

Integrated Transportation and Land Use For Thriving Communities



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Integrated Transportation and Land Use Planning

For the last 70 years, transportation and land use have been designed primarily around motor vehicles. Post-WWII suburbanization drastically changed the way communities developed, with single use zoning resulting in homes separated from workplaces and services, requiring a car for most trips. This has resulted in longer commute times, increased greenhouse gas emissions (GHGs), more time spent sitting, reduced access to shops and services and increased infrastructure and maintenance costs (Building Change: Towards Sustainable Communities in B.C., 2017). For those who cannot drive, prefer not to drive or do not have access to a motor vehicle, car-centric development has limited their ability to access job opportunities, services and other daily needs.

In response to increased traffic demand resulting from community growth, roads were widened, which gained only short-term reductions in traffic congestion followed by increased in driving demand. Paradoxically, this change encouraged people to live further from employment centres, in areas with greater housing affordability.

This is not to say that governments haven't made attempts at reversing these negative effects. For example, in Metro Vancouver's 1996 Livable Region Strategic Plan, several bold actions were identified to align complete communities with transit investment. This approach to planning has continued in the Metro 2040 and 2050 Regional Growth Strategies and in other plans across the province.

Whereas transportation and land use planning approaches over the past few decades have typically been undertaken as separate exercises, often by separate agencies, an **integrated planning** approach looks at the built environment as a complete system to proactively direct community growth, improve access and generate economic prosperity. It seeks to break down silos, such as those between transportation providers and land use planners, facilitating collaboration towards common goals.



Why Integrate Transportation and Land Use Planning

Integrated planning as an approach is smarter, more responsible and more collaborative:

- Smarter: creates communities where more people can live closer to jobs, services and transportation choices; locates industry in areas with easy access to employees and markets; and enables systems-based planning that links projects, programs and strategies.
- More Responsible: uses infrastructure and tax dollars more efficiently; reduces the impact of development on the natural environment; makes transportation and housing more affordable; cuts greenhouse gas emissions by reducing vehicle travel; and supports healthier, more resilient communities that can better adapt to climate change.
- More Collaborative: clarifies roles and relationships for all governments; leverages regulatory and investment opportunities to support collaboration; responds to and reflects the local priorities of B.C.'s diverse communities; and enables cross-ministry initiatives.



How Integrated Planning Benefits British Columbians

There are many societal, economic and environmental benefits to using a more modern, integrated approach to how the province plans and make decisions regarding transportation and land use investments.

Healthy and Safe Communities

Integrated planning uses land more efficiently and reduces travel times and costs while making it easier to build convenient, connected walking, cycling, and transit networks.

"It's time to reorient transportation policies to ensure that everybody benefits. The 20th century was the age of automobile ascendency, during which automobile travel increased and governments spent the majority of transportation infrastructure dollars to serve them. However, current demographic and economic trends an aging population, and increasing concerns about affordability, public health and environmental concerns justify shifting resources from urban highway expansions to improving resource-efficient travel modes such as walking, bicycling, ridesharing and public transit, as well as telework."

 Todd Litman, Founder and Executive Director of the Victoria Transport Policy Institute, 2021

This is important as Canadians who live in suburban neighbourhoods currently spend twice as much on transportation and three times longer commuting (Sustainable Prosperity, 2015). This increased time spent in a car directly correlates to an increased probability of injury or death, chronic illness, obesity, diabetes, and mental health concerns, and diminished productivity at work (B.C. Ministry of Health, 2016).

In denser, mixed-use communities where it is easier to walk, bike or take transit, a lower proportion of trips are made by motor vehicle. As a result, there are fewer motor vehicle collisions, better air quality, and healthier, more physically active residents (B.C. Ministry of Health, 2016).

More complete communities also increase the likelihood of social interaction by encouraging people to get out of their vehicles and experience their community at a slower pace and a more human scale. This supports the sharing of ideas, innovation, and a sense of community, thereby reducing social isolation (Sustainable Prosperity, 2015).

Competitive Trade Networks

The transportation of goods plays a critical role in B.C.'s economy. Transportation and transportation services are critical enablers of economic activity and significant contributors to the provincial economy. As of 2019, the transportation sector employed over 132,700 workers across the province, accounting for almost \$6 billion in wages and representing over \$14.8 billion in provincial GDP. Furthermore, B.C.'s transportation networks facilitated the movement of \$144 billion in exports and imports. Integrated planning encourages more people to walk, cycle, and use transit which reduces the demands on B.C. roads and highways. This frees up space for the movement of goods, improving supply chain fluidity and decreasing conflicts between goods movement and other road uses.

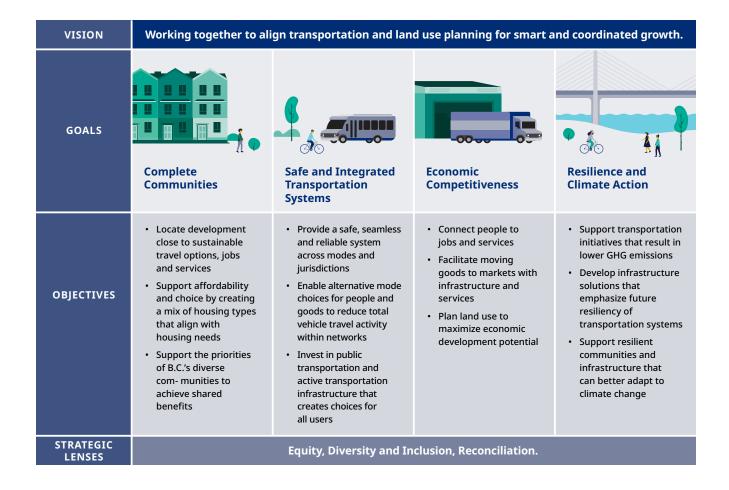
Environmental Stewardship and Resiliency

Integrated planning has been recognized as a critical part of reducing transportation emissions. The density of a community has a direct relationship with transportation-related energy consumption (Smart Prosperity Institute, 2013). While greener technology such as electric vehicles continue to advance, this alone will not effectively reduce transportation emissions – British Columbians must also drive less (Winkelman, 2021). To do that, the province must take on an integrated planning approach to work toward complete and connected communities.

Following recent extreme events and emergencies in B.C. such as wildfires, floods and supply chain disruptions during the COVID-19 pandemic, there is greater awareness of what community and transportation resiliency means to British Columbians. Providing a safe and resilient transportation system during emergencies is important to facilitate essential travel and the movement of goods through and around affected areas. This is best approached through integrated and proactive multi-agency planning.







PTBC has a vision of *working together to align transportation and land use planning for smart and coordinated growth in B.C.* This vision is supported by four main goals and supporting objectives. Additionally, the following strategic lenses apply to the implementation of the goals and objectives:

- Equity: PTBC will ensure that all people have access to the necessary opportunities and resources to live a healthy and meaningful life, including equitable transportation systems and communities.
- Diversity and Inclusion: PTBC
 will be developed using a Genderbased Analysis Plus (GBA+) lens,
 which considers gender, race, age,
 ability, sexual orientation, religion,
 language and other intersecting
 identity characteristics.
- Reconciliation: The province recognizes the importance of Indigenous Knowledge and is committed to ensuring that the values and aspirations of B.C.'s Indigenous Peoples are included in PTBC.



GOAL 1: Complete Communities

Complete communities have been a major focus of recent urban planning work. Complete communities exist in different contexts (from small and rural communities to medium and large urban centres) and can be measured at different scales (from a neighbourhood to an entire local government boundary). Recognizing the importance of transportation networks in shaping communities and the unique geographical challenges found in all regions of B.C., complete communities will only thrive when they are connected by robust multi-modal transportation options. To do this, the province has established three objectives:

1.1: Locate development close to sustainable travel options, jobs and services.

Development needs to support a mix of uses and transportation choices, allowing people to live, work and play in their local communities. Complete communities are places where a wide range of jobs, amenities and natural environments can be accessed within a 15- to 20-minute walk.

Taking the Pulse of the Population: An Update on the Health of British Columbians (2019)

recognizes that 10% of a person's determinant of health can be attributed to the physical environment. Moreover, to create healthy communities, British Columbians need to design communities where children and adults can easily and safely travel on foot and by bike between home, work, school, retail establishments, parks and recreation facilities. A goal of PTBC is to create complete, connected communities which provide affordable housing choices close to sustainable transportation options, jobs and services.

1.2: Support affordability and choice by creating a mix of housing types that align with housing needs.

To support affordability, communities need a range of housing types, including affordable and "missing middle" housing, close to transit services. The availability of these options and proximity to transit services helps to decrease the need to own a vehicle, thereby reducing household costs.

B.C.'s Housing Strategy (2023): The vision for the housing Strategy is that all people living in BC have access to housing that meets their needs. The Strategy outlines a framework with strategic areas that build on the 2018 Plan, which will create the quantity and diversity of housing needed by (1) Increasing the Rate of Market Housing Production; (2) Making More Efficient Use of Existing Housing; (3) Increasing Public and Community Owned Housing; (4) Better Regulating the Housing Market and Improving Tax Fairness; and (5) Making Rental Housing More Secure and Affordable.

1.3: Support the priorities of B.C.'s diverse communities to achieve shared benefits.

B.C. has a range of diverse communities, with transportation, housing options and needs that look different depending on community size as well as geography and topography. All communities have the potential to be more complete, regardless of their existing physical characteristics. Working with local governments and regional districts, the province supports the development of resilient, sustainable communities, with provincial projects and funding to enhance the completeness of the places we live, work and play.

PTBC IN ACTION - Complete Communities Guide and Grant Program: The Province is in the process
of establishing the Complete Communities Guide
and Grant Program - an application-based funding
program open to all local governments to undertake
assessments of the completeness and compactness
of their communities. This program will complement
the PTBC by developing foundational information for
local governments to take steps to advance complete
and compact communities which reduce community
reliance on personal vehicles.

GOAL 2: Safe and Integrated Transportation Systems

The Ministry of Transportation and Infrastructure has a mandate to build and maintain safe and reliable transportation systems that support seamless and accessible transportation options for all British Columbians. Doing so successfully requires safe and integrated transportation systems. As such, the province has established three objectives:

2.1: Provide a safe, seamless and reliable system across modes and jurisdictions.

Improved safety, mobility and reliability will be achieved through continued public investment in road infrastructure, public transit, active transportation network improvements and coastal and inland ferry services. Providing a safer transportation network includes reducing serious traffic injuries and fatalities for vehicles, pedestrians and cyclists.

As connectivity and integration of different modes of transportation increases, users will experience a more seamless transportation network. Innovation and the use of new technologies, including intelligent transportation system solutions and autonomous vehicles, can be integrated into existing networks to achieve safer and more seamless movement of goods and people.

PTBC IN ACTION - Broadway Plan (2022)

A recent example of planning for complete and connected communities can be found in the Broadway Plan (2022), which guides land uses adjacent to the Broadway Subway Project, a 5.7 km extension of the Millennium Line from VCC-Clark Station to Broadway and Arbutus. To support a mix of housing types, the Broadway Plan proposes to provide new homes, jobs and community and social facilities near transit. This Transit-Oriented Development (TOD) includes affordable housing choices, market, below-market and non-market rental homes.

2.2: Enable alternative mode choices for people and goods to reduce total vehicle travel activity within networks.

Convenient and affordable public transit connected to safe and seamless active transportation corridors will increase the number of users shifting away from motor vehicles, which will in turn create more capacity in the road network for moving people and goods. Improving the efficiency of goods movement and the supply chain through innovation can also reduce total distance travelled, congestion and GHG emissions.



Clean Transportation Action Plan (underway)

aims to implement actions to meet the transportation objectives outlined in the CleanBC Roadmap to 2030, including: reduce distance travelled, encourage mode shift, enhance vehicle efficiency, zero-emission vehicles, and clean fuels. PTBC will complement this plan to establish a collaborative, integrated planning process to increase sustainable travel options which seeks to reduce vehicle distance travelled and encourage mode shift.

2.3: Invest in public transportation and active transportation infrastructure that creates choices for all users.

The province continues to invest in public transportation through BC Transit and provincial programs such as the B.C. Active Transportation Infrastructure Grants Program and the Transit Minor Betterments Program. The integration of public transit and active transportation considerations into developments and road projects will increase affordability and mobility, while reducing dependence on passenger vehicles for short-distance trips.

PTBC IN ACTION – Central Okanagan Integrated Transportation Strategy (CO-ITS) The Central Okanagan Integrated Transportation Strategy being developed by MOTI will improve the safety and reliability of key connections between rural and urban areas. CO-ITS is looking to:

- Increase people-moving capacity along the Highway 97 corridor, including across the existing W.R. Bennett Bridge.
- Incorporate passenger car, transit and active transportation considerations.
- Shift local trips off the highway by enhancing crosshighway connectivity and creating network redundancy.

GOAL 3: Economic Competitiveness

Strategic land use planning and the seamless movement of people and goods are important to enable economic growth. To do this, the province has established three objectives:

3.1: Connect people to jobs and services.

Safe, seamless transportation networks enhance the movement of goods and people, resulting in a strong economy. By creating a more seamless and reliable transportation system and providing affordable transportation choices including public transit, active transportation, car share and ride-hailing services, we have a greater opportunity to connect with businesses, educational opportunities, community and health amenities.

The StrongerBC Economic Plan (2022) sets two key goals: inclusive growth and clean growth. Achieving these goals includes building resilient communities, meeting B.C.'s climate action commitments and fostering innovation throughout B.C.'s economy. StrongerBC recognizes that B.C. needs affordable housing close to transportation choices to make life better for families and help employers recruit and retain the workers they need. PTBC proposes to better connect people to jobs and services by providing safe and seamless transportation options which can spur local economic development and improve employee retention. StrongerBC will develop a Goods Movement Strategy to provide leadership and coordination among transportation industries and achieve greater coordination between transportation modes.



3.2: Facilitate moving goods to markets with infrastructure and services.

Enhancing the performance of the B.C. goods movement ecosystem is a critical enabler of economic growth. Seamless and resilient trade corridors will enable the transportation of goods to local, national and international markets. Strategic collaboration between the province and partners in the transportation and logistics sector will enhance the performance of the goods movement network and will result in increased competitiveness of B.C.'s industries.

B.C.'s Goods Movement Strategy (Under

Development) aims to identity opportunities to implement policies, programs and investments to grow the transportation and logistics sector, accelerate B.C. innovation to advance sustainability objectives and grow B.C. exports. The Strategy will support the goals of key provincial priorities including StrongerBC and CleanBC. PTBC proposes to better facilitate the movement of goods to market by investing in integrated transportation and trade corridors.

3.3: Plan land use to maximize economic development potential.

Local governments, First Nations, airports and port authorities are responsible for land use planning, including the supply and use of employment and industrial lands. The province encourages a more integrated and cooperative approach to land use and transportation planning to better realize the development potential of land. Provincial legislation enables regional districts to adopt Regional Growth Strategies which provide the opportunity to plan more strategically for economic development. These strategies should be aligned with regional transportation plans to ensure an integrated approach.

PTBC IN ACTION - Surrey Langley SkyTrain

The Surrey Langley Skytrain project will: support economic development by direct jobs through construction; increase business access to the labour force; and improve the access to housing, employment and educational opportunities through increased density around Skytrain stations and improved transit services.

GOAL 4: Resilience and Climate Action

Transportation is the single largest source of GHG emissions in B.C., accounting for about 37% of all the province's emissions (B.C. Ministry of Environment, 2021; Climate action and transportation, 2022). PTBC seeks to reduce GHGs associated with the transportation sector and support the relevant community and transportation actions identified in the CleanBC Roadmap to 2030 (2021). To do this, the province has established three objectives:

4.1: Support transportation initiatives that result in lower GHG emissions.

Shifting to alternative fuels, ride-sharing, active transportation and transit all have the potential to reduce carbon emissions. The development of complete mixed-use communities can also reduce the total vehicle kilometers travelled by residents. Provincial decisions and investments in transportation can be informed and prioritized using a sustainability lens focusing on actions that support reduced GHG emissions.

CleanBC Roadmap to 2030 (2021) identifies pathways to meet B.C.'s climate goals by 2030. Of note, the Roadmap recognizes the impact that land use planning has on the environment, economy, and how communities look, feel and function. Furthermore, the Roadmap recognizes that as communities grow, there is a need to better align land use and transportation planning to build connected, mixed-use communities where more people can live closer to jobs, services and transportation, ultimately reducing commute times and greenhouse gases. PTBC seeks to better align transportation and land use in order to advance these goals, meet reduced vehicle distance travelled targets and encourage mode shift.



4.2: Develop infrastructure solutions that emphasize future resiliency of transportation systems.

Natural hazards have the potential to severely disrupt B.C.'s transportation systems in and between communities, including cross border goods movement. Vulnerabilities exist with flooding, earthquakes, mudslides, forest fires and fuel availability. The November 2021 Atmospheric River event that hit the lower mainland and southern interior highlighted the interconnectedness of transportation modes and jurisdictions, with all levels of government working alongside residents, businesses, utility companies and transportation companies to restore access to goods, markets and services.

For B.C.'s communities to be resilient, there must be a range of transportation choices that make it easier for people to get around including roads, sidewalks, cycling facilities, transit, and ridesharing, focusing on improving inter-modal connectivity. Providing choice and redundancy in the transportation network is key for accommodating disruptions and keeping people and goods moving.

4.3: Support resilient communities and infrastructure that can better adapt to climate and environmental changes.

Climate impacts such as rising temperatures and more frequent and intense rainfall have the potential to affect transportation infrastructure including roads, pathways, bridges, railways and tunnels. Designing resilient infrastructure is key for adapting to these climate and environmental changes. Resilient communities and transportation systems are robust against emergency events, are adaptable to changing circumstances, and are coordinated to allow data-driven decision-making. Resilient communities reduce the amount of transportation infrastructure that could be exposed to climate impacts and are less reliant on longer-distance daily travel, providing greater multi-modal choices for all types of trips (Murray, 2021).

PTBC IN ACTION - B.C. Active Transportation

Design Guide (2019) is a comprehensive set of planning and engineering guidelines for the planning, selection, design, implementation, and maintenance of active transportation facilities across the province. The Design Guide describes the nuanced differences in active transportation design between urban, suburban, and rural communities, offering several flexible, low-cost solutions for all human powered forms of travel. Creating complete, connected active transportation networks is an important part of building choice and resiliency into communities and transportation systems, while also reducing GHGs



Getting There

The vision of working together to align transportation and land use planning for smart and coordinated growth is possible with strong coordination and collaboration between provincial ministries, First Nations, local communities and other partners. To optimize the opportunities for success, the province will be reviewing and proposing enhancements to existing funding mechanisms, policy, guidance and legislation, as well as identifying new opportunities to advance an integrated planning approach in B.C.

For more information please contact:

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References

Ministry of Environment. (2021). CleanBC: Roadmap to 2030.

B.C. Ministry of Health. (2016). Where the Rubber Meets the Road: Reducing the Impact of Motor Vehicle Crashes on Health and Wellbeing in B.C.

Building Change: Towards Sustainable Communities in B.C. (2017). Retrieved from Real Estate

Foundation of B.C.: https://www.refbc.com/sites/default/files/building-change-2017.pdf

Climate action and transportation. (2022). Retrieved from B.C. Government: https://www2.gov.bc.ca/gov/content/transportation/transportation-environment/climate-action

Litman, T. (2015). Analysis of Public Policies That Unintentionally Encourage and Subsidize Urban Sprawl. Global Commission on the Economy and Climate.

Murray, A. (2021). Transport Challenges – how integration of land use and planning can lead to carbon neutrality. Retrieved from BECA: https://www.beca.com/ignite-your-thinking/ignite-your-thinking/march-2021/transport-challenges-how-integration-of-land-use

Smart Prosperity Institute. (2013). Suburban Sprawl: Exposing Hidden Costs, Identifying Innovations.

Sustainable Prosperity. (2015). Creating Complete, Compact and Energy Efficient Communities in B.C.

Winkelman, S. (2021). Location, location, location: Three ways land use can tackle both the climate and housing crisis. Retrieved from Corporate Knights: https://www.corporateknights.com/built-environment/15-minute-neighbourhood/

