards sustainable development. This Transit Future Plan is informed by and complements the Regional Growth Strategy and supporting local Official Community Plans.

The Transit Future Plan has also been informed by the BC Provincial Transit Plan and the BC Transit 2030 Strategic Plan. The Transit Future Plan was developed through a participatory planning process involving a stakeholder advisory group and broad community consultation. The Transit Future Plan envisions the RDN transit network 25-years from now and describes the services, infrastructure and investments that are needed to achieve that vision.

Public Consultation

Development of the Transit Future Plan included consultation with the public and local government. BC Transit and the RDN completed public consultation initiatives including the formation of a stakeholder advisory group, two phases of public consultation with BC Transit's mobile open house--the Transit Future Bus--online and print surveys and project updates on the Transit Future Project website. These initiatives were completed to raise awareness of the plan, receive input on determining priorities for implementation and to ensure that the delivery of the plan will meet the diverse needs of the people within the RDN.

Vision and Goals

Vision Statement

"The Regional District of Nanaimo Transit System supports the region's high quality of urban and rural life by connecting the region's rural village centres, neighbourhoods and urban areas with high quality transit services that will encourage more people to choose transit as their preferred choice of travel. Integration with other modes of transportation affords people of all abilities a basic level of mobility throughout the region. Transit service is tailored to the needs of the region's population to be safe, convenient, cost-effective and environmentally responsible."

Goals

1. **The Transit System connects** the region's urban and rural communities with their downtowns and neighborhood centres with transit services that offer an attractive alternative to driving. This is accomplished with routes and schedules that are frequent, direct, safe and convenient.
2. **The Transit System supports** sustainable land use patterns and mobility networks that encourage a reduced automobile dependency and provides access to services and employment.
3. **The Transit System reduces** the region's impact on the environment by providing residents a transportation choice that will lower their GHG emissions and energy consumption.
4. **The Transit System provides** the majority of the residents in the region access to their communities.
5. **The Transit System is operated** in a fiscally responsible manner providing efficient cost-effective services.

Ridership Target

The Transit Future Plan sets a transit mode share target of five per cent for all trips by 2039, which will require the RDN's transit ridership to grow from 2.7 million to 13.5 million trips per year. This target aligns with the Provincial Transit Plan's transit mode share target for regional centres in British Columbia.

The Transit Future Plan Network

Rapid Transit Network (RTN)

The Rapid Transit Network (RTN) moves passengers between major regional destinations along key transportation corridors. Service is very frequent (at least 15 minutes between 7:00 a.m. and 10:00 p.m.) on weekdays and stops less often than traditional transit services. The RTN uses high capacity buses and may include future investments along the corridor in transit priority measures, right-of-way improvements, premium transit stations, service branding and off-board ticketing.

Frequent Transit Network (FTN)

The Frequent Transit Network (FTN) provides medium to high density mixed land use corridors with a convenient, reliable and frequent (at least 15 minutes between 7:00 a.m. and 10:00 p.m.) transit service. The FTN will carry a large share of the transit system's total ridership, justifying frequent service, a high level of transit stop amenities and service branding.

Local Transit Network (LTN)

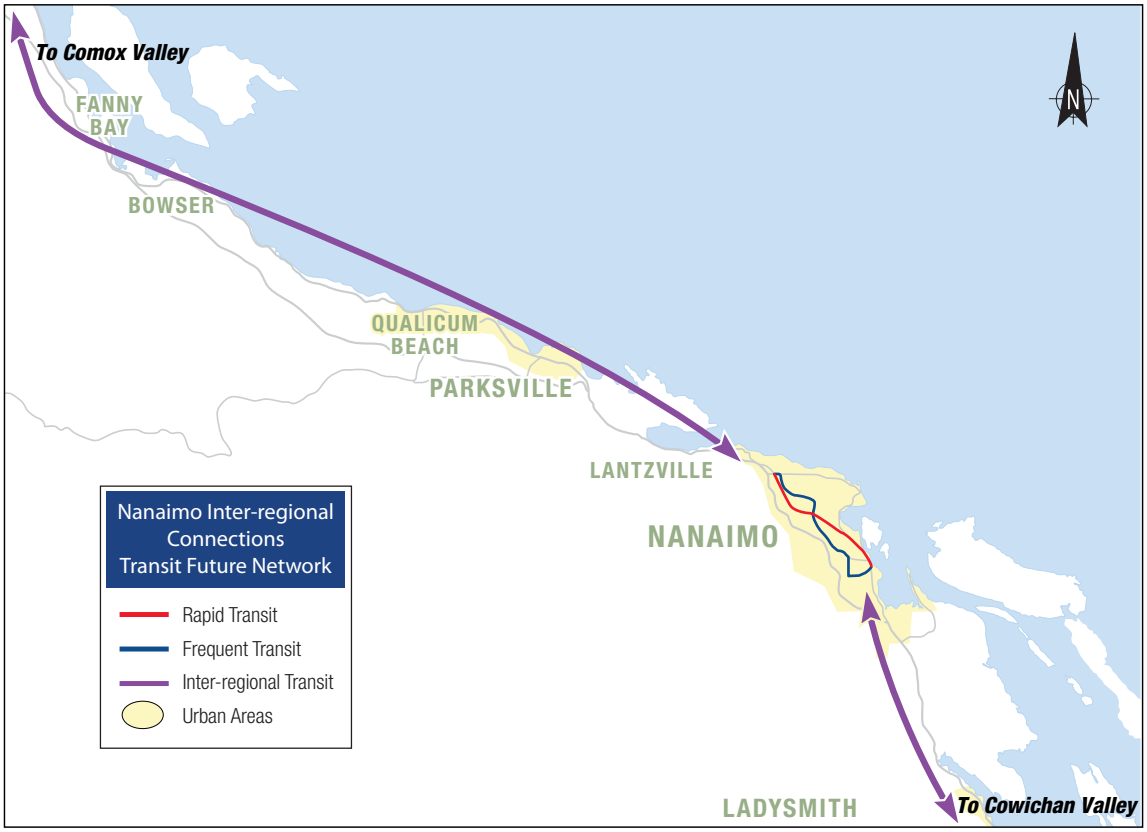
The Local Transit Network (LTN) is designed to connect neighbourhoods to local destinations, to the RTN and to the FTN. Frequency and vehicle type are selected based on demand.

Targeted Services

Targeted services are a collection of transit services that are more focused on the needs of specific customers. These services include:

- Inter-regional: provide connections between regions outside of the local transit service area
- Custom - handyDART: door-to-door services for customers unable to use the conventional service
- Paratransit: may include transit services that are demand-responsive or operate with flexible routes and schedules in low ridership areas

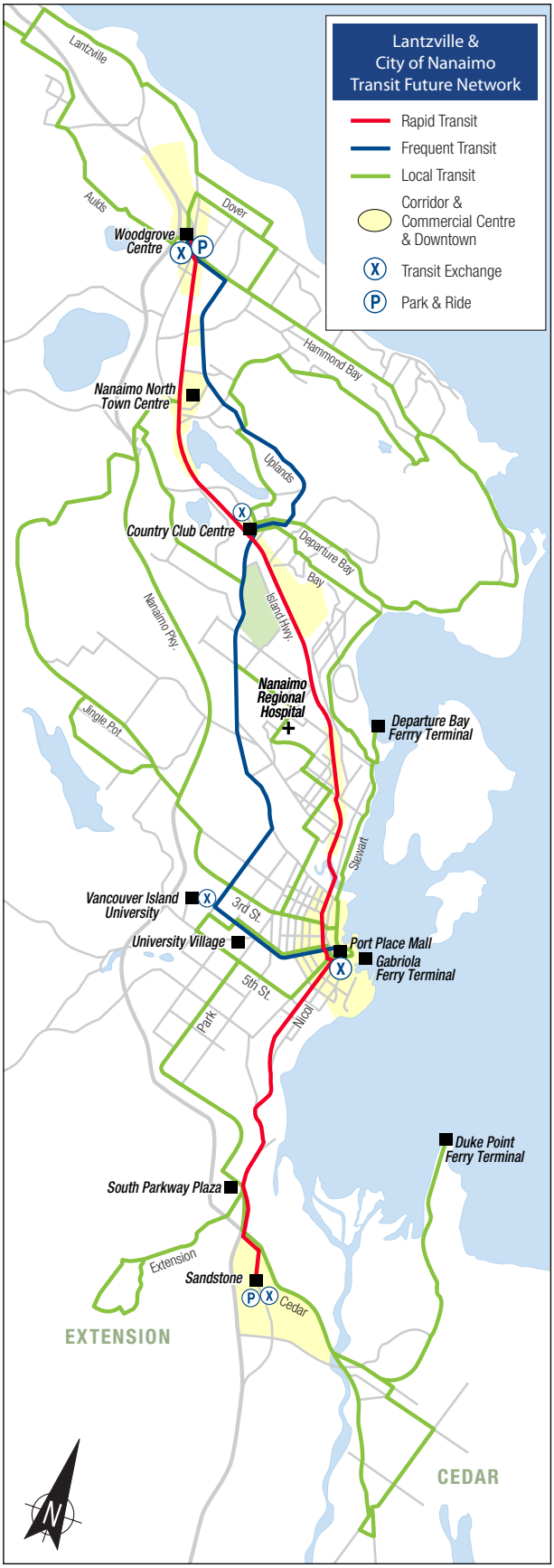
Map 1A


To Comox Valley
FANNY BAY
BOWSER
QUALICUM BEACH
PARKSVILLE
LANTZVILLE
NANAIMO
LADYSMITH
To Cowichan Valley
N
Nanaimo Inter-regional Connections Transit Future Network
Rapid Transit
Frequent Transit
Inter-regional Transit
Urban Areas

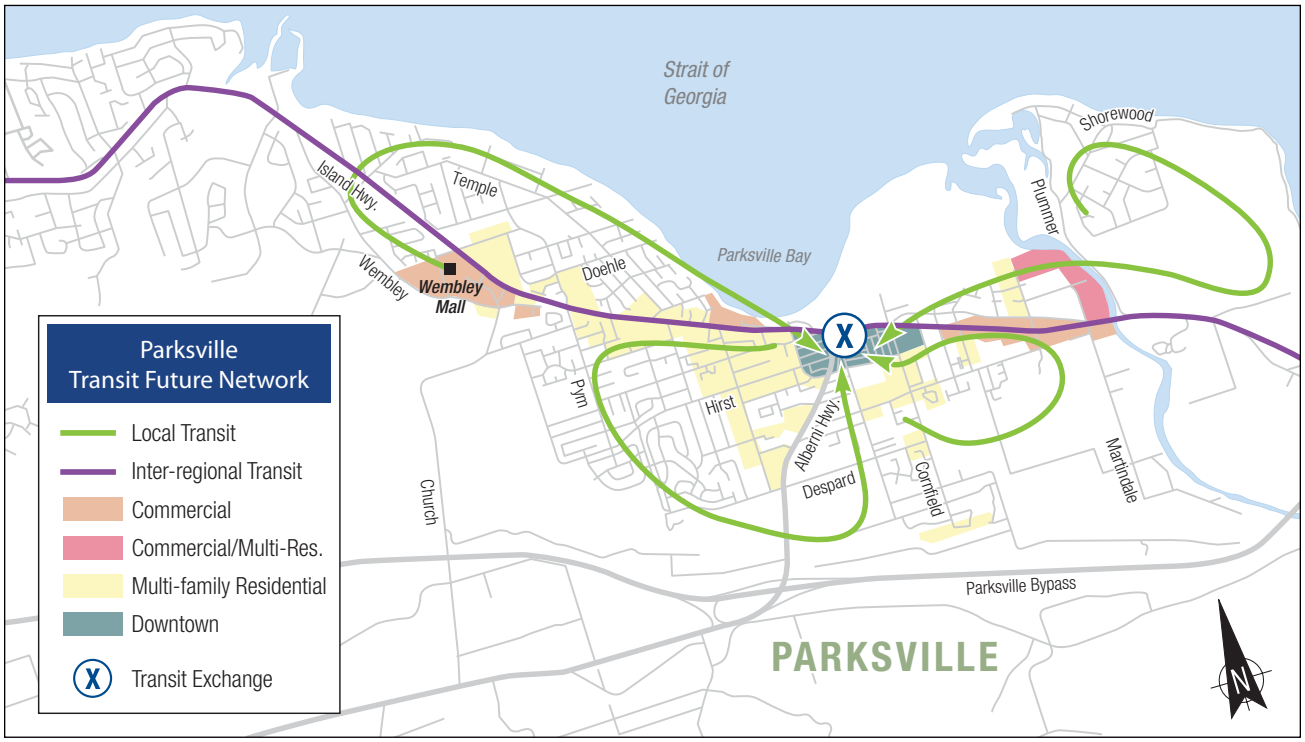
Map 2A


Gabriola Island Transit Future Network
Local Transit
Corridor & Commercial Centre & Downtown
Ferry to Nanaimo
Ferry Terminal
Berry Point
Twin Beaches Shopping Centre
Chelwood
Norwich
Spruce
Hemlock
Taylor Bay
Gallagher
Tin Can Alley
Rollo
McCloy
Barrett
Whalebone
Tashtego
Gabriola Elem.
North Road
Gabriola Village
Bertha
Eastham
Agricultural Hall
Lockinvar
Harrison
Stephens
Pat Burns
Golf Course
South Road
Hoggan Lake
Coats
Ferne
Tait
Cilgpon
North Road
Silva Bay
Silva Bay Marina
Peterson
Coast
Community Hall
Garland
South Road
Degnen Bay
Price
N

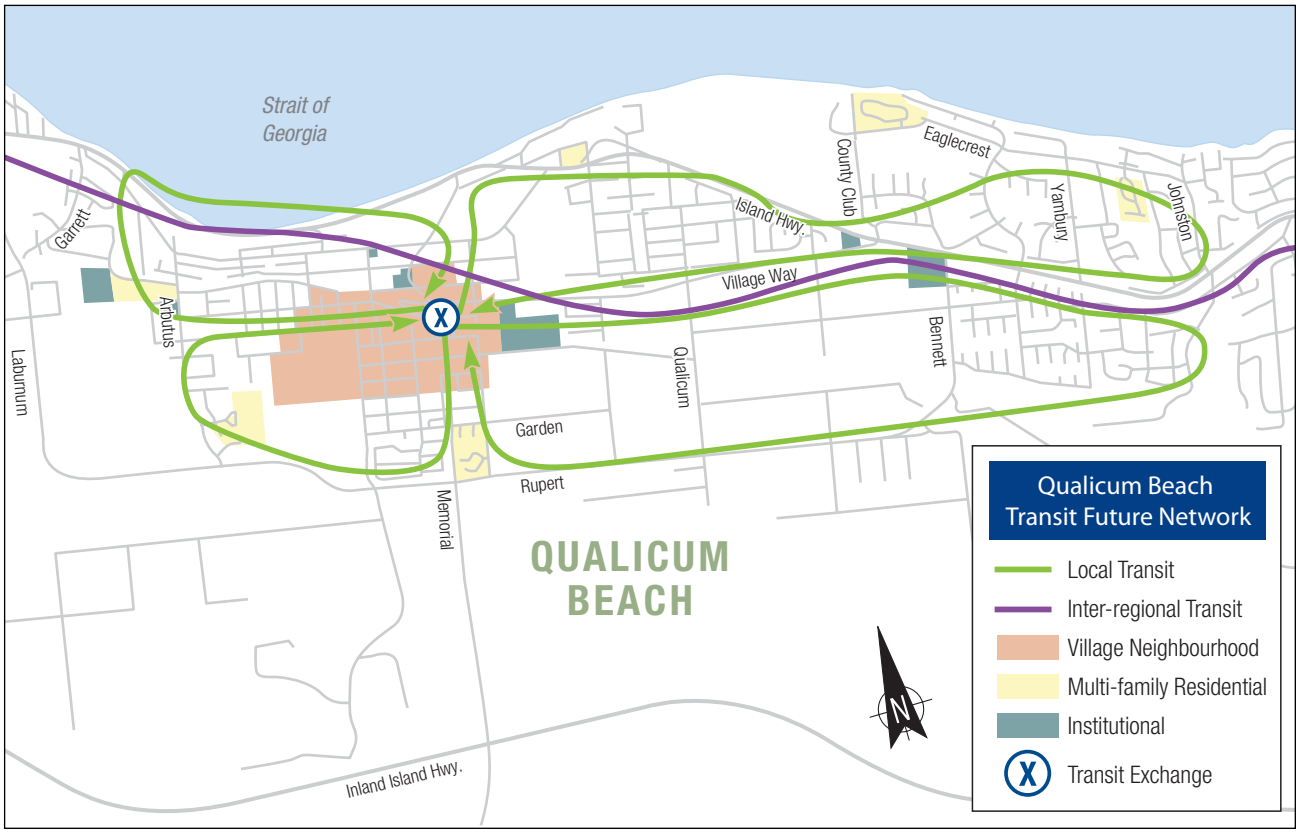
Map 3A


Lantzville & City of Nanaimo Transit Future Network
Rapid Transit
Frequent Transit
Local Transit
Corridor & Commercial Centre & Downtown
Transit Exchange
Park & Ride
Lantzville
Aulds
Dover
Woodgrove Centre
Hammond Bay
Nanaimo North Town Centre
Uplands
Country Club Centre
Departure Bay
Bay
Island Hwy
Nanaimo Pky
Nanaimo Regional Hospital
Jingle Pot
Departure Bay Ferrry Terminal
Stewart
Vancouver Island University
3rd St.
University Village
Port Place Mall
Gabriola Ferry Terminal
5th St.
Park
Nicol
Duke Point Ferry Terminal
South Parkway Plaza
Extension
Sandstone
Cedar
EXTENSION
CEDAR
N

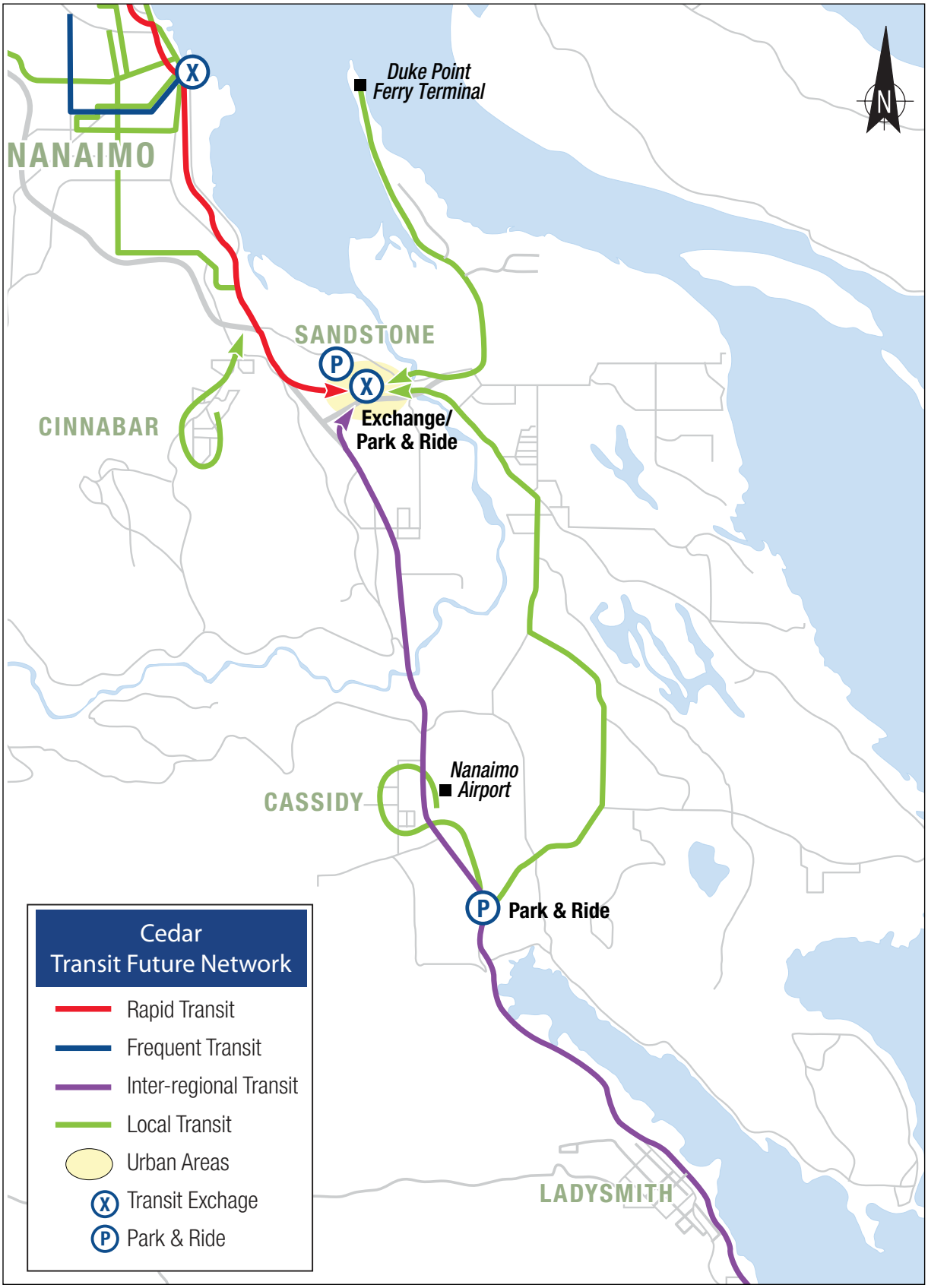
Map 4A


Strait of Georgia
Island Hwy.
Temple
Wembley
Wembley Mall
Doehle
Parksville Bay
Shorewood
Plummer
Pym
Hirst
Alberni Hwy.
Despard
Cornfield
Martindale
Church
Parksville Bypass
PARKSVILLE
Parksville Transit Future Network
Local Transit
Inter-regional Transit
Commercial
Commercial/Multi-Res.
Multi-family Residential
Downtown
Transit Exchange

Map 5A


Strait of Georgia
Garrett
Arbutus
Laburnum
Island Hwy.
County Club
Eaglecrest
Yambury
Johnston
Village Way
Bennett
Qualicum
Garden
Rupert
Memorial
QUALICUM BEACH
Inland Island Hwy.
Qualicum Beach Transit Future Network
Local Transit
Inter-regional Transit
Village Neighbourhood
Multi-family Residential
Institutional
Transit Exchange

Map 6A


NANAIMO
Duke Point
Ferry Terminal
SANDSTONE
CINNABAR
Exchange/
Park & Ride
Nanaimo
Airport
CASSIDY
Park & Ride
LADYSMITH
N
Cedar
Transit Future Network
Rapid Transit
Frequent Transit
Inter-regional Transit
Local Transit
Urban Areas
Transit Exchage
Park & Ride

Implementation Strategy

Establishing the Transit Future Plan network requires prioritizing transit investments and developing an implementation strategy to transform today's network into the future network. The plan forecasts that a fleet of 160 buses and 400,000 service hours will be needed to operate custom transit services by 2039.

Short-term Implementation Priorities (0-5 years)

Service Improvement	Infrastructure Improvement
Restructure existing routes to establish the Rapid and Frequent Transit corridors by restructuring existing routes and begin to invest in increases to service levels Restructure transit routes to serve the new Downtown Nanaimo Transit Exchange Enhance service on the Local Transit Network Introduce Inter-regional Transit Services to the Cowichan Valley The Regional District of Nanaimo and BC Transit will explore service options to connect Electoral Area 'H' with the Comox Valley Regional District	Plan and construct an expanded Transit Exchange in Downtown Nanaimo Complete a Rapid Transit Corridor Study for the Island Hwy, develop an incremental implementation plan and establish rapid transit stations Invest in technology to monitor ridership and service performance Improve customer information through the following: • An online trip planner or provide transit information on Google Transit • Additional transit information at the stop level • Branding strategies developed for the Rapid and Frequent Transit Network Continue to improve transit customer facilities: • Ensure that transit stops are spaced along a corridor at appropriate intervals • Invest in on-street customer amenities • Improve universal accessibility of transit stops • Improve customer information Update the Operation Facilities Strategy

Medium-term & Long-term Implementation Priorities

Service Improvement	Infrastructure Improvement
Continue to increase service levels of the Frequent and Rapid Transit Network to meet ridership demands Enhance service on the Local Transit Network by increasing frequency and span of service and expanding service to support future development Expand Inter-regional service to the Comox Valley Extend the Rapid Transit Network to South Nanaimo	Match service demand to transit vehicle capacity Establish and expand critical transit facilities needed to support the Rapid and Frequent Transit network: • Expanded Woodgrove Centre exchange and Park & Ride • Expanded Country Club Mall exchange • Expanded exchanges in Qualicum and Parksville • New Sandstone/South Parkway Plaza exchange and Park & Ride • New/expanded VIU exchange Establish Park & Ride in rural areas to support the Inter-Regional Transit Network Implement Transit Priority Measures on the Rapid and Frequent Transit Network as required Expand the operational and maintenance facility capacity to accommodate growth of the transit fleet Continue to improve customer information through the use of real-time information and bus stops

Custom Transit Service and Transit Accessibility

Improvements to accessibility and custom transit services will make the transit system more accessible for people of all ages and abilities. The plan forecasts that a fleet of 30 buses and 60,000 service hours will be needed to operate custom transit services by 2039. Service improvements to enhance accessibility and custom transit include:

- Improve the universal accessibility of the transit system services and infrastructure
- Aligning the hours of operation and service area with the conventional system
- Increase service availability to allow customers to plan medical appointments, shopping and casual trips throughout the entire service day

Service Design Standards and Route Performance Guidelines

As part of the on-going management of the transit network, service design standards and performance guidelines have been developed as tools to facilitate service planning decisions and measure how well the transit system is progressing towards achieving its goals. Service standards define service levels, the service area and when new service should be introduced to an area. Performance guidelines measure service effectiveness by defining numerical thresholds and targets for the system and its routes and services. These measures are meant to ensure an acceptable level of service quality to the customer, and along with the Transit Future Plan, guide planning decisions and recommendations of BC Transit and RDN staff to the Transit Select Committee.

Over-supply | Efficient and Productive | Overcrowded/pass-ups

Moving Forward

Funding the Plan

To meet the mode share and ridership targets of the Transit Future Plan, capital and operating investments in the transit system will be required over the next 25 years. Annual operating costs are based on service hours that are projected to increase from the existing 140,894 hours to approximately 460,000 hours. The plan also calls for capital investments that include:

- An expanded transit fleet (total of conventional and custom) from the existing 62 vehicles to 190 vehicles
- New transit exchanges/terminals and Park & Rides
- Improvements to customer amenities at transit stops
- Transit priority such as queue-jumpers bus lanes or bus only lanes on the Island Hwy as required
- An expanded or new operations and maintenance centre

Given the level of transit investment anticipated over the coming decades, the way in which transit will be funded needs to be reviewed. BC Transit and its funding partners will need to work together to achieve stable and predictable funding sources beyond the existing mechanisms.

Keys to Success

To guide the plan from vision to reality will require an on-going dialogue between the Province, BC Transit and RDN on transportation policy, funding and the connection between land use and transit planning.

The Transit Future Plan builds upon local land use and transportation plans and will be used to communicate the vision and direction for transit in the region. Steps required for the success of the plan include integrating the transit strategy into other municipal projects, supporting travel demand management measures, transit oriented development and transit-friendly land use practices.

Introduction

Why Do We Need a Transit Future Plan?

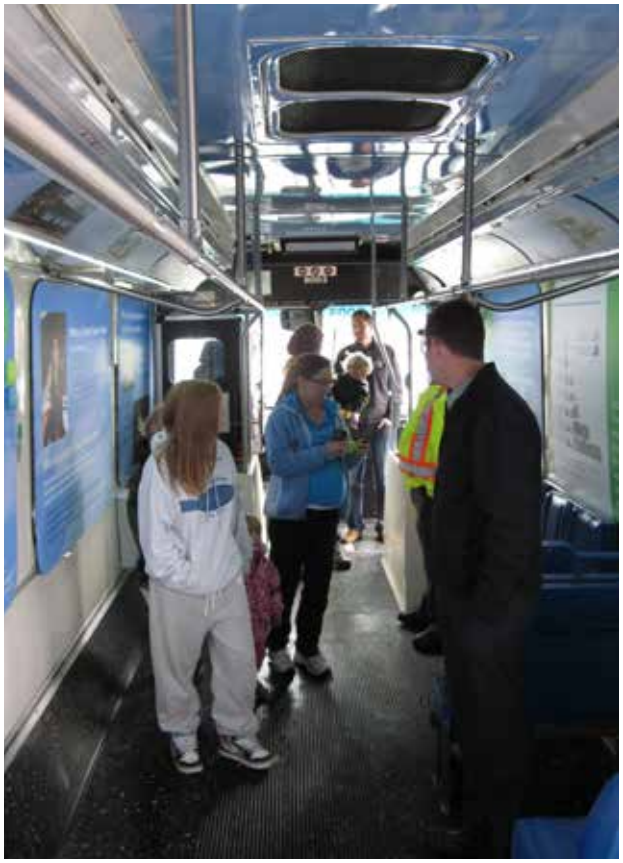
Transit has tremendous potential to contribute to a more economically vibrant, livable and sustainable community. The need to realize this potential in the RDN is increasingly important due to factors such as climate change, population growth and an aging demographic. BC Transit has initiated the development of a Transit Future Plan in the RDN and in other communities across the province to support the creation of more sustainable and livable communities.

Transit Future Plans are intended to:

- Focus public investment in transportation (the movement of people and goods)
- Influence and support urban form that lends itself to service by public transit and active modes of transportation (e.g. walking and cycling)
- Create communities and neighbourhoods where people can live, work and play without complete reliance on automobiles
- Ensure the road network is available for the efficient transportation of people and materials
- Reduce energy consumption and the production of greenhouse gas emissions by reducing the use of single occupancy vehicle
- Provide access to services in the community such as health care, education and business and,
- Make transit more competitive with private automobile travel

What is a Transit Future Plan?

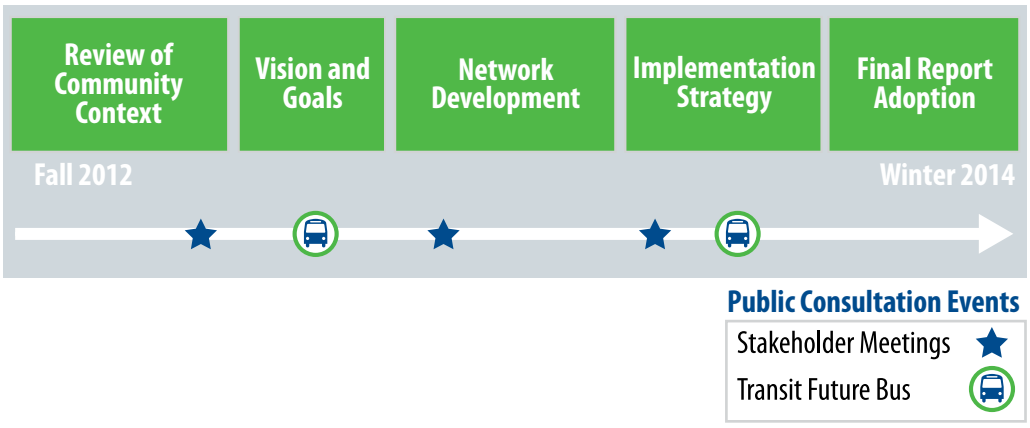
The Transit Future Plan for the RDN envisions the transit network 25 years from now and describes the services, infrastructure and investments that are needed to get there. Achieving the intended outcomes of the plan requires a collaborative approach between the RDN, local municipal governments, BC Transit and the Ministry of Transportation and Infrastructure.



The plan intends to promote and support planned land use in the region that will facilitate an increase in the use of transit and other sustainable modes of transportation. Municipal, regional and provincial planning agencies are pivotal to the success of the plan through strategic transit oriented development, transit friendly land use practices travel demand management practices and the provision of road right-of-way for significant transit priority measures.

The Transit Future Plan process began with a review of the community context, future population growth projections and local plans to develop comprehensive background information (see Figure 1). BC Transit then worked with the community to develop a plan for the future transit network and implementation strategy through meetings with a stakeholder group and two public consultation rounds.

Figure 1: Transit Future Plan Process



Study Area

This plan has been created for the RDN, located on the central east coast of Vancouver Island which includes the municipalities of Nanaimo, Lantzville, Parksville and Qualicum Beach and seven unincorporated Electoral Areas. The RDN has a population of approximately 146,600 (Statistics Canada, 2011 Census of Population) and in recent years has been recognized for its leadership among Canadian local governments in sustainable community development, improving services and quality of life for residents, while reducing the local environmental footprint and dependence on limited resources. The RDN has an area of 2,038 km^2.

Map 1: Study Area

Linkages to Other Plans

The Transit Future Plan is influenced by RDN, local municipal, Provincial and BC Transit planning initiatives.

Provincial Transit Plan (2008)

The Provincial Transit Plan is British Columbia's $14 billion strategy for expanding fast, reliable and green transit. The plan emphasizes that, from a transportation perspective, the best means of reducing greenhouse gas emissions is to focus on dramatically increasing transit ridership (and thereby reducing single occupancy vehicles), linking transit to active modes of travel (walking and cycling) and focusing land use decisions, made primarily by local government, on transit oriented development or at least transit friendly development. The Transit Future Plan sets the framework for accomplishing these substantial goals in the RDN.

The Provincial Transit Plan sets a number of measurable targets such as:

- Reduce greenhouse gas emissions and air contaminants from vehicles by 4.7 million tonnes by 2020

- Double transit ridership in BC to over 400 million trips a year by 2020
- Increase the transit market share in regional centres from three per cent to four per cent by 2020 and to five per cent by 2030. For the RDN, this would translate into increasing transit ridership from 2.7 million to 13.5 million passengers a year by 2039.

BC Transit 2030 Strategic Plan

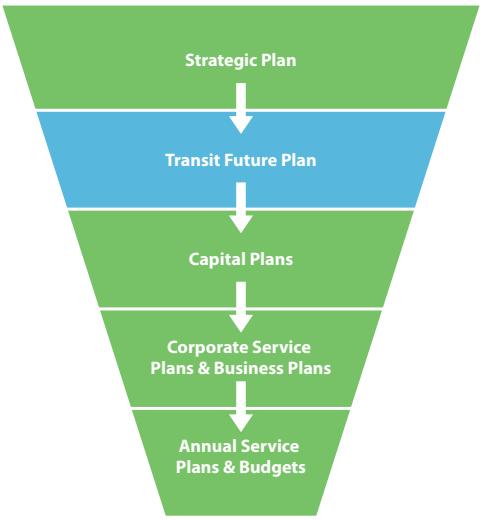
2010 – The strategic plan establishes BC Transit's vision to lead the development of sustainable transportation networks that will shift the balance to greener travel and a healthier province. It determines BC Transit's long-term direction and priorities. Most of all, the plan declares the organization's on-going commitment to develop transportation options that connect people and communities to a more sustainable future. See Figure 3.

The Transit Future Plan is designed to support key initiatives in BC Transit's Strategic Plan. Specifically, this plan contributes to the following Strategic Plan priorities:

- Increase integration with other types of sustainable travel, such as walking and cycling
- Influence land use and development patterns
- Identify and establish priority corridors for transit
- Enhance existing partnerships and develop new ones
- Increase BC Transit's environmental, social and economic accountability

Transit Future Plans developed for each community provide guidance to future BC Transit service design standards, performance guidelines, three-year service plans, annual service plans, capital plans and budgeting processes.

Figure 3: BC Transit Planning Hierarchy



Linkages to Local Plans

In addition to the Provincial Transit Plan and BC Transit's Strategic Plan, the Transit Future Plan was directly influenced by and sought to coordinate with local planning efforts including, but not limited to:

- **Nanaimo Regional Transit Business Plan, 2008** – A long range plan for expanding regional transit service and doubling ridership by 2015
- **Regional Growth Strategy, 2011**– A strategic plan adopted by the RDN Board that defines a regional vision for sustainable growth
- **City of Nanaimo Transportation Master Plan 2013** – A long-term transportation strategy that will guide transportation decision-making in the City of Nanaimo over the next 25 years
- **Official Community Plans (OCPs)** – providing overall plans for communities in the RDN, guiding decisions on future land use and transportation priorities
- **Village and Neighbourhood Plans –** Village and Neighbourhood Plans provide clear and comprehensive land use vision for tracts of land at the neighbourhood level

Participation

Development of the Transit Future Plan involved collaboration between BC Transit and the RDN staff to ensure the plan aligned with and built on existing Regional District land use and transportations plans. A Transit Future Plan Working Group was established to guide the creation of the plan. BC Transit and the RDN completed public consultation initiatives including the formation of a stakeholder advisory group, two phases of public consultation with BC Transit's mobile open house--the Transit Future Bus--online and print surveys and project updates on the Transit Future Project Website. These initiatives were completed to raise awareness of the plan, receive input on determining priorities for implementation and to ensure that the delivery of the plan will meet the diverse needs of the people within the RDN.

Transit Future Plan Consultation

The Transit Future Plan consultation initiatives included the following:

Stakeholder Advisory Group

The role of the group was to provide open, honest and constructive feedback and act as the liaison between each individual participating organization and BC Transit. The group was comprised of major institutions, community groups, business groups, residential associations, local and regional government staff and Ministry of Transportation and Infrastructure ("MoTI") staff. Key meetings included:

- An initial stakeholder advisory group meeting was held in November 2012 to discuss the planning process and community context; and,
- A meeting focusing on network development exercises and to identify implementation priorities was held in March 2013.

Consultation with the broader community was conducted in two phases at key milestones of the plan to ensure the final plan reflects the needs and priorities of the community. Regular updates on the progress of the Transit Future Plan were provided to the RDN's Transit Select Committee throughout the planning process.

PHASE ONE: Listening Phase

Transit Future Project Website

A dedicated web page was established for the Transit Future Plan, which provides materials developed throughout the plan, updates on upcoming events, reports, presentations and online surveys to solicit feedback during consultation.

Transit Future Bus

In October of 2012, ten Transit Future Bus events were held in the RDN during the Phase One - Listening Phase. The Transit Future Bus is an out of service bus that has been converted into a mobile open house facility complete with information on the Transit Future Plan, BC Transit and a Kids' Zone.

Events were held at the following locations:

- Bowser, Magnolia Court
- Cedar, 49th Parallel Grocery Store
- Lantzville, Town Hall
- Parksville, Thrifty Foods
- Qualicum Beach, Qualicum Foods
- Nanaimo, Beban Park: The Nanaimo Pumpkin Festival
- Nanaimo, Vancouver Island University
- Nanaimo Downtown, Port Place Centre
- Nanaimo, South Parkway Plaza
- Nanaimo, Woodgrove Centre

Attendees were able to provide feedback directly to BC Transit staff and municipal staff on-board or via an on-board survey and comment board. In total, more than 1,390 visitors were welcomed on-board the bus across the region.

Round 1: Public Feedback Facts			
Visitors	1,390	Print Surveys	112
Post-it Comments	462	Web Surveys	119

Summary of Public Feedback

Public feedback from the stakeholder advisory group and the Transit Future Bus events revealed the following major themes:

- General satisfaction with the existing transit services
- Many respondents believe transit will play an increasingly more important role in the community over the next 25 years
- A strong desire for:
  - » More frequent transit service and improved connections between transit services and BC Ferries Terminals
  - » An extension of the hours of operations in the evenings and early mornings
  - » Provision of express service with more direct routes
  - » Inter-regional transit service connecting residents to the Cowichan Valley and the Comox Valley

- Improved transit hubs or exchanges and transit stop amenities
- Improvements to customer information with new technologies such as an online trip planner, and real-time next bus information
- Consideration to matching vehicle size with ridership demand
- Consideration for future expansion of the transit service area to the following areas: the Nanaimo Airport, Duke Point Ferry Terminal, Yellow Point, Jingle Pot Road and Gabriola Island

PHASE TWO: Did we hear you correctly?

The second phase of public consultation was titled *"Did we hear you correctly?"*

During this phase the draft Transit Future Plan network was presented for review and public feedback.

The public was also asked to provide input on priorities for implementation of transit investments. This phase of public consultation included eleven Transit Future Bus events, as well as online and on site surveys.

The Transit Future Bus events were held from October 13th through the 19th, 2013 at the following locations:

- Bowser, Magnolia Court
- Cedar, 49th Parallel Grocery Store
- Lantzville, Town Hall
- Gabriola Island, Folklife Village
- Parksville, Thrifty Foods
- Qualicum Beach, Qualicum Foods
- Nanaimo, Beban Park: The Nanaimo Pumpkin Festival
- Nanaimo, Vancouver Island University
- Nanaimo Downtown, Port Place Centre
- Nanaimo, South Parkway Plaza
- Nanaimo, Woodgrove Centre

Over 1,260 people visited the Transit Future Bus or left comments online at the project website.

Round 2: Public Feedback Facts			
Visitors	1,260+	**Service Priority Votes**	500
Post-it Comments	167	**Web Surveys**	52

Summary of Public Feedback

Public feedback provided strong support for the proposed Transit Future Plan network and implementation strategy. Feedback received during the second phase of consultation identified the following priorities for investment in transit:

- Strong public support for the Transit Future Plan Network and Service Design Standards
- The introduction of RDN Transit schedules on Google Transit Trip Planner
- Service increases to 15 minutes on the Rapid and Frequent Transit corridors throughout the day from 7:00 am to 10:00 pm on weekdays and weekends
- A new exchange in the downtown of the City of Nanaimo
- Improve transit service to BC Ferries terminals, especially Duke Point Ferry Terminal
- Improved local bus networks in Parksville and Qualicum Beach with support for the use of smaller buses
- General increases to service levels in the evenings and weekends
- Improvements to bus stops and customer amenities

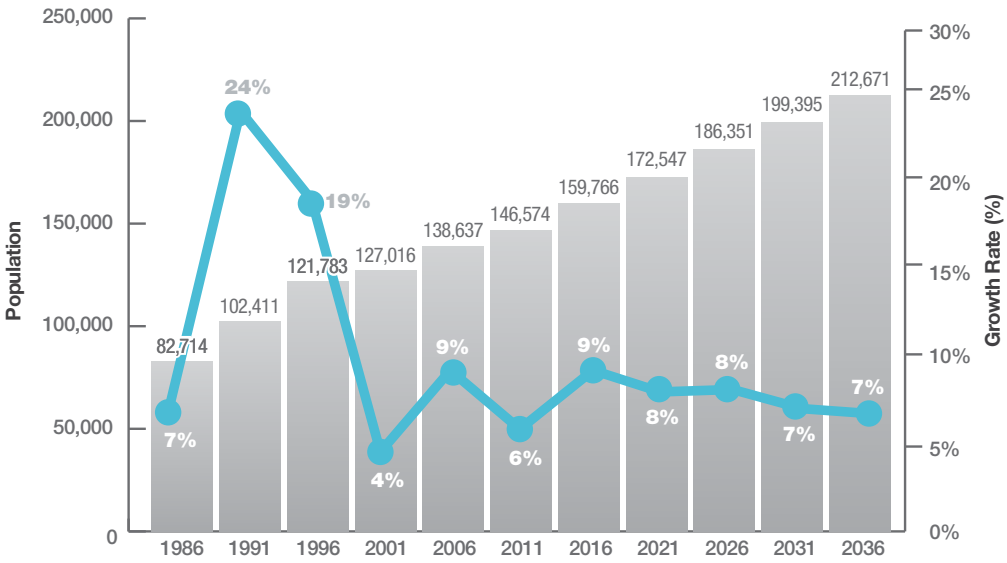
Setting the Scene

Population and Demographics

Regional Population

The population of the Regional District of Nanaimo grew from 84,800 persons in 1986 to 146,600 persons in 2011. This increase of 73% over 25 years is equivalent to an average annual growth rate of 2.3%. As illustrated in Figure 4, the population is forecast to grow to 212,700 persons by 2036, an increase of 32% over 25 years, equivalent to an average of 1.5% per year. This forecast is based on the growth rates assumed in the Regional Growth Strategy adjusted to the Statistics Canada 2011 census data for the regional population.

Figure 3: RDN Population Growth Projection



Sources: Statistics Canada, 2011 Census of Population; Population and Housing Change in the Nanaimo Region 2006 to 2036 (Urban Futures, 2007)

Population Distribution by Age

While the overall population of the RDN is forecast to increase by 32% over the next 25 years, the rate of growth will vary considerably among different age groups. The Region has already seen significant shift in the aging of the population with the median age increasing from 46.6 to 49.3 between the 2006 and 2011 census. This is higher than the B.C. median age of 41.9 and is also higher than other comparable communities. Only 44% of the RDN population is currently under the age of 45 years.

The propensity to use transit varies with age, which means that changes in key age groups can have a much greater impact on future transit use than overall population changes.

Examining the current and future age distribution the Region can predict future transit ridership trends. Two age groups form key transit markets:

Students & young adults (aged 15-24)

This group tends to be very mobile and makes a lot of trips. However, because youth often do not have access to automobiles, or are too young to drive, they are more reliant on transit, walking, cycling and carpooling. Encouraging youth to use transit contributes to continued transit use into adulthood.

Seniors (65+)

The growth in the seniors' population will significantly change the age demographic of the community.

- **Younger seniors (aged 65-79)**
  While the senior population in the RDN is projected to grow rapidly over the next ten years, 50.5% will be among younger, more active seniors (those aged 65-79), who are much less likely to use transit than older seniors.
- **Older seniors (aged 80 & over)**
  This group has a high rate of transit use. While older seniors don't make as many trips overall compared with other age groups, they tend to be very dependent on transit. A high proportion of this group has mobility difficulties, so this group has high demand for door-to-door service. Older seniors (80+) at this time make up 6.4 per cent of the RDN's population compared with 4.3 per cent province wide.

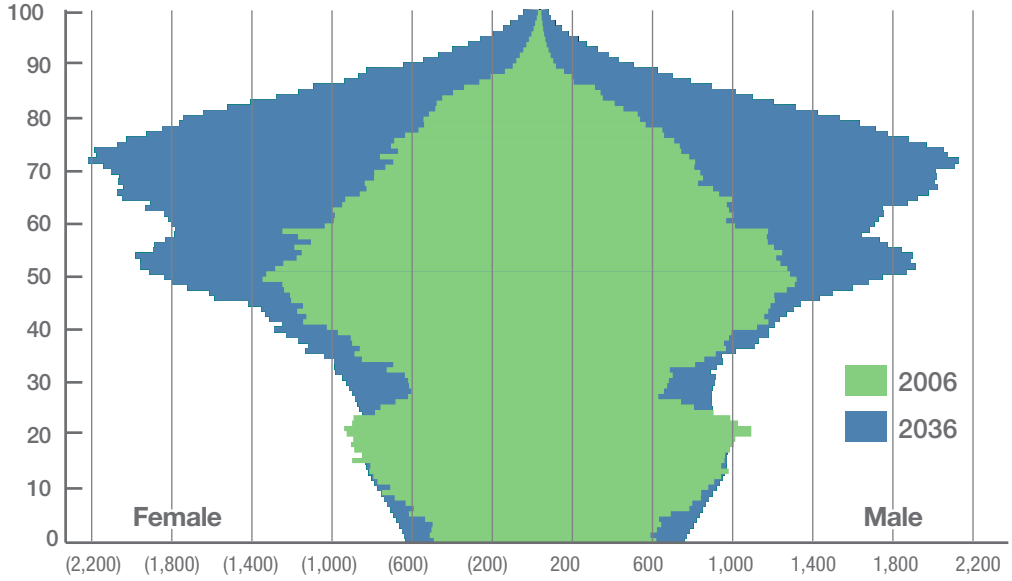
For the Region the key demographic change in the future will be the aging population (aged 65 and over). This will be the fastest growing segment of the population over the next 25 years, see Figure 5, with a forecast increase of 153%. This trend will be even more prominent in areas with an existing large population of seniors, such as Qualicum Beach and Parksville.

Population Distribution by Area

Population distribution and density have a significant impact on transit system performance. Areas with higher density can better support transit service. For example a gross density of 1,000 persons/km2 is generally considered the minimum to support local transit service with a 60-minute service frequency, while a density of over 2,000 residents persons/km2 can potentially support a 30-minute service frequency and a density of over 4,000 persons/km2 can potentially support a 15 minute service frequency.

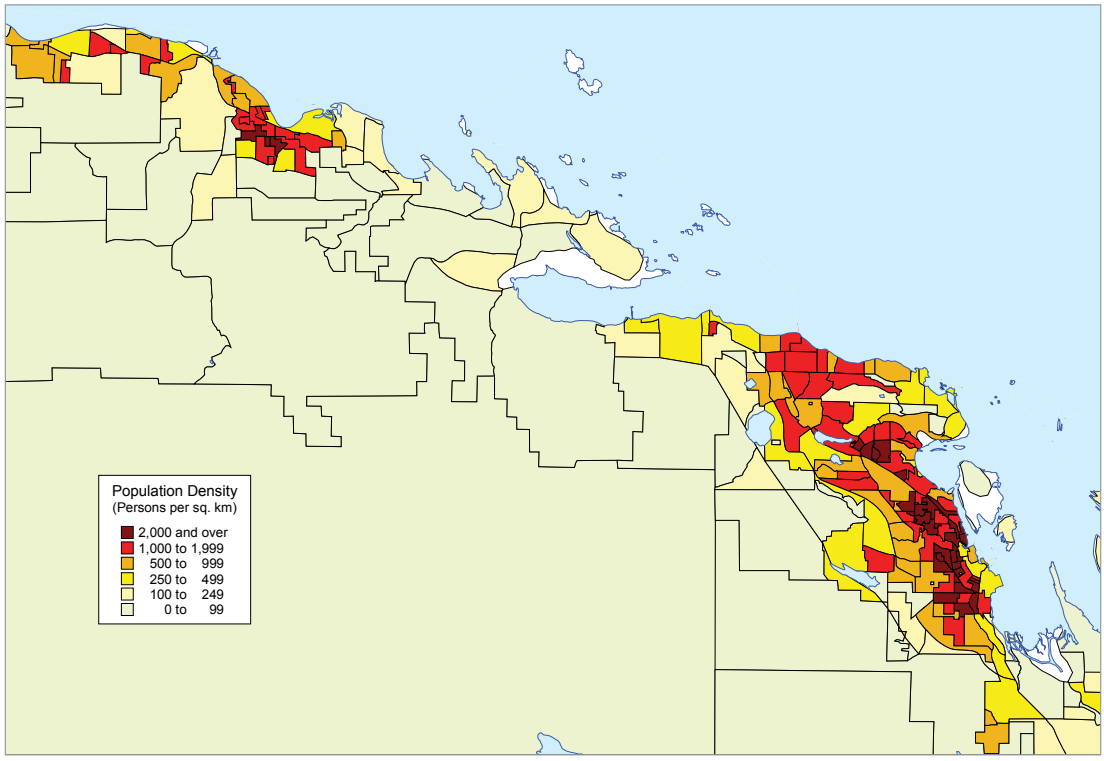
The population in the RDN is dispersed across both urban and rural areas. The largest population concentration is in the City of Nanaimo, which accounts for 57% of the regional population. Densities in urban areas are at least 500 persons per km2, whereas in rural areas densities are less than 150 persons per km2.

Figure 4: Population growth by age group and gender



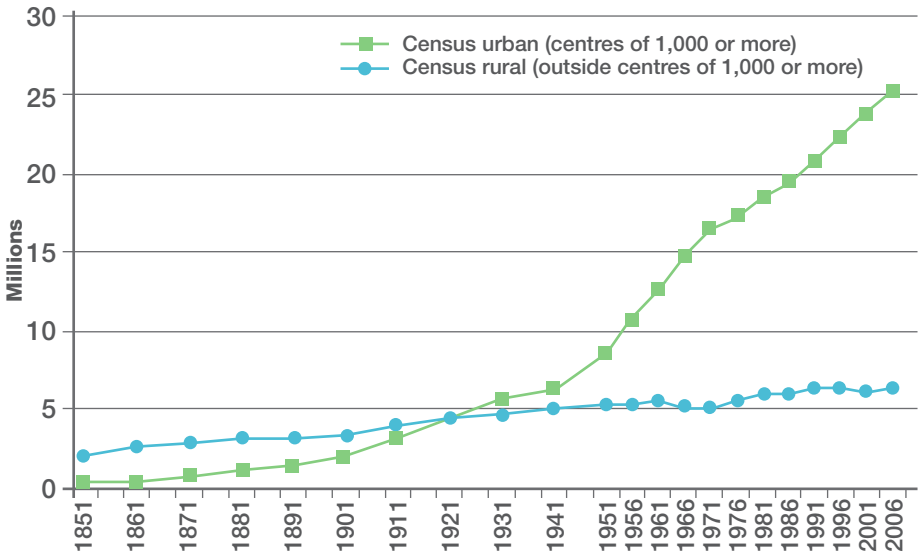
Source: Population and Housing Change in the Nanaimo Region 2006 to 2036 (Urban Futures, 2007)

Map 2: Population Density in the RDN, 2006



Between 2006 and 2011, the rural population growth of the RDN was 4.4% compared to the 6.1% of the combined municipalities. This is down substantially from the 14.2% growth rate that occurred for the census interval of 2001 to 2006. This slower growth in rural areas is trending across Canada where rural population increased by 1.1% compared to Canada's overall growth rate of 5.9%.

Figure 5: Urban and Rural Population Trends



Source: Statistics Canada, Census of Population, 2001. This chart excludes individuals living in the territories, on Indian reserves and in communities with a population of fewer than 250 inhabitants.

Table 1: Population and Density of the RDN – 2011

Name	Type	Population		Population/km2
Nanaimo	City	83,810	57.2%	918/km2
Parksville	City	11,977	8.2%	830/km2
Qualicum Beach	Town	8,687	5.9%	483/km2
Lantzville	District	3,601	2.5%	130/km2
Nanaimo A *Cassidy, Cedar, Yellowpoint, South Wellington*	Electoral Area	6,908	4.7%	116/km2
Nanaimo B *Gabriola, Decourcy, Mudge Islands*	Electoral Area	4,045	2.8%	70/km2
Nanaimo C *Arrowsmith-Benson, East Wellington, Pleasant Valley*	Electoral Area	2,834	1.9%	3/km2
Nanaimo E *Nanoose Bay*	Electoral Area	5,674	3.9%	76/km2
Nanaimo F *Coombs, Hilliers, Errington*	Electoral Area	7,422	5.0%	28/km2
Nanaimo G *French Creek, Dashwood, Englishman River*	Electoral Area	7,158	4.9%	145/km2
Nanaimo H *Shaw Hill, Qualicum Bay, Deep Bay, Bowser*	Electoral Area	3,509	2.4%	13/km2
Nanaimo Town	Indian Reserve	377	0.3%	1,866/km2 (377/0.20Km2)
Nanaimo River	Indian Reserve	287	0.2%	128/km2
Nanoose	Indian Reserve	204	0.1%	280/km2
Qualicum	Indian Reserve	81	< 0.1%	109/km2
	Total	**146,574**	**100%**	**72/km2**

Sources: Statistics Canada, Census of Population, 2011

Population + Demographic Challenges

Serving a dispersed population

The distances between communities in the RDN creates a challenge to providing attractive and cost-efficient transit service outside of the City of Nanaimo. Local government land use strategies that focus population growth in urban centres are critical to improving the effectiveness of the transit system in the future.

Increasing mode share with an aging demographic

The region's population has aged significantly since 1986, and the majority of the population is now over the age of forty-five. The fastest growing age group is persons over the age of sixty-five. To retain and grow ridership in this age group will mean improving transit service to better meet the physical abilities and travel needs of older persons, including routes and destinations served by transit, service levels and hours, customer information and passenger amenities.

Increases in medical, shopping and leisure trips

An aging population means increased demand for medical, shopping and leisure trips, with an associated decrease in work and school trips. These are more difficult trips to serve, as trip times and destinations are not as consistent as they are for work and school trips. The future transit network will need to better connect to local activity centres to capture these trips and increase ridership.

Additional pressure on accessible and custom transit services

As the number of older persons increase, accessible fixed-route and custom transit services will be expected to expand and provide more neighbourhood-oriented transit to address the mobility limitations of this segment of the population. Custom (door-to-door) handyDART services are typically more expensive to operate and are much less productive service in-terms of ridership, and therefore there may be a need to consider other options to deliver transit service to older persons.

Population growth in rural areas

While the population growth in rural areas of the region is not as strong as the urban centres it is still higher than the national average. Transit service delivery to rural areas tends to be less cost effective, generating low ridership over longer time and distance intervals.

Land Use

Transit Supportive Land Use

There is a strong relationship between transit and land use. Transit supportive land use is critical for the success of the transit system and conversely, transit (especially rapid transit or other fixed corridor, high quality transit service) can help to attract and support higher density, mixed-use development. Therefore, land use and transportation needs to be planned in a coordinated way.

Transit supportive land use typically includes the following features:

Medium to high residential density

Medium and higher density development can better support transit because a greater number of potential transit users are located within walking distance of a transit stop or station, thus maximizing the potential transit customer base and leading to increased ridership. A transit stop in an area with a density of 10 persons per hectare (which includes large lots and would likely be zoned as a low density single family development) would have 500 potential customers within a 400 metres walking distance, while a transit stop in an area with a density of 100 persons per hectare (a mix of low-rise and medium-rise apartments) would have 5,000 potential customers within walking distance of 400 metres.

Non-residential density (which relates closely with employment density)

Employment and other non-residential destinations can be much more efficiently served by transit when they are concentrated.

Nodes and corridors of medium and higher density

Nodes and corridors of medium and higher density can be very effective since they concentrate a large proportion of the population and the non-residential activities into areas that are within walking distance of transit.

Mixed use development

Different uses attract activity at different times of day. Therefore, mixed uses tend to lead to more balanced travel flows throughout the day and in multiple directions, which reduce peaking and one-directional travel. In addition, people who live or work in a mixed-use area are more likely to use transit since they don't need their cars to run errands during lunch or after work.

Pedestrian friendly design and active modes of transportation

Transit users begin and end their trips as pedestrians, so pedestrian friendly design will also make using transit more attractive. This could include aesthetically designed sidewalks, pedestrian zones, and buildings that are located close to the sidewalk rather than behind large parking areas. Consideration should also be given to cyclists that use the transit system, with connections to the cycling network and integration of cycling storage facilities with transit stops and exchanges.

Sustainability and Community Plans

Regional Land Use

The Regional Growth Strategy (RGS) is a strategic plan that establishes a consistent and coordinated approach across the region in order to foster socially, economically and environmentally sustainable communities. The RGS establishes several goals that influence travel and transportation services in the RDN. The following are goals most relevant to transit:

- Coordinate land use and mobility to ensure that development patterns and transportation networks are mutually supportive and work together to reduce automobile dependency and increase opportunities to walk, cycle and take transit
- Concentrate housing and jobs in rural village and urban growth centres, including activity centres and corridors within growth containment boundaries
- Provide services and infrastructure cost-efficiently

Map 3: RGS Growth Containment Boundary and Land Use Designation

Source: RDN, Regional Growth Strategy, 2012 Annual Report

The RGS also identifies a number of indicators that are to be used to monitor and report on progress towards achieving goals. Of particular relevance to transit planning are the following indicators:

- Commute to work travel mode shares
- Number of households within walking distance of transit

Land Use by Area

In addition to the Regional Growth Strategy, each municipality and all of the electoral areas in the RDN have an Official Community Plan (OCP). Each OCP presents a long-term vision for the community, and establishes policies, priorities and guidelines for land use and community development in order to achieve the vision. Land use patterns and policies within each community are highlighted below.

City of Nanaimo

Nanaimo is the second-largest population centre on Vancouver Island and is the primary urban centre in the RDN. The City is oriented around a large harbour and as a result is known as "The Harbour City." The downtown core is located on the harbour and the road network and development radiates out from the core to the north, west and south. Nanaimo is a city faced with many transportation obstacles including a hilly topography and several geographical barriers created by rivers and lakes.

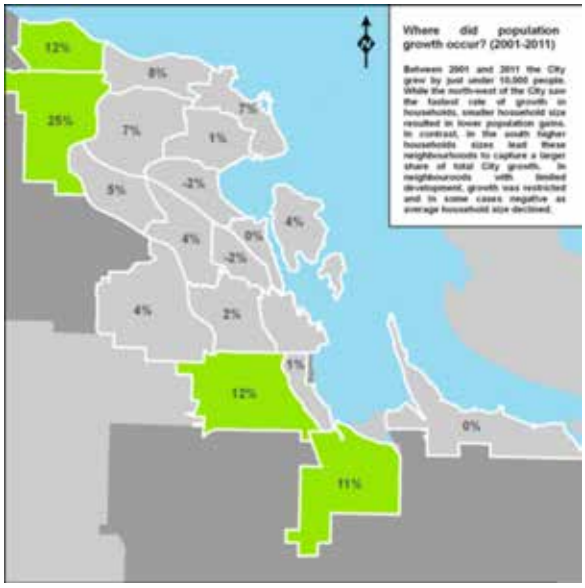
The majority of development in the City is located to the north of the downtown. Much of the commercial and other non-residential development in Nanaimo is located along the Old Island Highway and Bowen Road corridors. These are both key destinations for transit trips in the City.

The guiding principle of the City's OCP is sustainability. The plan seeks to manage urban growth and create a more sustainable community with homes located near shops, schools, recreation, work and other daily destinations, with safe and convenient opportunities to walk, cycle or take public transit.

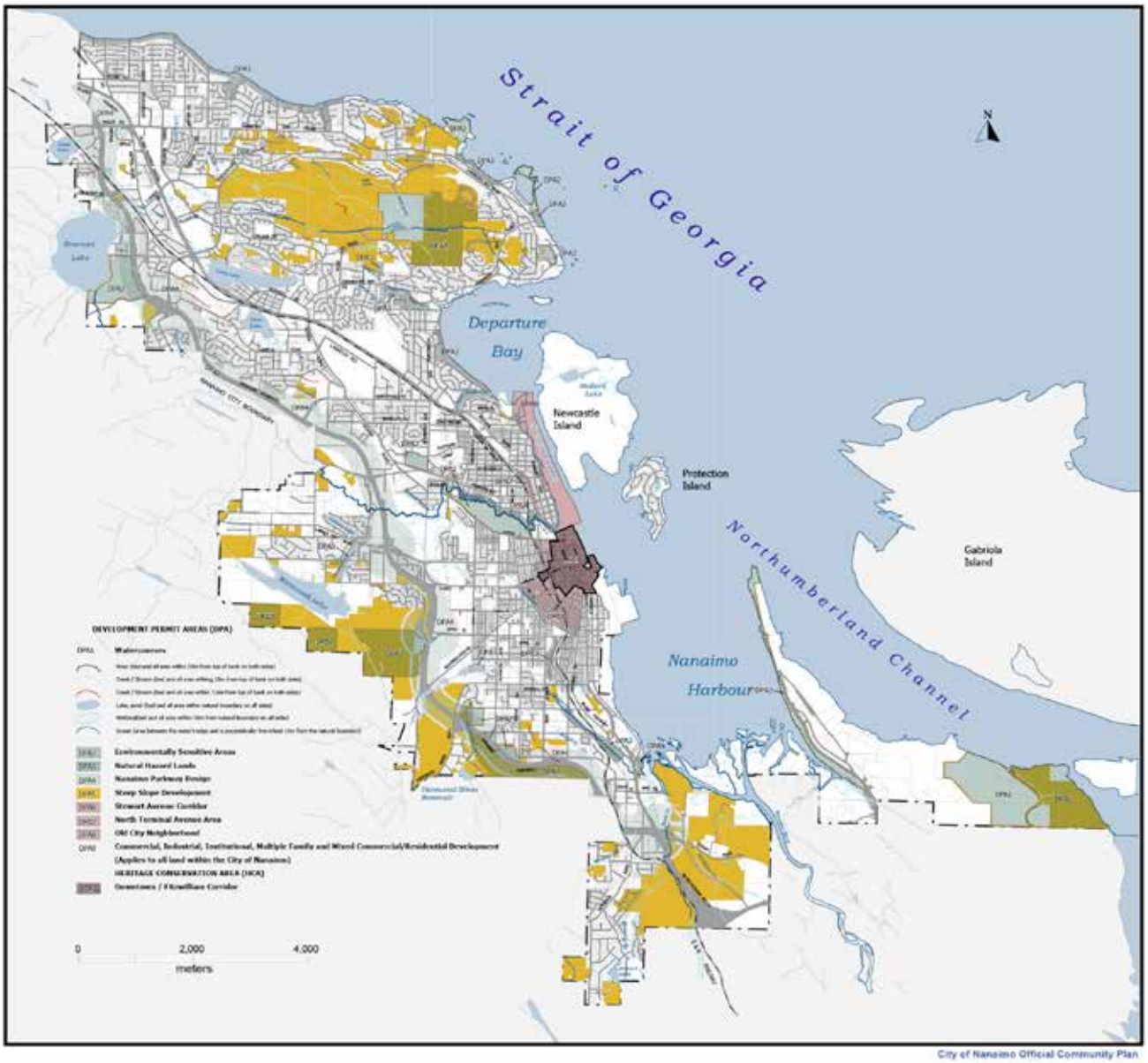
Over the past ten years, the fastest-growing neighbourhoods in terms of population were in the extreme north and extreme south ends of the City, as illustrated at right.

The City's OCP identifies an Urban Containment Boundary (UCB) to manage urban growth and reduce urban sprawl by guiding development to areas that already have urban services. Future development will include new development in currently undeveloped areas, and infill and redevelopment within existing developed areas. Areas where new development can occur are illustrated below. Infill development will occur in the downtown and along Stewart and North Terminal Avenues. New development will occur in the north in the hillsides around Cottle Lake, in the west in the areas south of Westwood Lake, and in the south end of the City.

Map: 4 City of Nanaimo Population Growth 2001 -2011



Map 5: City of Nanaimo Development Permit Area



City of Nanaimo Official Community Plan

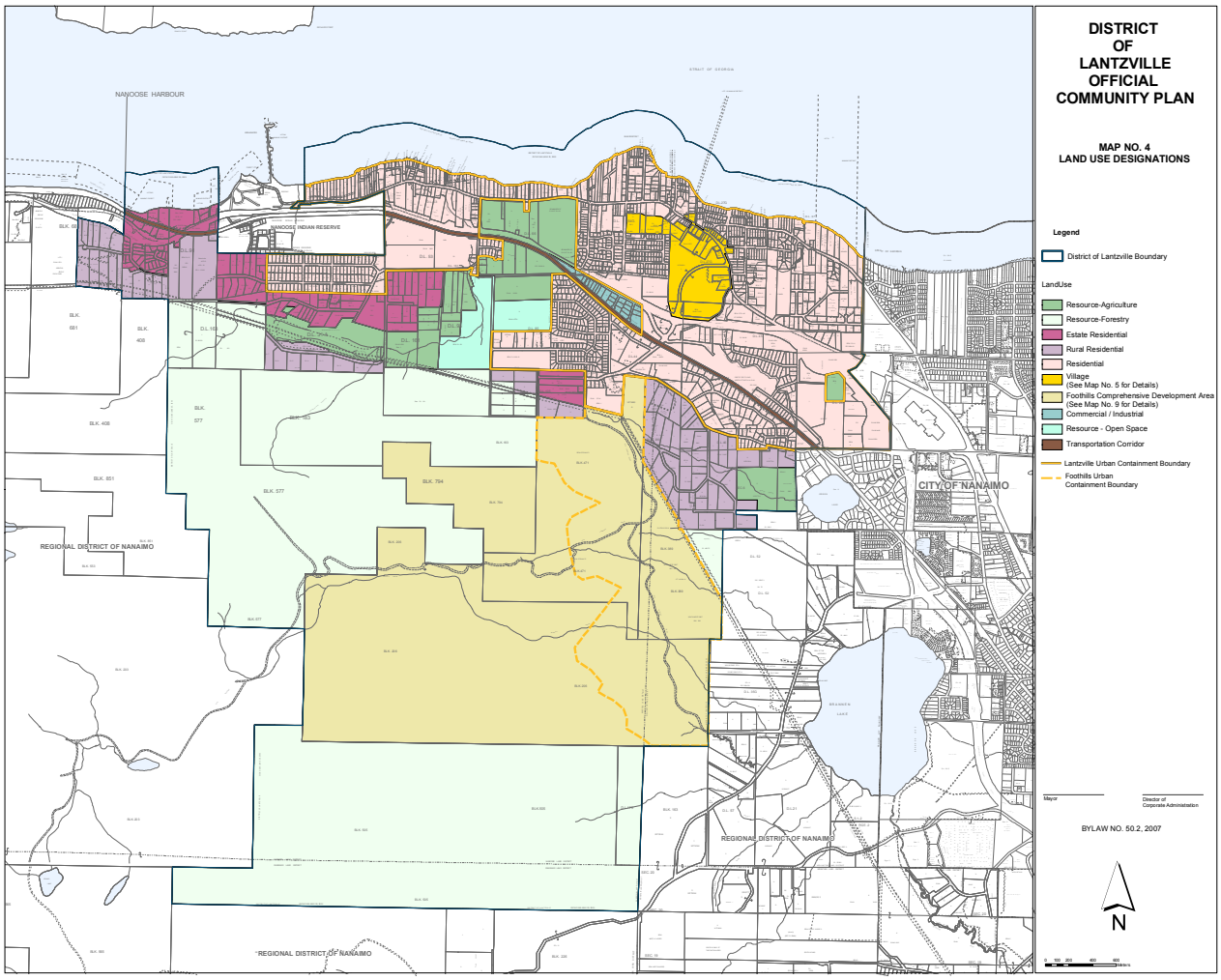
MAP 3: DEVELOPMENT PERMIT & HERITAGE CONSERVATION AREAS

District of Lantzville

Lantzville is located immediately north of Nanaimo, on the Strait of Georgia at the entrance to Nanoose Bay. The original village is located between the water and the Inland Island Highway, and is surrounded by predominantly residential development. The community extends south of the Inland Island Highway, where development includes lower-density residential, plus some commercial and industrial uses.

The guiding principle of the Lantzville OCP (adopted September 2013) is to retain its focus as a residential community while enhancing the "village-like" commercial centre. As illustrated below, future residential development will be centred on the village core around the intersection of Lantzville Road and Ware Road and supports higher density development. Existing residential areas will retain their suburban (to urban centres in the region), semi-rural or rural character. Commercial and institutional development will also be supported in the village core. Industrial development will continue to be encouraged in the Lantzville Industrial Park, adjacent to the Inland Island Highway, particularly the area between the highway and Harby Road.

Map 6: District of Lantzville Development Permit Area



City of Parksville

Parksville is located on the Strait of Georgia between Englishman River and French Creek, 37 km northwest of Nanaimo and 7 km east of Qualicum Beach. The downtown is located on Parksville Bay, where the beach is a major attraction during warmer months.

The City adopted the Plan Parksville: A Vision for Our Future – Official Community Plan in July 2013. The plan indicates that areas around the downtown and along the Old Island Highway will be redeveloped with more intensive residential development, including multi-unit developments and mixed-use commercial/residential development. New residential development will be directed to areas in the east, south and west of the City, as illustrated below. Industrial development will continue to be directed to the industrial park at Craig's Crossing in the east end of the City. The Oceanside Health Centre, opened in 2013, is a new urgent care and primary care facility on the Alberni Highway north of the Inland Island Highway.

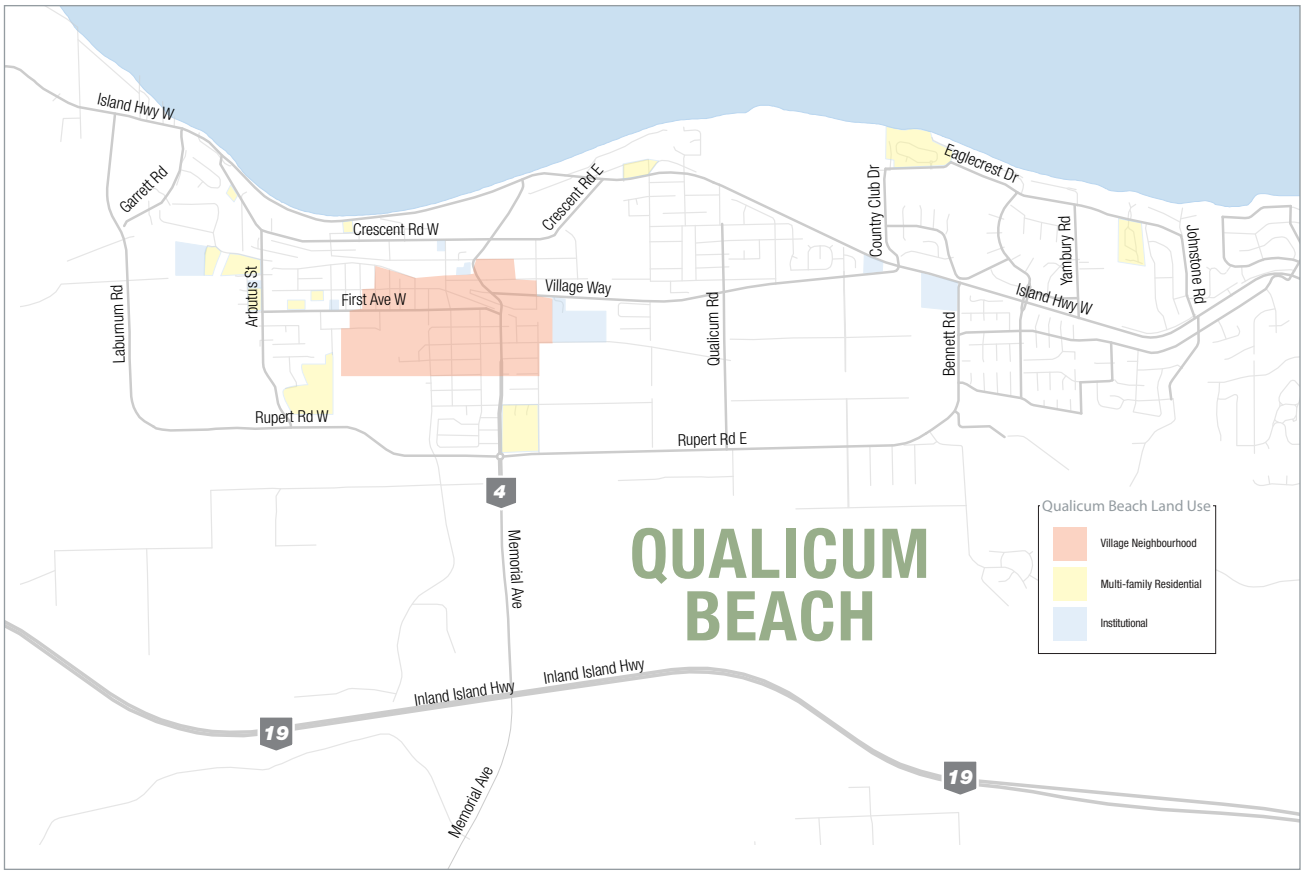
Map 7: City of Parksville Development Permit Area

Town of Qualicum Beach

Qualicum Beach is situated at the foot of Mount Arrowsmith, on the Strait of Georgia, 44 km northwest of Nanaimo. The majority of the Town is located on an escarpment, including the downtown core and all schools. The waterfront is a popular attraction during warmer months.

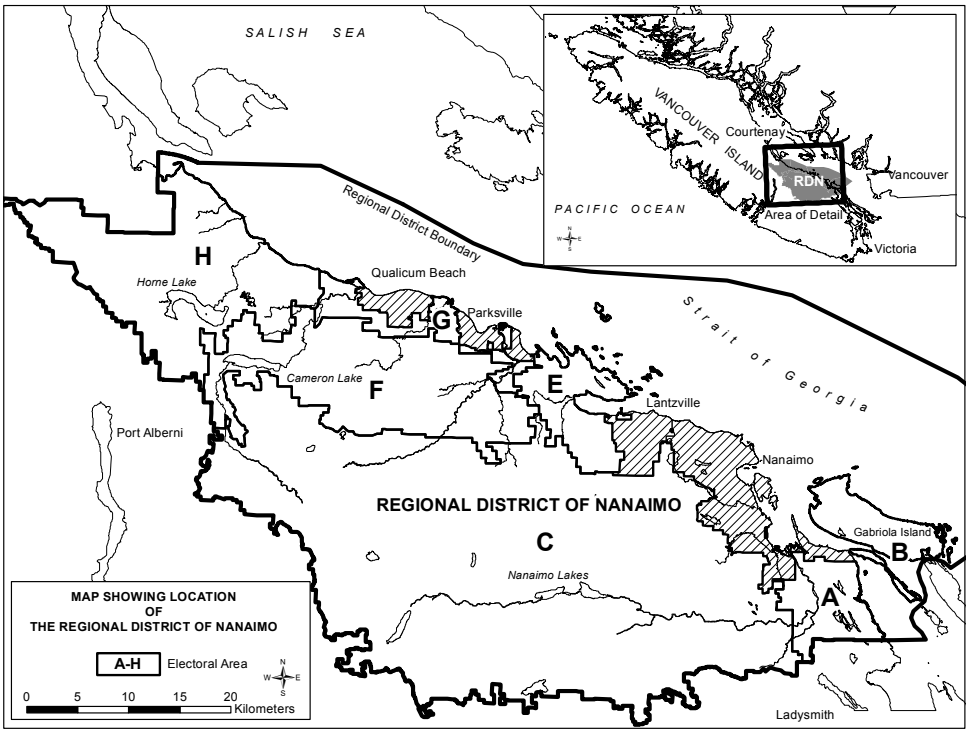
According to the OCP, future residential development in Qualicum Beach will occur primarily in and around the downtown through infill and redevelopment, and in new neighbourhoods in the western part of the Town, as illustrated below. Commercial development will occur on the southern periphery of the Town, including around the airport.

Map 8: Town of Qualicum Beach Development Permit Area



Electoral Areas

There are seven electoral areas in the RDN (electoral areas A, B, C, E, F, G and H), all having an OCP in place (Electoral Area B is under the Islands Trust). Electoral Areas A, E and H are currently the only ones served by transit.



Map 9: RDN Electoral Areas

Key features of each electoral area include:

- Area A is located southeast of the City of Nanaimo. Much of the residential development is focused in the Cedar community along Cedar Road, and in the Cassidy community to the south. The Nanaimo Airport is located in the Cassidy community. The other significant land use is the South Wellington light industrial/commercial area bordered by the Island Highway, Akenhead Road and the Duke Point Connector.
- Area B includes Gabriola Island and two smaller islands. Gabriola Island's main cluster of services is located in the Gabriola Village, which is centred on the intersection of North and South Roads. There are also clusters of services and amenities in the Twin Beaches area and Silva Bay.
- Area C is located southwest of the City of Nanaimo. Following the incorporation of the District of Lantzville, the remainder of the former Area D was amalgamated into Area C. The focus of development in Area C is the East Wellington/Pleasant Valley area, which is almost entirely residential.
- Area E is located between Lantzville and Parksville, and includes Nanoose Bay. Existing clusters of services include the Red Gap village centre on North West Bay Road and the Schooner Cove neighbourhood centre on Dolphin

Drive. A new neighbourhood centre is planned to be developed on the western side of the Fairwinds site, near Florence Drive.

- Area F is located south of Parksville and Qualicum Beach. Clusters of services include the Coombs, Hilliers and Errington village centres along the Alberni Highway, and Qualicum River Estates.
- Area G is located around Parksville and Qualicum Beach. Key areas for new development (primarily residential with some commercial) are between Parksville and Qualicum Beach in French Creek and Wembley, and on the east side of Parksville.
- Area H is located in the northwest corner of the region. The key cluster of services is in the village centre comprised of Qualicum Bay and Dunsmuir. Other communities include in Area H include Bowser and Deep Bay.

Land Use Challenges

Strengthening the link between land use and transportation planning

The link between transit and land use planning can be strengthened to better ensure that new development is consistent with the vision of Official Community Plans, the Provincial Transit Plan and the Transit Future Plan. This is particularly important in new development areas on the periphery of communities that can be difficult to serve by transit. Redevelopment in existing urban areas that are already served by transit is a feature of OCPs in Parksville, Qualicum Beach and Nanaimo and should be encouraged wherever possible.

Connecting regional centres

Not only is it important to connect regional centres within the City of Nanaimo, but it is also important to connect these centres with other communities in the region, particularly Parksville and Qualicum Beach.

Servicing low population densities

Providing transit to areas with low population densities reduces the overall efficiency of the transit system, as these areas generate relatively low levels of ridership while incurring relatively high costs to serve. Depending on the availability of resources, it may be preferable to focus transit investments in areas of higher population density and not provide transit service to low-density areas unless there are plans to densify these areas in future.

Servicing new neighbourhoods

In order for transit to be viable in new neighbourhoods, it is important that transit-supportive planning principles are applied in designing these neighbourhoods. The outcome should be neighbourhoods with a high level of pedestrian connectivity, a transit-friendly grid-like road network design (rather than a circuitous network filled with cul-de-sacs), and concentrations of population and employment along major road corridors where transit services would be provided.

Transportation

Transportation and Infrastructure

A safe, accessible and efficient transportation system is critical to the health and vitality of a community. People need the ability to move around the RDN to access employment and services, whether by walking, cycling, driving, riding the bus, or using mobility aids. Furthermore, the economy depends on the efficient movement of goods from outside and within the region. According to 2006 statistics, automobile trips are clearly the dominant mode for commuting in the RDN, accounting for 89.6% of total mode share.

The Regional Growth Strategy, the individual OCPs, as well as the Village and Neighbourhood Plans, have all set out strategies to improve the sustainability of transportation in the RDN. Policies around locating transit on arterial and collector roads, but not on local roads will be considered in the Transit Future Network. Key objectives for the transportation system of the RDN are to:

- Develop and maintain a safe and efficient transportation system that effectively accommodates the full range of transportation modes, including trucks, vehicles, transit, bicycles and pedestrians
- Encourage the use of more sustainable modes of transportation by providing safe cycling and walking routes, public transit, and opportunities for carpooling
- Collaborate with other transportation agencies and private companies to develop and manage the transportation system to meet the needs of residents, institutions, businesses, and industry
- Encourage reduction of reliance on the private automobile through land development policies, the development and promotion of an Active Transportation Network, and travel demand management (TDM) initiatives

Due to the automobile-oriented pattern of development throughout much of the RDN, the majority of its residents are primarily or entirely dependent upon automobiles to travel within the region and to neighbouring areas. Mode shares for trips to work summarized in the table below underscore the dominance of the automobile.

Table 2: Modes of Transportation to Work, 2006

Mode	Regional District	City of Nanaimo	Remainder of Region
Auto driver	80.2%	78.7%	82.6%
Auto passenger	7.1%	7.1%	7.0%
Transit	2.6%	3.4%	1.5%
Walk, bicycle	8.4%	9.1%	7.2%
Other	1.7%	1.7%	1.7%
Totals	100%	100%	100%

Source: Statistics Canada, 2006

The main transportation corridor in the region is the Inland Island Highway (Highway 19), which connects communities in the RDN to Victoria in the south and Campbell River and communities beyond in the north. Other major transportation corridors include Highway 4, which connects Qualicum Beach

and the Inland Island Highway to Port Alberni and Tofino, and the Old Island Highway (Highway 19A), which runs along the coast from downtown Nanaimo to north of Qualicum Beach. With the exception of regional connector routes, the majority of transit services in the RDN operate primarily on arterial and collector roads, rather than on these major highways.

Transportation and Infrastructure by Area

City of Nanaimo

The road network in the centre of Nanaimo radiates out from the downtown core. To the north, the road network is defined by geography, following valleys between hills and lakes, and in the case of Hammond Bay Road, along the shore. The western edge of the City is bordered by the Inland Island Highway, which is known as the Nanaimo Parkway.

Nanaimo Transportation Master Plan (NTMP)

The City is in the process of preparing its first long-term Transportation Master Plan. The Nanaimo Transportation Master Plan (NTMP) will guide transportation decision-making in the City over the next 25 years and beyond and will recommend improvements for all modes of transportation, including walking, cycling, public transit, goods movement and automobiles. This process is important to ensure that transportation investments work towards achieving the City's strategic goals, make the best use of tax dollars and help shift the community towards a more sustainable future. The RDN and BC Transit staff are participating in this planning processes, and the City of Nanaimo transportation staff are also participating in the Transit Future Plan process to ensure that all agencies' plans are aligned.

City of Parksville

The primary road corridors in Parksville are the Old Island Highway and the Alberni Highway, which intersect in the downtown core on the waterfront. The street network in the City generally follows a grid pattern.

The City is in the process of updating the 2002 Transportation Master Plan. As part of this, the City has presented four options for the city-wide road network and three options for downtown roads. The city-wide options involve extensions of Despard and Hirst Avenue to Church Road in the west and Tuan Road in the east, in effect creating a ring road along the southern periphery of the City. Options for the downtown include an extension of Jensen Avenue to the east to create a ring road around the downtown, while maintaining or reducing the number of traffic lanes on the Old Island Highway.

Town of Qualicum Beach

The primary north-south corridor in Qualicum Beach is Memorial Avenue, which is a continuation of Highway 4 connecting the Inland Island Highway to the waterfront through the downtown core. Major east-west roads include Village Way and the Old Island Highway along the waterfront. A ring road system (Laburnum, Rupert and Bennett Roads) encircles the Town and provides a connection to the airport.

The only new road connection in the Town's plans is an extension of Berwick Road across the railway tracks between Village Way and Fern Road, to improve access and circulation in and around the downtown core. The timing of this road extension is unknown as it is affected by the operating status of the railway.

The Town recently completed an Age-Friendly Transportation Plan that identifies a range of actions to improve safety and mobility for pedestrians and other vulnerable road users. Among these actions are crosswalk enhancements and intersection improvements that will assist pedestrians accessing bus stops.

District of Lantzville

The primary road corridor in the District is Lantzville Road. Ware Road and Dickinson Road intersect Lantzville Road at the south and north ends of the village core, respectively. Lantzville Road continues east into the City of Nanaimo where it becomes Dover Road.

The District recently initiated a Transportation Review to consider improvements to road, bicycle, and pedestrian connections within Lantzville and to surrounding areas, as well as safety improvements within the village core.

Electoral Areas

Primary roads in the electoral areas served by transit are:

- Electoral Area A. The Island Highway is the primary transportation corridor. Other key roads include Extension Road, Cedar Road, Yellow Point Road and the Duke Point Connector.
- Electoral Area E. Northwest Bay Road and Fairwinds Drive/Dolphin Drive are the primary roads on the Nanoose peninsula.
- Electoral Area H. The Old Island Highway is the primary road connecting communities along the coast, including Qualicum Bay, Bowser and Deep Bay.

BC Transit recently conducted feasibility studies of extending transit services in three electoral areas:

- Electoral Area A, where an extension of transit service to the south is proposed to serve the Cassidy community and Nanaimo Regional Airport.
- Electoral Area B, specifically Gabriola Island. Options for transit service include a taxi saver program, scheduled commuter trips to meet the Nanaimo ferry, and flex-route midday trips.
- Electoral Area H, Bowser. A midday paratransit service with a connecting trip from Qualicum Beach to Deep Bay was recommended and implemented in March 2012 with one trip on Tuesdays. The study also provided details on further increases that could be added to this routes as well as a possible extension to the Comox Valley.

Transportation Services (other than public transit)

Other transportation services and infrastructure in the RDN include:

School Bus

School District 68 (Nanaimo-Ladysmith)

The school bus system provides transportation with no user fees for eligible school students who live beyond walking limits within their catchment area. For elementary students the walking limit distance is 4.0 km, and for all other students it is 4.8 km. School District 68 has approximately 1,840 registered school bus users for the 39 schools in this district.

School District 69 (Qualicum)

The Qualicum school district operates 14 schools within the RDN. Eligibility criteria for school bus services are living within the catchment area but outside walk limits or if safety is a concern. Walk limits are set at 3.2km for elementary students, 4km for those attending middle school and 4.8 for secondary students. There are 1,460 registered school bus users served by 29 routes. Students are required to purchase a bus pass at a cost of $75 for eligible riders and $125 for courtesy riders.

Both school districts have conducted reviews of their school busing programs within the last 2 years. Faced with shrinking enrollment, both are looking for ways to decrease expenditures on transportation by re-evaluating policies and service delivery.

BC Ferries

BC Ferries provides daily service on several routes connecting locations in Nanaimo with the mainland and Gabriola Island. There are up to 23 daily sailings in each direction to and from the mainland via Departure Bay (serving Horseshoe Bay) and Duke Point, (serving Vancouver). There are 17 daily sailings in each direction between downtown Nanaimo and Gabriola Island.

Other ferries

There are two passenger ferries in the region. From downtown Nanaimo there are up to 18 sailings per day in each direction to/from Protection Island. From French Creek Harbour (midway between Parksville and Qualicum Beach) there are 2 or 3 sailings 5 or 6 days per week (depending on the season) to Lasqueti Island.

Nanaimo Airport

Nanaimo Airport is located in Cassidy in Electoral Area A, 15 km south of downtown Nanaimo. The airport is served by scheduled flights on four airlines with direct flights to Victoria, Vancouver, Abbotsford and Calgary.

Qualicum Beach Airport

The Qualicum Beach municipal airport is located at the eastern edge of the Town, five kilometres west of Parksville. The airport is served by scheduled flights on two airlines, which offer daily direct flights to Vancouver and Texada Island, as well as seasonal charter airlines.

Nanaimo Harbour Water Airport

This seaplane terminal is located in downtown Nanaimo, and is served by four airlines with daily flights to and from Vancouver Harbour, Vancouver International Airport and Sechelt.

Taxis

There are two taxi companies operating in Nanaimo, and one in Parksville and Qualicum Beach. One Nanaimo taxi company and the Parksville-Qualicum Beach taxi company operate wheelchair accessible vehicles.

Transportation Challenges

Network efficiency and connectivity

The considerable distances between the neighbourhoods in the City of Nanaimo and between communities in the RDN, as well as discontinuities in road networks in some areas create a challenge to providing efficient transit services and network connectivity.

Transit service to regional and local activity centres

Transit links to regional centres, local activity centres and other key destinations need to be improved by increasing the directness and frequency of service between centres, desirably without disrupting or compromising other established transit travel patterns.

Increasing public transit use in a highly automobile-dependent region

The majority of residents and employees in the RDN are dependent upon automobiles to travel within the region and to neighbouring areas. Transit cannot compete with the automobile for many trips, and the focus should therefore be on strengthening transit in areas where it can offer an attractive and competitive travel option. In some cases, this may require changes to the road network and development plans to improve the attraction of transit relative to the automobile.

Ferry connections

Challenges making scheduled connections between transit and ferries include scheduling constraints for transit services, schedule changes by BC Ferries and the overall on-time performance of the ferry services. There is no existing public transit service to the Duke Point Ferry Terminal, which serves the Tsawwassen (Lower Mainland) Ferry Terminal.

Increased travel between the RDN and neighbouring communities

Many people travel in and out of the RDN for work, school and shopping, to and from Comox and Courtenay in the Comox Valley Regional District to the north, and Ladysmith and Duncan in the Cowichan Valley Regional District to the south. As the populations of these regions increase, the demand for inter-regional transit services will also increase.

Conventional Transit System

The RDN Transit System began operation in 1969. In 1988, 17 buses provided 47,917 hours of service on 14 routes and carried 921,193 passengers. Today, the conventional transit system provides over 2.7 million rides annually, a 181% increase in rides over the last 25 years.

The existing conventional transit system provides fixed-route service to over 800 bus stops in the urban communities of the RDN, the part of Electoral Area E between Nanaimo and Parksville and Electoral Area A (Cedar). In 2013/14, transit service was operated with 113,892 service hours and 46 buses providing 24.1 rides an hour at an average cost of $4.23 per ride.

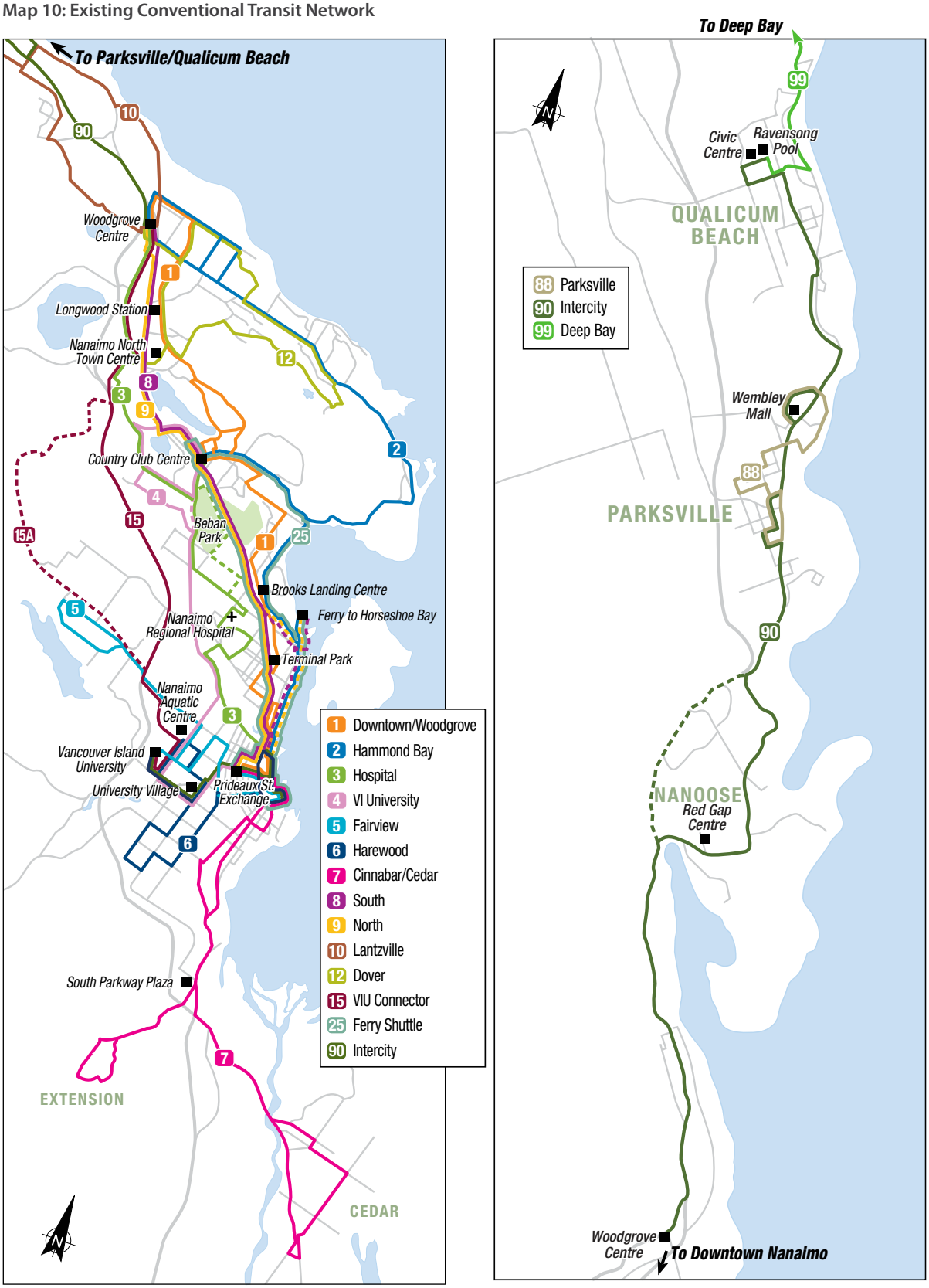
Funding for the transit system is cost shared between the RDN and BC Transit. Decisions on fares, routes and service levels are made by the RDN Board based on information and planning provided by BC Transit and RDN staff. Transit service is operated by RDN Transit System.

Transit Network

Currently there are 18 routes operating in the RDN, see Map 10. Fourteen of the 18 routes operate within the City of Nanaimo, with some service to Cedar; two of these routes are targeted for schools and operate September through June only. The remaining four routes serve the communities to the north of Nanaimo, from Lantzville through Parksville and Qualicum Beach to Deep Bay. The City of Nanaimo transit service accounts for 87.5% of the total service hours delivered in the RDN.

The transit network is focused on downtown Nanaimo, which functions as a hub for both City and regional bus routes. Other hubs in the network include Country Club Centre, Woodgrove Centre and Vancouver Island University. The existing system infrastructure does not include any transit priority measures.

Map 10: Existing Conventional Transit Network



Service Frequencies and Hours

The RDN conventional transit service is provided seven days a week, including most holidays, on most routes within the City of Nanaimo and on the intercity route to Parksville-Qualicum. The route 88 Parksville operates Monday through Saturday in Parksville and the route 99 Deep Bay one day a week to Deep Cove (Electoral Area H). Transit operates from 6:00 am to 12:00 am on weekdays, Saturdays from 6:30 am to 12:00 am and Sundays from 6:45 am to 7:30 pm

The table below summarizes the level of service on all routes. In general, there is 30-60 minute service on the major routes serving the north/south corridor, with 15-20 minute service during peak periods. During the summer select trips on a number of routes are suspended while school is out of session and routes 92 and 93 operate only when school is in session.

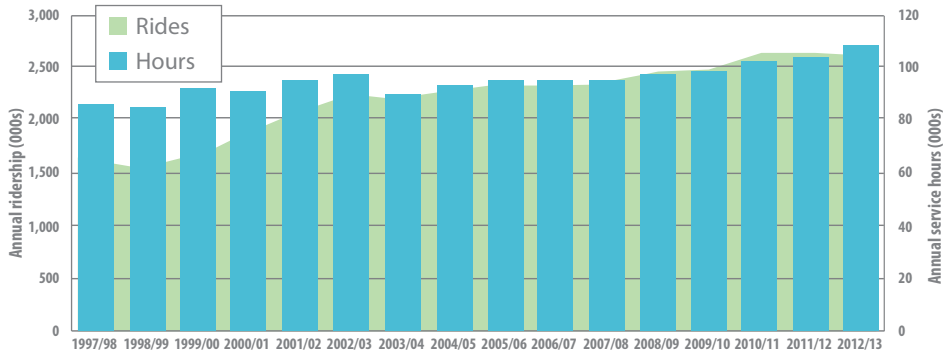
Table 3: Service Frequencies for RDN transit routes, September 2013

Route	Regular service (Peak service)	Weekend Frequencies
City of Nanaimo routes		
1 Woodgrove/Downtown	30-60 min (20 min)	30 min (60 min evening)
2 Hammond Bay	30-60 min (15 min)	30 min (60 min evening)
3 Hospital	30-60 min (20 min)	30 min (60 min evening)
4 VI University	20-60 min (15 min)	30 min (60 min evening)
5 Fairview	60 min	60 min
6 Harewood	60 min (30 min)	60 min
7 Cinnabar/Cedar	60 min (30 min)	60 min
8 South	60 min (30 min)	60 min
9 North	30-60 min (20 min)	60 min
12 Dover	Peak service only	--
15 VIU Connector	30-60 min (15 min)	60 min (no service Sunday)
25 Ferry Shuttle	60 min	--
92 Hammond Bay	Afternoon peak service only	--
93 Mountain View	Peak service only	--
Regional routes		
10 Lantzville	120 min (60 min)	120 min
88 Parksville	120 min (30-60 min)	60 min (no service Sunday)
90 Intercity	120 min (30-60 min)	60 min (limited service Sundays)
99 Deep Bay	**Tuesdays only**	--

Transit Ridership

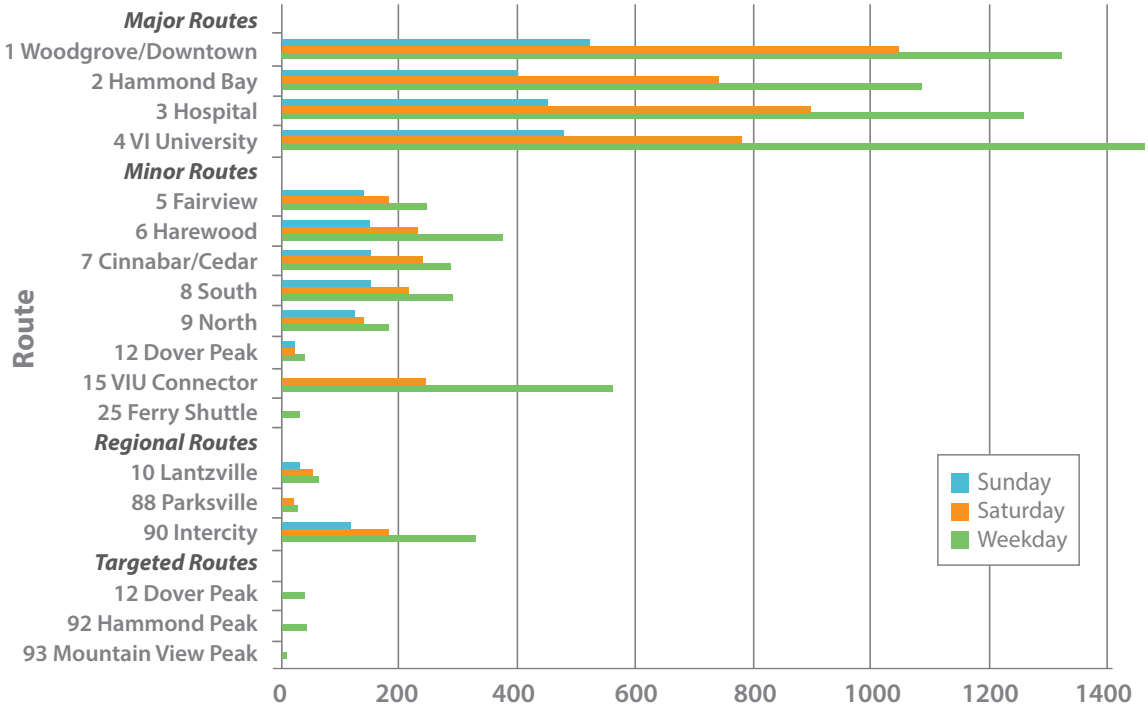
Transit ridership in the RDN has grown to approximately 2.7 million annual rides. Since 1997, service hours have increased by 33.8% while ridership has increased by 61.8%. Figure 6 below displays the steady growth of ridership over the past 16 years while service hours have remained relatively stable. The 2006 census indicates that transit accounts for 3.4% of all trips to work in the City of Nanaimo, and 1.5% in the remainder of the region.

Figure 6: RDN Conventional Service Hours and Ridership, 1997 - 2013



The following Figure 7 summarizes the average daily ridership by route and service day. The 14 routes serving the City of Nanaimo account for 94% of system ridership. The four routes, 1, 2, 3 and 4, account for 67% of systems total ridership.

Figure 7: Average Daily Ridership by Route, 2012/13



The data was collected from fare boxes on transit vehicles from April 2012 to March 2013. For 2013 route 99 averaged 13 riders per day.

Benchmarking the Existing Conventional Transit System

The table below compares the RDN transit system with other transit systems in BC, which are of comparable size. The regional transit services, Nanaimo, Central Fraser Valley and Kelowna, share a lower rides per service hour due the longer distances required for service coverage.

Table 4: Comparison of Conventional Transit Performance Measures, 2012/13

	Population Served	Hours of Service	Revenue Passengers	Hours/ Capita	Rides/ Hour	Cost Recovery
Nanaimo Regional	**98,500**	**108,892**	**2,750,000**	**1.10**	**24.1**	**34.90%**
Prince George	60,100	64,793	2,012,312	1.08	31.1	29.80%
Central Fraser Valley	124,700	96,031	2,090,000	0.77	21.8	27.60%
Kamloops	76,000	101,471	3,290,000	1.34	32.4	34.70%
Kelowna Regional	125,300	177,206	4,300,000	1.41	24.3	25.70%

In 2013/14, transit service was operated with 113,892 service hours and 46 buses providing 24.1 rides an hour at an average cost of $4.23 per ride.

Customer Facilities and Amenities

There are over 800 bus stops in the RDN. There are a total of 73 shelters at bus stops, 40 of which are owned by the City of Nanaimo, 30 by the RDN, and three which are privately owned.

Transit exchanges facilitate transfers between bus routes and are typically located within the activity centres of the community, such as the downtown, urban centres and shopping centres to reinforce the relationship with land use patterns. There are four transit exchanges in the City of Nanaimo:

- **The Prideaux Street.** Transit Exchange. The downtown exchange was relocated to Prideaux Street south of Fitzwilliam Street when the Convention Centre was constructed. Ten routes serve the Prideaux exchange, all of which operate in the City. There are three on-street platforms on northbound Prideaux Street plus three platforms in the exchange which are shared with intercity bus services. In addition, buses stop on Fitzwilliam Street.
- **Vancouver Island University.** Four City routes serve the VIU exchange, where there are three designated platforms.
- **Country Club Centre.** Seven City routes serve this exchange, where buses stop at several on-street bus stops.
- **Woodgrove Centre.** Seven City routes serve the Woodgrove exchange, plus two regional routes. There are five platforms for buses on the internal roadway on the west side of the shopping centre.

There are no dedicated transit exchanges in other communities. Transit hubs where routes intersect are located at Wembley Mall in Parksville and Ravensong Pool in Qualicum Beach.

Operations and Maintenance Centre

The RDN Administration and Transit operations are located in two buildings set in a forest remnant landscape at Hammond Bay and Applecross Roads in the City of Nanaimo.

The Administration and Transit Operations and Maintenance buildings were both expanded in 2008/09 and improvements were added to the general site to improve bus circulation and maintenance for public bus service in the Regional District. The facility has parking capacity for 64 buses and 6 maintenance bays. Instead of constructing new buildings, existing buildings were expanded and the site was reorganized to meet the need for expanded administration and public transit services.

Facilities Plan

In 2007/08 an operations and Maintenance Facilities Master Plan was developed for the Transit Facility. As part of this master planning process, relocating the transit facility to a new site was considered. After careful review of the industrial properties available for sale or lease, the existing site was considered the optimal site as it minimizes deadhead travel and significant investments had been made on the existing site. The existing site needed to be expanded to support the future growth of the system and a four phase strategy was developed to expand the facility. The plan also recommended that the RDN put a hold on the adjacent property for future transit needs as it will allow for a contiguous facility and is the most cost effective solution. The four phases included:

Phase 1 (2008/09) Completed – Improvements included expanding the office, improving existing work spaces and a reorganization of the yard to improve bus storage and staff parking

Phase 2 (2009/10) Completed – Improvements included the construction of a body bay for body work and painting

Phase 3 (2010/11) Completed – Improvements included a mechanized vehicle wash and improved service island with bulk distribution of fluids. In addition, a high bay and lift are added to allow use of double decker buses

Phase 4 (TBD) – This phase involves the development of the adjacent property to provide 57 additional parking spaces

The Operations and Maintenance Facilities Master Plan should be updated to ensure that the facility is equipped to accommodate the future needs of transit operations.

Conventional Transit Challenges

Invest to meet local and provincial ridership targets

To grow the transit mode share from 2.6% at present to 5% by 2039, ridership must increase from 2.7 million annual rides to 13.5 million annual rides. An increase in mode share of this magnitude requires significant investment in the transit system supported by transit supportive land use planning and travel demand management policies.

Improving route directness and simplifying the network

Consultation identified a number of public concerns on the directness of existing routes and the number of route variants per route making it difficult for some to understand how the service operates. Consideration should be given to simplifying the routes in order to better accommodate existing users and eliminate potential barriers to transit use for others.

Increase service levels and expand hours of service

The existing frequencies of service and limited evening and weekend service hours on several of the routes is not attractive to customers with other transportation choices.

Relocating the Prideaux Street. Transit Exchange

Bus routings to and from the existing Prideaux Street exchange are lengthy and time consuming, reducing the efficiency of transit services in the City of Nanaimo. Opportunities to relocate the transit exchange to downtown Nanaimo should be considered as a short-term implementation priority.

Links to ferries and airports

At present, there is no transit service to BC Ferries' Duke Point terminal or the Nanaimo Airport in Cassidy. Service to these key transportation facilities is important not only to accommodate inter-regional travel, but also for employees who work at these facilities.

Improve customer facilities

Many of the bus stops do not meet guidelines for universal accessibility and only 9% of transit stops have shelters. To make transit a more attractive transportation choice, investments are required to improve accessibility to transit, and provide additional customer amenities such as bus shelters, benches and bicycle racks.

Custom Transit Service

Service Description

Custom transit service, also known as handyDART, provides door-to-door transit service for people who are unable to use the conventional system without assistance. The objective of custom service is to provide eligible customers access to their community. Potential customers must apply to travel by handyDART. To determine eligibility, handyDART considers limitations in mobility and physical abilities, cognitive abilities, medical conditions and sensory abilities.

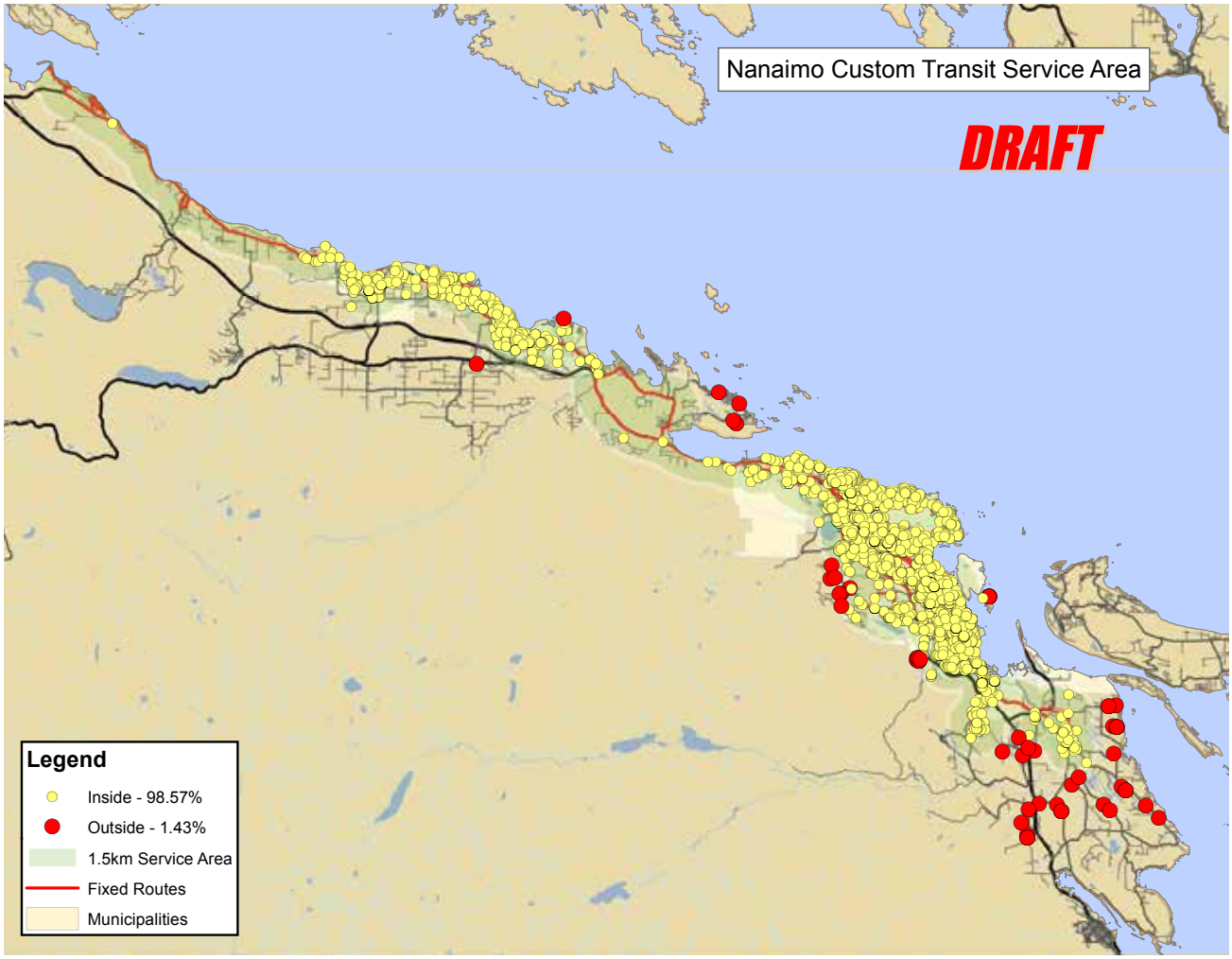
The custom transit system provides two types of service — regular subscription trips and one-time trips. Subscription trips are often for transport to adult day programs, school or medical-related appointments. In contrast, one-time trips are often personal in nature. For one-time trips, customers must reserve on a first come first served basis at least 24 hours in advance by calling the reservation line Monday to Friday between 8:30 am and 4:30 pm.

The RDN handyDART system also offers a Taxi Saver Program to City of Nanaimo customers, which subsidizes taxi fares by 50 per cent, providing coupons to registered customers who book their own trips with a taxi company. Two of the three taxi operators in the region have wheelchair accessible vehicles.

Service Area and Hours of Operation

The service area for handyDART is similar to the conventional transit service area, and encompasses Nanaimo, Lantzville, Nanoose, Parksville and Qualicum Beach.

Map 11: RDN Custom Service Area



The handyDART hours of operation are more limited than conventional transit:

- In Nanaimo and Lantzville, handyDART operates from 8:30 am to 6:00 pm Mondays to Fridays, 9:00 am to 6:00 pm on Saturdays and 9:00 am to 5:00 pm on Sundays.
- In Nanoose, Parksville and Qualicum Beach, handyDART operates from 7:15 am to 5:15 pm Mondays through Fridays only.
- handyDART does not operate on statutory holidays.

Service is provided with a fleet of 16 vehicle and 27,002 annual service hours.

Travel Patterns and Destinations

A total of 80% of handyDART trips are within the City of Nanaimo, with Parksville and Qualicum Beach accounting for 7% and 2% of trips respectively. Travel to adult daycare programs account for 70% of the total trips and are located predominately within the City of Nanaimo. Other trip purposes include medical appointments (18% of trips), and shopping and social trips (12%).

Ridership and Customer Profile

In 2012/13, the handyDART system provided 62,000 rides and the Taxi Saver Program provided an additional 1,900 rides, which is equivalent to an average of 2.7 trips per service hour. Approximately 65% of trips are subscription (recurring, pre-booked) trips.

There are approximately 4,645 persons registered for handyDART service. The average age of handyDART customers in the RDN is 75 years and 31% of passengers use some type of mobility aid.

Benchmarking the Existing Custom Transit System

In 2012/13, RDN handyDART services cost on average $23.90 per ride, which is substantially higher than other handyDART systems in BC. It is significantly more expensive when compared with the $4.23 average cost of providing a ride on the conventional transit service. Cost recovery for custom transit is 12.9%, which is significantly less than the 35.4% cost recovery for conventional transit, reflecting the higher cost of providing door-to-door service with custom transit, and the lower number of passengers per vehicle. Historically RDN Rides per hour have averaged 3.5 RDN staff are consistently reviewing operational policies and procedures to address items such as cost per ride and rides per hour.

Table 5: Comparison of Custom Transit Performance Measure, 2012/13

	Municipal Population	Hours of Service	Annual Ridership	Rides per Hour	Cost per Ride
Regional District of Nanaimo	**135,800**	**22,345**	**64,312**	**2.7**	**$23.90**
Prince George	72,000	17,095	98,097	4.3	$14.05
Central Fraser Valley	176,900	23,111	105,902	3.8	$15.68
Kamloops	86,800	25,383	110,428	3.6	$19.60
Kelowna Regional	186,700	38,940	194,008	4.1	$14.32

Custom Transit Challenges

Ensuring customers are matched to the appropriate transit service

Due to the relatively high cost of providing handyDART service, it is important to ensure that customers are matched with the type of transit service they need, and only customers who meet the handyDART eligibility criteria use the service. This helps to ensure that limited resources are allocated appropriately and are available for those that require the service. BC Transit is developing a province wide standardized registration criteria to determine if an individual is unable to use conventional transit, and thus eligible for custom transit.

Limited custom transit service availability

handyDART transit hours of operation are more limited than the conventional transit system. Ideally, the hours of service for handyDART should be the same as the conventional transit system.

Limited availability during peak travel times on weekdays

The number of subscription trips at peak travel times limits the ability to provide casual trips, and restricts users' ability to travel semi-spontaneously, or travel at all during peak travel periods. To meet this demand, service capacity needs to be expanded to improve customers' ability to book a trip within a few days at a time that is convenient to them. Opportunities for joint funding or other partnerships to accommodate medical and adult day program trips should also be considered.

Increasing demand for handyDART service

The aging population will increase the demand for handyDART and other accessible services in the future. This will require an increase in resources and the provision of new accessible transit solutions to allow those unable to use the conventional transit system the ability to travel spontaneously as those who use the conventional system do.

Alternative service delivery methods

Developing new ways to deliver custom transit services should be investigated to meet the custom transit market needs. For example, in North Vancouver, the Silver Harbour Seniors' Activity Centre has developed a "Go Bus" that operates three days a week and is designed to provide service for isolated seniors. The bus is free to ride and the service costs are covered by foundations, non-profits, service clubs and others.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Vision & Goals

Vision Statement

"The Regional District of Nanaimo Transit System supports the region's high quality of urban and rural life by connecting the region's rural village centres, neighbourhoods and urban areas with high quality transit services that will encourage more people to choose transit as their preferred choice of travel. Integration with other modes of transportation affords people of all abilities a basic level of mobility throughout the region. Transit service is tailored to the needs of the region's population to be safe, convenient, cost-effective and environmentally responsible."

Development of the transit vision statement and goals was a collaborative effort which included input from the community, stakeholders, local government partners and BC Transit. The vision builds upon the direction of the RDN's Regional Growth Strategy.

Plan Goals

Five project goals have been created to support the achievement of this vision statement. To work towards a vision that encompasses more than simply carrying more transit passengers, the supporting goals look beyond the provision of high quality transit service.

1. **The Transit System connects** the region's urban and rural communities with their downtowns and neighborhood centres with transit services that offer an attractive alternative to driving. This is accomplished with routes and schedules that are frequent, direct, safe, and convenient
2. **The Transit System supports** sustainable land use patterns and mobility networks that encourage a reduced automobile dependency and provides access to services and employment
3. **The Transit System reduces** the region's impact on the environment by providing residents a transportation choice that will lower their GHG emissions and energy consumption
4. **The Transit System provides** the majority of the residents in the region access to their communities
5. **The Transit System is operated** in a fiscally responsible manner providing efficient cost-effective services

Ridership Target

Targets are a critical component of the Transit Future Plan, as they are an effective way to measure progress towards achieving the goals of the plans, ensuring that they are implemented as intended.

In 2011, transit accounted for approximately 2.7 per cent of all trips to work in the RDN. The plan sets an overall transit mode share target of five percent for the region within 25 years, this target is further broken down by community in table 6 to reflect what is achievable in the urban and rural areas of the RDN. Modal share is a transportation term which describes the percentage of travelers using a particular type of transportation such as walking, cycling, transit or automobile. A transit mode share target of five percent implies that RDN transit ridership will need to grow from 2.7 million to 13.5 million passengers a year by 2039. This target supports the vision of the RDN Transit Future Plan and aligns under the Provincial Transit Plan's targets for transit mode share in regional centres in British Columbia, of three per cent in the near term, four per cent by 2020, and five per cent by 2030.

Table 6: Mode Share Target by Area

Area	Transit Mode Share Target
RDN	5%
City of Nanaimo	8%
Lantzville, Parksville, Qualicum Beach	3%
Area A, B, E, F, G, H	1.5%

The Network

The Transit Future Plan Network

To achieve the vision and goals of the Transit Future Plan and the five per cent transit mode share target, the transit network must support land use plans by connecting regional centres with high quality transit services. The transit network is based on the development of future land use nodes identified in the Regional Growth Strategy and the local Official Community Plans.

The Transit Future Plan network includes four distinct layers of transit service to better match transit service to demand. The network is designed to be more competitive with automobile travel by improving the directness, frequency and reliability of the transit system.

Service Layers

The four layers of transit service outlined below combine to create a comprehensive transit network to best meet the existing and future needs of the RDN. The service layers are designed to efficiently and effectively move people throughout the region facilitated by transit priority measures.

Rapid Transit Network (RTN)

RTN services are designed to move high volumes of passengers between major regional destinations along key transportation corridors. Service is very frequent (at least 15 minutes between 7:00 am and 10:00 pm) throughout the week and stops less often than traditional transit services. Investments in RTN infrastructure, technology, vehicles and service levels combine to greatly increase system performance. To improve travel time and reliability, RTN services may utilize an exclusive or semi-exclusive right-of-way to eliminate or significantly reduce the impact of general traffic on transit vehicles. RTN services use high capacity buses and may include future investments along the corridor in transit priority measures, right-of-way improvements, premium transit stations, corridor branding and off-board ticketing.

Frequent Transit Network (FTN)

The FTN provides medium to high density mixed land use corridors with a convenient, reliable, and frequent (at least 15 minutes between 7:00 am and 10:00 pm) transit service throughout the week. The goal of the FTN is to allow customers to spontaneously travel without having to consult a transit schedule. The FTN will carry a large share of the transit system's total ridership and for this reason justifies capital investments in a high level of transit stop amenities and service branding.

Local Transit Network (LTN)

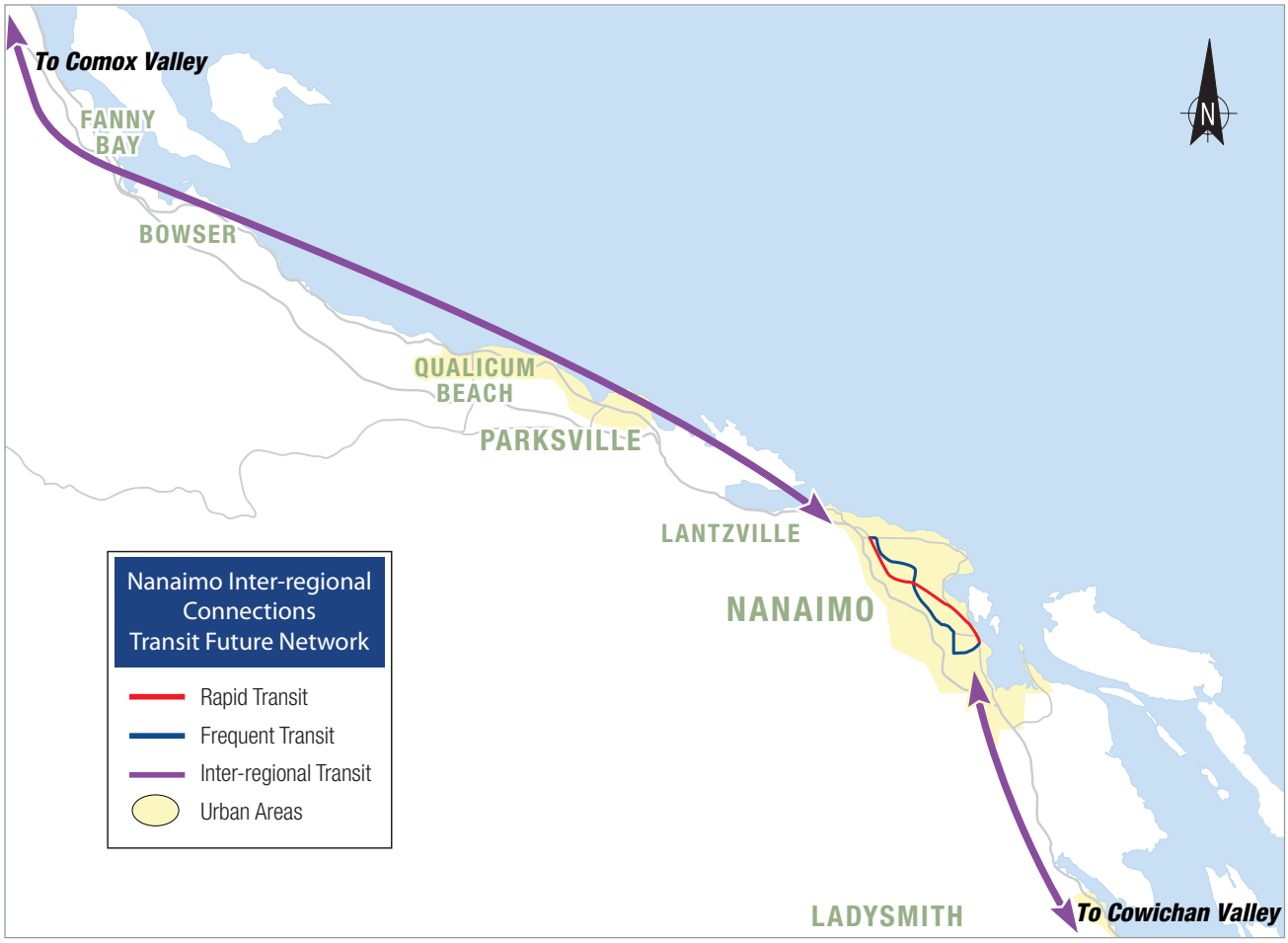
The LTN is designed to connect neighbourhoods to local destinations and to the RTN and FTN. LTN services allow customers to plan a trip to work, school, local shopping centre or personal trips by transit. Frequency and vehicle type are selected based on demand. In some cases, smaller transit vehicles can be utilized to better match customer demand and operating conditions.

Targeted Services

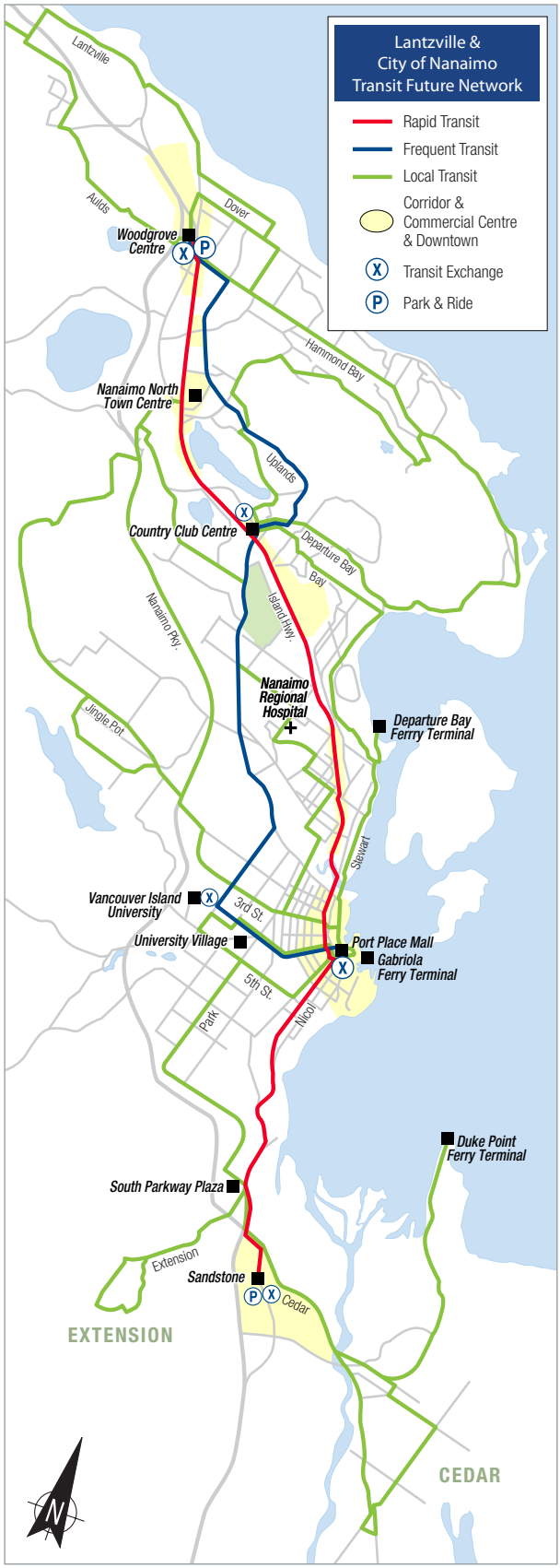
Targeted services are a collection of transit services that do not fit into the other definitions and are more focused on the specific needs of customers. These services include:

- Inter-regional: provide connections between regions outside of the local transit service area
- Custom - handyDART: door to door services for customers unable to use the conventional service
- Paratransit: may include transit services that are demand-responsive or operate with flexible routes and schedules in low ridership areas

Map 12: Transit Future Network Inter-regional Connections

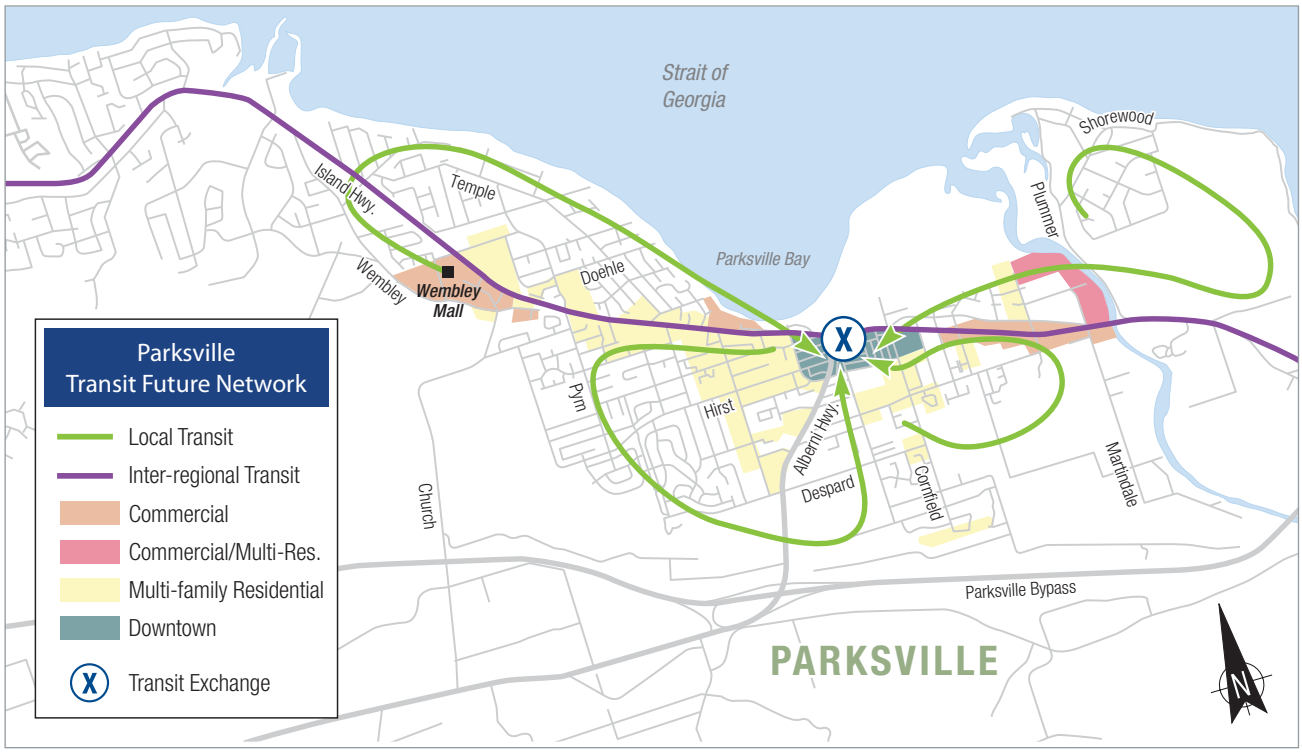


Map 13: Transit Future Network - Lantzville & City of Nanaimo

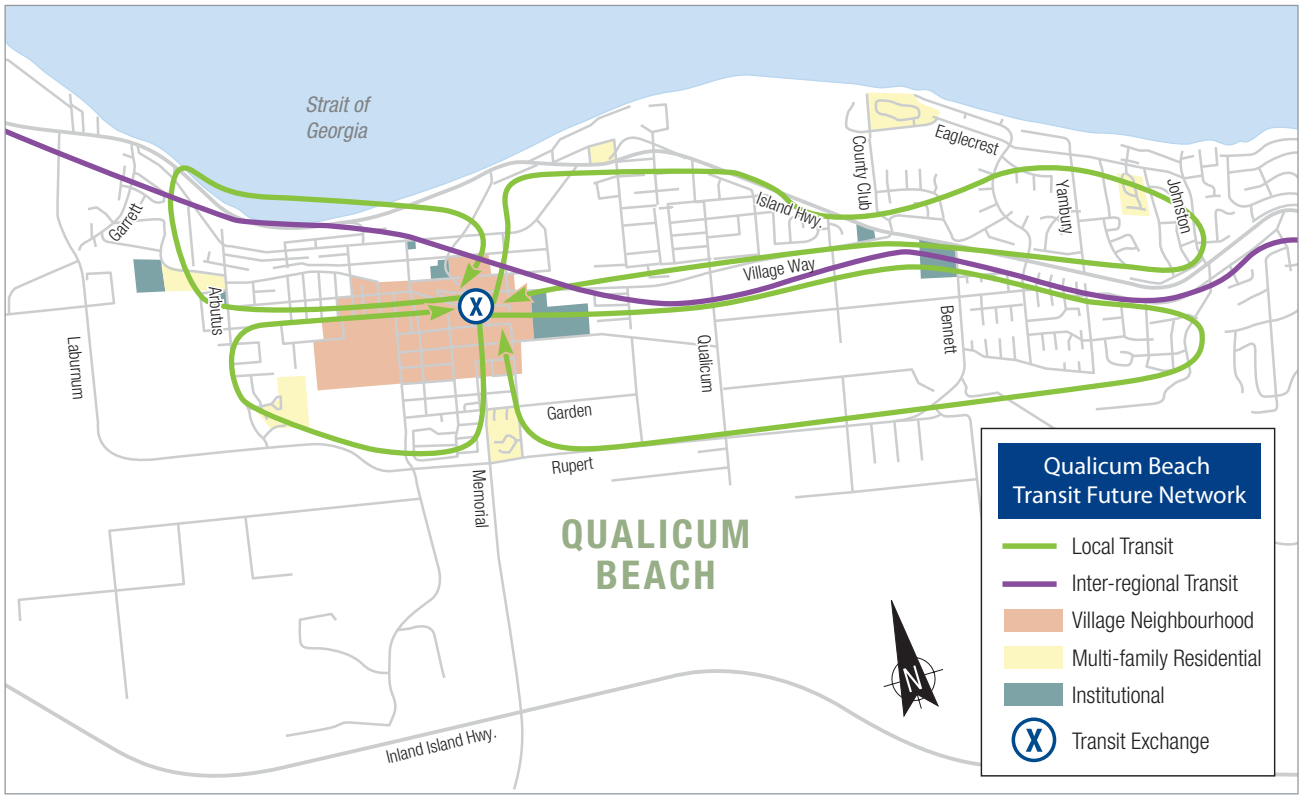


** Airport to south of map see map 16*

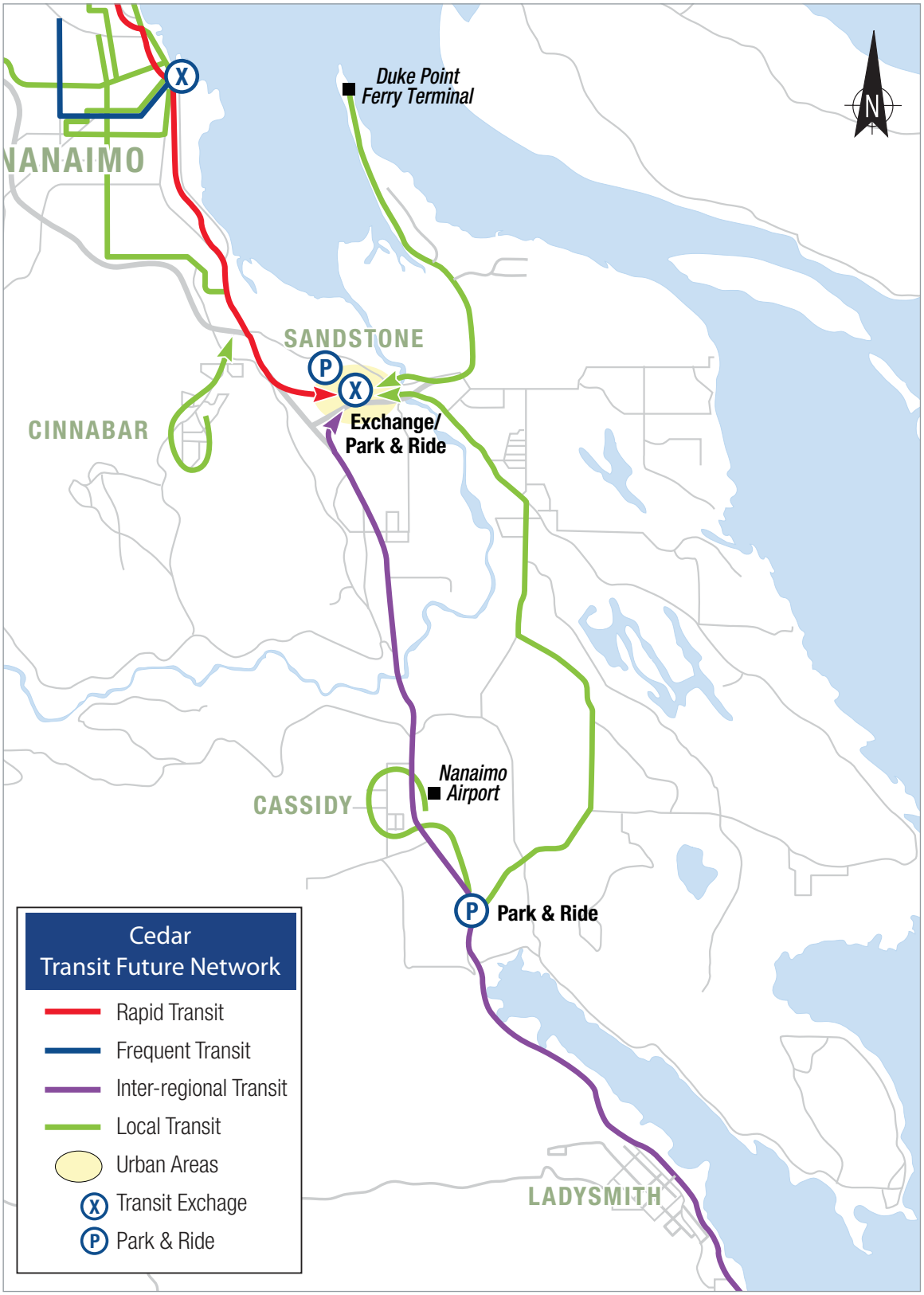
Map 14: Transit Future Network - Parksville



Map 15: Transit Future Network - Qualicum Beach



Map 16: Transit Future Network - Cedar



Map 17: Transit Future Network - Gabriola Island

Resources

To meet the mode share and ridership targets set out in the Transit Future Plan requires investments in transit operating and capital resources. This section of the Transit Future Plan outlines forecasted service hours, fleet requirements and infrastructure requirements.

Service Hours and Vehicles

Future Service Hours

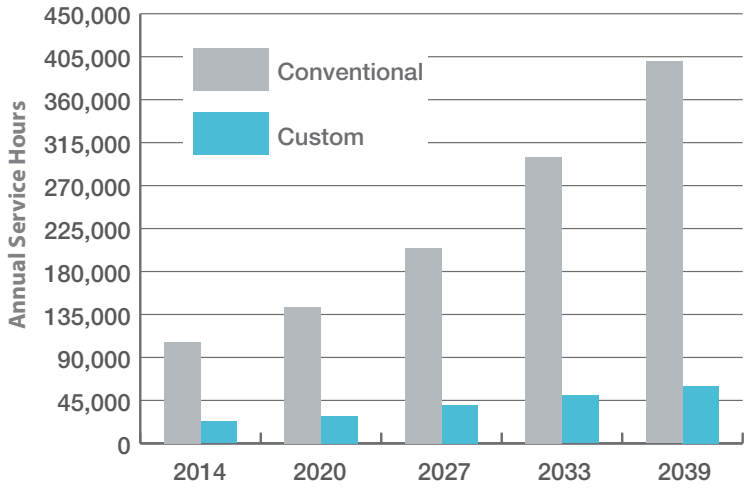
Future service hours were forecasted for 2039 for each transit corridor by service type (Rapid, Frequent, Local and Targeted Services), assigning corresponding service levels and spans for each day of the week. *See Table 7 and Figure 8.*

Service hours for each route were then calculated by estimating the cycle time. The cycle time is the length of time it takes for a transit vehicle to complete one round trip, including the recovery time (additional time at the end of the trip to ensure the next trip starts on time). Cycle times were calculated by measuring the length of the route in kilometers and estimating the average trip speed (km / average trip time). The total number of service hours for each route was then calculated by multiplying the frequency of trips throughout the day by the cycle time. Travel speeds were based on current trip speeds. Variations in travel speed have a significant impact on the number of service hours and fleet required to provide service. Custom service hour projections were based on historical trends matched with past and future demographic trends.

Table 7: Existing and Projected Annual Service Hours, conventional and custom transit

	Conventional Transit Service	Custom Transit Service	Total
2013	113,892	27,002	140,894
2027	205,000	40,000	245,000
Projected 2039	**400,000**	**60,000**	**460,000**

Figure 8: Existing and Projected Annual Service Hours, conventional and custom transit



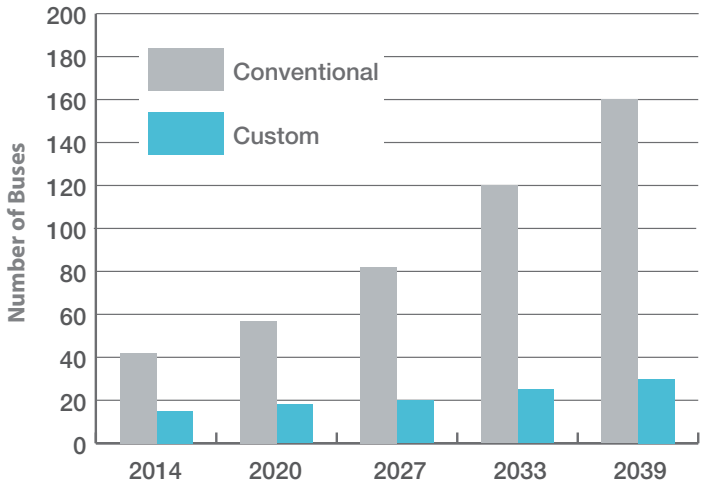
Future Fleet Requirements

The forecasts for fleet requirements were calculated for each transit route for 2039 by determining the number of vehicles required to operate the service during the peak hour for each transit route during weekday service. The formula used was peak frequency/ time required to complete one round trip. See Table 8 and Figure 9.

Table 8: Existing and projected fleet requirements, conventional and custom

	Conventional Fleet	Custom Fleet	Total Fleet
2013	46	16	62
2027	82	20	102
Projected 2039	**160**	**30**	**190**

Figure 9: Existing and projected fleet requirements, conventional and custom



Benchmarking the Transit Future System

The plan projections (2039 RDN) were compared to what other communities in Canada are operating in 2013. See Table 9 and Table 10. The benchmarking exercise displays that the ridership target, future service hours and fleet requirements are comparable statistically with similarly sized communities. The existing transit system performs well, but will need to perform at an even higher level to attain the ridership targets in the plan. To meet these ridership targets the plan must be supported with a transportation demand management strategy, as well as transit oriented development with denser, mixed land use along key transit corridors.

Table 9: Forecast 2039 Conventional Transit System – Future Service Level Comparison

System	Population	Annual Service hours	Vehicles	Annual Ridership	Hours per capita	Rides per capita	Rides per hour
Saskatoon, Sask	234,200	367,885	161	12,454,899	1.57	53.2	33.9
Gatineau, QB	277,380	485,185	302	19,165,932	1.75	69.1	39.5
Regional District of Nanaimo, BC	**231,000**	**400,000**	**160**	**13,600,000**	**1.88**	**58.8**	**34**
Regina, Sask	210,556	273,442	109	8,861,609	1.3	42.1	32.4

Table 10: Forecast 2039 Custom Transit System – Future Service Level Comparison

System	Population	Annual Service hours	Vehicles	Annual Ridership	Hours per capita	Rides per capita	Rides per hour
Kelowna Region, BC	186,700	40,132	23	141,600	0.21	1.1	3.53
Central Fraser Valley, BC	176,900	24,756	17	96,550	0.13	0.55	3.90
Regional District of Nanaimo, BC	**231,000**	**60,000**	**30**	**180,000**	**0.26**	**0.78**	**3.0**

Transit Infrastructure

Implementing the network requires investments in transit infrastructure such as customer facilities, operation and maintenance facilities and transit priority measures.

Customer Facilities

The attractiveness of transit is based not only on transit services, but on customer facilities that are provided such as at transit stops, exchanges, terminals and Park & Rides. New and expanded customer facilities will support the implementation of the plan and improve the customer experience, access to the system and the ability to accommodate an expanded transit fleet.

Transit Exchanges

Transit exchanges are typically located within the activity centres of the community, such as downtown, village centres and shopping malls, in order to reinforce the relationship with land use patterns. If properly planned and designed, transit exchanges can become effective multi-modal exchanges and

pedestrian-oriented sites. Transit exchanges should provide weather protection, seating, transit route and schedule information, lighting, bicycle parking and other amenities as shown in the passenger amenities section below. The Transit Future Plan requires ten transit exchanges or terminals as identified in Table 11. In several cases exchanges or terminals already exist and will need to be expanded or relocated.

Park & Rides

Transit services in rural areas are often inconvenient with less frequent service and long walking distances to bus stops, because population densities cannot support higher quality transit. The Transit Future Plan identifies five Park & Ride facilities in Table 11 to provide customers living in semi-rural to rural areas direct access to higher quality transit services.

Table 11: RDN Customer Facilities

Location	Type	Capacity – Buses & Automobile Parking	Status
Downtown Qualicum Beach	Exchange	4 bus pullouts	New
Downtown Parksville	Exchange	4 bus pullouts	New
Woodgrove Centre	Exchange	10-12 bus pullouts	Expanded or new
Woodgrove Centre	Park & Ride	200 parking stalls	New
Country Club Centre	Exchange	5-6 bus pullouts	Expanded or new
Vancouver Island University	Exchange	6-8 bus pullouts	Expanded or new
Downtown Nanaimo	Exchange	12 bus pullouts	New
Sandstone/South Parkway	Terminal	5-6 bus pullouts	New
Sandstone/South Parkway	Park & Ride	200 parking stalls	New
Airport	Terminal	1 bus pullout	New
Departure Bay	Terminal	2 bus pullout	Expanded
Duke Point	Terminal	2 bus pullout	New
Rural Centres to be determined Cedar, Bowser and Nanoose	Park & Ride	25-50 stalls	New

Enhanced Passenger Amenities

Passenger amenities at transit stops can also have a significant impact on attracting new users. The plan suggests that over the long-term, RDN and local municipal partners should strive to provide seating, shelters, lighting, and customer information at all stops. Table 12 lists the amenities that should be considered at exchanges, major stops, high activity transit stops and lower activity transit stops. Additional information can be found in the Service Design Standards section of this document.

Table 12: Passenger Amenities

Facility	Attributes	
Exchanges		• Premium transit shelters • Level door boarding • Off-board fare payment • Real time schedule information • Bike storage • Customer wayfinding information (such as directional signage) • Universally accessible • Pedestrian oriented lighting
Major stops with enhanced amenities with Rapidbus		• Premium transit shelters • Level door boarding • Off-board fare payment • Real time schedule information • Bike storage • Customer wayfinding information (such as directional signage) • Universally accessible
High activity transit stops		• Transit shelters • Bike storage • Quality customer information (such as transit schedule, map information) • Universally accessible
Lower activity transit stops		• Universally accessible • Bench

Transit Operations and Maintenance Facility

As outlined in the Setting the Scene section of this plan, the existing conventional operations and maintenance facility will need to be upgraded and expanded to accommodate a forecast fleet of 160 conventional transit vehicles and 30 custom transit vehicles over the long-term horizon of this plan. An Operational Facility Master Plan study will be required to identify the functional requirements of an expanded operations facility. Consideration could be given to partnership opportunities to share a new facility with other local government functions.

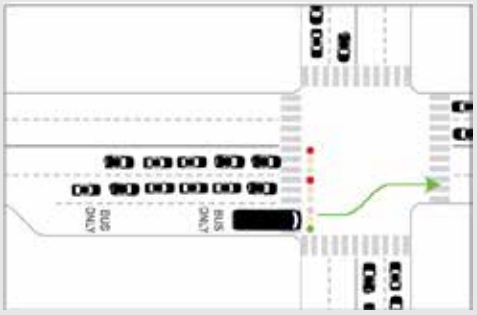
Transit Priority Measures

Transit priority is a term used to refer to a variety of physical and operational improvements designed to give transit vehicles and their passengers priority over general vehicle traffic. Transit priority measures can be:

- Regulatory, such as "Yield to the Bus" regulations and signage
- Operational, such as retiming traffic signals to respect the large number of passengers on transit vehicles compared to private vehicles
- Physical, such as exclusive transit ways, intersection queue jumpers, bus bulges and transit signal priority measures

BC Transit, the RDN and the City of Nanaimo should examine opportunities along the future RTN and FTN corridors to implement priority measures to reduce existing or potential delays to bus services. These transit priority measures will improve transit service, often at the expense of vehicle traffic. Although many of these measures can negatively impact vehicles, they reflect the value of transit to the RDN and represent a high quality service. This prioritization can attract choice riders and support long-term transit use.

Table 13: Transit Priority Measures

Signal Priority Measures	Lane Priority Measures
	
Transit is given signal priority along the corridor at the majority of intersections	Bus only lanes for part or all of the route corridor, or bus queue-jumper lanes when the number of buses exceed 25 buses per hour or at key areas of congestion
Queue-jumper lanes at key areas of congestion	
	

Implementation Strategy

The implementation strategy outlines how transit investments will be staged and prioritized over the life of the plan to meet the transit mode share and ridership targets. The implementation strategy identifies short, medium and long-term network priorities, as well as on-going improvement initiatives. The prioritization of transit investments is based on the needs and challenges identified throughout the plan and the feedback received from the general public, RDN and municipal staff, as well as the stakeholder advisory group during the planning process (see Participation section). The implementation strategy informs the Three-Year Service Strategy and captures the short-term implementation priorities.

Network Priorities (Conventional Service)

The Network Priorities section of the plan identifies the key priorities for establishing the Transit Future Plan network, with the highest level of detail provided on the short-term initiatives. As the plan is updated over time, more detail will be provided on medium and long-term initiatives. Service changes and infrastructure projects identified in this section vary significantly in terms of timelines, complexity, costs and process, meaning that initiatives will not necessarily be completed in a strictly chronological order. The priorities are not scheduled on a year-by-year basis as the implementation of the Transit Future Plan is dependent on a number of factors that may change annually including:

- Available funding from local government, the provincial government and the federal government
- Community growth factors (e.g., community development and shifts in demographic factors)
- Phasing of major projects (e.g., new operation and maintenance centre, new transit exchanges)
- Operational and capacity demands of the system
- Opportunities for value added partnerships (e.g., road improvement projects by local government)

Establishing the Transit Future Plan network requires prioritizing transit investments and developing an implementation strategy to transform today's network into the future network.

Short-term Implementation Priorities

Service Improvement	Resources
1. Establish the Frequent Transit Corridor and begin to increase service levels Restructure routes 1 Downtown/Woodgrove and 4 V.I. University service to better connect Woodgrove Centre, Vancouver Island University and the City of Downtown. This change would create the new frequent transit spine of the transit system increased service frequency and span of service on Wakesiah, Bowen and Uplands roads. The short - to medium-term goal is to increase service to 15 minutes Monday to Friday from 7:00 am to 7:00 pm and to also improve service levels in the evening and on weekends.	Phase 1: Two vehicles and 5,000 annual service hours Phase 2: One vehicle and 2,800 annual service hours Phase 3: One vehicle and 2,500 annual hours
2. Establish the Rapid Transit Corridor and begin to increase service levels Increase service levels and restructure routes 8 South and 9 North in tandem with investments in infrastructure to create a Rapid Transit Corridor between Woodgrove Centre and the City of Nanaimo Downtown. This change will include increases to the service frequency and span of service on the Island Highway. The short - to - medium term goal is to increase service to a 15 minute peak service and 30 minute midday, evening and weekend service.	Phase 1: Two vehicles and 5,000 annual service hours Phase 2: Two vehicles and 5,000 annual service hours
3. Restructure transit routes to serve the new Downtown Nanaimo Transit Exchange Transit routes and schedules are designed to serve the Prideaux Transit Exchange and will need to be changed when the new Downtown Exchange is developed. The relocation of the exchange will likely improve service efficiency and may allow for operational savings to be used to improve service levels.	Cost neutral or cost savings
4. Enhance service on the Local Transit Network General service increases to the routes that make up the local transit network. This would include expanded local bus service in Parksville and Qualicum Beach. A restructuring of routes 3 Hospital, 5 Fairview and 6 Harewood to improve route directness and service effectiveness and the introduction of a new route between VIU and South Parkway Plaza.	Phase 1: One vehicle and 2,000 service hours Phase 2: Two vehicles and 3,100 service hours Phase 3: One vehicles and 2,500 annual hours
5. Introduce Inter-regional Transit Services Phase 1 Comox Valley: The Regional District of Nanaimo and BC Transit will discuss opportunities to establish a transit service connection between Regional District of Nanaimo and Comox Valley Transit Systems with the Comox Valley Regional District Phase 2 introduce new peak hour weekday service that connects Downtown Nanaimo, VIU, and the RDN Airport with a direct service to the Cowichan Valley.	Phase 1: Discuss Opportunities & develop options Phase 2: Two vehicles and 2,000 annual service hours

Infrastructure Improvement	
1.	**Plan for an expanded Transit Exchange in Downtown Nanaimo** The Transit Future Plan identified the need for a downtown transit exchange to support the implementation of the Transit Future Network and the land use strategy of the City of Nanaimo's downtown. Planning is underway to identify how a new transit exchange in the Downtown Nanaimo Waterfront District would be integrated with other adjacent land uses. The transit exchange should be located within an active pedestrian-oriented area along the future Rapid Transit alignment that is large enough to accommodate future growth in transit services. Amenities at the transit exchange should include transit shelters, benches, transit customer information and cycling facilities.
2.	**Improve customer information** The improvement of customer information helps existing customers navigate the transit system and makes it easier for new users to access the transit system for the first time. The following customer information tools are recommended for consideration: • An online trip planner or provide transit information on Google Transit • Additional transit information at the stop level • Branding strategies should be developed for the Rapid and Frequent Transit Network
3.	**Complete a Rapid Transit Corridor Study for the Island Highway** Planning for the future Rapid Transit Corridor and infrastructure should be initiated with a study and include the following objectives: • Determine the transit alignment right-of-way • Identify opportunities for transit priority • Identify Rapid Transit Station locations • Plan for expanded transit exchanges in the downtown Nanaimo, Woodgrove Mall and Country Club Centre. The study should also include an incremental implementation strategy.
4.	**Construct a Downtown Nanaimo Transit Exchange and Establish Rapid Transit Stations on the Island Highway** A Downtown Nanaimo transit exchange and rapid transit stations are the highest priorities for the development of the Rapid Transit Network. A larger exchange is needed to support future increases to service and better align the transit network to existing and future land use. Rapid transit stations on the Island Highway will improve the directness of the Rapid transit line between Downtown and Woodgrove and improve access to service from the Island Highway as the existing bus stops are very limited.
5.	**Invest in technology to monitor ridership and service performance** Investments should be made in technology to allow for improved monitoring of ridership and service performance such as an automated passenger counting program and automated vehicle location to support evidence based decision making to ensure that resources are used in the most effective manner.

Infrastructure Improvement
6. Continue to improve transit customer facilities Continued improvement and maintenance of transit facilities and on-street customer amenities are important for the continued operation and future growth of the transit system. Some improvements that have been identified are to: • Consider amending zoning bylaws to include transit stop improvements as part of required works and services • Space transit stops along a corridor at appropriate intervals between 300 to 400 metres for Local and Frequent Transit and 800 metres to two kilometres for Rapid Transit. In some locations, transit stops are spaced too close together leading to slower transit trips and higher transit stop maintenance costs while in other cases transit stops are too far apart limiting passenger access to the system. Corridor transit and transportation projects should include a review of stop locations prior to investing in infrastructure. • Invest in on-street customer amenities such as transit shelters, customer information, benches and pedestrian-oriented lighting at transit stops • Improve universal accessibility of transit stops
7. Update the existing Operation Facilities Master Plan The existing Operational Facility Master Plan needs to be updated; BC Transit will work with the RDN to identify the functional requirements and develop concepts for an expanded facility. The existing facility will need to be expanded to accommodate the long-term growth of the fleet and a strategy needs to be developed to ensure that there is sufficient capacity available as the fleet grows. The facility needs to be able to accommodate a future fleet of up to 160 conventional transit vehicles and 30 custom transit vehicles.

Medium-term Implementation Priorities

Service
1. Continue to increase service levels of the Frequent and Rapid Transit Network to meet ridership demands: • The first priority will be to increase service levels as demand warrants • The second priority should be to increase evening and weekend service to every 30 minutes • The third priority should be to expand service levels to meet the minimum standard of 15 minutes from 7:00 am to 7:00 pm seven days a week
2. Enhance service on the Local Transit Network by increasing frequency and span of service: • Increase the frequency and hours of service on weekend days as demand warrants • Re-introduce bus service to Duke Point Ferry Terminal • Increase frequency of the 90 Intercity • Improve late night service • Increase services in Parksville and Qualicum Beach by establishing a local transit network for each community that operates on a timed "pulse" to connect with inter-regional services and other local transit services • Increase transit service in Lantzville
3. Expand the Local Transit Network to support existing and future development: • Sandstone • Gabriola • Cedar • Errington • Improve service in other rural areas as needs are identified
4. Expand the Inter-regional Service to improve connections between regions: • Introduce inter-regional service between downtown Nanaimo, Bowser and the Comox Valley with the introduction of regular weekday peak hour service
5. Extend the Rapid Transit Network to south Nanaimo: • Extend the Rapid Transit line to South Parkway Plaza or Sandstone as development occurs • Service levels to south Nanaimo should be increased over time to meet the minimum standard of 15 minutes from 7:00 am to 7:00 pm seven days a week

Infrastructure
1. Match service to demand by using smaller and larger capacity transit vehicles when appropriate to reduce transit operating costs and greenhouse gas emissions: • This may involve capital investments in additional vehicles
2. Establish and expand critical transit facilities needed to support the Rapid and Frequent Transit network: • Expanded Woodgrove Centre exchange and Park & Ride • Expanded Country Club Centre exchange • Expanded exchanges in Qualicum Beach and Parksville • New Sandstone/South Parkway Plaza exchange and Park & Ride • New/Expanded VIU exchange • Continue to add Rapid Transit Stations as development requires
3. Establish Park & Ride in rural areas to support the Inter-Regional Transit Network: • Cedar • Bowser • Nanoose
4. Implement Transit Priority Measures on the Rapid and Frequent Transit Network: as required

Long-term Implementation Priorities

Service
1. Continue to enhance service on the Rapid and Frequent Transit Network: • Increase peak service levels as demand warrants • Extend service levels to meet the minimum standard of 15 minutes to 10:00 pm seven days a week
2. Continue to enhance service on the Local Transit Network increasing frequency and span of service: • Expand service to areas to support future development • Restructure routes as necessary to better meet ridership demands
3. Enhance service on the Inter-regional routes: • Introduce midday service on weekdays • Introduce weekend service

Infrastructure
1. Expand the operational and maintenance facility capacity
2. Continue to implement transit priority measures on the Rapid and Frequent Transit Network as required
3. Continue to improve customer information through the use of real-time information

Custom Transit Service and Transit Accessibility

Improvements to accessibility and custom transit services will make the transit system more accessible for people of all ages and abilities. The plan forecasts that a fleet of 30 buses and 60,000 service hours will be needed to operate custom transit services by 2039. Service improvements to enhance accessibility and custom transit includes:

- Improvements to universal accessibility of the transit system services and infrastructure
- Aligning the hours of operation and service area with the conventional system
- Increasing service availability to allow customers to plan medical appointments, shopping and casual trips throughout the entire service day

Short-Term Implementation Priorities
Service Improvements
1. Define custom transit service area The existing custom transit service area defined in the Annual Operating Agreement is similar to the conventional transit service area, and encompasses Nanaimo, Lantzville, Nanoose, Parksville and Qualicum Beach.
2. Improve handyDART vehicle accessibility by changing bus type The Ford Polar buses used for handyDART service for the RDN are currently being phased out and replaced with low-floor accessible buses which have a level entry system and a deployable ramp instead of using a lift at the rear of the vehicle for clients with wheelchairs or other larger mobility aids. These are light duty transit vehicles (26' long, 96" wide) with a low floor and a single passenger entrance door that allows for wheelchair access. The bus has space for 20 seated passengers or 3 wheelchairs and 12 seated passengers. Low floor vehicles are generally faster and easier to load for passengers with mobility aids and they improve access for ambulatory clients, who may have difficulty climbing stairs into the vehicle.
3. Improve handyDART service: • Increase handyDART service availability in Parksville and Qualicum • Increase handyDART service to meet demand at peak travel times • Expand Taxi Saver and Taxi Supplement as required

Medium & Long Term Implementation Priorities
1. Improve handyDART service: • Increase handyDART service to meet demand at peak travel times • Increase handyDART service to service new areas as identified • Increase handyDART span of service to match conventional service hours
2. Improve custom registration process BC Transit is currently reviewing custom transit registration in partnership with local governments. A pilot project is being completed in two regions where BC Transit provides custom transit services. This pilot project will incorporate an in-person component to the custom transit registration process to more closely align with industry standards and best practices. Based on the projects outcomes, the intent of this project is to develop a new approach which will be fine-tuned and implemented across the province in all of BC Transit's applicable custom transit and paratransit systems. It is likely that this will be ready for implementation in the RDN in the medium term.

Medium & Long Term Implementation Priorities	
3.	**Implement a seniors' oriented service** Public consultation revealed that some customers find the conventional fixed-route service challenging to use but do not require the level of service offered by handyDART. These customers may be best served by developing a service plan to provide a regular bus service oriented to seniors or those who have difficulty accessing the conventional fixed-route system. For example, in North Vancouver, the Silver Harbour Seniors' Activity Centre has developed a "Go Bus" that operates three days a week and is designed to provide service for isolated seniors.
4.	**Implement a travel training program** A program should be developed to provide travel training to assist individuals who meet the handyDART eligibility criteria in learning to use conventional and handyDART transit systems. The travel training program would be based on handyDART referrals and outreach to seniors and people with a disability. For example, in Kelowna, 95% of training participants have chosen to ride conventional transit following their training.

Other initiatives to make transit more accessible:

- Upgrading existing and new transit infrastructure to meet BC Transit's Infrastructure Design Guidelines
- Improving written and online material for those with visual impairments
- Providing customers more convenient fare payment and purchase options
- Implementing audible stop announcements on transit vehicles and at major stops
- Improving accessibility for pedestrians and cyclists to use the transit system

Selecting a Path to Implementation of the Transit Future Plan

Selecting a plan for growth over the next five years allows for more accurate transit service, vehicle and infrastructure planning, as well as budget development. Annual budgets, proposed service expansion and associated services changes will be presented to the RDN for approval on an annual basis for implementation each year. The growth strategy selected will determine when short-term priorities are achieved. A 5 % investment in growth of transit services per year is an appropriate level of investment needed to meet the Transit Future Plan targets of a 5% transit mode share and support the Regional Growth Strategy aspirations outlined in Table 14 and Table 15.

Table 14: Annual Service Hour Growth Scenarios to Meet Transit Future Plan Targets

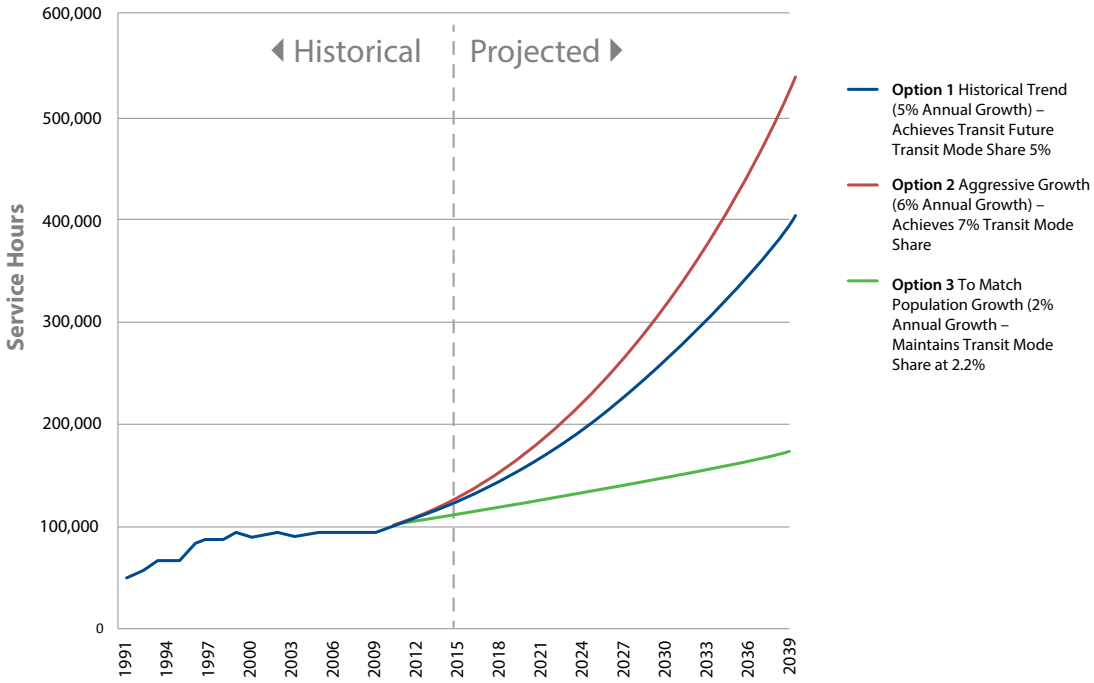


Table 15: Comparison of Short- term Expansion Scenarios

	Base Budget	Option 1 Growth to meet the Transit Future Plan mode share target of 5%	Option 2 Aggressive growth to meet a mode share target of 7%	Option 3 Maintain mode share and match service growth to population growth
Growth Strategies				
Five Year Growth- Conventional Service Hours	0	27,500	35,500	10,000
Five Year Growth- Conventional Vehicles	0	11	15	4
Five Year Growth- Custom Service Hours	0	5,000	8,300	2,800
Five Year Growth- Custom Vehicles	0	3	1	2
Evaluation Criteria				
Schedule Delivery – ability to improve on time performance	◔	●	●	●
Community Development – Allows for some expansion of transit service on key routes and provide coverage to neighborhoods not served by transit	○	●	●	◔
Allows for development of the RTN and FTN	○	◔	●	◔
On track to meet the Transit Future Plan Mode Share Targets	○	●	●	◔
Custom Service – ability to meet demand at peak times and improve weekend and evening service	○	◔	●	◑

● Achieves benefit ○ Does not achieve benefit

Costing of Short-term Implementation Priorities

Once an overall growth strategy has been selected and prioritized to fit within it. Preliminary costs have been developed for the priorities identified in the short-term implementation section of the Transit Future Plan. As shown in Table 16 and Table 17. Cost and revenue projections are based on existing 2013/14 Annual Operating Agreement (AOA) budget figures, and actual costs and impacts may vary depending on the finalization of service and operating details. Ridership projections are also estimates, based on analysis of existing ridership trends.

Table 16: Short-term Conventional Service Service Implementation, Preliminary Cost Estimates*

Service Option	Buses**	Service Hours	Rides	Total Revenue	Total Costs	Net Local Share of Costs	BC Transit Share of Costs
Frequent Transit Phase 1 – RT 1/4	2	5,000	75,000	$91,400	$528,800	$227,000	$210,400
Frequent Transit Phase 2 – RT 1/4	1	2,800	42,000	$51,200	$291,000	$122,200	$117,600
Frequent Transit Phase 3 – RT 1/4	1	2,500	37,500	$45,700	$264,400	$113,500	$105,200
Rapid Transit Phase 1 – RT 8/9	2	5,000	75,000	$91,400	$528,800	$227,000	$210,400
Rapid Transit Phase 2 – RT 8/9	2	5,000	75,000	$91,400	$528,800	$227,000	$210,400
Local Transit Phase 1 – Parksville/ Qualicum	1	2,200	11,000	$13,400	$225,700	$119,500	$92,800
Local Transit Phase 2 – South Nanaimo	2	3,100	46,500	$56,700	$360,400	$171,900	$131,800
Local Transit Phase 3 – RT 3	1	2,540	38,100	$46,500	$268,000	$114,600	$106,900
Inter-regional Transit – Cowichan Valley Connection	2	2,020	30,300	$36,900	$264,700	$140,700	$87,100
Total	**14**	**30,160**	**430,400**	**$524,600**	**$3,260,600**	**$1,463,400**	**$1,272,600**

Table 17: Short-term Custom Service Service Implementation, Preliminary Cost Estimates*

Service Option	Buses**	Service Hours	Rides	Total Revenue	Total Costs	Net Local Share of Costs	BC Transit Share of Costs
handyDART Phase 1 - Parksville/ Qualicum	1	1,640	2,500	$7,900	$123,000	$51,000	$64,100
handyDART Phase 2 - Nanaimo/ Lantzville	1	1,640	2,500	$7,900	$123,000	$51,000	$64,100
handyDART Phase 2A - Parksville/ Qualicum	0	800	1,200	$3,800	$46,200	$11,600	$30,800
handyDART Phase 2B - Nanaimo/ Lantzville	1	1,260	1,900	$6,000	$101,000	$45,600	$49,400
Total	**3**	**5,340**	**8,100**	**$25,600**	**$393,200**	**$159,200**	**$208,400**

Notes:
** Based on 2013/14 AOA budgets. Final costs may change based on final budgets and confirmation of final operational details.*
*** The vehicle requirements shown here appear feasible but would need to be confirmed by BC Transit's Fleet Standards department closer to the implementation date. Annual lease fee costs for a custom vehicle used in these estimates is $ 50,400.*
**** Net Local Share of Costs represents the cost that is shared less revenue collected*
***** BC Transit Share of Costs do not include Provincial portion of lease fees (this is standard wording we use on AOAs and 3YBs)*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Service Monitoring

Service Design Standards and Performance Guidelines

As part of the on-going management of the transit network, Service Design Standards and Performance Guidelines have been developed as tools to facilitate service planning decisions and measure how the transit system is progressing towards achieving its goals.

- **Service Design Standards** define service levels, the service area and when new service should be introduced to an area.
- **Performance Guidelines** measure service effectiveness and monitor how well the transit system is progressing to achieving the vision of the Transit Future Plan and determine whether change is required.

These measures are meant to ensure resources are used effectively and an acceptable level of service quality is provided to the customer, and, along with the Transit Future Plan, guide planning decisions and recommendations to the Transit Select Committee.

Service Design Standards and Route Performance Guidelines should be reviewed periodically (every 3-5 years depending the level of community development), since they evolve as the system develops and as the needs of the community change.

Service Design Standards

What they are and what they define:

Service Design Standards define levels of transit service desired to meet individual community needs. Service Standards are specific to a particular transit system and the communities it serves and should reflect community values. Transit policies identified in the 2008 RDN Transit Business Plan have been incorporated into the RDN Transit System Service Design Standards.

Service Design Standards usually define features such as:

- Service span (the hours and days of service when it operates)
- Frequency of routes or groups of routes
- Walking distance to bus stops
- Level of accessibility
- Thresholds for the introduction of new transit service to areas beyond the walking distance of existing transit services (subdivision density, population, etc.)

Why they matter:

The key benefit of service design standards are that they assist the RDN Transit Select Committee and BC Transit in determining and managing community expectations around the level of transit service to be provided. They also provide principles for decision making regarding system design, such as whether to provide a new service or change an existing service.

Network Design Principles

- Transit service should be focused on major activity centres and residential areas within urban areas with connections to rural village centres.
- Ensure that transit routes connect neighbourhood residents to the closest regional centre and that 90% of transit trips between centres can be made with no more than one transfer.
- Transit routes should be kept as direct and frequent as possible to be competitive with the automobile.
- Timed transfers should be provided for Local Transit Network connections at major exchange points.
- Transit service should connect to other transportation systems to allow passengers to conveniently connect to other modes, including cycling and pedestrian networks, intercity busing, ferry and rail passenger services, as well as custom transit services.
- Transit service should be operated on the arterial and collector road network and be very limited on the local road network. Future arterial and collectors roads should be designed to accommodate transit stops and transit priority measures.
- Ensure that at least 90% of residents and employees within the RDN's urban containment boundary are within 400 metres walking distance of a transit route.

Ease of Use Principles

- To make the transit system easy to understand and use for all passengers, routes should be direct and straightforward, and service frequencies and schedules should be consistent on each route and during each time period, when possible.
- Customer information should be designed to be straightforward with simple route and schedule information. Transit information should be developed to communicate the layers of service identified in the Transit Future Plan; including Rapid, Frequent, Local and Targeted Transit, with specific attention to the following:
  - » Strategies for route identification such as naming and numbering conventions
  - » A simple to understand transit network map
  - » Information and branding for the Rapid Transit Network and the Frequent Transit Network, including logo/identifier, visual identity and style guide for additional livery (vehicle colour schemes or logos), print and electronic channels. Identity and numbering for the Local Transit Network and Targeted Services.
- Persons with mobility and cognitive disabilities should be provided with a range of transit options, including handyDART service, taxi programs, and fully accessible conventional transit vehicles and bus-stop infrastructure.

Introducing New Service

The following guidelines have been identified to determine when it may be feasible to introduce transit service into new residential, industrial, commercial and recreational developments. The following conditions should be met:

- Minimum density of 10 residents or 10 employment jobs per hectare measured over a minimum developed area of 10 hectares
- There is a road and pedestrian access that provides for safe access and efficient operation of transit service

Types of Transit Service

Table 18 describes a hierarchy of transit services that will support the implementation of the long-term transit strategy and satisfies various market segments, including the regular transit rider and potential users.

Table 18: Types of Transit Service

Type	Service Description	Existing (Bus route #)	Short-term (Bus route #)	Medium to Long-term (Bus route #)
Rapid Transit Network	Rapid Transit routes are designed to move large volumes of passengers between major destinations with very frequent service and a limited number of transit stops or stations.	None	8 South 9 North	8 South 9 North NEW: Island Highway - Downtown to South Parkway Plaza
Frequent Transit Network	Frequent routes that operate at a minimum 15 minute frequency over a specific span of service. Routes generally operate on arterial roads, serve corridors with mixed land use and provide connections between urban centres	None	4 V.I. University NEW: Uplands	4 V.I. University NEW: Uplands
Local Transit Network – Ridership based	Local routes generally serve urban and suburban areas with a focus on connections to local centres and to rapid and frequent transit routes	TBD	1 Woodgrove/Downtown 2 Hammond Bay/ Waldbank 3 Hospital 5 Fairview 6 Harewood 7 Cinnabar/Cedar 90 Intercity	1 Woodgrove/Downtown 2 Hammond Bay/ Waldbank 3 Hospital 5 Fairview 6 Harewood 7 Cinnabar/Cedar 90 Intercity NEW: Sandstone
Local Transit Network – Coverage based	Local routes generally serve less densely populated suburban and rural areas with a focus on connections to local centres and to rapid and frequent transit routes	TBD	10 Lantzville 12 Dover Connector 88 Parksville	10 Lantzville 12 Dover Connector 88 Parksville NEW: Gabriola, Cedar, Errington
Targeted Transit	Targeted routes are created to provide service to specific areas such as schools, universities, peak commuter trips as well as inter-regional connections to other communities	TBD	12 Dover Connector 15 V.I.U. Connector 25 BC Ferry Shuttle 92 Hammond Bay 93 Mountain View 99 Deep Bay NEW: South Connector: Airport and Cowichan Valley	12 Dover Connector 15 V.I.U. Connector 25 BC Ferry Shuttle 92 Hammond Bay Overload 93 Mountain View 99 Deep Bay NEW: South Connector: Airport and Cowichan Valley NEW: North Connector: Bowser and Comox Valley
Custom Transit	Demand responsive service for people with disabilities who cannot use the regular accessible conventional transit system some or all of the time	HandyDART	HandyDART	HandyDART Senior's Bus

Span of Service

Span of service defines the operating hours for each service type, as described in Table 19. Extension to the span of service shall be considered when the first and last hour of service has productivity greater than the average productivity on the route. In general most routes operate from 6:30 am to 11:30 pm on weekdays with more limited service on weekends.

- Service should be available 7 days per week and 365 days per year
- Service should start early enough to allow for a 7:00 am arrival in downtown Nanaimo on weekdays, and an 8:00 am arrival on weekends using all major routes
- Service should start early enough to allow for an 8:00 am arrival at other major nodes on weekdays, and a 9:00 am arrival on weekends using all regular service routes
- Outbound service from downtown should be provided until at least 12 midnight, Monday to Saturday, on all major routes
- Outbound service from other major nodes should be provided until at least 11:30 pm, Monday to Saturday, on all major routes
- Span of service extension shall be considered when the first and last hour of service has productivity greater than the average productivity on the route

Table 19: Span of Transit Service

Type	Period	Existing	Short-term	Medium to Long-term
Rapid Transit Network	Weekday	NA	7:00 am to 7:00 pm	6:00 am to 12:30 am
	Saturday	NA	NA	6:00 am to 2:00 am
	Sunday	NA	NA	6:00 am to 11:00 pm
Frequent Transit Network	Weekday	NA	6:30 am to 12:00 am	6:00 to 12:00 am
	Saturday	NA	7:00 am to 12:00 am	6:00 am to 2:00 am
	Sunday	NA	7:30 am to 7:00 pm	6:00 am to 11:00 pm
Local Transit	Weekday	6:30 am to 11:30 pm	7:00 am to 7:00 pm	6:00 am to 12:30 am
	Saturday	7:00 am to 11:30 pm	NA	6:00 am to 2:00 am
	Sunday	7:30 am to 7:00 pm	NA	6:00 am to 11:00 pm
Targeted Transit	Weekday	Varies depending on service	6:30 am to 12:00 am	6:00 to 12:00 am
	Saturday	Varies depending on service	7:00 am to 12:00 am	6:00 am to 2:00 am
	Sunday	Varies depending on service	7:30 am to 7:00 pm	6:00 am to 11:00 pm
Custom Transit Nanaimo	Weekday	8:30 am to 6:00 pm	7:00 am to 7:00 pm	6:00 am to 12:30 am
	Saturday	9:00 am to 6:00 pm	NA	6:00 am to 2:00 am
	Sunday	9:00 am to 5:00 pm	NA	6:00 am to 11:00 pm
Custom Transit Parksville - Qualicum	Weekday	7:15 am to 5:15 pm	6:30 am to 12:00 am	6:00 to 12:00 am
	Saturday	NA	7:00 am to 12:00 am	6:00 am to 2:00 am
	Sunday	NA	7:30 am to 7:00 pm	6:00 am to 11:00 pm

Service Frequency

Service frequency defines the minimum frequency at which a route operates, subject to meeting the performance standards. Investments to increase service levels will be considered to strategically develop the network or when route performance indicates the route is performing 25% above the target for the routes class. "Peak" refers to typical commuter times while "base" refers to service in the early morning, midday and evenings. On weekends "peak" service is typically in the midday to afternoon.

Table 20: Transit Service Frequency

Type	Period	Existing *Peak(Base)*	Short-term *Peak(Base)*	Medium to Long-term *Peak(Base)*
Rapid Transit	Weekday	NA	30 min (15 min)	15 min (7 min)
	Saturday	NA	NA	15 min (15 min)
	Sunday	NA	NA	15 min (15 min)
Frequent Transit	Weekday	NA	15 min (15 min)	15 min (7 min)
	Saturday	NA	30 min (20 min)	15 min (15 min)
	Sunday	NA	60 min (30 min)	15 min (15 min)
Local Transit	Weekday	30 min (15 min)	30 min (15 min)	30 min (15 min)
	Saturday	60 min (30 min)	60 min (30 min)	30 min (15 min)
	Sunday	60 min (60 min)	60 min (60 min)	60 min (30 min)
Local Transit – Coverage	Weekday	60 min (30 min)	60 min (30 min)	60 min (30 min)
	Saturday	60 min (60 min)	60 min (60 min)	60 min (60 min)
	Sunday	60 min (60 min)	60 min (60 min)	60 min (60 min)
Targeted Transit	Weekday	Varies depending on service		
	Saturday			
	Sunday			
Custom Transit	Weekday	NA	NA	NA
	Saturday	NA	NA	NA
	Sunday	NA	NA	NA

Vehicle Type Classification

Table 21 describes the vehicle type's attributes such as capacity and length, as well as the operating guidelines such as life span, maximum annual hours of operation and kilometres.

Table 21: Vehicle Type Classification

High Capacity	Heavy Duty	Medium Duty	Light Duty
			
Low Floor/Accessible Minimum of 2 wheelchair positions 35 or more seats, 95 passengers with standees Double Deck or Articulated 13 / 20 year lifespan 40 feet or greater in length 2,500 maximum annual operating hours 75,000 maximum annual kms Midlife upgrade	Low Floor/Accessible Minimum of 2 wheelchair positions 13 – 15 year lifespan 30 or more seats, 70 passengers with standees 35 feet or greater in length 2,500 maximum annual operating hours 75,000 maximum annual kms	Low Floor/Accessible Minimum of 1 wheelchair position 8 – 10 year lifespan Fewer than 25 seats, 40 passengers with standees Less than 35 feet in length 2,500 maximum annual operating hours 75,000 maximum annual kms No midlife extension	Low Floor/Accessible Capable of having more than 2 wheelchair positions 5 year lifespan Up to 20 seats, No standees Less than 35 feet in length 2,000 maximum annual operating hours 60,000 maximum annual kms (300,000 km life) No midlife or life extension

Vehicle Type by Service Layer

Vehicle type is driven by passenger loads during the peak hour of the relevant operating period. On routes where bus capacity is exceeded, consideration should be given to operating buses with additional capacity or with increased service frequency. On routes where a small bus would accommodate passenger loads at peak times, consideration should be given to operating a smaller bus (light duty bus) and maintaining existing frequency. A typical approach is to allow standing passengers during peak periods (optimally for shorter runs) but to provide sufficient capacity for seated passengers during the off-peak hours. Table 22 describes the vehicle types associated with the Transit Future layers of service.

Table 22: Span of Transit Service

Service	Existing Vehicle	Short-term	Medium to Long-term
Rapid Transit	NA	Heavy duty vehicle	High capacity vehicle
Frequent Transit	NA	Heavy duty vehicle	Heavy duty or high capacity vehicle
Local Transit	Heavy duty to light duty vehicle	Heavy duty to light duty vehicle	Heavy duty to light duty vehicle
Targeted Transit	Heavy duty vehicle	Heavy duty to light duty vehicle	Heavy duty to light duty vehicle
Custom Transit	Light duty vehicle	Light duty vehicle	Light duty vehicle

Transit Infrastructure

Design principles for transit facilities should conform to the BC Transit infrastructure and design guidelines, as well as the federal guidelines for transportation and transit infrastructure.

Transit Stops

Transit stops and facilities should include a hard surface landing/waiting area and should be universally accessible, the RDN should work with local municipalities to improve on-street passenger facilities, including the provision of bus benches, shelters, lighting, waste receptacles, and route/schedule information.

- Direct pedestrian and cycling connections should be provided to bus stops via sidewalks, pathways and crosswalks, with curb ramps and barrier-free access.
- Bus stops should be located on the far side of crosswalks, or at least 20 metres in advance of a crosswalk.
- Buses may stop in the traffic lane (with a bus bulge where on-street parking is provided) and bay if the posted speed limit is greater than 50km/h at curbside out of the traffic lane, or in a dedicated bus pullout.
- Adequate sight distances should be achieved for motorists approaching the bus stop as well as transit passengers crossing the road from the bus stop.

Passenger amenities at transit stops can enhance the quality of service for customers and can also have a significant impact on attracting new users. Table 23 describes what transit stop amenities should be associated with each type of service.

Table 23: Transit Service Type and Associated Stop Amenities

Facility	Short-term	Medium-term	Long-term
 Rapid Transit & Transit Exchanges	• None	• Transit shelters • Bike storage • Quality customer information (such as transit schedule and map information) • Universally accessible	• Premium transit shelters • Elevated boarding platform • Off-board fare payment • Real time schedule information • Bike storage • Customer wayfinding information • Universally accessible • May include Park & Ride facilities
 Frequent Transit	• Universally accessible • Bench	• Transit Shelter • Universally accessible • Bench	• Transit shelters • Bike storage • Quality customer information (such as transit schedule and map information) • Universally accessible • May include Park & Ride facilities
 Local Transit	• Universally accessible • Bench	• Universally accessible • Bench	• Transit Shelter • Universally accessible • Bench • May include Park & Ride in rural areas
 Targeted Transit	• Universally accessible • Bench	• Universally accessible • Bench	• Transit Shelter • Universally accessible • Bench
Custom Transit	• Not Required	• Not Required	• Not Required

Stop Intervals

Transit stops should be spaced along a corridor based on the type of transit service. Transit stops that are spaced too close together lead to slower transit trips and higher transit stop maintenance costs while transit stops that are too far apart limit passenger access to the system. Therefore consideration should be given to balancing passenger needs and service efficiency, as well as the market and nature of the destination served. Outside the urbanized area bus stops should be limited to major destinations, connection points, points of interest, and residential concentrations. Select types of service will have different spacing intervals. See Table 24 for the appropriate standard for each service type.

Table 24: Service Type and Appropriate Stop Intervals

Service	Stop Interval
Rapid Transit	Limited stops at key locations. Stops are typically spaced 800 – 2,000 metres apart
Frequent Transit	Frequent stops along a corridor, 300 – 500 metres apart
Local Transit	Frequent stops along a corridor, 250 – 300 metres apart
Targeted Transit	Varies depending on service
Custom Transit	Not applicable

Transit Priority Measures

Transit Priority measures should be provided on the RTN and FTN network to improve travel time and reliability as required. Transit priority is a term used to refer to a variety of physical and operational improvements designed to give transit vehicles and their passengers' priority over general vehicle traffic. Transit priority measures can be:

- Regulatory, such as "Yield to the Bus" regulations and signage
- Operational, such as retiming traffic signals to respect the large number of passengers on transit vehicles compared to private vehicles
- Physical, such as exclusive transit ways, intersection queue-jumpers, bus bulges, and transit signal priority measures

Table 25: Transit Priority Measures

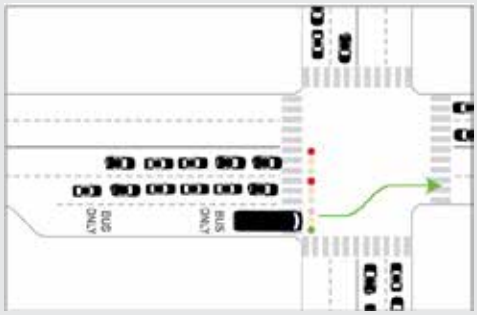
Signal Priority Measures	Lane Priority Measures
	
Transit is given signal priority along the corridor at the majority of intersections	Bus only lanes for part or all of the route corridor, or bus queue-jumper lanes when the number of buses exceed 25 buses per hour or at key areas of congestion
Queue-jumper lanes at key areas of congestion	
	

Table 27: Transit Service Type and Transit Priority Measures

Service	Priority	Existing	Short-term	Medium-term	Long-term
Rapid Transit	Signal	None	Signal timing is optimized to benefit transit	Transit is given signal priority at key delay points	Transit is given signal priority along the corridor at all intersections
	Lane	None	Not required	Transit queue-jumper lanes at key areas of congestion	Transit only lanes for all or part of the route corridor, when the number of buses exceeds 25 buses per hour or at key areas of congestion
Frequent Transit	Signal	None	Not required	Signal timing is optimized to benefit transit	Transit is given signal priority at key delay points
	Lane	None	Not required	Transit queue-jumper lanes at key areas of congestion	Transit queue-jumper lanes at key areas of congestion
Local Transit	Signal	None	Not required	Signal timing is optimized to benefit transit	Signal timing is optimized to benefit transit
	Lane	None	Not required	Not required	Only if part of the RTN
Targeted Transit	Signal	None	Not required	Not required	Only if part of the RTN
	Lane	None	Not required	Not required	Only if part of the RTN
Custom Transit	None	None	Not required	Not required	Not required

Transit Exchanges and Park & Rides

Transit exchanges are typically located within the activity centres of the community, such as the downtown, village centres and shopping malls, in order to reinforce the relationship with land use patterns. If properly planned and designed, transit exchanges can become effective multi-modal exchanges and pedestrian-oriented sites. Transit exchanges should provide weather protection; seating, transit route and schedule information, lighting, bicycle parking and other amenities as shown in the passenger amenities for stops (see Table 23).

Park & Rides should be located in suburban and semi-rural areas to provide residents who live in areas with no transit service or poor transit service an access point to higher quality transit services. Below are the basic functional requirements for transit exchanges and Park & Ride facilities:

Site requirements

- Sites with no significant safety concerns, which provide for direct and safe pedestrian access, and which minimize the interaction between buses and general traffic on adjacent roads
- Sites that can be accessed safely and efficiently, avoiding traffic congestion and queuing
- Sites that provide high visibility to pedestrians, motorists and others, minimizing personal safety concerns for transit passengers using the terminals in evenings and at other off-peak times
- The sites must be located to minimize additional routing and costs

Physical requirements

- All platforms should accommodate standard 12m buses, including double-decker buses in the future
- All Rapid Transit stops and select exchange platforms should be designed for articulated buses
- Buses must be able to arrive and depart from platforms independently
- Passenger facilities should include:
  - » Passenger amenities, including weather protection, seating, illumination, and bicycle storage
  - » Accessibility to all areas of the terminal for persons with disabilities
  - » Way finding signage and information
- Transit terminals should also incorporate operator washrooms
- In addition, Park & Ride sites should include parking for automobiles, bicycles and bus stops for transit access

Route Performance Guidelines

What they are and what they define:

Performance guidelines are a tool by which numerical thresholds and targets are set for a particular system and its routes and services.

Why they matter:

Working in tandem with service standards, performance guidelines are a tool that can be used to evaluate existing services, identify trends in performance and, based on this evidence, determine how service and supporting features (fares, marketing, facilities, etc.) should be adjusted to improve the effectiveness and efficiency of the system to optimize resources.

For a service to be efficient and productive, a balance should be achieved between oversupply and overcrowding. A number of measures can establish this equilibrium such as:

- Implementing transit priority
- Altering frequency
- Reducing/increasing coverage
- Targeted marketing/Corridor branding
- Changing service span
- Changing bus stop spacing
- Bus route changes
- Fleet type allocation

Over-supply | Efficient and Productive | Overcrowded/pass-ups

When system performance falls below or above the set guidelines, recommendations to the RDN Transit Select Committee will focus on the utilization of the above tools to maximize efficiency.

Measures

Performance measures have been chosen that measure the effectiveness of service planning investments on a system and route level.

System Level – The measures used for the system guidelines are:

Average rides per revenue hour - Measures the total volume of ridership as compared to the supply of transit service

- **Cost per ride** – Measures the average cost to provide service per trip
- **Cost recovery** – A measure of the financial performance of the transit system usually expressed in terms of total operating revenue/total operating expenses
- **Rides per capita** – Measures the ratio between transit trips and the population of the service area

Route Level – The measures used for the route level guidelines are:

- **Average rides per revenue hour** – Measures the total volume of ridership as compared to the supply of transit service
- **Average rides per trip** – Measures the total number of people that board a vehicle on a specific trip

Route level performance guidelines have been classified into four categories (rapid transit, frequent transit, local transit and targeted transit) to acknowledge different performance expectations based on a route's objective.

Performance Targets

Table 28 and 29 outline the performance targets set for the system and route level. As well as monitoring existing performance against these guidelines, historical trends will also be monitored to determine if the system or routes are becoming more or less efficient over time. Significant variance (+/ – 25%) from the target will place a route on an action list for further investigation and will require more detailed analysis. Routes that fall below the 25% variance will be candidates for corrective action and routes that fall above the 25% variance will be candidates for service improvements. BC Transit will report on an annual basis how the system and routes are performing and this will help guide planning decisions.

System Level

The purpose of monitoring system wide performance is to identify trends in system performance and compare the performance of the transit system with other peer transit systems. These measures are designed to monitor the pulse of the RDN Transit System as a whole and guide service planning. This can be particularly useful when identifying system wide impacts of major investments in the transit network, such as the development of the rapid and frequent transit networks.

Table 28: System Level Performance Targets

System	Measure
Rides per service hour	30
Cost per ride	$4.60
Cost recovery	25.5%
Rides per capita	33.85

Route Level

Analysis on a route-by-route basis provides a detailed indication of how individual components of the transit system are performing. A route-by-route analysis allows observations of the impact of service changes and investments made in the past and identifies future opportunities for strategic investment or re-investment.

Table 29: Route Level Performance Targets

	Rides per Trip	Rides per Revenue Hour
Rapid Transit	30	40
Frequent Transit	30	40
Local Transit	20	30
Local Transit (Coverage)	10	20
Targeted Transit	40	60

Service Reliability

The following guidelines have been developed to provide on-time performance targets that can be monitored to ensure service reliability:

- 90% of trips on each route should depart the terminus not more than two minutes late and not early
- 85% of trips on each route should depart each mid-route scheduling point not more than two minutes late and not early
- 90% of trips on each route should arrive at the terminus no more than three minutes late

Funding the Plan

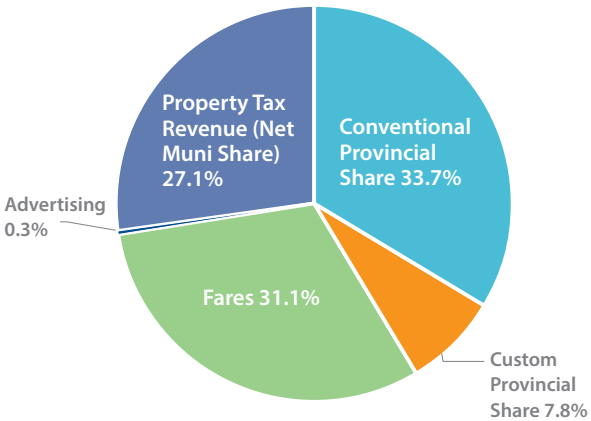
To meet the mode share and ridership targets of the Transit Future Plan, capital and operating investments in the transit system will be required over the next 25 years. Annual operating costs are based on conventional and custom service hours that are projected to increase from the existing 40,894 hours to approximately 460,000 hours. The plan also calls for capital investments that include:

- An expanded transit fleet (total of conventional and custom) from the existing 62 vehicles to 190 vehicles
- New transit exchanges/terminals and Park & Rides
- Improvements to customer amenities at transit stops
- Transit priority such as queue-jumpers bus lanes or bus only lanes on the Island Highway as required
- An expanded or new operations and maintenance centre

Given the level of transit investment anticipated over the coming decades, the way in which transit will be funded needs to be reviewed. BC Transit and its funding partners will need to work together to achieve stable and predictable funding sources beyond the existing mechanisms.

The RDN transit system is funded through a combination of provincial funding, local property taxes, passenger fares and advertising revenue. BC Transit's budgets are confirmed on a year-by-year basis making it difficult to plan for future growth. Local government identified that funding the local share of transit investments with property tax alone is a challenge, particularly regarding major capital investments. BC Transit is working to address this as part of the BC Transit's 25-year Strategic Plan, as one of the priorities is to "develop stable and predictable revenue sources."

Figure 10: RDN Transit System Funding Split



Alternative Local Funding Options

BC Transit has heard from local government that continuously increasing property tax to fund the local share of transit projects and operations, particularly for major capital investments, is a challenge. Reducing the local share funded through property taxes might be achievable through alternative funding sources. BC Transit is interested in developing concepts for alternative funding methods with local partners and the provincial government. Below are a number of concepts for further consideration. These options may require legislative changes and/or provincial government approval.

Local Fuel Tax

A tax on fuel could be collected at the pump at all gas stations in the RDN to help fund transit. A transit tax is levied on fuel in Greater Victoria and Vancouver to help fund transit services. The *BC Transit Act* allows local government to seek funding from a motor fuel tax to support funding and development of local transit systems. The implementation of a fuel tax requires the cooperation of the Province and requires a legislative amendment of the Motor Fuel Tax Act to create a dedicated fuel tax to be applied in the region under the *BC Transit Act*.

Vehicle Levy

An annual vehicle levy could be collected when vehicle insurance is renewed. Under the *BC Transit Act* a vehicle levy is not permitted and would require legislative change to do so.

Parking Tax

A parking tax could be used to offset transit costs. It acts as an incentive to decrease parking demand, which in turn can make transit more attractive. Under the *BC Transit Act* a parking tax is not permitted and would require legislative change to do so.

Capital Reserve

A portion of property taxes could be put aside each year to build a capital reserve to cover local government's share of cost for future transit infrastructure investments. The *BC Transit Act* does not restrict local government from establishing a capital reserve.

Community Pass

Each household could receive an annual transit pass paid for as part of their property taxes. Cost could be approximately half the cost of an annual transit pass. The *BC Transit Act* does not restrict local government from establishing a Community Pass Program.

Budget Development Process

The Implementation Strategy section establishes milestones over the next 25 years which strategically guide the system from where it is today to the Transit Future network vision. Supporting annual plans and three year service budget and initiative letters will provide the operational and budget details necessary to implement service changes.

Once the Transit Future Plan is approved it will act as a source of initiatives that drive BC Transit's operational and capital expansion process. This in turn guides budget development for BC Transit and the RDN, as well as BC Transit's provincial budget submission.

Since provincial funding for transit is confirmed on an annual basis, implementation of any option requiring expansion is dependent on BC Transit's fiscal year budget, normally confirmed in mid-February each year. Implementation of specific service options and packages is also dependent on the allocation of available provincial transit expansion funding between transit systems as determined through BC Transit's Transit Improvement Program (TIP).

Once local government has approved a service option or combination of options for implementation – and local and provincial funding has been approved, if required – an Implementation Agreement Memorandum of Understanding (MOU) will be developed for signature by all required parties including BC Transit. This MOU outlines the service changes to be developed for implementation and the roles and timeline for implementation. Once signed, changes to scope may change timelines. Detailed costing will be confirmed throughout implementation.

Keys to Success

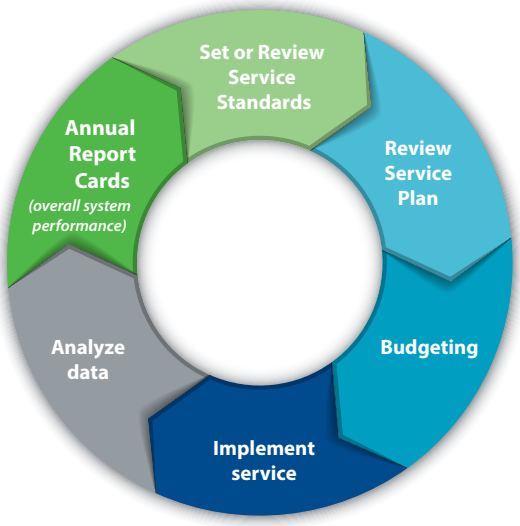
To guide the plan from vision to reality will require an on-going dialogue between the Province, BC Transit, the RDN and other local partners on transportation policy, funding and the linkage between land use and transit planning.

The Transit Future Plan builds upon local land use and transportation plans and will be used to communicate the vision and direction for transit in the region. Steps required for the success of the plan include integrating the transit strategy into other municipal projects, supporting travel demand management measures, transit oriented development and transit friendly land use practices.

BC Transit will work with the RDN and other local partners to begin to take steps to guide the Transit Future Plan from a vision to a reality. These efforts will only be successful if done in partnership with continuous dialogue between all partners and by maintaining strong links between:

- Land use planning and transit planning
- Provincial and regional transportation and transit planning
- Transportation policy and funding availability

Figure 12: Service Planning, Implementation and Evaluation Cycle



How will BC Transit and the RDN use this plan?

- As a tool to communicate the vision for transit to partners, stakeholders, and the public
- To identify where and in what order key transit investments will occur
- To strategically move projects through the capital planning process
- To inform the three year service planning process
- To work with partners on integrating transit plans and investments with other major infrastructure plans and projects
- To respond to planning and development proposals

Actions the RDN could consider to support the realization of the goals of the Transit Future Plan

- Update local plans and integrate future transit plans with land use plans and transportation plans
- Integrate and consider the Transit Future Plan network when developing sustainable transportation infrastructure plans and projects. For example:
  - » A pedestrian and cycling infrastructure project on a transit corridor could improve access to transit by providing or improving sidewalks
  - » Transit priority measures could be incorporated with an intersection upgrade project
- Ensure that local and major development proposals and projects support transit:
  - » Consider amending zoning bylaws to include transit stop improvements as part of required works and services
  - » Review development proposals to ensure they support the Transit Future Plan
- Alternate funding options for funding portions of capital projects for transit:
  - » A mechanism/tool for funding capital portions and improvements to transit amenities include Phased Development Agreements as per Local Government Act (LGA) Section 905.1 Phased Development Agreements or Section 904 Zoning amenities and affordable housing of LGA
  - » Expand the RDN's reinvestment reserve
- Implement travel demand management strategies that encourage shifting automobile trips to transit such as implementing high occupancy vehicle lanes, transit priority measures, marketing, restructuring parking fares, and reducing parking availability/requirements in areas well served by transit.
- Support and encourage transit-oriented development and work with BC Transit to explore incentives to attract high density and mixed-use development to areas well served by transit.
- Ensure that services are operated in an effective and efficient manner to make the best use of new and existing resources.

Appendix

Appendix 1: Glossary of Terms

Accessible Transit	Transit service utilizing vehicles that can be accessed by persons using a wheelchair or other mobility device.
Ambulatory	Individuals who are capable of walking.
Arterial	A high-capacity urban road. The primary function of an arterial road is to deliver traffic from collector roads to freeways.
Articulated Bus	A bus with two sections linked by a pivoting joint. Articulated buses are typically longer overall than a conventional bus, resulting in a higher passenger capacity while still allowing adequate maneuverability.
Bus bulge	A section of sidewalk that extends from the curb of a parking lane to the edge of a through traffic lane to maintain the bus location in the travel lane to avoid buses merging with through traffic, as well as increasing space for bus stop amenities (i.e. shelter, bench, etc).
Captive Rider	A transit rider who does not have immediate access to private transportation or due to some other circumstances must use public transit.
Choice Rider	A transit passenger who has other modes of travel available for a particular trip (especially access to a private vehicle) and has chosen to use public transit.
Conventional Transit	A transit service using regularly scheduled, "fixed route" vehicles (operating according to published route maps and timetables).
Corridor	A linear tract of land that contains lines of transportation like highways, railroads, trails, or canals.
Cost Recovery	A measure of the financial performance of the transit system usually expressed in terms of total operating revenue/total operating expenses.
Cycle time	The length of time it takes for a transit vehicle to complete one round trip, including the recovery time.
Custom Transit	A door-to-door transit service for those persons whose physical disability prevents them from being able to use a conventional transit service.
handyDART	The BC Transit custom transit program (***handy D***ial-***A***-***R***ide ***T***ransportation).
Greenhouse Gas Emissions	Greenhouse gas emissions (GHGs) refer to human-made emissions of four gases attributed to global warming and climate change - carbon dioxide, methane, nitrous oxide, and ozone.
High Occupancy Vehicle (HOV)	Vehicles carrying at least two people (i.e. a driver plus at least one passenger) in any of the following passenger vehicles: cars, minivans, motorcycles, pickup trucks, taxis, and limousines.
Level door boarding	Level door boarding is achieved through either low floor buses or higher boarding platforms, which increase passenger boarding speed and enhance accessibility.

Mode share	Mode share describes the percentage of travelers using a particular transportation mode, typically walking, cycling, transit or automobiles.
Off-board Fare Payment	Payment is made prior to boarding to reduce bus wait time during boarding. Passengers enter through a gate, turnstile, or checkpoint upon entering the station where their ticket is verified or fare is deducted, or "proof-of-payment," where passengers pay at a kiosk and collect a paper ticket which is then checked on board the vehicle by an inspector. This is also referred to as "barrier-controlled" fare payment.
Paratransit	A general name for a class of transportation service offering a more flexible and personalized service than conventional fixed-route transit but not including private, exclusive use systems such as private car, exclusive ride taxi or chartered bus. Includes systems such as a dial-a-bus, shared-ride taxi and subscription bus services.
Park & Ride	Vehicle parking with connections to public transportation that allow passengers to leave their vehicles and transfer to transit for the remainder of the journey. A Park & Ride facility may also provide bicycle parking.
Passenger Productivity	A measure of ridership per revenue hour of service.
Population Served	The total population within a defined proximity of a bus stop, typically 400 metres or 5-minutes walking distance.
Revenue Hours	The total number of scheduled hours that a transit vehicle is available for passenger service.
Ridership	A measure of the number of passengers using public transit.
Right-of-Way	A right to make a way over a piece of land, usually to and from another piece of land. A right-of-way is a type of easement granted or reserved over the land for transportation purposes.
Single Occupant Vehicle (SOV)	A privately operated vehicle whose only occupant is the driver.
Taxi Saver	A program providing subsidized taxi rides to eligible registered handyDART users. Registered users may purchase taxi coupons at 50% of the face value. There is a limit to the amount of taxi coupons that can be purchased each month. Registrants call participating taxi companies to arrange rides.
Taxi Supplement	A service where a privately owned taxi is dispatched through the transit operator for custom transit service when the regular handyDART service is not available.
Transit Exchange	A place where passengers switch between transit routes or transportation modes. Exchanges do not act as an origin or destination for traffic in the network, but only collect and redirect the traffic among local exchanges.
Transit Hub	A place where passengers and cargo are exchanged between vehicles or between transport modes.
Transit Supportive Land Use	Land use types defined by density, diversity and design regulations best suited to encourage transit ridership. Typically refers to compact, mixed land use with high residential density and an employment base.

Transit Terminal	The end (or terminus) of a transit route. Often coincides with an exchange point allowing passengers to connect with other routes.
Transit Oriented Development (TOD)	Development that is generally mixed-use residential and commercial, is designed to maximize access to public transport, and often incorporates features to encourage transit ridership. A TOD neighbourhood typically has a center with a transit station or stop surrounded by relatively high-density development and progressively lower-density development spreading outward from the center. TODs generally are located within a radius 400m from a transit stop.
Transit Priority	Physical and operational improvements that give transit vehicles priority over general vehicle traffic.
Transit Service Area	Established under the terms of the TSA and designated by the BC Transit Board as an area where transit service operates and which the Municipality can levy a property tax to cover their portion of operating cost.
Travel Demand Management (TDM)	The application of strategies and policies to reduce or redistribute travel demand (specifically that of single-occupancy vehicles).
Universal Accessibility	The goal of creating a built environment that can be navigated by all people, including those with physical, sensory, or cognitive disabilities.
U-Pass	A mandatory and universal transit pass for post-secondary students that all students pay for through student fees. A student population typically approves the U-Pass by referendum.

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BC Transit would like to thank all those who were involved in the creation of this plan

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