



POLICY REPORT
URBAN STRUCTURE

Report Date: January 12, 2010
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Meeting Date: January 19, 2010

TO: Standing Committee on Transportation and Traffic

FROM: General Manager of Engineering Services and Director of Planning

SUBJECT: Rapid Transit Principles for the Broadway Corridor and the UBC Line Rapid Transit Study

RECOMMENDATION

- A. THAT Council approve Vancouver's rapid transit principles, as contained in Appendix A, to guide staff involvement in the planning and future implementation of a rapid transit solution for the Broadway Corridor.
- B. THAT staff use these principles to guide participation in TransLink's UBC Line Rapid Transit Study and report back at key milestones including: after development and public review of the short-listed options; and, upon the identification of a preferred option for rapid transit technology(ies), alignment and general station locations.

CITY MANAGER'S COMMENTS

The City Manager recommends approval of A and B.

COUNCIL POLICY

Transportation priorities (1997): Pedestrians, bicyclists, and transit users; access for goods movement; and less reliance on cars.

Principles for rapid transit provision: Council approved principles for the Millennium Line (1998) and Canada Line (2003), to provide City input in the planning stages of these rapid transit lines.

Rapid transit in the Broadway Corridor:

- *1997: Council approved the City Transportation Plan which includes a rapid transit line along the Broadway Corridor with possible extension to UBC. The line should serve the needs of city riders as well as others regional users, and should not result in a loss of local transit service.*

- *March 2000: (Phase II Commercial Drive West) Council recommended that the SkyTrain continue west from Vancouver Community College, via the False Creek Flats and Broadway to Granville Street as part of the Millennium Line Construction Program, with a rapid bus extension to UBC.*
- *April 2002: (Vancouver Transit Strategy) Council reaffirmed its support for the Millennium Line extension as a subway serving the Central Broadway Corridor to Granville Street.*
- *January 2008: Council passed a motion that the City of Vancouver opposes cut and cover construction for the completion of the Millennium Line through commercial, congested or confined rights-of-way.*

Current Council priorities related to transit: building strong, safe and inclusive communities, environment and sustainability, and creative capital and a growing economy. In 2009, the Greenest City Action Team (GCAT) unveiled "Vancouver 2020 - A Bright Green Future: An Action Plan for Becoming the World's Greenest City by 2020" which includes targets for Greener Communities. This includes green mobility (majority of trips on foot, bicycle and public transit) supported by increased density and proximity to services and amenities.

SUMMARY

Expanding rapid transit to connect Central Broadway (between Main and Burrard Streets, 16th Avenue to False Creek) and the University of British Columbia (UBC), the region's two largest trip destinations outside of the Downtown, to the regional system is key to the successful achievement of a wide array of policies, plans, and targets. Rapid transit along the Broadway Corridor (roughly 500 metres north and south of Broadway/10th Avenue, from Commercial Drive to Blanca) has long been identified as a priority by regional land use and transportation plans, and is reinforced in many City plans and policies.

Today, the Broadway Corridor has a significant and growing concentration of jobs, residents, and major destinations important to both local and regional interests. The Corridor is a strategic opportunity to implement rapid transit with a guaranteed transit ridership base and growth potential unparalleled in the region.

Staff have developed a set of rapid transit principles (Appendix A) in order to guide planning and implementation of a rapid transit line that serves the Broadway Corridor. These principles are based on previous rapid transit principles and criteria, experience from the recent Canada Line planning/implementation, initial stakeholder consultation and Council priorities.

These principles will guide staff participation in TransLink's UBC Line Rapid Transit Study including the development of options and the evaluation criteria used to select the preferred rapid transit solution. These principles are comprehensive and it is anticipated that as options are short-listed, tradeoffs may be required.

The purpose of the UBC Line Rapid Transit Study is to:

- identify a wide range of options for rapid transit;
- analyse and evaluate the options based on available facts and evidence; and
- select a preferred rapid transit route, technology(ies), and general station locations that aligns with the evidence base.

Although there is currently no funding in place to construct the UBC Line, the identification of a preferred solution is important so that the project can move forward to the development of a detailed design and business case. This will allow the UBC Line to be assessed along with all

other regional rapid transit projects so that TransLink can develop a funding strategy and delivery timeline.

The Study is co-sponsored by TransLink and the Province of BC, with the City, University of British Columbia (UBC), University Endowment Lands (UEL) and Metro Vancouver as partners. A consultant team led by Steer Davies Gleave (SDG) is conducting the technical analysis and TransLink is leading the public process. Senior City staff met with SDG before the study began and urged that any recommendation should be based on the best facts and metrics reflecting current and future capacity and demands for public transit.

The Study began in April 2009 and has two main phases. Phase 1 focuses on technical work (e.g. compiling past studies, transit modelling, etc.). The product of Phase 1 is a short-list of four to six rapid transit options which is expected to be complete by spring 2010. Phase 2 focuses on detailed evaluation of the short-listed options. These options may include different technologies on different portions of the corridor. Phase 2 will support a decision on preferred route and technology(ies) including general station locations.

The public process in Phase 1 has involved invited corridor and regional stakeholders (see Appendix C). Initial feedback indicates that there is support for rapid transit in the Corridor, but there are significant information gaps and public skepticism that need to be addressed through the Study process. Input from this stakeholder process also has helped shape Vancouver's principles for the Corridor, as well as inform the nature of TransLink's public program going forward.

PURPOSE

This report seeks Council's endorsement of a set of rapid transit principles to guide staff in the planning and future implementation of a rapid transit solution for the Broadway Corridor. The report also directs staff to use these principles to guide participation in TransLink's UBC Line Rapid Transit Study including the public process and evaluation of rapid transit options and report back to Council at key milestones in the Study.

BACKGROUND

Rapid transit along the Broadway Corridor has long been identified as a priority within the region. Rapid transit expansion is identified in regional plans such as the draft Metro Vancouver 2040 regional Growth Strategy (2009), Transport 2040 (2008), the Livable Region Strategic Plan (1996) and Transport 2021 (1993). Rapid transit in the Broadway Corridor remains a key regional priority and it is reinforced in City plans and policies (e.g. Vancouver's Transportation Plan, 1997).

The City has considerable experience with the planning and implementation of rapid transit projects. City staff worked with provincial and regional agencies in various capacities on the Expo Line, Millennium Line, and most recently the Canada Line. This work is coordinated through the City's Rapid Transit Office (RTO), comprised of Engineering and Planning staff, who address the ongoing planning, implementation and operations of rapid transit and related transit services in Vancouver.

DISCUSSION

The discussion below covers the following main sections:

- i. The Need for Rapid Transit in the Broadway Corridor
- ii. The UBC Line Study Purpose and Timing
- iii. Recommended Vancouver Rapid Transit Principles for Broadway Corridor
- iv. Public Process
- v. Next Steps
- vi. Related City Land Use and Planning Studies

i. The Need for Rapid Transit in the Broadway Corridor

The Broadway Corridor (roughly 500 metres north and south of Broadway/10th Avenue, from Commercial Drive to Blanca - see map in Figure 1) is a strategic opportunity to implement rapid transit with a guaranteed ridership base and growth potential unparalleled in the region. It is also key to achieving a wide array of regional and City policies, plans, and targets.

Today, the Corridor is the location of a significant and growing concentration of residents and jobs. There are approximately 97,000 residents and 86,000 jobs in the Corridor (2006 Census). Based on current zoning and policy there is future growth potential within the Corridor to add an additional 29,000 residents and 19,000 jobs by 2041.

Planning work underway, including the Metro Core's Central Broadway work and the Mount Pleasant Planning Program, will result in additional potential growth in jobs, residents, and visitors (see 'Related City Studies' in Section vi. for details). Rapid transit in the Corridor will lead to further opportunities for growth.

It is important to recognize that the Broadway/UBC Line Rapid Transit extension is a project of regional significance and not just important to the City of Vancouver. This line would pass through Central Broadway, which is a significant regional destination highlighted by the following:

- Central Broadway (between Main and Burrard Streets, 16th Avenue to False Creek) is by far the region's (and Province's) largest office district outside the Downtown.
- Central Broadway is the largest trip destination in the region outside the Downtown.
- In the Uptown Office District (Yukon to Oak along Broadway including City Hall) about 50% of the work trips to the area are from outside Vancouver.
- Major institutions in and adjacent to Central Broadway, including City Hall, Vancouver General Hospital (VGH), Vancouver Community College, and the GNW Campus, are not only job destinations, but also major destinations for citizens, students and health-related visits from across Metro Vancouver.

Transit in the Broadway Corridor faces several challenges, including:

- Serving one of the largest transit destinations in the region and one of the busiest bus corridors in North America, Broadway buses currently carry over 80,000 transit trips per day, comparable to today's Canada Line ridership.
- Frequent pass-bys of passengers and bus-crowding occur even with a bus every 90 seconds. Existing transit service significantly under-serves the corridor during the peak travel periods.
- There is a lower transit mode share relative to the Downtown despite the high concentration of jobs in Central Broadway due, in-part, to limited bus capacity.

These challenges set the stage for the need to identify the appropriate rapid transit solution for the Broadway Corridor (see Appendix B for additional Broadway Corridor facts).

ii. UBC Line Rapid Transit Study

Purpose: The purpose of the UBC Line Study is to review a wide range of options for rapid transit services along the Broadway Corridor from Commercial Drive west to the UBC campus, and select the preferred rapid transit routing, technology(ies), and general station locations. A process to engage the public accompanies this technical work. Multiple routes, vertical alignments (i.e., on street, underground, and elevated), and technology options are under consideration. The selected option could have different technology solutions in different parts of the Corridor.

The UBC/Broadway Corridor has a long history of transit studies dating back to the early 1990s. The current Study builds upon past work and takes into consideration the completion of the Canada Line, recent planning initiatives, and the latest transit technology options.

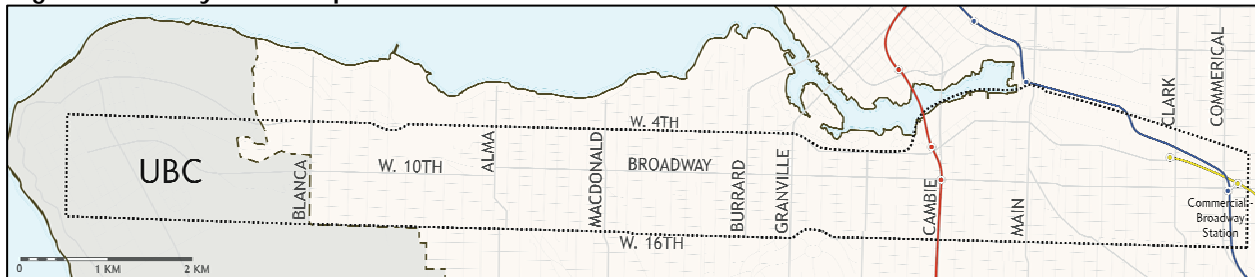
Although there is currently no funding in place to construct the UBC Line, the identification of a preferred solution is important so that the project can move forward to the development of a detailed design and business case. This will allow the UBC Line to be assessed along with all other regional rapid transit projects so that TransLink can develop a funding strategy and delivery timeline.

Sponsors, Partners, and Funding: TransLink and the Province are the project sponsors for the Study. The City of Vancouver, UBC, UEL, and Metro Vancouver are study partners. TransLink has hired a consulting team led by Steer Davies Gleave (SDG) to lead the technical analysis.

Funding for the Study is provided jointly by the project sponsors. TransLink is responsible for leading and managing the project, in consultation and cooperation with the Study partners. City participation in the Study includes membership in a Steering Committee providing strategic direction and advice, a Technical Advisory Committee, a Public Affairs Working Group, and various other working groups. Senior City staff also met with SDG before the study began and urged that any recommendation should be based on the best facts and metrics reflecting current and future capacity and demands for public transit.

Study Area: The study area is shown in Figure 1 below. Study area boundaries are approximate and are subject to confirmation as more detail about potential rapid transit routes becomes finalized. In this report, the ‘study area’ is also called the Broadway Corridor and within it are several distinct employment areas, communities, neighbourhoods, and local business areas.

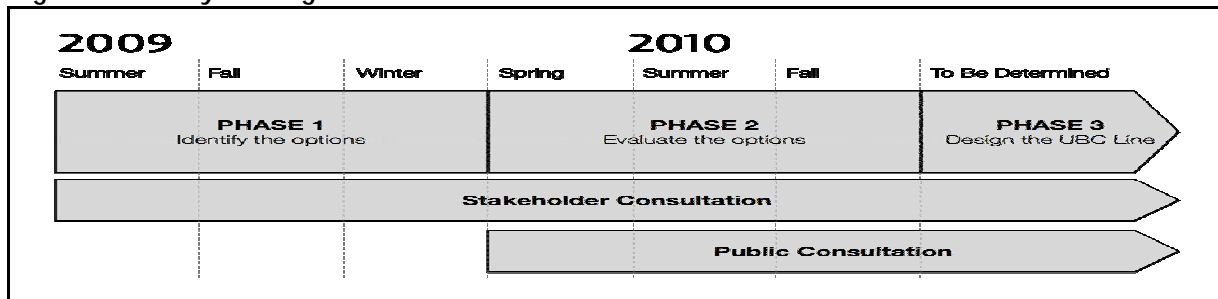
Figure 1. Study Area Map



Source: Study area boundary provided by TransLink.

Study Timing: The Study is divided into two main phases with the timing of a future third phase to be determined as shown below.

Figure 2. Study Timing



Source: Adapted from TransLink.

Phase 1- Shortlist Identification: (Summer 2009 - Spring 2010) - undertakes a high-level assessment of a wide range of technology and route options (100+) for an initial assessment based on factors such as transportation demand, community needs, and basic feasibility. The product of this phase is the identification of a short-list of four to six options for detailed evaluation in Phase 2. To-date, most of the work in Phase I has been preparation for the upcoming detailed evaluation of options. This includes: a corridor assessment and data collection (e.g. past studies, policies, demographics, growth estimates, etc.); review of best practices for rapid transit studies and evaluation methods; detailed model development for regional transit; and identification of potential options and technology combinations.

- Phase 2-Option Development and Evaluation: (Spring 2010 - Winter 2010) - builds on Phase I to undertake a detailed technical and public review, of a short-list of four to six options for the Corridor. The product is a preferred route, technology(ies), and general station locations.
- Phase 3- Design Development: not included in the current study (timing to be determined). This phase will further develop the detailed design and business case for the UBC Line project approval, including budget refinement, timeline for implementation and any potential phasing. Although the timing of this phase is unknown, the Provincial Transit Plan calls for the UBC Line to be in operation by 2020.

Other Related TransLink Studies: TransLink is conducting several rapid transit studies concurrent with the UBC Line Study. A similar study of rapid transit expansion options is underway for Surrey, scheduled to complete by February 2011. TransLink is also undertaking a Strategic Network Review that sets the stage for a Regional Rapid Transit Plan for the transit network. This Plan will identify priorities and phasing for future rapid transit expansions including the UBC Line and the Surrey extension.

iii. Recommended Vancouver Rapid Transit Principles for Broadway Corridor

To guide staff involvement in this process and the further planning for rapid transit in the Corridor, staff are seeking Council endorsement of a set of rapid transit principles (Recommendation A). These principles reflect the City’s interests while also recognizing regional rapid transit and land use planning objectives. These principles will also be used to guide staff as the UBC Line moves from the study phase to a future implementation of a rapid transit solution.

These principles are based on:

- previously approved rapid transit principles and criteria (1991, 1998, 2003);
- lessons learned as a result of Canada Line planning and implementation;
- initial input from stakeholders consulted in Phase I; and
- Council priorities related to sustainability, environment, communities, and the economy.

Prior to the identification of the short-listed options, it is timely for Vancouver to identify rapid transit principles as inputs into the public process, and the evaluation framework that will apply in Phase 2 to narrow down the four to six options to a final recommendation. Input into the Study’s evaluation framework is an important opportunity to integrate Vancouver’s interests into the UBC Line Study. The evaluation framework for the Study is under development by SDG in consultation with the study sponsors and partners and it will also incorporate stakeholder feedback.

The principles reflect an integrated approach as described in the GCAT Action Plan. This includes addressing both transportation and land-use/density to achieve the greenest city. The principles are also broad and as the work progresses, the final recommendation will most likely need to reflect some choices and trade-offs.

Vancouver’s recommended rapid transit principles are shown in Table 1 grouped under thematic topics. Appendix A contains the complete set of principles and accompanying key considerations.

Table 1: Recommended Vancouver Rapid Transit Principles for the Broadway Corridor

THEMES	BROADWAY CORRIDOR - RAPID TRANSIT PRINCIPLES
	<i>The rapid transit line should:</i>
ENVIRONMENTAL SUSTAINABILITY	1. <i>Significantly support GHG reduction and related environmental targets and objectives established by the Province, regional agencies, and the City (e.g. Greenest City Action Plan).</i>
FINANCIAL AFFORDABILITY	2. <i>Provide an affordable, cost-effective, and timely rapid transit solution for both construction and operation over the long term.</i>
TRANSPORTATION	3. <i>Provide transit capacity and service quality to meet mode split targets for current and future demand.</i> 4. <i>Integrate rapid transit with walking, cycling, local transit, and goods movement needs.</i>
URBAN DEVELOPMENT	5. <i>Serve existing and planned land use including major destinations, and help shape future land use policies including higher densities where appropriate.</i> 6. <i>Provide a consistently high standard of urban design and amenity, and significantly improve the public realm for pedestrians, cyclists and transit riders.</i>

<p>ECONOMIC DEVELOPMENT</p>	<p>7. <i>Promote a diverse, healthy and green economy, improve access to major commercial and institutional destinations, and support the concentration of Central Broadway jobs.</i></p>
<p>SOCIAL / COMMUNITY</p>	<p>8. <i>Address the needs of local and regional transit users, neighbours and adjacent communities, and businesses.</i></p> <p>9. <i>Minimize and mitigate construction and operation impacts.</i></p> <p>10. <i>Provide opportunities for meaningful engagement for stakeholders and the general public.</i></p>

iv. Public Process

The public process for the UBC Line Study is being led by TransLink and their consultants in two phases. Phase 1 engages stakeholders and Phase 2 includes stakeholders and the general public. As partners in the Study, City staff are actively involved in the process to ensure the interests and concerns of Vancouver’s businesses, residents, property owners, and other stakeholders are considered.

TransLink initiated Phase 1 consultation in June 2009 with invited corridor stakeholders including resident groups, community associations, and business groups within Vancouver, UBC and UEL. TransLink also met with city-wide and regional stakeholders (e.g., the Board of Trade, the Urban Development Institute, etc.) in November. A list of all the stakeholders contacted in Phase 1 to-date is provided in Appendix C.

Within Vancouver, there have been nine introductory stakeholder meetings to-date and approximately 40 groups have participated so far. These meetings described the Study and asked stakeholders to share their concerns and interests regarding rapid transit in the Broadway Corridor. Input was also received on how to engage stakeholders and the public. A complete summary of the stakeholder meetings is available on TransLink’s website at (translink.ca/en/Get-Involved/Public-Consultations/UBC-Rapid-Transit.aspx).

Stakeholder meeting participants noted that they generally support rapid transit. However, they want to ensure that the right type of rapid transit is planned to complement, protect, and contribute to the enhancement of their respective communities. The Phase 1 stakeholders identified several key themes and issues:

- Community fit: concern about rapid transit plans trumping local plans for land use and density in existing lower density neighbourhoods; ensure new development fits and is consistent with local plans; maintain the neighbourhood feel and character; ensure new transit system supports and enhances local businesses; and, consider safety and security at stations.
- Mitigate construction impacts: do not repeat Canada Line on Cambie; do not block north/south streets; preserve local transit service; consider risks – access, parking, etc.
- Ensure solution is sustainable and integrated with the transport network: reduce carbon emissions; limit impacts on open space; accommodate cyclists.
- Ensure collaborative dialogue with feedback and conversation: consider all technology and route options; identify all costs and impacts; address capacity, speed, frequency and reliability; and ensure value for money.

TransLink has incorporated this feedback into the public consultation process and as early input into developing an evaluation framework. This feedback also informed, and is reflected in, the City's recommended rapid transit principles. In addition to the stakeholder consultation TransLink and the City have established linked project websites to support the consultation. These sites can be accessed by anyone wishing to find out more about the Study and they include links to the study background, schedule, stakeholder meeting notes, news releases and past studies and documents (See: translink.ca/en/Get-Involved/Public-Consultations/UBC-Rapid-Transit.aspx and vancouver.ca/ubcline).

In Spring 2010, the Study will transition from Phase 1 to Phase 2. In Phase 2, the public process will focus on engaging the broader public and stakeholder groups in the review and evaluation of the four to six short-listed rapid transit options. Key elements of Phase 2 include:

- A public awareness and education program to provide more information on rapid transit technologies and the short-listed options including newspaper inserts and informational kiosks along Broadway.
- Interactive consultation workshop sessions held in various locations along the corridor in mid 2010.
- A communications program including e-mail updates, enhanced website, media releases newsletters and other feedback opportunities.

v. Next Steps

This report seeks Council instruction to report back at key milestones in the UBC Line Rapid Transit Study (Recommendation B).

The first is early in Phase 2 following the initial public review of the short-listed four to six options for the Corridor. This will provide a summary of the public reaction to the options and will seek Council's endorsement of the options going forward. This report to Council is anticipated to occur in Spring 2010.

The second is expected to occur towards the end of Phase 2. This phase concludes with the identification of a preferred rapid transit option for the Corridor. TransLink will be seeking Council's endorsement of the preferred option and staff will report back on the results of the detailed evaluation and on the input received through the public process. Staff expect this to occur in late 2010.

vi. Related City Land Use and Planning Studies

The *Central Broadway Planning Program*, now starting up, will deliver changes that intensify commercial and residential land uses and improve the public realm in the extensive C-3A zoned area along Broadway (from Vine Street to Prince Edward Street). This Planning Program will report to Council in late 2010 (using available staff and resources within the Planning Department's operating budget). The following will feed into this Program:

- *Metro Core Jobs and Economy Land Use Plan*: In the *Issues and Directions Report* (approved in 2007), Council directed staff to explore changes to zoning and policy to ensure sufficient capacity to accommodate future job growth and economic activity. This includes consideration of increased heights and densities in the Uptown Office District (between Yukon and Oak), as well as potential mixed-use and commercial hubs on Broadway at Main Street and at Granville Street.

- *Heritage Building Revitalization Program Review*: The Broadway C3-A zoning district is currently the only area outside of the Downtown Official Development Plan that allows for the transfer of heritage density. In July 2009, Council received the *Transfer of Density Program and Heritage Building Rehabilitation Program Review* update report and directed staff to review zoning and guidelines to seek additional opportunities to land heritage density in the C-3A area, as well as in other areas across the city.
- *Mount Pleasant Community Planning Program*: In 2007, Council approved the Terms of Reference and work is nearing completion on a long range, comprehensive community plan. The plan will generate options and directions for Mount Pleasant's shopping and residential areas, and will include changes supportive of future rapid transit expansion along Broadway.

Consultation and outreach activities of the Broadway Corridor Planning Program will be coordinated with the City's RTO to ensure consistency with the UBC Line Study.

In addition, the *Cambie Corridor Planning Program* (underway) is developing specific principles and policies for development in response to the City's desire to strategically focus new development around the Canada Line. In *False Creek Flats* Council has recently approved a rezoning policy to enable denser job development around SkyTrain stations, and staff are also working with the Great Northern Way Campus consortium. Broader False Creek Flats planning work is pending.

FINANCIAL IMPLICATIONS

There are no financial implications for the City at this time.

CONCLUSION

Expansion of rapid transit to connect Central Broadway and UBC, the region's two largest trip destinations outside of the Downtown, to the regional system is a key to the successful achievement of a wide array of policies, plans, and targets. This report provides principles for Council endorsement to guide rapid transit planning and implementation in the Broadway corridor, including TransLink's UBC Line Rapid Transit Study. The City is an active partner in the Study and staff will report back to Council at key milestones, namely after stakeholder input on the initial public review of short-listed options identified for detailed evaluation, and the identification of a preferred rapid transit solution for the Broadway Corridor.

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Recommended Vancouver Rapid Transit Principles for the Broadway Corridor
November 2009

The following principles and key considerations are based on: previously approved rapid transit principles (1991, 1998, 2003); lessons learned as a result of Canada Line planning and implementation; initial feedback from Broadway Corridor stakeholders; and Council priorities and recent initiatives related to sustainability, climate change, transportation, and land use.

These principles are intended to guide staff involvement in the planning and implementation of a rapid transit line that serves the Broadway Corridor. These principles reflect the City's interests while also recognizing regional rapid transit and land use planning objectives. These principles will also guide staff participation in TransLink's UBC Line Rapid Transit Study including, the development of options and the evaluation criteria used to select the preferred rapid transit solution for the Broadway Corridor.

The principles reflect an integrated approach as described in the Greenest City Action Plan (2009). This includes addressing both transportation and land-use/density to achieve the greenest city. The principles are also broad and as the work progresses, the final recommendation will most likely need to reflect some choices and trade-offs.

ENVIRONMENTAL SUSTAINABILITY

1. Significantly support GHG reduction and related environmental targets and objectives established by the Province, regional agencies, and the City (e.g., Greenest City Action Plan).

Key Considerations:

- Reduce pollution and congestion by shifting private auto trips to transit trips;
- Provide levels of transit service that support environmental targets to:
 - Reduce GHG emissions 33% below 2007 levels by 2020 (City and Province, 2007); and
 - Reduce GHG emissions 80% below 1990 levels by 2050 (City, 2008);
- Include full life-cycle environmental costs (e.g. emissions, construction materials) in the project evaluation criteria; and
- Minimize impacts on, and create new opportunities for street trees, public plazas and other open spaces.

FINANCIAL AFFORDABILITY

2. Provide an affordable, cost-effective, and timely rapid transit solution for both construction and operation.

Key Considerations:

- Provide a cost-effective solution for both initial capital and ongoing operating expenditures within the regional system;
- Consider full life cycle costs, including construction, operation, and maintenance costs, in the project evaluation criteria;
- Capitalise on the opportunity to develop a revenue-generating (i.e., high ridership at

- opening) rapid transit service for a large and growing market;
- Enhance the ability to attract private and/or senior government capital funding to meet city and regional transportation objectives; and
 - Ensure that rapid transit project costs (capital and operating) do not result in cutbacks to the basic transit system.

TRANSPORTATION

3. Provide transit capacity and service quality to meet mode split targets for current and future demand.

Key Considerations:

- Ensure transit capacity is resilient to support transportation targets as demand increases over time:
 - Double provincial transit ridership by 2020 (Province, 2008);
 - Achieve 50% non-auto mode share in the region by 2040 (TransLink, 2008); and
 - Achieve a corridor transit mode share of at least 25% (24 hours) and 38% (peak periods) by 2021 (City, 1997);
- Ensure that initial implementation and ultimate capacity of the system includes expansion plans to meet medium term (20 years) demand and the long term (50 years) demand for the corridor;
- Enhance transit, walking, and cycling within and between neighbourhoods, Central Broadway, and the Downtown;
- Provide regional travel times that are reliable and competitive to the private automobile;
- Provide safe access to the system and ensure ride-space quality (e.g. reduced crowding) and convenience are better than the existing bus system;
- Provide a solution that is affordable for “captive” users who lack viable alternatives, and attractive to “choice” riders who might otherwise drive;
- Ensure the system is accessible, including to those with higher mobility challenges and needs, and well-connected to the broader regional transit system; and
- Meet Vancouver Transportation Plan directions by limiting street expansion and by allocating more street space to transit.

4. Integrate rapid transit with walking, cycling, local transit, and goods movement needs.

Key Considerations:

- Enhance the pedestrian environment to accommodate increased volumes of pedestrians;
- Create effective connections between local service and longer distance travel to key destinations (e.g. Downtown, Central Broadway, neighbourhood business areas, and UBC);
- Ensure full integration with cycling and other non-motorized modes of transportation

including provision of safe connections with neighbourhood networks, wayfinding signage, fully-accessible station design, and secure bicycle end-use facilities;

- Maintain local transit service; and
- Accommodate goods movement needs.

URBAN DEVELOPMENT

5. Serve existing and planned land use including major destinations, and help shape future land use policies, including higher densities where appropriate.

Key Considerations:

- Support the city's planned development patterns and recognize new land use patterns will be considered based on future planning;
- Contribute to implementing city-wide land use objectives by supporting:
 - The concentration of activities and development Downtown, along Central Broadway, at major institutions, in neighbourhood business areas, and near rapid transit stations;
 - The take-up of existing residential and employment capacity and creation of redevelopment opportunities where appropriate; and
 - The development of compatible new projects;
- Contribute to implementing regional land use objectives by supporting:
 - The "Metropolitan Core" of the region (Regional Growth Strategy, 1996);
 - Transportation services required to meet population and employment growth targets; and
 - Population and employment transit-supportive densities;
- Enhance existing and emerging neighbourhood business areas that provide residents with shops, services, public places, and jobs close to home;
- Link neighbourhood business areas, the Downtown and Central Broadway; and
- Provide sufficient capacity to serve expected and potential growth (population, jobs, and other users) in the corridor.

6. Provide a consistently high standard of urban design and amenity, and significantly improve the public realm for pedestrians, cyclists and transit riders.

Key Considerations:

- Support Broadway becoming a 'great street' with a high quality public realm that promotes distinctive neighbourhood character;
- Provide links to City and neighbourhood greenways/bikeways to integrate walking, biking, and transit;
- Achieve improved landscaping and create new and more diverse public places;
- Coordinate public realm improvements with transit construction to reduce overall costs;
- Provide new opportunities for public art; and
- Ensure that rapid transit station location and design considers safety, enhances

neighbourhood character, and provides appropriate amenities (e.g. public plazas).

ECONOMIC DEVELOPMENT

7. Promote a diverse, healthy, and green economy, improve access to major commercial and institutional destinations, and support the concentration of Central Broadway jobs.

Key Considerations:

- Promote the diversity of existing and future economic activities in the Corridor (major office and other commercial, health and education, industrial, high-tech and emerging industry) by improving marketability and accessibility for customers, workers, suppliers, visitors, students, etc.;
- Improve access to city and regional centres for people, goods and services; and
- Enhance the attractiveness of the Corridor for existing and new businesses.

SOCIAL / COMMUNITY

8. Address the needs of local and regional transit users, neighbours, adjacent communities, and businesses.

Key Considerations:

Neighbours and adjacent communities:

- Enhance connectivity of residential neighbourhoods to jobs, shopping, recreation, and services;
- Enhance safety adjacent to the system and at stations;
- Minimize transportation disruptions caused by the system (e.g. street/lane closures, reductions to sidewalk widths, and increased vehicle traffic on residential streets); and
- Minimize system impacts of noise/vibration, visual intrusion, reduction of privacy, and loss of views, valued community spaces, and heritage assets, and number of persons and properties displaced.

Business community and commercially zoned property owners:

- Increase business opportunities by improving transit access to commercial sites;
- Enhance access for customers and workers to commercial locations;
- Minimize transportation disruption (e.g. street/lane closures, reductions to sidewalk widths);
- Enhance public realm;
- Consider street space requirements for commercial purposes (e.g. curbside parking, loading, and commercial truck deliveries); and
- Minimize impacts to commercial properties.

9. Minimize and mitigate construction and operation impacts.

Key Considerations:

- Ensure that adverse impacts such as visual, noise, vibration and safety impacts to the community, businesses, pedestrians, and traffic for both construction and operation are included in the evaluation process of rapid transit planning for the corridor; and
- Ensure that potential impacts to residents and businesses, identified during the planning phases, are addressed in the implementation of the rapid transit solution.

10. Provide opportunities for meaningful engagement of stakeholders and the general public.

Key Considerations:

- Work closely with study sponsors and partners to ensure timely and thorough public and stakeholder involvement in the planning, evaluation, selection, and implementation of a preferred solution for the Broadway Corridor
- Consult with communities and stakeholders to address the different ways that they may be affected by the project and examine options to mitigate system construction and operating impacts;
- Provide information about the project that is understandable by the general public, including costs of construction, and operation; and
- Consult with residents and businesses on setting regional transit priorities for major capital projects.

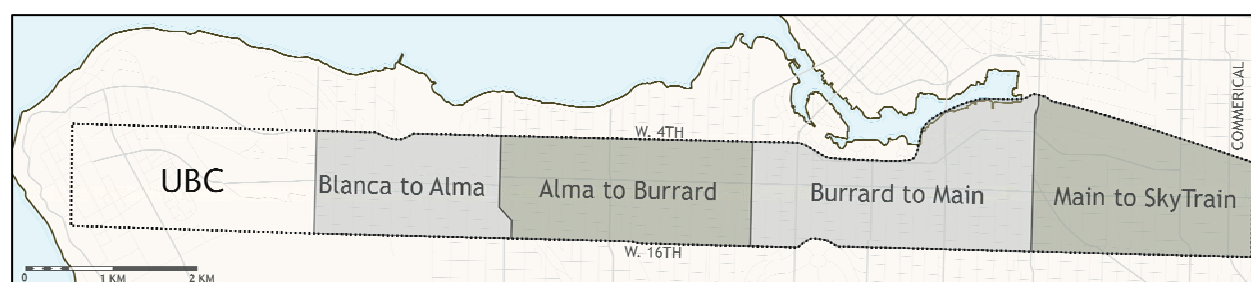
Broadway Corridor - Key Facts

This appendix provides additional data that supports the need for rapid transit in the Broadway Corridor and supplies additional input into TransLink's UBC Line Rapid Transit Study.

1. UBC Line Study Area Population and Employment Growth 2006-2041

The approximate location of the Broadway Corridor is shown in Map 1 below. Generally, the Corridor extends roughly 500 metres north and south of Broadway/10th Avenue, from Victoria Drive to Blanca Street. For the purposes of the UBC Line Study, the Corridor can be divided into several segments that reflect broad land use patterns.

Map 1: UBC Line Study Area and Segments



Source: Area boundaries provided by TransLink/SDG.

Table 1 below shows Vancouver's projected population and employment growth between 2006 and 2041 for the Broadway Corridor and its segments within Vancouver. The 2041 estimates are based on anticipated development under existing zoning and approved land-use policies.

Table 1: Vancouver's Broadway Corridor Population & Employment Growth 2006-2041 (Based on Projected Development Under Existing Zoning and Policy)

Characteristic	Blanca - Alma		Alma - Burrard		Burrard - Main		Main - SkyTrain		Broadway Corridor Total	
	2006	2041	2006	2041	2006	2041	2006	2041	2006	2041
Population										
Total	10,939	14,119	25,364	28,661	34,998	53,524	25,594	29,683	96,895	125,987
Density (pop / ha)	61	79	117	133	126	193	108	125	107	139
Population Growth 2006-41		3,180		3,297		18,526		4,089		29,092
% Change 2006-41		29%		13%		53%		16%		30%
Employment										
Total	3,327	3,478	12,117	12,280	57,412	66,666	13,114	22,916	85,970	105,340
Density (jobs / ha)	19	20	56	57	207	241	55	97	95	116
Job Growth 2006-41		151		163		9,254		9,802		19,370
% Change 2006-41		5%		1%		16%		75%		22%

Source: City of Vancouver, Planning Department, 2009.

Table 1 shows that between 2006 and 2041 there could be an increase of almost 50,000 residents and workers in the identified Corridor segments. Table 1 totals do not consider:

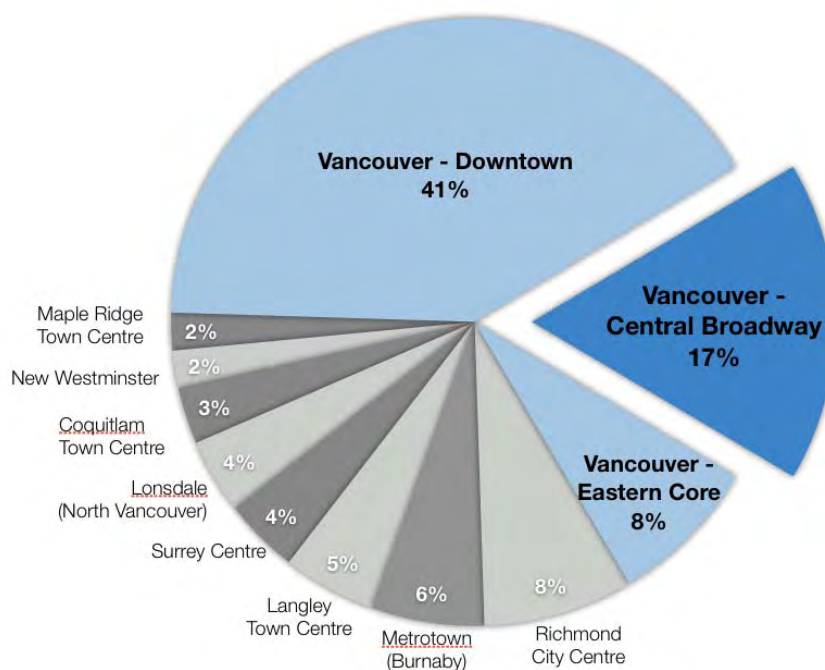
- capacity that would remain from existing zoning/policy beyond the projected development to 2040, or
- potential future zoning changes due to planning initiatives beyond those anticipated in the Metro Core Jobs and Economy Land Use Plan, the Heritage Building Revitalization Program and the Mount Pleasant Community Planning Program.

2. Central Broadway’s Regional Significance

Vancouver’s Metro Core has three main areas: the Downtown peninsula, Central Broadway (also called South of False Creek) between Burrard and Main Streets, from 16th Avenue north to False Creek, and the Eastern Core between Main Street and Clark Drive, from 16th Avenue north to Burrard Inlet. The potential rapid transit routes in the UBC Line Study could serve both Central Broadway and portions of the Eastern Core. Because of its job concentration, Central Broadway is often referred to as the Region’s ‘second downtown’.

The following table illustrates the significance of Central Broadway in relation to the region’s Town Centres identified in the Livable Region Strategic Plan (1996).

Chart 1: Metro Vancouver Job Distribution in Regional Town Centres and the Metro Core



Source: Statistics Canada, 2006 Census

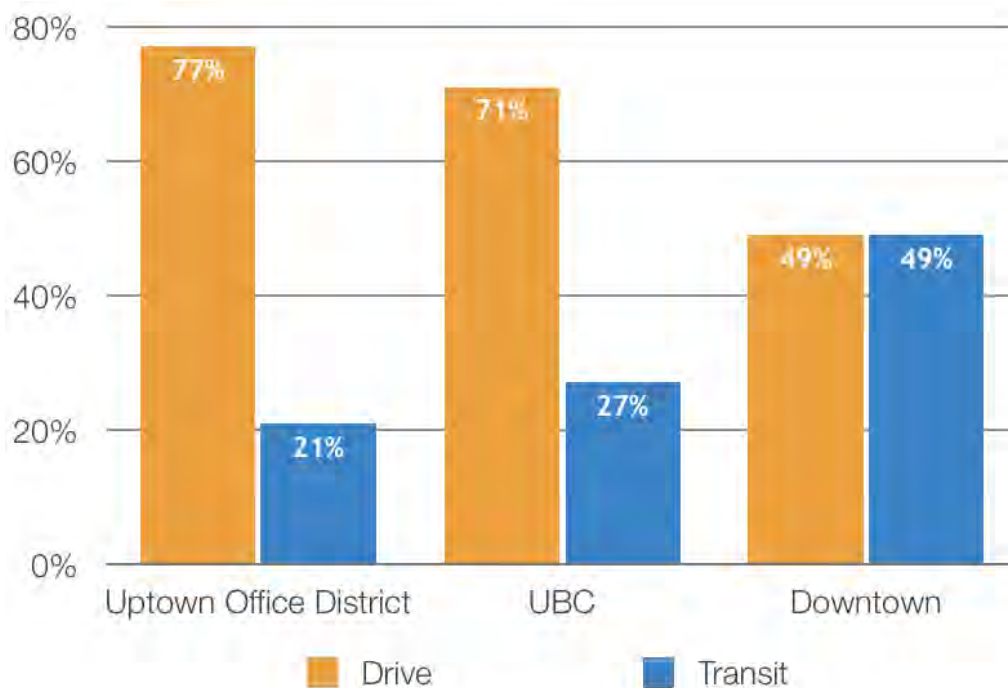
3. Central Broadway Travel Characteristics

With over 80,000 transit trips per day, Broadway is one of the busiest transit corridors in North America. For comparison, a typical busy bus route carries around 20,000 daily passengers, the Millennium Line carries around 60,000, the Expo Line carries about 195,000, and the newly finished Canada Line is already nearing the 100,000 ridership projections for 2011.

Despite significant improvements in bus service along Broadway and parallel routes, transit has not been able to keep pace with demand, and overcrowded buses routinely pass by transit riders during the peak travel times. This lack of transit service constrains transit mode share in the Corridor.

The following table shows how transit accounted for only one of every five Central Broadway Uptown Office District work trips from outside the city, and about one of every four UBC work/school trips. Trips to Downtown achieve a much higher transit mode share due to its well connected rapid transit service and the concentration of jobs. As stated above, Central Broadway currently has the next highest concentration of jobs in the region, so it is anticipated that higher capacity transit service could lead to mode shares similar to the Downtown.

Chart 2: Mode Split Comparison of Work Trips from Outside Vancouver to Central Broadway's Uptown Office District, UBC & Downtown



Source: Statistics Canada, 2006 census

Pedestrian traffic is important in the Broadway Corridor because of the significant office, retail, and major institutional (civic, health, and educational) destinations. In the areas counted by the City's pedestrian count program, seven of the ten busiest blocks outside of the Downtown are located in the Broadway Corridor. In 2008, the busiest block (Granville Street south of Broadway) had over 10,000 pedestrians between 10 am to 6 pm.

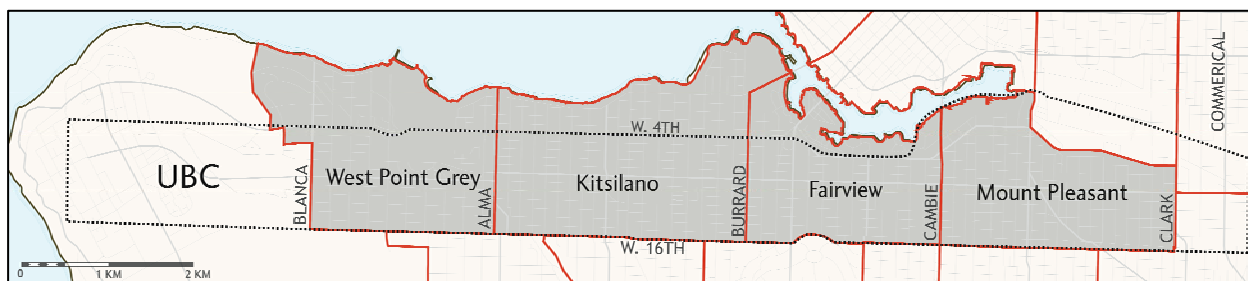
Goods movement is also important. The Broadway Corridor is one of the busiest east-west truck routes in the region. In addition, for east/west travel within the City there is no real alternative for trucks to serve this business areas, with the nearest alternative truck route at 4th Avenue to the north and 41st Avenue to the south. Currently, approximately 1,200 trucks, over 8 percent of all vehicles, pass through Central Broadway during work hours.

4. Broadway Corridor Demographics

The Broadway Corridor includes substantial portions of Vancouver's West Point Grey, Kitsilano, Fairview, and Mount Pleasant local areas, as well as smaller portions of Strathcona, Grandview Woodlands, and Kensington Cedar Cottage. The demographic data provided below for the four main local areas illustrates the diversity of communities along the Corridor.

The data is intended to assist TransLink's UBC Line study team to better identify the characteristics of existing and potential transit riders, and to help tailor the public engagement process for each community. The data is provided for the entire local area rather than only the portions within the study area. The relationship between these two areas is shown in Map 2 below.

Map 2: UBC Line Study Area and Vancouver's Local Areas



Source: Study area boundary - TransLink/SDG; local area boundaries - City of Vancouver.

Detailed demographic data is provided for the following local area communities:

- **West Point Grey:** Located between the University Endowment Lands (UEL) and Alma, with local shopping areas located along 10th Avenue and Alma.
- **Kitsilano:** Stretches from Burrard Street to Alma with local shopping areas along 4th Avenue and Broadway.
- **Fairview:** Bounded by Granville Street and Cambie Street with local shopping on Granville Street, Broadway, and Cambie Street. The Central Broadway job district is located mainly within Fairview.
- **Mount Pleasant:** Generally located between Clark Drive and Cambie Street with local shopping on Main Street, Broadway and Kingsway.

Table 2 below, also provides data for the City of Vancouver and the Metro Region to allow comparison between the Corridor and broader areas.

Table 2. Comparative Demographics: Broadway Corridor Local Areas, Vancouver, and Metro Vancouver (2006 Census)

Community Statistics	West Point Grey	Kitsilano	Fairview	Mount Pleasant	Total: Local Areas in Broadway Corridor	City of Vancouver*	Metro Vancouver
Area of Land							
Hectares	455	551	333	364	1,703	11,467	283,183
Population							
Census Population	12,990	40,595	29,295	23,615	106,495	578,040	2,116,580
Age Groups							
0 to 19 years	21.5%	12.6%	9.4%	13.7%	13.0%	17.9%	22.9%
20 to 39 years	26.0%	45.3%	42.7%	44.8%	42.1%	34.5%	28.5%
40 to 64 years	38.0%	33.1%	34.6%	33.4%	34.2%	34.5%	35.8%
65 years and over	14.4%	9.1%	13.4%	8.2%	10.7%	13.1%	12.8%
Language - Mother Tongue (single response)							
English	71.6%	75.0%	70.5%	62.0%	71.6%	49.1%	57.8%
French	2.8%	3.2%	3.2%	2.2%	3.0%	1.7%	1.2%
Chinese	9.7%	4.5%	8.1%	10.0%	7.5%	25.3%	15.3%
Education (total population 15 years and over)							
High school certificate or equivalent	19.5%	18.0%	18.5%	22.6%	19.3%	23.6%	27.0%
Non-university certificate or diploma	14.6%	20.6%	23.1%	25.3%	21.6%	20.9%	24.7%
University certificate, diploma or degree	58.7%	54.9%	53.0%	37.7%	51.0%	38.7%	31.0%
Mobility							
Population who moved since the last Census (5 years) 2001-2006	37.9%	58.1%	60.3%	59.5%	56.6%	50.2%	47.6%
Households							
One person households	30.6%	46.7%	54.1%	50.9%	48.4%	38.6%	28.4%
Average household size	2.4	1.8	1.6	1.8	1.8	2.2	2.6
Median household income	\$77,079	\$53,455	\$52,458	\$37,782	N/A	\$47,299	\$55,231
Population in low income households	15.7%	21.3%	19.2%	31.7%	22.3%	26.6%	20.8%
Families							
Total number of families	3,525	9,755	6,890	5,010	25,180	145,605	580,120
Children living at home (under 24 years of age)	3,440	5,750	3,065	3,410	15,665	121,815	567,090
Lone parent families	13.7%	13.9%	13.0%	18.6%	14.6%	16.2%	15.2%
Dwellings							
Occupied private dwellings	5,385	22,100	17,395	12,790	57,670	253,385	817,230
Dwellings per hectares	11.8	40.1	52.2	35.1	33.9	22.1	2.9
Rented dwellings	35.6%	56.8%	59.6%	67.2%	58.0%	51.9%	34.9%
Average gross rent**	\$1,114	\$1,041	\$987	\$772	N/A	\$898	\$893

Community Statistics	West Point Grey	Kitsilano	Fairview	Mount Pleasant	Total: Local Areas in Broadway Corridor	City of Vancouver*	Metro Vancouver
Type of dwelling							
Single- or semi-detached house	44.0%	12.9%	1.0%	6.0%	10.7%	20.6%	37.8%
Detached duplex	24.7%	11.5%	0.3%	9.2%	8.8%	16.9%	13.7%
Row house	1.5%	1.8%	3.8%	1.4%	2.3%	3.3%	8.3%
Apartment, under 5 storeys	22.6%	67.6%	67.3%	74.4%	64.8%	34.8%	26.6%
Apartment, 5 or more storeys	7.1%	5.6%	27.0%	8.9%	12.9%	24.2%	12.7%
Labour force							
Employed labour force	6,940	27,160	19,295	14,835	68,230	310,640	1,104,760
Working at home	15.3%	10.8%	10.1%	6.8%	10.2%	8.6%	8.3%
Working in the City, outside the home	49.4%	54.9%	57.3%	55.2%	55.1%	52.6%	33.8%
Unemployment rate	5.1%	4.2%	4.4%	5.5%	4.6%	6.0%	5.6%
Mode of travel to work							
Car, truck, van as driver	58.4%	48.4%	46.5%	40.9%	47.1%	51.5%	67.3%
Car, truck, van as passenger	4.2%	3.9%	3.5%	3.9%	3.8%	6.1%	7.1%
Public transit	17.7%	27.2%	24.0%	36.2%	27.4%	25.1%	16.5%
Walked to work	8.0%	12.0%	20.2%	9.7%	13.4%	12.2%	6.3%
Bicycle	9.6%	7.1%	4.4%	8.3%	6.8%	3.7%	1.7%
Other method	2.1%	1.4%	1.5%	1.0%	1.4%	1.3%	1.1%
Commute distance (straight line, not actual trip length)							
Median distance	5.9 km	4.1 km	2.9 km	3.5 km	N/A	5.0 km	7.4 km
% under 5 km	35%	70%	77%	74%	N/A	56%	36%

Notes:

* The City of Vancouver excludes the Musqueam IR lands, UBC, and UEL but includes Stanley Park.

** Adjusted by Consumer Price Index.

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Appendix C

Stakeholder Groups - Participants in UBC Line Rapid Transit Study - Phase 1

The UBC Line Rapid Transit Study is being led by TransLink and their consultants in two phases. Phase 1 engages stakeholders and Phase 2 includes stakeholders and the general public.

The following table includes a list of corridor (resident groups, community associations, and business groups from the Vancouver segment of the study area) and regional and city-wide stakeholders (Board of Trade, Urban Development Institute, Vancouver Economic Development Commission, etc.) invited to participate in Phase 1 consultation.

As partners in the Study, City staff are actively involved in the consultation process to advance the interests and concerns of Vancouver's businesses, residents, property owners, and other stakeholders and have worked closely with TransLink in developing the stakeholder list.

A similar list has been developed for UBC and UEL and TransLink has initiated discussion with the First Nations.

UBC Rapid Transit Line Study Stakeholders

Corridor Stakeholders	City-wide & Regional Stakeholders
Britannia Community Association	Access Transit Users Advisory Committee
Britannia Community Services Centre	British Columbia Automobile Association
Brock House Society	British Columbia Chamber of Commerce
Business and Residents for Sustainable Transit Alternatives (BARSTA)	British Columbia Trucking Association
Cambie Village Business Improvement Association	Better Environmentally Sound Transportation (BEST)
Cedar Cottage Neighbourhood House	Bicycle Advisory Committee - City of Vancouver
Central Broadway Business Group (emerging)	Building Owners and Managers Association (BOMA)
Commercial Drive Business Society/Business Improvement Association	Business Council of BC
False Creek Community Association	Canadian Federation of Students
False Creek Community Centre	Consulting Engineers of British Columbia
False Creek South Neighbourhood Association	Council of Tourism Associations
Grandview-Woodland Area Council	COUNTERPOINT communications Inc
Granville Island Business & Community Association	David Suzuki Foundation
Great Northern Way Campus	Environmental Youth Alliance (EYA)
Kingsgate Mall Merchants Association	Fraser Basin Council
Kits Point Residents Association (KPRA)	Greater Vancouver Gateway Council
Kitsilano Arbutus Residents Association (KARA)	Harcourt Enterprises Inc.
Kitsilano Chamber of Commerce	Insurance Corporation of British Columbia (ICBC)

Kitsilano Neighbourhood House	International Council of Shopping Centres
Kitsilano War Memorial Community Association	Livable Regional Coalition
Kitsilano War Memorial Community Centre	Lower Mainland Transportation Table
Kitsilano West 4th Avenue Business Improvement Association	Metro Vancouver
Mount Pleasant Business Improvement Association	National Association of Industrial and Office Properties (NAIOP)
Mount Pleasant Community Association	Real Estate Board of Greater Vancouver
Mount Pleasant Community Centre	Smart Growth BC
Mount Pleasant Neighbourhood House	Social Planning and Research Council (SPARC)
North West Point Grey Homeowners Association	Society Promoting Environmental Conservation (SPEC)
Point Grey Village Business Improvement Association	Tourism Vancouver
South Granville Business Improvement Association	UniverCity
South Granville Business Improvement Association	Urban Development Institute
Trout Lake Community Association	Vancouver Area Cycling Association (VACC)
Trout Lake Community Centre	Vancouver Board of Trade
Upper Kitsilano Residents Association	Vancouver Economic Development Commission
Urban Diggers Society	Vancouver School Board (VSB)
Vancouver Community College	
West 4th Avenue Community Association	
West Broadway Business Association (WBBA)	
West Kitsilano Residents Association (WKRA)	
West Point Grey Community Association	
West Point Grey Community Centre	
West Point Grey Community Liaison Group	