Strategic Review of Transit in the Fraser Valley
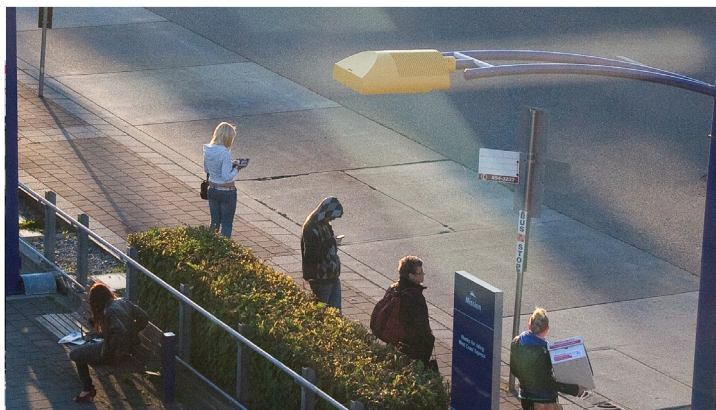# Foundation Paper #2

Review of Relevant Transit Practices for the Fraser Valley

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Fraser Valley Regional District

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SUMMARY

The success of transit in the Fraser Valley requires a unique combination of transit services and facilities that are aligned with the travel characteristics of the community, transit friendly land use patterns and the provision of transit supportive facilities and infrastructure. This Foundation Paper examines a number of practices and arrangements used in other communities that may be relevant to developing a long-range Strategy for the Fraser Valley. In particular, this paper explores the range of transit services that may or may not be considered in the Fraser Valley as well as other critical factors to the success of transit for the Fraser Valley.

What Exists Today

Without describing the individual routes within the Fraser Valley, the municipal systems in Abbotsford, Chilliwack and Mission generally operate using a hub-and-spoke route structure that is typically associated with a commuter service that connects communities with the central area where passengers can then access other transit services to the rest of the community, other municipalities and inter-regionally with Metro Vancouver. There are a range of service models already used today in the Fraser Valley that reflect the nature of the land use and travel demand patterns. In general, they include custom transit (handyDART), flexible services (or paratransit) and conventional services for local, regional and inter-regional travel markets. West Coast Express also serves inter-regional travel primarily for Mission and Abbotsford residents, most of which are going to Downtown Vancouver.

Potential Range of Services

A broad range of transit services may be considered for the Fraser Valley today and for the long-term. For the purpose of this Strategy, these services fall within three groupings of custom and paratransit, conventional transit and rapid transit. While there is no right or wrong transit service, the strategy will examine

Custom & Paratransit	Conventional	Rapid Transit
• *Flexible Routes* • *Custom Transit* • *Demand Responsive* • *Share-ride Taxi* • *Commuter Subscription*	• *Circulator Routes* • *Shuttle Routes* • *Trunk Routes* • *Express or Limited Stop*	• *Bus Rapid Transit* • *LRT or ALRT* • *Subway* • *Regional Rail* • *Express Rail*

enhanced services for the Fraser Valley that are best suited to the existing and planned land use patterns and will more effectively serve local, regional and inter-regional travel markets. Recognizing that this is a long-term strategy, some services and demand patterns will evolve over time. Highlights of these services are summarized below in Tables 1 through 3.

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Table 1 – Custom & Paratransit Services

Types of Service	Summary Features & Applicable Conditions
Flex-Route	• Low ridership in areas beyond reasonable walking • Typically fixed schedule for two or more timing points with at most 1 to 2 deviations • Up to 15 trips / hour per route • *Examples*: Fraser Valley and most communities
Custom Transit	• Serving people with disabilities unable to use conventional services • <20 people per hour • *Examples*: Fraser Valley's HandyDART
Dial-a-Bus	• Areas served by conventional during peak, but possible shift during off-peaks • Typically serving existing bus stops on demand (30 minutes ahead) • <40 passengers per hour • *Examples*: Strathcona, Red Deer, Brantford, Peterborough, etc.
Trans-Cab	• Low ridership throughout day • Areas not served by conventional transit during peak, with shift during off-peaks • Up to 20 people per hour in one area • *Examples*: Rimouski, Hamilton, Peterborough, Markham, etc.
Commuter Subscription	• Trips of >25 km • Regular commute trips at same time each day • 5 to 20 passengers per trip • *Examples*: Jack Bell Vancouver, Microsoft shuttle services, etc.

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Table 2 – Conventional Transit Services

Types of Service	Summary Features & Applicable Conditions
Circulator Routes	• Designed as distribution systems within a given area with maximum coverage • Typical use occurs within neighbourhoods or in commercial areas • 15 minute peak, 30-60 minute off-peak • Typical capacity of 100 psg/hr
Shuttle Routes	• Primary focus on serving the end of the routes, with pick-up and drop-off throughout • Typical feeder service between neighbourhood to transit hub, employment centre and retail centre • Typical capacity of 100 psg / hr • 15 minute peak, 30-60 minute off-peak
Trunk Routes	• Backbone of the bus-based transit service operating along major corridors • Enhance mobility within communities with a frequent level of service • Typical capacity of 1,000-2,000 psg/hr • Most attractive when <15 minute services during all periods of the day
Express & Limited Stop Routes	• Typically serving longer distance 'regional' travel along major corridors & highways • Typical capacity of 2,000-4,000 psg/hr • Urban corridors <10 minute peak, 15 minute off-peak for limited stop route • Suburban corridors 15 minute peak, 30-60 minute off-peak

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Table 3 – Rapid Transit Services

Types of Service	Summary Features & Applicable Conditions
Bus Rapid Transit	• Frequent 3-5 minute peak services, operating at 25 to 60 km/hr • Connections major generators and transit services • Protected from areas of congestion • Enhanced station and stop facilities • Capacity 2,000 to 10,000 psg/hr • Examples: North America, Asia, Australia, Jakarta, Taiwan
LRT & ALRT	• Frequency as low as 90 seconds, operating at 25 to 60 km/hr • Diesel or electric vehicles, operating exclusive environment with shared street crossings • Capacity of 5,000 to 25,000 psg/hr • *Examples*: Metro Vancouver, Edmonton, Calgary, Toronto
Subway	• Frequency as low as 90 seconds, operating at 25 to 50 km/hr • Electric heavy rail vehicles, operating exclusive environment • Capacity of 25,000 to 40,000 psg/hr • *Examples*: Montreal, Toronto, etc.
Regional Rail	• Frequency as low as 10 minutes • Diesel or electric locomotives or multiple units • Right-of-way often shared with freight rail traffic • Capacity 5,000 to 20,000 psg/hr • *Examples*: West Coast Express, Toronto Go Train, Montreal, New York, etc.
Express Rail	• Frequency as low as 5 minutes • Electric heavy rail vehicles • High speed rail serving long-distance travel with two way all day service • Capacity 25,000-40,000 psg/hr • *Examples*: San Francisco, Paris, etc.

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Critical Factors for the Success of Transit

The demand for transit services is highly influenced by a combination of factors, including the frequency, reliability and directness of service and the land use patterns and transportation systems within the community. This discussion highlights those patterns that are generally going to be supportive of attractive transit services and improve the likelihood of increasing ridership – specifically land use patterns, transportation system, demographic and socio-economic influences, and transit supportive infrastructure.

- *Land use patterns* – such as a mix of uses, density, and built-form – are important factors influencing the overall travel in the Fraser Valley and, consequently, the success of transit. A mixture and concentrations of residential, retail and office uses contribute toward the two-way travel patterns needed to have transit being used in both directions and during off-peak periods. Scale and density has the most significant impact on selecting the forms of transit. Higher density uses within 400 metres of transit stations and corridors generally support more frequent and direct services – such as express routes, BRT and other forms of rapid transit. Table 4 below highlights some suitable transit services for various population densities. Finally, the form of development must be supportive to walking, cycling and transit, and even discourage people from driving. \

Table 4 – Transit Services and Population Densities

Minimum Residential / Population Densities	Form of Residential Use	Suitable Forms of Transit Services	General Peak Frequencies
<7 upha (20 people/ha)	Rural and Single Detached Homes	**Paratransit** *Transcab, Demand Responsive, & Flexible Routing Services*	Pre-arranged or 30-60 minute
15 upha (40 people/ha)	Single Detached Homes, Townhomes, Homes with Suites	**Conventional Bus Routes** *Circulators and Shuttles*	15-30 minute
35 upha (90 people/ha)	Townhomes, Homes with Suites	**Conventional Bus Routes** *Trunk and Express Services*	15 minute
50 upha (125 people/ha)	Duplex, Rows and Triplexes	**Conventional Bus Routes** *Express Services & Limited Stop Services*	10 minute
75 - 150 upha (190 - 425 people/ha)	Low Rise Apartments	**Conventional Bus & Rapid Transit** *Express Services Limited Stop & BRT Services*	5 minute
175 - 300 upha (440 - 750 people/ha)	Medium & High Rise Apartments	**Rapid Transit** *BRT, LRT/ALRT, Subway & Regional Rail Services*	<5 minute

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- ***Demographic and socio-economic*** factors, such as age structure of the population, income, labourforce activity and automobile ownership, have a significant influence on the attractiveness of transit. These factors can influence whether riders are 'captive', in that they have no alternative to using transit, or 'choice', in that they have other transportation options but choose to use transit. In general, transit is most attractive to captive riders, including young people who cannot drive (such as students) and elderly persons, who may be unable to drive. In comparison to Metro Vancouver, a significant proportion of the Fraser Valley population is comprised of youth as a result of the Region being attractive to young families. Conversely, forecasted changes in age profile of the Fraser Valley reflects the baby boom generation moving towards retirement and suggests that the mobility challenges of the Fraser Valley will also increase as a result. Each of these groups will have increasing reliance on transit over the next 10 to 20 years for enhanced mobility.

- ***Transportation System Characteristics.*** Roads provide accessibility and mobility for all modes of travel. At a regional level, building capacity for single-occupant vehicle travel will continue to make driving more attractive for longer distance trip making – particularly for those individuals with access to a car. Although transit services will also benefit from enhanced roadway capacity, the Single Occupancy Vehicle (SOV) will continue to experience a significant travel time advantage. As indicated in the Regional Growth Strategy, it is projected that vehicle travel will continue to be the predominant form of transportation used in the Fraser Valley and that significant improvements to the road network will be required. However, it is recognized that the roadways and the network improvements as a whole must be designed to accommodate walking, cycling, transit as well as general purpose traffic and goods movements. Ultimately, the RGS promotes the development of a transportation system that supports compact urban development, promotes a network of sustainable communities, and minimizes intrusions on rural, recreational and agricultural lands.

- ***Transit Supportive Infrastructure.*** Many transit facilities can be enhanced to improve transit travel time and to provide more comfort and convenience to customers. These measures can make transit more competitive with the private automobile in attracting new transit customers and supporting existing riders. In much the same way that investing in a car and insurance isn't enough for people to drive, merely buying buses and allocating service hours will not be enough to make transit successful. In developing a transit strategy for the Fraser Valley consideration must be given toward investments of transit supportive infrastructure such as park-and-ride facilities, transit exchanges, transit priority measures, amenities and making the system accessible for all mobility levels. These facility improvements must also be accompanied by marketing efforts that sell the idea of transit as a viable transportation alternative.

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1.0   INTRODUCTION

The Fraser Valley Regional District (FVRD) offers residents, workers and visitors a high quality of life, with a mixture of urban, suburban, rural, and natural environment experiences. The region is home to approximately 263,000 residents living within its six municipalities and seven Electoral Areas. Residents in the region benefit from growing employment opportunities closer to home and affordable housing prices relative to other parts of the Lower Mainland. Over the next 25 years or so, the region's population is expected to increase by approximately 80%, or an additional 200,000 people. Much of this growth is anticipated to occur within the region's urban growth boundary. As such, managing this growth and fostering the sustainability of these communities is essential particularly in the area of reducing automobile dependence and increasing travel options.

One of the key growth management goals identified in the FVRD's Regional Growth Strategy (RGS) is to 'Increase Transportation Choice and Efficiency', which includes reducing dependency on single-occupant vehicle travel and enhancing commitments toward the provision of attractive bicycle and pedestrian facilities, as well as a broader range of transit services. This includes not only the provision of additional conventional transit services within and between communities, passenger facilities, and community shuttles using both fixed and demand-responsive services for local travel within Fraser Valley communities. A broader range of local and regional transit services supported by transit-oriented land use policies and measures – such as increased mixture of uses and density, attractive and accessible pedestrian facilities, park-and-ride facilities, transit exchanges, etc. – will complement the RGS goal for a 'network of sustainable communities.'

Significant strides have already been made toward enhancing transit services in the Fraser Valley in recent years, although service hours still lag comparable systems. BC Transit, in connection with local municipalities, has undertaken comprehensive assessments of transit markets and the performance of transit services for the Fraser Valley, and has identified needs for improvement through their 5 year planning processes. Although the Provincial Transit Plan does not specifically identify transit strategies for the Fraser Valley, the foundation goals for reduced greenhouse gases, increased transit mode share and complete communities are used to guide the development of a long-range transit strategy for the Fraser Valley.

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1.1 The Strategy Process

The **Strategic Review of Transit for the Fraser Valley** represents an opportunity to address historical issues and challenges of making transit attractive for the Valley. It will include the development of a long-term strategy for local, regional and inter-regional transit services, facilities and supportive infrastructure over the next 20 years. The Strategic Review will also identify implementation priorities for the next 5 and 10 years as well as the responsibilities for advancing the shorter-term initiatives. The process for developing the Strategy is separated into six phases, with the development of three integrated Foundation Papers being developed as part of this second study phase.
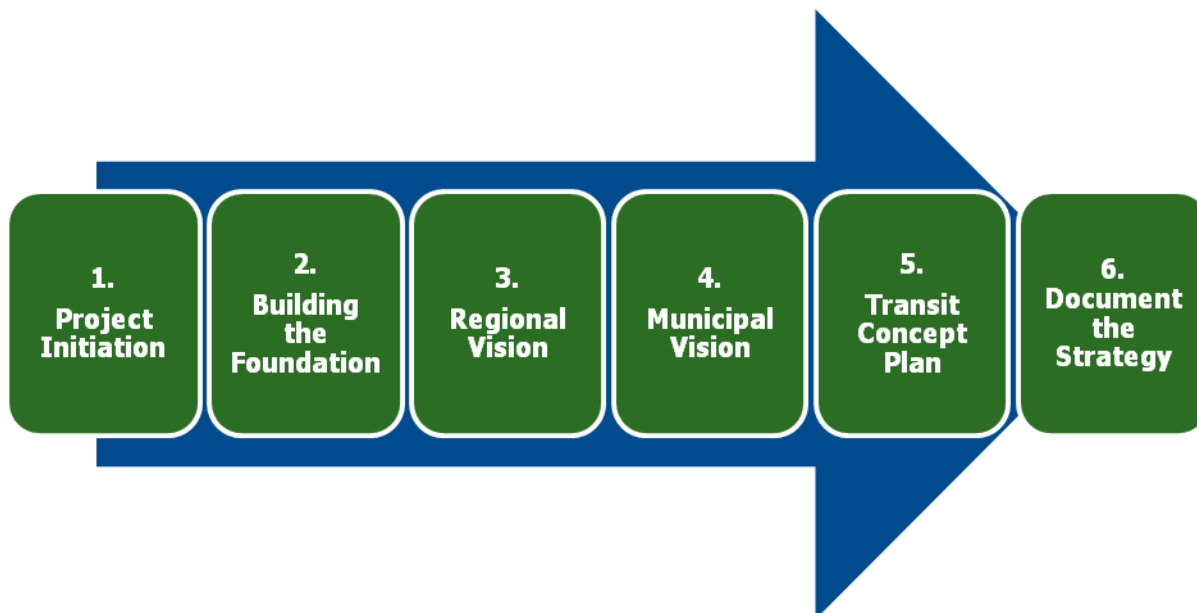
The Foundation Papers included in Phase 2 are intended as 'think pieces' to build on historical work and to shape and assist in the development of Municipal and Regional Visions for transit in the Fraser Valley.

- **Foundation Paper #1 – Transit Market Analysis.** In order to develop an effective long-term strategy for transit in the Fraser Valley, it is important to identify transit services and facilities that are targeted toward enhancing the experience for existing customers, may attract new transit customers that are traveling today by automobile and will be aligned with long-term travel markets. This Foundation Paper provides a comprehensive assessment of the local, regional and inter-regional transit markets in the Fraser Valley. Ultimately, the transit services and strategy for the Fraser Valley will be aligned with those markets where there is the greatest potential to increase transit ridership.

- **Foundation Paper #2 – Summary of Relevant Practices.** The success of transit in the Fraser Valley requires a unique combination of transit services and facilities (that are best suited to the

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transit markets being served), transit friendly land use patterns and the provision of transit supportive facilities and infrastructure. This Foundation Paper examines a number of practices and arrangements that are used in other communities that may be considered in developing a long-range strategy for the Fraser Valley.

- *Foundation Paper #3 – Managing and Financing Transit in the Fraser Valley.* The historical means of governing and funding transit is an ongoing challenge because communities in the Fraser Valley have grown significantly over the last 10 or so years. Although the Strategic Review of Transit in the Fraser Valley will NOT be identifying and evaluating alternative forms of governance and financing transit, this Foundation Paper provides an overview of the current models for governing transit in British Columbia, and highlights some of the historical facts about funding transit in the Fraser Valley and a comparison to other communities in Canada.

1.2   Key Features of This Foundation Paper

The purpose of this Foundation Paper is to provide an overview of relevant experiences that make transit successful in other communities and may be important to consider in developing the long-range strategy for the Fraser Valley. Specifically, this Foundation Paper addresses the following matters.

- *Range of transit services*. This section of the Paper explores the potential range of transit services that are found in the Fraser Valley and other communities throughout the world.   These services have been grouped into three categories as follows: custom and paratransit services, conventional transit services and rapid transit services.

- *Experience from Other Communities.* In addition to the experience in other communities with specific forms of transit as highlighted above, this section of the Paper will provide a brief overview of transit systems in communities similar in nature to the Fraser Valley in terms of their size (with some being larger communities), location relative to larger metropolitan areas, and where one or more transit systems are in operation. This discussion will include a review of the types and levels of transit service in other similar communities in comparison to the Fraser Valley in which to identify opportunities for enhanced local, regional and inter-regional transit.

- *Other critical factors to the success of transit.* The demand for transit services is highly influenced by a combination of factors, including the level and quality of transit service and the land use patterns and transportation systems within the community. This section of the Foundation Paper examines those factors that will go well beyond the provision of transit in the Fraser Valley. Specifically, the Paper broadly examines those patterns that are generally going to be supportive of attractive transit services and improve the likelihood of increasing ridership – specifically land use

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patterns, transportation system, demographic and socio-economic influences, and transit supportive infrastructure.

2.0   THE POTENTIAL RANGE OF SERVICES

The Fraser Valley transit systems – *Chilliwack Transit System and ValleyMAX Transit System* – offer a range of transit services including custom, paratransit and conventional services in addition to the provision of commuter rail operated by West Coast Express. This section reviews the range of transit services that may be examined as part of the long-range strategy to support the potential markets for increasing transit ridership in the Fraser Valley based on relevant experiences in similar communities throughout the world. It is important to recognize that most communities will integrate a range of these services into their transit systems and even 'brand' specific services slightly differently from what's described in this document in order to give them an identity for the customer to better understand the service.

2.1   Existing Fraser Valley Services

Without describing the individual routes within the Fraser Valley, the system generally operates using a hub-and-spoke route structure that is typically associated with a commuter service that connects communities with the central area where passengers can access other transit services to the rest of the community, other municipalities or inter-regionally with Metro Vancouver. The following discussion highlights the overall form and range of transit services locally, regionally and inter-regionally.

a. **Local Service**

   ValleyMAX Transit System (VTS) (Abbotsford and Mission). The VTS services both Mission and Abbotsford with custom, paratransit and conventional bus services.   The following discussion highlights the range of services provided in each community.

   - **Custom transit (handyDART).** handyDART is available to persons with a disability that prevents them from using conventional services without assistance.   Individuals must be registered and services are generally provided on a door-to-door basis. During periods when handyDART is unavailable, a subsidized taxi service may be used to give individuals the flexibility to coordinate their own travel.

   - **Conventional Services**. In general, most transit services in Abbotsford and Mission are comprised of conventional services with 15 minute service during peak periods in Abbotsford and 30 minutes during off-peak and in the Mission area. Figure 2.1 illustrates the corridor the coverage of transit services in Abbotsford and Mission. Overall, a significant proportion of the established, urban areas of Abbotsford and Mission are within a 450m walking distance of transit services. The 1-2-3 GoLine service illustrated in Figure 2.2 provides direct, frequent and "no–transfer" service along and adjacent to the South Fraser Way corridor between Downtown Abbotsford and the Civic Precinct.

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**Figure 2.1 –
Abbotsford, Mission, and Chilliwack Service Coverage (within 450 metres)**

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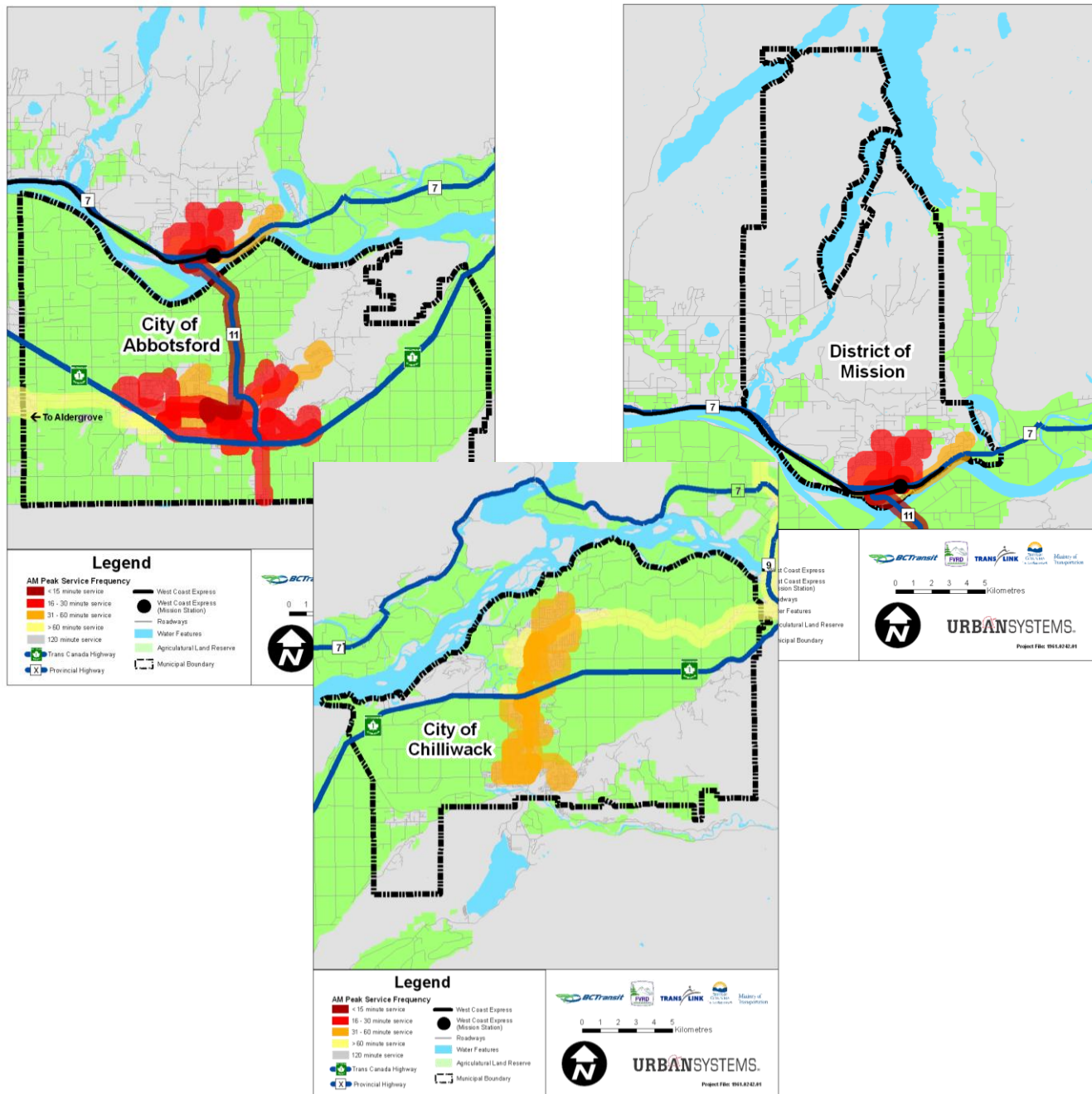Practices for the Fraser Valley.doc

Figure 2.2 – 1-2-3 GoLine Service
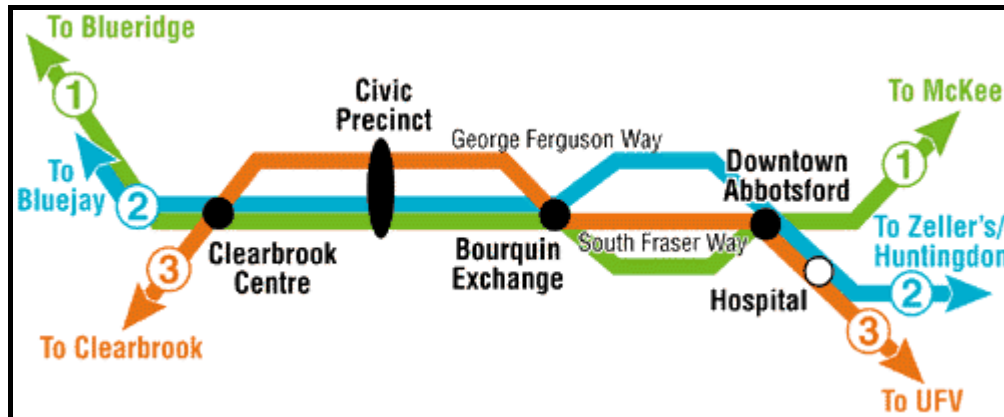
- **Flexible Routing**. Select trips in the Central Fraser Valley Transit system are operated by smaller community buses identical to those used for handyDART service. Although the community buses operate on routes and schedules, they will deviate up to 500 metres off route to provide door-to-door service for registered handyDART clients. In addition to those flexible services, the ValleyMAX Shopper Shuttle provides hourly service in the midday Monday to Saturday from residential neighbourhoods south of 7th Avenue to shopping destinations in downtown Mission and nearby shopping centres. The Shopper Shuttle can pick up and drop off shoppers closer to entrances of their destinations, such as to the Safeway in Mission Hills Mall. This service compliments the larger, low floor buses that serve these general shopping areas on other Mission routes.

- **Taxi Cab Service.** A special taxi shuttle service may be used with a 24 hour notice to connect with the first three morning trains from Mission City (before the bus services are operating). This service is available to Mission residents only.

Chilliwack Transit System. The Chilliwack System is comprised of both custom and conventional transit services as outlined below.

- **Custom transit (handyDART).** The Chilliwack handyDART System provides demand responsive door-to-door transit service using four fully accessible vehicles. It also provides rural paratransit service to residents of Cultus Lake and the Chilliwack River Valley. The service operates 8:00 to 17:00 Monday through Saturday.

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- ***Conventional Bus.*** The Chilliwack Transit System is comprised of nine conventional routes providing 60 minute service to most areas of the community. Many of the conventional services provide special routing for school trips during the morning and afternoon periods. Figure 2.1 illustrates the coverage of transit services in Chilliwack area. Once again, a majority of the urban area of Chilliwack is within a 450m walking distance of transit services. A summer service between downtown Chilliwack and Cultus Lake is provided during the months of July and August.

Kent-Agassiz-Harrison. This system largely comprised of a local service within Agassiz and Harrison Hot Springs, connecting through to Chilliwack along Yale Road. This service supports five trips per day between these communities.

b. Regional Services

Regional transit services between the Fraser Valley communities is somewhat limited, with 30 minute frequencies on one route between Abbotsford and Mission, and one route operating five times daily between Chilliwack and Agassiz-Harrison as previously described. There are no bus services connecting Chilliwack or other eastern valley communities with Abbotsford or Mission at this time.

c. Inter-regional Services

Two inter-regional services exist between Fraser Valley Regional District and Metro Vancouver. In September of 2008, ValleyMAX introduced a new service between Abbotsford and Aldergrove in Langley. This service consists of seven round trips each weekday and four round trips on Saturdays between downtown Abbotsford and Aldergrove. Passengers wishing to travel further west must transfer to TransLink service to connect with other parts of Langley and Metro Vancouver.

The longest standing inter-regional service is the West Coast Express which facilitates travel between the Fraser Valley and Metro Vancouver for many residents from Mission (57%), Abbotsford (38%) and other parts of the region. West Coast Express operates train service five days a week and bus service seven days each week (except on holidays). Five trains operate in the westbound direction during the morning and return at the end of the day. TrainBus provides service to the same stations as the West Coast Express after the last train during the morning and afternoon, with one trip before the first train returning in the afternoon. TrainBus service is also provided on weekends.

Private transit services are provided by Greyhound which operates an inter-city bus passenger service from Abbotsford, Chilliwack and Mission to destinations within the Lower Mainland and the rest of North America. Greyhound has regular service in central Abbotsford and Chilliwack, and limited service in Mission at the West Coast Express terminal.

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2.2 Custom and Paratransit

In basic terms, custom and paratransit services are different from conventional bus services in that they are designed to provide flexibility to customers. Depending on the circumstances, custom and paratransit services may be deigned to respond to demand patterns, support route deviation and allow for variable pick-up and drop-off points.

For many communities, growth patterns, social changes and economic activities have not supported the provision of traditional forms of transit. As such, many communities throughout the world have implemented different forms of services that are suited to the community needs rather than simply relying on fixed forms of transit services. In this regard, paratransit services have been used to maintain an attractive quality of transit service in lower density area in comparison to driving, while managing costs. Custom transit services are a form of paratransit designed specifically for individuals with disabilities. In many communities, custom transit is often covering the same areas as other paratransit services. Because of their similarities, integration strategies may be considered without compromising the accessibility of custom transit or the attractiveness and cost-effectiveness of paratransit services.

In many communities, paratransit services can provide attractive transit services to these and other environments:

- Rural Areas where there is very limited or no transit service, yet there is need to access nearby communities.

- Lower density suburban areas where frequent, direct, fixed transit services cannot be provided cost effectively, and where trip patterns have become increasingly challenging to serve by transit.

- Developing communities where the scale, density and mixture of uses have not expanded enough to provide conventional, fixed route services.

For the purpose of this discussion, the custom and paratransit services are defined in five categories as follows:

1. **Flexible Routes** have the ability to move within a given service area as long as they arrive on schedule at various time points such as at transit hubs to ensure reliable transfers as required. There are essentially three forms of flexible route services. The most flexible form has two time points, one on each end of the route. A slightly more restrictive service could have approximately 5 time points along a given route and the most restrictive allows for routing deviations of a certain distance from a given route.

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Flexible transit routing improves convenience of transit by allowing stops to be closer to the origin and destination of the transit customer. This will significantly increase accessibility of transit and provide greater coverage of the entire transit network.

2. **Custom Transit** (or HandyDart operated by BC Transit) is one option for people with disabilities to get around the community in addition to the accessible fleet of transit vehicles. HandyDart is a door-to-door service where people with severe disabilities that are unable to use conventional transit can arrange for door-to-door service as part of a share ride program with others that have scheduled trips at the same time. Trips must be booked at least one day in advance of traveling and a taxi service may be used as an alternative during times when the HandyDart service is unavailable. Many communities throughout North America have provided flexible and demand responsive services as an alternative to custom transit for many people with disabilities, but do not require travel assistance.

3. **Demand Responsive** or dial-a-ride services essentially schedules vehicles to pick-up and drop-off passengers throughout the service area (or operating zone), providing high quality curb-to-curb service for transit passengers. Due to the relatively small passenger loads, vehicles can more or less take the most direct route between major origins and destinations, thus reducing overall travel times. Although not necessary, advanced technologies have allowed some operators of transit services to reduce advance reservation requirements. Dial-a-bus services can be operated during all periods of service, or during specific hours of the day when demand patterns do not exceed the practical capacity of the system.

Table 2.1 – Dial-a-bus Services Elsewhere in Canada

Municipality	Weekdays	Saturday			Sunday		
	Evening	Morning	Afternoon	Evening	Morning	Afternoon	Evening
Brantford ON	✓			✓	✓	✓	✓
Medicine Hat AB	✓	✓		✓	No service		
Peterborough ON	✓			✓	No service		
Red Deer AB	✓	✓		✓	✓	✓	No service
Winnipeg MB	✓	✓		✓	✓	✓	✓

4. **TransCab or Share-ride Taxi** is another form of demand responsive transit service using taxis as part of the transit service. In most communities that utilize this form of transit service, it is used to provide coverage in areas not served by transit in order to connect to the transit system of the urban area. This is the case for systems operating in Hamilton, Peterborough and Markham, Ontario.

For example, Hamilton Street Railway (HSR) serves a population of approximately 490,000 people. The Trans-Cab service was initiated in 1998 to provide service to the only urbanized area within HSR's service area that did not have service, known as the Winona-Lakefront area. It uses regular taxi dispatching, vehicles and drivers to provide service to one or more passengers who want to make use of regular HSR services. Trans-Cabs connect with four HSR routes at three different transfer points.

Inbound customers must call for a Trans-Cab one-hour before their desired trip time to arrange a trip. On boarding the cab, they inform the driver of their trans-cab destination and pay a regular HSR fare. The driver gives the passenger a special transfer marked with the fare paid, and records the trip on a log sheet. Transfer points to the conventional transit system occurs at a point that provides access to as many transit routes as possible to maximize accessibility, but not at a point that represents a popular destination.

In contrast to the Ontario experience with TransCab services, the City of Rimouski, Quebec launched its TAXIBUS service in 1993 as a cost-effective alternative to transitional forms of transit throughout the community of 32,000 people. The service operates throughout the community Monday to Friday, serving 300 stops at scheduled times. Passengers must reserve at least one hour ahead of time by phone and taxi drivers are paid according to the readings of the taxi meter, from the time the first passenger is picked up to when the last passenger is dropped off.

5. **Commuter Subscription Services (Vanpool & Buspool)** offer a tailored service to specific individuals when they have paid a subscription fee. Many subscription services that exist have originated as privately run enterprises, some of which have transitioned to a public operation or may operate as a private-public partnership if suitable. Although the range of carpool, vanpool and other subscription services can vary, discussion of subscription services will be concentrated on commute services for the purpose of this exercise. This is the market upon which most public and public/private partnerships are focused.

Overall, commute buspools (or commuter clubs) often originate in low density suburbs where several residents place of work is in proximity to each other, but a long distance from home. Because this is a subscription service, seats are typically guaranteed and times for departure are often determined by the needs of passengers. In British Columbia, vanpools are probably the most popular form of subscription service. In the Lower Mainland, Jack Bell Foundation operates a carpool/vanpool program. The JFB fleet operates predominately in Metro Vancouver and southern Vancouver Island. Limited services are provided between Abbotsford and Metro Vancouver.

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Although buspool programs are not as common, there are some notable examples in the Lower Mainland and elsewhere. Probably the most well know is Microsoft's free express bus service for employees to and from its Redmond, Washington headquarters. The Connector runs five routes in the region, in Seattle, Issaquah, Mill Creek, Sammamish and Bothell, each with several stops. The service accommodates up to 1,000 employees daily via its Wi-Fi-enabled buses. The free shuttles began service in September of 2008 with most of the routes scheduling five pickup times in the morning and five in the evening.

Table 2.2 below summarizes the typical features of custom and paratransit services highlighted in this section of the Foundation Paper.

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Table 2.2 – Summary of Custom and Paratransit Services

	Commuter Subscription	TransCab	Demand Responsive	Custom Transit	Flexible Transit
Community Examples	Metro Vancouver Victoria	Hamilton Peterborough Markham Rimouski	Red Deer Brantford Peterborough	Most other Transit Systems	Most other Transit Systems
Vehicle	Van or Small Bus	Accessible Van or Car	Accessible Small Bus	Accessible Small Bus	Conventional, Accessible Buses
Periods of Service	Peak period only service	Possibly limited to non-peak periods only	Possibly limited to non-peak periods only (i.e. evenings & weekends	All periods	All periods
Typical Frequency	Twice daily	30-60 minutes	30 minutes	On-demand	60 minutes
Schedules	Pick-up and drop off-times set as a group for commuter services	Dispatcher will determine appropriate sequence and time for pick-ups	Typically fixed time end point (transfer) with flexible sequence and time for pick-up	Dispatcher will determine appropriate sequence and time for pick-ups	Typically fixed operating schedule with two or more time points
Typical Route Capacity	5 to 20 psg/ trip	<20 psg /hour	40 psg /hour	20 people /hour	40 psg /hour
Service Design	Direct routes between all origins and destinations per trip	Direct routes between all origins and destinations per trip	Direct routing within zones or to centrally located transfer	Direct routes between all origins and destinations per trip	Fixed routes with 1 or 2 deviations
Advanced Notice Requirements	Advanced reservations typically made by month	A minimum of one hour notice required	A minimum of one hour notice required	Generally a minimum one day notice required	No notice required
Potential Customers	Primarily commute to work trips of greater than 25 km	All levels of mobility if vehicle available	All levels of mobility, including those with disabilities	People with severe disabilities	Most levels of mobility
Boarding and Alighting Locations	Door to door service	Typically door to transit transfer point	Door-to-door or to transit transfer point	Door-to-door service	Mostly at defined stops with some on-request route deviation

2.3   Conventional Bus Services

Conventional fixed route and fixed schedule services are among the most commonly deployed transit services. All fixed route services will generally operate more frequently than paratransit services and

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provide attractive service levels during peak periods to support travel demands. In an effort to increase ridership, fixed route services will typically work most effectively along higher density, mixed use corridors to generate two way travel demands that will support attractive service levels. With higher ridership levels, conventional bus services typically result in higher productivity and lower costs per passenger than other paratransit services.

Within most communities, fixed route will typically function as circulator, shuttle, trunk and express transit services. Because they operate on a fixed route system, they are generally more understood than paratransit services by the community.   The following discussion highlights the four categories of conventional bus services used for the purpose of this Foundation Paper.

1. **Circulator Routes –** These bus routes are designed to support trip making that is concentrated within an area or community, collecting and dropping off passengers within lower density communities. Circulator routes by their very name are not designed for direct connections between single origins and destinations. Rather, circulators improve accessibility and coverage within areas of lower density communities and connect them with trunk routes and express services to get to other areas of the municipality or elsewhere. As the most common application of neighbourhood bus service, circulator routes typically use a smaller vehicle that is suitable to working within the neighbourhood street system and capacity suited to the demand patterns. In many communities, circulator services have been given a unique identity and have been designed to serve activity within a range of community settings – from commercial downtowns to residential neighbourhoods. With 4,000 people now living in downtown Bellevue, and nearly 40,000 working downtown, the city recently signed an agreement with King County Metro for a Downtown Bellevue *circulator bus* in 2010. The buses, which will run every 10 minutes, will be "Bellevue-branded." A circulator would provide local transit service for residents, employees and visitors making trips within downtown. Although not yet implemented, it is anticipated that this service will be free for travel within the downtown area (not normally a feature of public transit).

2. **Shuttles –** The primary focus for shuttle services is on serving one or both ends of a route in order to serve major activity points such as a downtown or commercial area, transit station, employment area, etc. as opposed to serving intermediate trip making between. Primarily aimed at getting choice riders out of their car with short, direct connections and enhance mobility of captive transit customers. Many forms of shuttle services are in existence, but they are typically provided using smaller vehicles and operate in several environments where their primary purpose, but not necessarily the only purpose may include:

   - Running a shuttle service between transit hub and employment centre

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- Running a feeder between a neighbourhood and a transit hub

- Operating mid-day shuttles between employment area and retail centre

3. **Trunk Routes –** For the purpose of this discussion, trunk routes can form the backbone of the bus-based transit services in a community, providing attractive services along primary corridors within the service area.   Trunk routes often play a vital role in either providing enhanced mobility within communities, or connecting communities.   The key features of trunk routes are that they are frequent and provide direct services between important community nodes.   Circulator services and neighbourhood shuttles are typically interconnected with the trunk routes at timed-transfer points or intermittently along the route. In Metro Vancouver for example, TransLink has established a frequent bus network which essentially forms the backbone of the transit system throughout much of the region. This network of routes is designed to provide a consistent and frequent local service along major corridors at least every 15 minutes (more during the peak), 15 hours a day, 7 days a week such that anyone can catch a bus on any one of these routes without having to refer to a schedule.

4. **Express and Limited Stop Routes –** The express transit routes typically serve the longer distance, regional trip making between communities.   In most communities, express services operate along major roadways and highways, and are designed to support commuter travel between suburban communities and regional or town centre areas.   By design, express bus services can compete with vehicle travel by offering a high quality service.   Express bus routes may be implemented to provide an attractive commuter service during peak periods (with limited off-peak service) or to enhance a corridor to supplement local bus services by making fewer stops and providing additional capacity and higher operating speeds.   In some cases, express routes will follow the same alignment as local routes, but only make a fraction of the stops.   The 99 B-Line service in Vancouver actually evolved from a local trunk service to a limited stop service along the Broadway corridor.   Express or limited stop transit services should be accompanied by increased density and mixture of land uses adjacent to and within reasonable walking distance of these major transit corridors to create the ridership needed to support the attractive transit services in urbanized environments.

Conversely, an express commuter bus service may be primarily designed for peak period, peak direction travel to support work-based trips.   Although the extent of the travel market using these services may decline during the midday and early evening period, they provide an important role to guarantee a ride home in case of emergency during off-peak periods.

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Table 2.3 – Summary of Conventional Bus Services

	Circulator Routes	Shuttle Routes	Trunk Routes	Express & Limited Stop Routes
Typical Vehicle	Small Bus	Small Bus	Conventional Bus	Conventional Coach & Articulated Bus
Periods of Service	All periods	All periods	All periods	Possibly limited to peak periods only
Typical Frequency	Peak 20 min Off-peak 60 min	Peak 20 min Off-peak 60 min	Peak 10 min Off-peak 15 min	Peak 10 min Off-peak 15 min
Typical Route Capacity	100 psg/hour	100 psg /hour	1,000-2,000 psg/hour	2,000 to 4,000 psg/hour
Service Design	Maximum coverage to serve circulator area	Coverage within area and directness to end point	Direct routing along major roads	Direct routing along major roads & highways
Potential Customers	Short distance trips within area	Travel to central point or transfer to other service	Trip making along major corridors and transfers	Trip making along major corridors and transfers
Boarding and Alighting Locations	Neighbourhood Stops	Neighbourhood Stops	Enhanced Bus Stops	Enhanced Bus Stops

2.4   Rapid Transit Services

Rapid transit services in urbanized environments broadly include a range of transit technologies that provide a high capacity, quality service for regional and inter-regional travel. Historically, rapid transit has implied normal bus operation or commuter rail in medium to large cities. Today, there are several forms of rapid transit services that can be used to provide an enhanced service quality and operating speed and they include Bus Rapid Transit, Light Rail Transit/Automated Light Rail Transit, subway, regional rail and express rail. The general operational features that differential rapid transit services from each other (and conventional bus services for that matter) include: average speeds; station spacing; grade separation; headways between vehicles; capacity; reliability; and power source. These factors are summarized later in this section of the Foundation Paper.

Much like the express and limited stop bus services, rapid transit services can and should be used to promote an even greater mixture of land use patterns and increased density at key station locations. The land use patterns suitable to rapid and other transit services are discussed in Section 3.0 of this Foundation Paper.

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The following discussion highlights the five primary technologies used to deliver rapid transit services to communities throughout the world.

1. **Bus Rapid Transit (BRT) –** This is a premium bus service with the characteristics of other forms of rapid transit in terms of providing frequent, reliable and direct services. Similar to other forms of rapid transit, BRT can be protected from areas of traffic congestion, use of premium vehicles, provide enhanced station amenities, and include real-time information to customers at station areas and within vehicles. Throughout North America, Asia, Australia, Jakarta and Taiwan, BRT systems operate along arterial corridors, expressways, freeways, as well as in dedicated rights-of-way.

   BRT can carry similar amounts of passengers per hour as lower level LRT, but at significantly lower costs. Unlike other forms of rapid transit, BRT can be implemented progressively as ridership builds and can be upgraded to LRT at an appropriate time. BRT vehicles can offer transfer-free service with conventional buses using dedicated buses for only part of the trip. In this regard, BRT systems offer flexibility of interlining suburban services, thus providing more flexibility in the evolution toward a complete BRT system.

   The characteristics often associated with BRT services include but are not limited to the following features:

   - Dedicated runningways or transit priority treatments to provide rapid and reliable service. In areas of recurring congestion for general purpose traffic, transit accommodation strategies will be implemented to enhance travel time relative to the private automobile. The form of accommodation will be unique to the community.

   - Enhanced station and stop facilities to increase customer access, information, comfort and security. Stations and stops should be uniquely designed in terms of treatments and amenities that provide an enhanced experience relative to conventional stops and bus exchanges. Within the station area, all facilities will be fully accessible for those with various physical and cognitive disabilities through design standards and treatments.

   - BRT vehicles should be designed to provide the on-board experience and performance of rapid transit to allow for easy boarding and alighting for all mobility levels and provide additional passenger information.

   - Other potential features may include enhanced fare collection, strong inter-modal connections at station areas, and on-street ITS technology.

2. **Light-rail Rapid Transit (LRT) and Automated Light Rail Transit (ALRT) –** LRT uses dedicated tracks where trains are operating in an environment protected from traffic, except at major intersections. The most common form of LRT vehicles – the Tram-trains – are specialized vehicles that can operate on streetcar tracks in urban areas and conventional rail tracks in suburban areas. In dense urban areas, LRT can support a more pedestrian friendly environment as vehicles produce no emissions and operate with minimal noise levels. Station areas are often integrated with the character of the urban surroundings and provided with the enhanced information similar to BRT stations and vehicles. The City of Edmonton implemented the first LRT system in Canada in 1978, extending between Belvedere in the north to Central in the south (7km).

   ALRT operates on exclusive rights-of-way, completely protected from traffic throughout the line. The first application of this intermediate capacity rapid transit system in Canada was introduced in Toronto's Scarborough RT line which opened in 1985. In 1986, in initial sections of ALRT – or SkyTrain as branded in Vancouver – was initially opened prior to Vancouver's hosting the transportation and communication-themed Expo86 World Fair. Now, the Expo Line connects downtown Vancouver with the Surrey Metro area, and the Millennium Line loops north through Burnaby and into the VCC-Clark station which opened in 2006 to complete the loop.

3. **Subway –** Subway systems are completely separated from other traffic and largely operate underground on a dedicated track system. This high capacity, heavy rail system is operated manually in most cases – including the Toronto Subway system. The subway system in Toronto was the first to open in 1954 along the Yonge Street corridor between Front Street to Eglinton Avenue. Today, the system includes 68.3km of track which includes the recently opened Sheppard Line which added 5.5km of track. Shortly after the Toronto Subway system opened, the Montreal Metro opened in 1966 and provides over 66 km of track using a rubber tire technology – the first of its kind in the world for subway systems.

4. **Regional Rail –** This category of rapid transit service generally includes those services that use standard railway track that often share track time with freight and/or intercity trains, or run on their own. Depending on the demand, Regional Rail services can operate all day in both directions as is the case with Go Transit along the Lakeshore Line in Toronto or in one direction during the peak periods such as the case with West Coast Express in the Lower Mainland and several other Go Transit rail lines. Train cars can be pulled by diesel-electric locomotives (such as with WCE and Go Transit) and electric locomotives (such as in Montreal and New York), or self-propelled by Diesel Multiple Units (DMUs) or Electric Multiple Units (EMUs).

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5. **Express Rail –** Express Rail supports high speed rail trains that primarily serve longer-distance travel with two-way all day service. These services run on grade separated tracks, but may operate along existing rail rights-of-way.   In either case, separate tracking is required to eliminate interference from slower rail traffic. Although not currently in use in Canada, the BART system in San Francisco and the Reseau Express Regional network in Paris (a combination of former suburban lines) are two such examples in the world. A similar system is currently being planned in London England that will be known as the CrossRail. Although the route is not yet fixed, the intention is to link existing surface routes in Maidenhead, Berkshire, and Heathrow Airport in the west out to existing tracks in Shenfield, Essex, and Abbey Wood in south-east London. Express rail differs from Regional Rail by the fact that it is typically electrified and can operate at higher speeds and frequency.

Table 2.4 below provides a brief summary of the broad features and characteristics that differentiate various forms of rapid transit.

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Table 2.4 – Summary of Rapid Transit Services

	Bus Rapid Transit (BRT)	Light Rail Transit (LRT & ALRT)	Subway	Regional Rail	Express Rail
Community Examples	Metro Vancouver Ottawa, Seattle Pittsburgh	Metro Vancouver Edmonton Calgary Toronto	Montreal Toronto	Montreal Toronto Metro Vancouver	San Francisco Paris
Typical Vehicle	Articulated or BRT specific bus	LRT (diesel or electric) or ALRT vehicles	Electric Heavy Rail Vehicles	Diesel or Electric Locomotives or Multiple Units	Electric Heavy Rail Vehicles
Typical Periods of Service	All periods of transit system	All periods of transit system	All periods of transit system	Peak direction only to intermittent all day service	Intermittent all day service
Typical Operating Environment	Shared street with priority & exclusive lanes	Exclusive with shared street crossings	Exclusive	Shared rail with freight traffic	Exclusive
Average Operating Speed	25 to 60 km/hr	25 to 60 km/hr	25 to 50 km/hr	30 to 50 km/hr	50 to 80 km/hr
Minimum Frequency	3 to 5 minutes	As low as 90 seconds	As low as 90 seconds	As low as 10 minutes	As low as 5 minutes
Peak Directional Capacity	2,000-10,000 psg / hour	5,000-25,000 psg/hour	25,000 – 40,000 psg/hour	5,000-20,000 psg/hour	25,000-40,000 psg/hour
Station Spacing	500m to 2 km	1 to 2 km	1 to 2 km	2 to 5 km	2 to 5 km
Cost per vehicle	$1 mil	$3-5 mil	$3 mil	$2 to 4.5 mil	$4.5 mil
Capital Cost per km	Busway $25-50 mil	LRT $35-40 mil ALRT $100-150 mil	$250-300 mil	$20-50 mil to existing ROW	$20-50 mil to existing ROW

All costs are provided for comparative purposes only and can vary significantly by location

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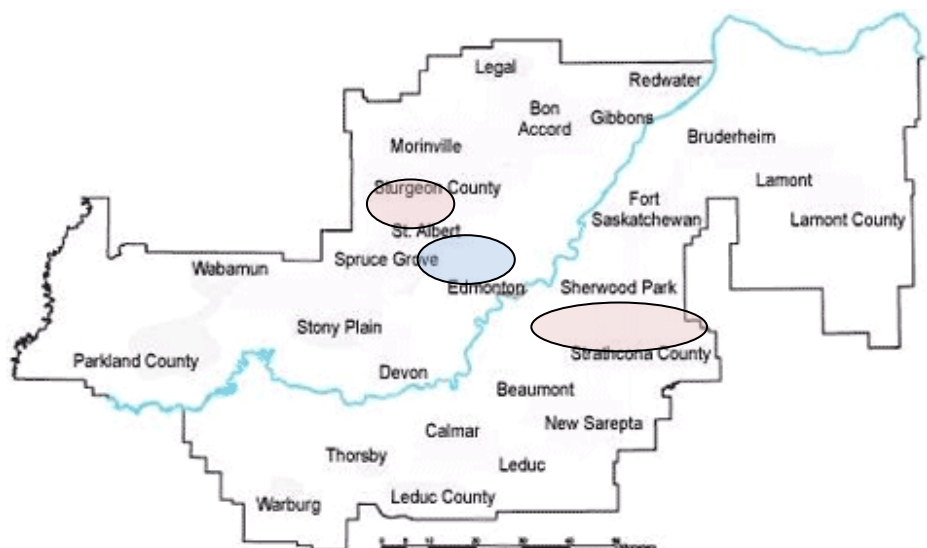## 3.0 EXAMINING EXPERIENCES IN SIMILAR COMMUNITIES

No transit system is the same as another. The scale, make-up, layout and broader context in a regional and inter-regional setting of each community is different and requires different forms of transit (such as paratransit services, conventional bus services and rapid transit services). None-the-less, understanding the 'lay of the land' in terms of the transit system in similar size communities that are located nearby larger urban centres may provide some perspective of how it compares with the FVRD and what it may become in future.

This section of provides a brief overview of transit services and facilities in other communities in North America with populations similar to or greater than that of Fraser Valley communities, operate a range of transit services (some independent systems to the metro centre) and that are within an hour of the larger center with regional connections. Specifically, the discussion highlights some of the key features of the community, the scale and types of transit services offered, and any other unique features of the transit system that may be considered within the Fraser Valley.

The communities examined include the Edmonton Area (Strathcona & St Albert), Brampton, Seattle Area (Renton and Kent), and Salem, Oregon.

3.1 Edmonton Area (Strathcona & St Albert)

Strathcona County and St. Albert are located within Alberta's Capital Region and in close proximity to the City of Edmonton. Each community operates its own transit service that connects people within the community and to the central area of downtown Edmonton.

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Strathcona County

The community of Strathcona is located roughly 30 kilometers and a 30 minute drive east of Edmonton and is home to around 87,000 residents. Strathcona County Transit (SCT) and Strathcona County Accessible Transit (SCAT) provide transit services in the area, offering paratransit services, local access and commuter services which are outlined as follows:

- *Custom and Paratransit.* SCAT provides local and rural weekday and evening services for seniors and persons with disabilities. Transport to Edmonton is available weekdays only. SCAT travels to pre-determined locations, and trip from specified origins are booked two days in advance. SCT replaces regular local routes on demand-responsive basis. This dial-a-bus service provides transportation during evenings and weekends as a means of providing attractive, economical off-peak transit services to the community. Approximately one hour before customers wish to travel, they can call to arrange for pick-up at a nearby, designated bus stop. The Dial-a-bus service also connects with the Edmonton commuter bus at Sherwood Park Transit Centre every hour.

- *Conventional Bus Services.* The SCT transit network consists of 32 fixed routes, serviced by 88 buses. There are 10 local routes and 7 designated commuter routes that provide access to key places within Strathcona, schools, University of Alberta and downtown Edmonton during the weekdays. SCT works closely with the Edmonton Transit System (ETS) and St. Albert Transit (StAT) to ensure well timed transfers between the systems, resulting in convenient commuting for area residents. Overall the network operates local, commuter and regional routes, boasting shuttle, trunk and expresses service brands.
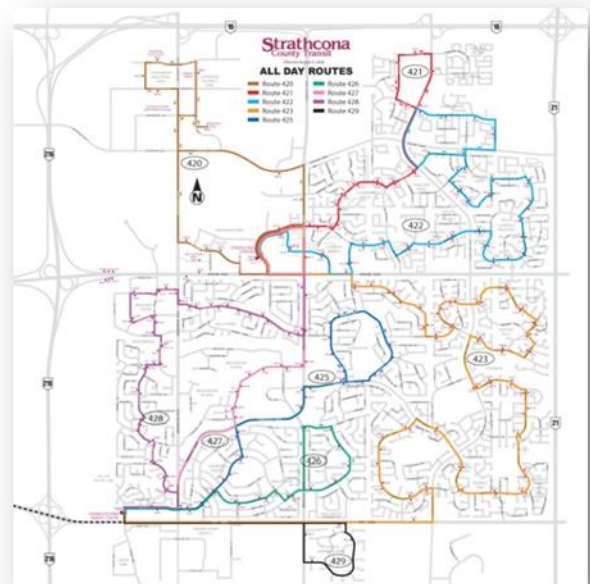
Two park-and-ride lots are among the major transit supportive facilities within Strathcona. Capacities are approximately 420 and 200 parking stalls, and each is serviced by local and commuter bus routes. It is also worth noting that Strathcona transit began support of the universal transit pass program (U-Pass) for U of A students in 2007 with the expectation that this agreement would also be extended to other colleges in the Edmonton area.
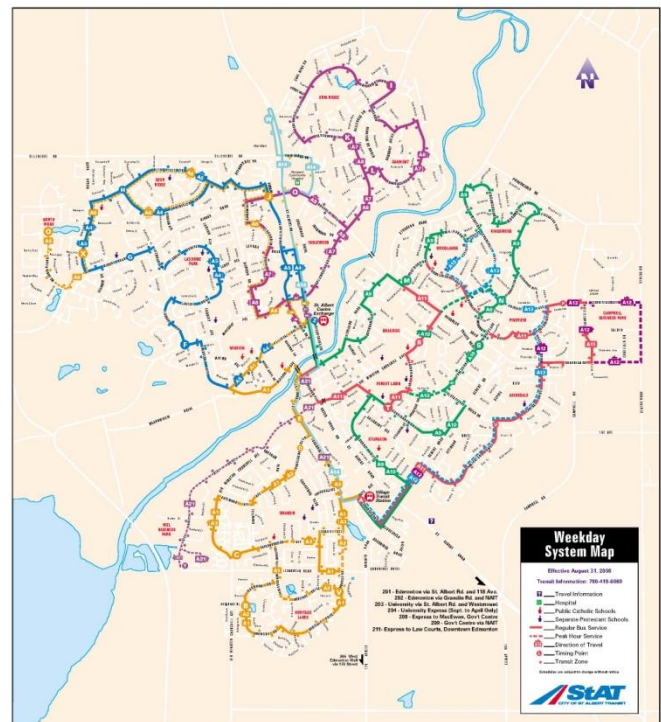
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St. Albert

The city of St. Albert is located roughly 15 kilometers northwest of Edmonton, a 25 minute drive, and is home to around 58,000 people. St. Albert Transit (StAT) is the transit provider in the area, offering service to all local neighborhoods and key destinations in Edmonton. Handibus, local and commuter services are available.

- **Custom and Paratransit.** Although 100% of the transit fleet is accessible, the Handibus is a door-to-door service provided to assist with the mobility needs of the community for those individuals that cannot access conventional transit due to a physical or cognitive disability. Handibus transportation is provided by a wheelchair-accessible vehicle owned by the city, or a car or van contracted by the city. The service operates from 5am – 7pm weekdays, with service to Edmonton available during peak hours.

  In terms of the paratransit services, Dial-A-Bus services are available evenings and weekends in place of regular scheduled weekday routes. This service is designed to provide residents of St. Albert with a cost effective way of providing transit services when demand is low and fixed routes are not operating. Dial-a-bus services will typically operate along conventional bus routes with some minor deviations, but will take the most direct path between the requested origins and destinations within St. Albert. Passengers can then connect with other transit services to and from Downtown Edmonton and U of A during these evening and weekend periods by reserving a seat.

- **Conventional Bus Service.** The StAT transit network consists of 26 fixed routes, serviced by 49 buses. The transit system is a hub-and-spoke shape that generally takes people from local neighbourhoods to a central area as the main part of their trip or to transfer to other local routes or commuter services to downtown Edmonton, NAIT & MacEwan colleges, the West Edmonton Mall and U of A. All buses run during the weekdays, with 7 local routes and 3 commuter routes operating on Saturdays. StAT coordinates with the Edmonton

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Transit System (ETS) to provide transferable passes and convenient connection times between transit systems for commuters

Within St. Albert, the City has a 500 parking stall park-and-ride facility located in the central area nearby the commuter services. This facilities is utilized as a farmers market on weekends.
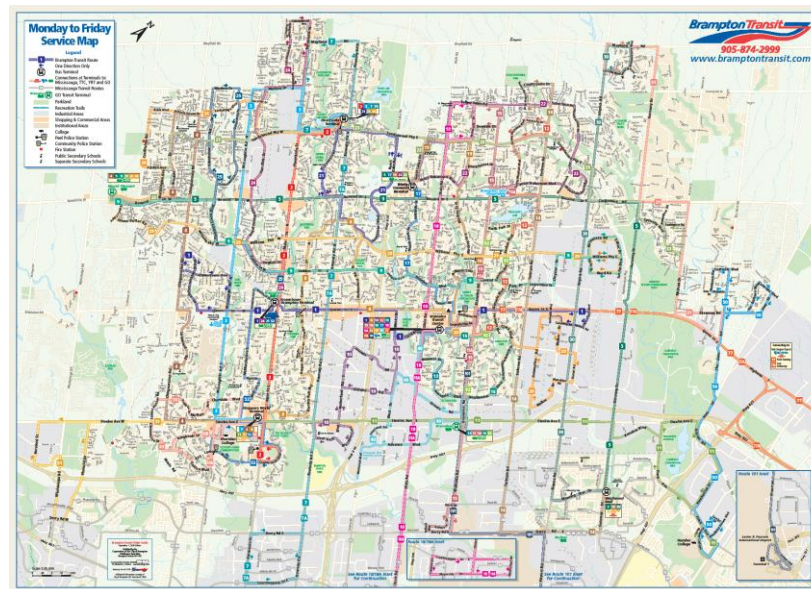
3.2   Brampton, Ontario

The city of Brampton is located approximately 45 kilometers west of Toronto, a 40 minute drive, and is home to approximately 450,000 people. Brampton Transit and GO Transit are the two main public transit agencies servicing the area. Brampton Transit is local to the city of Brampton, whereas GO Transit is a wider regional system of trains and connector buses that services a larger portion of the surrounding Toronto area. Both systems connect with York Region Transit, Mississauga Transit and Transit Help; other transit services in the regional vicinity.

GO Transit is Canada's first interregional transit system created and funded by a provincial government. Go is a Crown Agency of the Province of Ontario, reporting to the Minister of Transportation. Within the Greater Toronto Area (GTA), Go Transit provides a network of train and bus services. The Crown Agency must recover most of its operating costs through revenue, consistently bringing in 80% to 90% of what is needed through the fare box. The Provincial government subsidizes any operating costs that are not recovered through revenue.

- *Custom and Paratransit*.   There are no specific custom or Paratransit programs in place within Brampton's transit service network. However, just over 50% of Brampton Transit's routes are considered fully accessible and are equipped with low floor buses. All GO Transit train stations and the majority of buses are accessible as well.

- *Conventional bus services.*   The Brampton Transit network consists of 37 fixed local routes, serviced by 195 buses. The services provided include regular circulator, shuttle and trunk routes (daily and peak time specific), as well as two express routes to Pearson International Airport and Wonderland.

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- **Rapid Transit.** Rapid transit in the Brampton area is currently provided by GO Transit. The relevant portion of the GO Transit system encompasses 3 stations along a regional rail line that passes through Brampton. The line is primarily a commuter train running during peak rush-hours, and less frequently during midday. During off peak periods, GO bus services operate parallel to the train route. Furthermore, Brampton Transit has released plans for a new Bus Rapid Transit system to solidify the trunk of the Brampton Transit network.

AcceleRide BRT would connect the planned rapid bus systems in the GTA, linking Brampton with York Regional Transit and Mississauga Transit. Funding and other contribution agreements have been received, and Phase 1 of the implementation is intended to commence in 2010.

In support of the entire transit systems, there are 5 major transit exchanges within Brampton; each connects with several Brampton Transit bus routes. Four of the five exchanges also correspond with one of the 3 GO Transit train stations in the Brampton area. Because of the urbanized nature of the Brampton area, no park-and-ride facilities are located in the central area. Most Go passengers would arrive by transit or through drop-off and pick-up.

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3.3   Seattle Area (Kent & Renton), Washington

The cities of Kent and Renton are roughly 25 kilometres south and southeast of Seattle, or a 30 minute drive, and are home to approximately 85,000 and 80,000 people, respectively. Both areas are serviced by King County Metro Transit (Metro Transit) and Sound Transit, and serve as regional transportation hubs in the area. Metro Transit and Sound Transit both service a wider regional area that includes Kent and Renton.

- **Custom and Paratransit.**   Metro Transit runs the ADA Paratransit Program; it provides accessible transportation (reservations necessary), free senior shuttles, and reduced taxi rates and discounted job-access commuting options for seniors, those with mobility problems, disabled, and low-income residents. Rideshare options such as carpool and vanpool are also available. Dial-A-Ride transit (DART), or flexible routing, is also available along three routes in Kent and two in Renton. These services are provided using vans that can go off regular routes to pick up and drop off passengers within a defined service area. This service is essentially used to extend the service area coverage with an economic alternative, providing passengers with transit service closer to their destination, without providing a door-to-door service.

  In addition to the public transit system, ridesharing in King County is another transportation option for increasing mobility.   King County Metro's Vanpool program is the largest publicly operated vanpool program in North America with over 2,000 vanpools in the program. King County maintains a Statewide Ridematch System to connect potential rideshare partners which are primarily made up of work-based trip making.

- **Conventional.**   The public transit network in Kent is comprised of 29 Metro Transit routes and three Sound Transit Express routes. The bus routes operate in all quadrants of the city, with services ranging from shuttles to express transit. All 29 Metro Transit bus routes run weekdays, 11 run Saturdays, and 7 run full weekends. The 3 Sound Transit express bus routes through the city are primarily for commuting purposes and run weekdays every 15-30 minutes on average between 5:30am and 10:30pm.

  The public transit network in Renton is comprised of 21 Metro Transit routes and 3 Sound Transit Express routes.   The bus routes operate in all quadrants of the city, with services ranging from shuttles to express transit. All 21 Metro Transit bus routes run weekdays, 1 runs nightly, 11 run during Saturdays, and 8 run full weekends. The 3 Sound Transit express bus routes through the city

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services primarily commuters in the Renton area. The buses run at an average frequency of every 15-30 minutes between 5:00am and 11:30pm on weekdays, and roughly every hour from 6:30am to 11:30pm on weekends.

- **Rapid Transit**. The major rapid transit service operating in the Seattle area is the Sound Transit Commuter Rail, operating diesel locomotive multiple units. The regional rail line has one train station located in Kent. Two daily round-trips to Seattle service Kent Station.

Kent Station is a main transit hub for the area, facilitating transfers to 16 Metro Transit bus routes. The station also functions as a park and ride with over 1,100 parking stalls. An additional 10 park and rides are located within the Kent area. Renton also maintains its own major transit hub, the Renton Transit Center. The center hosts transfers for 17 of the Metro Transit bus routes and serves as a park and ride. An additional 12 park and rides are situated within the Renton area.
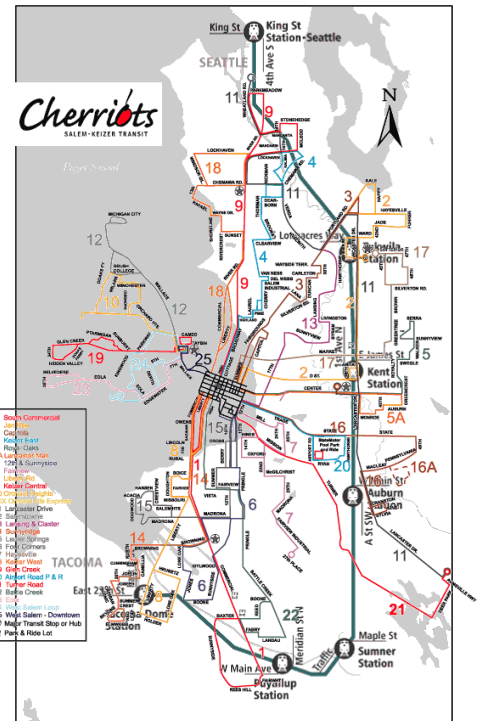
Passes such as the U-Pass, GoPass and Flex Pass provide frequent riders with other options, and are honoured on both transit systems (fare upgrades may be required).

3.4   Salem, Oregon

The city of Salem is located roughly 80 kilometers southwest of Portland, a 55 minute drive, and is home to around 154,500 residents. Located at the centre of the Willamette Valley, Salem is one of the most successful agricultural regions in the United States. Salem Area Mass Transit (also known as Salem-Keizer Transit or Cherriots) and Amtrak are the primary operators of public transit to the community. The Salem Area Mass Transit District – also known as the Cherriots – was formed in 1979, with the purpose of consolidating transit services within the urban growth boundary and securing an ongoing funding base for the operation of the system. In 2003, the organization changed its name to better reflect the population it serves. The District is now known as "Salem-Keizer Transit. Amtrak is a wider inter-regional train service for numerous areas throughout the United States.

- **Custom and Paratransit**. Cherriots provides the CherryLift Paratransit service for disabled and mobility limited area residents. In addition to the CherryLift custom transport service, travel training

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programs are available for mobility-restricted individuals desiring to use the fixed route portions of the transit network. Through a grant from the Oregon Department of Transportation (ODOT), Cherriots implemented a subsidy program to support vanpool growth. The subsidies cover from 20 to 50 percent of van lease and gasoline costs, based on the total number of commute miles.

Flexible routing for some services on community routes are also in place.

- *Conventional.* The Salem-Keizer Transit network is comprised of 26 fixed local bus routes, serviced by 75 buses. All buses run Monday through Friday and provide shuttle and trunk services. There are currently three express routes in operation. Furthermore, commuter bus services operate with CARTS and SMART to provide express service to rural Marion, Polk County and Wilsonville.

- *Rapid Transit.* Amtrak is a large, commercially operated system that provides two passenger-rail systems through Salem using diesel locomotive multiple units. One line services north from Seattle south to Los Angeles and runs once daily. The other line provides access from Eugene north to Vancouver and runs four trips daily.

Within Salem, there are many park-and-ride facilities within the Salem area, with two corresponding park and ride bus routes. All busses are also equipped with bike racks. In addition, there is a fare free transit zone (the fareless square) located within downtown Salem.

3.5   Summary of General Transit Characteristics

As discussed in this section, there are a broad range of experiences with various forms of local, regional and inter-regional transit for communities that are similar in scale today or in the future to that of the Fraser Valley area, with a diversity of urban, suburban and rural character and located at the edge of a major metropolitan area. This section provides a brief summary and commentary on those features which should be taken in the context of the Market Assessment (Foundation Paper #1) for this assignment. Those overall observations are briefly noted below and the available system statistics to compare services and resources are highlighted in Table 3.1.

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- All transit systems in those communities examined have experience with various forms of custom and paratransit services, conventional transit services and rapid transit services;

- A majority of transit services are concentrated on the local transit markets in other communities;

- Regional and inter-regional transit services are an important component of the transit system to provide alternative choices, but most are concentrated on a commuter travel market for work and school trip purposes. Therefore, these services comprise a relatively small proportion of the total transit services in each of the communities examined and operate as a commuter form of service with a heavy peak directional focus during the morning and afternoon periods of the day.

- Most transit systems have extensive experience with various forms of demand-responsive services either as a base form of serving areas outside the 'serviceable' areas of the transit system, or an alternative during certain periods of the day;

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Table 3.1 – Summary of Experience in Other Communities

	Central Fraser Valley Transit	Chilliwack Transit (Kent)	Strathcona, Alberta	St. Albert, Alberta	Brampton, Ontario	Kent & Renton, WA	Salem, OR
Transit Agency	BC Transit West Coast Express	BC Transit	Strathcona County Transit	St. Albert Transit	Brampton Transit & Go Transit*	King County Metro & Sound Transit*,†	Salem-Keizer Transit, Amtrak*
Municipal Population	168,000	81,000	87,000	58,000	450,000	Kent 85,000 & Renton 80,000	206,500 (area serviced)
Location	50 min east of Vancouver	>60 min east of Vancouver	30 min east of Edmonton	25 min north of Edmonton	40 min northwest of Toronto	25 min south and southeast of Seattle	55 min southwest of Portland
Transit Fleet	32 buses	7 buses	88 buses	49 buses	195 buses	~290 buses	72 buses
Standard	-	-	67	31	195	-	72
Articulated	-	-	5	18	-	-	-
Trolley	-	-	-	-	-	-	-
Community Bus	-	-	16	-	-	-	-
LRT	-	-	-	-	-	-	-
Heavy Rail	-	-	-	-	-	-	-
Commuter Rail	5 trains daily	-	-	-	3-5 trains*	2 trains daily*	3SB & 2NB trains daily*
# Fixed Routes	20	10	32	26	37	29, 3* & 21 , 3*	26
Transit Services							
Paratransit	cab support, custom, flexible transit	cab support, custom, flexible	custom, demand-responsive	custom, demand-responsive	Limited	flexible, custom, demand-responsive, transcab, vanpool & carpool	custom, demand-responsive, vanpool & carpool
Conventional	shuttle, trunk	Shuttle, Trunk	shuttle, trunk, express	shuttle, trunk, express	circulator, shuttle, trunk, express	shuttle, trunk, express	shuttle, trunk, express
Rapid Transit	West Coast Express	none	none	none	regional rail, BRT (2010)	regional rail	regional rail
Operating Data (2007)						**	
Vehicle Hours	84,000 hrs	24,400	107,000 hrs	84,000 hrs	653,000 hrs	541,900 hrs	318,300 hrs
Regular Passengers	1.8 mil	0.5 mil psg	2.2 mil psg	1.2 mil psg	11.1 mil psg	24 mil psg	5.6 mil psg
Total Operating Expenses	$8.7 mil	$2.5 mil.	$8.8 mil	$7.8 mil	$48.7 mil	$100.8 mil	$26.5 mil
Total Capital Expenditure	n.a.	n.a.	$4.4 mil	$2.6 mil	$35.4 mil	~ $20 mil	$1.2 mil

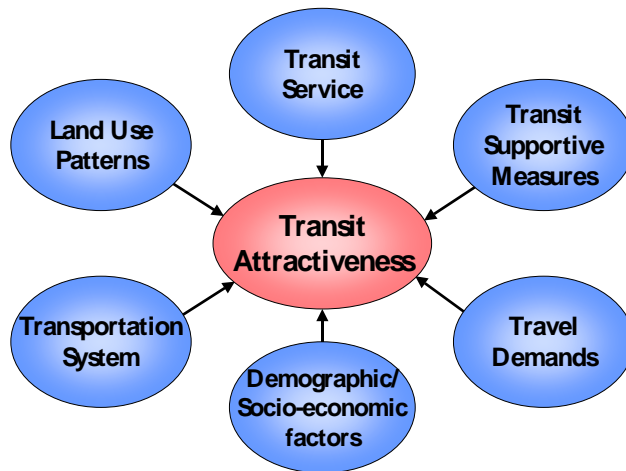* indicates regional rail service rather than local public transit provider

† Sound Transit is operated by Metro Transit within the Kent and Renton areas

** Operating Data statistics provided are for the southern division of King County Metro or 20% of system (includes Kent and Renton)

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4.0 CRITICAL FACTORS FOR THE SUCCESS OF TRANSIT

The demand for transit services is influenced by a combination of factors, including the level and quality of transit service, land use patterns and transportation systems within the community. This section examines factors that influence provision of transit in the Fraser Valley today and into the future. Specifically, the Paper broadly examines land use patterns that are supportive of developing attractive transit services and improving the likelihood of increasing ridership – specifically land use patterns, transportation system, demographic and socio-economic influences, and transit infrastructure. In this regard, the transit services are only one piece of the puzzle to making transit a success in the Fraser Valley. Other plans, policies and strategies are essential to increasing the potential of transit in the Fraser Valley.

4.1 Land Use Patterns

Land use patterns such as a mix of uses, density, and built-form – are important factors influencing the overall travel in the Fraser Valley and, consequently, the success of transit. A mixture and concentrations of residential, retail and office uses contribute toward the two-way travel patterns needed to have transit being used in both directions and during off-peak periods. Scale and density has the most significant impact on selecting the forms of transit. Higher density uses within 400 metres of transit stations and corridors generally support more frequent and direct services – such as express routes, BRT and other forms of rapid transit. Finally, the form of development must be supportive to walking, cycling and transit, and even discourage people from driving.

It is important to recognize that significant portions of even the most urban communities in the FVRD are agricultural or rural in nature, thus discussions of density and mixed-use apply to lands within Urban Growth Boundaries.

The relationship between land use patterns and transit service levels is critical. Higher density mixed-use areas can typically generate high transit ridership, which, in turn, supports attractive levels of service. Conversely, low-density, single-use areas (such as single-family residential) with curvilinear street patterns typically generate single-purpose trip making, directional travel patterns, and increased travel times. The challenge for communities is that while curvilinear streets and lack of connectivity provides challenges to transit planning, topographic and geotechnical issues and stringent environmental

regulations established to protect endangered plants and animals imposes restrictions on the layout and design of street networks in many parts of the Valley.

These land use characteristics make it more costly to provide conventional transit services and will generate low transit ridership. Low ridership discourages the provision of higher frequency service, thereby further discouraging the use of transit for some trip purposes. Land use patterns that are oriented to transit (transit-oriented development – TOD) and/or pedestrians (pedestrian-oriented development – POD) provide better opportunities for the success of transit.

With the broad range of transit services previously described in Section 2.0 of this Paper, properly aligning the appropriate form of transit services with land use patterns is essential. Existing and forecasted population and employment densities may be used as a guide to assist in identifying the forms of transit best suited for a given community. Table 4.1 provides some broad guidance based on experience and design guidelines applied in other North American communities.

The FVRD's Regional Growth Strategy provides the framework to guide growth and development patterns in municipalities and the incorporated areas of the region. The Vision for the Fraser Valley Regional District is outlined as follows:

"The Fraser Valley Regional District will be a network of vibrant, distinct, and sustainable communities that accept responsibly managed growth while being committed to protecting the land resource and the natural environment to ensure that a high quality of life is accessible to all."

The overarching goals of the Growth Strategy include eight fundamental goals to achieve that Vision for a sustainable region.

**Table 4.1 - General Guidelines for Residential Densities
and Nearby Transit Services (within 200 m)**

Minimum Residential / Population Densities	Form of Residential Use	Suitable Forms of Transit Services	General Peak Frequencies
<7 upha (20 people/ha)	***Rural and Single Detached Homes***	**Paratransit** *Transcab, Demand Responsive, & Flexible Routing Services*	Pre-arranged or 30-60 minute
15 upha (40 people/ha)	***Single Detached Homes***	**Conventional Bus Routes** *Circulators and Shuttles*	15-30 minute
35 upha (90 people/ha)	***Town Homes***	**Conventional Bus Routes** *Trunk and Express Services*	15 minute
50 upha (125 people/ha)	***Duplex, Rows and Triplexes***	**Conventional Bus Routes** *Express Services & Limited Stop Services*	10 minute

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Table 4.1 (cont'd)

	Low Rise Apartments	**Conventional Bus & Rapid Transit**	
75 - 150 upha *(190 - 425 people/ha)*		*Express Services Limited Stop & BRT Services*	5 minute
175 - 300 upha *(440 - 750 people/ha)*	*Medium & High Rise Apartments*	**Rapid Transit** *BRT, LRT/ALRT, Subway & Regional Rail Services*	<5 minute

The land use objectives of the Regional Growth Strategy are among the most important in shaping travel patterns and facilitating the reduction of vehicle travel in support of walking, cycling and transit. The Strategy outlined the following objectives to assist with responsibly managing the urban lands:

- focusing growth primarily within the six existing communities;

- developing and implementing growth management tools such as area plans, development policies and bylaws that will result in more sustainable and cost effective development;

- utilizing regional Urban Growth Boundaries (UGB) to contain growth;

- developing a land supply inventory to ensure that future residential and employment growth will be supported;

- increasing land use efficiency through increased densities, more compact forms of development and discouraging non-contiguous development within UGBs;

- supporting settlement patterns that minimize risks associated with flooding, forest and structural fires, and geological hazards;

- encouraging timely, economically efficient, and environmentally sound public investment in the provision of services and infrastructure to new development; and

- encouraging employment growth to keep pace with population growth

Local municipal plans and policies of the Fraser Valley support a consistent desire toward sustainable and effective urban growth patterns that are, not only concentrated on urban growth boundaries, but

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respectful of the importance of the rural areas to the quality of life and economy of the Fraser Valley. The population densities today and forecast for 2031 based on local area planning in Abbotsford, Chilliwack and Mission are illustrated in Figures 4.1 and 4.2 respectively.

As shown, the existing population densities of Chilliwack and Mission are largely less than 20 people per hectare, although significantly large portions of each city is rural or ALR in nature. Growth projections in both communities indicate that these densities will increase to 30-50 persons per hectare in the central area of Mission and to 50-70 persons per hectare in parts of Chilliwack. Abbotsford's population densities are among the highest in the region. Today, population densities in the central area of Abbotsford are generally 30-70 people per hectare, with some small areas of higher density adjacent to the civic precinct.   In the long-term however, the downtown area north and south of South Fraser Way will experience increasing densities of 50 to more than 70 people per hectare through densification. In all cases, the existing urban boundaries will largely remain unchanged in over the next 20 years. Although not illustrated in these figures, the District of Kent communities are forecast to have population densities that remain well below 20 people per hectare.

In addition to the form of land use patterns within the Fraser Valley, the availability and pricing of parking also has a critical influence on the attractiveness of transit. Transit is generally less attractive when there is an abundance of parking available at a destination at little or no cost to the user, as is common in most Fraser Valley communities.

4.2   Demographic and Socio-economic Factors

Demographic and socio-economic factors such as age structure of the population, income, labour force activity and automobile ownership, have a significant influence on the attractiveness of transit. These factors can influence whether riders are 'captive', in that they have no alternative to using transit, or 'choice', in that they have other transportation options but choose to use transit. In general, transit is most attractive to captive riders, including young people who cannot drive (such as students) and elderly persons, who may be unable to drive. In comparison to Metro Vancouver, a significant proportion of the Fraser Valley population is comprised of youth as a result of the Region being attractive to young families. Conversely, forecasted changes in age profile of the Fraser Valley, as shown in Figure 4.4, reflects the baby boom generation moving towards retirement and suggests that the mobility challenges of the Fraser Valley will also increase as a result. Each of these groups will have increasing reliance on transit over the next 10 to 20 years for enhanced mobility.

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Figure 4.1 – 2006 Population Densities (Abbotsford, Chilliwack & Mission)
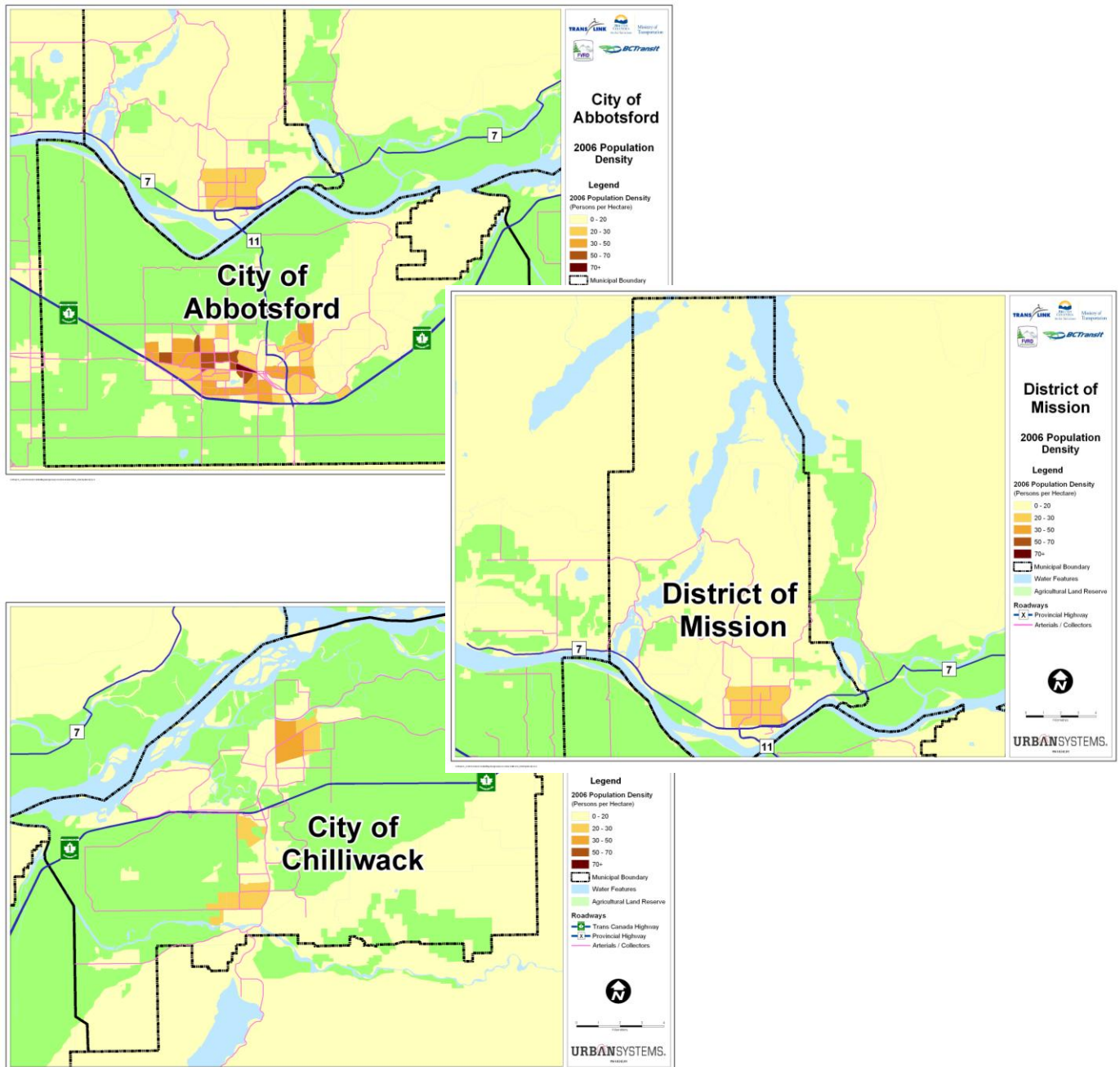
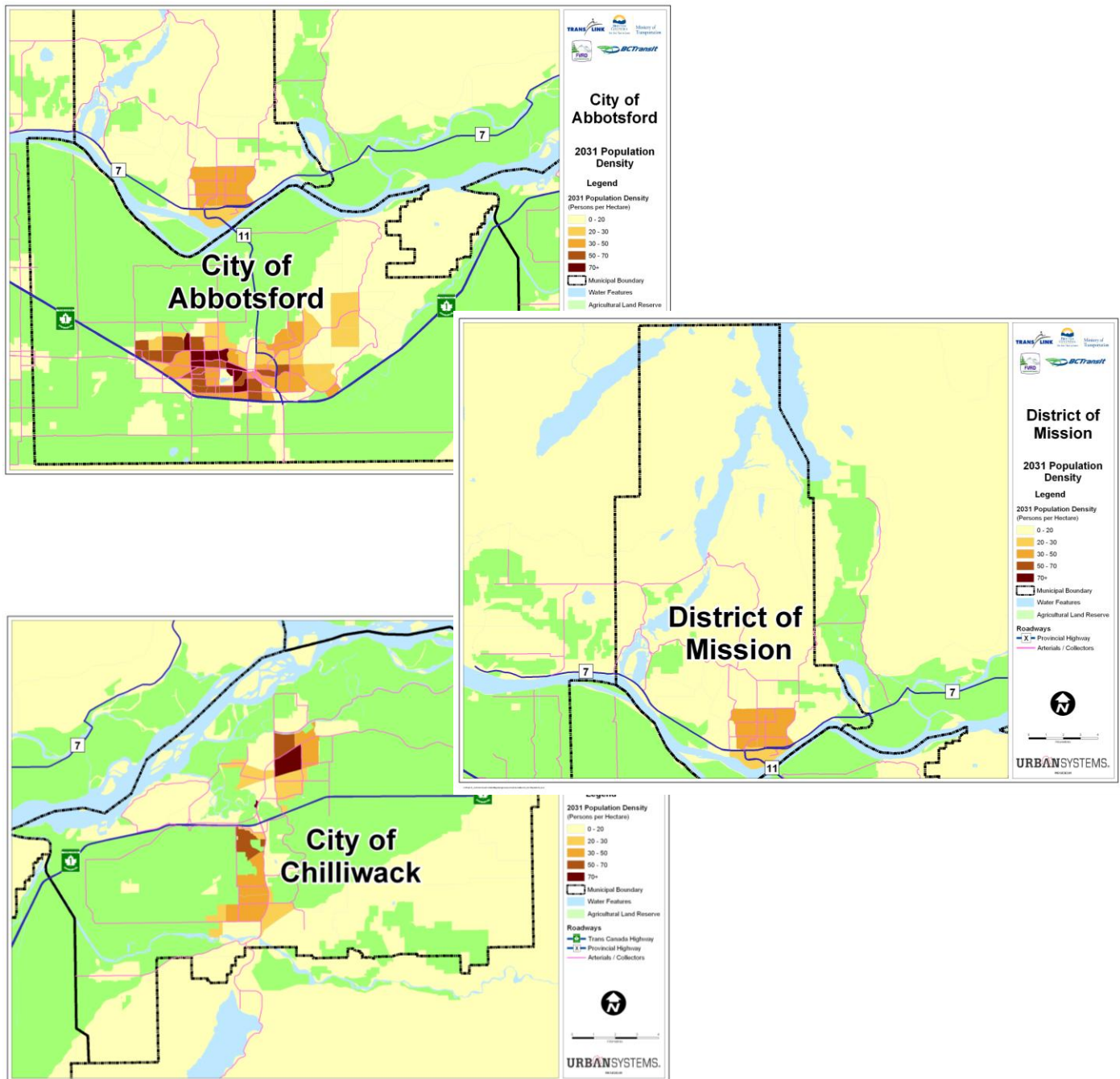**Figure 4.2 – 2031 Population Densities (Abbotsford, Chilliwack & Mission)**

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Figure 4.3 – Existing Age Distribution
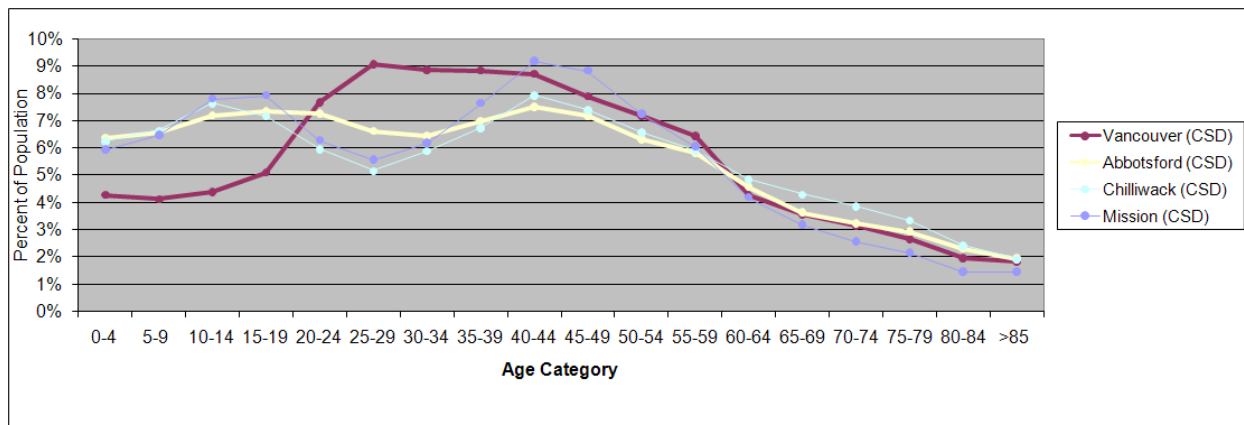
Exhibit 4.4 – Growth in Population by Age Group in the Fraser Valley
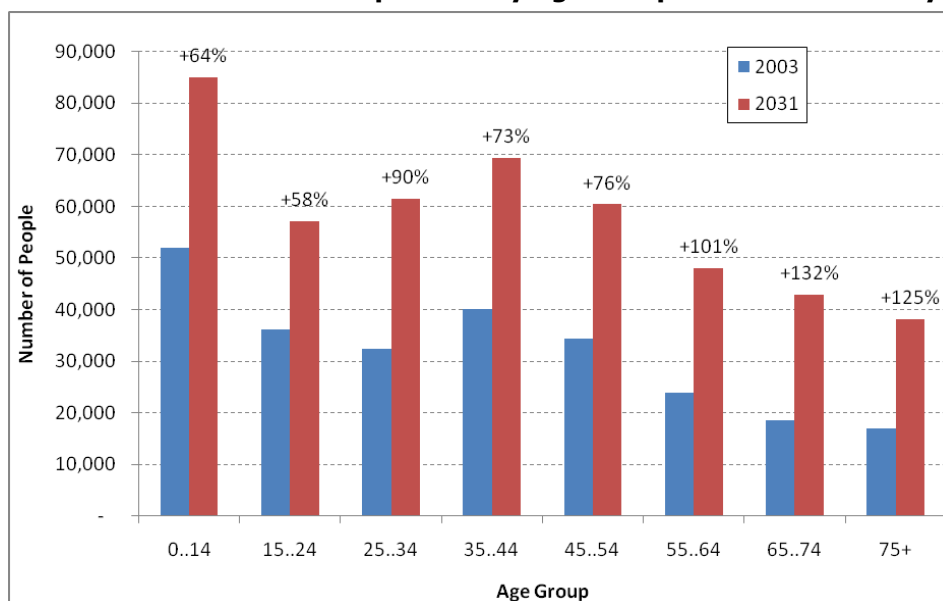
Source: The FVRD: Population Growth and the Context for Managing Change, Urban Futures, Jan 2005.

In addition to the demographic characteristics of the community, transit use is typically higher in areas where automobile ownership is relatively low and where there are consequently more captive riders. Income is another significant factor influencing transit use, as regular transit riders tend to have incomes below average. Housing costs and the nature of a community's labour force in relation to income are important factors to consider.

Although it is most attractive to captive riders, transit can also be made attractive to choice riders by enhancing its competitiveness with the personal automobile. Measures of competitiveness include cost

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and travel time, among others. Historically, automobile ownership in the Fraser Valley is very high compared with other Lower Mainland communities, though this may be a market reaction to the comparative lack of transit in the region. Throughout these regions, vehicle ownership patterns have shown to have an inverse relationship to transit use as shown in the Figure 4.5 below.

**Exhibit 4.5 –
Historical Relationship between Car Ownership and Transit Mode Share**
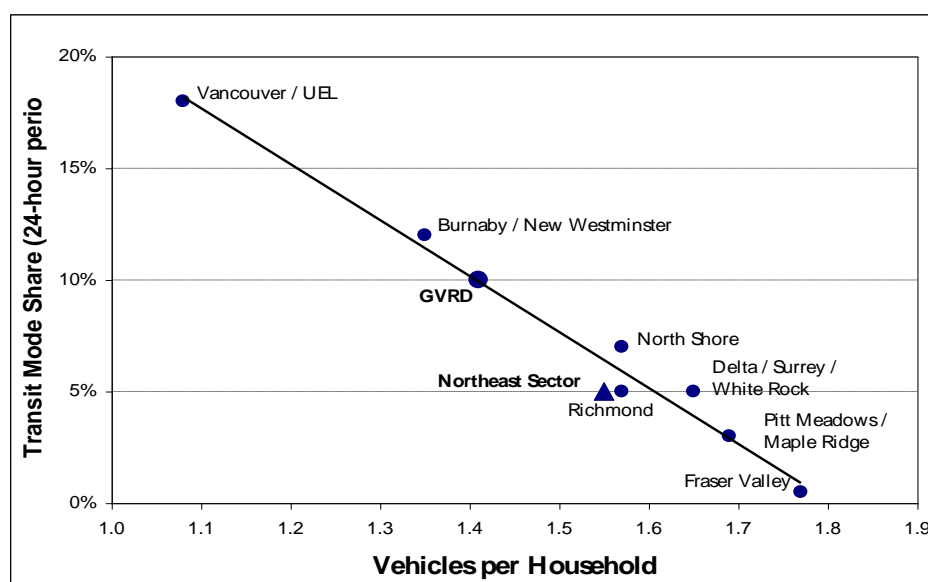
Source: 1994 GVRD Trip Diary Survey

4.3 Transportation System Characteristics

Roads provide accessibility and mobility for all modes of travel. At a regional level, building capacity for single-occupant vehicle travel will continue to make driving more attractive for longer distance trip making – particularly for those individuals with access to a car. Although transit services will also benefit from enhanced roadway capacity, the SOV would continue to experience a significant travel time advantage. As indicated in the Regional Growth Strategy, it is projected that vehicle travel will continue to be the predominant form of transportation used in the Fraser Valley and that significant improvements to the road network will be required. However, it is recognized that the roadways and the network improvements as a whole must be designed to accommodate walking, cycling, transit as well as general purpose traffic and goods movements. Ultimately, the RGS promotes the development of a transportation system that supports compact urban development, promotes a network of sustainable communities, and minimizes intrusions on rural, recreational and agricultural lands.

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Within Fraser Valley communities, the layout and classification of the road network can affect the quality and attractiveness of transit service in a community. Some road network patterns can result in circuitous routing for transit vehicles, thereby dramatically increasing travel time and reducing the attractiveness of transit, in addition to walking and cycling. Wherever possible, a 'grid street system' will provide the necessary redundancy in the roadway network to not only minimize the capacity and size of major roads, but will provide more convenient and attractive access for transit vehicles, pedestrians (including those walking to connect with transit) and cyclists.
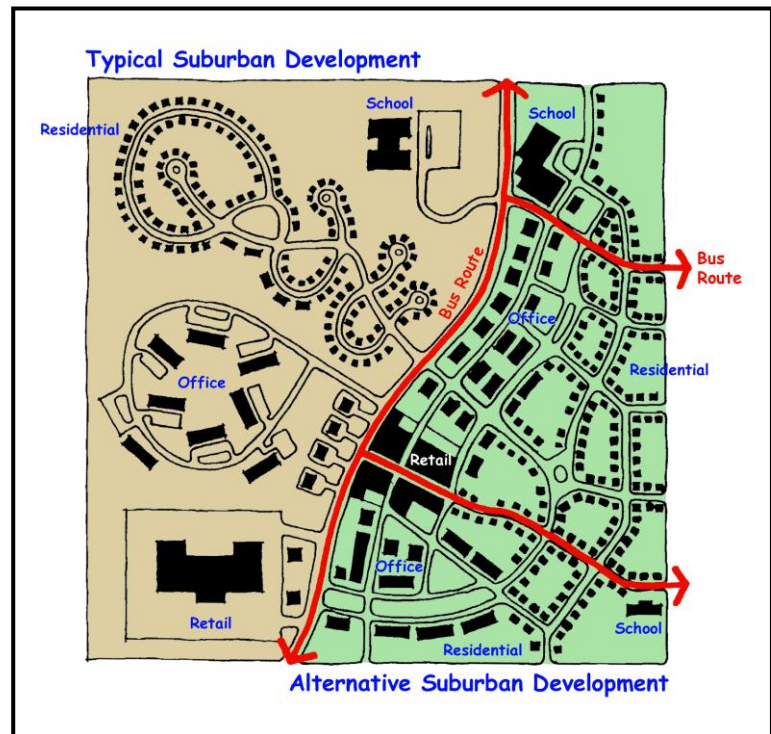
While creating grid street patterns can provide necessary connectivity, development in Fraser Valley communities face challenges related to topographic/geotechnical constraints and riparian and other stringent environmental regulations established to protect endangered plants and animals. These challenges often determine the layout and design of street networks in many parts of the Valley.

The integration of other modes with transit service is also a key determinant of transit success. Bicycle and pedestrian access to transit facilities can be negatively affected by poor road network facilities and linkages that increase cycling or walking distances to transit.

4.4   Transit Supportive Infrastructure

Many transit facilities can be enhanced to improve transit travel time and to provide more comfort and convenience to customers. These measures can make transit more competitive with the private automobile in attracting new transit customers and supporting existing riders. In much the same way that investing in a car and insurance isn't enough for people to drive, merely buying buses and allocating service hours will not be enough to make transit successful. In developing a transit strategy for the Fraser Valley consideration must be given toward investments in transit supportive infrastructure such as park-and-ride facilities, transit exchanges, transit priority measures, amenities and making the system

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accessible for all mobility levels. This section briefly highlights some of those critical elements that must be considered in developing the long-term transit strategy for the Fraser Valley.

- **Passenger Amenities**. Throughout the region, most transit stops consist of little more than a pole with a bus stop. Many are not accessible for people with disabilities and do not have lighting, shelter, seating or schedule information. For existing stops where passenger boarding activity or transit services (and thus passenger activity levels) are to be increased, passenger amenities at bus stops are essential. In order to make transit an attractive alternative, Fraser Valley communities will need to increase investments in passenger amenities and ensure that stops are accessible for all customers. In some cases, enhancements such as bus bulges will provide enhanced passenger waiting areas where space is limited and may reduce boarding and alighting times.

- **Accessibility.** Accessibility plays a significant role in the success of transit. It can also reduce demands on custom transit by making the conventional services accessible to a larger population.
Today, a growing percentage of the transit fleet in the Fraser Valley is accessible, with the expectation that it will ultimately be fully accessible. As in many communities, there are barriers to using public transit for many individuals, including but not limited to seniors and people with disabilities (i.e. cognitive, sensory and physical). In some cases, providing the right information and training in a form that makes it easy to understand the system can make a big difference to increasing accessibility of the system. Most often however, the physical environment leading to the bus is a barrier for most people because the stops, exchanges and routes to these locations aren't accessible for a segment of the population. In order to support a fully accessible bus fleet, significant investments must be made to provide accessible transit facilities in urban, suburban and rural areas of the Fraser Valley. Doing so will make the system for attractive for all customers and increase the mobility of the entire community.

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- ***Transit Priority Measures***. Transit travel time relative to the car has a significant impact on ridership. Giving transit priority in areas of traffic congestion can provide transit customers with a distinct advantage and will reduce the cost for transit services. Transit priority measures provide buses and other transit vehicles with an advantage over general traffic through the use of physical, regulatory, traffic control or other techniques to achieve operational and service improvements. Over the next 10 years or so, Fraser Valley communities will need to consider looking into implementing modest forms of transit priority treatments for frequent transit service corridors that experience significant traffic congestion. These priority treatments may include, but not be limited to bus lanes, intersection queue jumpers, traffic signal priority, priority access to freeways, and regulator measures such as transit only vehicle signage.

- ***Transit Exchanges***. In general, transit exchanges accommodate the largest number of transit passengers either transferring from one bus to another, or accessing transit at a centrally located hub. In addition to being located near commercial centres such as the business district, transit exchanges in the Fraser Valley should include enhanced features such as: shelters and other forms of protection; seating; lighting; telephone; customer information; secure long-term bicycle parking; passenger pick-up and drop-off area as well as a park-and-ride if located in a suburban location.

Within the Fraser Valley, there are five transit exchanges that consist of on-street and off-street facilities for anywhere from one to five buses. These exchanges include the Bourquin and Downtown exchanges in Abbotsford, the West Coast Express and Downtown exchanges in Mission, and the Downtown exchange in Chilliwack. Table 4.2 summarizes the primary features for each of the exchange facilities. The Bourquin exchange, located near the Seven Oaks mall, is isolated from an active street environment and is several hundred feet down grade from South Fraser Way. Plans for a new exchange located in Abbotsford have been developed. Plans for a new Clearbrook Transit Exchange have been solidified through the procurement of land near the intersection of Clearbrook Road and South Fraser Way where a 7-8 bay off-street bus exchange will be built.

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Table 4.2 – Existing Fraser Valley Transit Exchanges

Transit Exchange	Capacity (# Bus Bays)	# Bus Routes Serviced	Passenger Amenities	Surrounding Environments
Bourquin Exchange	5 Off-street	11	• 3 shelters • 4 benches • bus schedules • Pedestrian-scale lighting	• Location: Bourquin Crescent West on the northwest corner of Mill Lake Road intersection, • Abbotsford Seven Oaks Mall (including parking lots) • One hi-rise apartment building • Low-density residential housing
Downtown Abbotsford Exchange	2 On-street (NB & SB)	10	• 2 shelters • 4 benches • bus schedule	• Location: Montrose Avenue between Laurel Street and McDougal Avenue • Mostly commercial; shops, banks, etc. • Abbotsford Banquet and Conference Center
Downtown Mission Exchange	2 On-street (EB & WB)	7	• 2 shelters • 2 benches • bus schedules	• Location: Second Avenue between Home Street and Welton Street • Public Library • Residential (Low-rise condos)

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Table 4.2 – cont'd

West Coast Express Station	2 On-street	5	• 2 benches • Garbage bins • Pedestrian scale lighting	• Location: North Railway Avenue between Home Street and Welton Street • Adjacent to West Coast Express Train station and park and ride lot • Commercial buildings; shops, businesses, gas station, etc.
Downtown Chilliwack Exchange	3 On-street (EB & WB)	9	• 2 shelters • 3 benches • bus schedule info boards	• Location: Main Street between Princess Avenue and Kipp Avenue • Commercial; businesses and shops • Adjacent to public pay parking lot

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- ***Park-and-Rides Lots***. These lots provide a means of accessing attractive transit services for those living in rural and suburban areas where walking distance to transit is prohibitive and services may not be attractive. In order to intercept driving trips, research has indicated that park-and-ride lots should be located within about 5km of a person's home to reduce the likelihood of them driving the entire trip. In most communities, park-and-ride lots are located in many suburban and rural areas where people can access attractive transit

services. Within the Fraser Valley, there is one designated park-and-ride facility. This designated park-and-ride is located adjacent to the West Coast Express Train Station along North Railway Avenue in Mission. It has a capacity for over 240 parking stalls, and is heavily utilized by West Coast Express customers. The parking lot and surrounding side streets are generally full with parked vehicles on any given weekday.

There is a second, more informal park-and-ride facility within the Fraser Valley, located on Lonzo Street in Abbotsford, just north of the Trans Canada Highway and west of Highway 11. This facility accommodates approximately 50 vehicles. Another unofficial park and ride facility has evolved adjacent to the Whatcom Road interchange in east Abbotsford.

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