CITY OF PORT COQUITLAM

Committee of Council Regular Agenda

Council Chambers, 3rd Floor City Hall, 2580 Shaughnessy Street, Port Coquitlam, BC
Tuesday, April 23, 2019
Time: 2:30p.m.

1. CALL TO ORDER

2. ADOPTION OF THE AGENDA

2.1 Adoption of the Agenda

Recommendation:

That the April 23, 2019, Regular Committee of Council Meeting Agenda be adopted as circulated.

3. CONFIRMATION OF MINUTES

3.1 Minutes of Committee of Council

Recommendation:

That the minutes of the following Committee of Council Meetings be adopted:

- *April 9, 2019, Regular Committee of Council Meeting.*

4. REPORTS

4.1 Metro Vancouver Presentation: Lougheed Land Use Study (Verbal Report)

Recommendation:

None.

4.2 Rezoning Application - 3346 Finley Street

Recommendation:

That Committee of Council recommend to Council that:

1) The zoning of 3346 Finley Street be amended from RS1 (Residential Single Dwelling 1) to RS2 (Residential Single Dwelling 2); and,

2) Prior to adoption of the amending bylaw, the following conditions be met to the satisfaction of the Director of Development Services:

a) Demolition of existing structures;
b) Completion of design and submission of fees and securities for off-site works and services;
c) Submission of a $2000 security for tree replanting;
d) Registration of a legal agreement to implement design objectives and confirm number of units within a dwelling.

4.3 Development Variance Permit Application – 2389 Hawthorne Avenue

Recommendation:

That the Committee of Council:

1) Authorize staff to provide notice of an application to vary underground servicing requirements for a 28-unit apartment building at 2389 Hawthorne Avenue, and

2) Advise Council that it supports approval of Development Variance Permit DVP00065.

4.4 Coquitlam River Bridge & Lougheed Highway Improvements

Recommendation:

That Committee of Council direct staff to consult with stakeholders on the functional design for the Coquitlam River Bridge and Lougheed Highway improvements, and seek external funding for design and construction of the works.

4.5 Implementation of the BC Energy Step Code

Recommendation:

That Committee of Council recommend to Council that the Building & Plumbing Bylaw be amended to implement the BC Energy Step Code and that the amendment take effect 3 months after the date of adoption.

5. COUNCILLORS' UPDATE

6. MAYOR'S UPDATE

7. CAO UPDATE

8. ADJOURNMENT

8.1 Adjournment of the Meeting

Recommendation:

That the April 9, 2019, Regular Committee of Council Meeting be adjourned.

Committee of Council Regular Minutes

Council Chambers, 3rd Floor City Hall, 2580 Shaughnessy Street, Port Coquitlam, BC
Tuesday, April 9, 2019

Present:
Chair – Mayor West
Councillor Darling
Councillor Dupont
Councillor Penner
Councillor Pollock
Councillor Washington

Absent:
Councillor McCurrach

1. CALL TO ORDER

The meeting was called to order at 4:30 p.m.

2. ADOPTION OF THE AGENDA

2.1 Adoption of the Agenda

Moved - Seconded:
That the April 9, 2019, Regular Committee of Council Meeting Agenda be adopted with the following changes:

- *Addition to Item 3.1 February 12, 2019, Committee of Council Regular Minutes – Revised.*

Carried

3. CONFIRMATION OF MINUTES

3.1 Minutes of Committee of Council

Moved - Seconded:
That the minutes of the following Committee of Council Meetings be adopted:

- *February 12, 2019, Committee of Council Regular Minutes – Revised*
- *March 26, 2019, Regular Committee of Council Meeting.*

Carried

4. PUBLIC INPUT OPPORTUNITY

4.1 Coach House Development Permit for 1610 Knappen Street

No public comments.

5. REPORTS

5.1 February Community Centre Update

Staff provided an update and answered questions of Council.

5.2 Coach House Development Permit for 1610 Knappen Street - Issuance

Moved - Seconded:
That Committee of Council approve Development Permit DP000375 to regulate a coach house development at 1610 Knappen Street.
Carried

6. COUNCILLORS' UPDATE

Council provided updates on City business.

7. MAYOR'S UPDATE

Mayor West provided an update on City business.

8. CAO UPDATE

CAO provided an update on City business.

9. ADJOURNMENT

9.1 Adjournment of the Meeting

Moved - Seconded:

That the April 9, 2019, Regular Committee of Council Meeting be adjourned at 5:19 p.m.

Carried

Certified Correct,

Mayor

Corporate Officer

RECOMMENDATIONS:

That Committee of Council recommend to Council that:

1) The zoning of 3346 Finley Street be amended from RS1 (Residential Single Dwelling 1) to RS2 (Residential Single Dwelling 2); and
2) Prior to adoption of the amending bylaw, the following conditions be met to the satisfaction of the Director of Development Services:
   a) Demolition of existing structures;
   b) Completion of design and submission of fees and securities for off-site works and services;
   c) Submission of a $2000 security for tree replanting;
   d) Registration of a legal agreement to implement design objectives and confirm number of units within a dwelling.

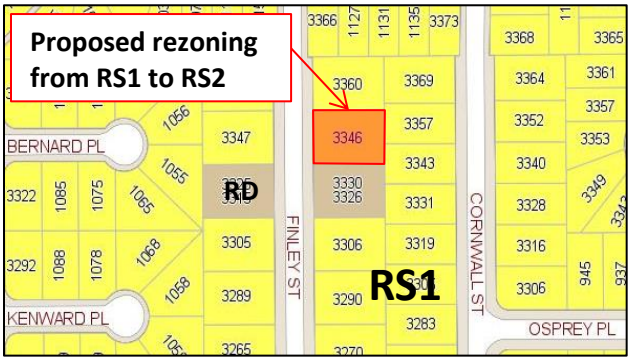
PREVIOUS COUNCIL/COMMITTEE ACTION

None.

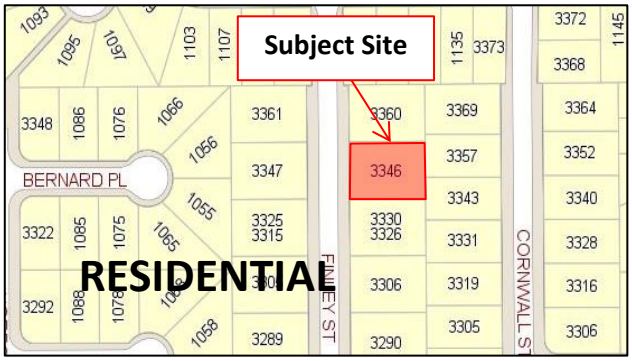
REPORT SUMMARY

This report provides for Committee's consideration of an application to rezone a large lot at 3346 Finley Street to facilitate its subdivision into two lots. Currently, an older home occupies the site and there are number of large, mature trees in the rear yard. The report notes the trees at the back of the property will be retained and protected through the development process. It recommends setting design restrictions for the new homes and lots to promote a better fit of smaller lots within an established context of larger lots.

BACKGROUND



Current Zoning

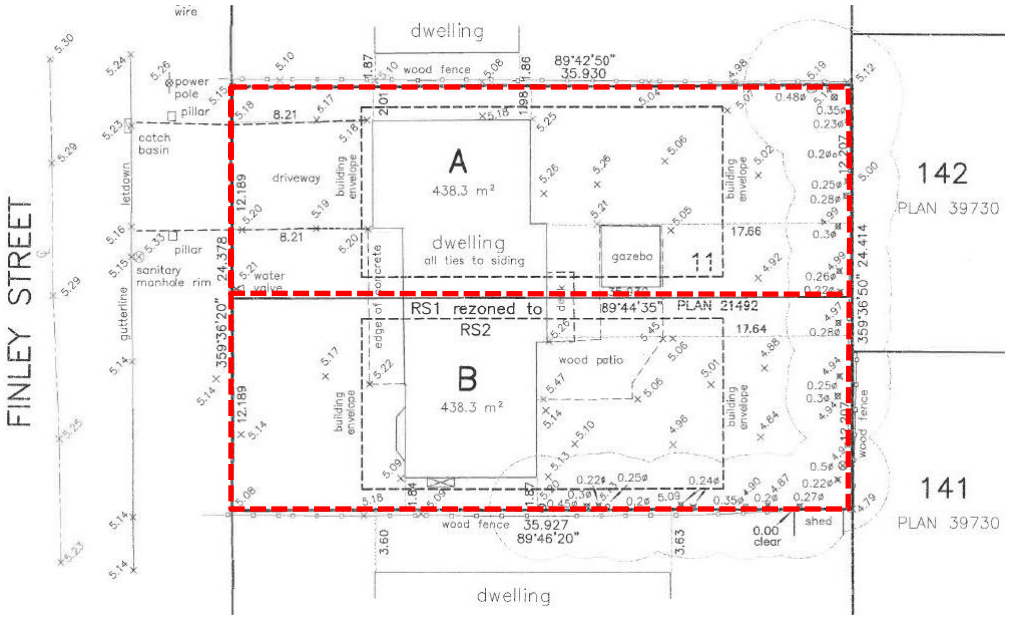


OCP Land Designation

The subject property is a large lot on the east side of Finley Street that is developed with an older single family home. Its land use designation in the Official Community Plan is Residential and its current zoning is Residential Single Dwelling 1 (RS1); the proposed zoning is Residential Single

Dwelling 2 (RS2). The area is primarily developed with older single-family homes and the site is next to a duplex.

The property owner has applied for subdivision to create two lots that would conform to the regulations of the RS2 zone, if approved. With proposed lot widths of 12.2m (40 ft.), each lot would be slightly wider than the required 12 metre minimum and their lot areas of 483 m^2 (4,718 sq.ft.) would exceed the required minimum lot area for this zone of 375 m^2 (4936 sq.ft.):



There are 31 mature trees located at the rear of the property. As identified by an arborist report, 29 of these trees may be retained. However, two western red cedars require removal due to significant decay.

The off-site upgrades to be required as a condition of rezoning approval include provision for the reconstruction of Finley Street (½ road plus one meter), curb and gutter, sidewalk, street lighting and street trees. Servicing upgrades (water, sanitary and storm) are also required. The submission of engineering design, fees and securities for these off-site works and services is recommended as a condition of rezoning but it is not expected that they would be implemented until additional development or infrastructure improvements would be scheduled within this block.

DISCUSSION

Rezoning to facilitate a subdivision of one large lot into two, smaller lots and the subsequent construction of two new homes could introduce a significant change to the established character of Finley Street. Recent changes to policies of the Official Community Plan have expanded where Council may consider rezoning sites in established neighbourhoods to the RS2 zone, and promote this amendment where there would be a public benefit such as off-site infrastructure

improvements, retention of mature vegetation and landscaping, or buildings and landscaping that would achieve a superior quality of design and enhanced fit with the established neighbourhood character. To achieve this policy direction, a number of restrictions are recommended as conditions of rezoning and, if approved as recommended, it is anticipated that the two new homes would be a better fit compared to a large new house (plus a secondary suite and coach house) as could be built in accordance with existing zoning.

A comparison of the two scenarios is as follows:

	Existing RS1 Zone Regulations (1 large lot)	**Proposed RS2 Zone and site-specific design restrictions (2 smaller lots)**
Lot Area	9436 sq.ft.	4718 sq.ft. per lot
Permitted house size, including a 500 sq.ft. garage	5218 sq.ft., plus any basement.	2859 sq.ft. plus any basement in each house.
Secondary suite	One permitted	One permitted in each dwelling
Coach house	One permitted (within total square footage)	If there are no secondary suites within the new dwellings, coach houses could be considered
House design	Not regulated	By design covenant (see note), each house required to be substantially different, 2nd storeys stepped back, prominent front entries, and scale that transitions to adjacent homes
Driveways	One driveways up to 7m wide	Two driveways up to 5m wide
Landscaping	Not regulated	Hedges, fences, or planting beds along interior side yard lines required for screening
Tree retention & replanting	Per Tree Bylaw	Owner intends to keep the 29 trees and these would be protected during construction per Tree Bylaw. Report recommends two trees be planted in each front yard and notes the two cedars replaced.

Note: the recommended s.219 design and landscaping covenant would prescribe the following:

i) Dwellings to be substantially different in appearance from adjacent buildings as defined by building massing, window location, balconies, decks, façade materials and finishing
ii) Second storeys to be stepped back, recessed, or articulated to reduce visual impact
iii) Prominent front entry
iv) Building massing that transitions to adjacent residential homes
v) Paved driveway surface limited to 5 m (16 ft.) in width (per lot)

vi) Landscaping to include hedges, fences, or planting beds along interior side yard lines to create screening
vii) Minimum of two large trees (height of no less than 3 m) to be planted in the front yards; and,
viii) Replacement of the two trees to be cut with a similar species (conifer) and a height of at least 3 metres.

FINANCIAL IMPLICATIONS

None.

PUBLIC CONSULTATION

A development sign is posted on the property. To date, staff have not received any comments.

OPTIONS

(Check = Staff Recommendation)

#	Description
1 ✓	Recommend to Council that the zoning of 3346 Finley Street be amended from RS1 (Residential Single Dwelling 1) to RS2 (Residential Single Dwelling 2) subject to Council setting the recommended conditions of approval to ensure appropriate building design and landscaping.
2	Request additional information or amendments to the application or recommended conditions to address specified issues prior to making a decision on the application
3	Recommend to Council that the rezoning application be refused.

Development Variance Permit Application DVP00065 - 2389 Hawthorne Avenue

RECOMMENDATION:

That the Committee of Council:

1) Authorize staff to provide notice of an application to vary underground servicing requirements for a 28-unit apartment building at 2389 Hawthorne Avenue, and
2) Advise Council that it supports approval of Development Variance Permit DVP00065.

PREVIOUS COUNCIL/COMMITTEE ACTION

On *April 17th, 2018, Smart Growth Committee approved:*

1. *Development Permit DP000304, which regulates an apartment development at 2389 Hawthorne Avenue (formerly 2377 Hawthorne Avenue); and,*
2. *Acceptance of $6,500.00 to provide for off-site tree replanting.*

REPORT SUMMARY

This report provides for Committee's consideration of a request to partially vary the requirement for undergrounding of overhead services to facilitate the development of a 28-unit apartment building. Undergrounding of the existing overhead service at this time is feasible along the property's frontage but not within the lane. The recommended variance would allow for the developer to provide funding for these works to be implemented in the future.

BACKGROUND

The property owner and applicant, Quorus Properties Ltd., wishes to construct a 28-unit apartment building on a vacant property located in the downtown area on the corner of Rowland Street and Hawthorne Avenue. In April 2018 Quorus obtained a development permit to regulate the form and character of the proposed development and in October submitted a building permit application, but this permit cannot be issued until a security has been received for required offsite works. The site is currently secured with construction fencing and remains vacant.

As part of the offsite requirements, the applicant is required to relocate overhead utilities to an underground service. It is feasible to underground the wiring for its Hawthorne Street frontage, but not feasible to remove the lines in the lane at this time. The cost to install this underground wiring is estimated to be $103,000.00.

DISCUSSION

If the variance is approved, pre-ducting would be installed for future removal of the overhead service when the entire block is redeveloped. Also, the poles along Hawthorne Avenue can be removed but one pole will need to be retained and relocated to the east property line.

It is recommended that the development variance permit be approved to obtain funding for the future works.

FINANCIAL IMPLICATIONS

The $103,000.00 would be placed in the city's Future Works liability account and held for future undergrounding.

PUBLIC CONSULTATION

An opportunity for public input would be provided as part of Council's consideration of the variance application.

OPTIONS

(Check = Staff Recommendation)

#	Description
1 ✓	Authorize notification of the application and advise Council that Committee supports the application.
2	Request additional information or amendments to the application to address specified issues prior to making a determination; or
3	Determine that it does not wish to authorize the notification. The applicant may then request the application be forwarded to Council for consideration.

ATTACHMENTS

Attachment #1: Location Map

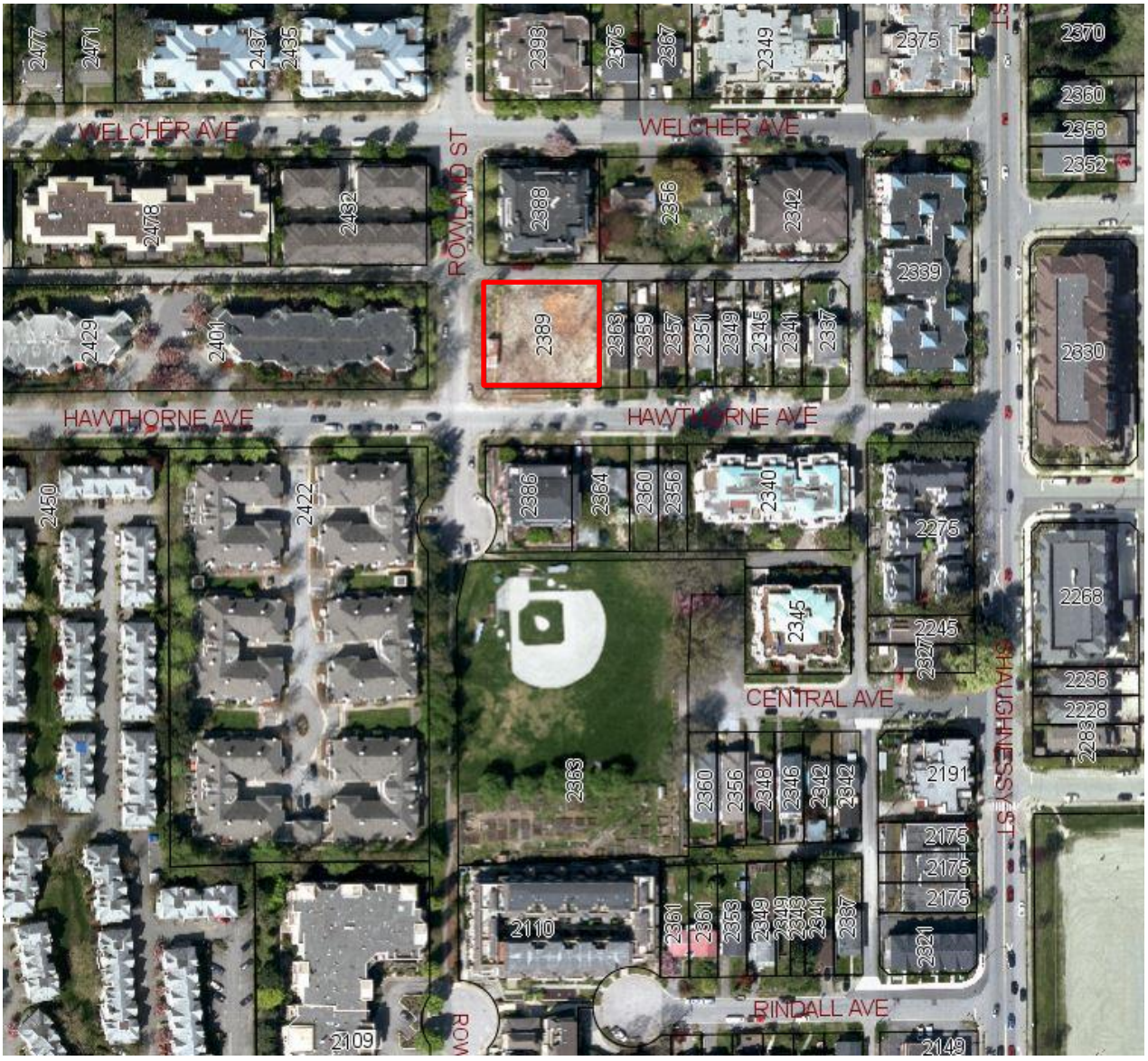
Attachment #2: Draft Development Variance Permit

ATTACHMENT 1

CITY OF PORT COQUITLAM

DEVELOPMENT APPLICATION LOCATION MAP

PROJECT ADDRESS: 2389 Hawthorne Avenue **FILE NO: DVP00065**



ATTACHMENT 2

THE CORPORATION OF THE CITY OF PORT COQUITLAM

"DEVELOPMENT PROCEDURES BYLAW, 2013, NO. 3849"

DEVELOPMENT VARIANCE PERMIT

NO. DVP00065

Issued to: Quorus Properties LTD.
(Owner as defined in the *Local Government Act*, hereinafter referred to as the Permittee)

Address: 7670 Morley Drive, Burnaby, BC V5E 2K4

1. This Development Variance Permit is issued subject to compliance with all of the bylaws of the Municipality applicable thereto, except as specifically varied by this permit.

2. This Development Variance Permit applies to and only to those lands within the Municipality described below:

Address:	2389 HAWTHORNE AVE, PORT COQUITLAM, BC V3C 1X1
Legal Description:	PARCEL 1, DISTRICT LOT 289, GROUP 1, NEW WEST DISTRICT PLAN LMP26019
P.I.D.:	023-270-403

3. The Parking and Development Management Bylaw, 2005 No. 3525 and Subdivision Servicing Bylaw, 1987 No. 2241 are varied as follows:

   - Section IV – Servicing Requirements: 405. To vary the requirement to underground electrical and telephone wiring with a one-time payment of $103,000.00.

   For clarity, this variance applies to and only to the Parking and Development Management Bylaw requirement to underground overhead utilities associated with Development Permit Application DP000330.

   The land described herein shall be developed strictly in accordance with the terms and conditions and provisions of this permit.

4. This permit shall lapse if the Permittee does not obtain a Building Permit within one year of the date of this permit.

5. This permit is not a building permit.

AUTHORIZING RESOLUTION PASSED BY COUNCIL THE _____ DAY OF _____, 2019.

ISSUED THIS _____ DAY OF _____.

_____
Mayor

_____
Corporate Officer

I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THE TERMS AND CONDITIONS UPON WHICH THIS PERMIT IS ISSUED.

_____
Applicant (or Authorized Agent or Representative of Applicant)

Coquitlam River Bridge & Lougheed Highway Improvements

RECOMMENDATION:

That Committee of Council:

Direct staff to consult with stakeholders on the functional design for the Coquitlam River Bridge and Lougheed Highway improvements, and seek external funding for design and construction of the works.

PREVIOUS COUNCIL/COMMITTEE ACTION

Funding ($100,000) for the Coquitlam River Bridge Replacement conceptual study was approved in the 2017 capital budget. Funding ($90,000) for the functional design was approved in the 2018 capital budget. A verbal update on the project was provided to the Transportation Solutions and Public Works Committee on March 21, 2018. Staff provided the background for the conceptual study and timeline for the functional design. Discussion took place on traffic concerns, additional lanes, pedestrian/cycling improvements, and funding.

REPORT SUMMARY

An electronic copy of the Coquitlam River Bridge Replacement Functional Design Study report (Associated Engineering, April 2019) was provided to Committee of Council members on April 18, 2019. This report summarizes information on the proposed functional design for replacement of the Coquitlam River Bridge and Lougheed Highway improvements from Westwood Street to Shaughnessy Street. The design proposes a six-lane cross section with multi-use paths and transit priority improvements to facilitate the planned Lougheed B-Line. The overall project is estimated to cost $32.1M. A construction phasing plan has also been developed to accommodate four lanes of traffic and a minimum of one sidewalk to remain open throughout construction. The recommended next step is to consult with stakeholders on the design and explore funding opportunities prior to the preparation of preliminary and detailed designs.

BACKGROUND

The Coquitlam River Bridge is made up of twin structures crossing the Coquitlam River. A condition assessment of the bridges in 2015 recommended that the eastbound bridge be replaced by 2020 and the westbound concrete bridge be replaced by 2024 (see Figures 1 and 2). The eastbound steel truss bridge is in poor condition with several significant defects while the westbound concrete bridge structure is in fair condition. Neither of the bridges complies with modern earthquake resistant design standards.

The City of Port Coquitlam partnered with TransLink in 2017 to begin the planning process for Coquitlam River Bridge replacement with a conceptual planning study. The study assessed

condition, mobility, safety, reliability, and future needs to evaluate retrofit or replacement options for the bridge.

Figure 1: Eastbound Steel Truss Bridge

Figure 2: Westbound Concrete Bridge

Lougheed Highway is Port Coquitlam's primary east-west arterial and an important regional alternative to Highway 1. The highway is part of TransLink's Major Road Network which supports travel between local communities, the West Coast Express, and Evergreen SkyTrain Lines and serves as a Frequent Transit Network corridor. Approximately 55,000 vehicles per day travel through the study corridor, which extends between the intersections of Lougheed Highway with Westwood Street and Shaughnessy Street. The existing crossing over the Coquitlam River is a pinch point along Lougheed Highway where traffic is often delayed while merging at the bridge

approaches. The segment of Lougheed Highway from Westwood Street to the Pitt River Bridge is primarily four lanes wide. The adjacent segment immediately west of Westwood Street has a six-lane cross section.

As the Region's population grows and the economy diversifies, poor traffic conditions are expected to be exacerbated in the future. Capacity constraints, coupled with the current structural condition of the bridge, can be detrimental to reliable commuter travel and goods movement, ultimately impacting businesses in the City of Port Coquitlam and the economy of the wider region. The City's Master Transportation Plan (2013) recommended widening the Lougheed Highway corridor to six lanes and incorporating transit priority treatments to reduce delays and congestion. Similarly, assessments carried out by TransLink recommended a number of transit priority improvements along the corridor to enable the bus speeds and reliability necessary to deliver a B-Line service. Accordingly, the conceptual study identified that replacing the bridges as a single project would provide an opportunity to upgrade the crossing with six travel lanes to accommodate existing traffic demand and transit priority improvements along with improved pedestrian/cycling access.

DISCUSSION

The functional design work completed in 2018 is the second step in the planning and design process. The scope of work included:

- safety review and traffic forecasts
- preliminary environmental, archaeological, and geotechnical assessments
- bridge functional design
- road functional design
- construction staging
- Class C costs estimates

The functional design also incorporates Lougheed B-Line bus stops, transit priority improvements, road widening, and pedestrian/cycling enhancements on Lougheed Highway from Westwood Street to Shaughnessy Street (Figure 3). Along with the bridge upgrade, these improvements support post-implementation betterment of the Lougheed B-Line service by contributing to bus speed and reliability while supporting broader objectives for the safe and efficient movement of regional goods and people. Accordingly, TransLink has cost shared the conceptual and functional designs with the City and committed initial funds for subsequent design and construction of the works.

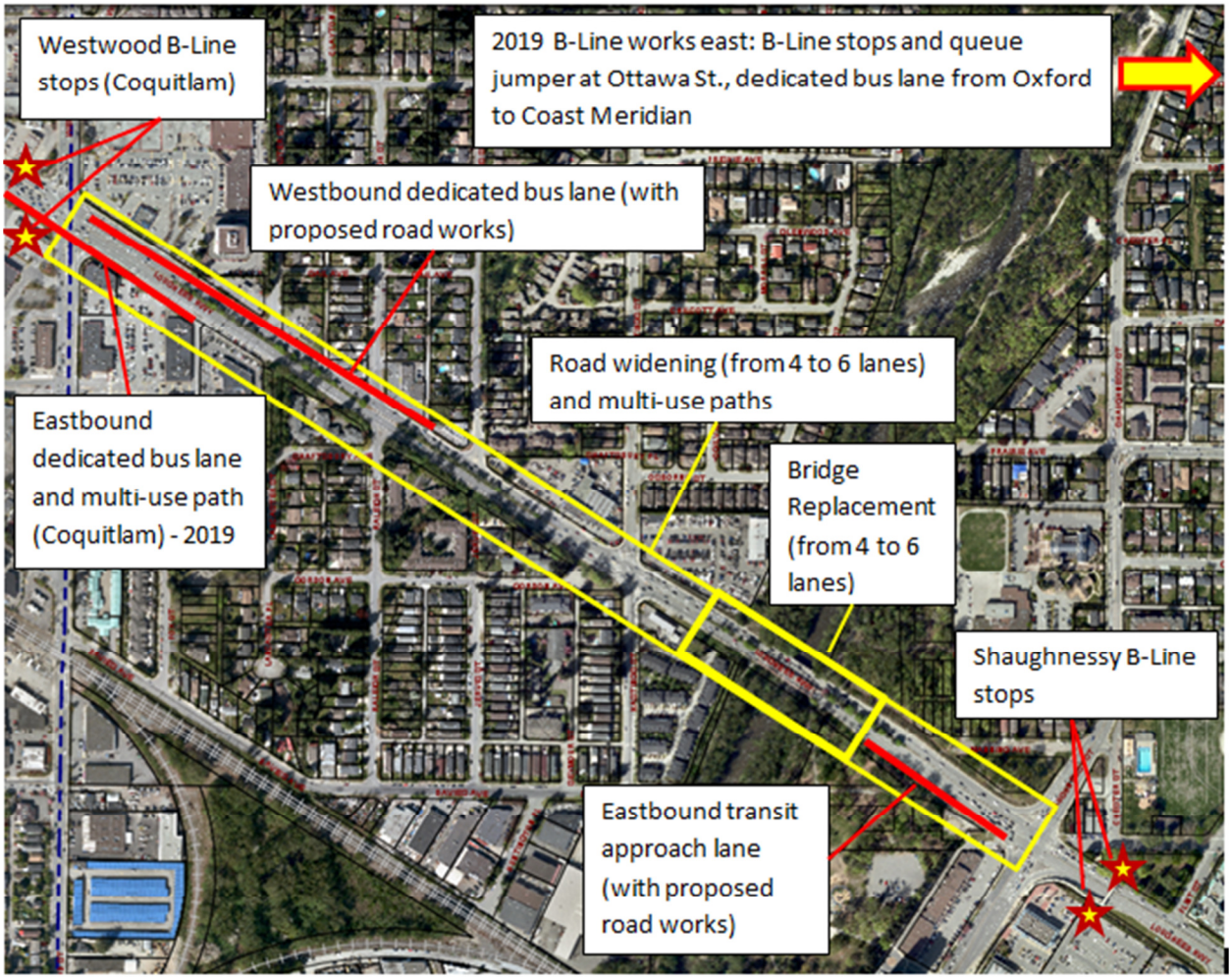


Figure 3: Proposed Coquitlam River Bridge & Lougheed Highway Improvements

Safety Assessment

The safety review indicates that traffic volume is likely a key factor in the numbers of collisions along the study corridor. A total of 1,131 collisions were reported on Lougheed Highway between Westwood Street to Shaughnessy Street from 2013 to 2017. Approximately one half of collisions occur during the afternoon peak period, when traffic volumes are highest. A total of 19 collisions involved cyclists and pedestrians. The proposed additional travel lane is anticipated to reduce the number of vehicle collisions associated with congestion on the corridor while the proposed multi-use path separated pedestrians and cyclists from traffic which will help to further reduce collisions.

Traffic Assessment

The City conducted traffic counts on Lougheed Highway in 2017 to evaluate growth and determine if signal adjustments or capacity enhancements were required. Lougheed Highway is categorized as a Divided Urban Arterial with a design capacity of ~30,000 vehicles per day. The traffic volume and growth results are presented below in Table 1.

Table 1: Lougheed Highway traffic volume and growth

Lougheed Hwy	2013 (vehicles/day)	2017 (vehicles/day)	Change (% /year)	Overall Change (%)
Hastings St to CQ River Bridge	34,928	43,726	+ 6.3%	+ 25%
Oxford St to Coast Meridian	28,994	35,934	+ 6.0%	+ 24%

The results indicated that Lougheed Highway is operating over its design capacity. Average speeds had also decreased since 2013 which, coupled with the traffic volume data, is indicative of congestion along the corridor. These findings are consistent with the 2013 Master Transportation Plan which identified Lougheed Highway as a key segment with mobility challenges, and recommended widening the corridor from four to six lanes. The 2017 Traffic Count Results staff report noted that the road capacity improvements would be considered with the functional design for the Coquitlam River Bridge and Lougheed Highway improvements.

For the conceptual study, traffic volume forecasts were developed using the Regional Transportation Model (RTM3). Peak hour traffic volumes are projected to increase an additional 27% by 2027 and 42% by 2042, driven by population and employment growth in Coquitlam, Port Coquitlam and the rest of the region. The results further support the need for capacity improvements to accommodate future traffic growth along this corridor. Capacity constraints on the corridor beyond the study area are beyond the scope of this project, but should be considered for future capital improvements.

Lougheed B-Line

The Lougheed Highway study corridor is part of TransLink's Frequent Transit Network, a network of corridors with transit service every 15 minutes or better. The corridor is currently serviced by bus routes 159, 160, 171, 172, and 701. The Lougheed B-Line is planned for deployment in early 2020 and will run from Coquitlam Central Station to Maple Ridge, along Lougheed Highway as shown below in Figure 4.

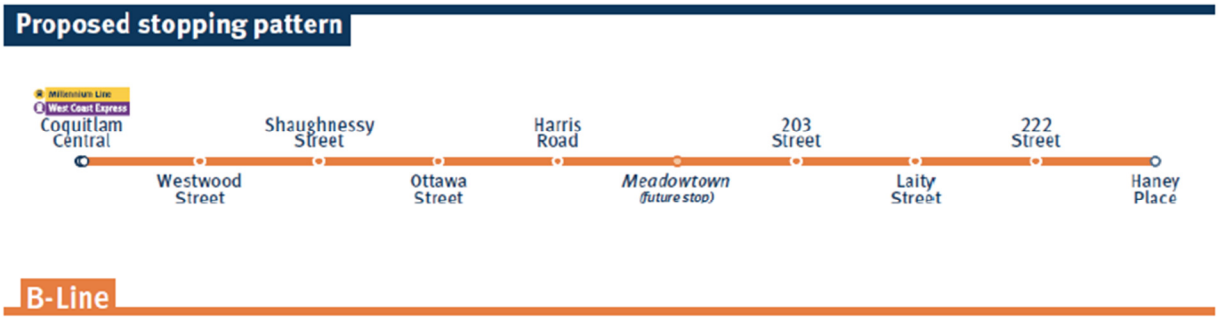


Figure 4: Lougheed B-Line Stops

The Lougheed B-Line is a rapid transit service with limited stops and shorter headways than the existing bus service. More frequent transit service can support mode shift which has the potential to reduce single occupancy vehicle travel and congestion along the study corridor. The functional design for the bridge replacement and road takes into account the requirements for transit accommodation, including appropriate lane placement and widths to accommodate the frequent, high speed, express buses in the B-Line service.

TransLink has been working with the cities of Port Coquitlam and Coquitlam to develop transit priority improvements which will support the successful operation of the B-Line while minimizing impacts on general purpose traffic through the busy Lougheed corridor. The designs were developed from B-Line stop analysis along with speed and reliability assessments in support of transit priority measures. Rather than a dedicated bus lane for the entire length, the functional design proposes that the additional lane be used to provide needed capacity for all traffic while incorporating a mixture of transit improvements along the corridor and at intersections.

The B-Line stops along Lougheed Highway near Port Coquitlam will be at Westwood Street, Shaughnessy Street and Ottawa Street; shelters and bus stop enhancements are proposed at all B-Line stops. TransLink has planned for a number of transit priority improvements to be constructed prior to the B-Line implementation. New eastbound bus lanes are planned from Pinetree Way (in Coquitlam) to Westwood Street and from the Oxford Connector to the Coast Meridian Connector. A queue jumper is planned at the Ottawa Street intersection; queue jumpers allow buses to share the right turn lane and enter the intersection ahead of traffic flow. The design and construction of all B-Line improvements is being undertaken and funded by TransLink. Additional transit priority improvements are planned for construction with the City's proposed road improvements, including a westbound bus lane from Jervis Street to Westwood Street and transit priority improvements from Shaughnessy Street to the bridge.

Preliminary Environmental Assessment

Based on the environmental review, no critical environmental issues were identified that would prevent the project from proceeding or substantially impact its design. An environmental assessment should be completed for the construction and operational phases of the project based on the final design to identify impacts on aquatic and terrestrial habitats, and recommend mitigation measures to avoid, minimize, and offset these impacts.

The assessment will supplement regulatory approval applications, which will be required for the project based on the final design. The project will require an application to the BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development and a Request for Review to the federal Department of Fisheries and Oceans. The development of a construction environmental management plan will also be required prior to the construction phase to avoid, minimize, and/or offset the potential effects of the construction phase.

The key constraints that should be addressed during project design and construction planning are aquatic and riparian habitat, and water quality in the Coquitlam River. These constraints are within the normal range for construction projects in developed areas and they are expected to be manageable with best management approaches to environmental design, mitigation, and monitoring. Consideration was given to replacing the existing concrete girder bridge with a clear-span bridge and removing the existing in-stream pier (Figure 5). However, due to considerable challenges with constructability, economics, and traffic flow during construction, a two-span replacement bridge is proposed.

Figure 5: Existing pier of westbound concrete bridge

Replacing the bridges will include instream work, and widening of the road which is anticipated to result in impacts on instream habitat and riparian vegetation. As such, the design should seek to minimize/reduce the total permanent footprint; manage drainage to minimize the risk of erosion and sedimentation, and; plan instream works within the reduced risk work window (August 1 - September 15).

Preliminary Archaeological Assessment

The majority of lands within the project area are of high or moderate archaeological potential. As such, it is recommended that an archaeological impact assessment be carried out during the preliminary design phase to reduce risk and uncertainty. Due to the built-up urban nature of the project area, and limited opportunity to access lands buried under the existing roadway, archaeological monitoring should also be undertaken concurrent with construction for ground-disturbing activities. Kwikwetlem First Nations were provided with the conceptual study and consulted to provide input on the archaeological assessment and proposed functional design.

Preliminary Geotechnical Assessment

No critical issues were identified with the preliminary geotechnical assessment that would prevent the project from proceeding or substantially impact its design. It was determined that the area around the Coquitlam River Bridge includes soils susceptible to seismic induced liquefaction. The Canadian Highway Bridge Design Code requires a site-specific ground response analysis for this type of soil, so additional geotechnical investigation will be required during the design stage. If properly designed, settlement of the embankment away from the abutments is expected to be tolerable as the differential settlement will not significantly alter the grade of the highway. Ground improvement will likely be required to reduce the risk of post-liquefaction lateral spreading and the hazard posed by seismic induced lateral spreading of the ground into the Coquitlam River channel.

Bridge Functional Design

The functional design proposed for the bridge includes twin slab-on-girder, two-span bridges with a six-lane cross section and MUP's on both sides (Figure 6). The additional lane is not proposed as a dedicated HOV or bus lane. On the bridge, and throughout the majority of the proposed highway improvement extents, the third travel lane is intended to provide additional capacity for all traffic to address existing volume and reduce congestion. As indicated in the earlier section on the B-Line improvements, segments of the highway will be designated as dedicated bus lanes and additional transit priority improvements are planned at some intersections.

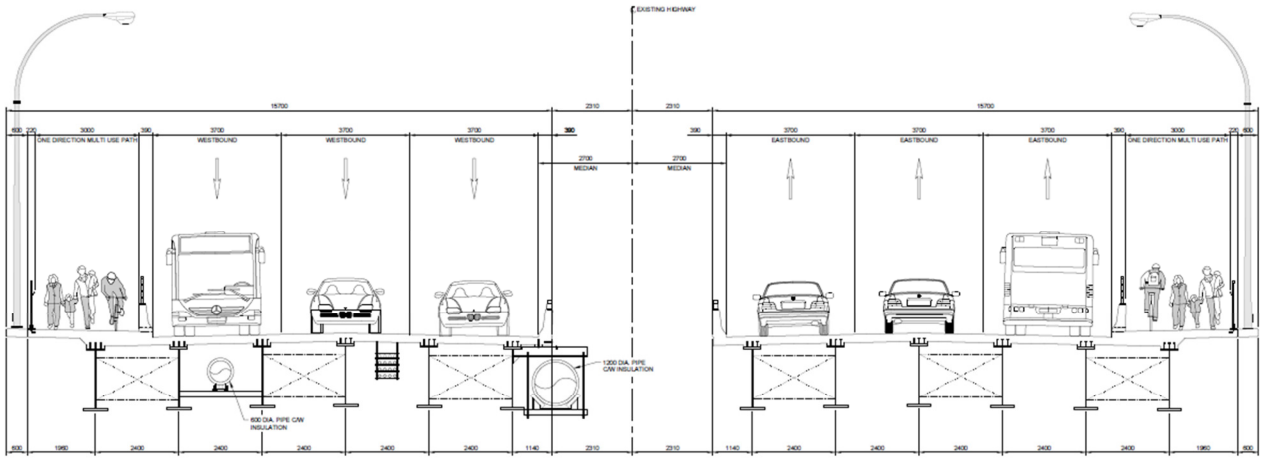


Figure 6: Proposed Coquitlam River Bridge Cross-Section

A clear span bridge design was considered to avoid the placement of a pier in the river but has a number of considerable disadvantages. It is more expensive than a two-span bridge and must be constructed in a single construction phase; the overhead structure to support the 77m crossing and the structural elements do not allow for partial width construction. Additionally, the preclusion of partial-width construction makes traffic accommodation extremely difficult during construction. Accordingly, a clear-span concept was not developed further.

There are two girder options for the bridge: steel plate I-girders or pre-stressed concrete girders with the same girder spacing. The choice will be made in subsequent design stages based on overall construction economy and ease of construction. By substituting a 3m MUP on each side in place of sidewalks and bike lanes, the bridge structure can be narrowed by one metre, which reduces the number of required girders from seven to six.

Road Functional Design

The limits of construction for the functional design are the east approach of the intersection of Westwood Street and Lougheed Highway to the west approach of the intersection at Shaughnessy Street. The design proposes a six-lane cross section with a MUP on both sides of the highway corridor, including the bridge (Figure 7). Lane widths will typically be designed as 3.7 m wide to match widths generally found on roadway sections east and west of the project site. Replacement of the vegetated center highway median with a narrower concrete barrier is required to accommodate the road capacity improvements with minimal property acquisition. The retention of vegetation in the design would require additional property acquisitions and cost which has not been considered in the functional design.

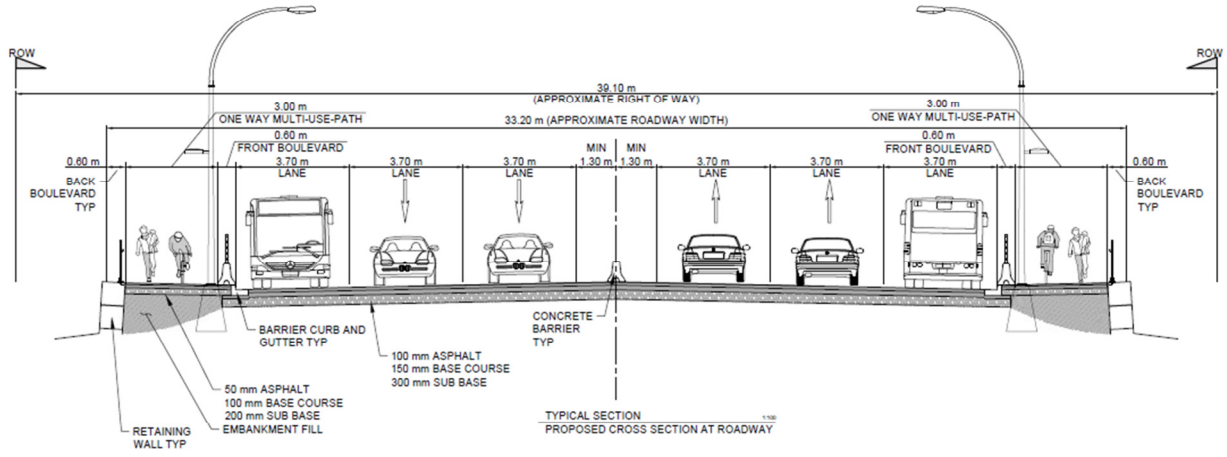


Figure 7: Proposed Road Cross Section

Within the project extents, there are existing sidewalks on both sides of Lougheed Highway except for 450m section on the south side (eastbound) from the Nissan car dealership to Hastings Street. There are no existing bike lanes on Lougheed Highway within the project extents in Port Coquitlam; there are bike lanes on Lougheed Highway from the project boundary at Westwood Street in Coquitlam through the Barnet Highway to Ioco Road in Port Moody. A MUP is proposed in place of separate sidewalks and bike lanes to accommodate both cyclists and pedestrians on the same facility. This reduces the cost, corridor footprint, and property impacts while providing a higher level of safety for cyclists and maintaining connectivity with the MUP proposed in Coquitlam

from Christmas Way to Westwood Street. The additional segment will provide continuity across the three municipal boundaries and form a link in the TransLink Major Bike Network and Regional Cycling Strategy.

The primary function of any road is to move goods and people safely and efficiently which is particularly important for a regional highway like Lougheed. The proposed road design aims to maximize the safe movement of goods and people while minimizing cost and property impacts. It is beneficial when additional elements (e.g. trees, environmental enhancements, aesthetic improvements) can be incorporated into the design but it is not always possible to achieve all desired objectives within the space and budget available. Accordingly, if there are changes suggested to the road elements proposed in the functional design (e.g. sidewalks, vegetation, multi-use path, road widening, transit improvements), it is recommended that public consultation be carried out prior to initiation of the design to provide information on the trade-offs and determine a preferred option.

Property Considerations

The functional design can be accommodated with minimal property impacts. Some land may be required to accommodate curb radius increases at intersections or limited boulevard encroachments. Details will be confirmed through consultation and further design. The City would seek to acquire any necessary land through development proposal opportunities or direct negotiation in the consultation phase.

Utility Upgrades

For the purposes of this functional design and cost estimate, it has been assumed that all of the existing utilities will be removed and replaced in order to minimize future traffic impacts and road reconstruction costs. Further review will be included in future design phases to determine which utilities have sufficient service life remaining (e.g. 20-25 years) to avoid replacement with this project. There may be further property impacts related to utilities that will be confirmed in future design phases.

Construction Phasing

A construction phasing plan was developed to accommodate four lanes of traffic and a minimum of one sidewalk to remain open throughout construction, except when lateral jacking is required (which is expected to take place during a night closure). Construction is feasible in four stages:

1) After its sidewalks have been demolished, the existing eastbound truss structure will be jacked laterally to move it adjacent to the westbound structure, and will continue to carry eastbound traffic. Two lanes of the new eastbound bridge and a 2m wide portion of the MUP will be constructed.

2) Eastbound traffic will be moved to the new eastbound bridge, followed by demolition of the existing eastbound truss structure. The remainder of the new eastbound bridge will be constructed.

3) Westbound traffic will be relocated from the existing westbound bridge to the new eastbound bridge. Traffic will be separated with a temporary barrier and four reduced width lanes of 3.1m during construction. The existing westbound structure will be demolished, and the full width of the new westbound bridge will be constructed.

4) The westbound structure will temporarily carry both directions of traffic while the eastbound structure is re-laned to three lanes of 3.7m and the remaining 1m of MUP is constructed. The eastbound structure will be fully opened to eastbound traffic. The westbound structure will be re-laned to three lanes of 3.7m.

Costs

The cost of the overall project is estimated at $32.1M which includes a 25% contingency typical for less detailed design sizing at functional design stage. The estimated cost of the bridge works is $21.1M, while the estimated cost of the road works is $11M. Subsequent preliminary and detailed design project stages will further refine the cost estimate.

To align with available budgets and external funding opportunities, the project could be split into a Lougheed Highway Improvement project and a Bridge Improvement project. However, there are reduced traffic impacts and cost efficiency gains in engineering services, mobilization, planning, and tendering costs if the works are constructed as one project.

Next Steps

Pending Council approval, the next stages of the project involve engagement with stakeholders (TransLink, City of Coquitlam, ICBC, provincial and federal governments, property owners) on the functional design and determination of funding opportunities for design and construction of the project.

FINANCIAL IMPLICATIONS

Replacement of the existing bridge structures and Lougheed Highway improvements is estimated to cost $32.1M, exclusive of property acquisitions.

TransLink has already committed $5M for the bridge design and construction from the MRN Structures program. The City has MRN funding reserves of $1.7M which could be applied to this project. Allocated TransLink funding of $1.05M through the MRNB and BICCS programs is also available for this project.

Additional TransLink funding is available for the transit priority improvements proposed in the road design. Provincial, federal and ICBC funding is yet to be determined. Upon further determination of external funding estimates, design and construction costs should be included in the City's capital plan budget. Should it be necessary, future borrowing for this project would require elector approval.

ENVIRONMENTAL IMPLICATIONS

As noted in the environmental assessment section, subsequent design work will seek to minimize impacts to instream habitat and riparian vegetation from the bridge replacement and road widening work and measures will be implemented to mitigate these impacts. All trees that would be cut to accommodate the road capacity improvements would be replaced in accordance with the City's bylaw regulations. The inclusion of transit improvements and multi-use pathways facilitates the use of alternate forms of transportation in support of environmental objectives.

PUBLIC CONSULTATION

The City has been working with TransLink, Kwikwetlem First Nation and City of Coquitlam staff to date. The next stages of the project involve consultation with these parties and additional stakeholders (e.g. ICBC, provincial and federal governments, property owners) to review the functional design and explore potential funding opportunities before commencing preliminary and detailed designs.

If there are changes of the road design elements proposed in the functional design (e.g. sidewalks, vegetation, multi-use path, road widening, transit improvements), it is recommended that public consultation be carried out to provide information on the trade-offs and determine a preferred option prior to design initiation.

OPTIONS

#	Description
1 ✓	Direct staff to consult with stakeholders on the functional design for the Coquitlam River Bridge and Lougheed Highway improvements, and seek external funding for design and construction of the works.
2	Provide alternate direction to staff.

Lead author(s): Melony Burton

Implementation of the BC Energy Step Code

RECOMMENDATION:

That Committee of Council recommend to Council that the Building & Plumbing Bylaw be amended to implement the BC Energy Step Code and that the amendment take effect 3 months after the date of adoption.

PREVIOUS COUNCIL/COMMITTEE ACTION

None

REPORT SUMMARY

The Province has enacted the BC Energy Step Code, a performance-based series of scheduled code "steps" being added to the British Columbia Building Code and is encouraging local governments to implement these steps in advance of its implementation timeframe. The Step Code sets progressively higher requirements to achieve buildings that will use less energy and thereby contribute to reducing greenhouse gas emissions. This report brings forward a recommendation to amend the Building and Plumbing Bylaw to initiate implementation of the Step Code at this time. The earlier time frame would be in accordance with policies of the Official Community Plan to reduce greenhouse gas emissions by reducing the energy consumption of new buildings in Port Coquitlam, would help prepare the local building industry for upcoming changes and would provide for greater flexibility and the potential for reduced costs in construction of commercial buildings. It further benefits new home owners by ensuring their homes would meet expectations with respect to energy use. As the Province has involved the building industry and other stakeholders in developing the Step Code legislation, proceeding directly with amendment of the City's building regulations is recommended.

BACKGROUND

The *BC Building Act* governs building construction in the Province, enabling local governments to regulate building construction in their communities through implementation of the BC Building Code. The Code includes provisions that regulate the energy consumption of new buildings. Until recently it regulated this energy consumption of buildings by prescribing the materials and construction methods required in new buildings, which is described as the "Code Minimum". In 2017 the Code was amended to include an alternative approach to regulating energy consumption by introducing a performance-based approach, described as the Step Code. It establishes a series of measurable and performance-based requirements for new construction and groups them into specific "steps" for different building types: small residential buildings including detached, duplex and row/townhouse dwellings less than 600 m^2 in size (*Part 9* of the Code); large residential buildings including apartments, residential units in mixed-use buildings and larger row/townhouse buildings more than 600 m^2 in size (subject to *Part 3* of the Code); and, commercial buildings (also subject to *Part 3* of the Building Code). Industrial and institutional buildings, due to their design and

utilization are not yet included in the Step Code framework, although the Province is exploring the future inclusion of these types of buildings. This approach offers builders with greater flexibility in how they address energy consumption requirements and uses modelled energy performance to guide their construction methods and materials selection. It sets an incremental and consistent approach to achieving more energy-efficient buildings that go beyond the current requirements of the BC Building Code and is being implemented by the Province in a scheduled timeframe of changes to the Code over the next 15 years. The intent is that all new buildings will operate with net zero energy consumption (i.e. be "Net Zero Ready") by 2032.

The Step Code encourages use of passive building construction principles (i.e. improved building insulation and airtightness), but allows builders to select their preferred energy efficiency measures, as long as modelled energy performance targets are achieved. This approach is intended to provide flexibility in meeting performance levels more cost effectively than if specific design requirements such as complex heating and cooling systems were required. A certified 3rd party energy advisor must be contracted by the builder to model the building's energy performance pre-construction, and test the building's airtightness after construction. Municipalities will verify that the model results meet the minimum performance required for the step to be achieved and that buildings are constructed in accordance with the modelled design through their building permit processes.

The graduated implementation of the Step Code by the Province is intended to allow builders and developers to become familiar with procedures and technologies to achieve more energy-efficient buildings incrementally as requirements will be increasing through the progressive steps. Step 1 aims to familiarize builders with airtightness and requires builders to report on their airtightness test results (such as a blower door test), but building performance does not need to exceed the base Building Code. As such, it is referred to as the 'no fail' step. Step 2 requires buildings to meet airtightness requirements, and demonstrate energy performance at or above a prescribed level such as being 10% more efficient than the Building Code's minimum. Building envelopes must also not exceed a maximum heat transfer level.

The Step Code was developed by the Province in conjunction with various stakeholders, including the Union of BC Municipalities, the Urban Development Institute, the BC Construction Association, the Canadian Home Builders' Association, BC Housing, and the Engineers and Geoscientists BC.

Implementation of the BC Energy Step Code

The Province's scheduled implementation of the Step Code and the energy benefits to be achieved are noted in the following table:

	Step 1	Step 2	Step 3	Step 4	Step 5
Small Residential (BCBC Part 9 residential)**	BCBC minimum + airtightness test	10% more efficient than BCBC	20% more efficient than BCBC 2022*	40% more efficient than BCBC 2027*	**Net Zero Ready 2032***
Large Residential (BCBC Part 3 residential)	BCBC minimum + airtightness test	20% to 40% more efficient than BCBC 2022*	50% more efficient than BCBC 2027*	**Net Zero Ready 2032***	
Commercial (BCBC Part 3 Commercial)	BCBC minimum + airtightness test	30% to 40% more efficient than BCBC	**Net Zero Ready 2032***		

*Default year of adoption by Province into BC Building Code (BCBC)

** Part 9 of the BC Building Code is applied to small residential buildings such as detached houses and duplexes; its Part 3 standard is applied to complex buildings including apartments, mixed-use buildings, and commercial developments.

The Province is encouraging municipalities to proactively implement the Step Code to ease the building industry's transition to meet an impending legislative requirement, as well as to promote higher energy efficiency in buildings at an earlier date. The Province is offering training and incentives to builders to achieve higher performing buildings.

As the Step Code is performance-based, builders can opt for lower cost methods of achieving required energy performance levels, reducing the cost impact of implementation. Modelling conducted by the Province, and reviewed by the Canadian Home Builders Association of British Columbia assessed multiple combinations of energy efficiency measures to determine the average minimum cost of achieving each step. Incremental costs for construction in the lower mainland area for each step are as follows:

Code Section	Building Type	Step 1	Step 2	Step 3	Step 4	Step 5
Small Residential (BCBC Part 9)	Small Detached	0.4%	0.3%	0.8%	2.2%	6.0%
	Medium Detached	0.2%	0.4%	0.9%	1.8%	3.6%
	Large Detached	0.2%	1.2%	1.3%	2.4%	3.6%
	4-Unit Townhouse	0.2%	1.0%	0.7%	1.5%	6.0%
	6-Unit Rowhouse	0.2%	0.4%	0.6%	1.8%	3.4%
	10-Unit Multi-Unit	0.1%	0.5%	0.8%	0.8%	1.9%
Large Residential (BCBC Part 3)	Low-Rise Multi-Unit	0.0%	0.5%	0.6%	2.6%	
	High-Rise Multi-Unit	0.0%	0.4%	0.8%	2.4%	
Commercial (BCBC Part 3)	Commercial Office	0.0%	-0.2%	0.0%		
	Retail (Big Box)	0.0%	0.8%	2.0%		
	Other Commercial (incl. smaller retail)	0.0%	-0.2%	0.0%		

The additional costs for achieving the lower steps are relatively low but increase as they approach the Net Zero Ready level, particularly for small residential buildings. There is little financial impact for commercial buildings, with some steps showing the overall construction costs could decrease compared to current requirements by providing a level of flexibility for builders to meet energy performance levels.

The additional construction costs for the higher steps are estimated to be offset by energy savings achieved with the more efficient design. For example, the Province has calculated that an average single family home built to Step 3 requirements will have additional construction costs of approximately $6,600 and corresponding energy cost savings are estimated at approximately $675 per year (at current gas and electricity prices) or $16,900 over a 25-year period.

Buildings constructed under the Step Code would also provide better indoor air quality by controlling building air intake, ensure more consistent and comfortable air and floor temperatures, and mitigate noise transmission, resulting in quieter homes. Airtightness requirements in the Step Code also protect homebuyers by ensuring that new homes perform as modelled, preventing the unknown purchase of drafty, underperforming new homes.

In the south coast area, to date Vancouver, Burnaby, Surrey, Richmond, Township of Langley, New Westminster, City of North Vancouver, District of North Vancouver, West Vancouver, Belcarra, Whistler, Squamish and Victoria have adopted bylaws to implement the Step Code that

require builders to achieve higher steps at an earlier date than the Provincial default. A number of other municipalities are assessing options to adopt the Code, including Port Moody and Coquitlam. Most municipalities have targeted Step 3 for small residential and Step 2 for large residential buildings by 2021 or sooner. Many municipalities are also targeting accelerated adoption of Step 4 for small residential and Step 3 for larger residential. Although some municipalities have adopted accelerated dates to require Net Zero Ready construction for large residential buildings, to date none have done so for small residential, choosing instead to monitor progress over the next few years.

Port Coquitlam currently promotes higher levels of building energy efficiency in its Official Community Plan policies and development permit area designations and includes a target to reduce community greenhouse gas emissions to 8% below 2007 levels by 2017. The policies are implemented by setting specific requirements as conditions of rezoning and through issuance of development permits that regulate compliance with guidelines for environmental conservation. Through these processes, a variety of energy saving solutions has been achieved, often through the use of green building standards such as LEED, EnerGuide and BuiltGreen.

For information, the Planning Division's 2019 work program includes an update to the greenhouse gas emissions target and work is in process to provide Council with information on the City's progress in meeting this target as well as outline additional measures that may assist the City in achieving an updated target.

DISCUSSION

It is recommended that the Building Bylaw be amended to implement requirements for new construction to meet the Step Code as indicated in the following timetable. It is further proposed that this requirement apply to all building permits received 3 months after the adoption of the bylaw amendment to ensure applicants would have sufficient time to amend their building permit plans, if required.

Building Type	2019	2021	2022	2023	2024
Small Residential (Part 9)	Step 1	Step 3			Step 4
Large Residential (Part 3) - combustible	Step 2	Step 3			
Large Residential (Part 3) - non-combustible	Step 1				
Commercial (Part 3)	Step 2				Step 3

Requiring Step 1 for small residential buildings would permit home builders to gain experience with airtightness testing and higher performance construction. After a one-year familiarization period, it

Step 3 would be required and experience in other municipalities has indicated there is relative ease in achieving this performance level. It is further recommended that the Bylaw require these buildings to be built to Step 4 by 2024, which would give time for builders to adjust to the higher standards required for this step. .

For larger combustible residential construction such as wood-frame apartment buildings, it is proposed that the City introduce a requirement to construct buildings to meet Step 2 in 2019 and Step 3 in 2021 and, for commercial buildings, Step 2 in 2019 and Step 3 in 2024. Step 2 would achieve an energy performance nearly 25% better than the Model National Energy Code for these buildings. Builders of these construction forms are generally familiar with airtightness and high performance construction practices and it is anticipated they will require less time to adapt to the requirements for higher energy efficiency in their design and construction.

For large residential construction which is non-combustible, such as concrete high-rise buildings, a requirement to meet Step 1 in 2019 is proposed, but no further steps are proposed at this time. Experience in neighbouring municipalities indicates the potential for complex construction methodology and substantial changes to the building design can achieve the required results. Also, this type of development is most likely to require rezoning and this process affords the City with an opportunity to work with the developer to achieve higher performance as may be appropriate.

If the bylaw amendment is adopted, progress in achieving these steps would be monitored and, if appropriate, modification of the proposed schedule would be proposed. In addition to the amendment to the Building Bylaw to include the Step Code levels, staff intend to bring forward a separate recommendation to amend the Zoning Bylaw to exclude thick walls from being counted in floor area ratio restrictions.

The amendments proposed for Port Coquitlam are similar to the changes currently being contemplated by Port Moody. Discussions at staff level have indicated there is a potential to explore a coordinated approach in order to enhance outreach and education and harmonize expectations for the building community.

FINANCIAL IMPLICATIONS

Implementing the Step Code within the Building Bylaw is not expected to add quantifiable costs to the City although there will be minor training and resource implications.

ENVIRONMENTAL IMPLICATIONS

Accelerated adoption of the Step Code as proposed would contribute to greenhouse gas emission reductions.

OPTIONS

Implementation of the BC Energy Step Code

#	Description
1 	Amend the Building & Plumbing Bylaw to implement the Step Code as recommended, with the changes taking effect in 3 months.
2	Direct staff to consult with the development and construction industry on the proposal to amend the Building & Plumbing Bylaw to implement the Step Code.
3	Determine that no changes will be made at this time to implement the Step Code at an earlier date than will be required by the Province.

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