



BACKGROUNDER #3: Trends & Challenges

Purpose: Why is this topic important to the Regional Transportation Strategy?

While it is impossible to perfectly predict the future, TransLink has a responsibility to create a long-term plan that is flexible, adaptable and achievable in all circumstances. This Trends & Challenges background paper describes the current best estimate of where the region is headed and what key issues it will need to address.

Trends & Challenges

Providing transportation for 1 million more people

Metro Vancouver is expecting an additional 1 million residents and 600,000 jobs over the next three decades – the equivalent of adding a “Port Moody” to the region every single year. This will increase daily trips in the regional transportation system from about 6 million to 9 million.

Keeping the economy moving in a growing region

As a gateway, Metro Vancouver contributes significantly to regional, provincial and national economies, both through the movement of goods on rail and roads and due to the value of international passenger travel. With container traffic projected to grow, we must also ensure efficient truck access to gateway facilities.

Metro Vancouver has also become a centre for high-tech industries, and our reputation as a livable region is attracting highly mobile knowledge-workers.

Figure 1: Metro Vancouver Population Growth: 2006 – 2045

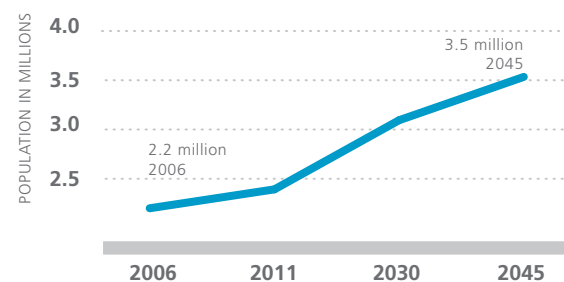
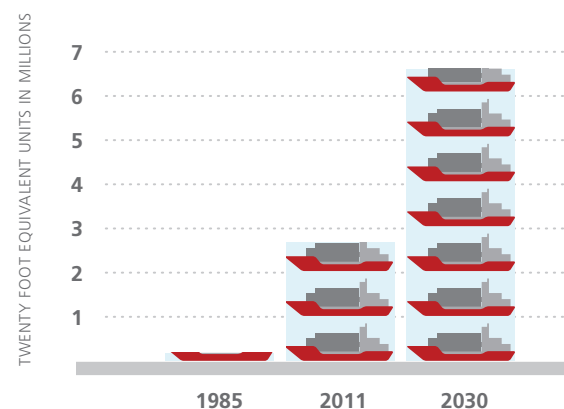


Figure 2: Port Metro Vancouver Projection for Container Traffic





To ensure our region remains economically attractive, and to protect the region in times of economic instability, we need to maintain a high quality of life – which includes ensuring that transportation is efficient, effective and affordable.

For more information on the relationship between transportation and the region's economy, see Backgrounder #4: Regional Economy and Growth.

Getting jobs in the right locations

About one-third of all trips are taken by commuters travelling to and from work or post-secondary school during peak periods. These typically determine the peak capacity needs of the system. The Regional Growth Strategy has set as a target that more than 75% of new jobs should be located in Urban Centres and along Transit Corridors, where they can be most easily served by walking, cycling and transit – making the system more efficient and affordable.

Metro Vancouver is comprised primarily of small to medium-sized businesses: 98% of businesses have fewer than 50 employees, and these are increasingly dispersed around the region. But about 750,000 jobs, or two-thirds of the total, are amenable to locating in transit-oriented office locations in Centres and Corridors. These are concentrated in retail, professional, scientific and health care fields, some of the fastest growing sectors in our economy.

Many potentially transit-appropriate jobs are currently located in auto-dependent business parks. But the trend is to locate new businesses near transit as an employee retention strategy, a shift demonstrated by the increasing rents and lower vacancy rates in transit-oriented locations. In Surrey, for example, office vacancy within 500m of rapid transit is currently just over 1% while it is more than 25% beyond 500m from rapid transit.¹

For more information on the role of Urban Centres and Transit Corridors in the region's transportation network, see Backgrounder #7: Urban Centres and Frequent Transit Corridors.

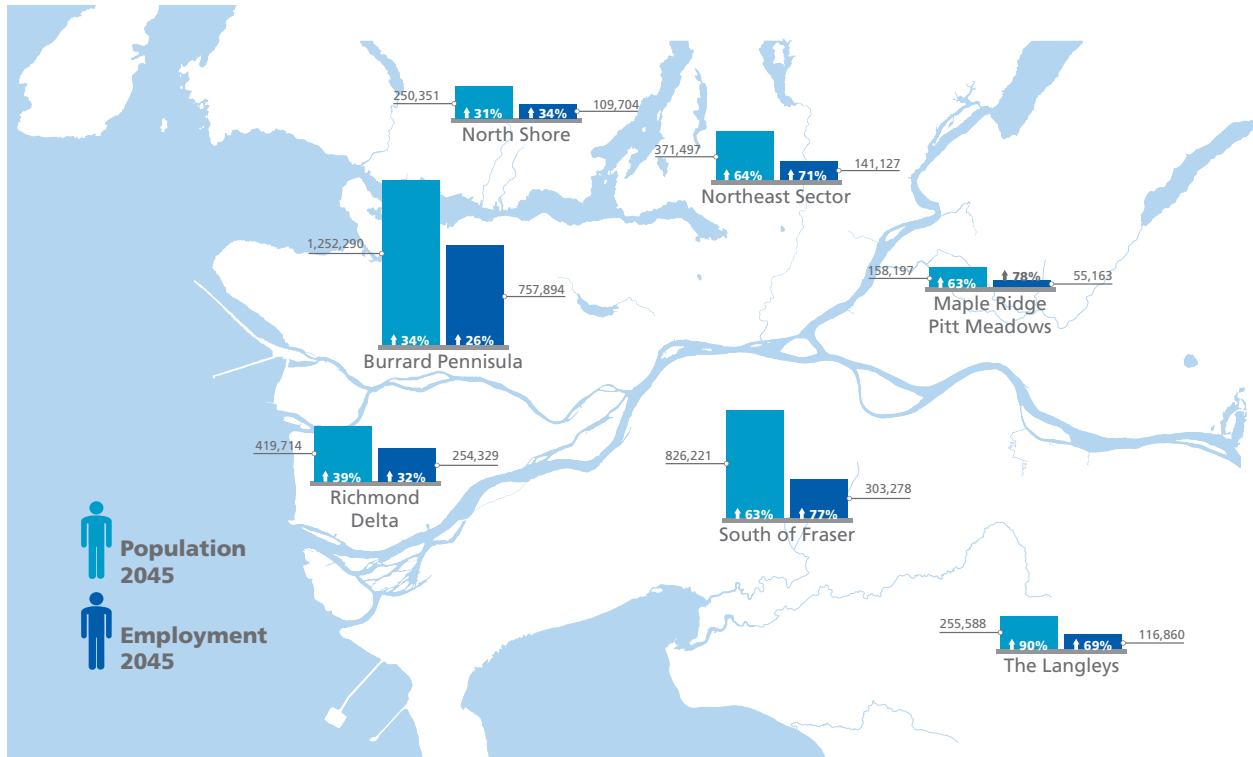
Getting housing in the right locations

The location of housing in the region is a major determinant of travel patterns. The Regional Growth Strategy aims to focus development within an urban containment boundary. While housing located in Urban Centres and along Frequent Transit Corridors allows residents to make more of their trips by walking, cycling, and transit, 32% of new housing development is targeted for lower density sites. These developments are typically difficult to access by foot or bicycle, expensive to serve with transit and therefore likely to remain largely auto-dependent. To the extent that development in these areas can be deferred and redirected to Centres and Corridors, transit service will be more productive and there will be more of it to go around.

¹ Jones Lang LaSalle. 2012. Rapid Transit Office Index.



Figure 3: Metro Vancouver 2045 Employment & Population Projection



Addressing housing and transportation affordability

Transportation is generally a household’s largest expense, and while people do not generally factor transportation costs into their home purchase decisions, housing and transportation costs are intimately linked. For example, the scarcity of affordable housing in the central parts of the region drives people to live farther away from work in homes that are seen as more affordable. However, families that opt to live farther away typically spend more on transportation costs, due to longer trip lengths and the need to have two or more cars.

These households are also more vulnerable to increases in fees or gasoline costs. By building an integrated transportation system that makes owning a car an option, but not a necessity, we reduce the financial burden of transportation on people and businesses.



Maintaining aging infrastructure

The cost for anticipated maintenance or rehabilitation of existing infrastructure is significant even without adding to the system or accommodating demand driven by population growth. This may force the region to decide how to balance the need to replace aging infrastructure with the desire to build new facilities to meet growing demand.

Serving an aging population

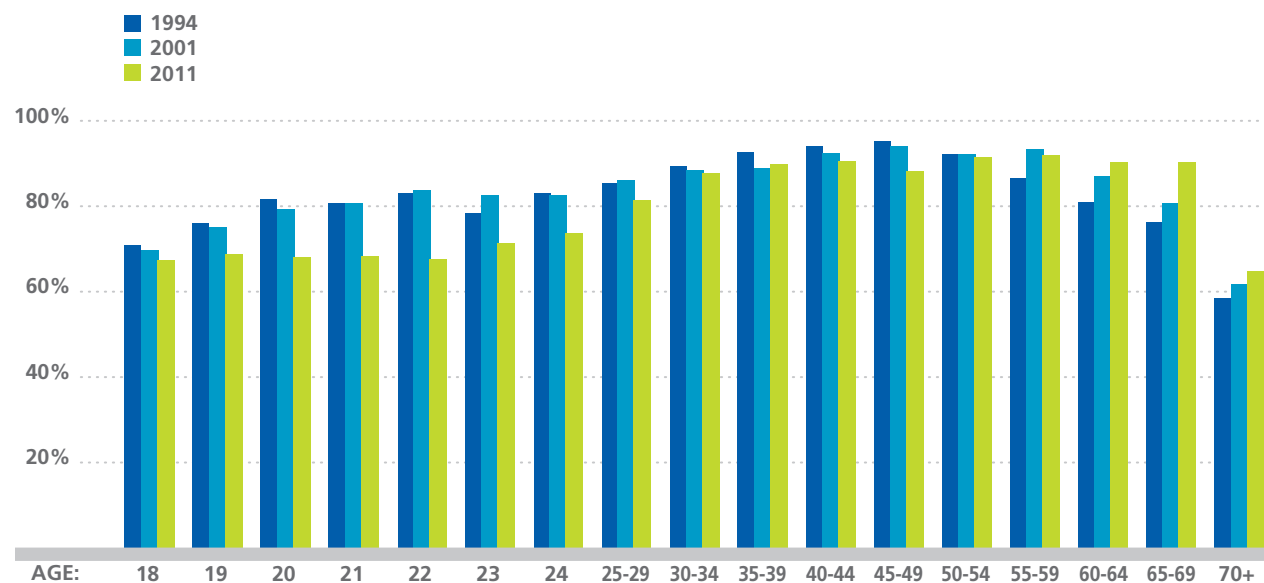
By 2045, 22% of the region's population will be older than 65 compared to 14% today. This is likely to shift pressure on the transportation system, for example with more people relying on transit or paratransit services.

At the same time, the number of retirees benefitting from transfer programs (e.g. pensions) will increase relative to the number of working people contributing to those programs. This phenomenon can have significant economic implications – for example, decreasing public revenues that are available for areas such as transportation.

Adapting to changing consumer preferences

In recent years, the amount of driving per person in North America has been decreasing. This is partly attributable to a sagging economy and increasing fuel costs, but it also reflects a trend among young people to delay getting a driver's license and/or avoid getting a private automobile at all (see figure below). If this pattern continues, we could see even greater demand for walking, cycling and transit alternatives.

Figure 4: Licensed drivers as a percentage of age group population in BC





Leveraging advances in information technology

Technology, such as ‘smarter’ transportation systems, increased internet use, expanded social media, and rapidly increasing data streams and processing power will inevitably affect the future of the transportation system. These developments will allow us to improve network management, fine-tune variable pricing, and provide real-time customer information. E-commerce and tele-working may also reduce the need for travel. We cannot accurately predict the pace, the extent or the impacts of these changes, but we must remain ready to respond to new technologies as they emerge.

Responding to changes in vehicle technology

Advances in materials, energy systems, connected vehicles, and self-driving cars all represent potential transportation system game-changers. For example, based on on-going trends and continued incentives, Metro Vancouver might expect the numbers of low carbon vehicles, including a variety of electric and high-efficiency internal combustion vehicles, to grow from about 1,400 today to 15,000 in 2020. Some experts predict that autonomous vehicles (AVs) – or self-driving vehicles – will account for up to 75% of cars on the road by 2040.² A proliferation of AVs could mean: significant improvements to traffic safety; improvements to energy efficiency; increased highway capacity since AVs can safely travel much closer together; cheaper goods movement; competition with conventional fixed-route public transit or the emergence of new more cost-effective models of flexible public transportation and taxi hybrids.

These and other technological advancements could result in new demands for public sector investment or regulation – and could create new benefits.

Mitigating and adapting to climate change

The B.C. government has set targets to reduce greenhouse gas emissions by 33% by 2020 and by 80% by 2050 from 2007 levels. In 2010, light- and heavy-duty vehicles accounted for 32% of greenhouse gas emissions in Metro Vancouver. In addition to adopting cleaner fuel and vehicle technologies, we can make significant gains against those targets by making it easier for people to reduce trip length and/or make more trips by walking, cycling and transit.

Even if we are successful in reaching these targets, climate change is already underway. We need to make adaptation plans to ensure that our transportation system is resilient in the face of extreme weather events and flooding.

² Gilbert, R. (2012a, December 24). Self-driving cars coming soon to a road near you. The Globe and Mail. Available at <http://www.theglobeandmail.com/report-on-business/economy/economy-lab/self-driving-cars-coming-soon-to-a-road-near-you/article6630552/>



Dealing with volatile fuel prices

Like most North American cities, Metro Vancouver is highly dependent on cars and oil. Fossil fuel prices have increased significantly in the past decade, and will likely continue to rise as global oil supplies dwindle.

Rising prices create a triple challenge for TransLink. When prices rise:

- TransLink’s fuel tax revenue drops as people reduce the amount they drive;
- Demand for TransLink services grows, as people switch to transit to save money; and
- TransLink itself must pay more for fuel.

To manage risk related to fuel tax revenue, funding sources for transportation need to continue to be diversified.

Figure 5: Metro Vancouver Historical Average Fuel Prices

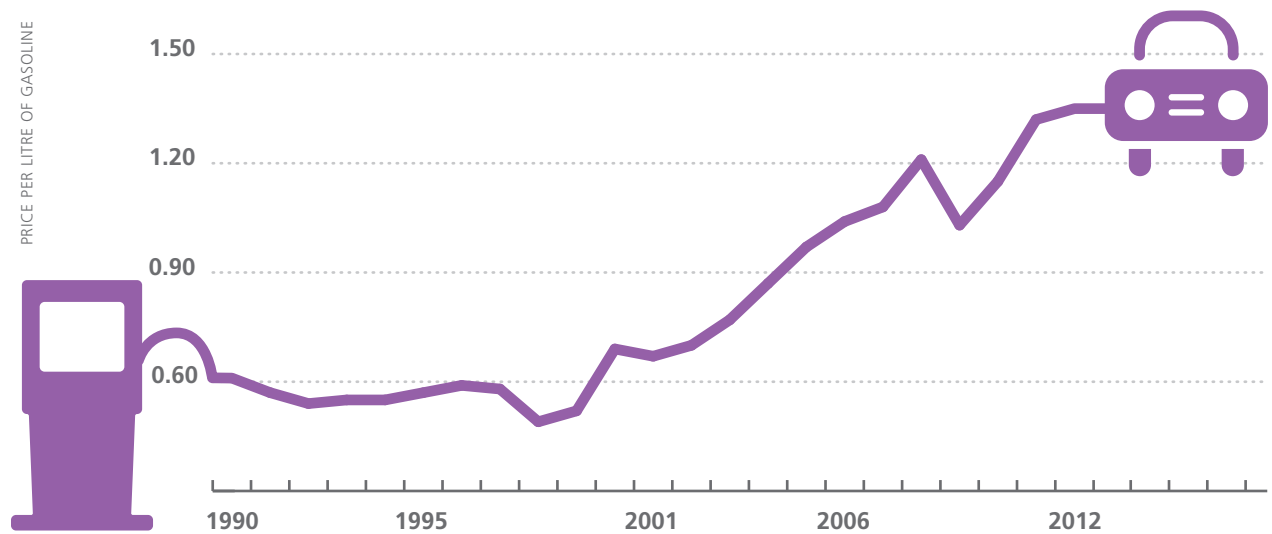


Figure 6: Triple Challenge to TansLink

Rising fuel prices can reduce sales volume.

TransLink is affected in three ways

