Transit Future Plan

PRINCE GEORGE | January 2014

CITY OF PRINCE GEORGE

BCTransit
Connecting People and Communities

TRANSIT *future*

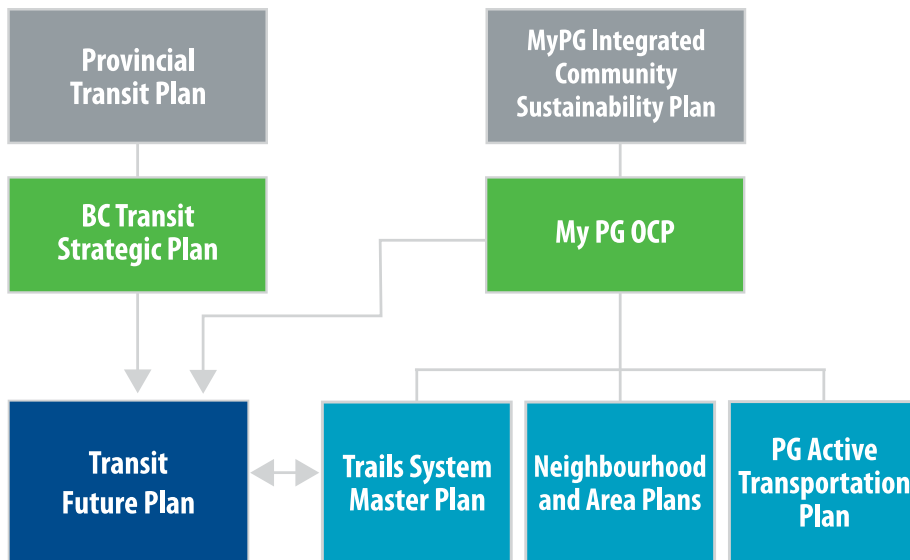# Table of Contents

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Executive Summary

Transit has tremendous potential to contribute to more economically vibrant, livable, and sustainable communities. The need to realize this potential in the City of Prince George ("Prince George") is increasingly important due to factors such as climate change, population growth, an aging demographic, and availability of affordable transportation choices for individuals who do not have access to a private automobile. Projected future growth in Prince George will place increasing pressure on the existing transportation system.

To address the factors noted above, Prince George has adopted the Integrated Community Sustainability Plan ("ICSP"), the Official Community Plan ("OCP"), a number of Neighbourhood and Local Area Plans, as well as an Active Transportation Plan and a Trails System Master Plan. The OCP establishes a policy framework and guidelines to move towards sustainable development. Transit supportive land use and transit oriented development are both important aspects of the OCP.

In addition to these planning initiatives in Prince George, the Transit Future Plan has been informed by the BC Provincial Transit Plan and BC Transit 2030 Strategic Plan. The Transit Future Plan builds on the OCP policies on the transit system and other transit supportive policies and includes an implementation strategy for transit investments. See Figure 1. 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 Prince George transit network 25-years from now and describes the services, infrastructure and investments that are needed to achieve that vision.

Figure 1: Transit Future Plan Framework

Vision and Goals

Vision

"The Prince George transit system supports Prince George's aspirations to be a model for sustainable winter Canadian cities with a healthy environment, robust economy and enviable quality of life for residents.

Transit services are focused on connecting neighbourhoods with the downtown and local centres, offering an attractive alternative to driving, with routes and schedules that are frequent, direct, safe, and convenient.

The transit system will also be integrated with other active modes of transportation and provides a basic level of mobility for people of all abilities who depend on transit."

Goals
1. The transit system is an attractive transportation choice that provides linkages between neighbourhood centres and the downtown;
2. The transit system supports an equitable, safe, healthy, active and engaged community through access to the transit network;
3. The transit system reduces Prince George's impact on the environment; and,
4. The transit system supports the local economy and is operated in a fiscally responsible manner.

Ridership Target

The Transit Future Plan sets a transit mode share target of four percent for all trips by 2038, which will require Prince George's transit ridership to grow from 2 million to 5.4 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 (15 minutes or better between 7:00 a.m. and 7:00 p.m.) and stops less often than traditional transit services. The RTN uses high capacity buses often branded as Rapidbus 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 every 15 minutes transit service between 7:00 a.m. and 7:00 p.m.). The FTN will carry a large share of the transit system's total ridership, justifying investments in 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 and include services such as handyDART, inter-regional, express and paratransit services.

Transit Future Network

- Rapid Transit
- Frequent Transit
- Local Transit
- Potential Local Transit
- Future Road Network
- Paratransit Service Area

- Neighbourhood Centres
- Ⓧ Major Transit Exchange/Terminal
- Ⓧ Minor Transit Exchange/Terminal
- Ⓟ Park & Ride

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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.

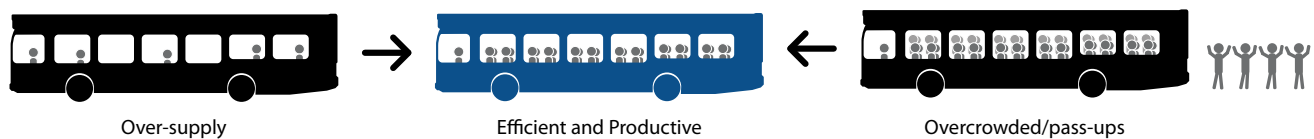| Short-term Implementation Priorities (0-5 years)	
Service	Infrastructure
Support the UNBC downtown Campus course schedule Provide service on statutory holidays Improve weekend service frequency and increase the span of the service day (earlier morning starts & extended evening hours) Conduct a transit feasibility study for Blackburn and Beaverly including fixed-route paratransit service options Begin to develop the Future Rapid Transit Network Begin to develop the Future Frequent Transit Network	Develop an Operational Facility Master Plan to ensure operations and maintenance infrastructure can support increases in the transit fleet Plan for an expanded transit hub in the downtown core 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
Short-term actions that the City of Prince George could consider to support realization of the goals of the Transit Future Plan?	
• Integrate the Transit Future Plan with the OCP and other City Transportation Plans and consider the Transit Future Plan when reviewing development proposal and infrastructure projects; • Consider amending city zoning bylaws to fund investments in transit related capital projects, as well as reducing parking requirements for new developments to encourage shifts to active modes of transportation; • Consider expanding the City's reinvestment reserve fund to support transit initiatives; and • Support and encourage transit-oriented development in areas well served by transit.	

Medium and Long-term Implementation Priorities (5-15+ years)

Service	Medium Term Infrastructure (5-15 Years)	Long Term Infrastructure (15+ Years)
Enhance service on the RTN and develop the FTN • Increase Rapid Transit service frequency and span of service to support increased population density along the corridors • Increase peak frequency initially to 20 minutes (and ultimately to 15 minutes) Monday to Friday on future FTN corridors Enhance service on the LTN increasing frequency and span of service • Increase the frequency and hours of service on weekends as demand warrants • Expand, or initiate service to areas to support future development • Establish a transit connection to Prince George Airport • Implement paratransit recommendations • Restructure routes as necessary • Replace any paratransit service implemented during the medium term with conventional service in the long term if the population and demand warrants	Match service to demand by using smaller or larger transit vehicles when appropriate Plan for the critical transit facilities needed to implement the Transit Future Plan network • Develop a plan for exchanges, terminals and Park & Ride stops for the RTN • Develop a Transit Priority Plan for the RTN • Plan for other minor transit terminals Establish critical transit facilities needed to support the Transit Future Plan network • Establish a new Downtown Transit Terminal	Establish critical transit facilities needed to support the Transit Future Plan network • Increase operational and maintenance facility capacity • Enhance the University of Northern BC Transit Terminal • Expand the Pine Centre Transit Exchange • Establish a Westgate Transit Terminal Implement Transit Priority Measures on the RTN as required Continue to expand transit facilities as needed to support the Transit Future Plan network

Enhance Custom Transit Service and Transit accessibility

Custom Transit and Accessibility Priorities

- Review the defined service area for handyDART
- Improve handyDART vehicle accessibility with on-going modernization of the bus fleet to exclusively low floor vehicles
- Improve handyDART service in the existing service area with 700 annual service hours and an additional bus every 3 years
- Expand the handyDART service to Blackburn, Prince George Airport, Pineview, Beaverly and the industrial areas as required
- Implement a seniors' oriented service
- Formalize and expand the existing travel training program
- Continue to expand service over time to meet demand

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 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 Prince George staff to council.

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

Moving Forward

Funding the Plan

Meeting the mode share and ridership targets of this plan will require capital and operating investments in the transit system over the next 25 years. Annual operating costs are based on service hours that are projected to increase from the existing 81,888 hours to approximately 197,000 hours. The plan also calls for capital investments that include:

- Expanding the transit fleet from the existing 35 vehicles to 82 vehicles
- Upgrading and expanding the operations and maintenance centre
- New transit exchanges at UNBC, Downtown, Westgate, Bon Voyage, Pine Centre and Prince George Airport
- Improvements to customer amenities at transit stops and transit priority measures as required

Given the level of transit investment anticipated over the coming decades, the way in which transit is 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 funding mechanisms. BC Transit is available to work with local governments to develop a strategy to fund the Transit Future Plan.

Keys to Success

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

The Transit Future Plan builds upon previous plans (the Official Community Plan, Neighbourhood/Local Area Plans, and the Active Transportation Plan) and will be used to communicate the vision and direction for transit in Prince George. Prince George has already taken the step of integrating transit system policies and other transit supportive policies within the Official Community Plan. Other steps required to ensure the success of the plan include integrating the transit strategy into other municipal projects, supporting travel demand management measures, transit oriented development and transit supportive land use practices.

Introduction

Why Do We Need a Transit Future Plan?

Transit has tremendous potential to contribute to more economically vibrant, livable, and sustainable communities. The need to realize this potential in the City of Prince George ("Prince George") is increasingly important due to factors such as climate change, population growth, an aging demographic, and availability of affordable transportation choices for individuals who do not have access to a private automobile. BC Transit has initiated the development of a Transit Future Plan in Prince George 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 vehicles;
- Provide access to services in the community such as health care, education and business; and
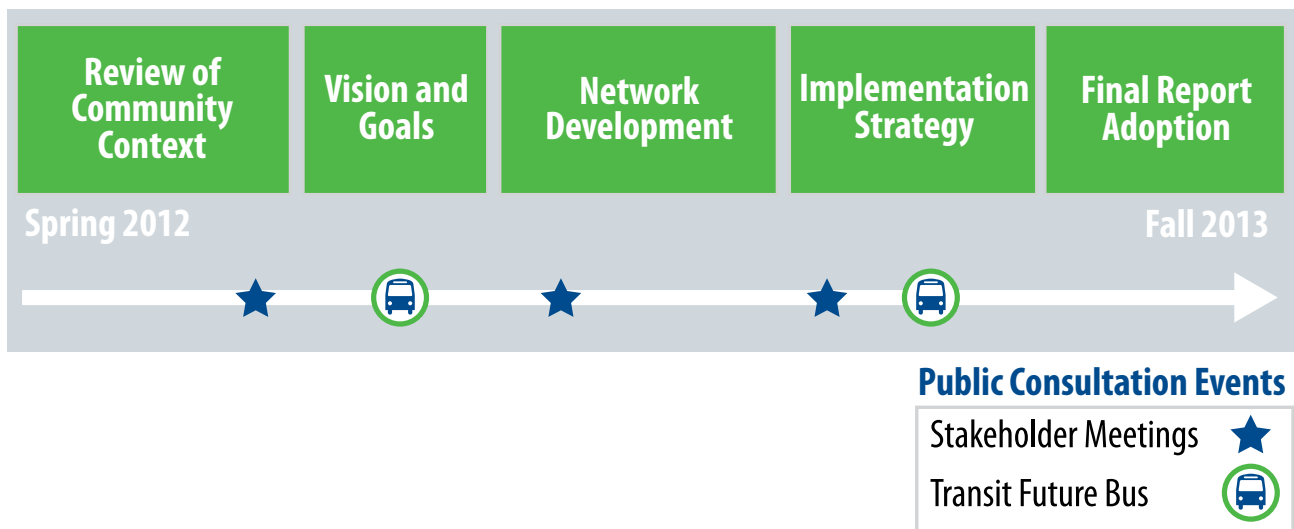- Make transit more competitive with private automobile travel.

What is a Transit Future Plan?

The Transit Future Plan for Prince George envisions the transit network 25 years from now and describes the services, infrastructure and investments that are needed to get there. Although it is BC Transit's role to guide the plan from vision to reality, the intended outcomes of the plan cannot be achieved by a single agency but rather through strategic and financial partnerships between local governments, the Province of British Columbia and BC Transit.

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 2. 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 2: Transit Future Plan Process

| Review of Community Context | Vision and Goals | Network Development | Implementation Strategy | Final Report Adoption |

Spring 2012 — Fall 2013

Public Consultation Events
Stakeholder Meetings ★
Transit Future Bus 🚌

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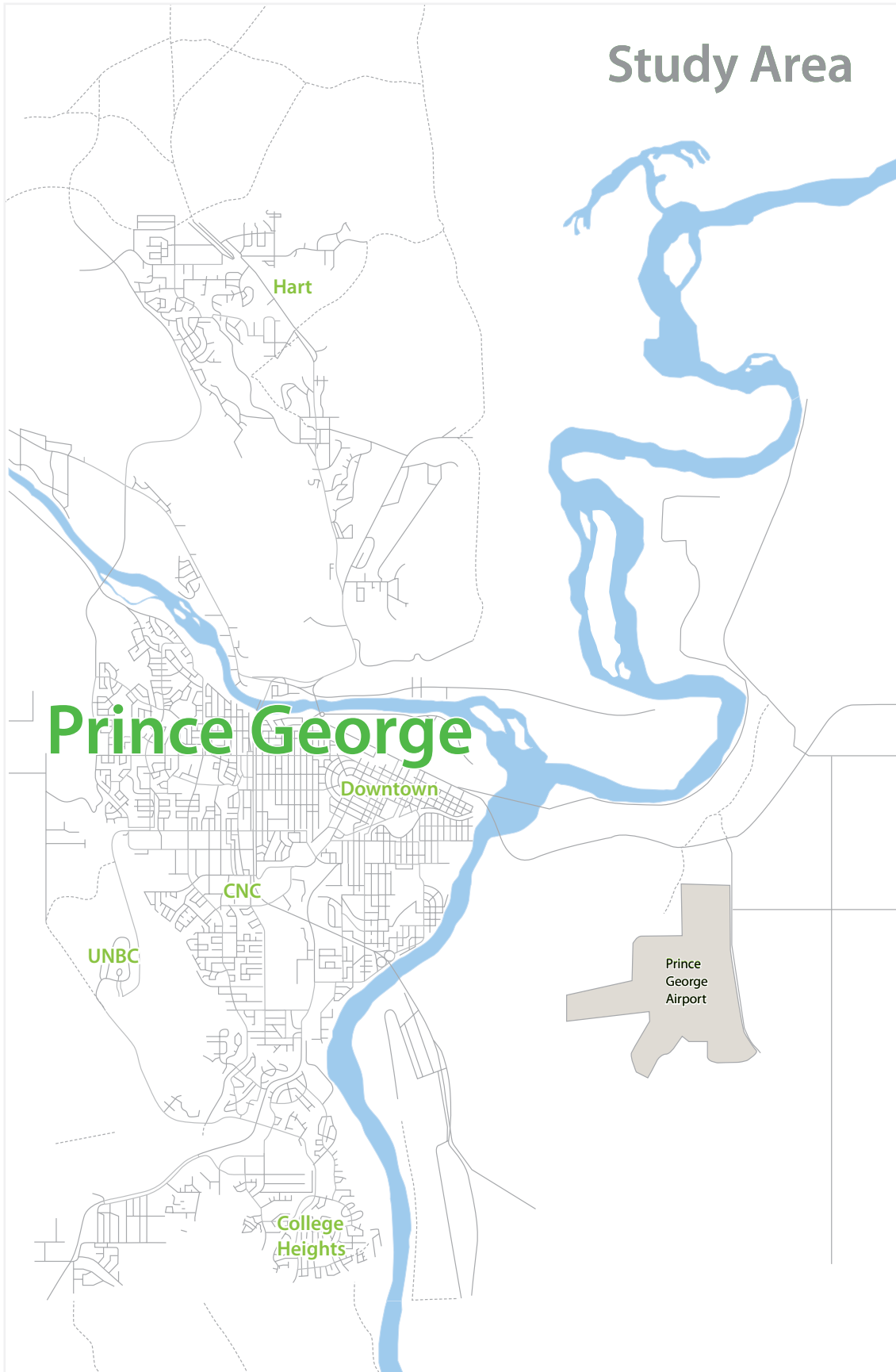Service Monitoring

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Study Area

This plan has been created for Prince George, which is known as BC's northern capital. Prince George is located on the traditional territory of the Lheidli T'enneh at the confluence of the Fraser and Nechako Rivers. Prince George has a population of approximately 72,000 people and is situated at the crossroads of Highway 97 (north-south) and Highway 16 (east-west).

Prince George is a vibrant, active and diverse community that provides a strong focal point and identity for northern B.C. Prince George has a thriving economy that offers full opportunities for housing, employment, education, recreation and culture. Prince George provides services and amenities to the nearby communities of Vanderhoof, Quesnel and other surrounding areas. Prince George has an area of 316 km2.

Study Area

Hart

Prince George

Downtown

CNC

UNBC

Prince
George
Airport

College
Heights

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Linkages to Other Plans

The Transit Future Plan is influenced by Provincial, BC Transit and local 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 Prince George.

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; and
- 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 Prince George, this would translate into increasing transit ridership from 2 million to 5.4 million passengers a year.
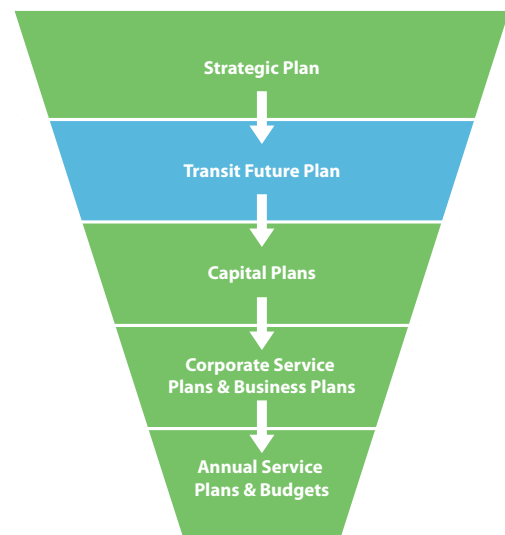
BC Transit 2030 Strategic Plan (2010)

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 ongoing 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; and
- Increase BC Transit's environmental, social and economic accountability.

Figure 3: BC Transit Planning Hierarchy

Strategic Plan

Transit Future Plan

Capital Plans

Corporate Service Plans & Business Plans

Annual Service Plans & Budgets

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.

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:

- **MyPG, Integrated Community Sustainability Plan**. The Integrated Community Sustainability Plan ("ICSP") is an action-oriented, long-term, visionary strategy to create a more sustainable community;

- **MyPG, Official Community Plan**. The Official Community Plan ("OCP") provides an overall plan for Prince George for the next 15 years, guiding decisions on future land use and transportation priorities;

- **Neighbourhood and Area Plans**. Neighbourhood and Area Plans provide clear and comprehensive land use vision for tracts of land at the neighbourhood level;

- **Prince George Active Transportation Plan**. The Active Transportation Plan (ATP) guides the development of a continuous, safe and enjoyable Active Transportation Network (addressing pedestrians, cyclists and their interface/integration with transit); and,

- **Trails System Master Plan**. A comprehensive planning document for the design and implementation of a city-wide trail system for pedestrians and cyclists.

Participation

Development of the Transit Future Plan involved collaboration between BC Transit and Prince George staff to ensure the plan aligned with and built on existing city land use and transportations plans. A Transit Future Plan Working Group was established to guide the creation of the plan. BC Transit completed public consultation initiatives including the formation of a stakeholder advisory group, two phases of public consultation with BC Transit's mobile open house 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 Prince George.

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 June 2012 to discuss the planning process and community context;
- A meeting focusing on network development exercises was held in September 2012; and,
- A meeting was held to establish implementation priorities in February 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. A presentation was delivered to Prince George City Council to inform Council of the Transit Future Plan process, and a second presentation will be delivered at the end of the process to seek Council's endorsement of the Transit Future Plan vision, goals, network and implementation plan.

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

Four Transit Future Bus events were held in Prince George. 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:

- Fort George Park with Mayor Shari Green and Manuel Achadinha, President & CEO of BC Transit (June 29, 2012)

- The transit exchange at Spruceland Mall (June 30, 2012)

- The transit exchange at Pine Centre Mall (June 30, 2012)

- Fort George Park during the Canada Day celebration (July 1, 2012)

Over 1,495 people visited the bus on Canada Day, which is a new record for attendees at any of BC Transit's Transit Future open house events.

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 1,600 visitors were welcomed on-board the bus.

Round 1: Public Feedback Facts	
Visitors	1,600+
Post-it Comments	650
Print Surveys	34
Web Surveys	67

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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:
  - » Increased frequency on major corridors during peak travel times;
  - » An extension of the hours of operations in the evenings and early mornings, and on Sundays;
  - » The provision of transit service on statutory holidays;
  - » Improved transit hubs or exchanges and transit stop amenities;
  - » Improved customer information;
  - » Consideration to matching vehicle size with demand;
  - » Increasing handyDART service and providing a Senior's "Go Bus"; and
  - » Consideration for future expansion of the transit service area to the following areas; Blackburn, Pineview, Prince George Airport, Beaverly and the industrial areas (pulp mills and Canadian Pacific Railway (CPR) lands).

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 seven Transit Future Bus events, as well as online and on site surveys.

The Transit Future Bus events were held from May 23rd to 26th 2013 at The College of New Caledonia, University of Northern British Columbia, Books & Company and the Farmer's Market in Downtown, Spruceland Mall Transit Exchange, Pine Centre Mall Transit Exchange, and Walmart. Over 290 people visited the Transit Future Bus or left comments online at the project website.

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, listed in order of highest support:

Round 2: Public Feedback Facts	
Visitors	290+
Post-it Comments	164
Print Surveys	34
Web Surveys	21

Improved weekend and holiday service levels:

- Provision of transit service on statutory holidays;
- Improved frequency of Sunday service;

Development of the Rapid Transit Network:

- Introduction of express trips on the #15 UNBC/Downtown;
- Establishment of a new express route that links UNBC, Downtown, Pine Centre Mall and Westgate Mall via Highways 16 and 97;
- Increases to the frequency of rapid and frequent transit service;

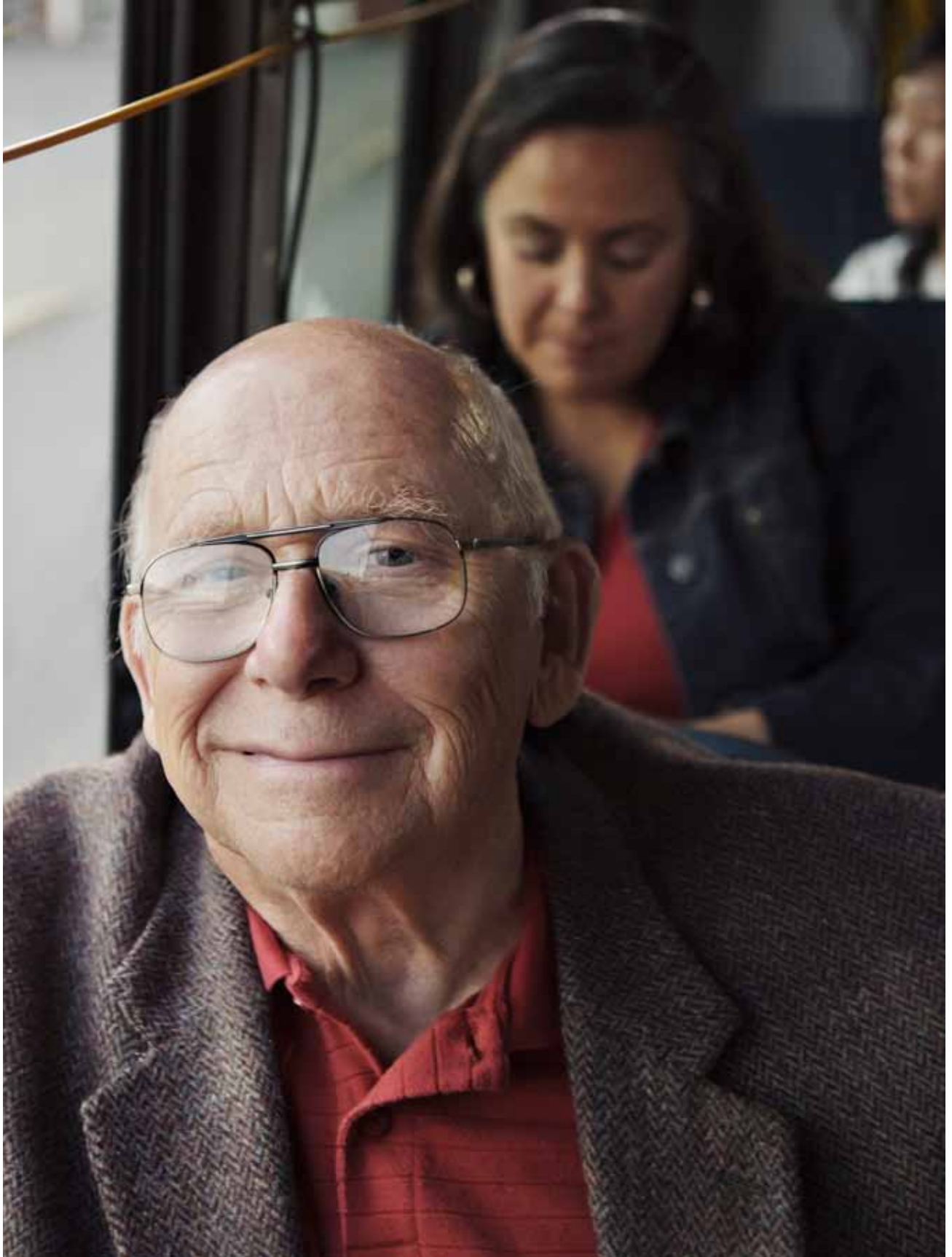Improved customer amenities and information:

- Amenities at transit stops such as sidewalk upgrades, new bus shelters and benches;
- Improved transit signage and schedule information at transit stops;
- Introduction of Prince George Transit schedules on Google Transit Trip Planner;

Enhanced service on the Local Transit Network:

- Introduction of service to new neighbourhoods and rural areas;
- Establishment of a transit connection to the Prince George Airport; and
- Increased frequency of local transit service.

Setting the Scene

Population and Demographics

Population

Prince George's population is expected to grow from an estimated 71,974 residents in 2011 to between 78,900 and 90,200 residents in 2026. As outlined in Figure 4, the OCP forecast high, medium and low population growth projection scenarios (0.4%, 0.8%, and 1.2%) based on data from 2008. For planning purposes, the Transit Future Plan assumes a medium population growth rate of 0.8 per cent, which means Prince George's population may grow to approximately 93,000 people in 2038.

Figure 4: Prince George Official Community Plan Population Growth Projections
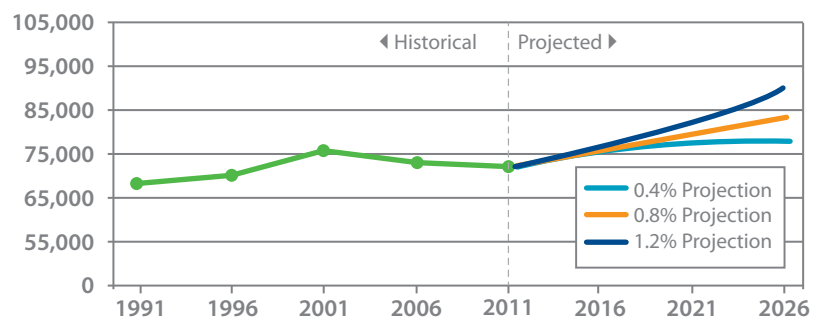

Population Distribution by Age

Prince George has a significantly younger population than the provincial average, with a median age of 36.5. This is lower than the B.C. median age of 40.8 and also lower than other comparable communities. The age groups under 44 are over-represented and the age groups over 45 are under-represented in population distribution.

Population distribution is likely to change over time, as the rate of population growth in Prince George will vary considerably among different age groups over the next 25 years. The current age distribution is contrasted by projected changes from 2009-2038. Anticipated changes include: a 10 percent decline in the 20 to 64 age group, a 13 percent decline for the under-20 population, and a 24 percent increase in the 65+ population of Prince George. See Figure 5.

Examining the current and future age distribution Prince George 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 make 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 senior's population will significantly change the age demographic of the community. The 65-plus population of Prince George will account for 15 per cent of the population by 2018, 21 per cent by 2028, and 24 per cent by 2038. This change will result in a 166 per cent growth in the 65-plus population: one in four residents will be 65-plus by 2038.
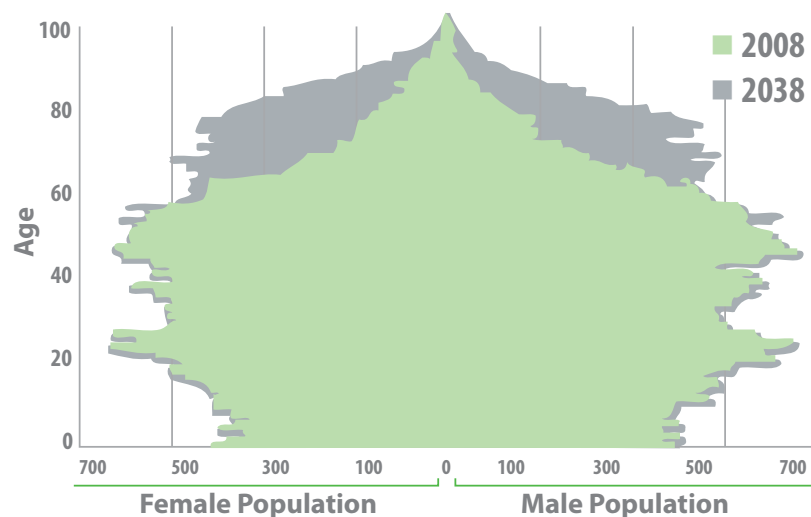
- **Younger seniors (aged 65-79)**
  While the senior population in Prince George is projected to grow rapidly over the next ten years, 80% of this growth will be among younger, more active seniors (those aged 65-79), who are much less likely to use transit than older seniors.

- **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 only 2 per cent of Prince George's population compared with 4 per cent province wide. The older seniors' population is projected to grow significantly.
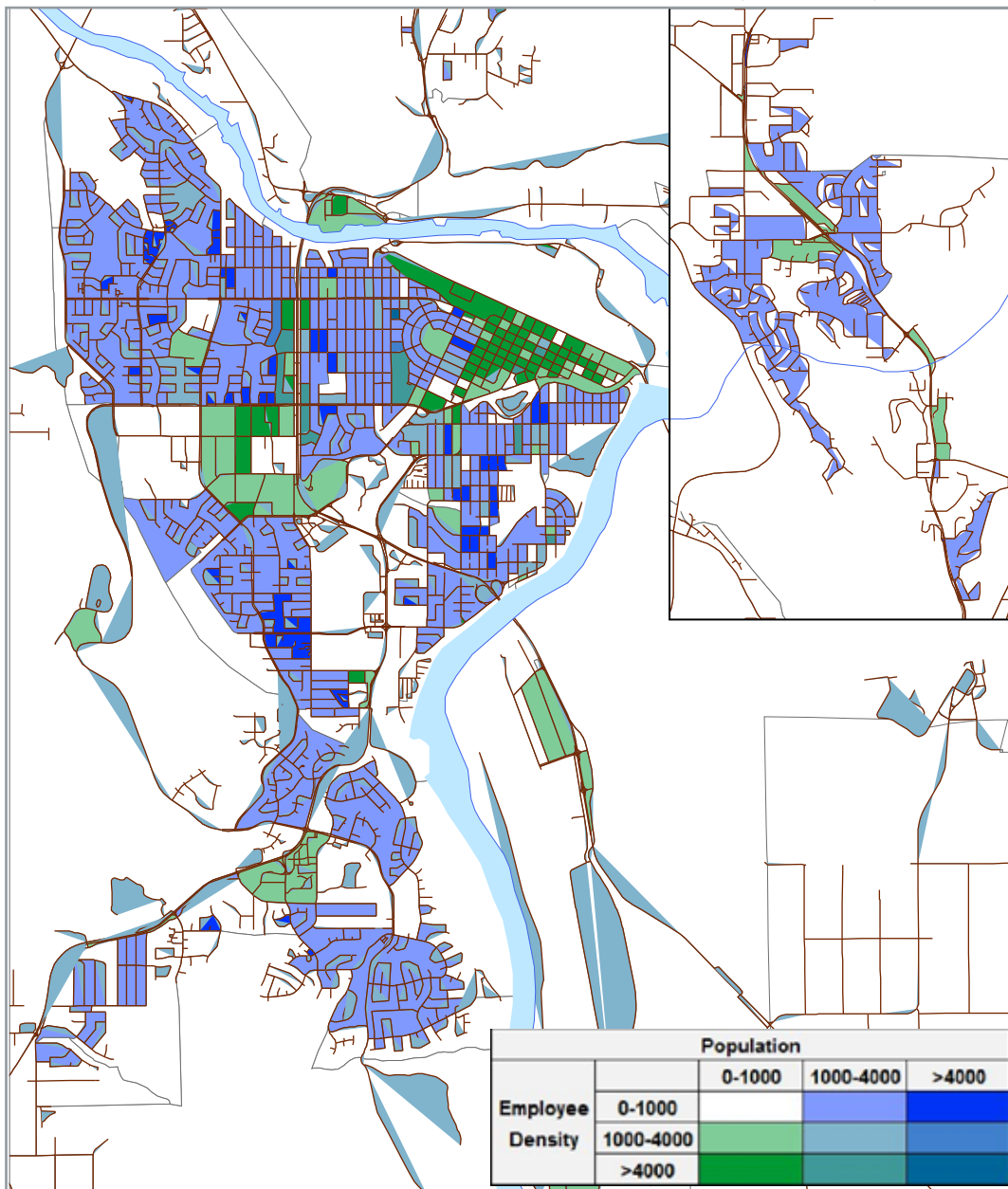
Figure 5: Prince George Population Age Profile

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Population Distribution by Area

Areas with higher density can better support transit service. While Prince George is a relatively low-density city, it is comparable to similarly-sized communities in B.C. 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. Map 1 identifies existing population and employment densities in Prince George at the thresholds described above. The blue and green coloured blocks are areas that potentially can support transit as of 2011. The population and employment densities were derived from census dissemination blocks from the 2011 Census data.

Map 1: Population and Employment Density, Census 2011

		Population		
		0-1000	1000-4000	>4000
Employee Density	0-1000			
	1000-4000			
	>4000			

Population and Demographic Challenges

Increasing mode share with an aging demographic.

The region's demographics shifting towards an older population and some traditionally strong transit user age groups (i.e.15-24) are proportionately decreasing. If transit ridership is to increase, improvements in all aspects of service delivery (including service levels, customer information and stop amenities) are required to retain existing customers and to attract new customers. This is critical for increasing ridership and meeting the goals set out in the ISCP and the Provincial Transit Plan.

Increases in medical, shopping and leisure trips

The aging of the population and the resultant decrease in the proportion of people working and attending school will likely lead to increased travel demand for medical, shopping and leisure purposes. Seniors can be a difficult ridership market to serve due to relatively undefined trip times and destinations. The network of the future will need to better connect people to local centres to capture this market and increase ridership.

Additional pressure on accessible and custom transit services due to increase in 65+ group

As the numbers of seniors increases, 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 handyDART service is typically more expensive to operate and is a much less productive service in-terms of ridership.

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 m 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;

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:

It is not necessary to have uniformly high densities throughout Prince George. 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; and

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.

Housing Stock and Employment

Generally, areas with mixed housing stock, including townhouses, apartments and single-family houses, have greater densities and can better support transit. In 2011, single family houses accounted for 61 per cent of housing in Prince George. The increase in population and aging demographics in Prince George will create a housing demand of approximately 3,600 to 7,500 units by 2025. Unit types may reflect historical preferences for single and multiple residential in each age group, or, if trends observed in other similar BC communities with older populations hold, then the vast majority of new housing will need to be multiple residential (townhouses, condominiums, and row housing), or senior-friendly housing.

Total employment in Prince George is projected to grow by nine per cent by 2038, bringing the total number of jobs in Prince George to 45,064. This is slightly higher than the historical employment growth rate of 0.09 per cent, with an annual employment growth rated of 0.27 per cent per annum expected (2008 data).

Sustainability and Community Plans

Prince George's Integrated Community Sustainability Plan (ICSP)

The ICSP is an action-oriented, long-term, visionary strategy to create a more sustainable community. The plan identifies a number of social, environmental and economic objectives to achieve its vision. The transit system supports the ICSP's objectives for: an equitable, healthy, active, safe, supportive and engaged community; a green city with clean air and reduced carbon emissions; and a diverse and vibrant economy characterized by fiscal responsibility.

My PG Official Community Plan (OCP)

The Prince George OCP provides an overall plan for the next 15 years, guiding decisions on future land use and transportation priorities. The community vision and goals identified in the ICSP frame the concepts and strategies of the OCP.

The OCP transit system policies and other transit supportive policies have informed the Transit Future Plan. Transit supportive policies include housing, economy and growth management. Together, these policies aim to:

- Increase density by focusing growth in a network of compact, complete corridors and centres, with higher densities and mixed land uses;
- Prioritize public investments to Growth Priority Areas, including capital investments in transit, as well as repairs and maintenance;
- Enhance downtown and neighbourhood centres; and
- Enhance the community's identity.

The OCP envisions connecting centres with infrastructure and services that support walking, cycling and transit. The OCP strives for: accessible and efficient transit, attracting new riders and using research and benchmarks to design and prioritize service improvements.

Protecting and enhancing the transportation networks is identified in the plan as important for economic growth and for attracting investment. Improving air quality and preparing for climate change are other goals of the OCP where transit plays a key role. Map 2 describes the future land uses identified in the OCP.

Neighbourhood and Area Plans

Under the policy direction of the OCP, Neighbourhood and Area Plans provide a clear and comprehensive land use vision for sections of land at the neighbourhood level. These plans are policy documents intended to guide land use decisions over time, and strive to balance social, environmental and economic factors. Neighbourhood and Area Plans present a transportation vision, guidelines and objectives, specific to each local area, and include transit, cycling and pedestrian networks. In accordance with transit policies in the OCP, the timing of implementation and design of transit service in each neighbourhood is evaluated by Prince George using an over arching set of criteria.

Prince George has a total of nine Neighbourhood Plans, including:

- The Smart Growth on the Ground Downtown Prince George Concept Plan (2009);
- Airport Light Industrial Plan (2008);
- Crescents Neighbourhood Plan (2003);
- Fraser River Bench Lands (2006);
- Glenview Crescents Neighbourhood Plan (2011);
- Golf Course Pine Centre (2010);
- Ospika South Neighbourhood Plan (2004);
- University Heights Neighbourhood Plan (2007); and
- Wessner Heights Neighbourhood Plan (2004).

Two neighbourhoods in particular impact projections and proposals within the Transit Future Plan:
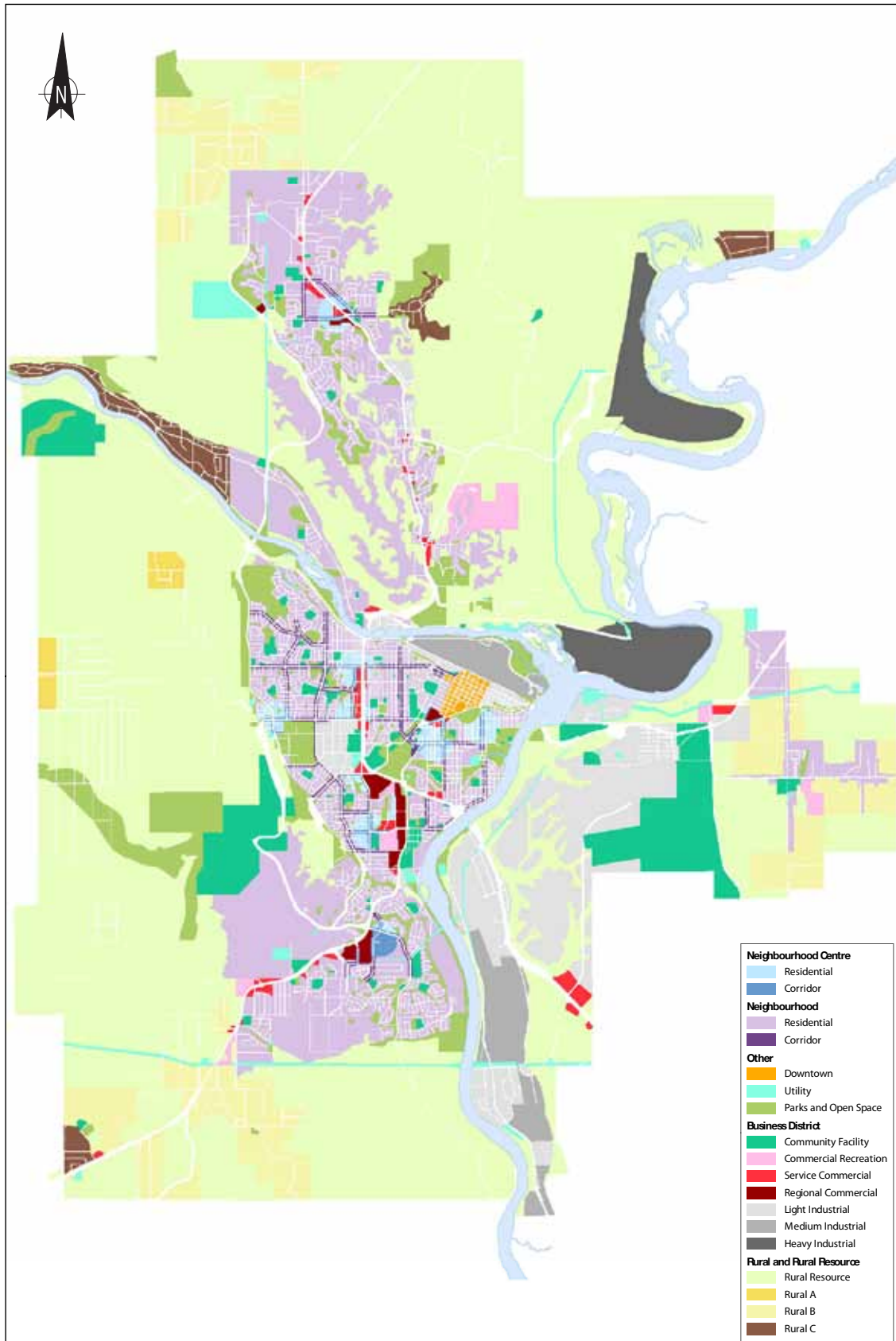
Airport Light Industrial Plan (ALIP)

The Airport Light Industrial Plan is reflective of Prince George's goal to maximize the economic potential associated with the expansion of the Airport, as well as to position itself as the regional transportation and distribution centre for the region. The location of the property creates the opportunity to improve Prince George's overall transportation network by connecting Highway 16 East to Highway 97 South. This Local Area Plan has a goal for future frequent transit service directly to the airport and in Section 3.3.4 of the plan outlines specific transit network design guidelines and service standards.

University Heights Neighbourhood Plan

University Heights, the location of the University of Northern BC ("UNBC"), is the fastest growing sector in Prince George. This plan emphasizes that the transit network should be developed in conjunction with higher density residential development, as well as with commercial, civic and institutional development.

Map 2: Prince George Neighbourhoods and Development Areas

Neighbourhood Centre
- Residential
- Corridor

Neighbourhood
- Residential
- Corridor

Other
- Downtown
- Utility
- Parks and Open Space

Business District
- Community Facility
- Commercial Recreation
- Service Commercial
- Regional Commercial
- Light Industrial
- Medium Industrial
- Heavy Industrial

Rural and Rural Resource
- Rural Resource
- Rural A
- Rural B
- Rural C

Transportation

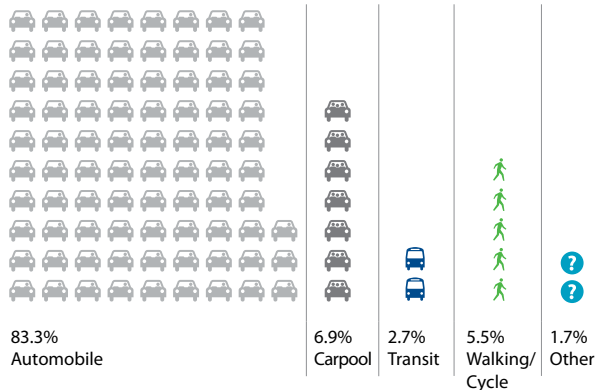## Transportation and Infrastructure

A safe, accessible and efficient transportation system is critical to the health and vitality of a community. People need the ability to move around Prince George 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 Prince George. BC Transit service operates on most of the main roads in Prince George. According to 2011 statistics, automobile trips are clearly the dominant mode for commuting in Prince George, accounting for 83% of total mode share. See Figure 6.

The ICSP, OCP and other plans, elaborated upon below, have all set out strategies to improve the sustainability of transportation in Prince George. Policies in Neighbourhood and Area Plans 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 Prince George 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; and

Figure 6: Prince George Travel to Employment Mode Share

Commuter Modes

| 83.3% Automobile | 6.9% Carpool | 2.7% Transit | 5.5% Walking/ Cycle | 1.7% Other |

Source: Statistics Canada, 2011

- Encourage reduction of reliance on the private automobile through land development policies, the development and promotion of the Active Transportation Network, and travel demand management ("TDM") initiatives.

Prince George Active Transportation Plan (2010)

Prince George developed the Active Transportation Plan to guide the development of a continuous, safe and enjoyable Active Transportation Network (pedestrians, cyclists and their interface/integration with transit). The Active Transportation Plan builds on previous plans related to the development and management of the Active Transportation Network. The plan specifically states in OCP Policy 8.7.29 that transit service should connect to other transportation systems to allow passengers to conveniently connect to other modes. The intent of the Transit Future Plan is to support this policy and incorporate the other transit related recommendations made in the active transportation plan to support active transportation in being competitive with other transportation modes.

City Wide Trail System Master Plan (1998)

In 1998, Council approved the Prince George City Wide Trail System Master Plan, a comprehensive planning document for the design and implementation of a City-Wide Trail system. One of the goals of this Transit Future Plan is to recognize where the future transit system can connect to the trail system in order to support the integration of active transportation modes.

University of Northern British Columbia & College of New Caledonia

Both post-secondary institutions have plans to further increase enrolment and expand facilities on campus in the future. The University has short-term plans to provide a program and courses off campus in downtown Prince George. It can be difficult to forecast future demand for transit at post- secondary institutions as increases in enrolment are subject to provincial funding for expanded programs on campus.

Transportation Services (other than transit)

Other transportation services and infrastructure in Prince George and the surrounding area include:

School Bus (Prince George)

The School District # 57 provides transportation for students who reside more than four kilometres from the school or where the safety of the student is determined to represent an unacceptable risk. A transportation assistance allowance is provided for students living beyond 3.2 kilometres from the nearest existing bus route, and where school bus transportation is not practical. Each day of the school year, approximately 4,500 students ride school buses to and from school, for a total of approximately 11,500 kilometres a day. District bussing is contracted to Diversified Transportation Ltd., which operates 64 regular and 13 custom routes daily.

Airport

The Prince George Airport serves Prince George and the surrounding region. The Airport offers daily direct flights to Vancouver, Calgary, Terrace, Smithers, Fort St. John, Fort Nelson, Kamloops and Kelowna. There is currently no public transit serving the Airport.

Taxi Service

There are two main taxi companies operating in Prince George that participate in the Taxi Saver Program - Prince George Taxi and Emerald Taxi. Prince George Taxi offers wheelchair accessible service.

Northern Health Bus

Diversified Transportation provides service for individuals from their homes to out of town medical appointments. The service costs between $10-$20 for a one way trip. Buses arrive in Prince George from Burns Lake, Fort St. James, Mackenzie, Quesnel, Valemount, Vancouver and Prince Rupert. Buses depart Prince George to Fort St. James, Mackenzie, Vancouver and Prince Rupert.

Transportation and Land Use Challenges

Servicing low population densities

About 15 percent of Prince George residents live in areas where densities are not high enough to support regular transit service. Providing these areas with sufficient service will be a challenge as they require considerable resources to serve and generate low levels of ridership. Key areas currently without service are: Blackburn, Prince George Airport, Pineview, Beaverly and industrial areas (such as the pulp mills and CPR lands). Local government land use strategies, which focus population growth on existing transit corridors and neighbourhood centres to increase population densities, are critical to improving the effectiveness of the transit system in the future.

Increasing public transit use in a highly automobile-dependent region

Parking is generally free or very affordable, thereby encouraging the use of automobiles. Commuting patterns show that the mode share for the private automobile is significantly higher than the provincial average. The convenience of public transit will need to be improved to attract transit riders and transit-supportive land use policies will also need to be promoted.

Making transit attractive in poor weather conditions

The winters in Prince George, with high levels of snowfall and cold temperatures, make it difficult to both operate transit and to attract transit users. Reliable snow removal, weather protection at bus stops, clearly visible transit stops and clear routes to walk or cycle to transit stops are essential for reliable transit service.

Conventional Transit System

The conventional Prince George Transit System officially began operation in 1978 with 11 buses and 39,000 service hours. The transit system serves most developed areas and major destinations within Prince George. The transit system provides approximately 2 million rides annually with 16 bus routes and serves over 450 bus stops. In 2012/13, transit service was operated with 64,793 hours and 27 buses at an average cost of $3.25 per ride.

The opening of UNBC in 1994 and the subsequent introduction of transit service to the campus resulted in significant changes to the transit system. The introduction of U-Pass at UNBC in 2008 and the College of New Caledonia ("CNC") in 2009 along with improvements to service frequency on many routes and the new #17 and #18 UNBC routes have combined to significantly increase ridership. Overall, service levels increased 40% between 1998/99 and 2012/13 while ridership has increased 263% over the same period.

The existing transit system has relatively low service frequency (service every 30-60 minutes), and does not service most rural areas of Prince George. In general, the transit routes are focused on the Downtown, Spruceland and Pine Centre Malls. Bus routes are largely structured in a radial system designed to meet at central locations, with timed transfers between routes, to facilitate convenient transfers across Prince George. The existing Prince George transit system has no transit priority measures.

Funding for the transit system is cost shared between Prince George and BC Transit. Decisions on fares, routes and service levels are made by City Council based on information and planning provided by BC Transit. Transit service is operated by Pacific Western Transportation.

Transit Network

Local fixed-route transit service is provided on 16 routes. See Map 3.

Existing Service Frequencies and Hours of Service

Transit service in Prince George is provided seven days a week on most routes, excluding statutory holidays. Transit operates from 6:30 a.m. to 10:30 p.m. on weekdays. Saturday service operates from 7:00 a.m. to 10:00 p.m., with extended service until 3:00 a.m. on the 15 UNBC on Fridays and Saturdays. Service is more limited on Sundays operating from 9:00 a.m. to 7:00 p.m.

In general, there is a frequency of 30-60 minute service on all routes and 15 minute service during peak period on three routes. Service was historically focused on downtown and key commercial areas, but is now increasingly oriented around UNBC and CNC to reflect demand. Table 4 highlights the variation of frequency between bus routes. During the late spring and summer select trips are cancelled on the #15, #16, #17 and #18 when the college and university are not in full session.

Map 3: Local Fixed-Route Transit Service

Prince George Transit

- **1** Heritage/10th Ave.
- **11** Heritage/10th Ave.
- **5** Victoria/5th Ave.
- **55** Victoria/5th Ave.
- **12** Parkridge
- **15** UNBC/15th Ave.
- **16** UNBC/College Heights
- **17** **18** UNBC
- **46** Queensway
- **47** Reverse Queensway
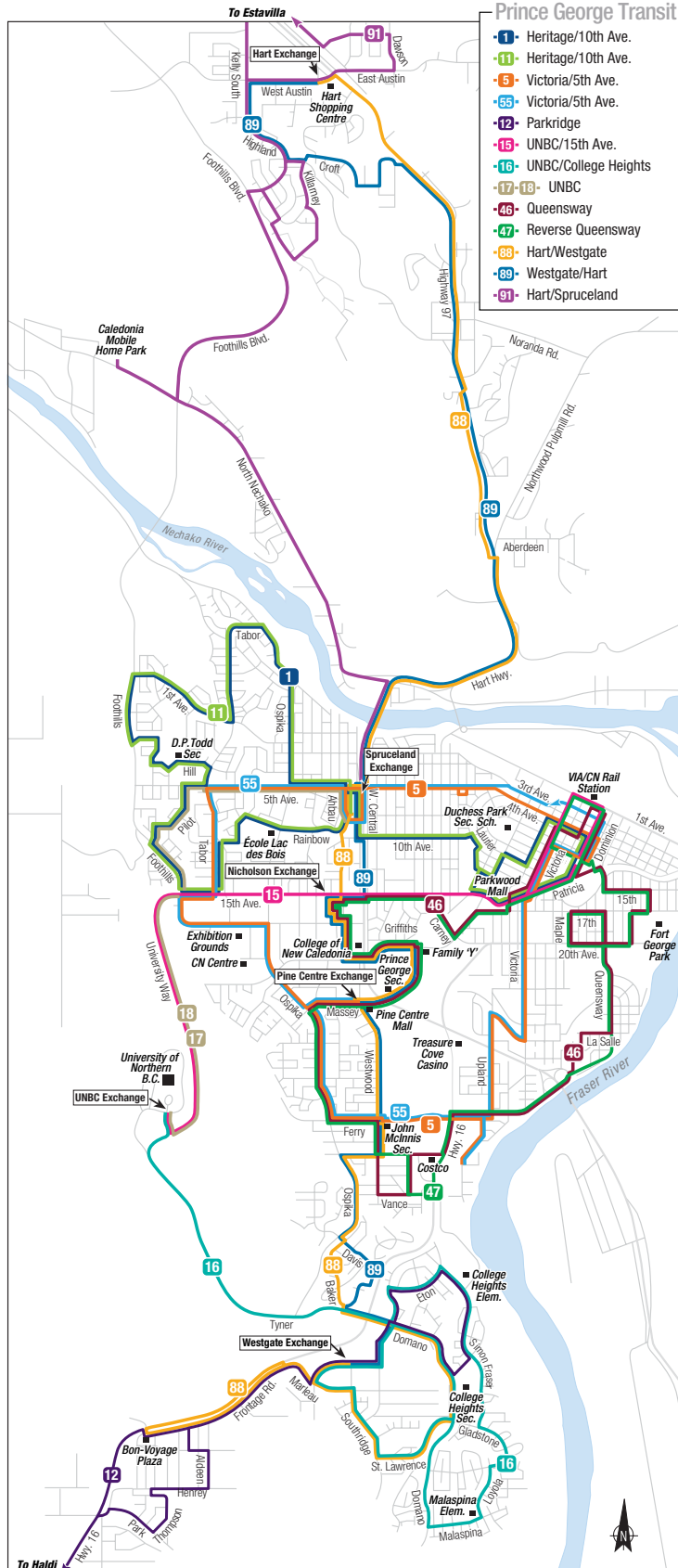- **88** Hart/Westgate
- **89** Westgate/Hart
- **91** Hart/Spruceland

Table 4 : Service Frequencies for Prince George Transit Routes

Route	Regular service (Peak service)	Weekend Frequencies
1-Heritage/10th Avenue	60 min (15 min)	60 min
11-Heritage/10th Avenue	60 min (30 min)	60 min
12-Parkridge	Peak times only	--
5-Victoria/5th Avenue	60 min (30 min)	60 min
55-Victoria/5th Avenue	60 min (30 min)	60 min
15-UNBC/15th Avenue	30 min (15 min)	60 min
16-UNBC/College Heights	30 min (60 in evening)	30 min
17/18 UNBC	30 min	--
46-Queensway	60 min	60 min
47-Reverse Queensway	60 min	--
88-Hart/Westgate	30 min (60 in evening)	60 min
89-Westgate/Hart	30 min (60 in evening)	60 min
91-Hart/Spruceland	60 min	60 min
96/97- Kelly	Peak times only	--

Transit Ridership

Prince George has the lowest use of transit for work trips among similarly sized communities. In 2006 Transit accounted for just 1.8 per cent of work trips, which is an increase from 1.6 per cent in 2001. Transit use for work trips in Prince George varies by neighbourhood of residence, sex, age and income level. The following trends have been noted in Prince George:

- A strong relationship exists between transit use and population density of the neighbourhood;

- The transit mode share was higher for female commuters and younger commuters;

- Commuters with employment income below $20,000 were much more likely to use transit, making up 78 per cent of transit users; and

- Downtown Prince George and UNBC are the top two origins and destinations for the transit system.

Figure 7 : Prince George Conventional Service Hours and Ridership, 1998-2012

*In 2001/02 there was a 3-month labour dispute that impacted ridership and service hours results for the year

In 2013, overall transit ridership had grown to approximately 2 million rides annually from 600,000 rides annually in 1998/99. This is an increase of 263 per cent compared to service level increases of 40 per cent over the same period. Consequently, passenger productivity (a measure of rides per revenue hour of service) has risen from less than 13 rides per hour to nearly 31.1 rides per hour, as demonstrated in Figure 7.
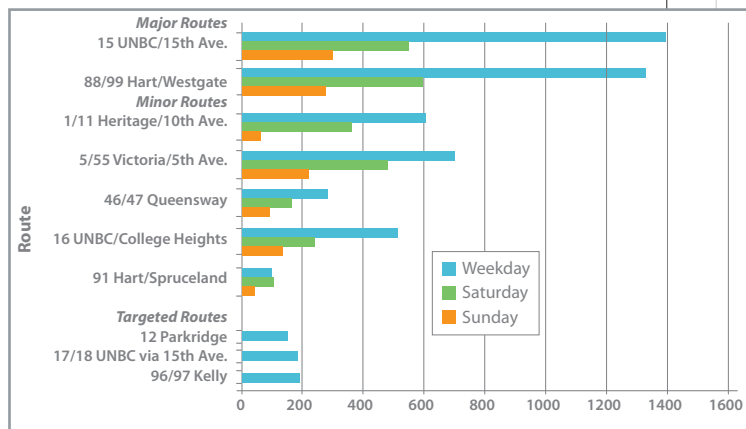
Five routes account for more than 85% of total system ridership. See Figure 8. These routes are:

- #15-UNBC/15th Ave.;
- #88/#89 Hart Centre/Westgate;
- #1/#11 Heritage/10th Ave.;
- #5/#55 Victoria/5th Ave.; and
- #16 UNBC/College Heights.

The most productive routes in the system, as measured by rides per revenue hour of service, are the routes targeting services to schools and include:
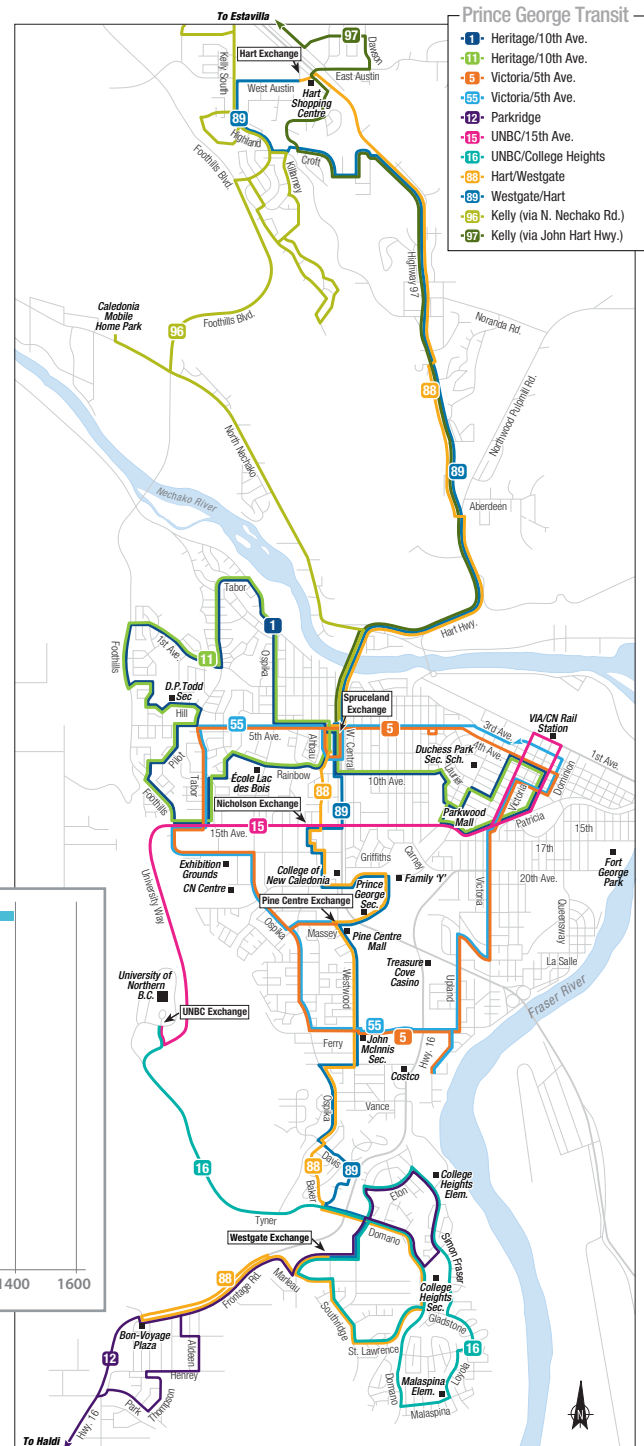
- #12-Parkridge; and
- #96/#97 Kelly.

Figure 8: Average Daily Ridership by Route

Data is from fall 2012 and was collected from fareboxes on transit vehicles.

Map 4: Price George Transit System Key Routes

Benchmarking the Existing Transit System

Table 5 compares the existing Prince George transit system with other B.C. communities of similar size. The statistics below show that Prince George has higher rides per hour, but the smallest amount of transit service, measured in hours of service. The number of service hours per capita is also below average for comparable systems.

Figure 5: Comparison of Conventional Transit Performance Measures, 2012/13

	Population Served	Hours of Service	Annual Ridership	Hours/ Capita	Rides/ Hour	Cost Recovery	Service Area KM²
Prince George	60,100 (of 72,000)	64,793	2,012,312	1.08	31.1	29.8%	62.8
Central Fraser Valley	124,700	96,031	2,090,000	0.77	21.8	27.6%	84.5
Kamloops	76,000	101,471	3,290,000	1.34	32.4	34.7%	76.3
Kelowna Regional	125,300	177,206	4,300,000	1.41	24.3	25.7%	136.9
Nanaimo Regional	98,500	101,404	2,750,000	1.03	24.5	34.9%	100.9

Customer Facilities & Amenities

Customer facilities should be universally accessible and include some form of weather protection, benches, trash cans and lighting. Good on-street facilities improve the overall experience of using transit.

Transit Stops

As shown in Table 6, there are 469 transit stops in the system. Approximately 25 per cent of all bus stops in Prince George have seating, but less than 10 per cent of bus stops provide weather protection with a shelter.

Table 6: Existing Transit Stop Amenities

Type of Amenity	Number	% of Total
Transit stops	469*	
Shelters	39	8%
Bike racks at transit stops	2	0.4%
Benches	80*	26%
Wheelchair accessible	181	39%

*An additional 40 benches to be added in 2014

Transit Exchanges

Transit exchanges facilitate transfers between bus routes and are typically located within the activity centres of the community. In addition to the amenities in Table 6, transit exchanges should provide transit route and schedule information, and cycling storage. Existing exchanges are:

- Downtown Prince George (top trip origin and destination);
- UNBC (2nd most popular origin and destination);
- Spruceland Mall (3rd most popular origin and destination, most frequent transfer destination);
- Nicholson & 15th Ave (2nd busiest transfer point in the system);
- Pine Centre (3rd busiest transfer point); and
- Hart Shopping Centre.

Operations and Maintenance Centre

The existing conventional transit operations and maintenance centre is reasonably close to main transit routes to keep the amount of required deadhead (travel time between the operations centre and start of bus route) relatively low. The facility is owned by the operator Pacific Western Transportation and is very close to capacity with the current fleet of 27 conventional buses. With some reconfiguration of the parking layout at this facility, it may be possible to create space for approximately nine additional buses. The facility has four service bays, office space for nine employees, and a transit operator's room. The operating company does own the adjacent property which could accommodate future expansion of the existing facility.

With the conventional transit fleet projected to more than double to 67 vehicles by 2038, increased capacity will be required. BC Transit will need to analyze the operating facilities serving the network to determine their suitability for the long-term provision of expanded service in the region, and explore options for upgrading or augmenting these facilities. The creation of an Operational Facility Master Plan is an essential piece of the long-term planning process to ensure that fleet parking, maintenance, refueling, washing, and operations functions have room to grow as the service grows, and to allow for the most effective use of assets and operational efficiencies.

Conventional Transit Challenges

Increase service frequency and coverage:

Improving service level and hours of operation of the existing transit system:

- The existing service level of 30 minutes or more during non-peak times, the reduced service on weekends and the lack of service on statutory holidays is unattractive to new users. This impacts the potential growth of transit ridership.

- Operations centre capacity: The fleet storage capacity of the existing operations and maintenance facility limits the ability to expand transit services, strategies to address this will need to be developed through an Operational Facility Master Plan for Prince George.

- Expanding transit exchanges and creating park and rides: New transit exchanges need to be developed at key transportation nodes, and some existing transit exchanges (e.g. the Nicholson exchange) should be upgraded to improve pedestrian connectivity and safety. There are currently no park and rides; introduction of this amenity would extend the transit service area to rural and semi-rural areas of Prince George.

Increase the efficiency of the transit system:

Addressing long layovers for some routes:

- There are very long layovers at Spruceland Mall for some routes in order to maintain timed transfers. As frequencies on main routes are increased transfers becomes less critical.

- Match service to demand: There are opportunities to better match transit service to demand by utilizing smaller or larger vehicle types to increase efficiency and reduce operating costs on select transit routes.

Increasing transit mode share to meet targets

To grow the existing transit system mode share from two percent to four per cent by 2038 requires significant investment in the transit system supported by transit supportive land use planning and travel demand management policies. Mode share can be increased by:

- Improving customer facilities: Less than ten per cent of transit stops have shelters and several transit stops do not meet universal accessibility guidelines.

- Improving customer information: Decreasing the complexity of the transit network and providing more customer information such as maps at stops and exchanges.

- Removing barriers to integration of transit with cycling and walking during all seasons: For example secure, weather protected bike storage at transit exchanges, and plowed pedestrian and cyclist access to transit stops. Investments should be prioritized to growth management and priority areas.

- Attracting choice riders: Transit in Prince George currently strives for wide coverage to provide access to many destinations. The provision of more direct, targeted routes can attract riders of a particular demographic. For instance the working age population (aged 25-64) tends to have the lowest transit use; providing direct service to places of employment can boost ridership in this age group.

- Implementing travel demand management policies: For example reducing parking requirements for new development and considering reducing parking availability or increasing fees for parking at key transit destinations such the UNBC, CNC and Downtown.

Custom Transit System

Service Description

The Prince George custom transit service (see Map 5) consists of handyDART service provided by minibuses (operated by the Carefree Society), as well as two taxi programs - Taxi Supplement and Taxi Saver. HandyDART provides door-to-door transit service for people who are unable to use the conventional system without assistance. Potential customers must apply to travel by handyDART, who determines eligibility by considering limitations in mobility/agility, cognitive abilities, medical conditions, and sensory abilities. The objective of custom service is to provide eligible customers access to their community and is not focused on ridership growth. The service is operated by the not-for-profit Carefree Society.

The system provides two types of service - regular subscription trips and one-time trips. Subscription trips are often for transport to adult day programs, to school or to medical-related appointments. In contrast, one-time trips are often personal in nature and 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 a.m. and 4:00 p.m. In 2012/13 the custom system provided 17,095 hours of service and 4.3 rides per hour.
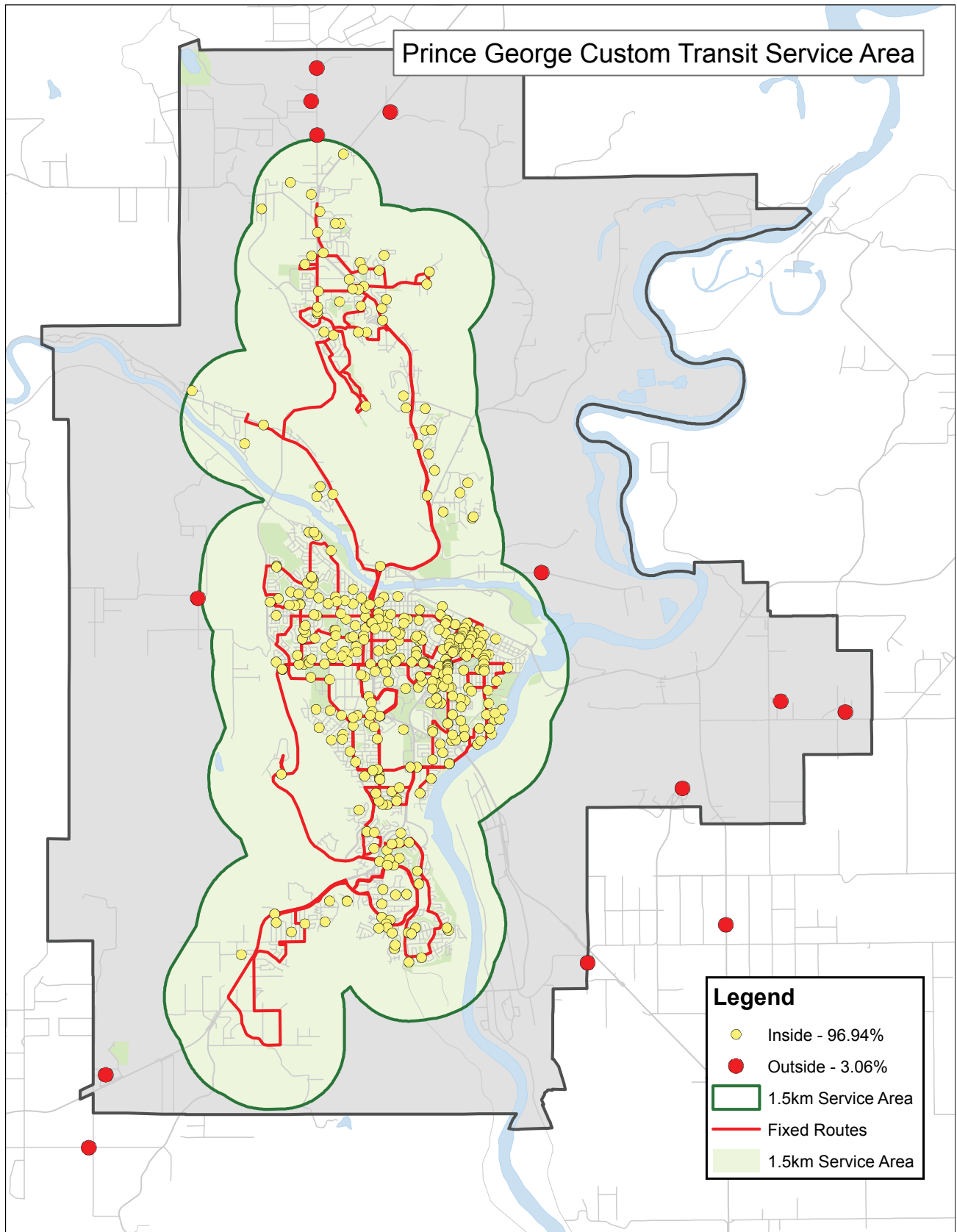
BC Transit also offers the Taxi Supplement and Taxi Saver programs in Prince George. The Taxi Supplement program allows handyDART trips to be dispatched to taxis at times when there is no capacity on handyDART vehicles. The Taxi Saver program provides subsidized taxi trips to registered users, who can then arrange for trips directly with the taxi company.

Hours of Operation

The service is provided with a fleet of eight vehicles and 17,095 annual service hours. The handyDART hours of operation are more limited than conventional transit, operating from 7:00 a.m. to 6:00 p.m. on weekdays, with extended service to 10:30 p.m. on Thursday evening, and from 9:00 a.m. to 6:00 p.m. on Saturdays and Sunday. Conventional transit, on the other hand, operates seven days a week, with many services running between 6:00 a.m. to 10:00 p.m. The hours of service are relatively low, due to Prince George's smaller senior's population.

Map 5: Prince George Custom Service Area

Prince George Custom Transit Service Area

Legend
- Inside - 96.94%
- Outside - 3.06%
- 1.5km Service Area
- Fixed Routes
- 1.5km Service Area

Service Area

The handyDART service area is limited to trips within Prince George city limits, covering a larger area than the conventional transit. The Custom Service Area Map below provides an approximate location of handyDART client addresses. The yellow circles in Map 5 represent residential addresses of handyDART registrants that are 1.5 kilometers from the existing fixed routes highlighted in orange. The red circles represent residential/door-to-door pick-up addresses that are 1.5 kilometers or farther beyond the existing fixed routes. The municipal boundaries and major roads are also represented.

Travel Patterns and Destinations

A large percentage of custom transit clients go to medical appointments, including treatments at the hospital. Aside from medical appointments, the most common destinations are: the Rainbow Adult Day Centre (Northern Health), the Child Development Centre, Pine Centre, Walmart, Great Canadian Superstore, various Seniors Centres, UNBC, Prince George Aquatic Centre and the Four Seasons Leisure Pool. Common destinations of origin are: Western Acres, Lafreniere, College Heights, the Bowl area, North Nechako, Hart Highlands, Hart Highway, and Cranbrook Hill.

Ridership and Customer Profile

In 2012/13, there were 2,899 registered custom transit users and 98,097 total passengers. In 2012/13, 30 per cent of handyDART riders were in wheelchairs and 70 per cent were ambulatory. In the same time period there were 44,763 handyDART rides, 1,287 Taxi Supplement rides and 24,208 Taxi Saver rides.

Cost per Ride

In 2012/13, Prince George custom transit cost an average of $14.05 per ride, which is comparable to other custom transit services in British Columbia. However, this is relatively expensive when compared to the average cost of providing a ride on the conventional transit service at $3.25 per ride. Prince George has the lowest cost per ride for custom transit when compared to similarly-sized BC communities.

Benchmarking the Existing Transit System

The Prince George Custom Transit System is compared with other British Columbia communities of similar size in Table 7. The statistics show that the Prince George Custom Transit system provides higher than the average rides per hour and a lower cost per ride than other similarly-sized communities.

Table 7: Comparison of Custom Transit Performance Measure, 2012/13

	Population Served	Hours of Service	Annual Ridership	Rides Per Hour	Cost per ride
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
Nanaimo Regional	135,800	22,345	64,312	2.7	$23.90

Custom Transit Operations and Maintenance Facility

The custom transit operations and maintenance facility is owned by the Carefree Society. The facility is close to capacity with room to accommodate a total capacity of nine vehicles, the existing fleet consists of eight vehicles.

With the custom transit fleet projected to nearly double to 15 vehicles by 2038, BC Transit will need to analyze the operating facilities' suitability for the long-term provision of expanded service in the region. The creation of an Operational Facility Master Plan is an essential step in the long-term planning process to ensure that fleet parking, maintenance, refueling, washing, and operations functions have room to grow as the service grows, and to allow for the most effective use of assets and operational efficiencies.

Executive Summary

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Participation

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Visions and Goals

The Network

Resource

Implementation Strategy

Service Monitoring

Moving Forward

Appendix

Custom Transit Challenges

Limited custom transit service availability:

Limited custom transit service availability: There were only 22 unmet custom transit trip requests for the 2012/13 year, indicating that there is generally enough service to meet demand. However, handyDART transit hours of operation are more limited than the conventional transit operating system. 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. Service capacity should be steadily expanded to ensure that customers can request trips for all trip purposes at any time of the service day, and be guaranteed next day service. Opportunities for joint funding or other partnerships to accommodate medical and adult day program trips should also be considered.

Aging demographics and increasing demand for handyDART service:

The aging population will increase the demand for handyDART and other accessible services in the future. In order to meet the demand of the aging population in Prince George, an additional 15,000 annual hours of handyDART service is proposed during the life of the plan, more than doubling the existing level. Taxi supplement and Taxi Saver funding would also increase by 50 per cent and 30 per cent respectively during this period.

Custom operations centre capacity:

The fleet storage capacity of the existing operations and maintenance facility limits the ability to expand transit services, strategies to address this will need to be developed through an Operational Facility Master Plan for Prince George.

Ensuring effectiveness and efficiency of the transit system:

Due to the relatively high cost of providing handyDART service, it is important that customers are matched with the type of transit service they need and that only customers who meet the eligibility criteria use the handyDART services. Developing ways to increase the economic efficiency of custom transit services should also be investigated to meet the custom transit market needs through appropriate scheduling and pricing.

Service area and clients in rural areas:

There are trade-offs with serving a small number of individuals in outlying areas of the community as it reduces the ability to serve clients in the more urban centres. In order to ensure that custom services are reaching the largest number of individuals in need, the service area should be formalized. The Americans with Disabilities Act (ADA) - legislation has made enormous advances in custom and paratransit services -the service area parameters have been defined in terms of a 1.5 kilometer buffer around the existing fixed-route system in each community.

Upgrading to low floor accessible handyDART vehicles:

The minibuses used for handyDART service in Prince George are being phased out and replaced with low-floor accessible vehicles. The new vehicles 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 mobility aids. Low floor vehicles are generally faster and easier to load for passengers with mobility aids, and they are more accessible for clients who are ambulatory, but who may have difficulty climbing the stairs into the vehicle.

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Vision and Goals

Vision Statement

"The Prince George transit system supports Prince George's aspirations to be a model for sustainable winter Canadian cities with a healthy environment, robust economy and enviable quality of life for residents.

Transit services are focused on connecting neighbourhoods with the downtown and local centres, offering an attractive alternative to driving, with routes and schedules that are frequent, direct, safe, and convenient.

The transit system will also be integrated with other active modes of transportation and provides a basic level of mobility for people of all abilities who depend on transit."

The development of the transit vision statement and goals was a collaborative effort, which included input from the community, stakeholders, the City and BC Transit. The vision builds upon the direction outlined within the Prince George Integrated Sustainable Community Plan and Official Community Plan.

Goals

Four goals have been created to support the achievement of the 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.

Goal 1 - The transit system is an attractive transportation choice that provides linkages between neighbourhood centres and the downtown. How do we do that?

- Provide frequent transit service on the key arterial corridors and improve transit service outside of peak travel times for trips throughout the day, during evenings, weekends and holidays.

- Create direct transit routes and express routes with transit priority measures to reduce travel times.

- Provide accessible and easy to understand route, fare and schedule information, through tools such as: a web-based trip planner, real-time information at the stop level, and wayfinding information at transit exchanges and transfer points.

- Provide universally accessible and comfortable transit vehicles, transit stops and transit exchanges.

- Design the transit network to connect neighbourhood centres; commercial, business and industrial districts; activity centres and downtown.

- Allocate resources to address operational service issues on an on-going basis.

Goal 2 - The transit system supports an equitable, safe, healthy, active and engaged community through access to the transit network. How do we do that?

- Connect neighbourhoods with major destinations within Prince George, making transit a viable transportation choice for residents of all levels of ability and income.

- Provide paratransit services in rural areas where the provision of fixed-route services is not cost-effective.

- Improve accessible services such as handyDART to provide customers with the opportunity to travel more spontaneously throughout Prince George.

- Provide customer information in formats for people with hearing and visual impairments to make the transit system easier to use.

- Invest in technology to make transit vehicles more accessible, such as audible stop announcements on vehicles and at stops.

- Make new and existing infrastructure at transit access points universally accessible, inviting and safe.

- Connect to the trail network and include cycling infrastructure at transit facilities to support an integrated active transportation network.

- Provide new, convenient and affordable fare payment options (e.g. off-board fare payment).

Goal 3 - The transit system reduces Prince George's impact on the environment. How do we do that?

- Reduce carbon emissions by providing more frequent transit service that encourages people to choose transit over other more highly polluting modes.

- Integrate the transit network with active modes of transportation (e.g., cycling and walking) to increase the catchment of transit services and provide opportunities to further reduce the amount of single occupancy vehicles on the road.

- Explore the use of new transit vehicle technologies with lower greenhouse gas emissions to further reduce transit's impact on the environment.

- Design the transit network to support land uses that lend themselves to an increase in the use of transit and active modes of transportation (e.g., increased densities and mixed use developments).

Goal 4 - The transit system supports the local economy and is operated in a fiscally responsible manner. How do we do that?

- Connect people with employment, business and educational opportunities within the community.

- Develop the necessary transit service and infrastructure to attract and facilitate new and diverse business.

- Provide a safe and efficient transit system to support the movement of people and goods.

- Match service levels to demand by creating a transit network with distinct targeted layers of service, which utilizes smaller or larger transit vehicles where appropriate.

- Maximize ridership by focusing transit investments on corridors with transit supportive land uses (e.g. between the downtown, other prominent transit exchanges, and neighbourhood centres).

- Prioritize all new transit service investments according to a number of service performance indicators (e.g. cost per passenger, rides per hour, and boardings per service hour).
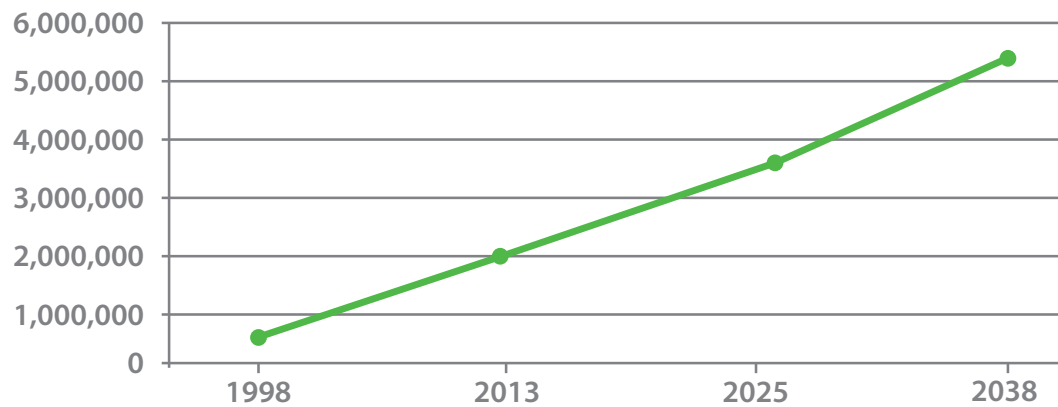
Ridership Target

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 plan and to monitor plan implementation.

In 2006, transit accounted for approximately two percent of all trips to work in Prince George. The Transit Future Plan sets a transit mode share target of four percent for all trips in 25 years, a target that was suggested by the stakeholder advisory group. Modal share is a transportation term that describes the percentage of travelers using a particular method of transportation such as walking, cycling, transit or automobile. A transit mode share target of four percent implies that Prince George transit ridership will need to grow from 2 million to 5.4 million passengers a year by 2038, as demonstrated in Figure 9. This target aligns with the Provincial Transit Plan's targets for transit mode share in regional centres in British Columbia.

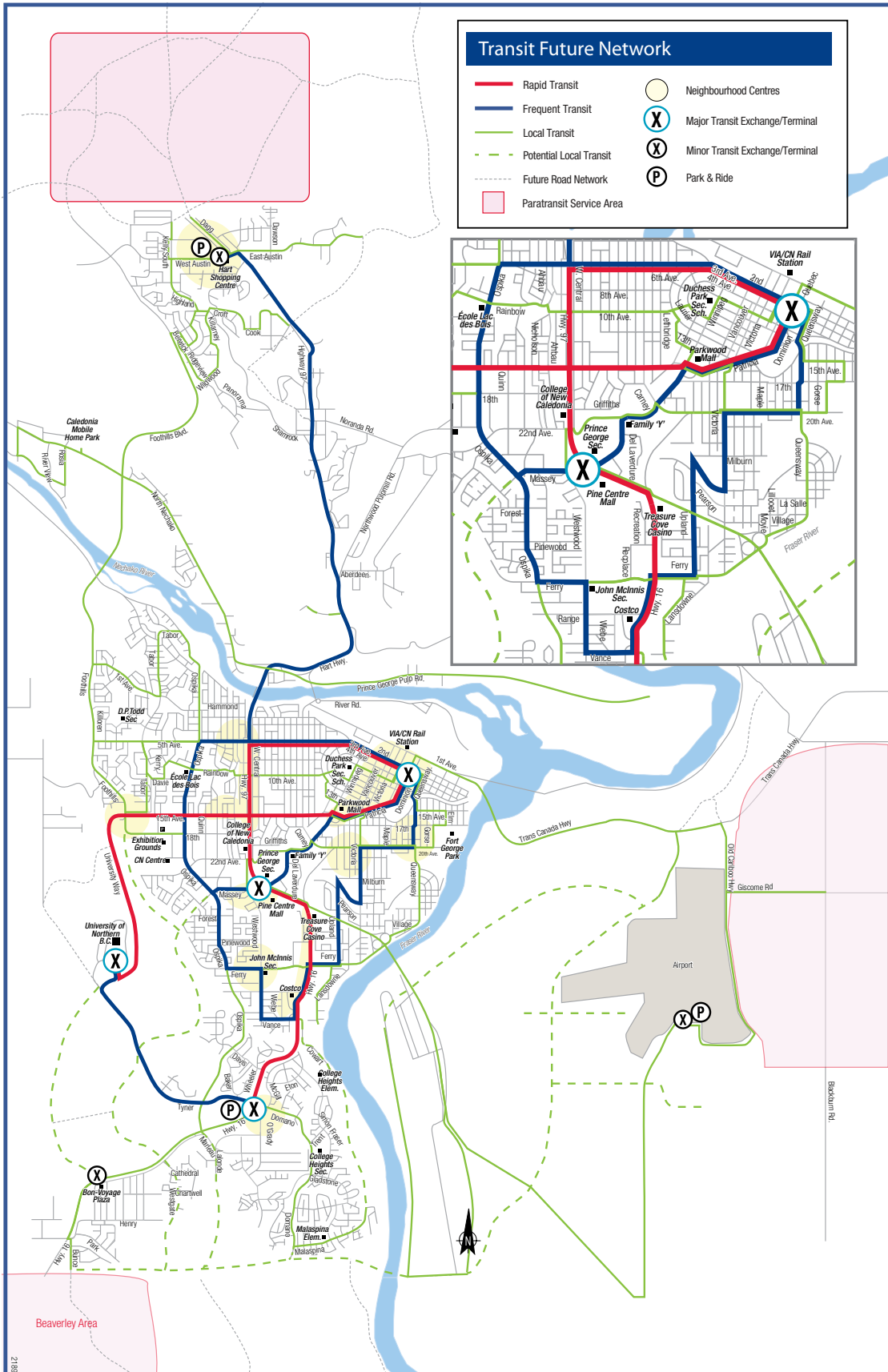**Figure 9: Prince George Historic and Forecast Ridership**

The Network

The Transit Future Plan Network

To achieve the vision and goals of the Transit Future Plan and the four percent transit mode share target, the transit network must support the Integrated Community Sustainability Plan and the Official Community Plan. The transit network is based on future land use nodes, the active transportation network and the future road network identified in the Official Community Plan.

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. The network focuses services to the downtown, between neighbourhoods and between business centres. See Map 6.

Map 6: Transit Future Network

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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 Prince George. The service layers are designed to efficiently and effectively move people throughout Prince George, facilitated by transit priority measures.

Rapid Transit Network (RTN)

RTN services are designed to move high volumes of passengers between key nodes and along key transportation corridors with high to medium density mixed land use. Service is very frequent (at least every 15 minutes between 7:00 a.m. and 7:00 p.m.) on weekdays and stops less often than traditional transit services. Investments in RTN infrastructure, technology, vehicles, and service levels 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 often branded as Rapidbus and may include future investments along the corridor such as 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 every 15 minutes between 7:00 a.m. and 7:00 p.m.) transit service on weekdays. 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 for 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 networks.   LTN services allow customers to plan a trip to work, school, local shopping centres 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 local transit network definition and are more focused on the needs of specific customers. These services may include:

- Custom/handyDART: door-to-door services for customers unable to use the conventional service;

- Paratransit: A range of services designed to effectively serve rural and low-density areas;

  » Flex-route transit following a fixed route and schedule, but buses deviate from fixed routes on request;

  » Dial-a-bus, where routes are variable but schedules are fixed;

  » Demand-responsive transit, where routes and schedules are both variable and transit operates in response to requests for service; and,

  » Vanpools, a group of up to 15 commuters travelling to the same destination and the same time each day where one of the passengers is also the operator of the service.

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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.

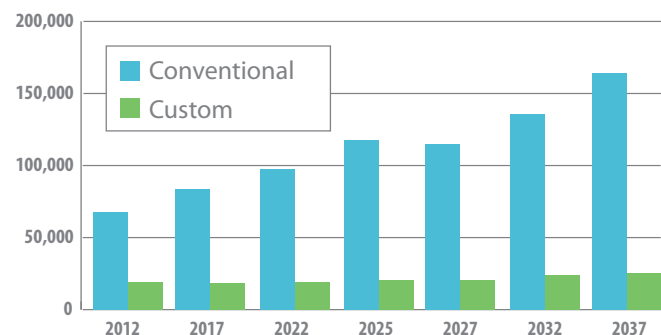## Service Hours and Vehicles

Future Service Hours

Future service hours were forecasted for 2038 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 8 and Figure 10.

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

	Conventional Transit Service	Custom Transit Service	Total
2013	64,793	17,095	81,888
2025	115,000	13,000	138,000
Projected 2038	167,000	30,000	197,000

Figure 10 : Projected Annual Service Hours, conventional and custom transit
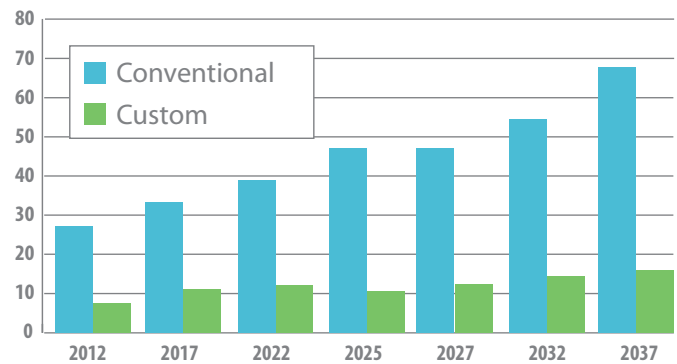
Future Fleet Requirements

The forecasts for fleet requirements were calculated for each transit route for 2038 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 9 and Figure 11.

Table 9: Projected Annual Service Hours, conventional and custom transit

	Conventional Fleet	Custom Fleet	Total Fleet
2013	27	8	35
2025	40	7	47
Projected 2038	67	15	82

Figure 11: Projected fleet requirements, conventional and custom

Benchmarking the Transit Future System

The plan projections (2038 Prince George) were compared to what other communities in Canada are operating in 2012. See Table 10 and Table 11. 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 as described in the Prince George OCP.

Table 10: Forecast 2038 Conventional Transit System – Future Service Level Comparison

	Population	Annual Service hours	Vehicles	Annual Ridership	Hours per capita	Rides per capita	Rides per hour
Red Deer, AB	90,084	143,978	50	3,626,937	1.5	40.2	25.2
Thunder Bay, ON	110,000	151,025	49	4,134,472	1.4	37.6	27.3
Guelph, ON	120,000	241,964	65	6,742,447	2.0	56.1	31.3
Prince George, BC	93,500	167,500	67	5,400,000	1.79	58.8	32.7

Table 11: Forecast 2038 Custom Transit System – Future Service Level Comparison

	Population	Annual Service hours	Vehicles	Annual Ridership	Hours per capita	Rides per capita	Rides per hour
Kamloops , BC	86,800	27,441	16	97,550	0.32	1.1	3.55
Nanaimo, BC	135,800	23,312	15	64,070	0.17	0.47	2.75
Central Fraser Valley, BC	176,900	24,756	17	96,550	0.13	0.55	3.90
Prince George, BC	93,500	30,000	15	105,000	0.32	1.12	3.50

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 seven transit exchanges or terminals as identified in Table 12. Two exchanges already exist (Pine Centre and Hart Shopping Centre).

There are existing transit exchanges at Spruceland Mall, Nicholson & 15th Ave and Pine Centre Mall that could be consolidated into one location to provide a transit focal point and simplify the transit network. The exact location would be determined through a planning study to identify and evaluate potential options that could include both Pine Centre Mall and the College of New Caledonia.

Table 12: Prince George Customer Facilities

	Type	Capacity – Buses & Automobile Parking	Status
Downtown	Terminal	6-8 bus pullouts	New
Pine Centre/CNC Area	Exchange	10-12 bus pullouts	Expanded or new
UNBC	Terminal	5-6 bus pullouts	Expanded or new
Westgate	Exchange	6 bus pullouts	Expanded or new
Westgate	Park & Ride	50-100 parking stalls	New
Bon Voyage	Terminal	2 bus pullouts	New
Airport	Terminal	1 bus pullout	New
Airport	Park & Ride	25 parking stalls	New
Hart Shopping Centre	Terminal	2 bus pullouts	Expanded
Hart Shopping Centre	Park & Ride	50-100 stalls	New

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 three Park and Ride facilities in Table 12 to provide customers living in semi-rural to rural areas direct access to higher quality transit services.

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, Prince George should strive to provide seating, shelters, lighting, and customer information at all stops. Table 13 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 13: 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 67 conventional transit vehicles. A custom transit operations and maintenance facility will also be needed to accommodate 15 custom transit vehicles. The recommended Operational Facility Master Plan study will be required to identify the functional requirements of these new operations facilities as well as to evaluate potential locations to recommend a preferred site location. Partnership opportunities to share a new facility with the School District or other municipal functions should also be explored. There are existing properties owned by the operating company that should be evaluated as part of the process.
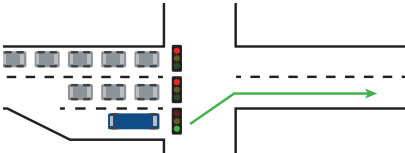
Transit Priority Measures

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 re-timing traffic signals to respect the large number of passengers on transit vehicles compared to private vehicles; and
- Physical, such as exclusive transit ways, intersection queue jumpers, bus bulges, and transit signal priority measures.

BC Transit and Prince George 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 Prince George and represent a high quality service. This prioritization can attract choice riders and support long-term transit use.

Table 14: Transit Priority Measures

Signal Priority Measures		• Transit is given signal priority along the corridor at the majority of intersections
Lane Priority Measures		• Bus only lanes for part or all of the route corridor, or bus queue-jumper lanes 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, City staff and the stakeholder advisory group during the planning process (see Participation section, pgs 16-21). The implementation strategy informs the Three-Year Service Strategy and captures the short-term implementation priorities. Service design standards and performance guidelines (described in the Service Monitoring section) have been developed to provide a consistent tool to measure the performance of new and existing services. These standards and guidelines ensure services are effective, in line with community goals and provide evidence-based service planning recommendations to Council.

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; and
- Opportunities for value added partnerships (e.g., road improvement projects by local government).

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Short-term Implementation Priorities (0-5 years)

Service Improvements	Resources
Support UNBC downtown campus course schedule Review schedules and services to ensure that transit service supports UNBC's downtown Campus course schedule.	Study
Provide service on statutory holidays There is no transit service on statutory holidays. The results of feedback gathered during the planning process indicated a strong desire for transit service on holidays. This service expansion proposal is designed to provide enough resources for service on all statutory holidays at a Sunday service level with the exception of Christmas Day.	900 annual service hours 1 vehicle
Improve weekend service Existing weekend service is very limited, especially on Sundays, in terms of frequency and hours of operation with many routes only operating a few trips per day. This service expansion proposal is designed to improve the frequency of service and hours of operation on weekends.	1,600 annual service hours
Paratransit feasibility study A study will be conducted to identify potential opportunities to provide transit service within and to Blackburn and Beaverly. These areas are largely rural in nature and the study will look at options that include fixed route and paratransit type services (e.g. dial-a-ride and demand responsive services).	Study
Begin to develop a future Rapid Transit service **Phase 1:** Short-term steps can be taken to begin to develop a future Rapid Transit line. This will start with the introduction of express service on route 15 between UNBC and Downtown on select peak hour trips. **Phase 2:** A new express bus route, which will form the future Rapid Bus line on Highway 97, can be introduced to connect Westgate, Downtown and UNBC. This improvement could be combined with a restructuring of existing resources on routes #15, #88 and #89.	**Phase 1:** can be introduced with existing service levels. **Phase 2:** will require 2 vehicles and 5,000 annual service hours
Begin to develop the future Frequent Transit Network **Phase 1:** Increase service on the corridors identified as part of the FTN including Ospika, Massey, Victoria and Uplands. This may include restructuring the #46/47 Queensway and #5/55 Victoria/5th Ave. routes. **Phase 2:** Increase service on other corridors identified as part of the FTN including Tyner and the Hart Highway on the routes #16 UNBC/College Heights and the #88/89 Hart Westgate.	**Phase 1:** will required 1 vehicle and 2,500 annual hours of service **Phase 2:** will require 1 vehicle and 2,500 annual hours of service

Short-term Implementation Priorities (0-5 years)

Infrastructure Improvements

Develop an operation facilities strategy

The existing facilities cannot accommodate the medium to long-term fleet growth. The facilities need to be able to accommodate a future fleet of 67 conventional transit vehicles and 15 custom transit vehicles. Through the initiation of an Operational Facility Master Plan study, BC Transit will identify and document the functional requirements for the facilities as well as evaluate potential locations to recommend a preferred site(s).

Plan for an expanded transit hub in the downtown

The plan identified the need for a downtown transit hub to support the implementation of the transit network and the land use strategy of Prince George's downtown. The transit hub should be located in an active pedestrian-oriented area along the future Rapid Transit alignment that is large enough to accommodate future growth in transit services.

A planning study is required to identify and evaluate potential locations and recommend a preferred site. The study should consider both on-street and off-street transit exchange concepts. Initially, the exchanges could be established on-street at an existing bus pullout. Ultimately, the transit exchange will need to accommodate future operational capacity requirements with a high level of customer amenities including transit shelters, benches, transit customer information and cycling facilities.

Continue to improve transit customer facilities

Continued improvement and maintenance of transit facilitates 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 City Zoning bylaws to include transit stop improvements as part of required works and services
- Space transit stops along a corridor at appropriate intervals between 300m - 400m. In some locations, transit stops are spaced too closely together leading to slower transit trips and higher transit stop maintenance costs. 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.

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:

- Additional transit information at the stop level
- An online trip planner or provide transit information on Google Transit

Medium and Long-term Implementation Priorities (5-15+ years)

Service Improvements

Enhance service on the RTN and develop the FTN
- Increase peak frequency initially to 20 minutes, and eventually to at least every 15 minutes, Monday to Friday on future frequent transit corridors
- Increase Rapid Transit service frequency and span of service to support increased population densities along the corridors

Enhance service on the LTN increasing frequency and span of service from 7:00 a.m. - 10:00 p.m. over time to support increased population densities along the corridors
- Increase the frequency and hours of service on weekend days as demand warrants
- Expand service to new areas to support future development including the Prince George Airport and the industrial areas (pulp mills and CPR lands)
- Implement recommendations from paratransit feasibility study and establish service for low density areas as deemed feasible

Medium and Long-term Implementation Priorities (5-15+ years)

Infrastructure Improvements

Match service to demand by using smaller or larger transit vehicles when appropriate to reduce transit operating costs and greenhouse gas emissions.
- This may involve capital investment in additional vehicles

Plan for the critical transit infrastructure needed to implement the Transit Future Plan network
- Develop a plan for exchanges, terminals, and Park & Rides where local service is less frequent or does not exist for the RTN
- Develop a transit priority plan for RTN
- Plan for other minor transit terminals

Establish critical transit facilities needed to support the Transit Future Plan network
- Establish a new downtown transit terminal

Long-term Implementation Priorities (15+ years)

Infrastructure Improvements

Establish critical transit facilities needed to support the Transit Future Plan network and implement Rapid Transit service
- Increase operational and maintenance facility capacity
- Enhance the UNBC transit terminal
- Expand the Pine Centre transit exchange
- Establish a Westgate transit terminal

Implement transit priority measures on the RTN as required

Continue to improve customer information through use of:
- Real-time information system
- Implementing branding of the RTN and FTN corridors

Continue to expand transit facilities as needed to support the Transit Future Plan network

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 15 buses and 30,000 service hours will be needed to operate custom transit services by 2038. Service improvements to enhance accessibility and custom transit include:

- Aligning the hours of operation and service area with the conventional system; and

- Increase service availability to allow customers to plan medical appointments, shopping and casual trips throughout the entire service day.

Short-term Implementation Priorities (0-5 years)

Service Improvements

Define custom transit service area

The existing custom transit service area defined in the Annual Operating Agreement is the municipal boundary. It is important for Prince George to define a service area that ensures that the service is effective and available to the largest number of individuals in need.

BC Transit is recommending a service area definition that draws from the Americans with Disabilities Act (ADA) legislation, which is commonly used as a technical source in Canada. The ADA legislation has defined service area parameters of a 1.5 kilometer distance from the existing fixed-route system in each community. BC Transit will work with Prince George to define a boundary that meets each individual community's needs.

Improve handyDART vehicle accessibility by changing bus type

The Ford Polar buses used for handyDART service in Prince George are currently being phased out and replaced with low-floor accessible 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.

Improve handyDART service in the existing service area

Based on the review of handyDART service the following priorities for service improvements have been identified.

- Service on statutory Holidays;
- Weekday service at peak times; and,
- Expanded hours of service on weekdays and weekends.

Improve custom registration process

BC Transit, in partnership with local governments, would like to improve the custom transit registration process to bring it in closer alignment with industry standards and best practices. BC Transit is piloting two projects in other regions now and these projects will incorporate an in-person component to the custom transit registration process. This revised process incorporates information about the family of accessible transit services available in each community and is intended to match each applicant with the transit service (or combination thereof) that best suits their individual needs and abilities. Based on the pilot's 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.

Medium-term Implementation Priorities (5-15 years)

Service Improvements

Expand the handyDART service area

Expand the service area to Blackburn, Prince George Airport, Pineview, Beaverly and industrial areas (pulp mills and CPR lands) as required.

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.

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.

Long-term Implementation Priorities (15+ years)

Service Improvements

Continue to expand service over time to meet demand

Improve handyDART availability to match conventional service area and hours of operation.

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; and,
- Improving accessibility for pedestrians and cyclists to use the transit system.

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Selecting a Path to Implementation

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 Prince George for approval on an annual basis for implementation each year. The growth strategy selected will determine when short-term priorities are achieved. A 3.5% investment in growth services per year is an appropriate level of investment needed to meet Transit Future Plan targets of a 4% transit mode share and support Prince George's Integrated Community Sustainability Plan aspirations outlined in Table 14 and Table 15.

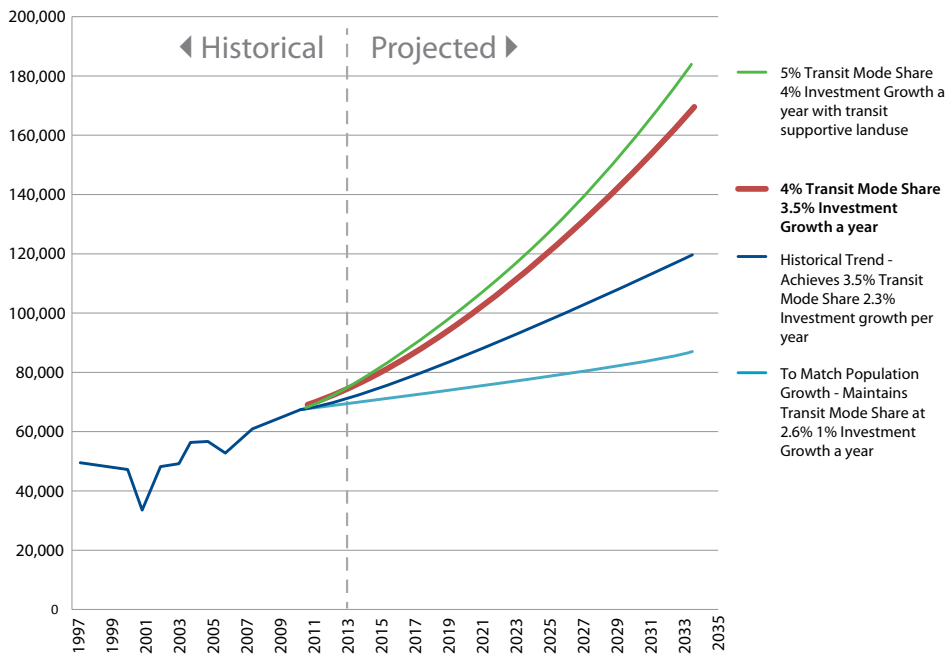**Table 14: Annual Service Hour Growth Scenarios to Meet Transit Future Plan Targets**

Table 15: Comparison of Short- term Growth Strategies

	Base Budget	Option 1 Service growth to match population growth	Option 2 Growth to match historic investments in the transit system	Option 3 Growth to meet Transit Future Plan Target and support ICSP
Growth Strategies				
Five Year Growth- Conventional service hours	0	3,500	8,000	12,500
Five Year Growth- Conventional vehicles	0	2	4	5
Five Year Growth- Custom service hours	0	700	1,200	2,100
Five Year Growth- Custom vehicles	0	1	1	2
Evaluation Criteria Inputs				
Schedule Delivery – Ability to improve on time performance	◕	●	●	●
Community Development – Allows for expansion of transit service to provide service on statutory holidays, improve weekend service 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**

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Costing of Short-term Implementation Priorities

Once an overall growth strategy has been selected short-term service improvements can be 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 current ridership trends.

Table 16: Short-term Conventional Service Implementation Priorities, preliminary cost estimates*

Service Option	Buses**	Additional total kms	Service Hours	Annual Ridership	Total Revenue	Total Costs	Net Local Share of Costs***	BC Transit Share of Costs
Statutory Holiday Service	1	20,200	900	14,000	$12,000	$140,000	$81,000	$47,000
Weekend Service	0	35,800	1,600	24,000	$21,000	$170,000	$70,000	$79,000
Development of the RTN	2	111,900	5,000	125,000	$109,000	$517,000	$203,000	$205,000
Development of the FTN	1	56,000	2,500	63,000	$55,000	$259,000	$102,000	$102,000
Development of the FTN	1	56,000	2,500	63,000	$55,000	$259,000	$102,000	$102,000
Total	**5**	**279,900**	**12,500**	**289,000**	**$252,000**	**$1,345,000**	**$558,000**	**$535,000**

Table 17: Short-term Custom Service Implementation Priorities, preliminary cost estimates*

Service Option	Buses**	Service Hours	Annual Ridership	Total Revenue	Total Costs	Net Local Share of Costs***	BC Transit Share of Costs
Statutory Holiday Service	1	110	400	$800	$10,800	$3,000	$7,000
Additional Weekday Peak Service	0	760	2,500	$4,900	$50,000	$11,800	$33,300
Expanded Evening and Weekend Service	1	1,240	4,100	$8,000	$83,100	$19,700	$55,400
Total	**2**	**2,110**	**7,000**	**$13,700**	**$143,900**	**$34,500**	**$95,700**

Based on preliminary 2013/14 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' closer to the implementation date.*

**** Net Local Share of Costs represents the cost that is shared less revenue collected*

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.

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 to council.

Service standards and route performance guidelines should be re-examined and renewed periodically (every 5-10 years depending on community size and rate of 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 minimum levels of transit service desired to meet community needs. Service standards are specific to a particular transit system and the communities it serves. Transit policies identified in the Prince George OCP have been incorporated into the Prince George transit system service design standards to reflect community values.

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; and,
- How new service will be triggered for additional areas of service (subdivision density, population, etc.).

Why they matter:

The key benefit of service design standards are that they guide local governments and BC Transit staff in determining and managing community expectations regarding the level of transit service to be provided. They also inform decisions regarding system design such as whether to provide a new service or change existing service.

Network Design Principles

Transit service should be focused on major activity centres and residential areas within the urban area.

Transit routes should be kept as direct and frequent as possible to be competitive with the automobile.

Transit routes should connect residents to their local neighborhood centres and transit trips between neighborhood centres should be able to be made with no more than one transfer.

Transit service should connect to other transportation systems to allow passengers to conveniently connect to other modes, including cycling and pedestrian networks, regional busing, rail passenger services and custom transit services.

Transit service should be operated on the arterial and collector road network and have limited operations on the local road network. Future arterial and collectors roads should be designed to accommodate transit stops and transit priority measures.

Transit service coverage and distance to major destinations. Transit routes and bus stops should be within:

- 400 m walking distance of 90 percent of the residences,
- 250 m of all future medium and high-density residential developments, and
- 150 m walking distance of all designated senior's residences and major institutional facilities.

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, where possible.

Customer information should be designed to be straightforward with simple route and schedule information. BC Transit will work with Prince George to develop a comprehensive branding package in the future, specific issues to be addressed include:

- Information and branding for the RTN and the FTN, including naming convention, logo/identifier, visual identity and style guide for additional livery (vehicle colour schemes or logos), print and electronic channels.
- Identity and numbering for the LTN and special services. Current livery will remain.
- Strategies for route identification (e.g. name/number that align with the layers of service).
- 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.

Types of Transit Service

The Transit Future Plan, Table 18, describes a hierarchy of transit services that will support implementation of the long- term transit strategy and satisfy 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	Rapid Transit routes are designed to move large volumes of passengers between major destinations and stop less often than frequent and local transit service	None	15, 88, 89	15, 88, 89
Frequent Transit	Frequent routes that operate at a 15 minute frequency over a select span of service. Routes generally operate on arterial roads, serve corridors with mixed land use and provide connections between urban centres	None	15, 88, 89	5,16, 55,88, 89
Local Transit	Local routes generally serve less densely populated areas with a focus on connections to local centres and to frequent transit routes	1, 5, 11,15, 16, 46, 47, 55, 88, 89, 91	1, 11, 46, 47, 91, Airport, Blackburn	1, 11, 46, 47, 91 Airport, Blackburn
Targeted Transit	Targeted routes are created to provide service to specific areas such as schools, universities and/or peak commuter trips	12,17,18, 96, 97	12, 17, 18, 96, 97, Beaverly	12, 17, 18, 96, 97, Beaverly
Custom Transit	Demand responsive service for people with disabilities who cannot use the regular 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. In general most routes operate from 7:00 am to 10:00 pm on weekdays with reduced service on weekends. 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: Prince George Transit Span of Service

Type	Period	Existing	Short-term	Medium to Long-term
Rapid Transit	Weekday	NA	7:00 am to 10:00 pm	6:00 am to 11:00 pm
	Saturday	NA	NA	6:00 am to 11:00 pm
	Sunday	NA	NA	6:00 am to 11:00 pm
Frequent Transit	Weekday	NA	6:00 to 10:00 pm	6:00 am to 11:00 pm
	Saturday	NA	NA	6:00 am to 11:00 pm
	Sunday	NA	NA	6:00 am to 11:00 pm
Local Transit	Weekday	7:00 am to 8:00 pm	7:00 am to 9:00 pm	7:00 am to 10:00 pm
	Saturday	7:00 am to 8:00 pm	7:00 am to 9:00 pm	7:00 am to 10:00 pm
	Sunday	9:00 am to 5:00 pm	8:00 am to 9:00 pm	7:00 am to 10:00 pm
Targeted Transit	Weekday	Varies depending on service	Varies depending on service	Varies depending on service
	Saturday	Varies depending on service	Varies depending on service	Varies depending on service
	Sunday	Varies depending on service	Varies depending on service	Varies depending on service
Custom Transit	Weekday	7:00 am to 6:00 pm	7:00 am to 10:00 pm	6:00 am to 11:00 pm
	Saturday	9:00 am to 6:00 pm	8:00 am to 6:00 pm	6:00 am to 11:00 pm
	Sunday	9:00 am to 6:00 pm	9:00 am to 6:00 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 (see page 87).

Table 20: Prince George Transit System Service Frequency

Type	Period	Existing Regular service (Peak service)	Short-term Regular service (Peak service)	Medium to Long-term Regular service (Peak service)
Rapid Transit	Weekday	NA	30 min (15 min)	15 min (10 min)
	Saturday	NA	NA	15 min (15 min)
	Sunday	NA	NA	15 min (15 min)
Frequent Transit	Weekday	NA	30 min (15 min)	15 min (10 min)
	Saturday	NA	NA	20 min (15 min)
	Sunday	NA	NA	20 min (15 min)
Local Transit	Weekday	30-60 min (15-30 min)	60 min (30 min)	60 min (30 min)
	Saturday	60 min (60 min)	60 min (60 min)	60 min (30 min)
	Sunday	60 min (60 min)	60 min (60 min)	60 min (30 min)
Targeted Transit	Weekday	Varies depending on service	Varies depending on service	Varies depending on service
	Saturday	Varies depending on service	Varies depending on service	Varies depending on service
	Sunday	Varies depending on service	Varies depending on service	Varies depending on service
Custom Transit	Weekday	NA	NA	NA
	Saturday	NA	NA	NA
	Sunday	NA	NA	NA

Vehicle Type Classification

Table 22 describes the vehicle type's attributes such as capacity and length, as well as the operating guidelines such as life span, and maximum annual hours of operation and kilometres.

Table 22: Vehicle Type Attributes

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

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 21 describes the vehicle types associated with the Transit Future layers of service.

Table 21: Vehicle Type by Service Layer

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

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Transit Facilities

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 for waiting passengers should include a hard surface landing/waiting area and be universally accessible. They should also include on-street passenger facilities such as, benches, shelters, lighting, waste receptacles, and route/schedule information. Priority should be given for snow clearing at transit stops and the pedestrian connections to them.

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 10 m in advance of a crosswalk. Buses may stop in the traffic lane (with a bus bulge where on-street parking is provided), at curbside out of the traffic lane, or in a dedicated bus bay. 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.

Stop Intervals

Transit stops should be spaced along a corridor at appropriate intervals, in urban areas this is typically between 300m - 400m. Transit stops that are spaced too close together lead to slower transit trips and higher transit stop maintenance costs. Stops that are too far apart limit passenger access to the system. Outside the urbanized area, bus stops should be limited to major destinations, points of interest, and residential concentrations. Spacing of stops should be limited on select types of service. 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 800m to 2km apart
Frequent Transit	Frequent stops along a corridor, 300m - 500m apart
Local Transit	Frequent stops along a corridor, 250m - 300m apart
Targeted Transit	Varies depending on service
Custom Transit	Not applicable

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

Transit Priority Measures

Transit priority measures should be provided on the RTN and FTN network to improve travel time and reliability as required. These measures include: signal timing optimization, transit signal priority, regulatory signage such as yield to buses, and geometric measure such as queue-jumper lanes and transit only lanes. See Table 25 and 26.

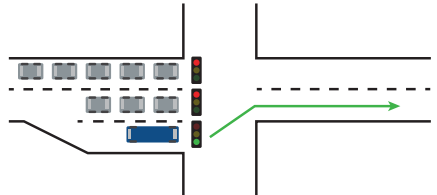**Table 25: Transit Priority Measures**

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

Table 26: 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 intersections
	Lane	None	Not required	Not required	Transit only lanes or bus queue-jumper lanes 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	Not required	Only if part of the RTN
Local 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
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

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Transit Exchanges and Park and Rides

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.

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; and,
- 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; and,
  - » Wayfinding 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.

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 per hectare or 10 jobs per hectare measured over a minimum developed area of 10 hectares (i.e. suburban development of single family homes); and

- Road and pedestrian access that provides for safe access and efficient operation of transit service.

Performance Guidelines
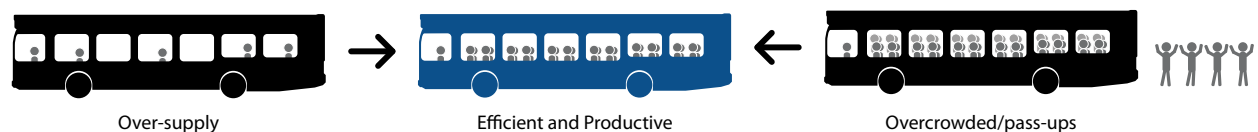
What they are and what they define:

Performance guidelines define numerical thresholds and targets for a particular system and its routes and services.

Why they matter:

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

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:

- Implement transit priority
- Change service span
- Alter frequency
- Change bus stop spacing
- Reduce/increase coverage
- Bus route changes
- Targeted marketing/Corridor branding
- Fleet type allocation

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

When system performance falls below or above the set guidelines, recommendations to Prince George will focus on those tools above that maximize efficiency.

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Measures

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

System level: The measure used for the system guidelines is:

Average rides per service 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 passenger 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 service 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 26 and 27 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 Prince George 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, development of the rapid and frequent transit networks.

Table 26: System Level Performance Guidelines

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 gives 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 27: Route Level Performance Guidelines

System	Boardings per Trip	Boardings per Service Hour
Rapid Transit	25	30
Frequent Transit	25	30
Local Transit	12	25
Targeted Transit	40	60

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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 81,888 hours to approximately 197,000 hours. The plan also calls for capital investments that include:

- Expanding the transit fleet from the existing 35 vehicles to 82 vehicles
- Upgrading and expanding the operations and maintenance centre
- New transit exchanges at UNBC, Downtown, Westgate, Bon Voyage, Pine Centre and Prince George Airport
- Improvements to customer amenities at transit stops and transit priority measures as required

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. BC Transit is available to work with local government to develop a strategy to fund the Transit Future plan.
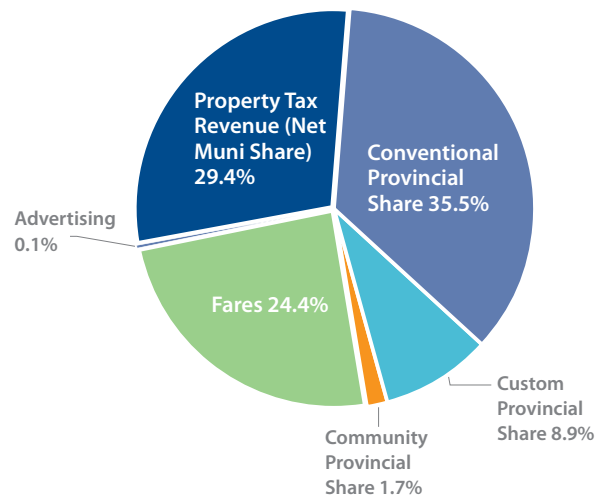
The Prince George transit system is funded through a combination of provincial funding, local property taxes, passenger fares and advertising revenue. BC Transit's budgets are confirmed on a year-by-year basis making it difficult to plan for future growth. Local government identified that funding the local share of transit investments with property taxes alone is a challenge, particularly regarding major capital investments.

As a part of BC Transit's 25-year Strategic Plan, one of the priorities is to "develop stable and predictable revenue sources." The proposed actions for this are to:

Develop stable revenue sources

- Assess various approaches to developing stable, secure provincial investment in transit;
- Work to identify and implement new revenue sources;
- Assess various approaches to developing stable, secure local investment in transit; and,
- Initiate a revenue committee to manage fare revenue strategies in partnership with local authorities.

Figure 14: Prince George Transit System Funding Split

Property Tax Revenue (Net Muni Share) 29.4%

Conventional Provincial Share 35.5%

Advertising 0.1%

Fares 24.4%

Custom Provincial Share 8.9%

Community Provincial Share 1.7%

Increase predictability

- Examine and implement improvements for conveying transit system budget information to local governments, such as the provision of multi-year budgets aligned to municipal calendar years; and,

- Continue to confirm the Provincial Government's BC Bus Pass program pricing (an annual pass program for lower income seniors and people with disabilities).

Implement new partnerships and revenue opportunities

- Seek to revise legislation, policies and procedures to encourage profitable commercial use of BC Transit assets and resources for reinvestment to further transit service objectives;

- Explore opportunities to offset BC Transit costs by leveraging BC Transit expertise and scope with other organizations (for example, synergies with other local transportation providers, BC Transit fleet procurement expertise or bulk fuel contracts); and,

- Continue to support local governments to offset costs from identifying and creating local transit funding partnerships with other agencies.

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 Prince George 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 requesting the Province to amend the Motor Fuel Tax Act to create a dedicated fuel tax to be applied in the City under the BC Transit Act.

Vehicle Levy

An annual vehicle levy could be collected when vehicle insurance is renewed. Under existing 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 existing 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 governments 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 Plan 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 Prince George, 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 allocation of available provincial transit expansion funding between transit systems as determined through BC Transit's Transit Improvement Program (TIP).

Figure 15: Service Planning, Implementation and Evaluation Cycle

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.
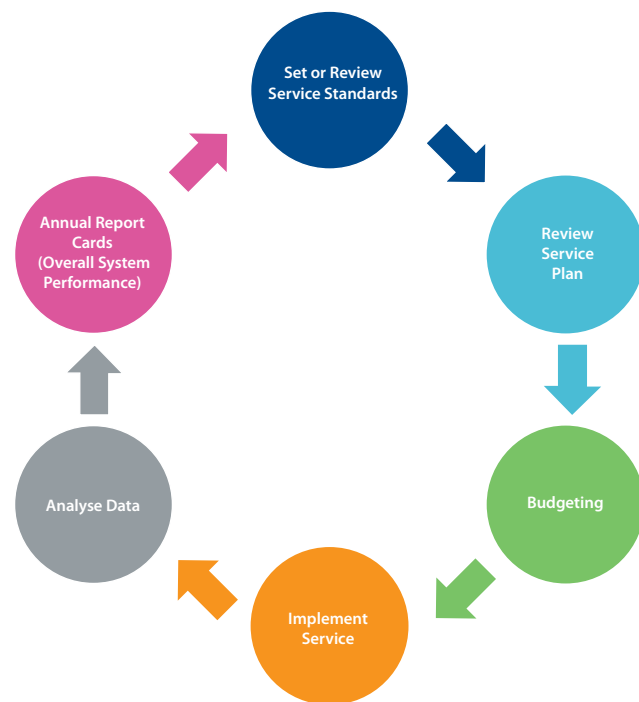
Keys to Success

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

The Transit Future Plan builds upon previous plans (ICSP, OCP, Neighbourhood / Local Area Plans, ATP) and will be used to communicate the vision and direction for transit in Prince George and the region. Prince George has already taken the step of integrating a long-term transit strategy within the OCP. Other 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 Prince George 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 maintaining strong links between:

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

How will BC Transit and Prince George 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; and
- To respond to planning and development proposals.

What actions can the City of Prince George consider to support 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.

- Example, a pedestrian and cycling infrastructure project on a transit corridor could improve access to transit by providing or improving sidewalks;

- Incorporate transit priority measures with an intersection upgrade project;

Ensure that local and major development proposals and projects support transit

- Consider amending city 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;

Explore 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 City'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.

- For example; Prince George could consider a short-term recommendation to include an amendment to the City of Prince George Zoning Bylaw No. 7850, 2007 to:

  » Review for reduction of parking requirements for new developments;

  » Consider an amendment to the zoning bylaw regulation for a reduction in parking spaces by cash in lieu per parking space for new development to encourage the use of Active Transportation modes (as per Section 906 (1)(d), (2) and 7(a)(ii) of the Local Government Act); and

- 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.

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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 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 expense.

Cycle Time – The length of time for a transit vehicle to complete one round trip, including recovery time.

Custom Transit – Door-to-door transit service for those persons whose physical disability prevents them from using conventional transit service.

handyDART – The BC Transit custom transit program.

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 and 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 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.

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

BCTransit

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