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The Corporation of **THE CITY OF NORTH VANCOUVER**
ENGINEERING, PARKS & ENVIRONMENT DEPARTMENT

REPORT

To: Mayor Linda Buchanan and Members of Council

From: Justin Hall, Manager, Public Realm Infrastructure

Subject: UPPER LEVELS GREENWAY UPDATE AND LONSDALE HIGHWAY
OVERPASS MOBILITY IMPROVEMENTS PROJECT INITIATION

Date: April 10, 2024 File No: 16-8350-20-0046/1

The following is a suggested recommendation only. Refer to Council Minutes for adopted resolution.

RECOMMENDATION

PURSUANT to the report of the Manager, Public Realm Infrastructure, dated April 10, 2024, entitled "Upper Levels Greenway Update and Lonsdale Highway Overpass Mobility Improvements Project Initiation":

THAT the community's preferred alignment for the Upper Levels Greenway project be endorsed;

THAT staff be directed to complete options analysis, concept design and public engagement for the Lonsdale Highway Overpass Mobility Improvements;

AND THAT staff be directed to integrate analysis and concept design work of the Lonsdale Highway Overpass Mobility Improvements with the Phase 1 concept of the Upper Levels Greenway to develop a coordinated mobility solution.

ATTACHMENTS

1. Upper Levels Greenway – Project Update & Phase 2 Engagement Summary
(CD#[2474770](#))

SUMMARY

This report provides Council with an overview of the work completed to address the technical issues raised in the July 2022 report to Council titled "Upper Levels Greenway – Project Update & Phase 2 Engagement Summary" (Attachment 1), so that staff can confidently recommend endorsing the community's preferred alignment for the Upper

Levels Greenway. The report also outlines an approach to designing a first phase of the greenway that unlocks the necessary roadway space to deliver safety and accessibility improvements at Lonsdale Avenue and initiates the project to work collaboratively with MOTI to improve the Upper Levels Highway crossing at Lonsdale Avenue for people walking and rolling by creating a safe, accessible and welcoming link to/from the Upper Levels Greenway from/to the new Harry Jerome Community Recreation Centre.

The approach outlined in this report reflects the synthesis of public input and previously completed technical analysis overlaid with the limitations on City decision-making that come with designing a project that is integrated with Provincial infrastructure.

BACKGROUND

The Upper Levels Highway was opened in 1964 and, while it improved motor vehicle flow for regional travel to and across the North Shore, it severed the north residential areas of the City from the south neighbourhoods. Since highway operations began, the City's land use and transportation plans have confirmed the need to improve the highway crossing route options and conditions for people walking and rolling (Figure 1).

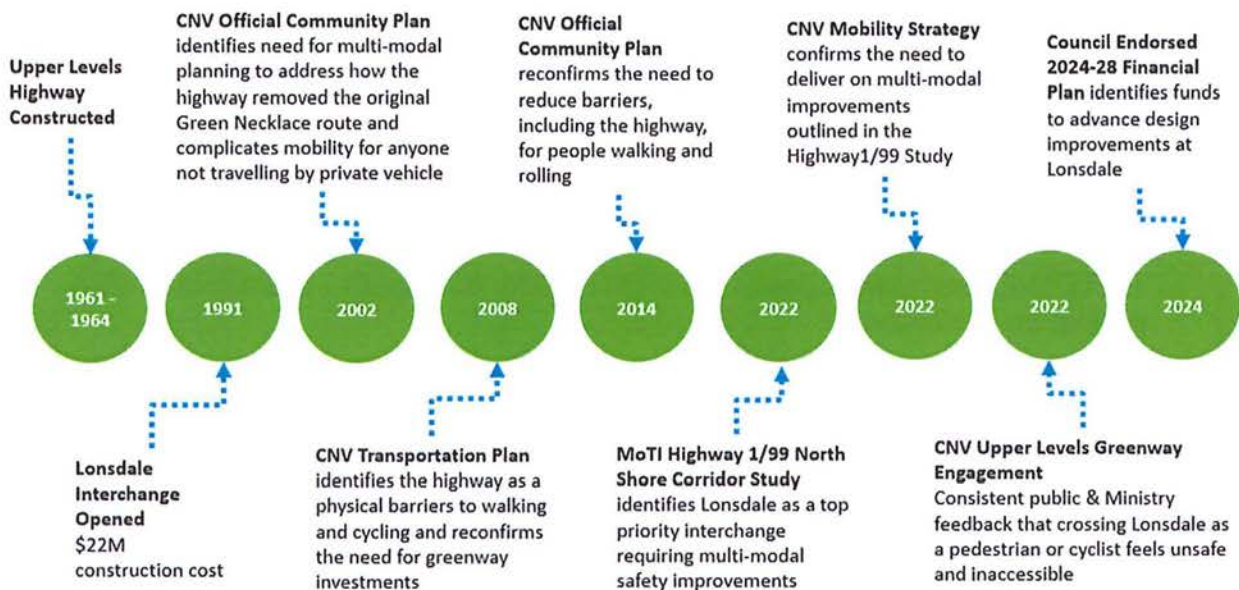


Figure 1. Lonsdale Highway Crossing Policy History.

In 2022, the Ministry of Transportation and Infrastructure (MoTI) released their North Shore Corridor Study that outlines the need to focus on road safety, in particular, recognizing the higher collision locations at major interchanges and need for active transportation improvements, with the Lonsdale Avenue and Westview Drive interchanges identified as priority locations for improvements.

In parallel to these discussions, the Upper Levels Greenway is being developed as part of the City's commitment to provide active transportation and recreation options that support and enhance the health and well-being of all community members. This

greenway was first identified in the City's 2002 Parks and Greenways Strategic Plan, envisioned to stretch from Lynn Valley Road to Westview Drive, a distance of approximately three (3) kilometers. Once complete, it will give people more choice in how they move around the City by enhancing access to parks, recreation spaces, community amenities and other destinations, such as schools and commercial areas.

DISCUSSION

Upper Levels Greenway Project Update

Since the last update to Council in July 2022, Staff have been conducting a range of technical studies to respond to public and stakeholder feedback and to inform the concept development of the Upper Levels Greenway. See Attachment 1 for the previously provided detailed Phase 2 Engagement Summary report.

Over the last year, the team has completed:

- **Tempe Park Forest Inventory:** Documenting tree health and identifying the least impactful path through the park.
- **FireSmart Planning:** Initial outline of a forest management plan to address fire safety issues in Tempe Park.
- **Highway Noise Assessment:** Measuring current noise levels and investigating options in Tempe Park to design a path that avoids increased noise levels for residents.
- **Structural Studies:** Understanding the condition and repair needs of various retaining structures between Jones Avenue and Lynn Valley Road, including within Tempe Park.
- **Drainage and Utilities Review:** Developing a plan to improve drainage flows and water service capacity throughout the study area.
- **Neighbourhood Traffic Assessment:** Examining traffic patterns and identifying ways to reduce speeding and neighbourhood shortcutting.
- **Highway Analysis:** Working with our provincial partners to analyze the Lonsdale and Westview intersections and confirm safe multi-modal design options that respond to the requirements of both the City and the Ministry.

Concept Design – Proposed Greenway Experience

Through the second public engagement period, the 25th Street route (Figure 2 – Purple Route) emerged as the community preferred route for the greenway, compared to the other potential routes on 26th and 27th Streets. Feedback from the public survey in support of the Purple route includes:

- **Most Convenient:** The route is the most direct path on an established route with the least challenging elevation changes that would benefit from accessibility improvements.
- **Perception of Safety:** 25th Street was considered a quiet street with less traffic than other residential streets and the most direct opportunity to provide a safer intersection at Lonsdale.

- **Connections:** Provides good connections to regional destinations like Harry Jerome Recreation Centre and opportunities to cross the highway at Lonsdale and via the existing Jones active transportation overpass.
- **Least Impact to Neighbours:** With homes and parking on only one side of 25th Street, this route was seen as least disruptive to existing parking with more space to allocate to the greenway.
- **Access to Nature:** Saves key significant trees on the street and provides an accessible pathway through Tempe Park.

Key concerns from the public include:

- **Proximity to the Highway:** Concerns about noise and pollution near the greenway.
- **Comfort and Accessibility:** Current sidewalks on 25th Street and the pathways through Tempe Park are narrow and not accessible.
- **Safety:** Concerns about providing enough space to separate all modes and need to address safety around heavy traffic major intersections like Lonsdale.
- **Nature Impacts:** Desire to minimize impacts in the park. Some concerns that 25th is less scenic than other residential options.
- **Impacts to Neighbours:** Concerns around on-street parking loss and changes to vehicle movements.

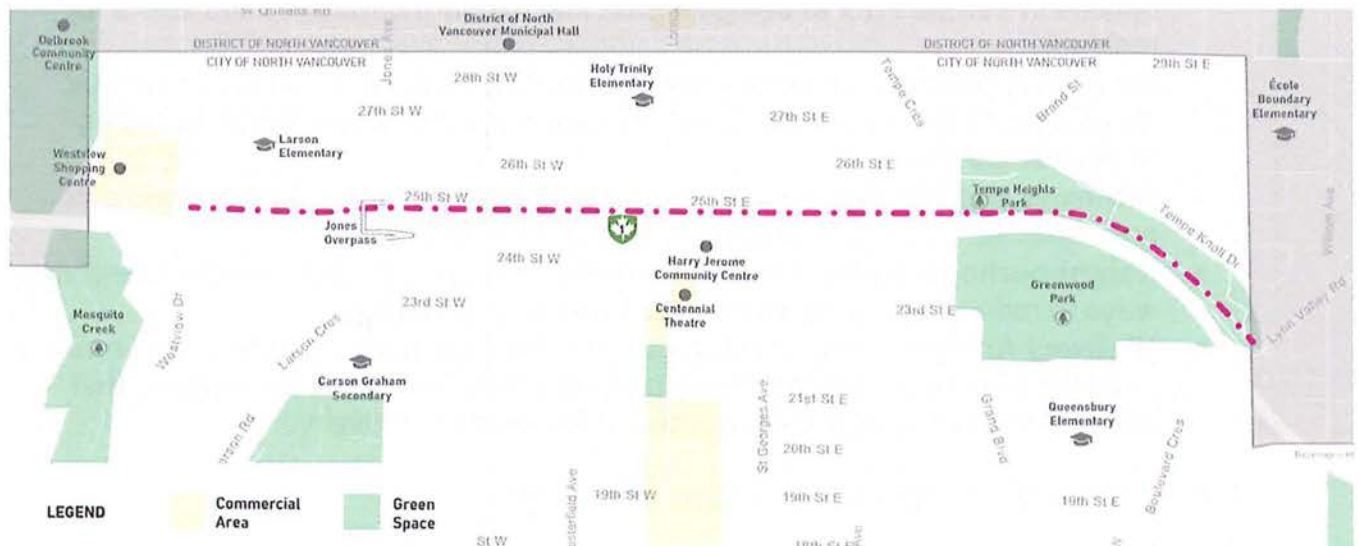


Figure 2. Preferred Route on 25th Street and through Tempe Park.

This technical work program has provided sufficient site understanding to develop a concept design that achieves the following:

- Widened sidewalks to contemporary street standards to address insufficient and uncomfortable walking spaces on 25th Street.
- Incorporation of a two-way bidirectional mobility lane between Westview Drive and Ridgeway Avenue in response to strong community preference for protected micro-mobility infrastructure separated from walking spaces.
- A wide shared multi-use pathway through Tempe Park between Ridgeway Avenue and Lynn Valley Road that minimizes forest impacts and retains significant trees while navigating challenging grades through the park. The

shared path reduces the paved surface area in response to public feedback seeking a balance between accessible paved surfaces and natural trail surfaces in green space areas.

- Retention of on-street parking capacity that is aligned with neighbourhood demand.
- Retention of existing street trees and identification of opportunities for enhanced trees and landscaping to contribute to growing the urban tree canopy.

Proposed Greenway Phasing Strategy

Through the development of the concept, it became clear that delivery of the greenway would be most successfully managed if delivered in phases. The Spirit Trail and Green Necklace routes were both delivered in 5-6 phases and the Upper Levels Greenway is likely best delivered in a similar phased approach.

Delivering a project of this scale in phases allows for development of construction management plans that respond to the varying construction approaches needed within different segments of the greenway. For example, construction requirements at the highway interchange are different than on local street segments and different than construction within park spaces. Phased delivery also ensures there is staff capacity to effectively engage with adjacent neighbours through the design and construction process.

The greenway can be divided into 3 key areas of work for phased delivery (Figure 3).

1. **Lonsdale:** The on-street segment stretching between St Georges Avenue to Chesterfield Avenue on 25th Street, including the Lonsdale interchange area. This is the east-west corridor length necessary to achieve the road space needed to make any safety improvements at Lonsdale in all directions.
2. **25th Street:** The remaining on-street segments from Westview Drive to Chesterfield Avenue in the west and from St Georges Avenue to Ridgeway Avenue in the east – which could be delivered separately.
3. **Tempe Park:** Integrated pathway from Ridgeway Avenue to Lynn Valley Road delivered alongside other forest management works needed to improve fire safety and address other forest health issues, such as damage from the Looper Moth. Delivering the pathway along with other necessary forest works allows for coordinated project delivery to minimize impacts to local park users while also ensuring cost effective investment in our green spaces.

Through engagement and study of the area it was identified that many of the streets north of the Upper Levels Highway are missing sidewalks on both sides of the street. To improve access to the greenway, constructing a sidewalk to one side of all streets without a safe pedestrian route can be considered in the future. This work could also include delivery of a multi-use path outside of Larson Elementary School to formalize pilot design interventions already in place along the street and connect the school directly to the greenway. These additions could be achieved through a targeted project or incorporation into the *New Sidewalks to Complete the Pedestrian Network* project.

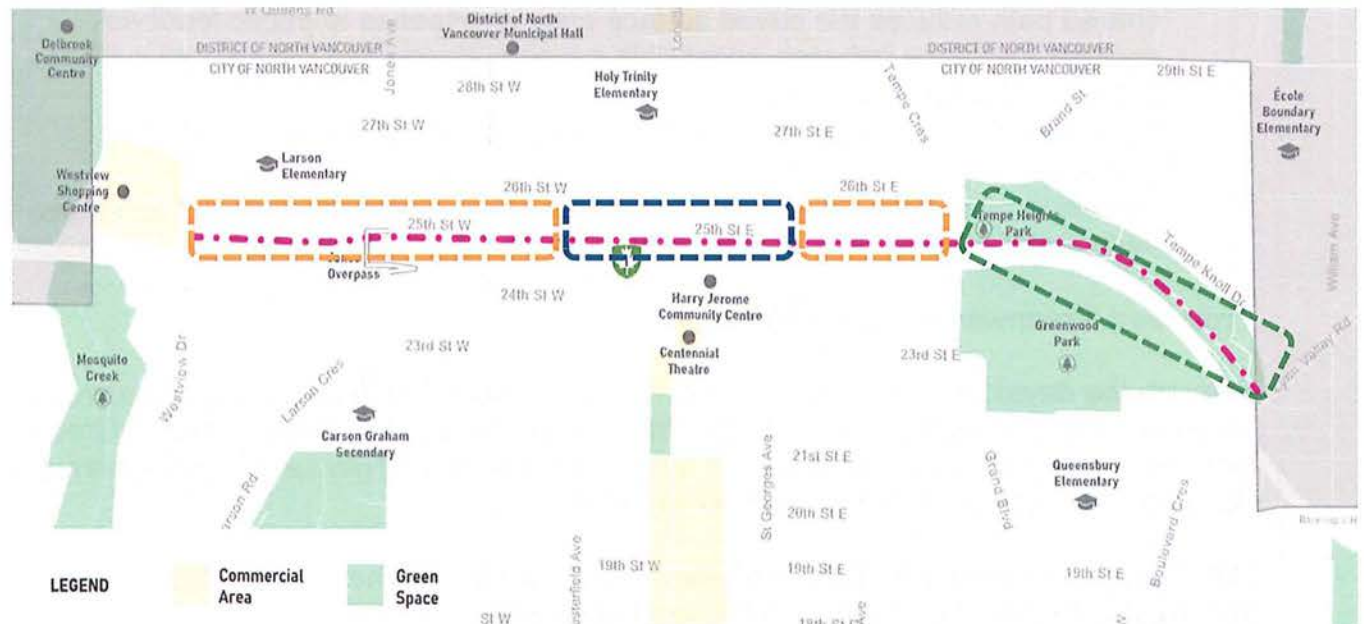


Figure 3. Three phases of work for the greenway including Lonsdale (blue), 25th Street (orange), Tempe Park (green)

With significant changes underway to update citywide land use policies in response to recent Provincial direction, phasing the greenway allows for the City to clarify the land use plans for these neighbourhoods before advancing future phases of design for the greenway.

Phases could be delivered sequentially or with some level of overlap depending on Council prioritization. Through the annual capital budget and appropriation processes, staff will review resourcing and funding requirements and present updated phasing considerations for Council in advance of any future detailed design work or the start of construction.

Existing Condition at Lonsdale

The Lonsdale interchange is a high collision location for vehicles with no dedicated safe space for people cycling.

The interchange is a motor vehicle dominated space with six (6) vehicle lanes consisting of two (2) north and two (2) south through lanes with left turn bays to access the highway eastbound and westbound. Vehicle lanes are generous and overbuilt compared to modern design standard lane widths for an urban arterial roadway of this nature.



While it is possible to cross the highway on the sidewalk, the width of the sidewalk does not meet currently accepted design standards for pedestrian infrastructure adjacent to a high vehicle volume roadway. The sidewalk edges have low contrast against the roadway asphalt, making the safe pedestrian space difficult to discern by people with low vision. The letdowns at all access points north and south of the highway do not meet modern accessibility design standards.



There are crosswalks for pedestrians present at some locations north and south of the highway, however the crossing times for pedestrians do not meet current signal timing standards for an intersection of this scale

There are no dedicated crossing spaces east-west or north-south for cycling and other active modes. Active and micro-mobility travelers are required to share space with vehicles coming on and off a high speed freeway. Some people choose to cycle on the sidewalks to avoid these dangerous interactions, further squeezing the already limited space for pedestrians.



Priority for Delivery – ULG Phase 1 and Lonsdale Highway Overpass Mobility Improvements

This work is an opportunity to stitch the local road network and neighbourhoods together after being severed in 1964 when the Upper Levels Highway cut through the community. The project is well positioned to see a first phase of the East-West greenway delivered along with North-South Lonsdale highway crossing improvements. Delivering these projects as a single integrated mobility network project provides the opportunity to maximize the safety benefits in a way that neither segment would be able to realize individually.

These are critical and interdependent segments that address the most urgent safety and accessibility needs on the corridor. While crossing the highway barrier is the core challenge, having safe paths of travel on both sides of the bridge structure is necessary to ensure people can disperse into the neighbourhoods safely. These areas transition into low vehicle volume residential streets with less immediately urgent safety interventions that can be addressed in subsequent greenway phases.

This study area additionally unlocks important multi-modal access to the new Harry Jerome Recreation Centre, the largest regional destination investment in the City's history, currently under construction within the community. Creating conditions where the people can safely and easily access our recreation facilities regardless of mode of travel is important for advancing our mobility goals by building more viable route options for active transportation.

Figure 4 shows the proposed project study area in purple with connections to the new Harry Jerome Recreation Centre and Green Necklace to the south of the highway and integration with Phase 1 Upper Levels Greenway north of the highway.

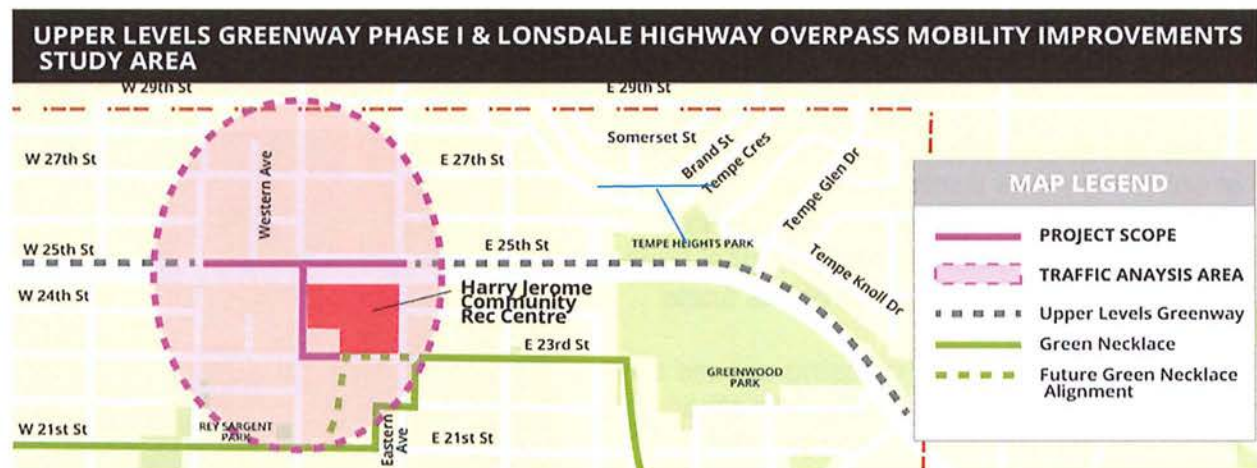


Figure 4. Proposed project study area

Staff propose that the previously developed concept design for the Upper Levels Greenway Phase 1 from Chesterfield Avenue to St Georges Avenue be integrated with the Lonsdale Highway Overpass Mobility Improvements project to produce an integrated concept that connects the ULG across the highway on Lonsdale to the Harry Jerome Recreation Centre.

Early works on an integrated project will focus on completing an options analysis with the Province to address the north-south active travel challenges. When complete, an integrated concept can be advanced and brought forward for the first public engagement phase (Figure 6 – Draft Milestone Schedule).

This work also provides the opportunity to engage MoTI in feasibility level studies to address Council's Motion to explore a land bridge over the highway.

Initial Options for Analysis

Staff have completed initial spatial analysis of the study area and have identified a long list of options for analysis to be confirmed in partnership with the Ministry of Transportation and Infrastructure. Given the complexity of the area and the critical function the highway and access points play within the broader Major Road Network, it is important to assess a comprehensive set of options to fully understand the opportunities and challenges different design solutions present.

While the project work plan is still being defined with the Province, there are three general categories of options that Staff anticipate working through. Each of these analysis categories will have several sub-options considered.

Road Space Reallocation: Revising existing bridge lane widths or configuration to accommodate protected active mode space.

Example – Mountain Highway overpass includes a protected multi-use path to accommodate people walking and rolling.



Cantilevered Pathway: Creation of a separate active mode facility connected to the existing interchange bridge.

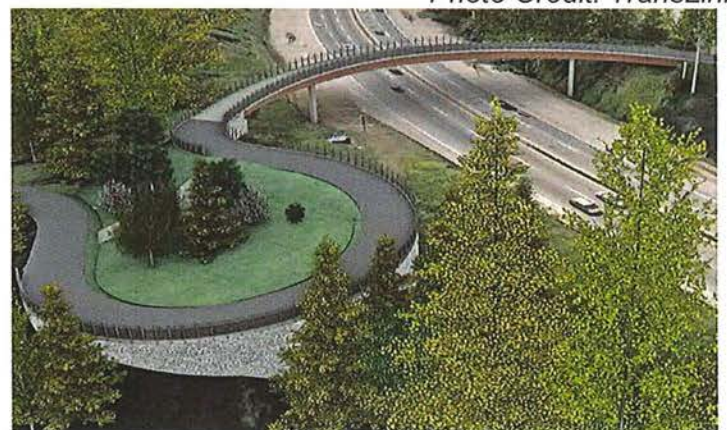
Example – Canada Line active mode bridge across the Fraser River into Richmond



Photo Credit: TransLink

New Structures: Building a completely new active mode bridge between Lonsdale and Lynn Valley Road or larger land bridge over a portion of the highway.

Example – Future Casano-Loutet Overpass



The evaluation criteria for the long list analysis will be developed in partnership with the Province. It is anticipated the evaluation will consider user comfort and safety for all modes, network operational and access impacts, order of magnitude cost, and

deliverability complexity. Evaluation criteria will be informed by City and Provincial policy and previously received public and stakeholder feedback.

Project Governance

Design on, and adjacent to, Provincial highways is a highly technical exercise. The Province holds complete decision making power over highway and bridge design elements and additionally holds review and permitting authority over any changes within 800 metres of the highway, which includes the entire proposed project study area.

The City of North Vancouver has the responsibility to construct and maintain local road networks adjacent to provincial infrastructure. Within 800 metres of this infrastructure, all projects are reviewed by the Ministry before permits for construction can be granted.

With the proposed project area for the Lonsdale Highway Crossing improvements, there is joint responsibility for design development to balance local needs with Major Road Network functions. This means that City staff can develop design concepts, but ultimately must work with the Ministry to achieve a solution that is acceptable to both parties, recognizing that there is not always consistent alignment of priorities between highway operations and local community transportation goals.

Staff will be working with our Ministry partners to set up a collaborative working structure that will ensure City policies are properly reflected throughout the design process.

Involving the Community

Through the recent adoption of the Mobility Strategy and the first two phases of public engagement on the Upper Levels Greenway, staff have received rich and detailed feedback from the public about our collective transportation vision and immediate design needs to address safety and accessibility around the Lonsdale interchange. During this next phase of work, it is the responsibility of staff to bring those perspective to the Province as we work through the options analysis process.

Due to the technical nature of highway designs and jurisdictional oversight by the Province, current engagement planning for this work envisions as CONSULT level of public involvement from the IA2P Spectrum of Public Participation (Figure 5). Taking a CONSULT approach, means the City will provide the public with all of the information about the project including the technical constraints and obtain public feedback on analysis and decisions.

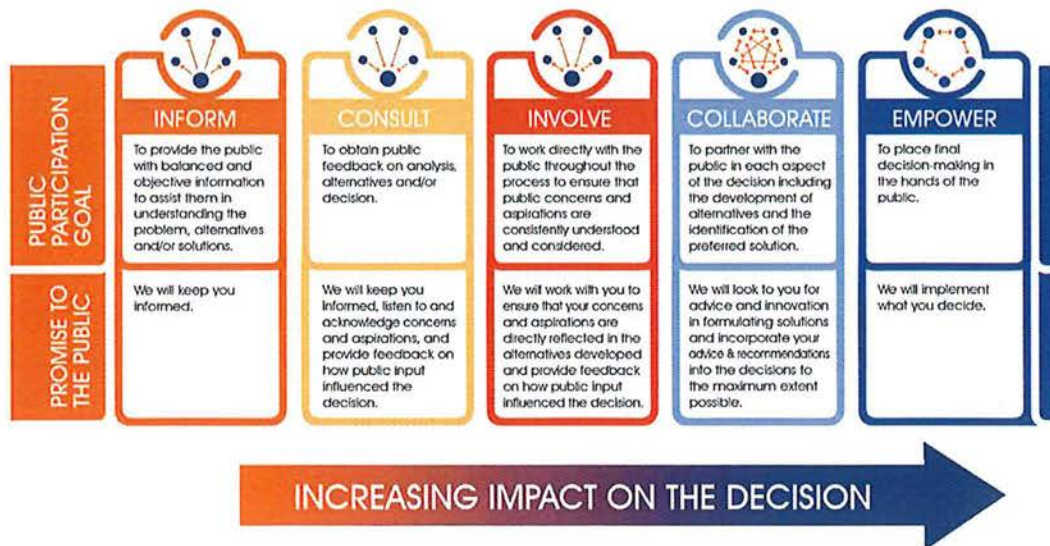


Figure 5. IA2P Spectrum of Public Participation. Source: IA2P Canada

While the opportunities to collaboratively design this highway project are more limited compared to local street active mobility projects, there will still be opportunities to hear from the community about specific safety and accessibility concerns and to keep them informed as the project design process advances. In particular, as the project moves forward from concept into detailed design, there will need to be direct engagement with the small number of adjacent residents within the study area to ensure site specific considerations are properly incorporated into the design.

With the Province as the ultimate decision authority for much of the work, the City can provide the following commitments to the community:

- Safe property access will be maintained for all residents
- Mature trees will be retained everywhere possible
- Designs will focus within the existing public right-of-way
- Strive to provide property owners a cohesive design and seamless transition between private property and the public realm.

Integrated Project Schedule and Next Steps

Staff are working with the Ministry to confirm a project schedule and detailed work plan. The draft milestone schedule (Figure 6) outlines the anticipated work flow for analysis and design work for the Lonsdale crossing and Phase 1 of the Upper Levels Greenway through 2024-2025 with construction anticipated in 2026.

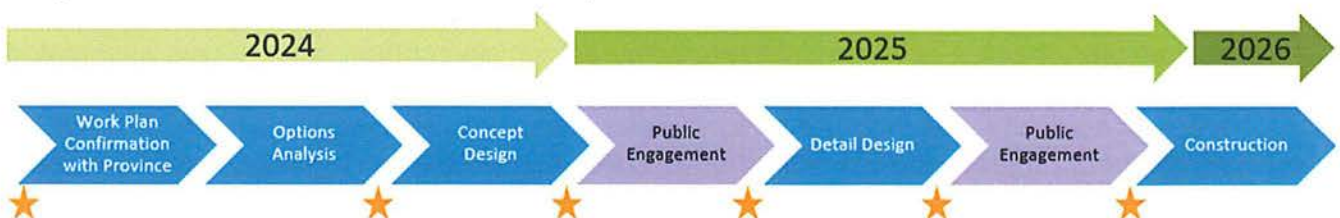


Figure 6. Draft milestone schedule. Orange stars represent Council touchpoints where staff will provide project updates and/or seek endorsement to move into the next phase of work.

As the work plan is confirmed with the Ministry, the details of public engagement and Council reporting will be updated to reflect the schedule and milestones agreed to. The current engagement plan involves bringing a concept design for the Lonsdale Highway Crossing and Phase 1 of the Upper Levels Greenway to the public as a single project for comment after concept design and before detailed design. The second public engagement period shown in the schedule will primarily consist of direct one-on-one engagement with adjacent neighbours in advance of construction.

Additionally, discussions with Squamish and Tsleil-Waututh Nation members will be important and will build upon early engagement around the Upper Levels Greenway. All Provincial projects additionally require engagement with First Nations across Metro Vancouver. Staff will be working with Ministry staff to determine how to properly engage in discussions with the Nations.

FINANCIAL IMPLICATIONS

In 2022 Council approved funds to support the early work on the Upper Levels Greenway Project. The project team has completed supportive technical work and two rounds of engagement with the community to establish a concept plan and preferred route for the Upper Levels Greenway. A value of \$799,000 remains unspent and can be used to support future phases of the project.

Should Council direct staff to integrate Phase 1 of the Upper Levels Greenway and Mobility Improvements into the Lonsdale Highway Overpass Mobility Improvements project, funding in the 2024-2028 Financial Plan will be pulled together from the sources indicated below. At this time, there is no additional funding required to advance the analysis, concept design, and public engagement components of the combined project. There are sufficient unspent funds from the ULG route identification and concept design stage to advance the project to the end of the first public engagement phase. Any funds that remain unspent after the next phase of work, can be carried over into the detailed design and construction phases to help meet the matching funding commitment typically required by external granting agencies. Staff have been successful in securing matching funds up to \$1.46m from TransLink to support the delivery of the Upper Levels Greenway project. As a portion of this project will be constructed on Provincial infrastructure, it is anticipated that the Province will contribute capital funding once the scope of the work is more clearly defined. Staff will continue to explore opportunities to secure additional external funding support.

A total cost for the design and construction of the proposed integrated project is difficult to assess at this time. While staff have a preliminary estimate of the Upper Levels Greenway Phase 1 of \$4.4 million including design and construction. Costs associated with the various options for improving the north-south crossing of the highway overpass vary significantly. Through the option analysis and concept design process with the Province a project estimate will be developed. As indicated in Figure 6, staff will report back to Council after option analysis is complete with further information, including funding options for Lonsdale Highway Overpass component, and seek direction on a pathway forward.

Source	Project	Value
Upper Levels Greenway Route Identification, Concept Design, Supportive Technical Work, and Engagement		
Appropriated from 2019 – 2023 Financial Plans	Upper Levels Greenway	\$1,590,000
	Staffing and Overhead	(\$398,000)
	Technical Consultant Support	(\$393,000)
Unspent Funds		\$799,000
Integrated Analysis and Concept Design		
Growing Communities Fund (Appropriated in Q3 2023)	Lonsdale Highway Overpass Mobility Improvements	\$90,000
Unspent funds from 2019-2023 Financial Plans	Upper Levels Greenway	\$799,000
Total Available Funding for Analysis, Concept Design, and Engagement		\$889,000
Detailed Design and Construction (Future Appropriations)		
2024-2028 Financial Plan	Lonsdale Highway Overpass Mobility Improvements	\$200,000
2024-2028 Financial Plan	Mobility Network Implementation – Upper Levels Greenway – Phase 1	\$1,300,000
External Funding – TransLink (Secured)	Mobility Network Implementation – Upper Levels Greenway – Phase 1	\$1,460,000
Total Available Funding for Construction		\$2,960,00

In the 2024-2028 Draft Financial Plan there is an additional \$150,000 for the Land Bridge Feasibility Study. An initial high level evaluation will be performed within the scope of this project and staff will report back to Council for further direction based on those findings.

INTER-DEPARTMENTAL IMPLICATIONS

Resolving the complexity of the Lonsdale highway crossing involves a range of technical components including transportation engineering, public realm design, and integration with future land use integration considerations. The project will be delivered through the Public Realm Infrastructure team with support from across Engineering, Planning, Public Works, Communications and Engagement, and Finance as required.

The project team will be directly coordinating work with the Harry Jerome Community Recreation Centre team to ensure potential design solutions integrate appropriately with the developed site plans for this regional destination with no additional costs or land requirements from the HJCRC project.

STRATEGIC PLAN, OCP OR POLICY IMPLICATIONS

This project supports a Connected City, provides active and sustainable ways for people to move to, from and within the City safely and efficiently and will result in the increase of active transportation mode share, while also supporting the health and well-being of all.

The project specifically addresses the following actions from the City's Mobility Strategy:

- 1A: Deliver a complete, universally accessible, and high-quality pedestrian network.
 - i. Provide a complete sidewalk network on both sides of the street of all streets within a reasonable walking distance (typically 400 metres) of all key pedestrian areas and destinations like schools, community centres, and frequent transit corridors. Prioritize improving the quality and comfort of existing narrow sidewalks along and within a reasonable walking distance of the City's Main Streets.
 - iii. Prioritize universal design and accessibility standards when designing or redesigning all streets, sidewalks, connections, and pathways using guidance from BC's Active Transportation Design Guide.
- 1B: Deliver an all ages and abilities Mobility Lane Network that connects all our neighbourhoods and key destinations.
 - i. Complete the priority corridors for All Ages and Abilities (AAA) Mobility Lanes and provide improved North-South connections to key activity centres in the City. Identify new phases for network expansion on a regular basis as corridors as delivered.
 - iii. Upgrade existing mobility lane infrastructure to meet AAA standards, prioritizing investments on corridors with high use and the greatest potential for risk reduction.
- 5A: Minimize the potential for conflict where different street users come together.
 - i. Increase the separation of different users at our busiest intersections, particularly for the protection of vulnerable road users.
- 5B: Manage travel speeds and access to improve neighbourhood safety and livability.
 - iv. Use access management interventions to manage through traffic on Local Streets that experience chronic traffic and shortcutting.
- 10C: Coordinate closely with the District of North Vancouver, Squamish Nation, and the Province on all boundary-adjacent mobility infrastructure projects.
 - iv. Work with the Province to deliver the recommendations of the Highway 1/99 North Shore Corridor Study, including improving the people moving capacity of the corridor through dedicated transit lanes and improving connections across Highway 1 for all modes of travel.

RESPECTFULLY SUBMITTED:



Justin Hall
Manager, Public Realm Infrastructure