



POLICY REPORT

Report Date: April 27, 2018
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Meeting Date: May 16, 2018

TO: Standing Committee on Policy and Strategic Priorities

FROM: General Manager, Engineering Services and the General Manager,
Planning, Urban Design and Sustainability

SUBJECT: Millennium Line Broadway Extension of SkyTrain - Municipal Requirements

RECOMMENDATIONS

- A. THAT Council endorse the Millennium Line Broadway Extension (MLBE), a primarily tunnelled SkyTrain extension under Broadway from VCC-Clark to Arbutus Street, as a key element in helping the City achieve its liveability, transportation and environmental objectives.
- B. THAT, subject to Recommendations E and F, Council authorize the granting of access to City streets and certain City properties to the MLBE project owner or its delegate (the "Project Owner") on terms and conditions consistent with those granted for previous rapid transit projects with such additional or modified terms and conditions as may be required to reflect legal, geographical, and project type differences.
- C. THAT the terms and conditions of access to City streets and certain City properties will be consistent with, and informed by, the following principles, strategies and processes, all of which will be to the satisfaction of the General Manager of Engineering Services, the General Manager of Real Estate and Facilities Management, the General Manager of Planning, Urban Design & Sustainability, the General Manager of Development, Building and Licensing and the Director of Legal Services (the "Authorized City General Manager's"):
 - i. The Station Design and Urban Integration Principles generally in accordance with Appendix A (the "Principles");
 - ii. The Construction Impact Mitigation Strategies generally in accordance with Appendix B (the "Strategies"); and

- iii. A design advisory process (“DAP”) and construction approval process (“CAP”) to be developed by City staff and the Project Owner;

all of which will be consistent with, and informed by, best practices and lessons learned from past rapid transit projects and station upgrades.

- D. THAT Council approve, in principle, amendments to the Noise Control By-law to authorize the Chief License Inspector to approve an exception from the Noise Control By-law for a period greater than 60 days, provided that an acceptable noise mitigation strategy is in place and that Council instruct the Director of Legal Services to bring forward for enactment an amendment to the Noise Control By-law generally in accordance with Appendix D.
- E. THAT the terms and conditions of access to City streets and certain City properties be documented in a written agreement with the Project Owner (the “Municipal Master Agreement”) to be negotiated on behalf of Council by City staff, which terms and conditions will generally be consistent with the Principles, Strategies, DAP and CAP, and all of which will be to the satisfaction of the Authorized City General Managers.
- F. THAT no legal rights or obligations will be created or arise by virtue of Council's approval of Recommendations A, B, C and E unless and until the Municipal Master Agreement has been executed and delivered by the Authorized City General Managers.

REPORT SUMMARY

The Broadway Corridor is a regionally important corridor and rapid transit for Broadway has been prioritized in City and regional plans for over twenty years. In 2014, the Mayors’ Council on Regional Transportation approved a long range transportation Vision (the Mayors’ Council Vision) which included an investment package for the first 10 years. The Vision prioritized rapid transit to UBC to be delivered in two stages. The first stage is the Millennium Line Broadway Extension (MLBE), a primarily tunneled SkyTrain extension under Broadway from VCC-Clark to Arbutus, to be delivered in the first 10 years of the Vision. Following the announcements last month unlocking an estimated \$7 billion of regional, provincial and federal funding, TransLink is now developing the Investment Plan required to implement this next phase of the Vision. Once the Investment Plan is approved, the MLBE project can begin the procurement process later this year.

This report seeks Council endorsement of the MLBE to Arbutus with City staff input on implementation guided by the Station Design and Urban Integration Principles (Principles) and Construction Impact Mitigation Strategies (Strategies) generally in accordance with Appendix A and B respectively.

Like all large, complex projects, the MLBE project will require trade-offs and not every principle or strategy will be possible in every location. However, the Principles will be used to guide City input on important elements both inside and outside of the stations as well as related City activities in the Broadway Corridor (Land Use and Transportation Planning, development reviews, etc.). The Strategies will help to minimise the impacts of construction and will guide the development of construction and traffic management plans for the project.

These Principles and Strategies are the result of past experience on rapid transit projects and have been shaped through consultation and input from 7 City Advisory Committees, three rounds of public consultation and engagement with over 52 stakeholder groups. Summaries on the engagement are included in this report with details on the most recent engagement in March, 2018 in Appendix C.

This report also seeks endorsement of the development of a Design Advisory Process (DAP), a Construction Approval Process (CAP) and an amendment to the Noise Control By-law. Consistent with all development in the City, the DAP process will provide advice to the MLBE project on a range of design and urban integration elements, the CAP process will facilitate project permitting and provide oversight of the project from a building code perspective. Amending the Noise Control By-law to allow a longer than 60 day noise exception, with the approval of a noise mitigation plan will ensure the interests of businesses and residents are met while providing more certainty to the project.

This report further seeks endorsement on granting access of City Streets, Statutory Rights-of-Way and selected City properties to the Project Owner for the MLBE project generally consistent with those granted for past rapid transit projects.

This report will be the guiding framework for staff to work with the Project Owner to create a Municipal Master Agreement that outlines how the City and the Project Owner will work together in delivering the MLBE project. Agreements similar to this that grants access to City streets and certain City properties have been entered into by the City for past rapid transit projects that have been constructed within the City boundaries. The Municipal Master Agreement will generally be consistent with these past agreements subject to such additional or modified terms and conditions as may be required to reflect legal, geographical, and project type differences. Staff are seeking Council authority to negotiate, approve and execute the Municipal Master Agreement on behalf of the City in accordance with the Recommendations. In the event there are terms and conditions in the Municipal Master Agreement that are materially different from the summary provided in this report, staff will report back to Council.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

- 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 other 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, with consideration to Arbutus, as part of the Millennium Line Construction Program, with a rapid bus extension to UBC.
- April 2002: (Vancouver Transit Strategy) Council re-affirmed 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.
- April 2010: Council approved Vancouver's rapid transit principles for the Broadway Corridor to guide staff involvement in the TransLink-led UBC Line Rapid Transit Study. At this time, Council also requested that staff report back at key study milestones including after the development and public review of TransLink's rapid transit alternative shortlist.

- October 2012: Council approved Vancouver's Transportation 2040 Plan which includes "Action T 1.1.1 Work with partners to deliver an underground Millennium Line extension serving the Broadway Corridor as a top regional priority."
- June 2014: Regional Mayors' Council Vision approved including a Millennium Line Broadway Extension of a SkyTrain in a tunnel under Broadway to Arbutus Street.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The City Manager recommends approval of the foregoing.

REPORT

Background/Context

The Broadway Corridor is a regionally important corridor that connects the largest university (UBC) and the largest hospital (Vancouver General Hospital) in Western Canada. In 2011, there were 125,000 people living within the Corridor (including UBC) with a further 70,000 expected by 2045. With more than 105,000 jobs along the Corridor in 2011, Broadway is the second largest job centre in the Province, and a key source of employment for residents throughout Metro Vancouver. The demand for job space in the Corridor is high with roughly 30,000 new jobs anticipated by 2045.

Rapid transit for Broadway has been prioritized in City and regional plans for over twenty years. Two studies led by TransLink and the City and more recently by TransLink and the Province with the City as a partner agency, have explored rapid transit options for the Corridor and both concluded that a SkyTrain extension is the right choice for Broadway. The latest study, the UBC Line Rapid Transit Study, found that a SkyTrain extension to UBC was the highest performing alternative. In 2014, the Mayors' Council on Regional Transportation approved "Transportation Investments: A Vision for Metro Vancouver" which prioritized rapid transit to UBC to be delivered in two stages, the first of which is the Millennium Line Broadway Extension (MLBE) – a primarily tunneled SkyTrain extension under Broadway from VCC-Clark to Arbutus Street - to be delivered within the next ten years. The MLBE to Arbutus will provide significantly decreased travel time and increased reliability to transit users, support economic growth, offer significant benefits to the existing rapid transit network, reduce greenhouse gas emissions and improve affordability for residents around Metro Vancouver. The MLBE to Arbutus is key to the City achieving its liveability, transportation and environmental objectives.

In the past two months a series of announcements were made by the Metro Vancouver Mayors', the Provincial and the Federal governments, unlocking an estimated \$7 billion of regional, provincial and federal funding to fund the next phase of the 10 year Vision. As required to implement this next phase, TransLink is currently developing an Investment Plan, which will be taken for public consultation in late May and approval by the Mayors' Council and TransLink Board in late June. Once approved, the MLBE project can begin the procurement process with the release of the RFQ anticipated later this year.

Since 2016, TransLink has been leading procurement readiness activities for the MLBE project, in partnership with the City and the Province. It has not yet been determined if TransLink or the Province will be the Project Owner for the MLBE project. A decision on the Project Owner is expected in the coming months, in conjunction with the completion of project funding approvals. Regardless of the Project Owner, TransLink will be responsible for the operation of the Project following construction.

The City of Vancouver has been involved in past rapid transit project implementations within the City and has gained valuable experience with rapid transit implementation over the years. This experience led to Council passing a motion opposing cut and cover construction for the completion of the Millennium Line through commercial, congested or confined rights-of-way. This report seeks Council endorsement to guide staff through the implementation of the MLBE project including ways to protect business and resident interests while supporting project delivery.

Strategic Analysis

Through the implementation of the Expo, Millennium and Canada Line SkyTrain projects and station upgrade projects such as Main Street-Science World, Joyce-Collingwood and Commercial-Broadway, the City has gained valuable experience with how it can most effectively add value to rapid transit projects within the city boundaries. The key elements can be grouped into three categories including Station Design and Urban Integration Principles, Construction Impact Mitigation Strategies and Regulatory Review. These areas are discussed below.

Station Design and Urban Integration Principles

The Station Design and Urban Integration Principles (Principles) are intended to guide City advice and input on the integration of project infrastructure, particularly stations on public and private lands. The introduction of SkyTrain stations and guideway elements can create a significant presence within the urban environment. The principles will provide project guidance and support to help ensure good design and that project infrastructure is well integrated into the urban environment. These Principles were developed through the consultation process outlined within this report and are generally in accordance with Appendix A.

Construction Impact Mitigation Strategies

The City has gained valuable experience through the implementation of past rapid transit projects to manage construction impacts as well as through the establishment of the City's Engineering Project Management Office to better coordinate major infrastructure projects within the City. These learnings have been consolidated into a set of Construction Impact Mitigation Strategies to guide the development of construction and traffic management plans for the project. These strategies were refined through the consultation process outlined in this report and are generally in accordance with Appendix B. We expect these strategies to evolve as we learn more about the project, construction methods and speak with residents, businesses and stakeholders in the Corridor. One key aspect to reduce construction impacts in the corridor is by using a tunnel boring machine for the tunnel construction which allows the majority of the project to be built underground limiting surface impacts to areas around stations. In these areas staff will work with businesses to provide certainty on duration, maintain access and develop strategies to minimise dust.

Regulatory Review

The City is responsible for ensuring input and advice to the MLBE project represents the interests of its businesses and residents. As a regulatory agency, the City also has a role in helping to provide certainty to the Project Owner in the timing of the input and review process to reduce project risks. The following provides a summary of three regulatory areas where the City can support the project.

Design Advisory Process (DAP)

The City and TransLink have established a Design Approval Process (DAP) for past rapid transit infrastructure projects including the Expo Line, Millennium Line, Canada Line, Faregate installation and station upgrades. The DAP has been refined over time and will be used as the basis for the process to be used for the MLBE project. The DAP is a modified development review process designed specifically for large scale rapid transit projects. The process was created for the City to provide advice on rapid transit infrastructure, particularly stations, while providing the Project with timing and process certainty. The process involves City staff, the project team and the contractor working together and includes opportunities for review by the Urban Design Panel, Development Permit Board, as well as the public. City staff will work with the Project Owner to develop a mutually acceptable Design Advisory Process (DAP) based on lessons learned, current best practices and the specific needs of the MLBE project.

Construction Approval Process (CAP)

To achieve a level of design and construction review consistent with that intended by the municipal permitting process and building on previous rapid transit projects and station upgrades, a Construction Approval Process (CAP) will be developed with the Project Owner of the MLBE. It is expected that the process could be similar to City's Certified Professional (CP) program and will cover design review, appropriate permits and inspections. This process would also outline how the project would undertake reviews, approvals and inspections related to fire/life safety and the assurance of public safety and security.

Amendments to the Noise Control By-law

The Broadway Corridor is a busy transportation corridor that is part of the regional Major Road Network, has over 110,000 bus passengers, and is a significant City truck route. Although the tunnel is anticipated to be constructed as a bored tunnel, the station areas will be challenging to construct while maintaining bus and truck access without construction occurring outside the time permitted by the Noise Control By-law. To provide more certainty to the contractor while still looking after the interests of nearby residents, City staff are proposing an amendment to the Noise Control By-law.

In other jurisdictions, where projects require night work to maintain traffic flow during the day, authorities authorize exceptions from a noise by-law for longer durations, subject to the submittal of a detailed noise mitigation strategy. Noise mitigation strategies could include items such as:

- Scheduling noisy work such as piling or saw cutting to happen during the day;
- Training workers to decrease noise;
- Engaging an independent noise monitoring consultant to monitor and report on compliance with agreed upon noise levels on a monthly basis;
- Installing noise reduction measures;
- A contact person that is available 24 hours during active construction; and
- Using video display noise monitors to indicate noise levels and compliance.

The Noise Control By-law currently allows the Director of Licences and Inspections to approve exceptions for up to 60 days. To allow for flexibility in the duration of noise exceptions for the MLBE project as well as other potential major projects, staff propose extending the duration of exceptions up to 180 days, subject to an acceptable noise mitigation strategy. It is

recommended that this exception is revocable if the applicant is in contravention of its proposed noise mitigation strategy. Staff is also proposing to change the reference in the Noise Control By-law from the Director of Licences and Inspections to the Chief Licence Inspector, in order to better reflect the current organization of the City. The proposed amendments to the Noise Control By-law are to be generally in accordance with Appendix D.

Public Engagement

City staff collaborated with the TransLink MLBE project team to co-host two rounds of public engagement in 2017 to provide information to the public and to get input on station design features as well as strategies to minimise disruption during construction. Key themes heard throughout this engagement include:

- extension of the line to UBC;
- customer bathrooms;
- accessibility features in the stations such as up and down escalators, right sized elevators, etc.;
- multiple station entrances;
- minimizing impacts of the Arbutus terminus station bus exchange; and
- managing project construction differently than the Canada Line.

Based on previous experiences with rapid transit projects in the City and the results of this engagement, City staff drafted a series of Station Design and Urban Integration Principles and Construction Impact Mitigation Strategies. This is consistent with previous rapid transit projects whereby the City has prepared project integration principles and construction impact mitigation strategies.

Through the fall of 2017 and early 2018, the City engaged with seven of the City's advisory committees including;

- Persons with Disabilities Advisory Committee;
- Seniors Advisory Committee;
- Children, Youth and Families Advisory Committee;
- Urban Indigenous Peoples' Advisory Committee;
- Women's Advisory Committee;
- Active Transportation Policy Council; and
- Vancouver City Planning Commission.

Staff also met with two multi stakeholder groups: the Transportation 2040 group initially established for the development of the City's Transportation Plan, and the Business and Community Advisory Group which was set up to provide advice to the MLBE project. The interaction with these advisory and stakeholder groups was key to refining the draft Principles and Strategies prior to presenting to the public. Support was generally high among the advisory and stakeholder groups and the process to work with them was well received. Key interests of the advisory committees and stakeholder groups related to:

- features contributing towards universal accessibility and age friendly design such as provision of customer bathrooms, efficient design of escalators/elevators suitable for all users and mobility aids and weather protected benches both inside and outside stations,
- intermodal connectivity,
- connections to Vancouver General Hospital and minimizing impacts to the hospital during construction,
- how the project can contribute towards the City's goals of reconciliation,

- strategies that generate excitement during construction and activate areas affected by construction, and
- a desire for strong, proactive communications and engagement with those affected during construction.

In March 2018, City staff sought public feedback on the draft Principles and Strategies at two public open houses and through an online questionnaire. The feedback received through this engagement process found a high level of support for the Principles and Strategies (between 86-90%) and helped refine the final draft Principles and Strategies proposed in Appendices A and B of this report. A summary of the engagement process that contributed towards these Principles and Strategies can be found in the table below. A consultation summary report with details on the most recent engagement in March 2018 is provided in Appendix C.

Table 1: Summary of # of People Engaged for MLBE Principles and Strategies Development

Date	Events	People
January 2017	MLBE Phase 1 Engagement – 3 Open Houses	400
January 2017	Questionnaire for Phase 1 Engagement – Online and at Open Houses	4,199
June 2017	MLBE Phase 2 Engagement – 3 Open Houses	875
June 2017	Questionnaire for Phase 2 Engagement – Online and at Open Houses	3,050
Fall 2017/ Winter 2018	Advisory Group Meetings – 14 meetings	139
Fall 2017/ Winter 2018	Stakeholder Meetings – 4 meetings	58
March 2018	City Engagement on Principles/Strategies – 2 Open Houses	409
March 2018	Questionnaire on Principles/Strategies – Online and at Open Houses	2,033
Total People Engaged		11,163

Municipal Master Agreement and Next Steps

This report will provide a framework to guide staff in the development and negotiation of the Municipal Master Agreement with the Project Owner. Like all large, complex infrastructure projects, the MLBE project will require trade-offs and not every principle or strategy will be possible in every location. The Municipal Master Agreement will outline, among other things, how the City will provide access to its properties and Statutory Rights-of-Way to the Project Owner, how the City will participate in and support the project and how the review processes will work. Agreements similar to this have been entered into by the City for past rapid transit projects that have been constructed within the City boundaries. The Municipal Master Agreement will generally be consistent with these past agreements subject to such additional or modified terms and conditions as may be required to reflect legal, geographical, and project type differences.

Similar to previous rapid transit projects, the alignment and stations of the MLBE are within existing street rights-of-way wherever possible. Over the years, the City has strategically acquired properties and Statutory Rights-of-Way for station elements and to facilitate construction. The terms and conditions for use of City lands for the Project will generally be similar to previous projects with additions or modifications as may be required to reflect the current project.

In addition to the Municipal Master Agreement, City and TransLink staff have come to an agreement in principle on the proposed terms of a Supportive Policies Agreement (SPA). The SPA is a new requirement of all new major capital investments in the region that was introduced in the Mayors' Council Vision in 2014. This agreement is intended to support the MLBE through land use and transportation policies, actions and investments. The City is well positioned to meet the objectives contemplated in the draft SPA with population and employment densities along the Broadway Corridor that already support rapid transit. The draft SPA is generally consistent with existing plans and policies already approved by Council as well as current or future planning programs such as Broadway Corridor Planning.

Supportive of the SPA, a comprehensive Broadway Corridor Plan provides an opportunity to maximize the benefit of the new MLBE and secure additional job space, housing with a focus on affordability, place making, strengthening local business, improving access and connectivity and providing the appropriate amenities to support this growth. The planning process is a key opportunity to accommodate new growth on rapid transit, supporting Greenest City and Transportation 2040 objectives to increase sustainable transportation options. A Terms of Reference for the Broadway Corridor Plan process is expected mid-2018 for Council's consideration.

The SPA must be completed and entered into by the City and Translink prior to the approval of Translink's 10 Year Investment Plan in late June. Since the SPA reflects policies, actions and investments that have already been approved by Council, staff are not seeking Council approval of the SPA.

Public/Civic Agency Input

Comments from TransLink on Principles and Strategies

The Principles and Strategies were independently developed by the City. TransLink shares the City's objectives in delivering a high quality rapid transit project that serves transit customers, City residents and businesses, and the region, while managing impacts to residents and businesses during the construction phase.

TransLink has reviewed the draft Principles and Strategies, and provided detailed comments and input with respect to TransLink's policies, standards, and operational practices, as well as from the perspective of the MLBE project scope, schedule, and budget. TransLink has commented that it is not currently in a position to commit on behalf of the Project with respect to some of the principles and strategies, in particular where they relate to decisions regarding design or project risk allocation that have not been finalized or are to be determined by the Project Owner and/or design-build contractor. TransLink is broadly supportive of the Principles and Strategies that relate to:

- Design of the project to accommodate a future project to connect rapid transit to UBC;
- Design of stations to be user-friendly, safe, and comfortable;
- Configuration of the Arbutus bus exchange to integrate with the local neighbourhood and to ensure safe and efficient transit operations;
- Integration of system infrastructure into the urban realm in a seamless manner, as much as possible within project budget and schedule;
- Ease of multimodal access to and from MLBE station;
- Support for bus transit operations during the construction period; and

- Importance of business access during construction.

TransLink has indicated that the Project would consider project enhancements, provided that additional costs for enhancements are borne by the City or a third party and do not negatively impact the project schedule or introduce significant risks.

Implications/Related Issues/Risk

Financial

As owner and operator of the MLBE project, TransLink and/or the Province will be responsible for the design, construction, financing, operation and maintenance of the rapid transit system. As a project partner, the City will be making properties and secured statutory right of ways available for transit infrastructure with access rights identified through the Municipal Master Agreement. In the event that the City requires enhanced service standards and/or capacity for our infrastructure and utilities beyond the MLBE project scope, such costs will be borne by the City and funding will be sought as part of capital plan and budget processes.

Legal

In accordance with the Recommendations, this report will be used to guide staff in the development and negotiation of the Municipal Master Agreement to the satisfaction of the Authorized City General Managers. Once this is achieved, the Authorized City General Managers will execute the Municipal Master Agreement. In the event there are terms and conditions in the Municipal Master Agreement that are materially different from the summary provided in this report, staff will report back to Council.

Upon Council approving, in principle, the proposed amendments to the Noise Control By-law generally in accordance with Appendix D, the Director of Legal Services will bring forward for enactment an amendment to the Noise Control By-law generally in accordance with the proposed amendments set out in Appendix D.

CONCLUSION

The MLBE project is the top transportation priority for the City and has the ability to help further goals in areas such as housing, affordability, jobs, amenities and environmental targets. This report outlines ways that the City can support the project while also improving the integration with the public realm and minimising construction impacts. The elements of this report will help to guide the development and negotiation of the Municipal Master Agreement with the Project Owner, similar to agreements entered into by the City in relation to past rapid transit projects constructed within the City of Vancouver. Public engagement has shown strong support for the project. Endorsement of Recommendations in this report will help to ensure a successful project and help staff to guide the Project Owner in the design and construction of the MLBE.

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STATION DESIGN AND URBAN INTEGRATION PRINCIPLES

The following principles focus on the MLBE station design and how the MLBE project will integrate into the surrounding neighbourhoods and transportation network. There are twelve high level principles grouped into three categories:

- System-Wide Principles - relate to the entire MLBE project
- Comfort and Accessibility Principles - relate to achieving a user friendly and accessible extension
- Urban Integration Principles - relate to how the stations and system infrastructure will fit within the surrounding city.

The high level principles are numbered and include a number of more specific lettered principles that demonstrate how the high level principle will be achieved.

SYSTEM-WIDE PRINCIPLES

1. **Support reconciliation.** That consideration be given to how the Broadway Extension can support the City's goals of reconciliation with the Musqueam, Squamish and Tsleil-Waututh Nations: (1) Strengthen local First Nations and Urban Indigenous relations; (2) Promote Indigenous peoples arts, culture, awareness, and understanding; (3) Incorporate First Nations and Urban Indigenous perspectives for effective City services.
 - a. That a Statement of Significance and Archaeological Assessment be completed at the outset of the Broadway Extension and future Broadway Corridor planning programs to establish heritage values, historic places, and places of low, medium or high archaeological potential and risk. The themes and values identified can be used to inform station design and opportunities for public art. (also contributes towards Principles #8 and #10)
 - b. That the City of Vancouver is a City of Reconciliation-and encourages TransLink to invite Musqueam, Squamish and Tsleil-Waututh Nations to incorporate Indigenous naming for stations (where of MST First Nations' interest, as well as supported by the Statement of Significance) that would supplement TransLink's station name and recognize the rich history and cultural heritage of the local Nations.
2. **Design for long-term flexibility and resilience.** That the system and all stations are designed for long-term needs, expansion, sustainability and resiliency to effects of climate change and natural shocks such as floods and earthquakes.
 - a. That the system and all structures be designed for durability and resiliency for major seismic events.
 - b. That SkyTrain service access and operational staff parking be located off-street and avoid impacting the public realm whenever possible. (also contributes towards Principle #9)
 - c. That the Broadway Extension be designed to allow for a future Millennium Line extension west to UBC with minimal impacts to Millennium Line services. (also contributes towards Principle #7)
 - d. That the Broadway Extension system should be designed to be consistent with the ultimate capacity of the existing Millennium Line. Station elements (platforms, elevators, escalators, emergency exits...) should either be sized for

- the long term needs on opening day or allow for future expansion of station elements with minimal impacts on transit operations and passengers. Emergency exit capacity must be based on full trains operating at their maximum length and at minimum headways (i.e. highest frequency).
- e. That the public realm is designed and built at a high quality using enduring and attractive materials and furniture. The design of the public realm at the Cambie Station should consider its significance as a major transfer point as well as the centre of the civic and medical precinct. (also contributes towards Principle #12)
 - f. That any trees removed for the MLBE project should be replaced whenever feasible with the goal of maximizing the tree canopy around stations (also contributes towards Principle #10).
 - g. That the Broadway Extension team work with the City's Green Infrastructure group towards designing stations in consideration of the City's Integrated Rainwater Management Plan.
 - h. That the Broadway Extension team work with the City's Transportation Division and the Planning Department towards designing the public realm to protect for Complete Street design options on Broadway.
 - i. That the Broadway Extension be designed to high environmental standards and consider participating in the Envision sustainable infrastructure accreditation program.
3. **Provide flex space onboard trains.** That the City would like TransLink to provide at least as much flexible space onboard trains as their most recently purchased SkyTrain vehicles to accommodate people with wheelchairs of all sizes, mobility aids, bikes, strollers and larger personal items. The City recognizes that many older vehicles will be operating on the Broadway Extension that do not have the same design flexibility. (also contributes towards Principle #4)

COMFORT AND ACCESSIBILITY PRINCIPLES

4. **Design for accessibility.** That the system and all stations are designed to be age friendly and with the goal of universal accessibility for all transit users including vulnerable populations.
- a. That the system and all stations are designed with the goal of universal accessibility for all transit users in accordance with TransLink's Transit Passenger Facility Design Guidelines and any accessibility features introduced since the guidelines were developed. This includes seating on platforms and other locations in stations, up and down escalators, sufficient elevator capacity for long-term needs and RFID (Radio Frequency Identification) faregates for people who are unable to use fare card media.
 - b. That elevators are designed to optimize the accessibility of each station. This should include minimizing the number of elevator trips required to travel between the platform and the street. Elevators should be sufficiently sized to accommodate all users (people with all sizes of wheelchairs, other mobility aids, stroller, bikes...) with the preferred design allowing for a single direction of travel (i.e. in one door, out the opposite door). Multiple elevators are preferred at all stations to allow for redundancy. (also contributes towards Principles #2 and #5)

- c. That areas where HandyDART, taxi and pickup/drop-off activity can occur should be located as close to the station as possible, avoiding grades, while also providing safe access to curb drops. Weather protected areas should be considered near these zones that includes space for wheelchairs as well as seating. (also contributes towards Principles #2 and #11)
 - d. That station designs should be analyzed considering the specific needs of vulnerable populations including but not limited to people with a wide range of physical or cognitive disabilities, seniors, women and children (also contributes towards Principles #2 and #5).
 - e. That fire and other emergency warning devices should consider the specific needs of all transit users, including individuals who are deaf or hard-of-hearing.
5. **Design to be user-friendly, safe and comfortable.** That the system and all stations are designed to be intuitive, easy and comfortable to navigate, welcoming and foster feelings of safety and security.
 - a. That Broadway Extension station entries are designed to be immediately recognizable as a rapid transit station in accordance with TransLink's wayfinding standards. (also contributes towards Principle #11)
 - b. That all stations should be identifiable at platform level to assist transit wayfinding.
 - c. That all stations be designed to CPTED (Crime Prevention Through Environmental Design) principles to promote feelings of safety and comfort in accordance with TransLink's Transit Passenger Facility Design Guidelines. This would include adequate lighting and designing for clear sightlines at grade and below grade.
 - d. That stations and station wayfinding are designed to be useful to people with a wide range of visual and cognitive abilities and to integrate with the existing and planned City of Vancouver pedestrian and cyclist wayfinding systems. (also contributes towards Principles #4 and #11)
6. **Provide universally accessible customer washrooms.** That the City believes that the Broadway Extension should provide universally accessible customer washrooms to begin operations on opening day that are suitable for all sized power wheelchairs and other mobility devices as well as all gender identities. (also contributes towards Principles #4 and #5)

URBAN INTEGRATION PRINCIPLES

7. **Minimize impact of Arbutus exchange.** That impacts of the Arbutus bus exchange are minimized on the local neighbourhoods, including locating bus layover, turnaround and passenger queueing/waiting areas off street right-of-way as much as possible. (also contributes towards Principles #5, #10 and #11)
8. **That public art be considered at all stations,** including opportunities to use public art to increase visual appeal of at grade system structures or fencing. Individual station designs (entrances and below grade elements) should explore opportunities to integrate public art that considers the unique features of the neighbourhood. (also contributes towards Principle #10)

9. **Design for future flexibility.** That the system and stations be designed in a manner to allow for flexibility for future underground pedestrian connections and integration with nearby developments.
 - a. That stations and related system structures should be designed to allow for overbuild and integration into current and future developments whenever feasible. (also contributes towards Principles #10 and #12)
 - b. That the Broadway Extension work with the City of Vancouver towards full integration of the Cambie Station with a future City of Vancouver campus on the block bounded by Cambie, Yukon, West 10th Avenue and West Broadway. (also contributes towards Principles #10 and #12)
 - c. That the Broadway Extension work with the owner of Lot 7 of the Great Northern Way Structure Plan when designing and building the Great Northern Way Station head house (entry building) and underground elements to allow for overbuild of station head house or integration into a concurrent or future development. (also contributes towards Principle #10)
 - d. That the Broadway Extension work with stakeholders in the Vancouver General Hospital area to explore the possibility of an accessible underground connection between the future Oak Street Station and Vancouver General Hospital campus. (also contributes towards Principles #4, #5 and #11)
 - e. That City staff should seek opportunities with new developments for underground connections to the MLBE (e.g. emergency exits, additional entrances, direct connections, etc.)

10. **Integrate seamlessly into the corridor.** That the system infrastructure, stations and plazas (when present) be designed to integrate seamlessly into and maintain the heritage features of the corridor and provide sufficient space for waiting, queueing, pedestrian movement, future connections, business access, weather protection and street furniture.
 - a. That emergency exits be located off the street right-of-way and integrated into an adjacent building or development whenever feasible. If integration is not possible on opening day, emergency exits should be designed to allow for the integration into a future development. (also contributes towards Principle #9)
 - b. That whenever possible, Broadway Extension stations should use statutory rights-of-way secured by the City for emergency exits or additional entrances.
 - c. That the City will work with TransLink towards providing Commercial Retail Units (CRUs) at some or all stations. (also contributes towards Principle #5)
 - d. That the elevated structure and tunnel portal north of Great Northern Way is designed to increase visual appeal, consider creative treatments that reflect the users of the area, seek opportunities to retain existing street uses under the guideway (e.g. parking, pedestrian and cycling uses) and avoid creating barriers to existing or future movement patterns.
 - e. That all Power Propulsion Substation (PPS) and other system structures should be located to minimize their visual impact exploring options to locate them underground or above grade. If some structures have to be located at grade (e.g. Automatic Assured Receptivity Unit (AARU), the location and treatment of these structures should be determined with City staff. (also contributes towards Principles #2 and #9)
 - f. That Broadway Extension station head houses and surrounding public spaces are designed considering existing and emerging City of Vancouver urban design guidelines, Complete Streets Policy Framework, Design Criteria Manual and

best practices and provide sufficient space for waiting, queuing, pedestrian movement, business access, shelters, weather protection and street furniture (garbage receptacles, benches). (also contributes towards Principles #5 and #11)

- g. That impacts to buildings on the Vancouver Heritage Register along the Broadway Extension be minimized or avoided.
 - h. That the Broadway Extension work with major landowners and stakeholders in the corridor with sensitive medical or scientific equipment (e.g. Vancouver General Hospital, Discovery Parks) when designing and building the Broadway Extension.
 - i. That noise mitigation strategies for noisier elements of the elevated guideway (e.g. switches, corners) are implemented that consider current and future development patterns.
11. **Design for efficient movement to, from and around the station.** That the station plazas and surrounding public realm are designed to allow for efficient, intuitive and comfortable transfers between the Broadway Extension and other transit services as well as other modes of travel (walking, cycling, motor vehicles, car share).
- a. That vents in sidewalks should be strategically located to ensure adequate sidewalk capacity is provided for universal accessibility and located to avoid conflicts with bus stops, seating, and queuing areas. In locations where vents are challenging to locate without impacting sidewalk capacity, consideration should be given to integrating vents and related ducts into buildings while minimizing the amount of building frontage affected by the ducts. (also contributes towards Principles #4, #9 and #10)
 - b. That stations be designed for maximum integration into the city's pedestrian, cycling and transit networks, as well as the communities they will serve. (also contributes towards Principle #10)
 - c. That station entrances are located to provide the most direct, safe and comfortable connections possible between transit modes. The connection between the Broadway Extension and the Canada Line should be underground. (also contributes towards Principle #10)
 - d. That the Broadway Extension be designed to accommodate bicycles in stations and in flex space onboard trains that can be used for bikes, strollers or luggage as well. Consider runnels for stairs which could reduce the use of elevators by people with bicycles. Whenever possible at stations, provide secured, enclosed, easily accessed bicycle parking facilities, bike racks, and sufficient space at grade for Public Bike Share stations. (also contributes towards Principle #3)
 - e. Consideration be given to car share and future mobility options when allocating curb space (also contributes towards Principle #2).
12. **Recognize significance of Cambie Station.** That Cambie Station be given special consideration due to the significance of the site as a major transportation hub and centre of a civic and medical precinct including considering opportunities for the City or another party to provide additional station entrances.
- a. That consideration be given to additional entrances at Cambie Street Station due to the significance of the site (major transfer point, future City of Vancouver campus), to reduce pedestrian movements at grade and to allow flexibility to upgrade the existing entrance during construction of the future

City Hall campus with minimal impacts to transit operations and passengers.
(also contributes towards Principles #2, #9 and #11)

CONSTRUCTION IMPACT MITIGATION STRATEGIES

The following strategies focus on minimizing the impacts of construction of the MLBE project. There are twelve high level strategies grouped into three categories:

- Strategies Supporting Local Interests - aim to minimize the impacts on local businesses, residents, services and stakeholders
- Transportation Related Strategies - aim to minimize the impacts on the various modes of transportation
- Engagement and Communications Strategies - aim to develop proactive and useful communications and engagement during construction.

The high level strategies are numbered and include a number of more specific lettered strategies that demonstrate how the high level principle will be achieved.

STRATEGIES SUPPORTING LOCAL INTERESTS

1. **Support business viability** throughout construction including maintaining business access and the establishment of a business and community liaison office at least one year prior to construction.
 - a. Establish a business and community liaison committee to manage the impact of construction at least one year prior to the beginning of construction. (also contributes towards Strategy #11)
 - i. Include members that represent residents and business interests in the Corridor as well as senior management at the City of Vancouver, TransLink and the Broadway Extension Office. (also contributes towards Strategy #11)
 - ii. While funded by the Project the committee should remain independent in budgetary decision making and allocation of business support spending.
 - iii. Include business support such as marketing plans, retail consultants, funding for events, loyalty programs, contests, wayfinding, etc....
 - iv. Provide a single point of contact for businesses and residents with concerns about construction impacts including detours to the pedestrian, cycling, transit and road networks. (also contributes towards Strategy #11)
 - b. Maintain business visibility and access for customers throughout construction. (also contributes towards Strategy #9)
 - c. Consider relaxations of City sign regulations during construction to retain business visibility and promote businesses most affected by construction.
2. **Minimize the impacts of noise, dust and vibration** during construction on local residents, businesses, services and stakeholders.
 - a. Minimize and manage dust during construction by considering interventions such as watering construction sites, covering exposed soils, constructing wind barriers and/or other measures.
 - b. Manage and minimize vibration during construction by monitoring vibrations before and during construction and seek ways to minimize impacts of vibration during construction using appropriate measures.

- c. Coordinate when (time of day) construction happens to reduce noise and traffic impacts on business and the community whenever possible. (also contributes towards Strategy #11)

TRANSPORTATION RELATED STRATEGIES

3. **Construction mitigation strategies should consider the City's "hierarchy of modes"** as approved in Transportation 2040. Generally, the priority of modes should be (in order of priority) walking, cycling, transit, taxi/commercial transit/shared vehicles, private automobiles.
4. **Minimize impacts on pedestrians** during construction by minimizing pedestrian detours that cross roads and ensuring all detours are accessible, safe, comfortable and predictable.
 - a. Minimize pedestrian detours that have to cross roads and ensure they are well marked with high contrast for visually impaired people, accessible, comfortable and predictable. Particular attention should be paid to ensuring safe temporary crossings near schools in the corridor.
 - b. Ensure pedestrian safety and security around construction zones by achieving direct sightlines and adequate light around detours. Additional lighting and security may be required.
 - c. Ensure construction hoarding does not impact the visibility of pedestrians crossing the street.
5. **Minimize impacts on cyclists.** Ensure bike route detours use alternate routes that are easy to use and at least the same level of comfort and protection as the existing route. This may require temporary or permanent upgrades to alternate routes. The City should consider fast tracking cycling network improvements that can aid in protecting cyclists during Broadway Extension construction.
6. **Prioritize Broadway bus services and minimize detours.** The City should prioritize bus services primarily operating on Broadway (#9, 99 B-Line) through transit priority measures and TransLink should minimize bus detours and monitor bus services in the broader corridor throughout construction.
 - a. Prioritize Broadway transit service by continuing peak hour bus lanes and consider off peak transportation measures such as bus lanes as queue jumpers for areas experiencing congestion.
 - b. Ensure bus services that are entirely focussed on Broadway (#9 and #99) continue to operate on Broadway, even during times of greater lane reductions.
 - c. Minimize bus route detours and avoid using local streets. Maintain predictable transit routes and bus stops by timing route changes to TransLink's regular quarterly service changes. (also contributes towards Strategy #12)
 - d. Monitor bus service performance on Broadway and the diversion of bus ridership onto parallel bus routes and adjust service as needed.
7. **Ensure accessibility of transit services during construction** and minimize impacts to HandyDART services within the corridor.
 - a. Ensure all bus services and stops, both permanent and temporary, are accessible during construction. (also contributes toward Strategy #6)

- b. Ensure HandyDART vehicles can provide safe access for passengers throughout construction.
- 8. Maintain traffic flow as much as possible.** Encourage alternate driving routes for through traffic during construction and maintain sufficient travel lanes on Broadway for the busiest parts of the day to ensure efficient movement of vehicles, buses and goods.
- a. Minimize impacts to traffic flow and access on Broadway by maintaining at least four travel lanes (2 in each direction) whenever possible for the busiest parts of the day and at least two travel lanes (one in each direction) at all times. Consideration can be given to maintaining fewer lanes of traffic if it is not physically possible to do safely or sufficient analysis is done to assess the ability to continue to move people, goods and transit vehicles along Broadway and a clear benefit to the businesses and residents results (i.e. shorter construction duration, less noise at certain times of day) (also contributes towards Strategy #6)
 - b. Maintain Broadway's function as a truck route.
 - c. Review adjacent traffic routes to improve reliability and efficiency and minimize traffic using short cuts on local streets and laneways. Monitor traffic volumes on local streets and laneways and consider temporary measures to decrease traffic volumes as necessary.
- 9. Manage needs of many stakeholders.** Manage loading, parking, access and emergency services needs during construction to balance the needs of residents, businesses, services, stakeholders and the Broadway Extension project.
- a. Coordinate with businesses to ensure access to loading and parking throughout construction, particularly for areas with reduced or removed on street parking. (also contributes towards Strategies #1 and #11)
 - b. Review existing parking restrictions and enforcement on nearby local streets to minimize impacts to neighbourhood parking.
 - c. Provide signage to direct people to key destinations such as Vancouver General Hospital, BC Cancer Agency, and off-street parking opportunities.
 - d. Work with emergency services (fire, ambulance, police) to ensure adequate access during construction. The Broadway Extension should work towards the goal of zero impact on emergency vehicle access to and from Vancouver General Hospital.
- 10. Coordinate with other developments and projects.** Ensure coordination of Broadway Extension construction with other developments and projects in the corridor including development of traffic management plans that are approved, monitored and adjusted when needed by dedicated staff.
- a. Ensure traffic management plans considering pedestrian, bicycle and vehicle movements are approved and monitored by dedicated staff who respond to traffic issues as they arise by adapting plans. Consideration of plans should extend beyond the areas immediately affected by construction.
 - b. Coordinate construction of the Broadway Extension with other developments and projects in the Corridor to minimize overall impacts.

ENGAGEMENT AND COMMUNICATIONS STRATEGIES

11. **Engage with those most affected.** Ensure that construction methods, mitigation and transportation demand management strategies are developed by engaging with the residents, businesses, services and stakeholders most affected by construction.
 - a. Ensure that trade-offs related to construction method decisions such as level of noise, traffic impacts, and time of day of construction involve engagement with those most impacted.
 - b. Work with residents, business owners, City advisory groups such as the Persons with Disabilities and Seniors Advisory Groups, and stakeholders in the community to share information early and often.
 - c. Promote alternative travel choices during construction (e.g. Travel Smart program). (also contributes towards Strategy #12)
 - d. Minimize interruptions to utilities and services for residents and businesses throughout the construction period. When interruptions are required, sufficient notification must be provided.

12. **Communicate upcoming impacts.** Use positive and proactive communication of upcoming construction activities.
 - a. Use proactive, positive communications on websites, social media, radio, and signage to provide advance warning of traffic changes. This should include TransLink's existing notifications for their quarterly service changes to alert of detours and bus stop changes as well as the City's Road Ahead notifications.
 - b. Project and City communications staff should work with local media outlets to encourage positive reporting of detours and traffic impacts.

City of Vancouver Station Design and Urban Integration Principles and Construction Impact Mitigation Strategies Engagement Summary

The purpose of this report is to provide a summary of the engagement process for the City's draft Station Design and Urban Integration Principles and Construction Impact Mitigation Strategies (Principles and Strategies), which will be considered for the design and construction of the Millennium Line Broadway Extension (Broadway Extension) as well as City activities related to the project.

Project Context and Goals

Like all large, complex projects, the Broadway Extension project will require trade-offs and not every principle or strategy will be possible in every location. However, the Council approved Principles and Strategies will identify the goals that the City will endeavour to achieve through the Broadway Extension project and related City activities and guide City staff in:

- The development of the Master Agreement between Broadway Extension project (TransLink) and the City of Vancouver, which is a key input to the creation of the Project Agreement between TransLink and the contractor that designs and builds the Broadway Extension.
- The review of final designs and construction methods for the Broadway Extension project.
- Future land use and transportation planning in the Broadway Corridor as well as development reviews close to the future stations.

Process

The Principles and Strategies were developed from past experience with rapid transit projects in the City of Vancouver and from feedback received from the following Broadway Extension events co-hosted with TransLink:

- 6 public open house events (January 2017, June 2017)
- 26 stakeholder meetings (January 2017 to February 2018)
- Approximately 7,000 online questionnaires (January 2017, June 2017)

More recently, the Principles and Strategies were refined through regular meetings with seven of the City's advisory committees and two multi-stakeholder groups representing local interests. There was a generally high level of support from the Advisory Committees that were engaged with. This led to a draft set of Principles and Strategies that was taken to the public for feedback.

Feedback from these open house events will be used to refine the draft Principles and Strategies prior to presentation and approval by Council on May 16, 2018.

Engagement methods

In March 2018, feedback was sought on the draft Principles and Strategies. Presentation boards were available at two public open house events and online and provided:

- A brief overview of the Millennium Line Broadway Extension project
- The City's roles and responsibilities in the Broadway Extension
- The purpose of the City's draft Principles and Strategies
- Explanations of the 11 draft principles and 11 draft strategies for consideration
- Opportunities for feedback on the Principles and Strategies

Two open house events were held at the CityLab space (511 West Broadway) on:

- Saturday, March 10, 10am-2pm
- Wednesday, March 14, 4pm-7pm

Feedback was gathered at the open house events through conversations with participants, comments on sticky notes on the display boards, and dots indicating the level of agreement or disagreement with each set of principles or strategies. A paper questionnaire was available for people to complete at the public open house events or mail in their responses (attached to the end of this appendix). Participants were also welcome to submit their comments by email to the Rapid Transit Office email address.

The display boards were also posted on the City's Broadway Extension webpage (vancouver.ca/broadwayextension) with feedback gathered through an online survey hosted on the Talk Vancouver platform. The questionnaire was identical to the paper questionnaire available at the public open house events. A summary of the events and feedback tools can be found in the table below:

Date	Engagement Tool	Number
March 10	Public Open House #1	246 participants
March 14	Public Open House #2	163 participants
March 10/14	Paper Questionnaire	22 completed (9 partial)
March 9 to April 1	Online Questionnaire	2010 completed
March 9 to April 1	Email responses	1 email

The event was publicized through a number of channels including:

- A Canada Post mail drop of all residences and businesses within at least two blocks of the alignment. (18,311 pieces of mail delivered)
- A Vancouver Matters advertisement in the Vancouver Courier on Friday, March 9
- City of Vancouver webpage
- An email to the Talk Vancouver Panel on March 14 (15,291 panelists)
- City of Vancouver tweets
- City of Vancouver Facebook (Post March 10 reached 6,195 people, 34 reactions, 9 shares)
- An email by TransLink to their MLBE mailing list (150 people)

What we heard

The Principles and Strategies were grouped into three sets of principles and three sets of strategies for feedback. The sets of principles and strategies were well supported through all methods of feedback. Conversations at the open house events found a high level of agreement with the draft Principles and Strategies which was reflected by the level of agreement (strongly agree and somewhat agree) indicated directly on the boards ranging from 98% to 100%. The level of agreement indicated directly on the display boards are presented in the table below:

		Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Principles	System-Wide	87%	13%	0%	0%	0%
	Comfort and Accessibility	90%	8%	1%	0%	0%
	Urban Integration	94%	6%	0%	0%	0%
Strategies	Supporting Local Interests	86%	12%	2%	0%	0%
	Transportation Related	87%	11%	2%	0%	0%
	Communications and Engagement	86%	12%	2%	0%	0%

The paper and online questionnaires found levels of agreement (strongly agree and somewhat agree) ranging from 86% to 90%. The paper and online questionnaire results were combined and are presented in the table below:

		Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Principles	System-Wide	64%	26%	6%	2%	3%
	Comfort and Accessibility	63%	25%	6%	4%	3%
	Urban Integration	60%	28%	6%	3%	3%
Strategies	Supporting Local Interests	64%	23%	9%	2%	3%
	Transportation Related	62%	24%	8%	3%	3%
	Communications and Engagement	65%	23%	8%	2%	3%

Opportunities were provided for participants at the open house events as well as the online and paper questionnaires to give specific comments on the principles or strategies within each set. The comments were categorized into two groups according to whether they were:

- generally supportive or expressed a desire to strengthen the principle or strategy
- generally not supportive or expressed a desire to weaken the principle or strategy

The following section summarizes the specific comments related to each set of principles and strategies.

System-Wide Principles

	Supportive/ Strengthen	Non-supportive/ Weaken	Total
1 - Design for long-term flexibility and resilience	140	9	149
2 - Provide more flex space onboard trains	66	47	113

A large majority of comments related to Principle 1 (Design for long-term flexibility and resilience) were supportive. Supportive comments focused on the length of platforms, the number of trains and a desire for the MLBE to have higher capacity than the Canada Line. Comments not in support of this principle expressed concerns about budget.

The comments received for Principle 2 (Provide more flex space onboard trains) were more mixed with slightly more supportive than non-supportive comments. Supportive comments included many desires for allowing bikes on trains at all times of day and more reachable bars and holding straps for shorter people. Non-supportive comments voiced concern for a loss of seating, the majority of transit users not using the flex space, or opposition to bikes being on trains.

Comfort and Accessibility Principles

	Supportive/ Strengthen	Non-supportive/ Weaken	Total
3 - Design for accessibility	79	10	89
4 - Design to be user-friendly, safe and comfortable	72	2	74
5 - Provide universally accessible customer bathrooms	166	113	279

A large majority of comments related to Principle 3 (Design for accessibility) were supportive with multiple comments related to a desire for up and down escalators, improving accessibility of fare gates and Compass Cards and involving persons with disabilities in the review of designs. Non-supportive comments focussed on a desire for the system to be designed to serve the majority of the users.

Comments on Principle 4 (Design to be user-friendly, safe and comfortable) were entirely supportive. The comments focused on improving wayfinding, making station designs unique so that each station is easily identifiable and giving consideration for safety and crime prevention in surrounding neighbourhoods.

Principle 5 (Provide universally accessible customer bathrooms) received the largest number of comments, most of which were supportive. Requests were made to ensure the maintenance and cleanliness of the bathrooms and to provide bathrooms in existing SkyTrain stations. Non-supportive comments related to safety, maintenance and costs.

Urban Integration Principles

	Supportive/ Strengthen	Non-supportive/ Weaken	Total
6 - Minimize impact of Arbutus exchange	50	31	81
7 - That public art be considered at all stations	67	71	138
8 - Design for future flexibility	27	3	30
9 - Integrate seamlessly into the corridor	63	4	67
10 - Design for efficient movement to, from and around the stations	74	3	77
11 - Recognize significance of Cambie Station	51	10	61

Most comments received for Principle 6 (Minimize impact of Arbutus exchange) were supportive and acknowledged the large number of people using this exchange. Many requests for more details on the design of the Arbutus exchange were made and concerns for the Arbutus Greenway were expressed. Non-supportive comments felt that all station areas should be given the same consideration or expressed preference for prioritizing the efficiency of the exchange over minimizing impacts.

Principle 7 (That public art be considered at all stations), was the only principle that received more unsupportive comments than supportive comments. Supportive comments often suggested incorporating art into the station design, for example in the tile colour and pattern, using local artists, and including green space. Non-supportive comments expressed concern about the costs and indicated that art should not be considered as high a priority as other Principles.

Designing for future flexibility (Principle 8) received the least number of comments. The comments received were almost entirely supportive including a desire for additional entrances and retail space within stations.

Almost all comments received for Principle 9 (Integrate seamlessly into the corridor) were supportive with some comments suggesting to not only integrating with the corridor but enhancing it. Four comments were not in support of this principle, three of which favoured significant change to the corridor rather than integration with the existing character of the corridor.

Designing for efficient movement to, from and around the stations received a significant majority of supportive responses with a desire to facilitating transfers between the SkyTrain

and the bus. Some comments expressed a desire to plan ahead to avoid the congestion experienced in existing stations. There was also support for bike parking and bike lockers.

Most comments related to Principle 11 (Recognizing significance of Cambie Station) were supportive reflecting that as a large transit hub, Cambie Station would require special consideration. There was support for additional entrances and an underground and direct connection to the Canada Line. Many of the non-supportive comments stated that Cambie should not be recognized above other MLBE stations.

Strategies Supporting Local Interests

	Supportive/ Strengthen	Non-supportive/ Weaken	Total
General comments on Strategies 1-2	39	41	80
1 - Support business viability	119	24	143
2 - Minimize the impacts of noise, dust and	23	9	32

Comments on the set of strategies supporting local interests were split with roughly half generally supportive and half generally non-supportive. Supportive comments acknowledged that business viability and minimizing impacts were important while non-supportive comments expressed concern about prolonging the length of construction and a need to accept disruption for a project such as this.

Supporting business viability (Strategy 1) received the largest number of comments of the Strategies with a majority of comments supportive. Many respondents felt that businesses needed greater support than during Canada Line with a general preference for supporting small and local businesses. Non-supportive comments suggested that businesses will need to accept some disruption and focus on the long term benefits of the project.

Strategy 2 (Minimize the impacts of noise, dust and vibration) received primarily supportive comments. Non-supportive comments tended to express a desire to complete the project as quickly and cost efficiently as possible with less concern for mitigation.

Transportation Related Strategies

	Supportive/ Strengthen	Non-supportive/ Weaken	Total
General comments on Strategies 3-9	11	65	76
3 - Minimize impacts on pedestrians	22	0	22
4 - Minimize impacts on cyclists	18	53	71
5 - Prioritize Broadway bus services and minimize detours	41	1	42

6 - Ensure accessibility of transit services during construction	0	0	0
7 - Maintain traffic flow as much as possible	53	12	65
8 - Manage needs of many stakeholders	15	3	18
9 - Coordinate with other developments	16	2	18

While support for the set of transportation related strategies was found to be high, the majority of comments received on this collective set of strategies were non-supportive. The non-supportive comments focused on concerns for increasing the length and cost of construction and a desire to accept disruption for a project of this nature.

All comments received for Strategy 3 (Minimize impacts on pedestrians) were supportive with some expressing a desire to specify pedestrian needs nearby schools and accessibility prioritized.

Minimizing impacts on cyclists received more non-supportive comments than supportive. Supportive comments focussed on the vulnerability of cyclists and the need to ensure their safety during construction. Respondents not in support of this strategy stated that they would prefer that bikes do not travel on Broadway and use alternate routes during construction.

Prioritizing bus service and minimizing detours (Strategy 5) received almost entirely supportive comments with some requesting service improvements for parallel bus routes operating on streets such as King Edward Blvd, Great Northern Way/2nd Ave/6th Ave/4th Ave and 41st Ave.

No comments were received on ensuring accessibility of transit services during construction (Strategy 6). However, comments related to minimizing impacts on pedestrians (Strategy 3) found many comments related to ensuring an accessible pedestrian network during construction which will contribute towards having accessible transit services.

The strategy to maintain traffic flow as much as possible (Strategy 7) received the highest number of supportive comments for the set of transportation related strategies. Respondents who supported this strategy felt that vehicles should be given a higher priority than other modes. Some non-supportive comments believe that the construction period should be used as an opportunity to discourage private car use and improve Broadway transit service.

Managing the needs of many stakeholders (Strategy 8) received primarily supportive comments with suggestions to provide a higher priority for parking and access to VGH.

A majority of comments related to coordinating with other developments (Strategy 9) were supportive, many of which expressed a preference for a greater effort to coordinate with other developments than what was provided during the Canada Line.

Engagement and Communications Strategies

	Supportive/ Strengthen	Non-supportive/ Weaken	Total
General comments on Strategies 10-11	15	26	41
10 - Engage with those most affected	43	27	70
11 - Communicate upcoming impacts	101	5	106

While support for the set of engagement and communications strategies was found to be high, the majority of comments received on the collective set of strategies were non-supportive. Supportive comments expressed a desire to do better than the Canada Line experience with non-supportive comments related to concerns about increasing the length and cost of construction.

Engaging with those most affected (Strategy 10) received a majority of supportive comments, expressing a desire for meaningful engagement and willingness to change plans based on feedback. There was support for engagement before and during construction as well as support for including UBC in engagement. Non-supportive comments did not want to see small groups delaying the project or expressed distrust in the City's engagement process.

Strategy 11 (Communicate upcoming impacts) received almost entirely supportive comments noting a desire for communications to be clear, upfront, and accurate and use various platforms for communications.

Other Comments

A variety of comments we heard did not necessarily relate to the draft Principles and Strategies. These comments were recorded through the display boards and large map at the open house events, the paper questionnaire and the online questionnaire. These comments included (in general order of frequency):

- Expressing general support for the project, a majority of which expressed a preference for extending the MLBE to UBC (206 comments).
- Expressing general disagreement with the route, technology or costs of the project (139 comments).
- Concerns over construction methods with a preference to avoid the Canada Line experience cut and cover (52 comments).
- Concerns about the questionnaire itself with some expressing a desire to rank their level of agreement with all 22 Principles and Strategies rather than the 6 sets of Principles and Strategies and others suggesting that the Principles and Strategies were "motherhood" statements impossible to disagree with (23 comments).
- A number of comments were out of scope of this questionnaire but related to the MLBE and included comments on land use planning and overall TransLink policies (80 comments).

Next Steps

The feedback received during this engagement will be used to refine the draft Principles and Strategies to create a final draft set of Principles and Strategies for presentation and adoption by Council. Council may edit the final draft Principles and Strategies prior to adoption. Once adopted, the Principles and Strategies will guide City staff in their involvement in the Broadway Extension project including:

- Creating a Master Agreement between the Broadway Extension project and the City of Vancouver that sets out each agency's responsibilities and commitments including use of lands, spaces around stations, construction and maintenance. The Master Agreement will be a key component of the Project Agreement between the Broadway Extension project and the contractor that is hired to design and build the Broadway Extension.
- The review of final designs and construction methods for the Broadway Extension
- Future land use and transportation planning in the Broadway Corridor as well as development reviews close to the future stations.



Draft Principles & Strategies Questionnaire: Millennium Line Broadway Extension

The Millennium Line Broadway Extension (Broadway Extension) will be a tunneled extension of the Millennium SkyTrain along the Broadway Corridor from VCC–Clark Station to Arbutus Street.

While the Broadway Extension will offer a number of benefits to the Broadway Corridor and the Metro Vancouver region, careful consideration must be given to the design and integration of the stations as well as impacts during construction.

The City of Vancouver has prepared draft station design and integration Principles and draft construction mitigation Strategies that we would like to endeavour to achieve through the Broadway Extension project and related City activities. While TransLink is the owner of the Broadway Extension project, the City offers advice on the design of the Broadway Extension and is a partner on the delivery of the project.

Tell us what you think of the draft Principles and Strategies! Your feedback will be used to refine the draft Principles and Strategies prior to consideration and approval by Council. Once approved, the Principles and Strategies will guide the City's involvement in the Broadway Extension project as well as future land use and transportation planning in the corridor.

DRAFT PRINCIPLES

QUESTION 1: System-Wide Principles

The following set of draft Principles relate to the entire Broadway Extension project.

2. Design for long-term flexibility and resilience. That the system and all stations are designed for long-term needs, expansion, sustainability and resiliency to effects of climate change and natural shocks such as floods and earthquakes.
3. Provide flex space onboard trains. That the City would like TransLink to provide at least as much flexible space onboard trains as their most recently purchased SkyTrain vehicles to accommodate people with wheelchairs of all sizes, mobility aids, bikes, strollers and larger personal items. The City recognizes that many older vehicles will be operating on the Broadway Extension that do not have the same design flexibility.

Do you agree or disagree with these System-Wide Principles?

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Do you have any additional comments? Did we miss anything?

QUESTION 2: Comfort and Accessibility Principles

The following set of draft Principles relate to achieving a user friendly and accessible extension.

4. Design for accessibility. That the system and all stations are designed with the goal of universal accessibility for all transit users including vulnerable populations.
5. Design to be user-friendly, safe and comfortable. That the system and all stations are designed to be intuitive, easy and comfortable to navigate and foster feelings of safety and security.
6. Provide universally accessible customer bathrooms. That the City believes that the Broadway Extension should provide universally accessible customer bathrooms to begin operations on opening day that are suitable for all sized power wheelchairs and other mobility devices as well as all gender identities.

Do you agree or disagree with these Comfort and Accessibility Principles?

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Do you have any additional comments? Did we miss anything?

QUESTION 3: Urban Integration Principles

The following set of draft Principles relate to how the stations and system infrastructure will fit within the surrounding city.

7. Minimize impact of Arbutus exchange. That impacts of the Arbutus bus exchange are minimized on the local neighbourhoods, including locating bus layover, turnaround and passenger queueing/waiting areas off street right-of-way as much as possible.
8. That public art be considered at all stations, including opportunities to use public art to increase visual appeal of at grade system structures or fencing. Individual station designs (entrances and below grade elements) should explore opportunities to integrate public art that considers the unique features of the neighbourhood.
9. Design for future flexibility. That the system and stations be designed in a manner to allow for flexibility for future underground pedestrian connections and integration with nearby developments.
10. Integrate seamlessly into the corridor. That the system infrastructure, stations and plazas (when present) be designed to integrate seamlessly into and maintain the character of the corridor and provide sufficient space for waiting, queueing, pedestrian movement, future connections, business access, shelters and street furniture.
11. Design for efficient movement to, from and around the station. That the station plazas and surrounding public realm are designed to allow for efficient, intuitive and comfortable transfers between the Broadway Extension and other transit services as well as other modes of travel (walking, cycling, motor vehicles).
12. Recognize significance of Cambie Station. That Cambie Station be given special consideration due to the significance of the site as a major transportation hub and centre of a civic and medical precinct including considering opportunities for the City or another party to provide a secondary station entrance.

Do you agree or disagree with these Urban Integration Principles?

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Do you have any additional comments? Did we miss anything?

DRAFT STRATEGIES

QUESTION 4: Strategies Supporting Local Interests

These draft Strategies aim to minimize the impacts of construction on local residents, businesses, services and stakeholders.

13. Support business viability throughout construction including maintaining business access and the establishment of a business and community liaison office at least one year prior to construction.
14. Minimize the impacts of noise, dust and vibration during construction on local residents, businesses, services and stakeholders.

Do you agree or disagree with the Strategies for Supporting Local Interests?

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Do you have any additional comments? Did we miss anything?

QUESTION 5: Transportation Related Strategies

These draft Strategies aim to minimize the impacts on the various modes of transportation during construction.

15. Minimize impacts on pedestrians during construction by minimizing pedestrian detours that cross roads and ensuring all detours are accessible, safe, comfortable and predictable.
16. Minimize impacts on cyclists. Ensure bike route detours use alternate routes that are at least the same level of comfort and protection as the existing route. This may require temporary or permanent upgrades to alternate routes. The City should consider fast tracking cycling network improvements that can aid in protecting cyclists during Broadway Extension construction.
17. Prioritize Broadway bus services and minimize detours. The City should prioritize bus services primarily operating on Broadway (#9, 99 B-Line) through transit priority measures and TransLink should minimize bus detours and monitor bus services in the broader corridor throughout construction.

18. Ensure accessibility of transit services during construction and minimize impacts to HandyDART services within the corridor.
19. Maintain traffic flow as much as possible. Encourage alternate driving routes for through traffic during construction and maintain sufficient travel lanes on Broadway for the busiest parts of the day to ensure efficient movement of vehicles, buses and goods.
20. Manage needs of many stakeholders. Manage loading, parking, access and emergency services needs during construction to balance the needs of residents, businesses, services, stakeholders and the Broadway Extension project.
21. Coordinate with other developments. Ensure coordination of Broadway Extension construction with other developments in the corridor including development of traffic management plans that are approved, monitored and adjusted when needed by dedicated staff.

Do you agree or disagree with these Transportation Related Strategies?

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Do you have any additional comments? Did we miss anything?

QUESTION 6: Engagement and Communications Strategies

These draft Strategies aim to developing proactive and useful communications and engagement during construction.

22. Engage with those most affected. Ensure that construction methods, mitigation and transportation demand management strategies are developed by engaging with the residents, businesses, services and stakeholders most affected by construction.
23. Communicate upcoming impacts. Use positive and proactive communication of upcoming construction activities.

Do you agree or disagree with these Engagement and Communication Strategies?

- Strongly Agree
- Somewhat Agree
- Neutral
- Somewhat Disagree
- Strongly Disagree

Do you have any additional comments? Did we miss anything?

ABOUT YOU

It's important to us that we hear from a diverse group of people and perspectives. The following questions help us determine how the feedback we receive represents the community.

What's your connection to the Millennium Line Broadway Extension?
Select all that apply

- I rent and live near the planned extension
- I own and live near the planned extension
- I work near the planned extension
- I go to school near the planned extension
- I commute/travel along Broadway
- I commute/travel using the Millennium Line
- Other (please specify):

What mode of transportation do you most often use? Please select one.

- Walk (including wheelchair or other mobility device)
- Cycle
- Public transit (e.g. bus, SkyTrain, HandyDART)
- Car
- Other (please specify)

What is your home postal code? _____

Which age group do you belong to?

- 19 yrs and under
- 20-29 yrs

- 30-39 yrs
- 40-49 yrs
- 50-59 yrs
- 60-69 yrs
- 70+years

Do you identify as...?

- Female
 - Male
 - Transgender
 - None of the above. I identify as: _____
 - Prefer not to say
-

Thank you for sharing your thoughts on the City of Vancouver's Draft Principles & Strategies for the Millennium Line Broadway Extension! Your feedback will be used to refine the draft Principles and Strategies prior to consideration and approval by Council.

You can drop off your completed questionnaire in the box provided at one of the Open House events or return by mail by April 1, 2018 to:

Attn: Rapid Transit Office
City of Vancouver - Engineering
320-507 West Broadway
Vancouver BC, V5Z 0B4

