Council Agenda

Tuesday, October 27, 2020, 6:00 p.m.
Port Coquitlam Community Centre - Wilson Lounge
2150 Wilson Avenue, Port Coquitlam, BC

Pages

1. CALL TO ORDER

2. ADOPTION OF THE AGENDA

2.1. Adoption of the Agenda

Recommendation:
That the Tuesday, October 27, 2020, Council Meeting Agenda be adopted as circulated.

3. CONFIRMATION OF MINUTES

3.1. Minutes of Council Meetings 1

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

- *October 13, 2020.*

4. PROCLAMATIONS

None.

5. DELEGATIONS

5.1. Coquitlam Search and Rescue

6. PUBLIC HEARINGS

6.1. Zoning Amendment Bylaw - 1604 Pitt River Road

See item 8.1 for information.

7. PUBLIC INPUT OPPORTUNITY

7.1. Development Variance Permit - 2481 Welcher Avenue

See item 9.1 for information.

8. BYLAWS

8.1. Zoning Amendment Bylaw - 1604 Pitt River Road - Third Reading 5

Recommendation:
That Council give Zoning Amendment Bylaw No. 4189 for 1604 Pitt River Road third reading.

8.2. OCP and Zoning Bylaw Amendment - 2455-2475 Gately Avenue, 2428-2492 Kingsway Avenue and 2420 & 2450 Ticehurst Lane - First Two Readings 13

Recommendation:
That Council:

1. Give first and second reading to OCP Amendment Bylaw No. 4195 and Zoning Amendment Bylaw No. 4196 for 2455-2475 Gately Avenue, 2428-2492 Kingsway Avenue and 2420 & 2450 Ticehurst Lane; and
2. Prior to adoption of the zoning bylaw amendment, the following conditions be met or secured through registration of a legal agreement to the satisfaction of the Director of Development Services:

   a. Registration of a Housing Agreement that provides for 300 non-market rental housing units.
   b. Closure and sale of lanes within the development site and subdivision and sale of a portion of 2428 Kingsway Avenue.
   c. Demolition of existing structures and lot consolidation.
   d. Submission of a plan providing for road dedication along Kingsway and Gately Avenues.
   e. Submission of plans and securities and fees for off-site works and services including improvements to the intersection of Kingsway and Gately Avenues, construction of Gately Avenue and a 3m wide multi-use pathway along the Kingsway Avenue frontage and street trees.
   f. Submission of a plan and securities for riparian area enhancements and construction of the Coquitlam River Trail between Gately and Kingsway Avenues.
   g. Registration of legal agreement(s) to ensure:

      i. The development is designed and constructed in accordance with the recommendations of acoustic and vibration studies, and

      ii. The watercourse protection area is restricted to riparian vegetation and protected from future disturbance.

8.3. Property Standards and Nuisance Abatement Bylaw - Adoption 303

Recommendation:
That Council adopt Property Standards and Nuisance Abatement Bylaw No. 4190.

Recommendation:
That Council adopt Fees and Charges Bylaw No. 4191.

Recommendation:
That Council adopt Bylaw Notice Enforcement Amendment Bylaw No. 4192.

Recommendation:
That Council adopt Ticket Information Utilization Amendment Bylaw No. 4193.

Recommendation:
That Council adopt Delegation of Authority Amendment Bylaw No. 4194.

9. REPORTS

Recommendation:
That Council approve Development Variance Permit DVP00073 for 2481 Welcher Avenue.

10. NEW BUSINESS

11. OPEN QUESTION PERIOD

12. ADJOURNMENT

12.1. Adjournment of the Meeting

Recommendation:
That the Tuesday, October 27, 2020, Council Meeting be adjourned.

13. MEETING NOTES

Council Minutes

Tuesday, October 13, 2020
Port Coquitlam Community Centre - Wilson Lounge
2150 Wilson Avenue, Port Coquitlam, BC

Present:	Chair - Mayor West	Councillor Penner
	Councillor Darling	Councillor Pollock
	Councillor Dupont	Councillor Washington
	Councillor McCurrach	

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1. CALL TO ORDER

The meeting was called to order at 6:00 p.m.

2. ADOPTION OF THE AGENDA

2.1 Adoption of the Agenda

Moved-Seconded:

That the Tuesday, October 13, 2020, Council Meeting Agenda be adopted as circulated.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

3. CONFIRMATION OF MINUTES

3.1 Minutes of Council Meetings

Moved-Seconded:

That the minutes of the following Council Meetings be adopted:

- *September 22, 2020 - Special Council*
- *September 22, 2020 - Regular Council.*

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

4. PROCLAMATIONS

Mayor West proclaimed October 2020, as Foster Family Month.

4.1 Foster Family Month - October 2020

Mayor West proclaimed October 2020, as Foster Family Month.

5. DELEGATIONS

None.

6. PUBLIC HEARINGS

None.

7. BYLAWS

7.1 Zoning Amendment Bylaw for 1604 Pitt River Road - First Two Readings

Moved-Seconded:

That Council:

1. Give first and second reading to Zoning Amendment Bylaw No. 4189 for the zoning of 1604 Pitt River Road be amended from RS1 (Residential Single Dwelling 1) to RS4 (Residential Single Dwelling 4); and
2. Prior to adoption of the amendment bylaw, the following conditions be met to the satisfaction of the Director of Development Services:
    a. Demolition of the existing buildings; and
    b. Completion of design and submission of fees and securities for off-site works and services including stairwell access from Pitt River Road.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

7.2 Property Standards and Nuisance Abatement Bylaw - First Three Readings

Moved-Seconded:

That Council give Property Standards and Nuisance Abatement Bylaw No. 4190 first three readings.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

7.3 Fees and Charges Amendment Bylaw - First Three Readings

Moved-Seconded:

That Council give Fees and Charges Amendment Bylaw No. 4191 first three readings.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

7.4 Bylaw Notice Enforcement Amendment Bylaw - First Three Readings

Moved-Seconded:

That Council give Bylaw Notice Enforcement Amendment Bylaw No.4192 first three readings.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

7.5 Ticket Information Utilization Amendment Bylaw - First Three Readings

Moved-Seconded:

That Council give Ticket Information Utilization Amendment Bylaw No. 4193 first three readings.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

7.6 Delegation of Authority Amendment Bylaw - First Three Readings

Moved-Seconded:

That Council give Delegation of Authority Amendment Bylaw No. 4194 first three readings.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

7.7 Cemetery Amendment Bylaw - Adoption

Moved-Seconded:

That Council adopt Cemetery Amendment Bylaw No. 4169.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

8. REPORTS

None.

9. NEW BUSINESS

Council provided updates related to community events.

10. OPEN QUESTION PERIOD

One member of the public asked questions.

11. ADJOURNMENT

11.1 Adjournment of the Meeting

Moved-Seconded:

That the Tuesday, October 13, 2020, Council Meeting be adjourned at 6:32 p.m.

In Favour (7): Mayor West, Councillor Darling, Councillor Dupont, Councillor McCurrach, Councillor Penner, Councillor Pollock, and Councillor Washington

Carried

12. MEETING NOTES

None.

Mayor	Corporate Officer

Zoning Amendment Bylaw – 1604 Pitt River Road - Third Reading

RECOMMENDATION:

That Council give Zoning Amendment Bylaw No. 4189 third reading.

REPORT SUMMARY

Upon conclusion of the Public Hearing held earlier this evening, Zoning Amendment Bylaw No. 4189 will be available for Council to give third reading.

OPTIONS (✓= Staff Recommendation)

	#	Description
✓	1	Give third reading to the bylaw.
	2	Request that additional information be received and determine next steps after receipt of that information.
	3	Fail third reading of the bylaw.

CITY OF PORT COQUITLAM

ZONING AMENDMENT BYLAW, 2020

Bylaw No. 4189

The Council of the Corporation of the City of Port Coquitlam enacts as follows:

1. CITATION

This Bylaw may be cited as “Zoning Bylaw, 2008, No. 3630, Amendment Bylaw, 2020, No. 4189”.

2. ADMINISTRATION

2.1 The Zoning Map of the "Zoning Bylaw, 2008, No. 3630" be amended to reflect the following rezoning:

Civic: 1604 Pitt River Road

Legal: LOT 380, DISTRICT LOT 342, NEW WEST DISTRICT, PLAN NWP29298, GROUP 1

From: RS1 (Residential Single Dwelling 1)

To: RS4 (Residential Single Dwelling 4)

as shown on Schedule 1 attached to and forming part of this Bylaw.

READ A FIRST TIME this	13th day of	October, 2020
READ A SECOND TIME this	13th day of	October, 2020
PUBLIC HEARING this	20th day of	October, 2020
READ A THIRD TIME this	day of	, 2020

Mayor

Corporate Officer

SCHEDULE 1


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2041
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2021
STELLA PL
PITT RIVER RD
KNAPPEN ST
^ To be rezoned as RS-4
2051
1602
1605
1602
POOLEY AVE
1600
1601

RECOMMENDATION:

That Committee of Council recommend to Council that:

1. The zoning of 1604 Pitt River Road be amended from RS1 (Residential Single Dwelling 1) to RS4 (Residential Single Dwelling 4);
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 the existing buildings; and
    b. Completion of design and submission of fees and securities for off-site works and services including stairwell access from Pitt River Road.

REPORT SUMMARY

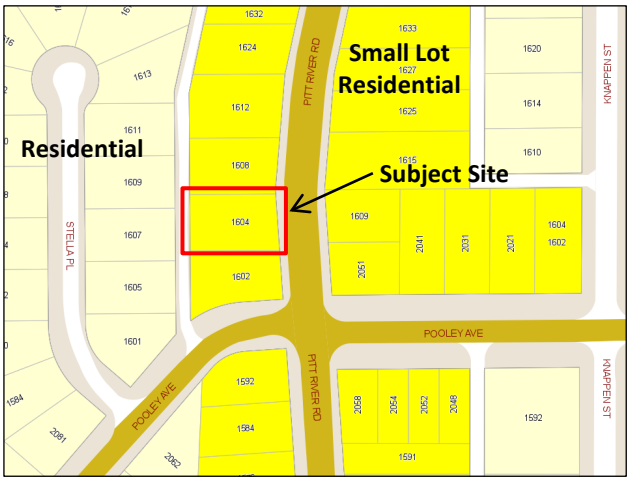
This report describes a rezoning application at 1604 Pitt River Road to facilitate its subdivision into two small lots. The proposed development is consistent with housing policies of the Official Community Plan and the site's Small Lot Residential land use designation. The report recommends the developer be required to demolish the existing buildings, upgrade infrastructure and ensure pedestrian access is provided to the lots from Pitt River Road. Staff recommend approval.

BACKGROUND

Proposal: The applicant proposes to rezone 1604 Pitt River Road to enable subdivision into two lots. The subject property is a large 811 m^2 (8,730 ft^2) lot located on the west side of Pitt River Road north of Pooley Avenue and is currently developed with an older single residential home. The sloped site is a predominately single residential neighbourhood.

Location Map

Policy and Regulations: The Official Community Plan (OCP) designated the site as Small Lot Residential and the property is currently zoned RS1 – Residential Single Dwelling 1.



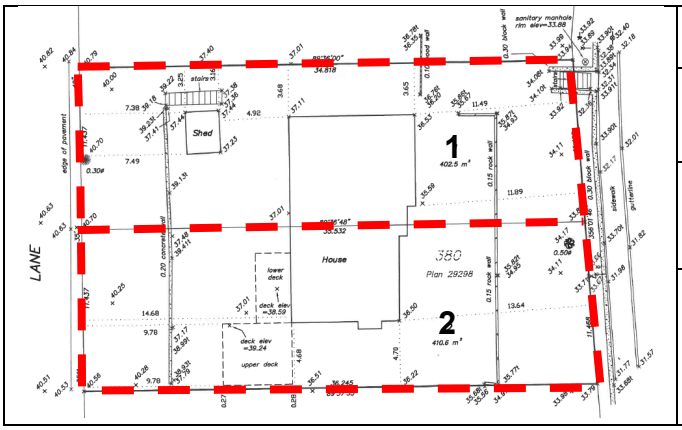
OCP Land Use Designation

Current Zoning

OCP housing policy suggests the City should "perrmit small lot, single-detached residential uses in areas designated Small Lot Residential subject to City bylaw requirements".

A Small Lot Development Permit will be required for each new house to be built on the subdivided lots. The design guidelines in the OCP encourage a high quality of design through a prominent front entrance, second floor articulation and differing appearance from adjacent buildings. The guidelines also encourage vehicle access from the lane, the planting of at least one tree in the front yard and landscaping that provides privacy and minimizes hard surfaces.

Proposed Subdivision: The applicant has provided a preliminary plan of subdivision to demonstrate the site would meet the minimum lot area and dimensions to comply with the zoning bylaw subdivision regulations of the proposed RS4 zone.



	RS4 Zone Regulation	Proposed Lot 1	Proposed Lot 2
Minimum Lot Area	300m^2 (3,230 sq.ft.)	402.5m^2 (4,332.5 sq.ft.)	410.6m^2 (4,419.7 sq.ft.)
Minimum Lot Width	9.5m (31.2ft)	11.4m (37.4ft)	11.4m (37.4ft)
Minimum Lot Depth	28m (91.9ft)	35.18m (115.4ft) *Average lot depth*	35.9m (117.8ft) *Average lot depth*

Trees: There are two trees on the property, a deciduous in the front and a conifer in the rear yard near the lane. Parks staff have assessed the front tree and found it to be in poor condition and not a good candidate for retention. The rear tree, also in poor condition, is located within the vehicle access for Lot 1 and, due to the grade changes of the property; it is not possible to relocate the driveway to retain the tree. The property owner has applied for a tree cutting permit for both trees which has been approved. Each tree will be replaced in accordance with the Tree Bylaw.

Off-site Infrastructure and Servicing: The additional lot will require off-site upgrades to meet the standards of the Subdivision Servicing Bylaw including upsizing the sanitary and storm sewers from Pooley Avenue to the north property line of the site and reconstruction of half the road plus 1m fronting the site, curb and gutter, sidewalk, and street lighting. This property is also located along a segment of Pitt River Road with retaining walls along the street edge. When the retaining walls were constructed stairwells were created to allow pedestrian access to each existing lot. Subdivision will require consideration of street front pedestrian access to the new lot.

Street Front Retaining Wall

DISCUSSION

The Official Community Plan was amended in 2018 to allow greater opportunity for where smaller lots may be located within established neighbourhoods. This included extension of the Residential Small Lot designation to properties along Pitt River Road. The intent of this designation is to allow for consideration of rezoning for the purpose of subdivision to assist in meeting increasing demand for single residential housing in the community.

The proposed properties will be developed in accordance with the Small Lot design guidelines which require that new buildings complement the current form and character of the neighbourhood.

The OCP encourages the retention of mature trees. Typically, an arborist report is requested for rezoning applications; however, the two existing trees on the property have been assessed as poor candidates for retention by Parks staff through a tree cutting permit application submitted by the property owner. Parks staff have determined that the tree in the rear yard has been repeatedly topped and pruned along the side for lane clearance, and any grade changes due to the slope will also negatively impact the tree. Both trees will be replaced in accordance with the Tree Bylaw and a minimum of one tree should be located in the front yard of each lot in accordance with the small lot design guidelines in the OCP.

Submission of design, fees and securities for off-site works and services including the addition of a new stairwell access from Pitt River Road is a recommended condition of approval prior to adoption of the amending bylaw.

The proposed rezoning would be in keeping with policies of the OCP and the preliminary subdivision information provided by the applicant demonstrates the site would meet the minimum size requirements. Staff recommend approval.

FINANCIAL IMPLICATIONS

The rezoning from one larger lot to two smaller lots has the potential for increased property assessment values resulting in an increase in property taxation revenue once development occurs.

PUBLIC CONSULTATION

A development sign has been posted on the property fronting Pitt River Road. Planning staff have not received any comments in association with the rezoning application. If the application proceeds to Public Hearing, the city would provide notification by mail to residents located within 120m of the site and advertise the Public Hearing in the newspaper.

OPTIONS

(Check = Staff Recommendation)

	#	Description
✓	1	Recommend to Council that the zoning of 1604 Pitt River Road be amended from RS1 to RS4 and that the specified conditions be met prior to adoption of the rezoning bylaw.
	2	Request additional information or amendments to the application to address specified issues prior to making a decision on the application
	3	Recommend to Council that the rezoning application be refused.

Lead author(s): Natalie Coburn

OCP/Zoning Amendment Bylaws for 2455-2475 Gately Avenue, 2428-2492 Kingsway Avenue and 2420 & 2450 Ticehurst Land – First and Second Reading

RECOMMENDATIONS:

That Council:

1. Give first and second reading to OCP Amendment Bylaw No. 4195 and Zoning Amendment Bylaw No. 4196 for 2455-2475 Gately Avenue, 2428-2492 Kingsway Avenue and 2420 & 2450 Ticehurst Lane; and
2. Prior to adoption of the zoning bylaw amendment, the following conditions be met or secured through registration of a legal agreement to the satisfaction of the Director of Development Services:
    a. Registration of a Housing Agreement that provides for 300 non-market rental housing units.
    b. Closure and sale of lanes within the development site and subdivision and sale of a portion of 2428 Kingsway Avenue.
    c. Demolition of existing structures and lot consolidation.
    d. Submission of a plan providing for road dedication along Kingsway and Gately Avenues.
    e. Submission of plans and securities and fees for off-site works and services including improvements to the intersection of Kingsway and Gately Avenues, construction of Gately Avenue and a 3m wide multi-use pathway along the Kingsway Avenue frontage and street trees.
    f. Submission of a plan and securities for riparian area enhancements and construction of the Coquitlam River Trail between Gately and Kingsway Avenues.
    g. Registration of legal agreement(s) to ensure:
        i. The development is designed and constructed in accordance with the recommendations of acoustic and vibration studies, and
        ii. The watercourse protection area is restricted to riparian vegetation and protected from future disturbance.

Previous Committee Action:

At the October 13, 2020, Committee of Council Meeting, the staff report, OCP and Zoning Bylaw Amendment – 2455-2475 Gately Avenue, 2428-2491 Kingsway Avenue and 2420 & 2450 Ticehurst Lane was considered and the following motion was passed:

That Committee of Council recommend that Council:

1. That Committee of Council, having given consideration to s.475 of the *Local Government Act*, confirm the following consultation for the proposed Official Community Plan amendment:
    a. on-site signage,

b. the applicant's consultation with the community,
c. staff communication with School District 43, and,
d. consideration of the application by Committee of Council in open meetings.

2. That Committee of Council recommend to Council that:
   a. The Official Community Plan land use designation for the development site be amended from Neighbourhood Commercial and Apartment to Comprehensive Residential.
   b. The Official Community Plan land use designation for the remaining City portion of 2428 Kingsway Avenue be amended from Neighbourhood Commercial to Park Reserve.
   c. The Zoning be amended from RS1 (Residential Single Dwelling 1), RD (Residential Duplex) and M1 (General Industrial) to a Comprehensive Development Zone to provide for rental tenure apartment dwelling units and a 400m^2 childcare facility and P3 (Parks and Natural Areas) for the eastern portion of 2428 Kingsway Avenue.

3. Prior to adoption of the amending bylaws, the following conditions be met to the satisfaction of the Director of Development Services:
   a. Adoption of a Housing Agreement Bylaw that provides for 300 non-market rental housing units.
   b. Closure and sale of lanes within the development site and subdivision and sale of a portion of 2428 Kingsway Avenue.
   c. Demolition of existing structures and lot consolidation.
   d. Submission of a plan providing for road dedication along Kingsway and Gately Avenues.
   e. Submission of plans and securities and fees for off-site works and services including improvements to the intersection of Kingsway and Gately Avenues, construction of Gately Avenue and a 3m wide multi-use pathway along the Kingsway Avenue frontage and street trees.
   f. Submission of a plan and securities for riparian area enhancements and construction of the Coquitlam River Trail between Gately and Kingsway Avenues.
   g. Registration of legal agreement(s) to ensure:
      i) The development is designed and constructed in accordance with the recommendations of acoustic and vibration studies, and
      ii) The watercourse protection area is restricted to riparian vegetation and protected from future disturbance.

The following motion is now before Council for decision:

OPTIONS (✓= Staff Recommendation)

	#	Description
✓	1	Give first and second reading to the bylaws.
	2	Delay first and second reading and request staff to provide additional information.
	3	Deny first and second reading of the bylaws.

CITY OF PORT COQUITLAM

OFFICIAL COMMUNITY PLAN AMENDMENT BYLAW, 2018

Bylaw No. 4195

Whereas an Official Community Plan was adopted by the "Official Community Plan Bylaw, 2013, No. 3838"

And whereas an amendment to the Official Community Plan has been prepared and after First Reading of this Bylaw the Council has:

(a) considered the amendment to the plan in conjunction with the City's financial plan;

(b) determined that no applicable waste management plan exists for consideration;

(c) determined that sufficient opportunities for consultation on the amendment to the plan have been provided;

(d) determined that the amendment to the plan does not affect the City of Coquitlam, District of Pitt Meadows, School District No. 43, Metro Vancouver Regional District, TransLink, the Kwikwetlem First Nation or the provincial or federal government or their agencies.

The Council of the Corporation of the City of Port Coquitlam enacts as follows:

1. CITATION

This Bylaw may be cited as "Official Community Plan Bylaw, 2013, No. 3838, Amendment Bylaw, 2020, No. 4195.

2. ADMINISTRATION

2.1 That Section 8.2 of the "Official Community Plan Bylaw, 2013, No. 3838" be amended by replacing the description for the Comprehensive Residential land use designation with the following description:

Comprehensive Residential means the Comprehensive Residential designation allows for ground-oriented residential and apartment dwelling units and may include complementary community commercial uses such as child care facilities and medical services."

2.2 That Map 16 of the "Official Community Plan Bylaw, 2013, No. 3838" be amended by applying the land use designation Comprehensive Residential (RC) and Park Reserve (PR) to the areas of land as shown on Schedule 1, attached to and forming part of this Bylaw.

2.3 That subsection 9.5 (e)(iv) *Intensive Residential Location Specific Guidelines for Coquitlam River North* be augmented with the following clause:

"A comprehensive development restricted to affordable rental housing and a childcare facility may be located at 2471 Gately Avenue. Buildings with a height of up to 6 storeys may be located on the site. All buildings shall have a high quality architectural character but recessed upper floors are not required.

Vehicle access shall only be permitted from Gately Avenue and garbage and recycling storage must be located within in a building. Where parking is provided at street level, it shall not be located within any yard facing a street. Amenities including vehicle and bicycle washing facilities, children outdoor play areas, outdoor seating and garden plots are to be provided on the site. The site shall be designed to provide a high level of pedestrian accessibility connecting the buildings and ground floor unit entries to the streets. Where landscape retaining walls are proposed or underground structures protrude above grade, the use of brick or stone cladding is required. All signs and signage should be architecturally coordinated with the overall design of buildings and landscaping."

2.4 That subsection 9.6 (h)(ii), *Commercial Location Specific Guidelines for Coquitlam River North*, be augmented with the following clause:

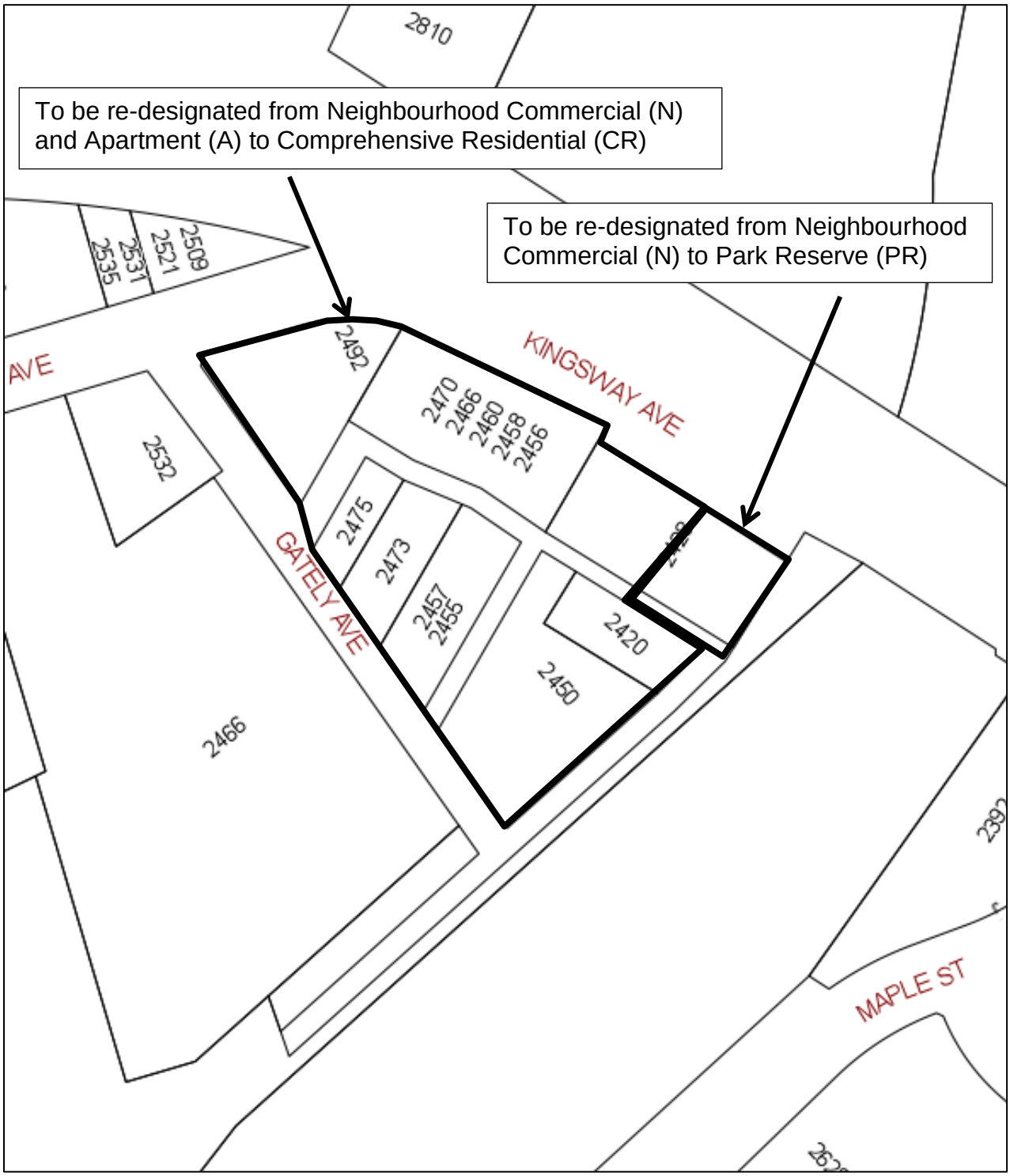
"The Intensive Residential Location Specific Guidelines for Coquitlam River North shall apply to commercial uses at 2471 Gately Avenue".

READ A FIRST TIME this	day of	, 2020
READ A SECOND TIME this	day of	, 2020

Mayor

Corporate Officer

SCHEDULE 1


To be re-designated from Neighbourhood Commercial (N) and Apartment (A) to Comprehensive Residential (CR)
To be re-designated from Neighbourhood Commercial (N) to Park Reserve (PR)
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MAPLE ST

CITY OF PORT COQUITLAM

ZONING AMENDMENT BYLAW, 2020

Bylaw No. 4196

The Council of the Corporation of the City of Port Coquitlam enacts as follows:

1. CITATION

This Bylaw may be cited as “Zoning Bylaw, 2008, No. 3630, Amendment Bylaw, 2020, No. 4196”.

2. ADMINISTRATION

2.1 The Zoning Map of the "Zoning Bylaw, 2008, No. 3630" be amended to reflect the following rezoning:

Civic: 2455-2475 Gately Avenue, 2428-2492 Kingsway Avenue and 2420 and 2450 Ticehurst Lane

Legal: Lot 1, District Lot 379, New Westminster District, Plan NWP8602;
Lot 2 District Lot 379, New Westminster District, Plan NWP8602;
Lot 16, District Lot 379, Plan NWP3106, Group 1, Except Plan 29226;
Lot A, District Lot 379, New Westminster District, Plan LMP2211;
Lot 1, District Lot 379, New Westminster District, Plan LMP 15261;
Lot 14, District Lot 379, New Westminster District, Plan NWP3106, Except Plan 29226; and
Lot A, District Lot 379, New Westminster District, Plan NWP3106, Group 1, (See Ref Plan 62772).

From: RS1 (Residential Single Dwelling 1), RD (Residential Duplex) and M1 (General Industrial)

To: Comprehensive Development (CD) Zone and P3 (Parks and Natural Areas)

as shown on Schedule 1 attached to and forming part of this Bylaw.

2.2 In subsection8.5 of Section 8, Child Care Regulations, by inserting “other than a child care facility in CD38” after, “Child care facilities in a CD zone”.

2.3 By inserting a new Comprehensive Development Zone CD38 as follows:

“CD38 Comprehensive Zone 38 (2471 Gately Avenue)
(currently 2455-2475 Gately Avenue, 2428-2492 Kingsway Avenue and 2420 & 2450 Ticehurst Lane)

Property Descriptions

Lot 1, District Lot 379, New Westminster District, Plan NWP8602;
Lot 2 District Lot 379, New Westminster District, Plan NWP8602;
Lot 16, District Lot 379, Plan NWP3106, Group 1, Except Plan 29226;
Lot A, District Lot 379, New Westminster District, Plan LMP2211;

Lot 1, District Lot 379, New Westminster District, Plan LMP 15261;
Lot 14, District Lot 379, New Westminster District, Plan NWP3106, Except Plan 29226; and
Lot A, District Lot 379, New Westminster District, Plan NWP3106, Group 1, (See Ref Plan 62772).

(All to be consolidated)

Table 6.38.1 Permitted Uses in CD38

Permitted Use	
Apartment restricted to residential rental tenure	
Child care facility	Note 1
Offices restricted to caretaker services, management of rental accommodation within this zone	
Accessory home business	
Accessory child care facility	Note 2

Notes to Table 6.38.1

Note 1. A child care facility shall be restricted to the ground floor of building containing rental apartment uses, must comply with the requirements of the B.C. Building Code for assembly uses, and must provide a separate entrance at the ground level connecting directly to a street or at-grade parking area. A maximum of 50 children may be cared for at one time in the child care facility.

Note 2. A maximum of 5 children may be cared for at one time in any dwelling unit. The dwelling unit in which the use is conducted must be occupied by a residential use. The child care facility must have access to the exterior of the building through areas directly controlled by the operator, and such access may not involve the use of a building common corridor or elevator. Child care is not permitted in a dwelling unit with an accessory home business.

6.38.2 Proposed Zoning Regulations

Lot area	9,500m2
Building height	20m
Lot coverage	50%
Floor Area Ratio	1.5/2.0 Note 1
Underground structure setback	1.2m Note 2
Building setbacks	
Front setback (Gately Ave)	3.5m
Rear setback (Kingsway Ave)	4.5m
Interior side setback (east)	0m
Outdoor amenity space	479m^2 Note 3
Indoor amenity space	160m^2 Note 4
Parking:	
Resident	0.96 per dwelling unit
Childcare	1 per 10 children

Notes to Table 6.38.2

Note 1. In the CD38 zone the maximum floor area ratio may be increased to 2.0 where the apartment use is restricted to non-market housing secured through a housing agreement.

In the calculation of floor area ratio the following may be excluded as floor area:

a. Floor area comprising entrances, elevator shafts, stairwells and hallways common to two or more dwelling units, electrical rooms and mechanical rooms;
b. Exterior balconies and decks;
c. Floor area within a basement or underground structure;
d. Floor area within the building used for required off street parking; and
e. 2m^2 of floor area in an adaptable dwelling unit.

Note 2. Any portion of an underground structure that is above finished grade must be sited at least 1.2m from any lot line.

Note 3. Outdoor amenity space is a common outdoor area available for recreation and leisure activity use by all residential occupants within this zone.

Note 4. Indoor amenity space is a common area within a building designed to accommodate meetings, fitness or recreational activities available for use by all residential occupants within this zone.

6.38.3 Additional Regulations

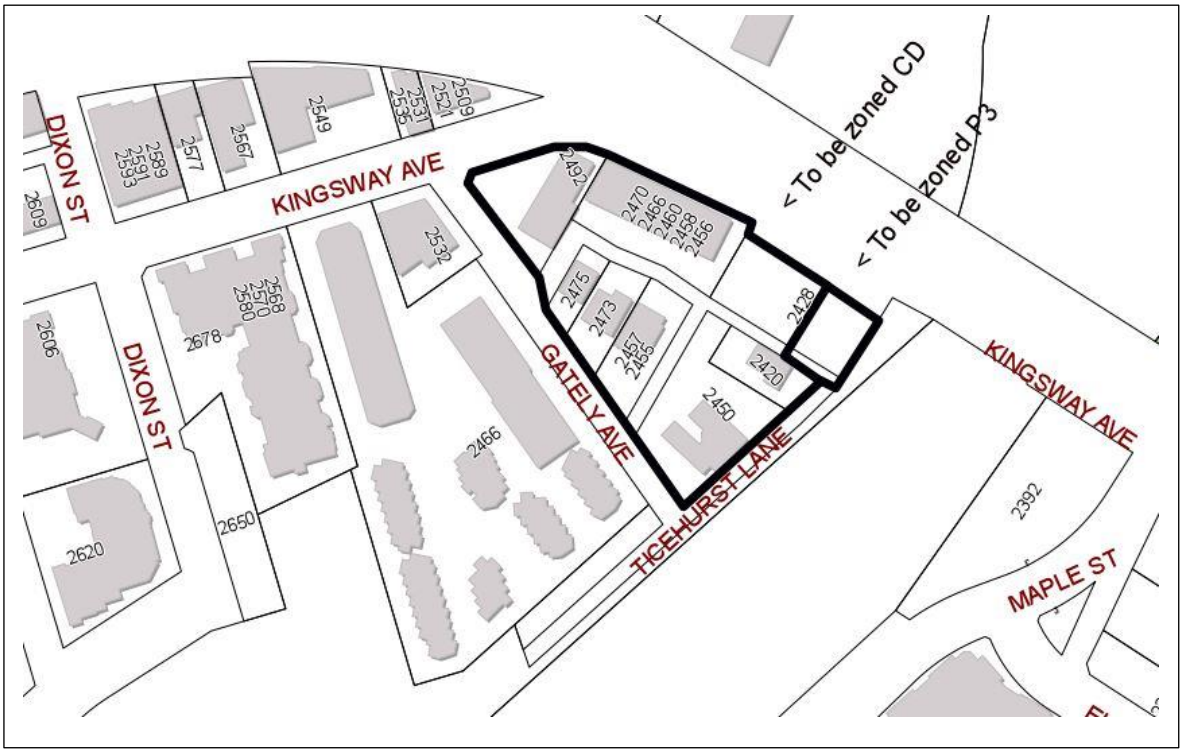
ELECTRIC VEHICLE INFRASTRUCTURE

For a residential building with a common parking area, a separate single utility electrical meter and disconnect shall be provided in line with the electrical panel(s) intended to provide for charging of electric vehicles located within 3 metres of the unit's required parking space."

READ A FIRST TIME this	day of	, 2020
READ A SECOND TIME this	day of	, 2020

Mayor	Corporate Officer

SCHEDULE 1


DIXON ST
KINGSWAY AVE
DIXON ST
GATELY AVE
TIGEHURST LANE
KINGSWAY AVE
MAPLE ST
< To be zoned CD
< To be zoned P3
2609
2589
2591
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RECOMMENDATIONS:

1. That Committee of Council, having given consideration to s.475 of the *Local Government Act*, confirm the following consultation for the proposed Official Community Plan amendment:
   a. on-site signage,
   b. the applicant's consultation with the community,
   c. staff communication with School District 43, and,
   d. consideration of the application by Committee of Council in open meetings.

2. That Committee of Council recommend to Council that:
   a. The Official Community Plan land use designation for the development site be amended from Neighbourhood Commercial and Apartment to Comprehensive Residential.
   b. The Official Community Plan land use designation for the remaining City portion of 2428 Kingsway Avenue be amended from Neighbourhood Commercial to Park Reserve.
   c. The Zoning be amended from RS1 (Residential Single Dwelling 1), RD (Residential Duplex) and M1 (General Industrial) to a Comprehensive Development Zone to provide for rental tenure apartment dwelling units and a 400m^2 childcare facility and P3 (Parks and Natural Areas) for the eastern portion of 2428 Kingsway Avenue.

3. Prior to adoption of the amending bylaws, the following conditions be met to the satisfaction of the Director of Development Services:
   a. Adoption of a Housing Agreement Bylaw that provides for 300 non-market rental housing units.
   b. Closure and sale of lanes within the development site and subdivision and sale of a portion of 2428 Kingsway Avenue.
   c. Demolition of existing structures and lot consolidation.
   d. Submission of a plan providing for road dedication along Kingsway and Gately Avenues.
   e. Submission of plans and securities and fees for off-site works and services including improvements to the intersection of Kingsway and Gately Avenues, construction of Gately Avenue and a 3m wide multi-use pathway along the Kingsway Avenue frontage and street trees.
   f. Submission of a plan and securities for riparian area enhancements and construction of the Coquitlam River Trail between Gately and Kingsway Avenues.
   g. Registration of legal agreement(s) to ensure:
      i) The development is designed and constructed in accordance with the recommendations of acoustic and vibration studies, and
      ii) The watercourse protection area is restricted to riparian vegetation and protected from future disturbance.

OCP and Zoning Bylaw Amendment – 2455-2475 Gately Avenue, 2428-2492 Kingsway Avenue and 2420 & 2450 Ticehurst Lane

PREVIOUS COUNCIL/COMMITTEE ACTION

At the July 28, 2020 Committee of Council meeting, the following resolution was passed:

That in consideration of s.475 of the Local Government Act, Committee of Council direct the following consultation be undertaken for the proposed Official Community Plan amendment:

1. *On site signage and an advertised on-line public input process led by the applicant, with notification provided to residents, businesses and community services within the area;*
2. *Information posted on the City's website and considered in an open Committee of Council meeting; and*
3. *Staff communication with School District 43.*

REPORT SUMMARY

This report provides for Committee consideration of an application to rezone a 2.4-acre site to permit a 6 storey non-market rental apartment development with a childcare facility. This site is currently designated in the Official Community Plan (OCP) for commercial and low density apartment uses and amending the land use designation of the OCP would be required to facilitate rezoning for the proposed development. The report recommends a number of conditions be required prior to consideration of bylaw adoption, including closure and sale of City lanes, sale of a portion of 2428 Kingsway Avenue, dedication of road to allow for widening of Kingsway and Gately Avenues, a Housing Agreement to ensure adherence to the City's Affordable and Family Friendly Housing Policy, and legal agreements to ensure the development is constructed to adhere to acoustic and vibration standards.

The project is seen to offer an important opportunity to address affordable housing needs within the community and review of this application is being expedited in accordance with the City's policy for applications deemed to be in the public interest. Staff recommend Committee support the Official Community Plan and Zoning Bylaw amendments and that the applications proceed to Council for consideration of the bylaw amendments.

BACKGROUND

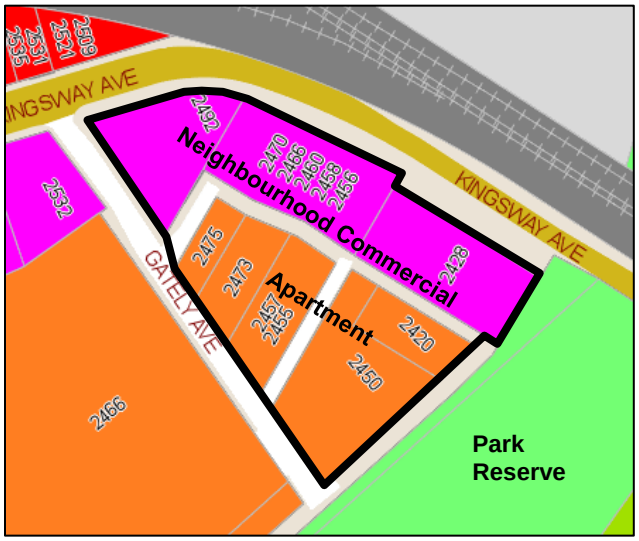
Proposal: Peak Towers Development Ltd. in partnership with the Affordable Housing Societies has submitted applications to develop a large non-market residential apartment complex with a childcare facility at 2455, 2473 and 2475 Gately Avenue, 2428, 2456 and 2492 Kingsway Avenue and 2420 and 2450 Ticehurst Lane.

Site Context: The proposed development site is approximately 2.4 acres in size and consists of eight properties bound by Kingsway Avenue, Gately Avenue, Ticehurst Lane and the Coquitlam River. Uses on the site currently include four houses, one duplex and two small scale industrial properties (one single tenant building and one two-storey multi-tenant building) and a vacant City owned parcel.

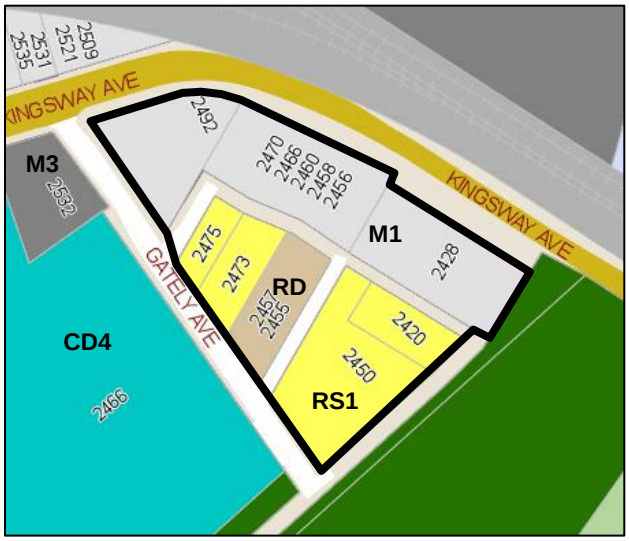
Location map

Surrounding land uses include the Canadian Pacific Railway corridor and small scale industrial uses north of Kingsway Avenue, a large multi-family residential complex and a small scale light industrial building west of Gately Avenue. An unopened road allowance (Ticehurst Lane) and Coquitlam River is to the east. The Downtown and Lions Park are within walking distance, directly east of the Coquitlam River.

Policy and Regulations: The site is currently zoned a mixture RS1 (Residential Single Dwelling 1), RD (Residential Duplex) and M1 (General Industrial), which reflect their current uses. The Official Community Plan land use designation for the properties along Kingsway Avenue is currently Neighbourhood Commercial (N) intended to provide for a mixed use development. The designation along Gately Avenue is Apartment (A) which would support low profile apartment uses to a maximum of 4 storeys. An amendment to the Comprehensive Residential (RC) OCP designation is proposed to better reflect the anticipated mix of uses.



Current OCP designations



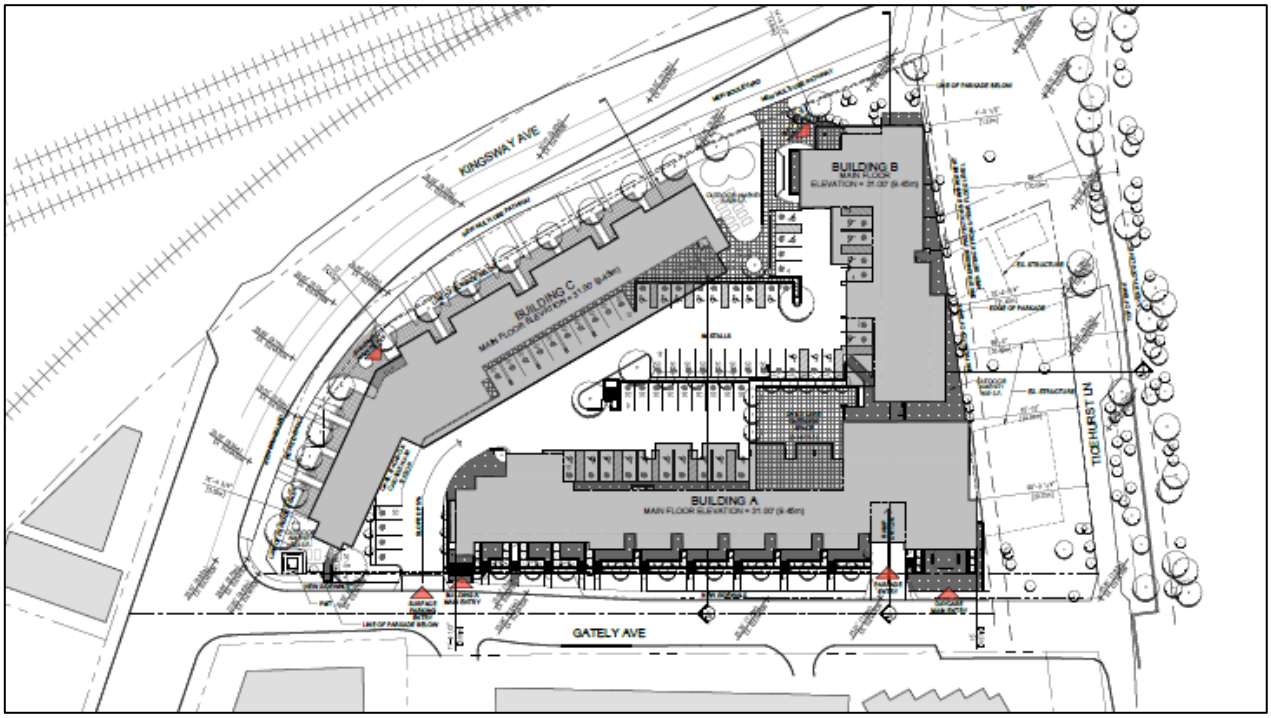
Current zoning

The policies of the Official Community Plan supports provision of housing that will meet a variety of needs, including affordable and non-market rental housing. The policies support new multifamily housing in areas close to the downtown, and encourage the creation of new childcare facilities. The policies also provide for the City to protect areas of environmental sensitivity through development and support improved pedestrian connections and trail networks.

This site will be subject to form and character, environmental conservation and watercourse protection development permit objectives and design guidelines. These applications would be considered after adoption of the Official Community Plan and Zoning Bylaw amendments.

The City's Density Bonus policy provides for the City to retain the additional land value achieved by the rezoning and Official Community Plan amendment and provides for consideration of that value to be offset by the provision of social housing and community amenities. The City's Affordable and Family Friendly Housing Policy requires that 10% of any additional residential density be secured as non-market rental housing. The City's Processing of Development Applications Policy provides for the City to fast-track public Interest applications through the various application review processes and process the applications at the City's cost.

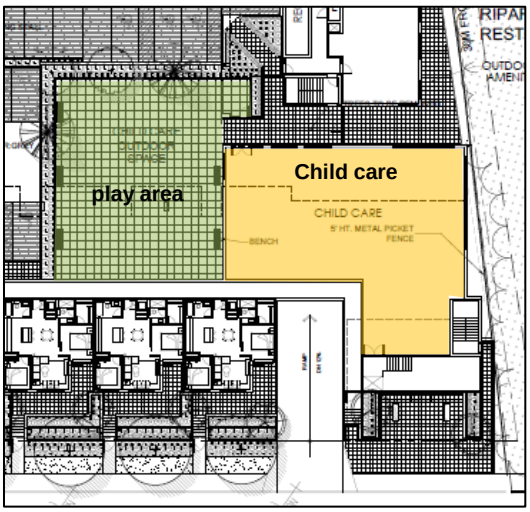
Project description: The proposed development consists of three 6-storey buildings with 302 apartment units and a 400m^2 (4,305 ft^2) childcare facility built over a common one-level parkade. The complex consists of three buildings fronting the periphery of the site clustered around a grade level interior parking court.



Proposed site plan

Each building is designed with its own prominent main entry providing pedestrian level access from the adjoining street. Apartment units at street level have individual front doors and landscaped walkways leading to the street to promote pedestrian access and eyes on the street. There are two vehicle access points to the site from Gately Avenue; one for access to the grade level parking court which will also serve as access to garbage and recycling rooms located to the interior of the site and a second for access to the underground parkade.

The residential portion of the development will consist of 129 one-bedroom, 123 two-bedroom and 48 three-bedroom apartment units ranging in size from 44m^2 (474 ft^2) to 80m^2 (861 ft^2). These units include 60 adaptable and 30 accessible units to help meet the needs of residents with disabilities. The proposal include common amenity space for the residents consisting of two outdoor amenity areas which provide a children's play area, raised gardening beds and seating and tables for outdoor gatherings. The indoor amenity spaces include a lounge/party room and meeting/study rooms. The proposed child care is to be located near the southeast corner of the site and includes outdoor play space located to the interior of the site. All units have private outdoor space in the form of a balcony or patio.



Child care and outdoor play area

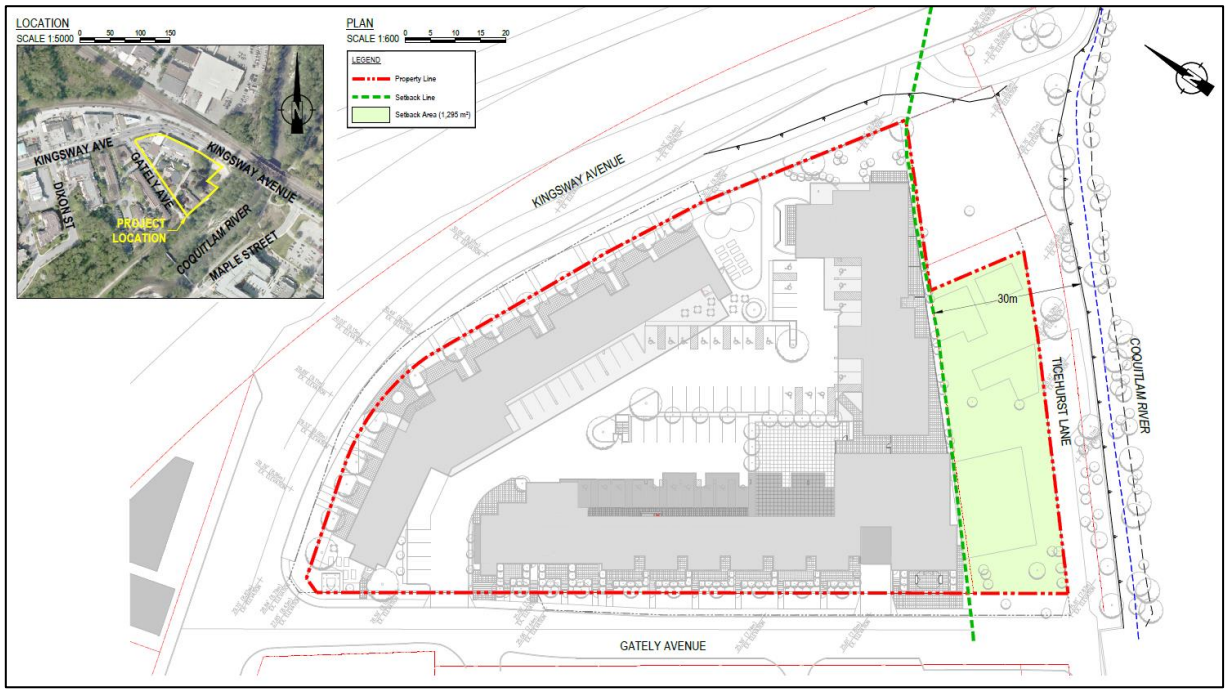
The developer proposes a contemporary architectural style that includes quality cladding materials in keeping with other recent development in Port Coquitlam including brick, fibre-cement panel, corrugated metal, standing seam metal, aluminum and glass balcony railing, and wood look metal soffits. Each building will utilize consistent materials but have its own unique colour palette to create a cohesive design while allowing each building to have its own personality.

Façade fronting Kingsway / Gately intersection

The landscape plan calls for a mixture of trees, shrubs, perennials and ground cover plants located throughout the periphery of the site in integrated landscape planters and tiered retaining walls to soften the building edges and define and beautify the apartment patios for the ground floor apartment units. The interior parking court is also to be landscaped and the parking areas interplanted with trees to add shading and architectural interest. The landscape surface materials include concrete and high quality unit pavers for patios and walkways, asphalt for the parking court driveways and unit pavers for the vehicles parking spaces.

The proposed development, in accordance with the building and plumbing bylaw, will also be constructed to meet Step 2 of the BC Energy Step Code which will provide at least a 15% reduction to the National Building Code for energy consumption. The applicant's preliminary stormwater management plan indicates a stormwater detention tank is to be installed to detain/delay stormwater flows from the development to aid in reducing impacts to the City stormsewer system. A thorough description of environmental conservation measures will be provided to Committee for consideration of development permit issuance.

Watercourse Protection: The proposed development is adjacent to the Coquitlam River and subject to the objectives and guidelines of the Watercourse Protection Development Permit (DP) Area. These guidelines would prescribe a 30m wide watercourse protection area measured from the Coquitlam River top-of-bank. The development is also subject to the Provincial Riparian Area Protection Regulation (RAPR).



Map showing the watercourse protection area

The applicant provided an environmental report which assessed the development proposal and its conformance with the City's Watercourse Protection DP guidelines. This report confirmed the project meets the prescribed 30 meter setback as shown on the image below. Through this development, the applicant would remove several existing structures (two houses, two accessory buildings and pavement) from the setback area and enhance it with riparian plantings. Further information on watercourse protection and the enhancement plans would be provided to Committee in consideration of a Watercourse Protection Development Permit should the application proceed.

Trees: The applicant submitted an arborist report (Attachment 2) assessing the 54 existing trees on the site, mostly located on the single residential and duplex properties and 6 street trees. The proposed concept requires 41 trees to be removed as they are within the footprint of the parkade; 7 of these trees meet the Tree Bylaw's definition of significant tree due to their size. 13 trees within the watercourse protection area and the 6 street trees would be retained.

The applicant is proposing to plant 91 new trees which includes 59 on the development site, 20 in the watercourse protection area and approximately 12 additional street trees. The robust landscape plan also proposes a mixture of 1,079 shrubs, 660 grasses, 467 perennials and 428 ground cover plants with an additional mixture of 775 shrubs, 127 perennials, and 325 ground cover plants in the watercourse protection area.

Parking: The Parking and Development Management Bylaw requires 305 parking spaces for the proposed development including 300 for the residents (1 parking space per dwelling unit) and 5 for the child care (1 parking space per 10 children). The applicant has proposed 294 parking spaces including 289 for the residents (0.96 parking spaces per dwelling unit) and 5 for the childcare facility. Over 10% (33) of the parking stalls will be accessible spaces that provide for wheelchair access; these stalls are 4 meters wide which is 1.3m wider than a standard parking space.

The transportation impact study (Attachment 3) provides an analysis of the proposed parking and concludes the proposed parking will meet the needs of the development. The Affordable Housing Societies has also provided a letter (Attachment 4) describing the typical parking needs of their residents and confirming that, based on their other housing projects, the proposed parking ratio is more than adequate to meet the needs of their tenants. The building will also provide storage for bicycles in a secure room in the underground parking structure.

Transportation: The applicant provided a transportation impact study that assessed the existing traffic conditions and the impact of the proposed development on the transportation network. In summary, the report found the proposal will add 153 new vehicle trips in the AM peak hour and 178 new vehicle trips in the PM peak hour and confirms the existing transportation network has adequate capacity to accommodate these trips. The report provides analysis and identified options for improvements to the Gately/Kingsway Avenue intersection. The recommended improvement is

to enhanced movements to/from Gately Avenue through the addition of a westbound left turn lane/receiving lane as shown on the image below. Road dedications along Kingsway and Gately Avenues would be required to meet the necessary road allowance widths to accommodate the required infrastructure.

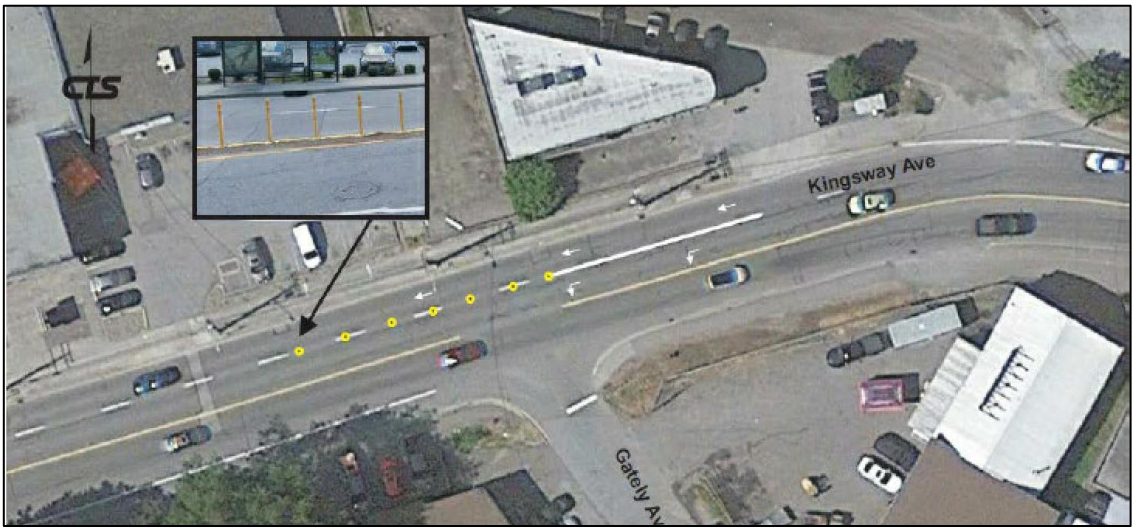


Illustration of proposed westbound left turn and receiving lane

The report also recommends improvements to pedestrian and bicycle infrastructure adjacent to the site including a construction of a 3m wide multi-use pathway (MUP) along Kingsway Avenue and connection of the Coquitlam River Trail between Gately and Kingsway Avenues.

Potential extension to Coquitlam River Trail

Finally, the report recommends consideration of a future connection between Gately and Chine Avenues to provide enhanced access from Gately Avenue to the fully signalized intersection at Dixon Street and Kingsway Avenue as shown on the image below. This connection would transect vacant municipal land adjacent to Dixon Street and the River Woods housing site at 2446 Gately Avenue (owned by the Affordable Housing Societies). Affordable Housing Societies has indicated intent to explore redevelopment 2446 Gately Avenue in the future and the potential to construct this connector will be explored at that time.

Potential future extension to Chine Avenue

Off-site Infrastructure and utilities: In addition the road network improvements identified by the traffic study, this project would require significant infrastructure and service upgrades to meet standards of the subdivision servicing bylaw and adequately service the proposed development. These include reconstruction of Kingsway Avenue ½ road plus one meter complete with curb and gutter, sidewalk, road drainage, street trees and street lighting; reconstruction of Gately Avenue full width complete with curb and gutter, sidewalk, road drainage, street trees and street lighting on the eastern side fronting the site. This development also requires extensive service upgrades including replacement of both the watermain and sanitary services on Gately Avenue. An assessment is being completed to determine if storm sewer upgrades are necessary.

Land Purchase and Road Closure: To facilitate the consolidation with adjacent properties, the applicant has requested to purchase a portion of a city owned parcel at 2428 Kingsway Avenue and the lanes within the 2400 block of Gately and Kingsway Avenue as illustrated in the image below. The total area of land to be purchased is approximately 2,184m^2.

Map showing proposed road closure, portion of 2428 Kingsway to be purchased and road dedications

Proximity to railway operations and Kingsway corridor: The site is located in proximity to the CP Rail corridor and adjacent to the Kingsway Avenue, which is an arterial route and truck corridor. In accordance with guidelines developed by FCM and the Railway Association of Canada, the applicant contacted CP for comments and retained technical studies to assess potential noise and vibration impacts and provide mitigation strategies. The guidelines also suggest maintaining a 30m setback from the rail corridor where possible; the proposed development is located approximately 25 to 29m from the Canadian Pacific Railway (CP) corridor and approximately 40m from the actual rail tracks.

The acoustic study (Attachment 5) found the noise level to be 69 dBA, which is on the high side of the CMHC recommended range of 55 to 75 dBA. The study recommends a number of measures be taken to provide adequate noise isolation in interior spaces including thickening exterior sheathing and interior drywall and using sound dampening windows and doors for suite walls fronting Kingsway Avenue. As the noise isolation can only be achieved when windows and doors are tightly closed, consideration will also need to be given to alternative forms of ventilation. The applicants are in the process of assessing the potential for vibrations and identifying if mitigation measures are necessary.

CP declined to comment on the development as it is not directly adjacent to the rail corridor.

Public Consultation: Consistent with the consultation plan presented to Committee July 28, 2020, the applicant provided an opportunity for community input beginning August 20th and ending September 13th. During this period the applicants received comments from 9 respondents on the proposed land use. The input received about the proposal included comments in support of the

project and the provision of non-market housing along with concerns about the additional density, traffic and environmental impacts. A summary is provided in attachment 6.

DISCUSSION

The OCP and additional City policies establishes how the community is intended to develop, designates lands for uses in keeping with these policies and provides guidance on the types of housing, services and community supports the City should encourage. An evaluation of the proposal with applicable policies and regulations indicates the following:

- The apartment uses on the site are reflective of the OCP's Apartment Residential designation for a large portion of the site and in keeping with policies to locate apartment buildings in urban centers close to community services and transit. The site is within walking distance from the Downtown, in close proximity to other multi-family developments, parks and trails and existing commercial uses.
- The proposal retains a portion of the commercial uses anticipated in the OCP by including a daycare facility. The location of this facility at the rear of the site provides for a superior site context and buffers this use from the traffic and rail corridor.
- The proposal for 300 non-market rental housing units aligns with the OCP and associated policies to explore and support the development of rental housing, encourage housing affordability and promote a range of housing options to meet the needs of our diverse community. The development provides for outdoor and indoor community amenity space and each unit will benefit from their own balcony or patio.
- The OCP policies for community facilities and services encourages the provision of additional childcare spaces to meet the needs of the community and the draft Child Care Action Plan supports this direction. The proposed 48 child facility will help support childcare need in the neighbourhood.
- The proposal is in keeping with the City's Affordable and Family Friendly Housing and Density Bonus Policies by providing 100% non-market rental units and community amenities in the form of the childcare facility in exchange for an increase in density. The additional density will translate into the provision of approximately 78 additional non-market units.
- The OCP provides that residential units should be buffered from negative impacts. The impact of traffic noise from Kingsway Avenue and the CP rail corridor can be reduced by implementing measures and recommendations of the technical studies prepared by acoustical and geotechnical engineering consultants.
- Information submitted by the applicant and their transportation consultants suggested the proposed parking ratio will more than adequately meet the needs of the residents given the mix of tenants and the affordability criteria. The site is also well located to promote alternative modes of transportation (walking and cycling) due to its proximity to the Downtown and access to public transit on Kingsway Avenue.

- The proposal meets the intent of the City's Watercourse Protection Development Permit Guidelines by maintaining the required setback to the Coquitlam River and enhancing the riparian landscape through removal of encroachments and appropriate plantings.
- The proposal will result in improvements to the Kingsway and Gately intersections and additional pedestrian connections through construction of the MUP on Kingsway and extension to the Coquitlam River Trail.

It is staff's opinion that the proposal provides substantial community benefit and is aligned with established direction in the OCP. Staff recommend the proposal be supported with the following provisions:

1) The site land use designations be amended to Comprehensive Residential (RC) and a Comprehensive Development (CD) zone be crafted that provides for the proposed mix of land uses, and confirms permitted density, built form, siting and parking requirements.
2) Registration of a housing agreement that restricts the site to the provision of rental non-market housing to ensure the continued community benefit of the project.
3) Closure, subdivision and sale of municipal lanes and land, dedication of road along Gately and Kingsway Avenues and consolidation of lands into one parcel.
4) Securing off-site works that include improvements to Kingsway and Gately Avenue intersection, construction of a multi-use path along Kingsway Avenue, extension of the Coquitlam River Trail along Ticehurst Lane, and riparian enhancements.
5) Registration of legal agreements to ensure the noise and vibration impacts from Kingsway Avenue and rail lines are mitigated in accordance with the recommendations of technical studies and the Watercourse Protection Area is restricted to riparian vegetation and protected from future disturbance in perpetuity.

The applicant has undertaken consultation in keeping with Committee's July 28th resolution and Section 475 of the *Local Government Act*. Comments on the proposal ranged from support to concerns about traffic, density, overall growth in the community and impacts to the environment. Staff further recommend Council confirm its consultation requirements by adoption of the recommended motion.

FINANCIAL IMPLICATIONS

In accordance with the Processing of Development Applications Policy, the City did not require Rezoning and Development Permit application fees, an approximate value of $57,000. The Affordable Housing Society may also apply to the City for a grant from the Special Needs Housing Reserve, previously provided at $1,000 per dwelling unit.

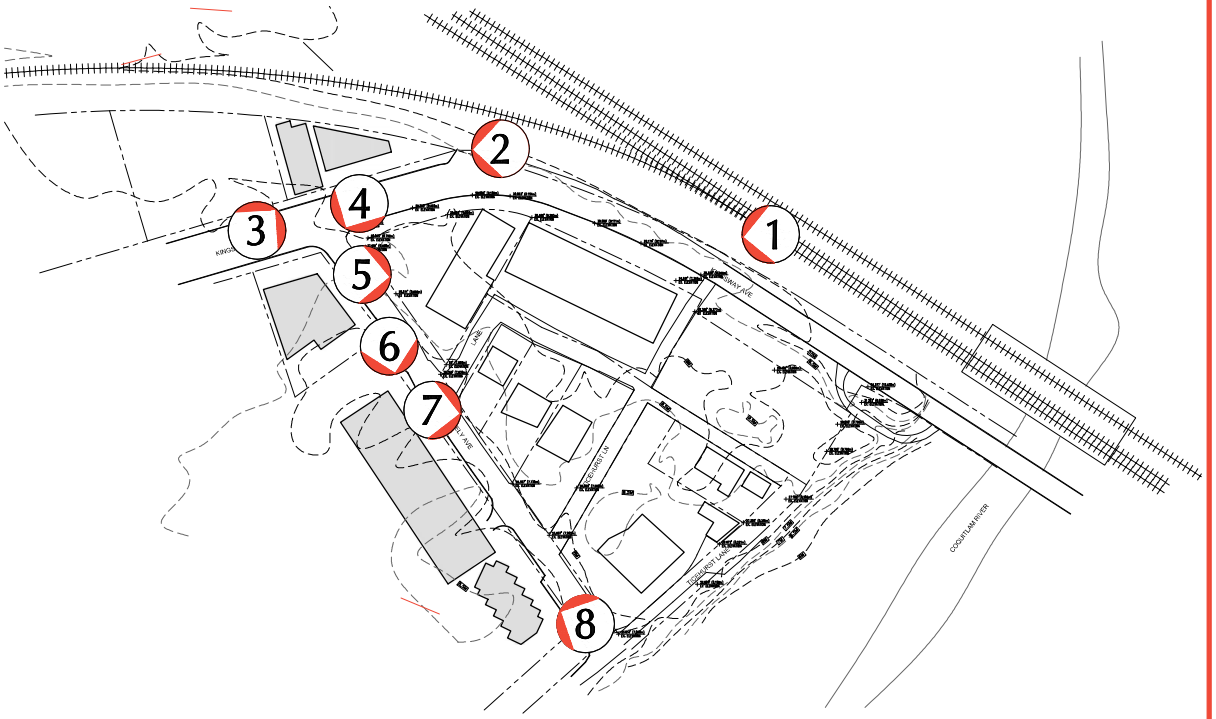
OPTIONS (✓= Staff Recommendation)

	#	Description
✓	1	Recommend to Council that the Official Community Plan and Zoning Bylaw amendments be considered for approval.
	2	Request additional information, amendments to the application, changes to recommended conditions of prior to forwarding the application to Council.
	3	Recommend to Council that the application be refused.

ATTACHMENTS

Attachment #1: Development concept drawings
Attachment #2: Arborist report
Attachment #3: Transportation impact report
Attachment #4: Affordable Housing Societies parking needs letter
Attachment #5: Acoustic study
Attachment #6: Consultation summary

Lead author(s): Bryan Sherrell and Jennifer Little



NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

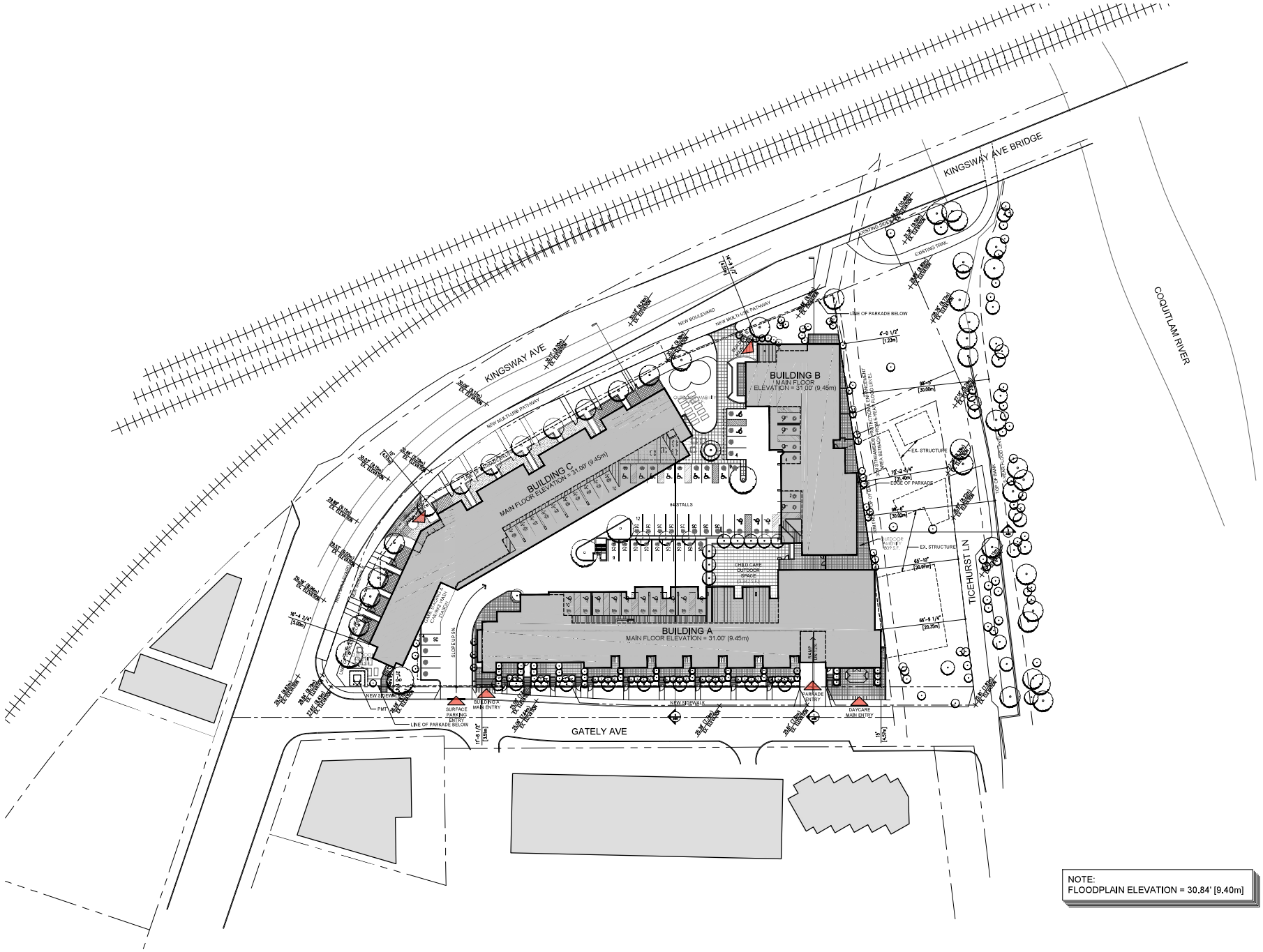
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J5
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
CONTEXT PLAN
+ IMAGES

PROJECT NO: 19029
DRAWN BY: CSH
SCALE: ~~1/64"=1'-0"~~
REVIEW BY: BW
APRIL 2020
DWG NO: A0100



NOTE:
FLOODPLAIN ELEVATION = 30.84' [9.40m]

NORTH ARROW:

OWNER/CLIENT:

02	DP/REZONING RESUBMISSION	09/28/20
01	DP/REZONING SUBMISSION	04/01/20
NO.	ISSUE	M/D/Y

SEAL:

CONSULTANT:

WA ARCHITECTS

VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 0J5
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

SITE PLAN

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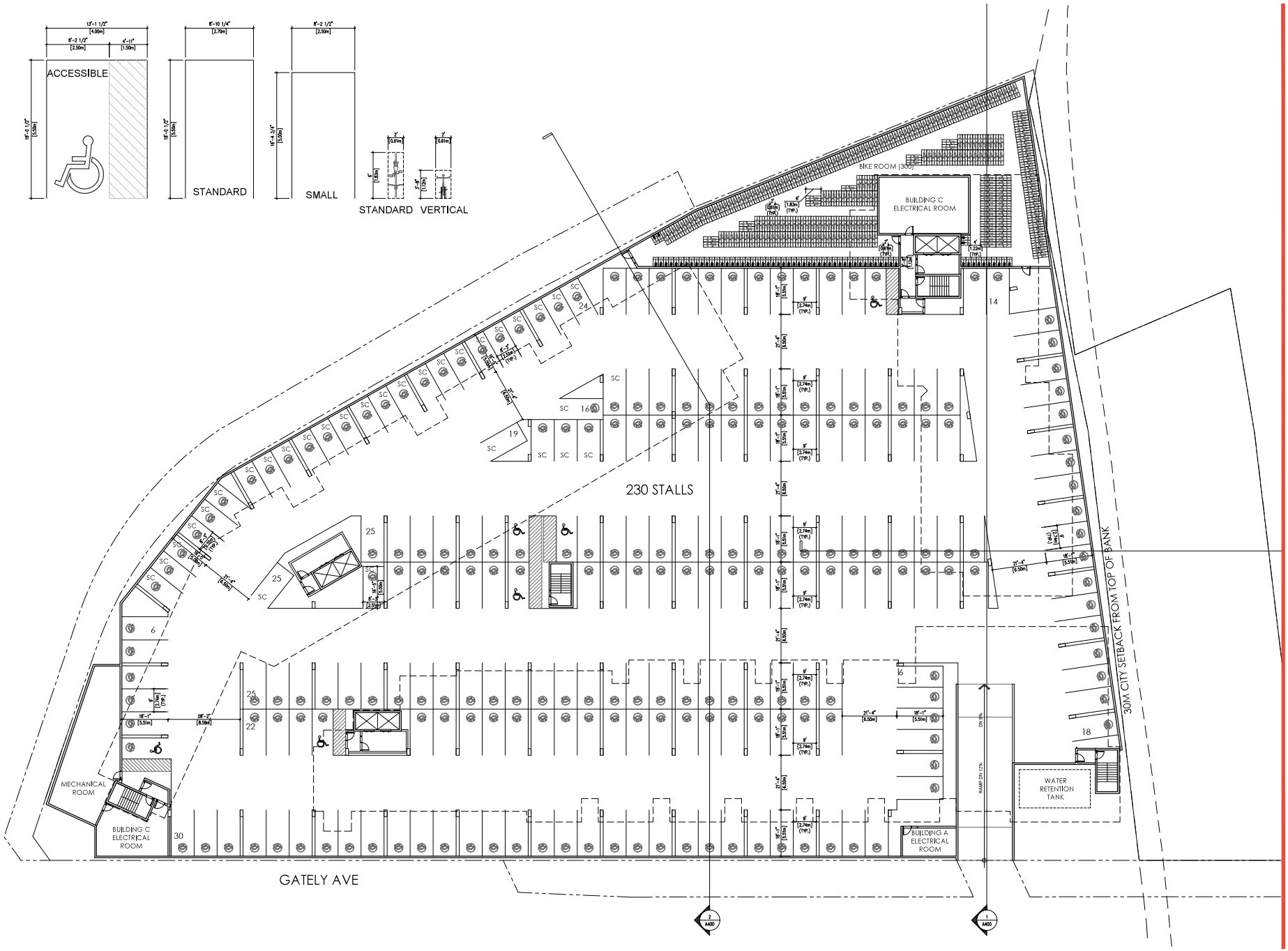
APRIL,2020
DWG NO: A0102



NORTH ARROW:

PROJECT

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/09/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

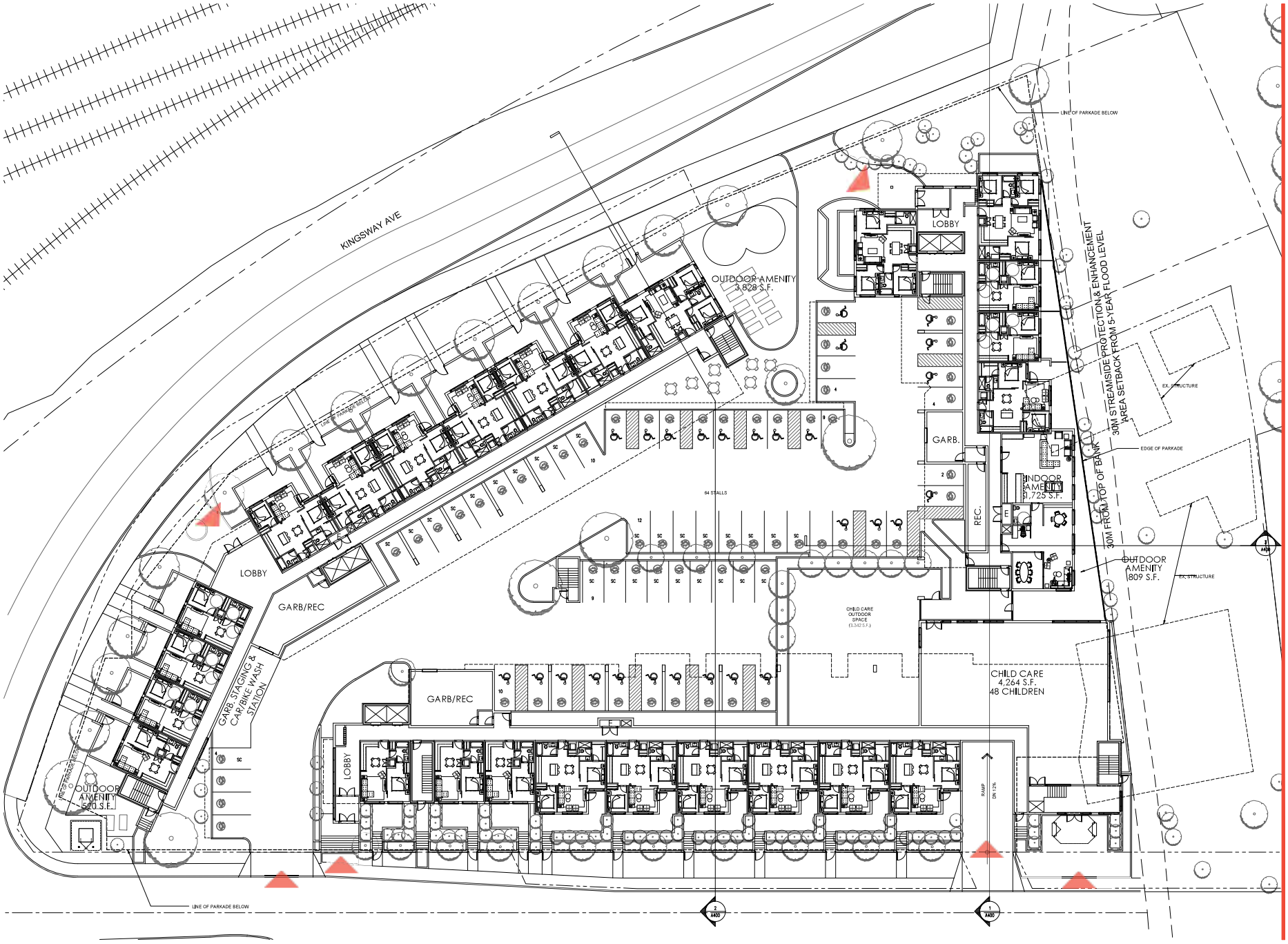
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J5
604.885.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
PARKADE FLOOR PLAN

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 1/16"=1'-0" REVIEW BY: BW
DWG NO: A0200 APRIL 2020



NORTH ARROW:

PROJECT

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/09/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

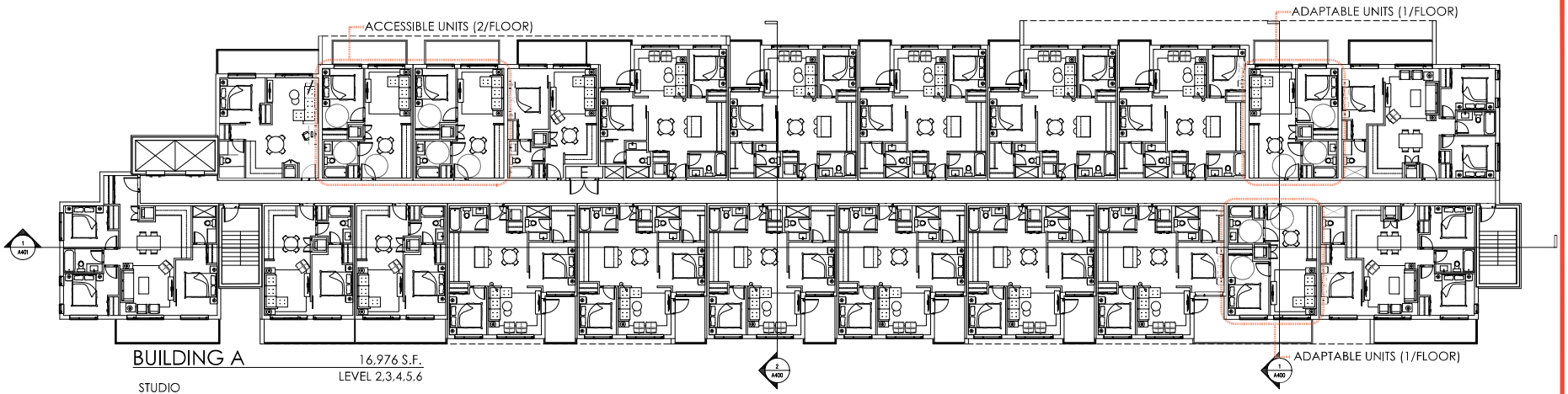
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J5
604.885.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

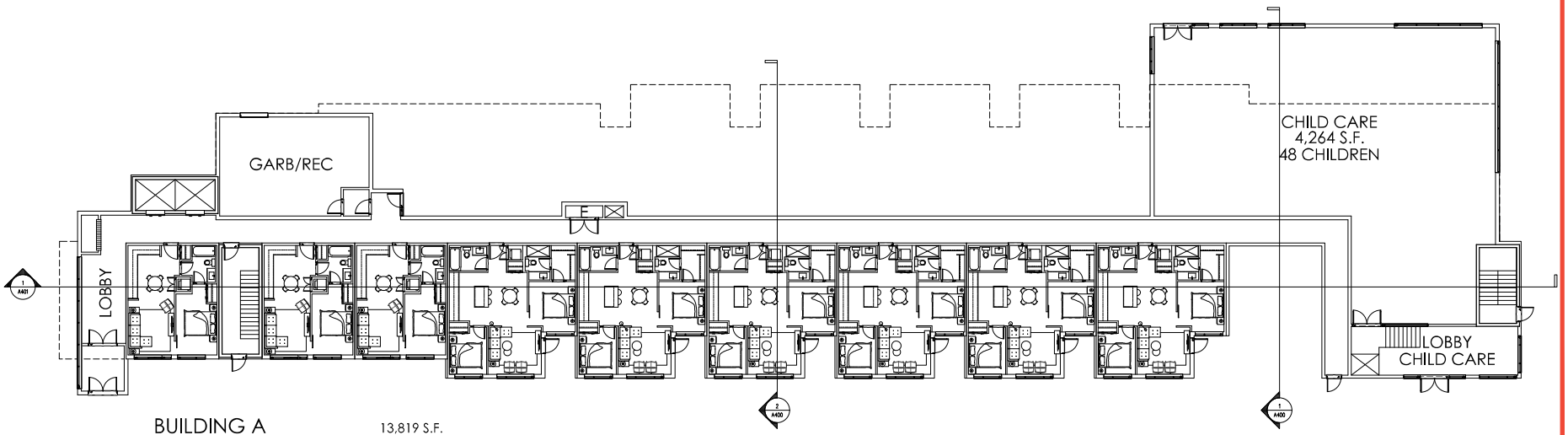
DRAWING TITLE:
GROUND FLOOR PLAN

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 1/16"=1'-0" REVIEW BY: BW
DWG NO: **A0201** APRIL 2020



BUILDING A 16,976 S.F.
LEVEL 2,3,4,5,6

STUDIO	
1 BED	8
2 BED	11
3 BED	3
TOTAL	22 UNITS



BUILDING A 13,819 S.F.
LEVEL 1

STUDIO	
1 BED	3
2 BED	6
3 BED	
TOTAL	9 UNITS

NORTH ARROW:

PROJECT

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

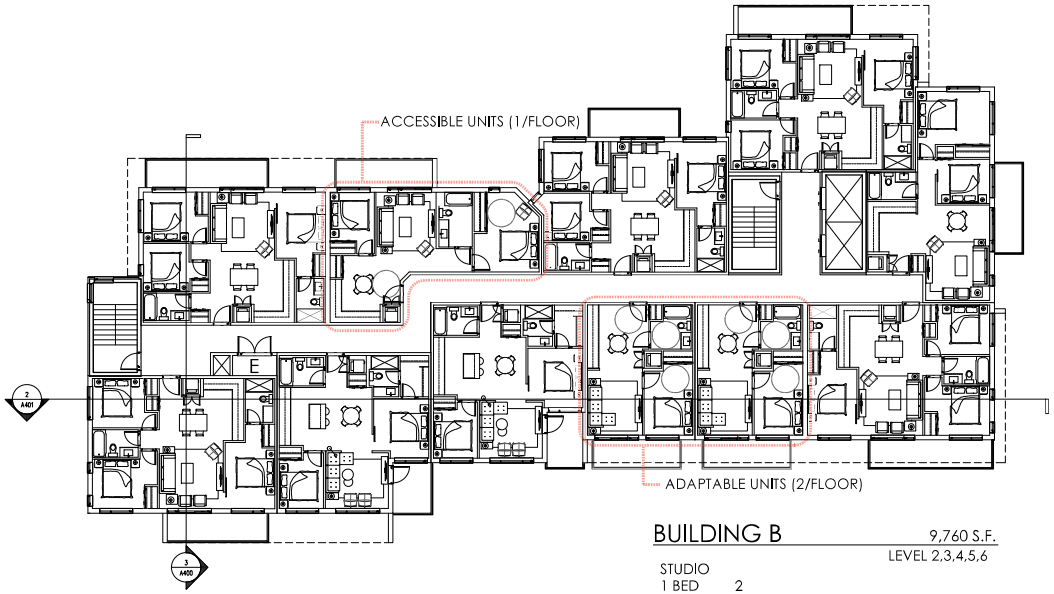
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J5
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
BUILDING A
L01, L02–L06

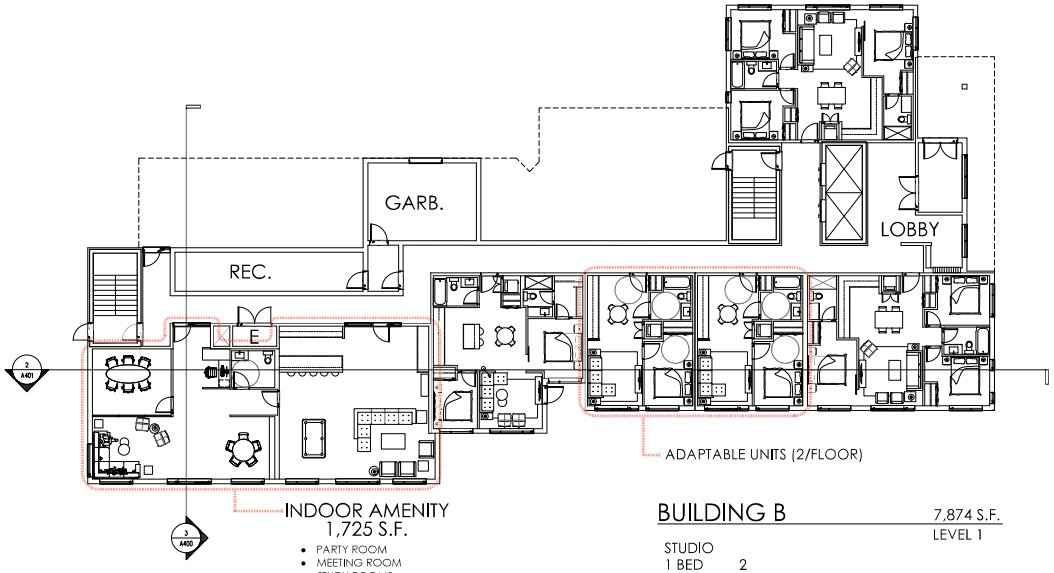
PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 3/32"=1'-0" REVIEW BY: BW
DWG NO: A0202 APRIL 2020



BUILDING B

9,760 S.F.
LEVEL 2,3,4,5,6

STUDIO	
1 BED	2
2 BED	4
3 BED	5
TOTAL	11 UNITS



BUILDING B

7,874 S.F.
LEVEL 1

STUDIO	
1 BED	2
2 BED	1
3 BED	2

NORTH ARROW:

PROJECT

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

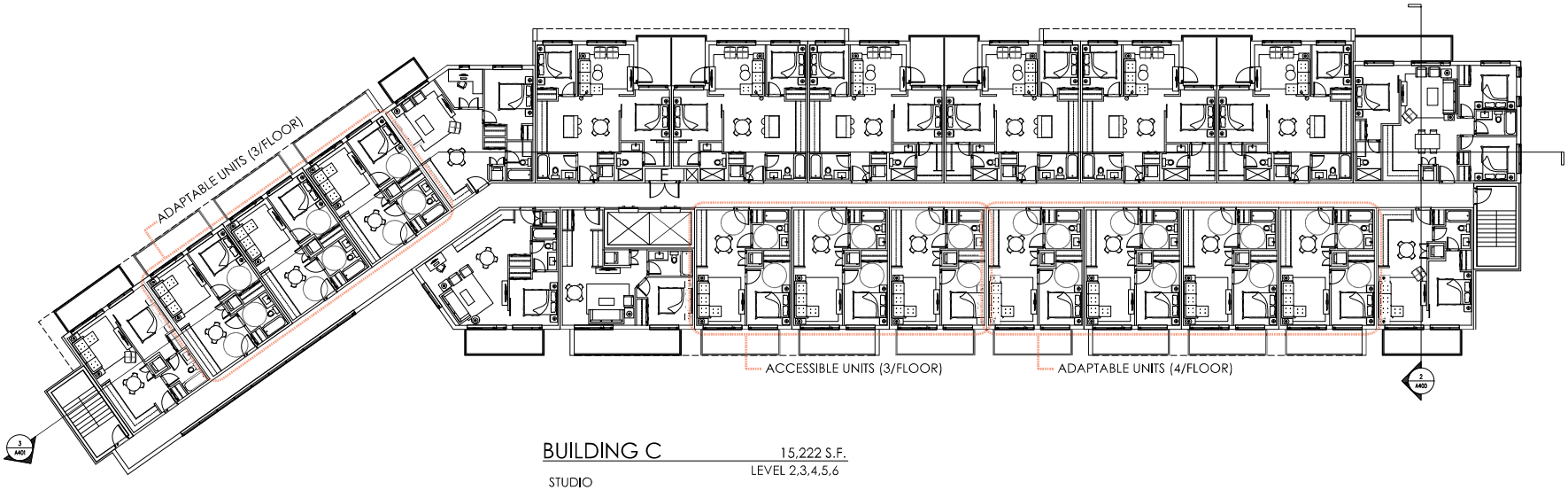
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J5
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
BUILDING B
L01, L02–L06

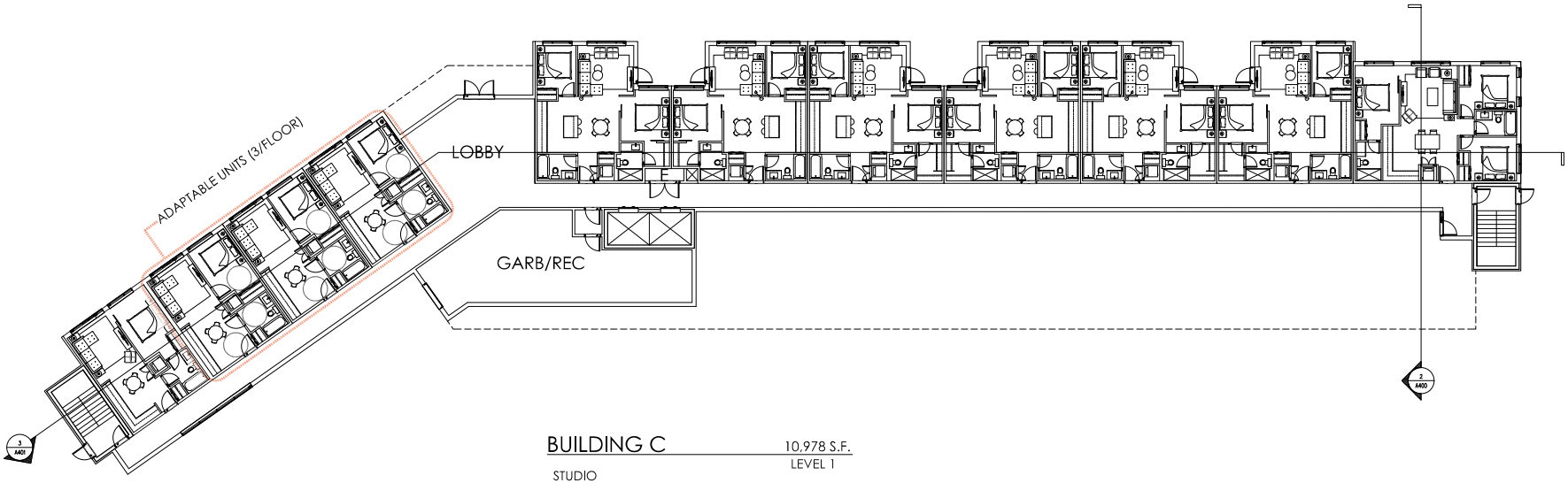
PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 3/32"=1'-0" REVIEW BY: BW
DWG NO: **A0203** APRIL 2020



BUILDING C

15,222 S.F.
LEVEL 2,3,4,5,6

STUDIO	
1 BED	14
2 BED	7
3 BED	1
TOTAL	22 UNITS



BUILDING C

10,978 S.F.
LEVEL 1

STUDIO	
1 BED	4
2 BED	6
3 BED	1
TOTAL	11 UNITS

NORTH ARROW:

PROJECT

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

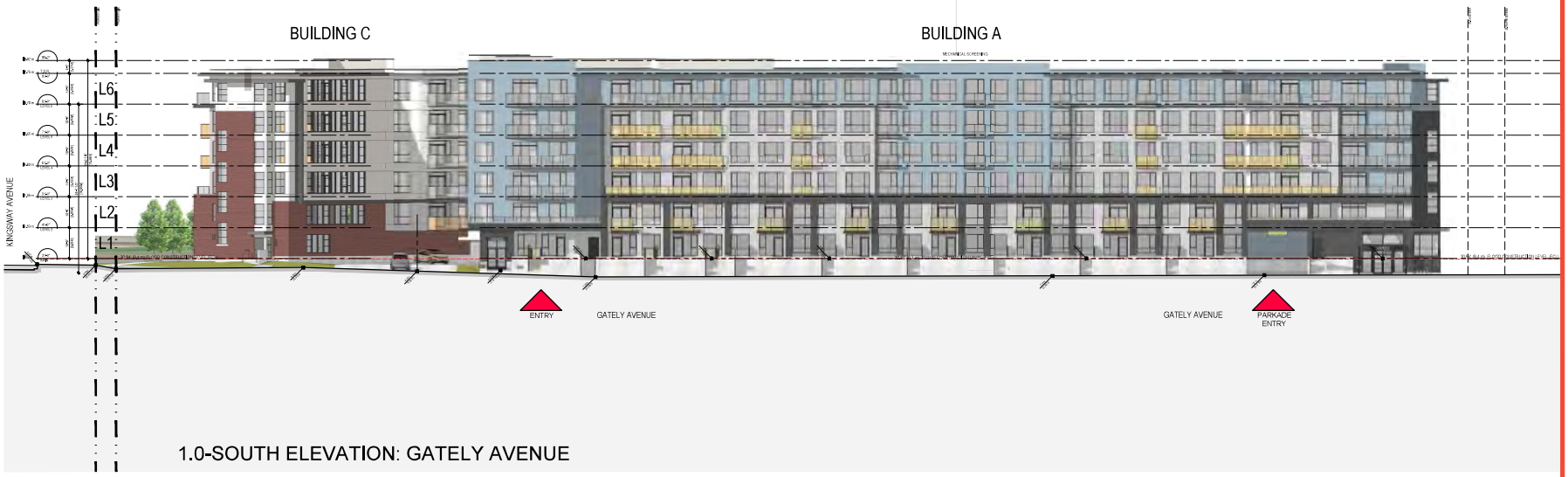
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 0J5
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
BUILDING C
L01, L02–L06

PROJECT NO: 19029
DRAWN BY: CSH
SCALE: 3/32"=1'-0"
REVIEW BY: BW
APRIL 2020
DWG NO: A0204



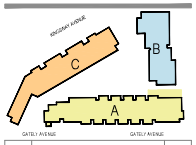
1.0-SOUTH ELEVATION: GATELY AVENUE

2.0-NORTH ELEVATION:

NORTH ARROW:

OWNER/CLIENT:

KEY PLAN:



NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V8R 6J5
604.685.3028 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
BUILDING A
ELEVATIONS

PROJECT NO: 19029
DRAWN BY: CSH
SCALE: 1/16"=1'-0"
REVIEW BY: BW
APRIL 2020
DWG NO: A0300

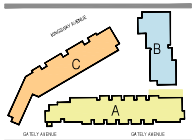
3.0-EAST ELEVATION

4.0-WEST ELEVATION

NORTH ARROW:

OWNER/CLIENT:

KEY PLAN:



NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

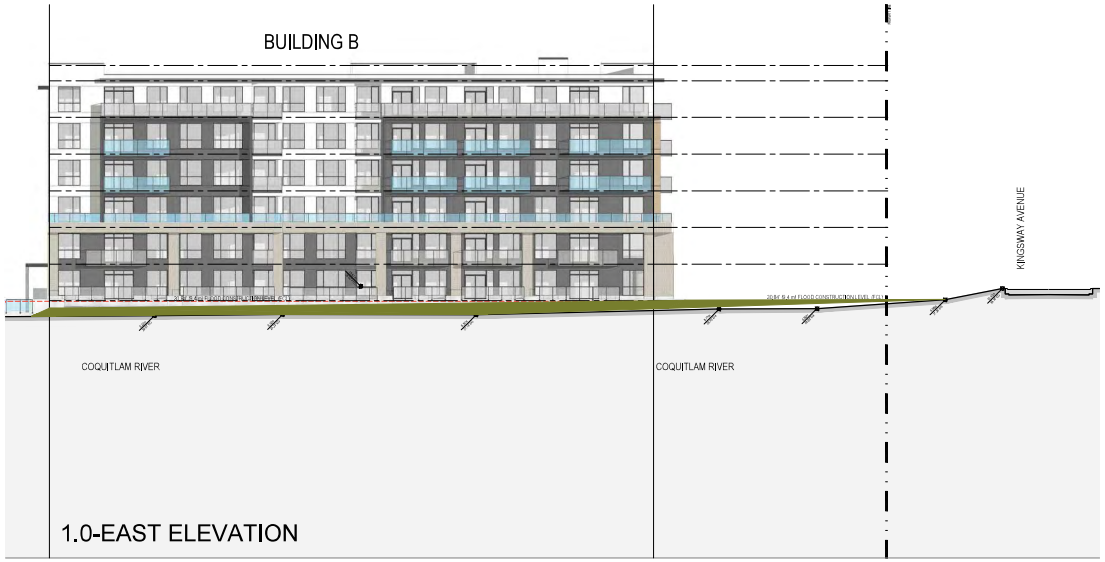
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V8R 0J5
604.685.3028 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

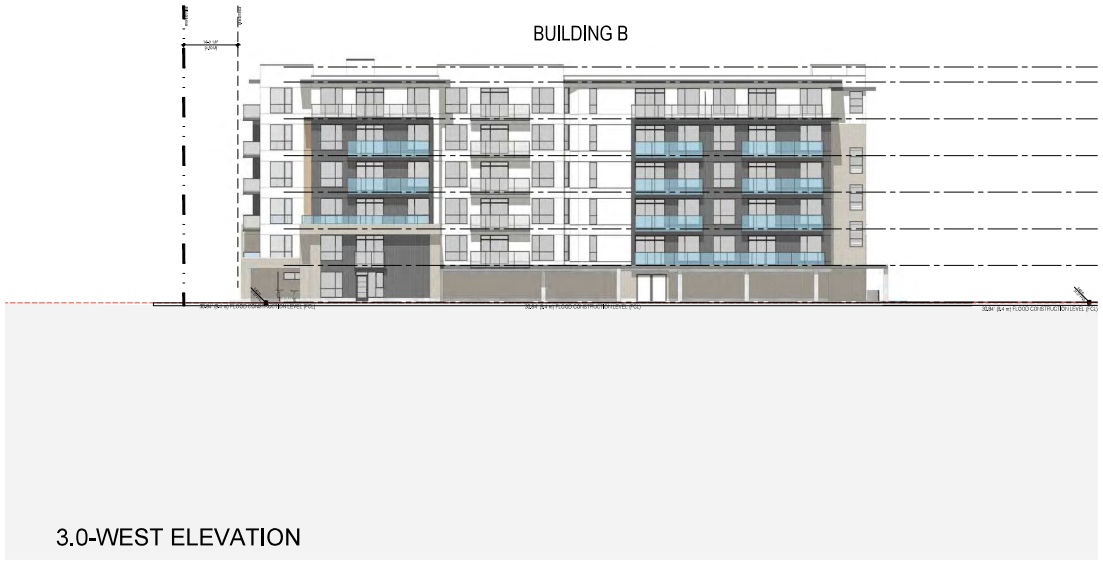
DRAWING TITLE:
BUILDING A ELEVATIONS

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 1/16"=1'-0" REVIEW BY: BW
DWG NO: A0301 APRIL 2020



1.0-EAST ELEVATION

2.0-NORTH ELEVATION



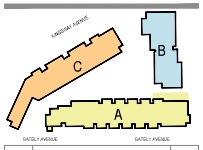
3.0-WEST ELEVATION

4.0-SOUTH ELEVATION

NORTH ARROW:

OWNER/CLIENT:

KEY PLAN:



NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/09/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

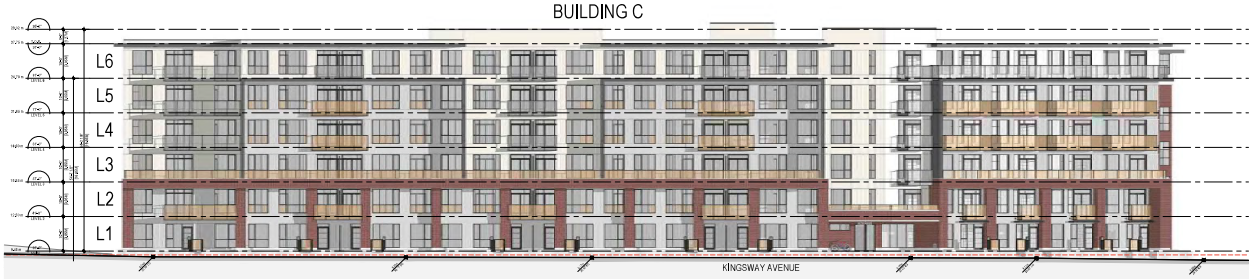
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J5
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
BUILDING B ELEVATIONS

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 1/16"=1'-0" REVIEW BY: BW
APRIL 2020
DWG NO: **A0302**



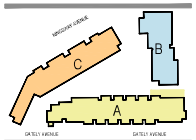
1.0-NORTH ELEVATION

2.0-SOUTH ELEVATION

NORTH ARROW:

OWNER/CLIENT:

KEY PLAN:



NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

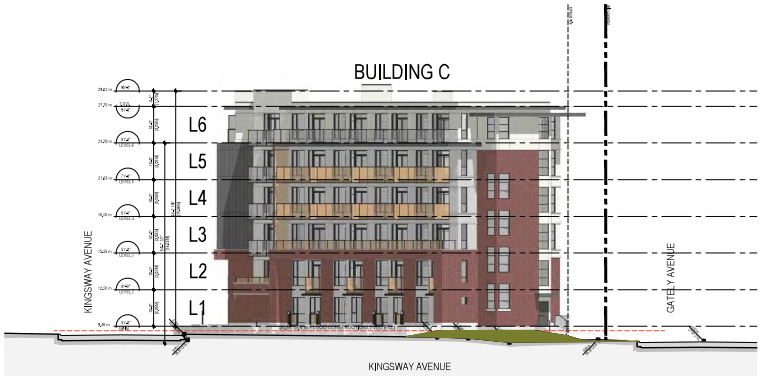
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 0J5
604.985.3928 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

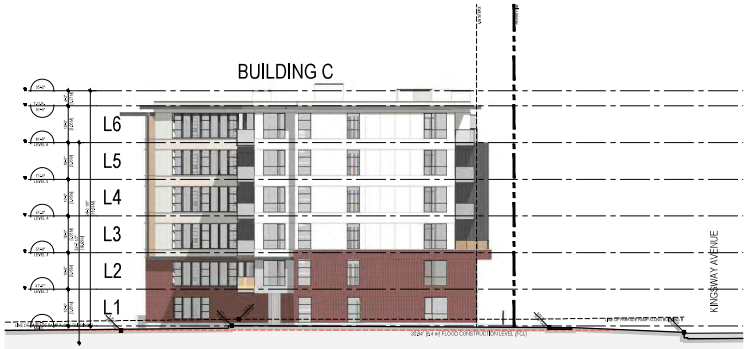
PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
BUILDING C ELEVATIONS

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 1/16"=1'-0" REVIEW BY: BW
APRIL 2020
DWG NO: A0303



1.0-NORTH ELEVATION

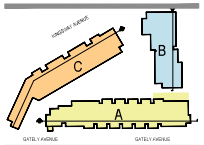


2.0-SOUTH ELEVATION

NORTH ARROW:

OWNER/CLIENT:

KEY PLAN:



NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

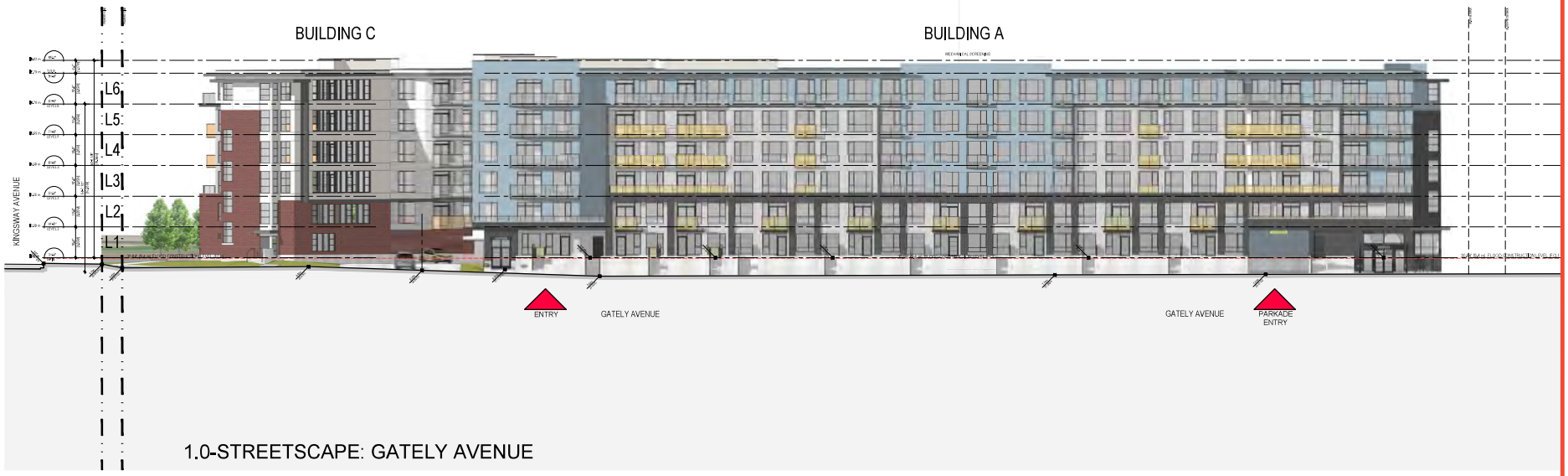
WA ARCHITECTS
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J3
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

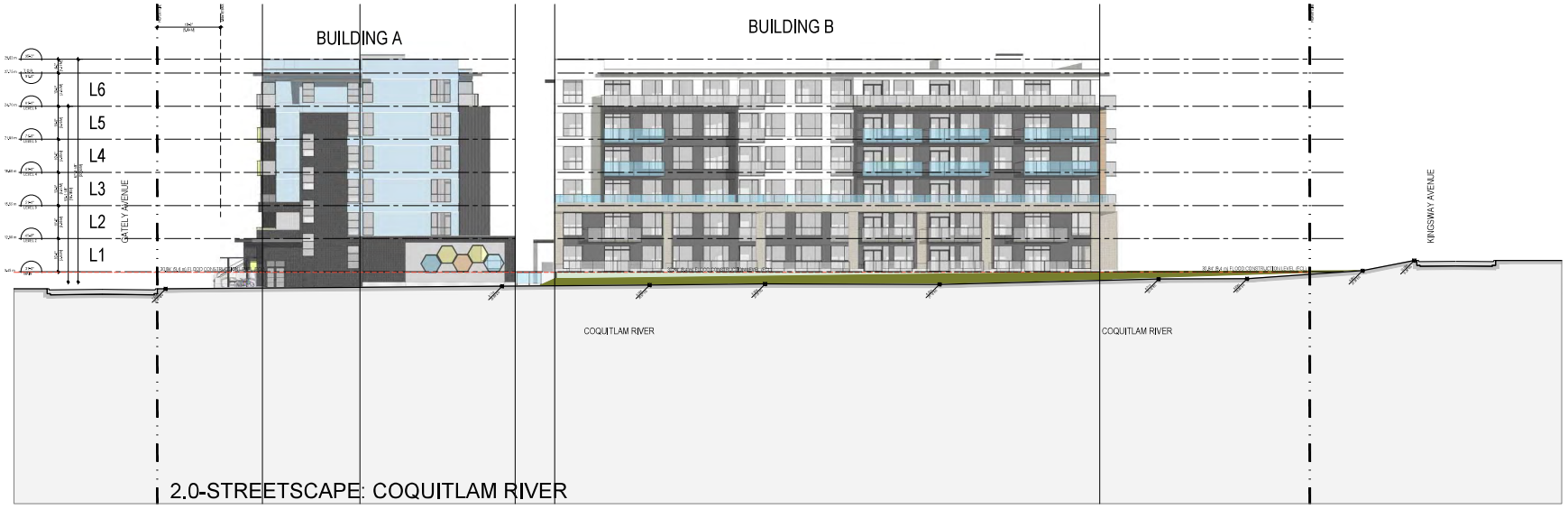
PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
BUILDING C ELEVATIONS

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 1/8"=1'-0" REVIEW BY: BW
DWG NO: A0304 APRIL 2020



1.0-STREETSCAPE: GATELY AVENUE

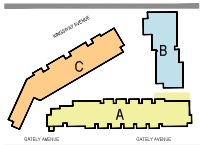


2.0-STREETSCAPE: COQUITLAM RIVER

NORTH ARROW:

OWNER/CLIENT:

KEY PLAN:



NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS
VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J3
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
STREETSCAPES

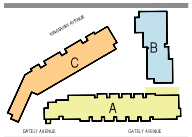
PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 1/8"=1'-0" REVIEW BY: BW
DWG NO: A0305 APRIL 2020

3.0-STREETSCAPE: KINGSWAY AVENUE

NORTH ARROW:

OWNER/CLIENT:

KEY PLAN:



NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 0J5
604.669.3828 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

STREETSCAPE

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 1/16"=1'-0" REVIEW BY: BW
DWG NO: A0306 APRIL 2020

1.0-MATERIALS: BUILDING "A"

2.0-MATERIALS: BUILDING "B"

3.0-MATERIALS: BUILDING "C"

BUILDING A: MATERIALS

- CEMENTITIOUS PANELS - BLUE
- 12" STANDING SEAM PANEL VERTICAL - CHARCOAL
- GALVALUME CORRUGATED SIDING VERTICAL-SILVER
- YELLOW GLASS ALUMINUM GUARDRAIL
- STACKED BRICK-CHARCOAL
- 6" METAL PERFORATED SOFFIT - WOOD GRAIN

BUILDING B: MATERIALS

- CEMENTITIOUS PANELS - BLUE
- 12" STANDING SEAM PANEL VERTICAL - CHARCOAL
- GALVALUME CORRUGATED SIDING VERTICAL-SILVER
- BLUE GLASS ALUMINUM GUARDRAIL
- STACKED BRICK-CREME
- 6" METAL PERFORATED SOFFIT - WOOD GRAIN

BUILDING C: MATERIALS

- CEMENTITIOUS PANELS - BLUE
- 12" STANDING SEAM PANEL VERTICAL - CHARCOAL
- GALVALUME CORRUGATED SIDING VERTICAL-SILVER
- ORANGE GLASS ALUMINUM GUARDRAIL
- STACKED BRICK-RED
- 6" METAL PERFORATED SOFFIT - WOOD GRAIN

MATERIAL LEGEND

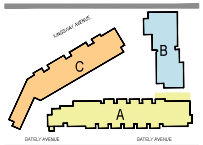
MATERIALS	FINISH	COLORS	MATERIALS	FINISH	COLORS	MATERIALS	FINISH	COLORS	MATERIALS	FINISH	COLORS
WALLS AND EXPOSED STRUCTURE			DOORS , WINDOWS, + RAILINGS			DOORS , WINDOWS, + RAILINGS			DOORS , WINDOWS, + RAILINGS		
1 CEMENTITIOUS FIBRE PANELS	PREFINISHED	BLUE, CREME, BEIGE	6 VINYL WINDOW WITH CASEMENT OPENER	PREFINISHED	BLACK	10 ALUMINUM RAILING WITH TEMPERED CLEAR GLAZING + SIDE MOUNTED	PREFINISHED	BLACK	14 METAL EXIT DOORS	PREFINISHED	MATCH BACKGROUND
2 CORRUGATED SIDING	PREFINISHED	SILVER, CHARCOAL	7 ALUMINUM STOREFRONT WINDOW	PREFINISHED	BLACK	11 ALUMINUM RAILING WITH TEMPERED COLORED GLAZING + SIDE MOUNTED	PREFINISHED	BLACK RAIL: BLUE, ORANGE, YELLOW	15 OVERHEAD GARAGE DOOR	PREFINISHED	TBD
3 BRICK	PREFINISHED	CHARCOAL, CREME, RED	8 VINYL RESIDENTIAL DECK SLIDER-GLAZED	PREFINISHED	BLACK	12 ALUMINUM RAILING SIDE MOUNTED WITH TEMPERED CLEAR GLAZING ON UPSTAND	PREFINISHED	BLACK	16 6" METAL PERFORATED SOFFIT-WOOD GRAIN	PREFINISHED	LIGHT WOOD GRAIN
4 STANDING SEAM	PREFINISHED	CHARCOAL	9 VINYL HEXAGON FIXED WINDOW	PREFINISHED	BLACK W/ CLEAR, BLUE, ORANGE, YELLOW GLAZING	13 ALUMINUM RAILING SIDE MOUNTED WITH TEMPERED COLORED GLAZING ON UPSTAND	PREFINISHED	BLACK RAIL: BLUE, ORANGE, YELLOW	17 THROUGH WALL FLASHING	PREFINISHED	MATCH BACKGROUND
5 EXPOSED ARCHITECTURAL CONCRETE - SACKED	CLEAR SEALER	SINGLE COAT: FABRIKEM "FABRISHIELD 760"									

4.0-MATERIAL LEGEND

NORTH ARROW:

OWNER/CLIENT:

KEY PLAN:



NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

VAN 351 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J5
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:
MATERIAL BOARD

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: 3/16"=1'-0" REVIEW BY: BW
DWG NO: A0307 APRIL 2020

1.0-3D IMAGE: BUILDINGS B + C, KINGSWAY AVENUE

NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J5
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

3D IMAGE 01

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: REVIEW BY: BW
DWG NO: **A0500** APRIL 2020

2.0-3D IMAGE: BUILDING C, KINGSWAY AVENUE ENTRY LOBBY

NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	05/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 0J5
604.669.3828 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

3D IMAGE 02

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: REVIEW BY: BW
DWG NO: **A0501** APRIL 2020

3.0-3D IMAGE: BUILDING C, KINGSWAY AVENUE

NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

VAN 351 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J3
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

3D IMAGE 03

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: REVIEW BY: BW
APRIL 2020
DWG NO: **A0502**

4.0-3D IMAGE: BUILDINGS C + A, CORNER OF KINGSWAY AVENUE + GATELY AVENUE

NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

VAN 301 - 1444 Alberni Street Vancouver, V6G 2Z4
VIC 104 - 3212 Jacklin Road Victoria, V9B 5J3
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

3D IMAGE 04

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: REVIEW BY: BW
APRIL 2020
DWG NO: **A0503**

5.0-3D IMAGE: BUILDINGS A + B , COQUITLAM RIVER R.O.W.

NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

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VIC 104 - 3212 Jacklin Road Victoria, V9B 5J3
604.685.3529 | office@wa-arch.ca | wa-arch.ca

PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

3D IMAGE 05

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: REVIEW BY: BW
APRIL 2020
DWG NO: **A0504**

6.0-3D IMAGE: COURTYARD

NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	08/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

WA ARCHITECTS

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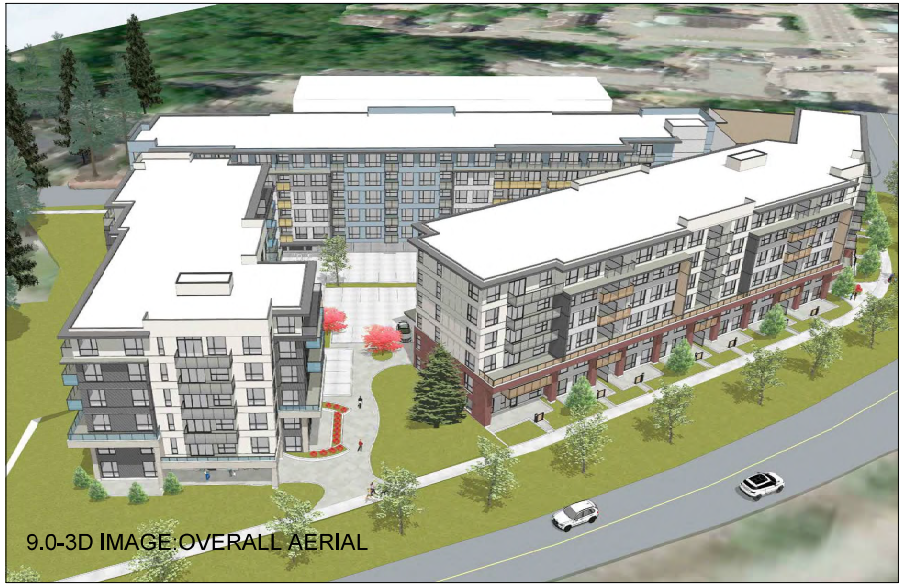
PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

3D IMAGE 06

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: REVIEW BY: BW
APRIL 2020
DWG NO: **A0505**



NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

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PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

3D IMAGE 07

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: REVIEW BY: BW
APRIL 2020
DWG NO: **A0506**

11.0-3D IMAGE:OVERALL AERIAL

NORTH ARROW:

OWNER/CLIENT:

NO.	ISSUE	M/D/Y
02	DP/REZONING RESUBMISSION	09/28/20
01	DP/REZONING SUBMISSION	04/01/20

SEAL:

CONSULTANT:

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PROJECT NAME:

PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC

DRAWING TITLE:

3D IMAGE 07

PROJECT NO: 19029 DRAWN BY: CSH
SCALE: REVIEW BY: BW
APRIL 2020
DWG NO: **A0506a**

Tree Evaluation Report for:
Kingsway Affordable Housing
Kingsway Avenue and Gately Avenue
Port Coquitlam, BC

Prepared by:

Mike Fadum and Associates Ltd.
#105, 8277-129 Street
Surrey, BC
Phone 778-593-0300
Fax 778-593-0302

Date: April 22, 2020
Revised: September 28, 2020

1.0 INTRODUCTION

We attended the site on April 8 and April 21, 2020 to evaluate the tree resource and to make recommendations for removal and preservation for the development application proposed for the properties southeast of the Kingsway Avenue and Gately Avenue intersection. The Coquitlam River riparian zone borders the site to the southeast. The application proposes rezoning for the purpose of constructing new multifamily buildings with underground parking. A plan showing the proposed building footprints, lot lines, riparian setbacks, and topographical survey was provided for our use and used as a resource for making recommendations pertaining to tree removal and retention. *The September 28, 2020 revision reflects the current plans.*

Figure 1. Aerial Photograph 2492 Kingsway Avenue (QtheMap, 2019).

2.0 FINDINGS

The onsite tree resource varies considerably across the site with the majority of trees located on 2450 and 2420 Ticehurst Lane. These two properties include a wide assortment of native and non native species that are typically well conditioned. Dominant trees to the north include a small group of mature black cottonwoods (*Populus balsamifera* ssp. balsamifera) and a mature Douglas-fir (*Pseudotsuga menziesii*). Dominant trees on the western lots include a well conditioned Colorado blue spruce (*Picea pungens* var. glauca) and row of flowering cherries (*Prunus sp*). We did not individually assess all trees below the top of bank but did walk the area to conduct a Level 1 Tree Risk Assessment. This area is dominated by red alder (*Alnus rubra*) and black cottonwood that range in diameter from approximately 15-65cm. Trees here are typically in good health and have forms of trees growing in this type of environment including limited stem tapers and phototropic sweeps.

Table 1 provides individual tree data. Specific information includes tree type, diameter at breast height (DBH), structure and health rating (poor (P), moderate (M), good (G) or a combination of two), live crown ratio (LCR) and structural observations. Health refers to the tree's overall health and vigor, while structure is a qualitative rating of a tree's shape and structure when compared to ideal trees of the same species and age class. Trees were evaluated for their preservation potential based on health, structure, location and species factors. Trees expected to be unsafe, conflicting with the proposed building plans, of poor health or of little long-term retentive value are recommended for removal and are shown on the attached Tree Preservation and Removal Plan. Smaller stature trees and shrubs are included on the plans with a Legend. Photographs are provided in Appendix A.

3.0 TREE PROTECTION

Tree protection fencing is to be installed as per municipal standards prior to construction with no excavation, grade alterations or materials storage within the tree protection zone. The consulting Arborist should be contacted prior to and be onsite for any construction within the recommended root protection zone which is approximately 6x the tree diameter. Grade alterations and other construction works required to provide drainage are not to occur within the root protection zone. Failure to comply with these recommendations may result in delays, stop work orders or fines imposed by the municipality.

4.0 TREE PRESERVATION SUMMARY

Our plans have been provided to the design team and it is expected that all consultants and contractors adhere to the recommendations in this report and ensure there is no conflict with Tree Protection Zones. No ground disturbance or grade alterations are permitted within the Tree Protection Zones unless preapproved by the project arborist. Mechanical injuries caused to trees below or above ground cannot be repaired. All parties must be aware that long-term success in tree preservation efforts depends greatly on minimizing the impact caused during and post construction. Best efforts must be made to ensure that soils remain undisturbed within the tree protection zones. Ongoing monitoring and implementation of mitigating works, such as watering, mulching, etc., is essential for success.

5.0 EDGE TREE ASSESSMENT

We recommend all edge trees undergo a Tree Risk Assessment to determine if they are at an increased risk of partial or complete failure when the surrounding trees are removed and the exposure to wind is increased. Trees considered to be of poor structure and / or condition, of species types prone to failure within striking distance of future targets of value should be removed or undergo crown modification treatments. We recommend that any trees to be removed near retained trees are cut to grade and their stumps left intact in order to prevent disturbance to the stability and negative impacts on the health of the adjacent trees. Crown modification treatments may include large limb removal and or retopping.

6.0 LIMITATIONS

This Arboricultural field review report is based on site observations on the dates noted. Effort has been made to ensure that the opinions expressed are a reasonable and accurate representation of the condition of the trees reviewed. All trees or groups of trees have the potential to fail. No guarantees are offered or implied by Mike Fadum and Associates Ltd. or its employees that the trees are safe given all conditions. The inspection is limited to visual examination of accessible items without dissection, excavation, probing, coring or climbing. Trees can be managed, but they cannot be controlled. To live, work or play near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

The findings and opinions expressed in this report are representative of the conditions found on the day of the review only. Any trees retained should be reviewed on a regular basis. The root crowns, and overall structure, of all the

trees to be retained must be reviewed immediately following land clearing, grade disturbance, significant weather events and prior to site usage changes.

Please contact the undersigned if you have any questions or concerns regarding this report.

On behalf of Mike Fadum and Associates Ltd.

Peter Mennel BSc
ISA Certified Arborist PN# 5611A
TRAQ

Table 1 - Tree Evaluation: Kingsway Avenue and Gately Avenue, Port Coquitlam, BC

Tree #	Type	DBH (cm)	Structure	Health	LCR (%)	Observations	Recommendation / Tree Protection Zone Radii
4530	Japanese Maple *(Acer palmatum)*	10/6/16/8 /16/8/17	G	G	NA	5m dripline.	**Remove. 4.0m**
4531	Dogwood *(Cornus florida)*	15/8/ 5/6	M	M	NA	All major leaders headed back previously. Growing under a soffit. Extensive sucker growth. 3m dripline.	**Remove. 2.5m**
4532	Japanese Maple *(Acer palmatum)*	12/14/4/5 /3/19/ 10	MG	MG	NA	Not identified at the time of survey. Location approximate. 4m dripline. Includes 4 unsurveyed rhododendrons between 3-4m tall in this area.	**Remove. 2.5m**
4533	Mountain Ash (*Sorbus americana)*	20/8/ 18/8/7	MG	MG	NA	Multi stemmed base. 3m dripline.	**Remove. 3.0m**
4534	Sawara Falsecypress (*Chamaecyparis pisifera*)	37/27/ 23/43	M	MG	80	4m dripline. Some stems topped previously for overhead utility line clearance. Multi stemmed base.	**Remove. 5.0m**
4535	Threadleaf Falsecypress (*Chamaecyparis pisifera*)	17	MG	MG	60	2m dripline. Canopy weighted to the south west. Slight pistol butt base.	**Remove. 2.0m**
4536	Deodar Cedar *(Cedrus deodara)*	75	MG	MG	70	Pistol butt base. Multi stemmed at 5m. Canopy weighted to the southwest. 7m dripline.	**Remove. 5.0m**
4537	Grand Fir *(Abies grandis)*	38	G	MG	90	3m dripline. No observed defects.	**Remove. 3.0m**
4538	Hiba *(Thujopsis dolabrata)*	28	MG	MG	80	3m dripline. No observed defects.	**Remove. 2.5m**

Table 1 - Tree Evaluation: Kingsway Avenue and Gately Avenue, Port Coquitlam, BC

Tree #	Type	DBH (cm)	Structure	Health	LCR (%)	Observations	Recommendation / Tree Protection Zone Radii
4539	Sawara Falsecypress *(Chamaecyparis pisifera)*	61/48	P	M	95	Significant lower stem phototropic sweep. Northern stem has been topped at 5m with no regrowth. Canopy weighted to the south. 4m dripline.	**Remove. 5.0m**
4540	Magnolia *(Magnolia sp.)*	15/10/8/16 /12/17/8	MG	M	NA	Shade suppressed. 4m dripline.	**Remove. 3.0m**
4541	Pine *(Pinus sp.)*	14/16/ 12/6	M	M	20	Leggy form. High canopy. Four stemmed coppice base. 2.5m dripline.	**Remove. 2.5m**
4542	Photinia (*Photinia sp*)	~14/ 14/6/9/ 8/6/5	MP	M	NA	Topped at 3m with multiple stem small diameter regrowth. 1.5m dripline.	**Retain. 2.5m**
4543	Flowering Cherry (*Prunus sp*)	43	M	MG	NA	Most major leaders and scaffold headed back at 4m. Open grown symmetrical canopy. Decay cavity at point of past leader failure. 4m dripline.	**Retain. 3.5m**
4544	Norway Maple (*Acer platanoides*)	42	M	M	NA	Well calloused rib on the north side. Leggy form. Canopy weighted to the west. 7m dripline.	**Retain. 3.5m**
4545	Flowering Cherry (*Prunus sp*)	48	MP?	MG	NA	Decay cavity at base with large conk. Leggy form. High canopy. 7m dripline.	**Retain. 3.5m**
4546	Katsura *(Cercidiphyllum japonicum)*	~35/36/ 28/35/ 20/15/19	MG	G	NA	8m dripline. No observed defects.	**Retain. 5.0m**
4547	Persian Ironwood (*Parrotia persica*)	3-17 X40	M	G	NA	Multi stemmed base. 6m dripline.	**Retain. 5.0m**

Table 1 - Tree Evaluation: Kingsway Avenue and Gately Avenue, Port Coquitlam, BC

Tree #	Type	DBH (cm)	Structure	Health	LCR (%)	Observations	Recommendation / Tree Protection Zone Radii
4548	Norway Spruce *(Picea abies)*	34	M	MG	40	Limited trunk taper. 3m dripline.	**Retain.** **3.0m**
4549	Japanese Maple *(Acer palmatum)*	8/5/9	M	M	NA	Dieback throughout canopy. Shade suppressed - leggy form. 3m dripline.	**Retain.** **2.0m**
4550	Mountain Ash (*Sorbus americana*)	31	MP	M	NA	Multiple stems cut or fail at 2-4m. Leggy form. 3.5m dripline.	**Retain.** **2.5m**
4551	Sycamore Maple (*Acer pseudoplatanus)*	42	M	MG	NA	Canopy weighted to the south. Large pile of debris and concrete at the base prevented a thorough assessment. 6m dripline.	**Retain.** **3.5m**
4552	Sycamore Maple (*Acer pseudoplatanus)*	40	M	MG	NA	Canopy weighted to the north. Phototropic sweep to the north. Large stem removed from the base with sucker growth. 5m dripline.	**Retain.** **3.0m**
4553	Sycamore Maple (*Acer pseudoplatanus)*	~60	M	M	NA	Heavy ivy growth. 6m dripline.	**Remove.** **4.5m**
4554	Cherry *(Prunus sp.)*	33	M	G	NA	Significant sweep to the west. Decay column at 1m. 8m dripline.	**Remove.** **2.5m**
4555	Spruce (*Picea sp.*)	47	M	MG	80	Sweep to the north. Old wound at 1m north side. 5m dripline.	**Remove.** **4.0m**
4556	Colorado Blue Spruce *(Picea pungens Glauca Group)*	41	M	M	NA	Dieback throughout. Codominant leader at 3m has failed at 8m.	**Remove.** **3.0m**
4557	Colorado Spruce *(Picea pungens)*	29	M	MP	75	Canopy weighted to the south. Pruned north side for utility line clearance. 3m dripline.	**Remove.** **2.5m**

Table 1 - Tree Evaluation: Kingsway Avenue and Gately Avenue, Port Coquitlam, BC

Tree #	Type	DBH (cm)	Structure	Health	LCR (%)	Observations	Recommendation / Tree Protection Zone Radii
4558	Colorado Spruce *(Picea pungens)*	29	MG	M	80	Pruned north side for utility line clearance. Canopy weighted to the south. 3m dripline.	**Remove. 2.5m**
4559	Black Cottonwood *(Populus trichocarpa)*	~20	G	G	NA	Typical.	**Retain. 2.0m**
4560	Black Cottonwood *(Populus trichocarpa)*	~60/50 /60	M	MG	NA	3 stems fused to the base with phototropic sweeps. Ivy across lower 10m and recently removed. 11m dripline.	**Remove. 7.5m**
4561	Black Cottonwood *(Populus trichocarpa)*	55	M	MG	NA	Tree grows to about 60 degrees angle to the south then corrects to vertical. Ivy across lower 10m recently removed. 10m dripline.	**Remove. 4.5m**
4562	Black Cottonwood *(Populus trichocarpa)*	56	M	MG	NA	Ivy recently removed. Significant sweep to the west. 10m dripline.	**Remove. 4.5m**
4563	Black Cottonwood *(Populus trichocarpa)*	53	M	MG	NA	Ivy across lower 10m and recently removed. 8m dripline.	**Remove. 4.0m**
4564	Black Cottonwood *(Populus trichocarpa)*	~100	M	MG	NA	2 stems fused across lower 2m. Ivy across lower 10m and recently removed. 8m dripline.	**Remove. 7.0m**
4565	Emerald Cedar *(Thuja occidentalis)* 'Smargd'	8/10/12 /8/5	MP	M	80	Tree leans to the south – possibly supported by the Douglas fir. Top has corrected to vertical. 2m dripline.	**Remove. 2.0m**
4566	Colorado Blue Spruce *(Picea pungens Glauca Group)*	36	M	M	50	Significant phototropic sweep to the west. Shade suppressed. 5m dripline.	**Remove. 2.5m**

Table 1 - Tree Evaluation: Kingsway Avenue and Gately Avenue, Port Coquitlam, BC

Tree #	Type	DBH (cm)	Structure	Health	LCR (%)	Observations	Recommendation / Tree Protection Zone Radii
4567	Douglas-fir *(Pseudotsuga menziesii)*	77	M	MG	80	Codominant attachment at 2m with angle of attachment. Limb locked. Some dieback across lower canopy and needle blight. 8m dripline.	**Remove.** **6.0m**
4568	Threadleaf Falsecypress (*Chamaecyparis pisifera*)	23/20	M	G	NA	2 stem base. Canopy weighted to the south. Pruned on north side to clear the house. 2m dripline.	**Remove.** **2.5m**
4569	Colorado Blue Spruce *(Picea pungens Glauca Group)*	42	MG	MG	80	4m dripline.	**Remove.** **3.0m**
4570	Cherry *(Prunus sp.)*	31/32/ 32/20	M	G	NA	Multi stemmed base. Large leader scaffolds pruned/cut on the west side. 7m dripline.	**Remove.** **5.0m**
4752	Cherry (*Prunus sp*)	44/15/17/1 7/26/27	M	MG	NA	Scaffolds pruned on west side. 7m dripline.	**Remove.** **5.0m**
4753	Threadleaf Falsecypress (*Chamaecyparis pisifera*)	31	M	G	50	Canopy weighted to the north. Aggressively pruned on the south side to clear the carport. 2.5m dripline.	**Remove.** **2.0m**
4754	Plum *(Prunus sp)*	~5-15 X13	M	M	NA	Not maintained. 2.0m	**Remove.** **2.5m**
4755	Mountain Ash (*Sorbus americana*)	~3-25 X25	P	M	NA	Large limb failure. Large cavity in the lower stem. Topped at 4-6m. Southern stem has failed.	**Remove.** **2.5m**

Table 1 - Tree Evaluation: Kingsway Avenue and Gately Avenue, Port Coquitlam, BC

Tree #	Type	DBH (cm)	Structure	Health	LCR (%)	Observations	Recommendation / Tree Protection Zone Radii
4756	Magnolia *(Magnolia sp.)*	15/12	MP	MG	NA	Leaders cut at 2m with multiple stem small diameter regrowth. Decay at points of cutting. 2m dripline.	**Remove. 2.0m**
4757	Cherry *(Prunus sp.)*	10/6/ 11	MP	M	NA	Dieback lower mid canopy. Shade suppressed. 1m dripline.	**Remove. 2.5m**
4758	Norway Maple (*Acer platanoides*)	58	M	MG	NA	Well calloused crack on the south side. Some leaders have been topped previously. 6m dripline.	**Remove. 4.5m**
4759	Apple (*Malus sp*)	10/10/ 13/17	M	MG	NA	3 stems fused at the base. 3m dripline.	**Remove. 2.5m**
4760	Laburnum (*Laburnum sp*)	12/5/ 4/2	MG	MG	NA	Multi stemmed. Canopy weighted to the north.	**Remove. 2.0m**
4761	Norway Spruce *(Picea abies)*	~25	MG	MG	70	Lack of access prevented thorough assessment. Possibly topped previously. 3m dripline.	**Remove. 2.5m**
4762	Apple (*Malus sp*)	10/15/10/ 10/10	M	M	NA	Open grown canopy. Lack of access prevented thorough assessment. 4m dripline.	**Remove. 2.5m**
4763	Atlas Cedar (*Cedrus atlantica*)	24/ ~45/35	MG	M	80	Canopy weighted to the south. Multi stemmed base. 8m dripline.	**Remove. 5.0m**
ROW1	Western Redcedar *(Thuja plicata)* X12	24,19,22,26 ,20,18,23, 22,20,11,8, 24	G	G	60	Many trees not surveyed. 3m dripline.	**Retain. 2.5m**

Table 1 - Tree Evaluation: Kingsway Avenue and Gately Avenue, Port Coquitlam, BC

Tree #	Type	DBH (cm)	Structure	Health	LCR (%)	Observations	Recommendation / Tree Protection Zone Radii
C1	European Hornbeam (*Carpinus betulus*)	22/15 /15/5	G	G	NA	Phototropic sweep to the west. Canopy weighted to the west. 5m dripline.	**Retain. 3.0m**
C2	European Hornbeam (*Carpinus betulus*)	5-15 x11	MG	G	NA	4m dripline. No observed defects.	**Retain. 3.0m**
C3	European Hornbeam (*Carpinus betulus*)	5-10 X12	M	MG	NA	Stems pruned on north side for sidewalk clearance. 2.5m dripline.	**Retain. 3.0m**
C4	European Hornbeam (*Carpinus betulus*)	3-6 X7	M	MG	NA	Stems pruned on north side for sidewalk clearance. 2m dripline.	**Retain. 3.0m**
C5	European Hornbeam (*Carpinus betulus*)	3-8 X11	MG	MG	NS	2.5m dripline. No observed defects.	**Retain. 3.0m**
C6	European Hornbeam (*Carpinus betulus*)	3-16 X22	MG	MG	NA	2.5m dripline. Typical.	**Retain. 3.0m**

ADDITIONAL RECOMMENDATIONS

- **In order to prevent root damage, which may adversely affect the health and or stability of the retained trees, any ground disturbance or grade alteration within the recommended Tree Protection Zone provided in the table above shall be under the direction of the project arborist if permissible.**

Note: 'OS' refers to Offsite trees and due to restricted access their diameters are approximate. An assessment of offsite trees does not imply they are safe as the restricted access prevented a thorough review. 'C' refers to trees on City property.

Figure 1. 4530 with rhododendrons.

Figure 2. 4533 with sumac in the foreground.

Figure 3. 4534

Figure 4. 4535 and 4763.

Figure 5. 4536 (left) and 4539.

Figure 6. 4537

Figure 7. 4538

Figure 8. 4545.

Figure 9. 4546

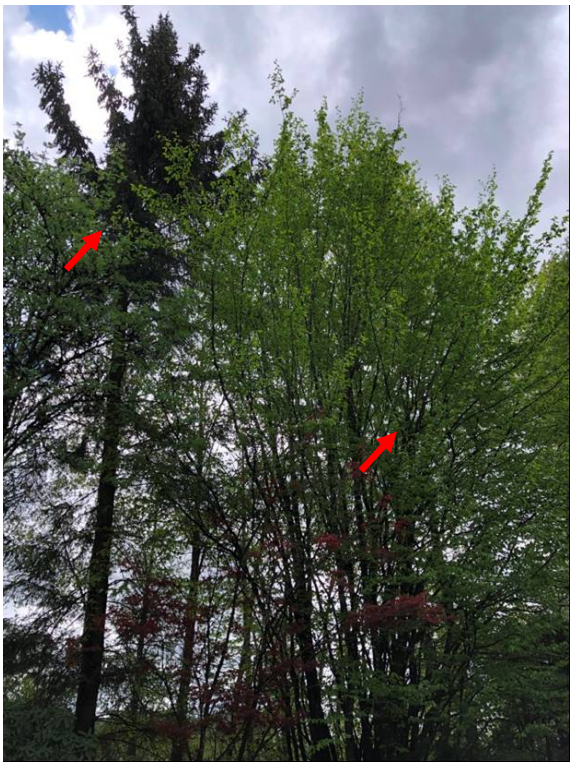


Figure 10. 4547 (right) and 4548.

Figure 11. Row 1.

Figure 12. 4552.

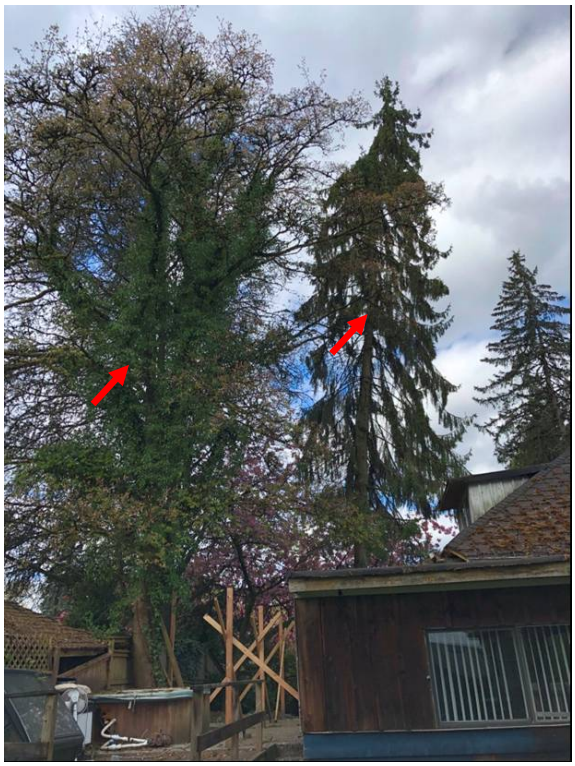


Figure 13. 4553 (left) and 4555.

Figure 14. Typical boulevard hornbeam.

Figure 15. 4560-4564.

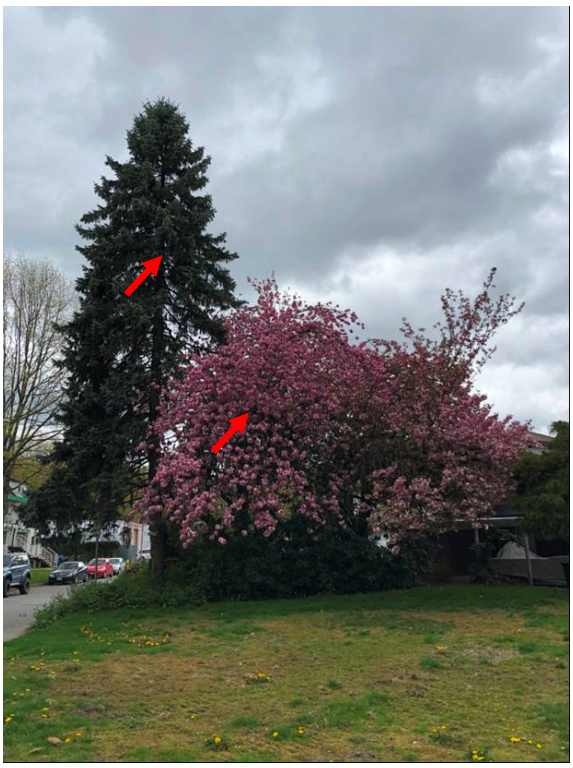


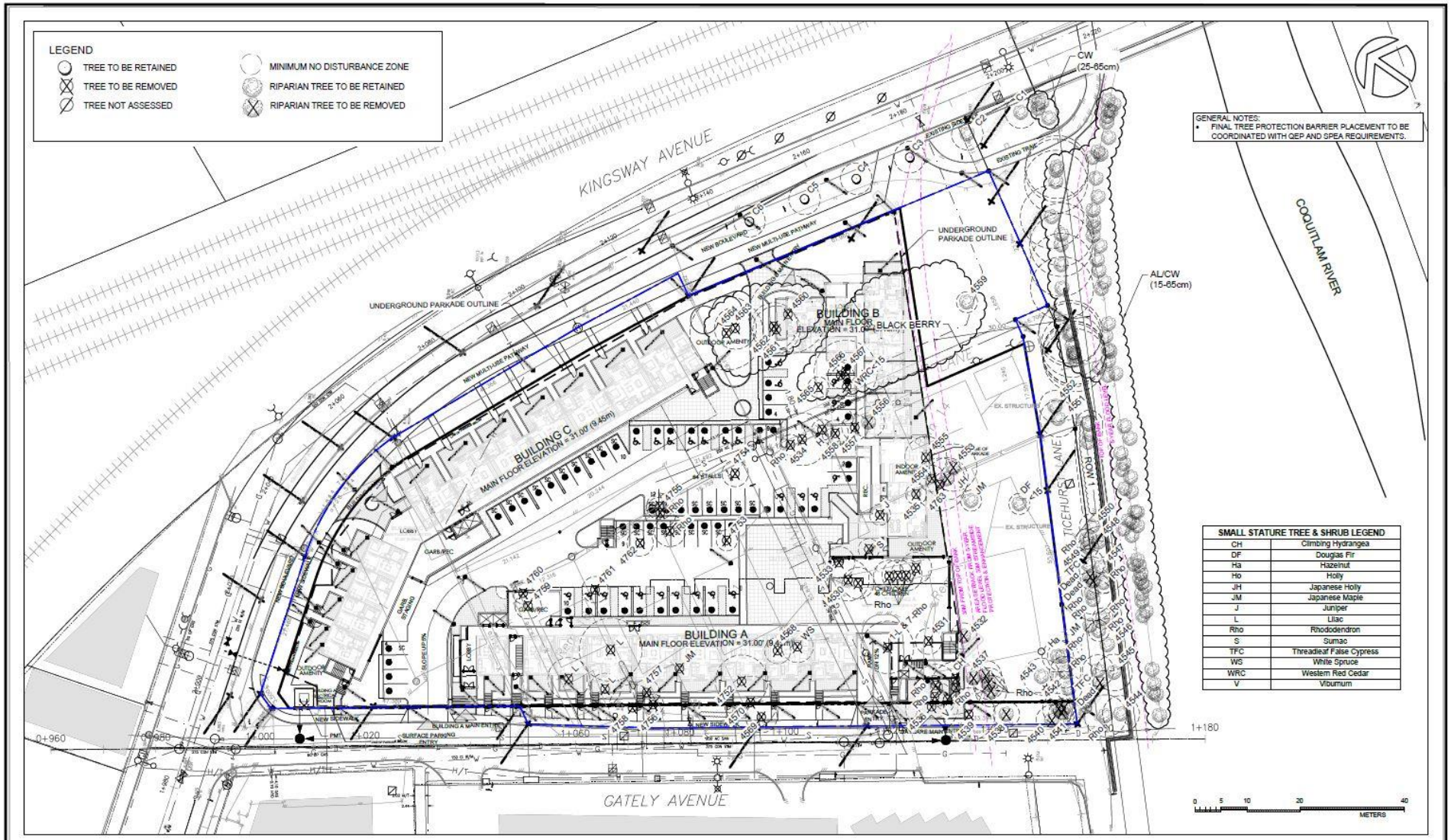
Figure 16. 4569 (left) and 4570.

Figure 17. 4578.

Figure 18. 4761.

Figure 19. Riparian are black cottonwoods at northeast corner.

Figure 20. Interior of riparian zone.



STAMP		NO.	DATE	BY	REVISION
		1	APR21/20	MK	SITE AND GRADING PLAN
		2	SEPT29/20	MK	SITE PLAN

MIKE FADUM AND ASSOCIATES LTD.
VEGETATION CONSULTANTS

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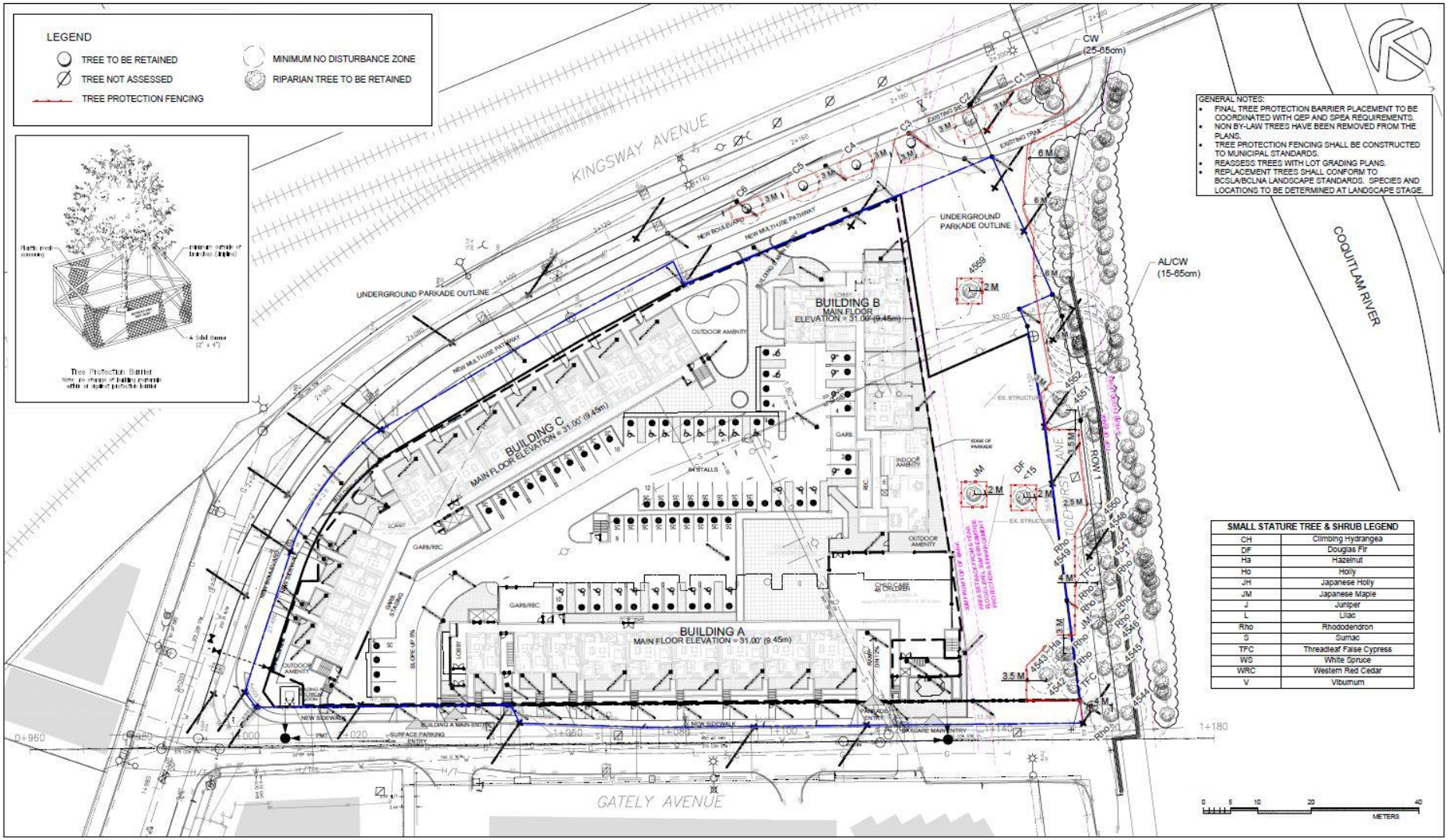
PROJECT TITLE
KINGSWAY & GATELY AVENUE
PORT COQUITLAM, B.C.

SHEET TITLE
T1 - TREE REMOVAL AND PRESERVATION PLAN

CLIENT

DRAWN: MK
SCALE: AS SHOWN
DATE: APRIL 8, 2020

T-1
SHEET 1 OF 2



GENERAL NOTES:

- FINAL TREE PROTECTION BARRIER PLACEMENT TO BE COORDINATED WITH QEP AND SPEA REQUIREMENTS.
- NON BY-LAW TREES HAVE BEEN REMOVED FROM THE PLANS.
- TREE PROTECTION FENCING SHALL BE CONSTRUCTED TO MUNICIPAL STANDARDS.
- REASSESS TREES WITH LOT GRADING PLANS.
- REPLACEMENT TREES SHALL CONFORM TO BCSLA/BCLNA LANDSCAPE STANDARDS. SPECIES AND LOCATIONS TO BE DETERMINED AT LANDSCAPE STAGE.

SMALL STATURE TREE & SHRUB LEGEND	
CH	Climbing Hydrangea
DF	Douglas Fir
Ha	Hazelnut
Ho	Holly
JH	Japanese Holly
JM	Japanese Maple
J	Juniper
L	Lilac
Rho	Rhododendron
S	Sumac
TFC	Threadleaf False Cypress
WS	White Spruce
WRC	Western Red Cedar
V	Viburnum

STAMP		NO.	DATE	BY	REVISION
		1	APR21/20	MK	SITE AND GRADING PLAN
		2	SEPT28/20	MK	SITE PLAN

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PROJECT TITLE: KINGSWAY & GATELY AVENUE
PORT COQUITLAM, B.C.

SHEET TITLE: T2 - TREE PROTECTION AND PRESERVATION PLAN

CLIENT:

DRAWN: MK
SCALE: AS SHOWN
DATE: APRIL 8, 2020

T-2
SHEET 2 OF 2

Housing Development Traffic Impact Study

Prepared for:

Peak Tower Development

Prepared by:

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SEPTEMBER 2020

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Date: September 28, 2020
File No: 7163-01

BY EMAIL

Peak Tower Development
c/o
Mr. Barry Weih
WA Architects Ltd.
#301, 1444 Alberni Street
Vancouver, BC
V6G 2Z4

Dear Mr. Weih,

Re: Housing Development, Port Coquitlam – Revised FINAL Traffic Impact Study

Creative Transportation Solutions Ltd. (CTS) is pleased to submit this Revised FINAL Traffic Impact Study for a proposed housing development located at the intersection of Gately Avenue at Kingsway Avenue in the City of Port Coquitlam. The primary objectives of this assignment were:

1. To conduct a traffic impact assessment for the proposed housing development based on the most recent project data, and
2. To document the site conditions, data, analyses, conclusions and recommendation (if any) in a report that meets the requirements of the City of Port Coquitlam.

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1.0 BACKGROUND

1.1 Study Site

The proposed housing development site is located in the south quadrant of the intersection of Gately Avenue at Kingsway Avenue in the City of Port Coquitlam. Phase 1 of the development will have 302 apartment units and 4,000 ft^2 of day care space on eleven properties:

- 2428, 2456, 2458, 2460, 2466, 2470, 2492 Kingsway Avenue;
- 2420, 2450 Ticehurst Lane; and
- 2455, 2473, 2475 Gately Avenue.

The legal descriptions are:

- Strata Lot B, Plan NWS1714, District Lot 379, New Westminster District;
- Strata Lot D, Plan NWS1714, District Lot 379, New Westminster District;
- Strata Lot C, Plan NWS1714, District Lot 379, New Westminster District;
- Strata Lot E, Plan NWS1714, District Lot 379, New Westminster District;
- Strata Lot F, Plan NWS1714, District Lot 379, New Westminster District;
- Lot 1, Plan LMP15261, District Lot 379, New Westminster District;
- Lot 14, Plan NWP3106, District Lot 379, New Westminster District;
- Lot A, Plan NWP3106, District Lot 379, New Westminster District;
- Lot 16, Plan NWP3106, District Lot 379, New Westminster District;
- Lot 2, Plan NWP8602, District Lot 379, New Westminster District; and
- Plan NWP8602, District Lot 367, New Westminster District.

Phase 2 of the housing development could have up to 450 apartment units on two properties:

- 2532 Kingsway Avenue; and
- 2466 Gately Avenue.

The legal descriptions are:

- Lot 22, Plan NWP3106, District Lot 379, New Westminster District; and
- Lot 125, Plan NWP63714, District Lot 379, New Westminster District.

1.2 Study Area

The study area is bounded by Dixon Street to the west, Kingsway Avenue to the north and the site property line to the south & east. **FIGURE 1** illustrates the study area and adjacent road network. A copy of the site plan referenced by this Traffic Impact Study is included as **APPENDIX A**.

The following intersections are included in the traffic impact assessment:

1) Gately Avenue at Kingsway Avenue (unsignalized);
2) Dixon Street at Kingsway Avenue (signalized);
3) Westwood Street at Kingsway Avenue (signalized); and
4) Maple Street at Kingsway Avenue (signalized).

FIGURE 1
STUDY AREA AND ADJACENT ROAD NETWORK

1.3 Road Network

A brief description of each study intersection follows:

Westwood Street at Kingsway Avenue

- Westwood Street intersects Kingsway Avenue at a signalized "**T**" intersection.
- On the north approach there is a left turn lane and through lane. On the south approach there is a through lane and right turn lane. On the east approach there is a left turn lane and right turn lane.
- The signal is coordinated with the CP Rail signal to the east.
- There are signalized pedestrian crosswalks and sidewalks on the north and east approaches.
- The intersection is illuminated.
- The posted speed is 50 km/h.
- On-street parking is prohibited on Westwood Street and Kingsway Avenue in proximity to the intersection.

Dixon Street at Kingsway Avenue

- Dixon Street intersects Kingsway Avenue at a signalized "**+**" intersection.
- On the north approach there is a shared left turn/through/right turn lane. On the south approach there is a shared left turn/through/right turn lane. On the east approach there is a shared left turn/through lane and shared through/right turn lane. On the west approach there a shared left turn/through lane and shared through/right turn lane.
- There are signalized pedestrian crosswalks and sidewalks on all approaches.
- The intersection is illuminated.
- The posted speed is 50 km/h.
- On-street parking is prohibited on Westwood Street and Kingsway Avenue in proximity to the intersection.
- On-street parking is controlled by time of day along Kingsway Avenue i.e. NO PARKING / 7AM–9AM / 3PM-7PM / MON-FRI and 1 HOUR PARKING / 9AM-3PM / MON-FRI.

Gately Avenue at Kingsway Avenue

- Gately Avenue intersects Kingsway Avenue at an unsignalized "**T**" intersection. Gately Avenue is STOP controlled.
- On the south approach there is a shared left turn/right turn lane. On the east approach there is a shared left turn/through lane and a through lane. On the west approach there a shared through/right turn lane.
- There are sidewalks on all approaches.
- The intersection is illuminated.
- The posted speed is 50 km/h.

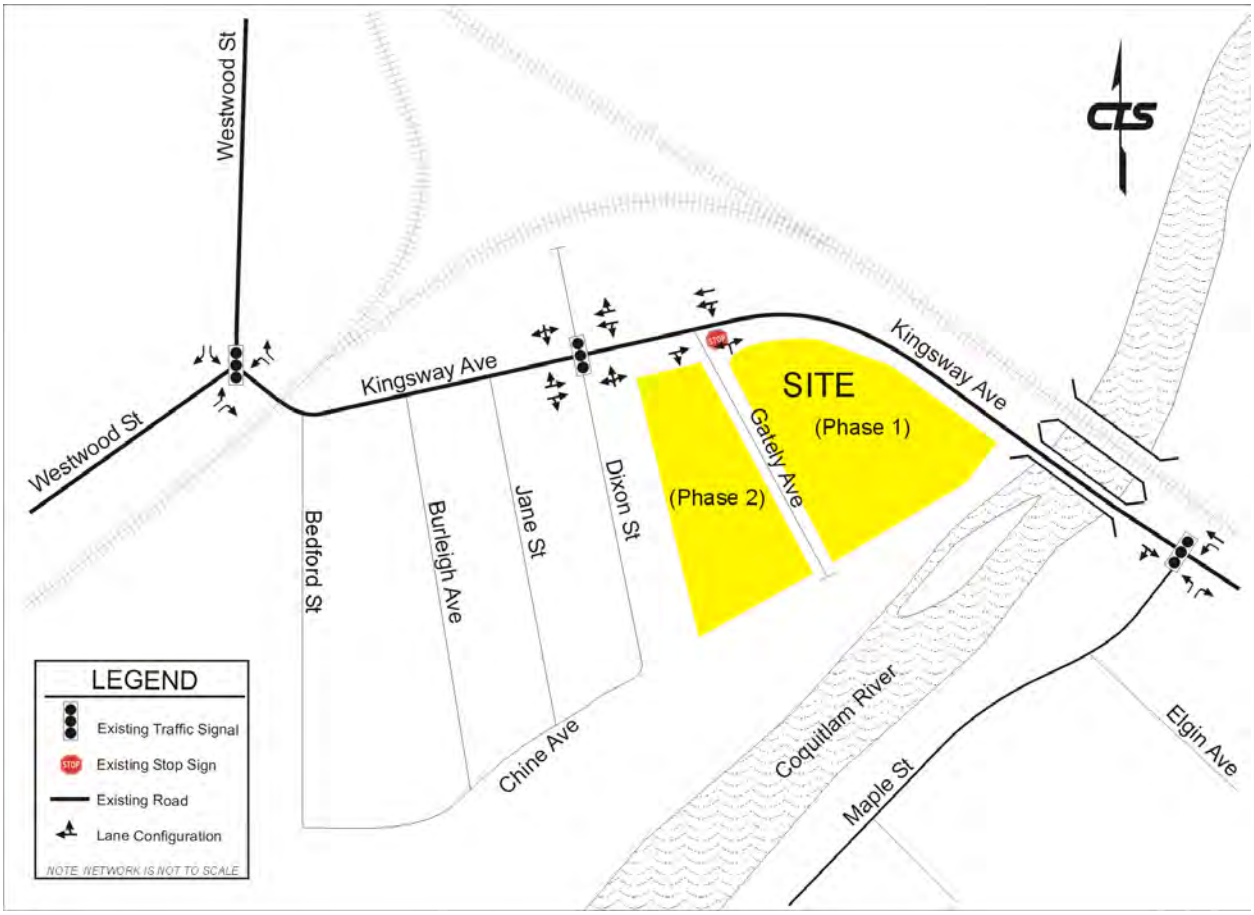
- On-street parking is prohibited on Westwood Street and Kingsway Avenue in proximity to the intersection.
- On-street parking is controlled by time of day along Kingsway Avenue i.e. NO PARKING / 7AM–9AM / 3PM-7PM / MON-FRI and 1 HOUR PARKING / 9AM-3PM / MON-FRI.

Maple Street at Kingsway Avenue

- Maple Street intersects Kingsway Avenue at a signalized "**T**" intersection.
- On the south approach there is a left turn lane and right turn lane. On the east approach there is a left turn lane and a through lane. On the west approach there a shared through/right turn lane.
- There are signalized pedestrian crosswalks and sidewalks on all approaches.
- The intersection is illuminated.
- The posted speed is 50 km/h.
- On-street parking is prohibited on Maple Street and Kingsway Avenue in proximity to the intersection.

The existing laning configuration for the study intersections is illustrated by **FIGURE 2**.

FIGURE 2
EXISTING LANING CONFIGURATION



1.4 Transport Modal Infrastructure

Pedestrian Network

There are concrete sidewalks on Kingsway Avenue. However, there are currently no sidewalks around the proposed housing development site on Gately Avenue.

Bicycle Network

Currently, there are no bicycle routes within the study area. However, with reference to the City of Port Coquitlam *2013 Master Transportation Plan*, there is a multi-use pathway proposed along Kingsway Avenue from Wilson Avenue to the Fraser River and a signed on-street bicycle route along Wilson Avenue linking the multi-use pathway along Kingsway Avenue with the existing multi-use pathway network along the Coquitlam River. There is a new signed on-street bicycle route along Bedford Street and Chine Avenue linking to the existing multi-use pathway network along the Coquitlam River. **FIGURE 3** illustrates the existing and proposed bicycle network within the study area.

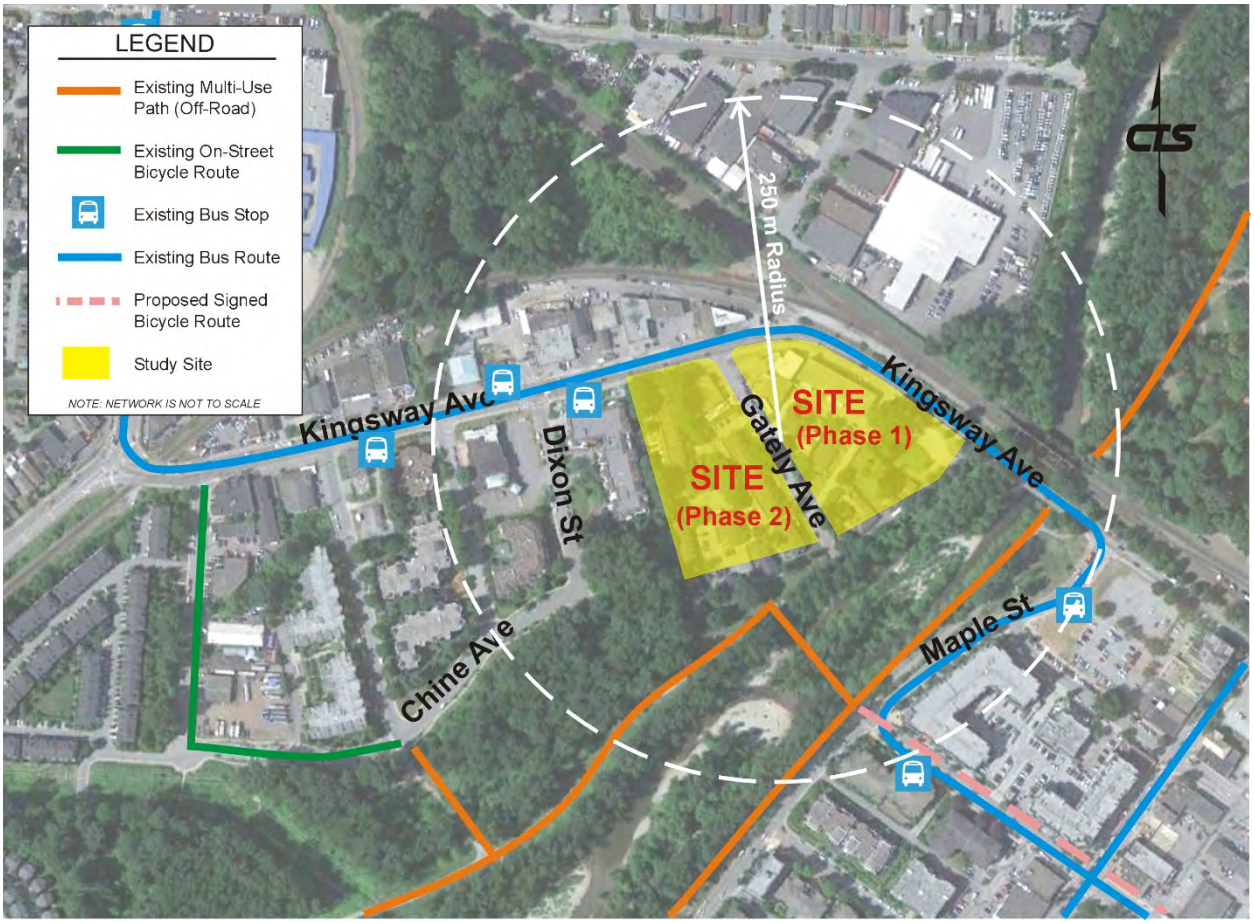
Public Transit

The site is well serviced by transit. The proposed housing development is located approximately 130 meters from bus stops on Kingsway Avenue. Bus stop locations are illustrated by **FIGURE 3**. The nearby bus stops are served by the following routes:

- Route #173 – Coquitlam Central Station/Cedar. Service is every 10 to 15 minutes Monday to Friday during peak periods.
- Route #174 – Coquitlam Central Station/Rocklin. Service is every 10 to 15 minutes Monday to Friday during peak periods.
- Route #175 - Coquitlam Central Station/Meridian. Service only in the morning and afternoon peak hours every 30 minutes.

A transit route diagram for each transit route is included as **APPENDIX B**.

FIGURE 3
EXISTING BUS STOP AND BICYCLE ROUTE LOCATIONS



1.5 Study Periods

The weekday AM and PM peak hours were selected as the design hours for this study.

- Weekday AM Peak Hour – 0745 to 0845
- Weekday PM Peak Hour – 1545 to 1645

The following horizon years were selected for this study:

- 2020 (existing base traffic conditions);
- 2022 (future base traffic conditions without the development);
- 2025 (future base traffic conditions without the development);
- 2030 (future base traffic conditions without the development);
- 2022 (future base traffic conditions + Phase 1 site generated traffic volume);
- 2025 (future base traffic conditions + Phase 1 & Phase 2 site generated traffic volume); and
- 2030 (5 years post build-out).

2.0 BASE TRAFFIC VOLUMES

2020 Base Traffic Volumes

CTS conducted intersection traffic turning movement counts on Tuesday, January 21, 2020 from 0700 to 0900 and 1500 to 1800 in order to capture both the AM and PM peak periods. The traffic turning movement count data was tabulated and reviewed to ensure data integrity and validity. The tabulated traffic turning movement count data sheets are included as **APPENDIX C**. **FIGURE 4** and **FIGURE 5** illustrate the weekday AM and PM peak hour traffic volumes, respectively.

The following design hours were selected based on the peak hours observed at the study intersections:

- Weekday AM Peak Hour – (0745 to 0845)
- Weekday PM Peak Hour – (1545 to 1645)

2022 Future Base Traffic Volumes

Year 2022 is anticipated to be the year of build-out for the proposed housing development – Phase 1. The 2020 base traffic volumes were factored up by a traffic volume growth rate of 2.0% per annum (simple straight line) to represent the future base year 2022 traffic volumes. **FIGURE 6** and **FIGURE 7** illustrate the 2022 weekday AM and PM peak hour traffic volume future base scenarios with no development traffic, respectively.

2025 Future Base Traffic Volumes

Year 2025 is anticipated to be the year for build-out for the proposed housing development – Phase 1 and Phase 2. The 2020 base traffic volumes were factored up by a traffic volume growth rate of 2.0% per annum (simple straight line) to represent the future base year 2025 traffic volumes. **FIGURE 8** and **FIGURE 9** illustrate the 2025 weekday AM and PM peak hour traffic volume future base scenarios with no development traffic, respectively.

2030 Future Base Traffic Volumes

Year 2030 is anticipated to be 5 years post build-out for the proposed housing development – Phase 1 and Phase 2. The 2020 base traffic volumes were factored up by a traffic volume growth rate of 2.0% per annum (simple straight line) to represent the future base year 2030 traffic volumes. **FIGURE 10** and **FIGURE 11** lustrate the 2030 weekday AM and PM peak hour traffic volume future base scenarios with no development traffic, respectively.

FIGURE 4
2020 WEEKDAY AM PEAK HOUR BASE TRAFFIC VOLUMES

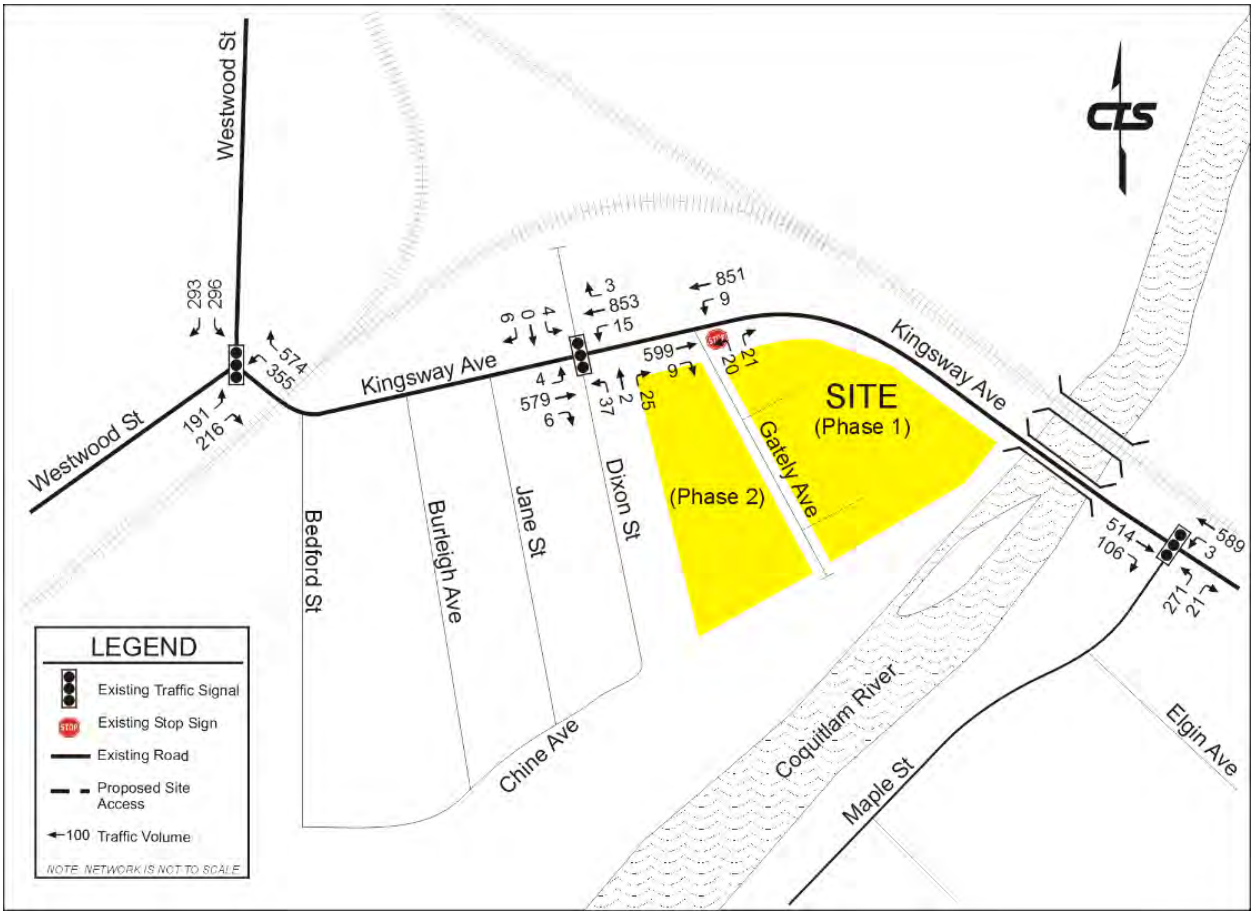


FIGURE 5
2020 WEEKDAY PM PEAK HOUR BASE TRAFFIC VOLUMES

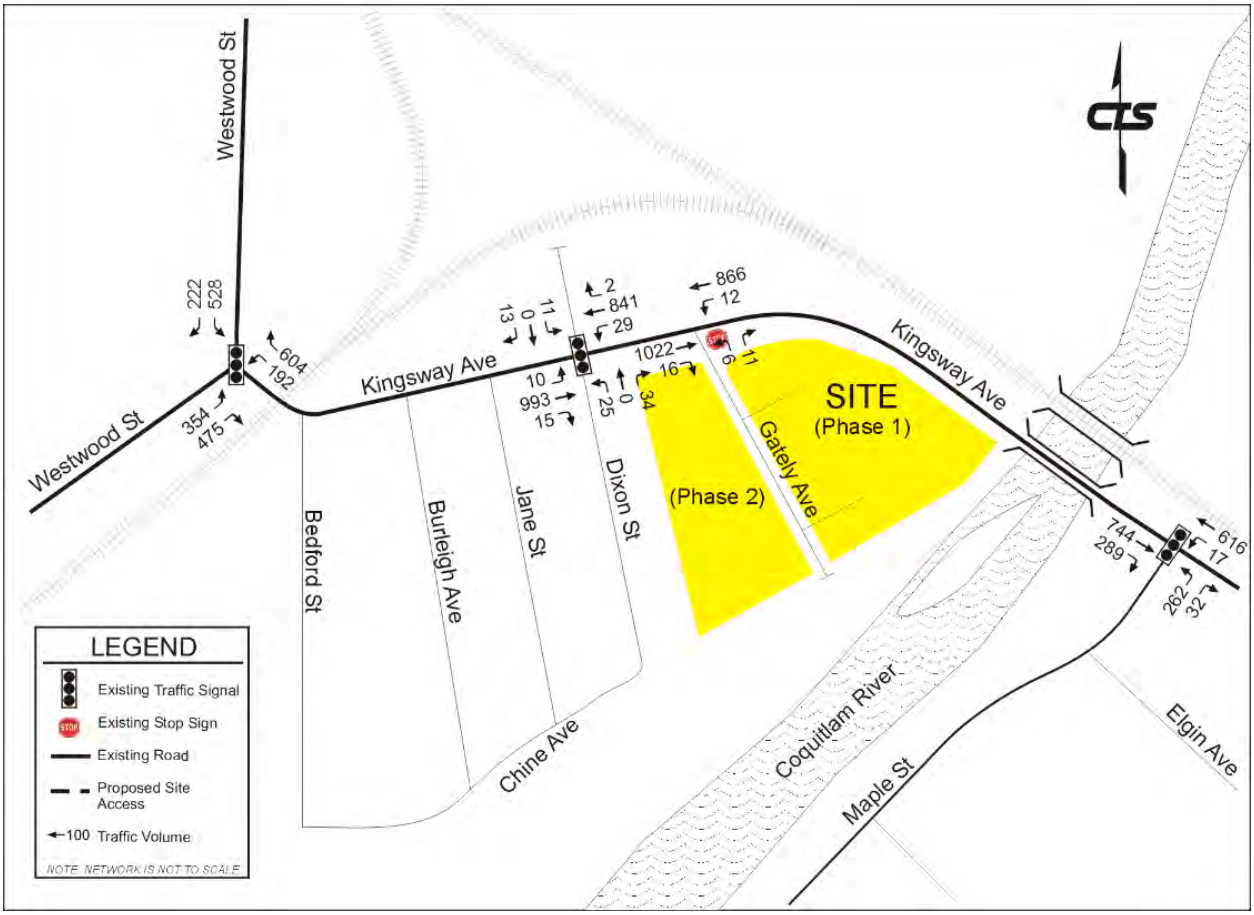


FIGURE 6
2022 WEEKDAY AM PEAK HOUR BASE TRAFFIC VOLUMES

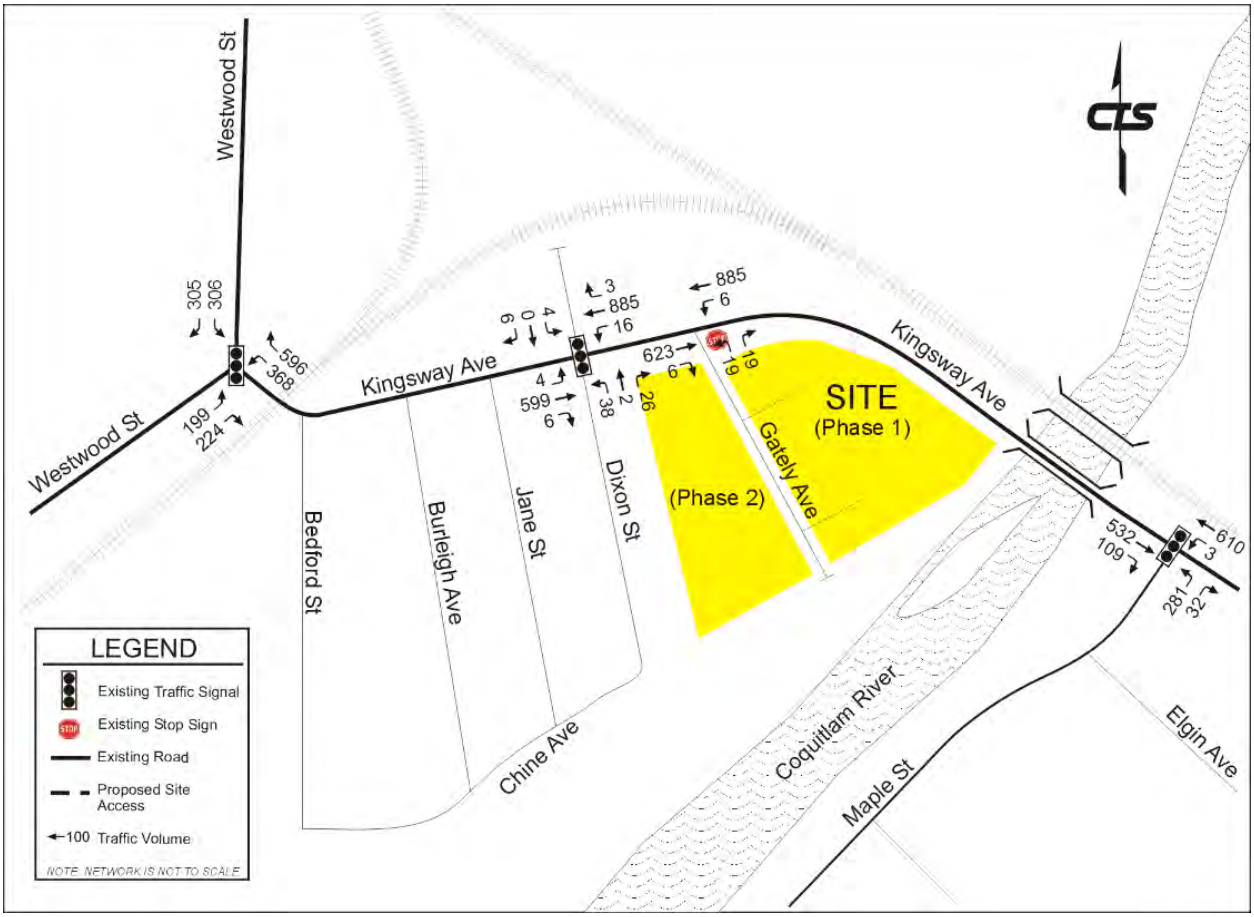


FIGURE 7
2022 WEEKDAY PM PEAK HOUR BASE TRAFFIC VOLUMES

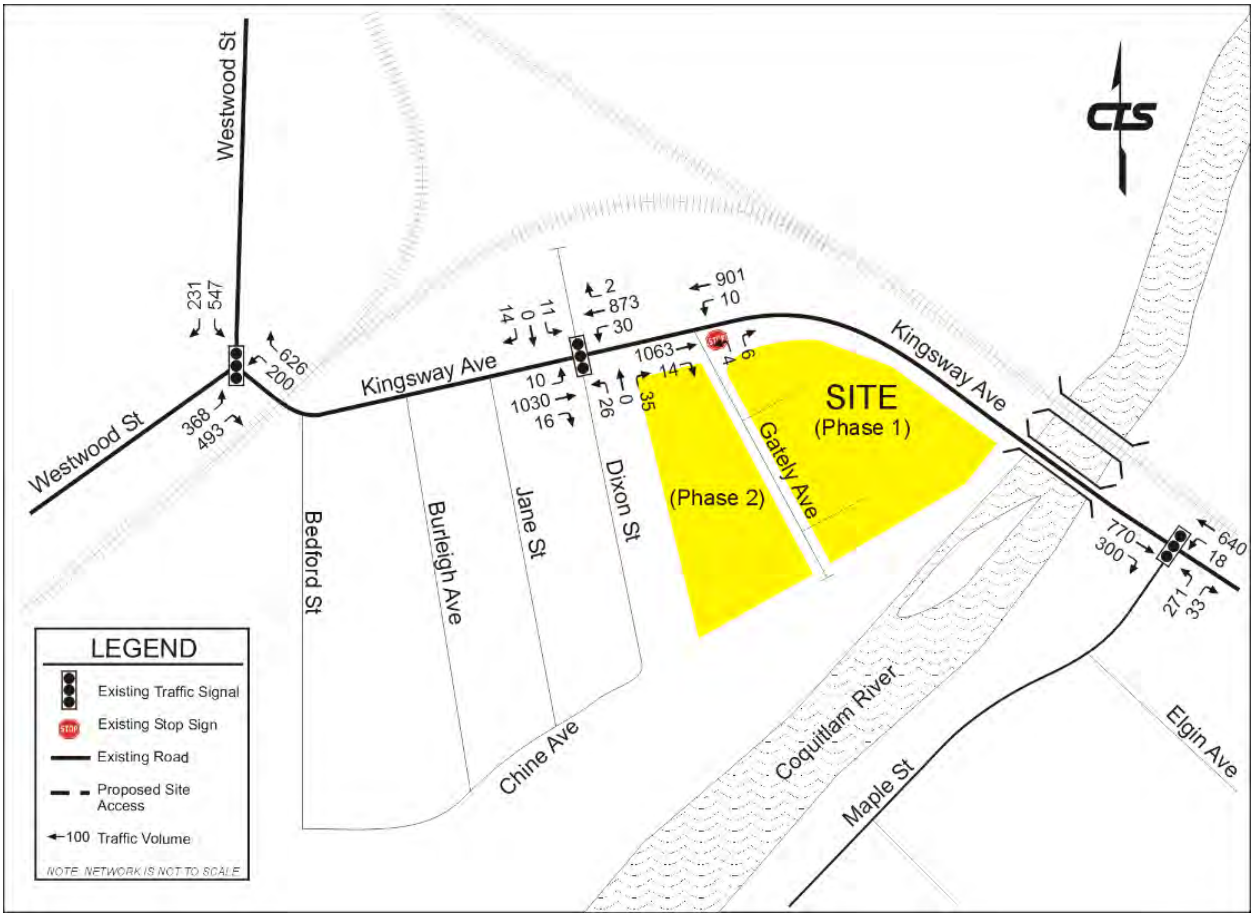


FIGURE 8
2025 WEEKDAY AM PEAK HOUR BASE TRAFFIC VOLUMES

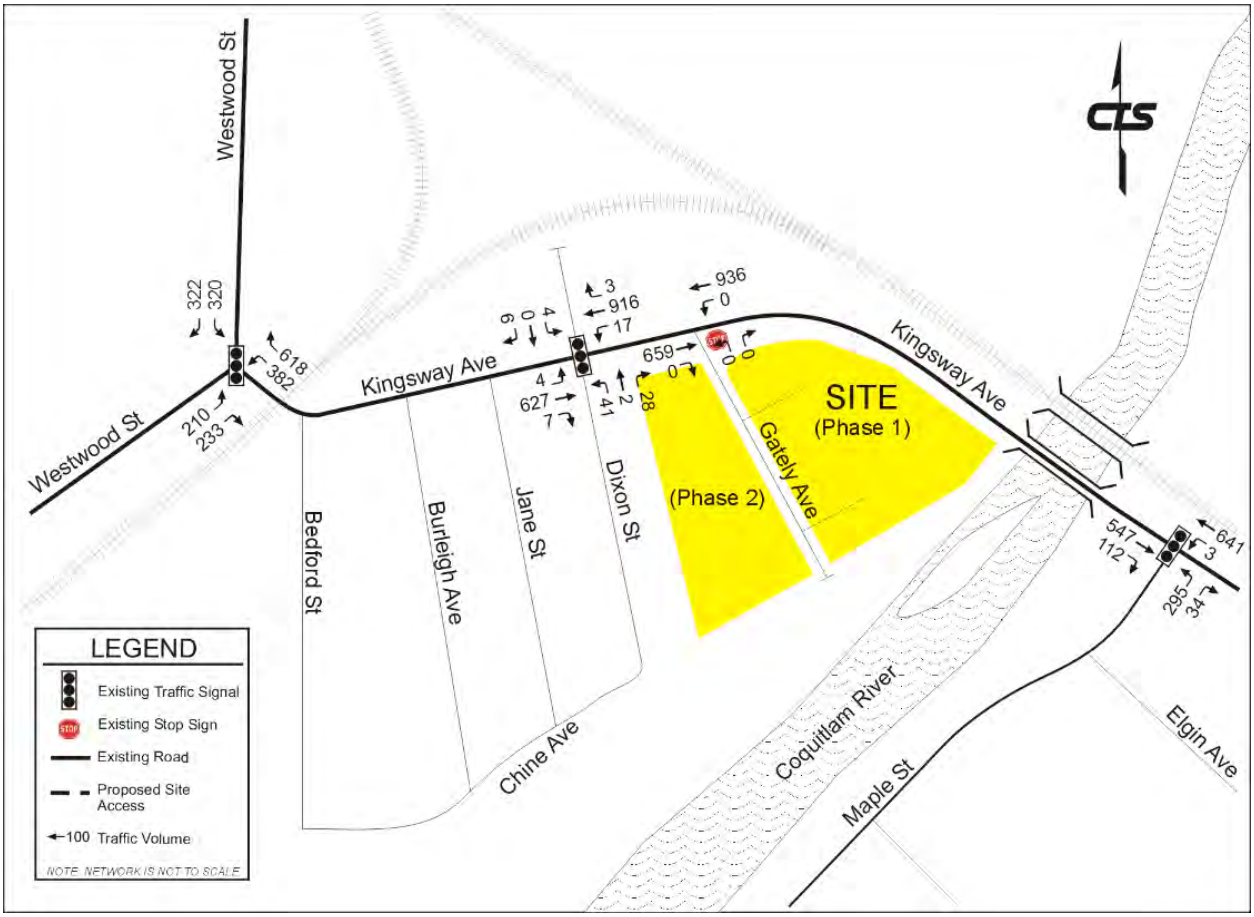


FIGURE 9
2025 WEEKDAY PM PEAK HOUR BASE TRAFFIC VOLUMES

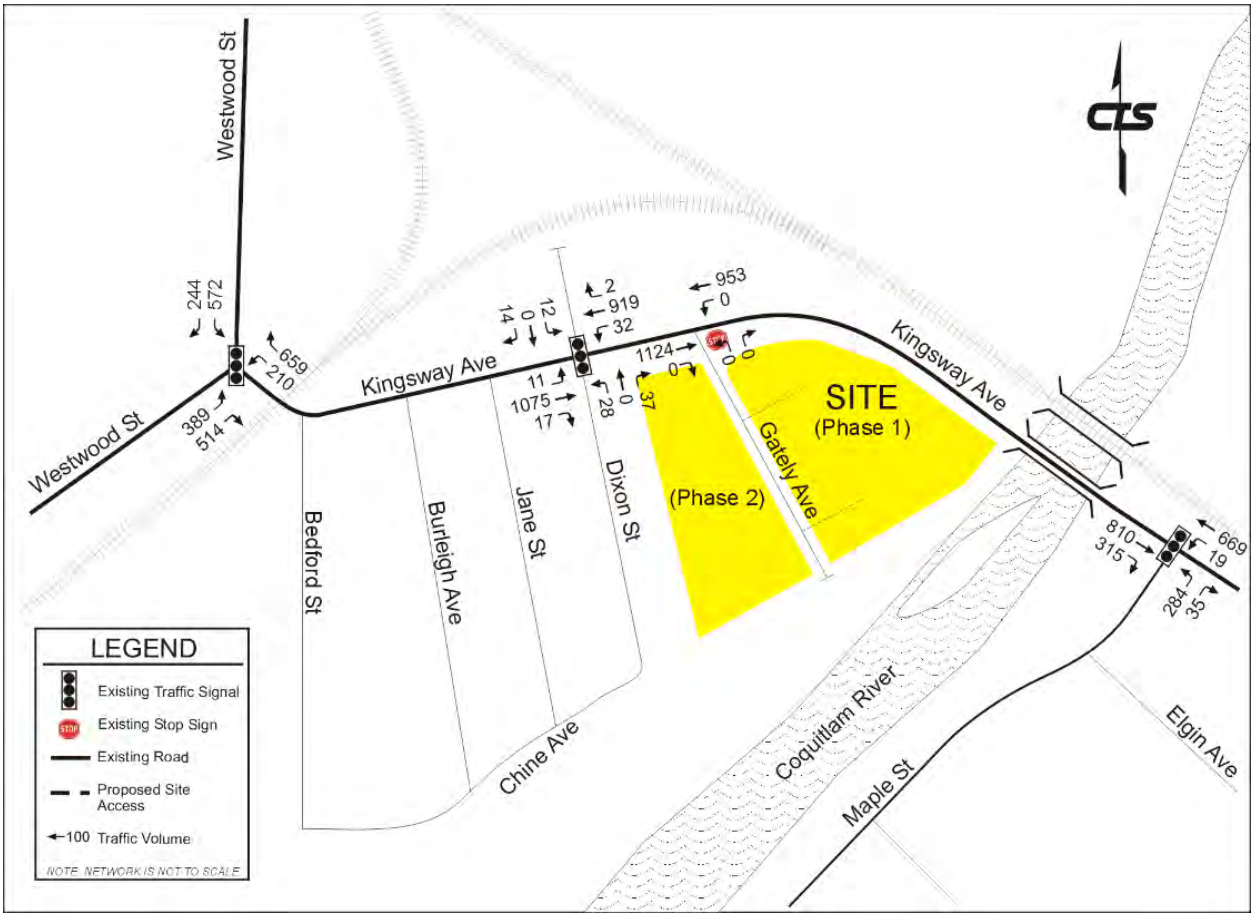


FIGURE 10
2030 WEEKDAY AM PEAK HOUR BASE TRAFFIC VOLUMES

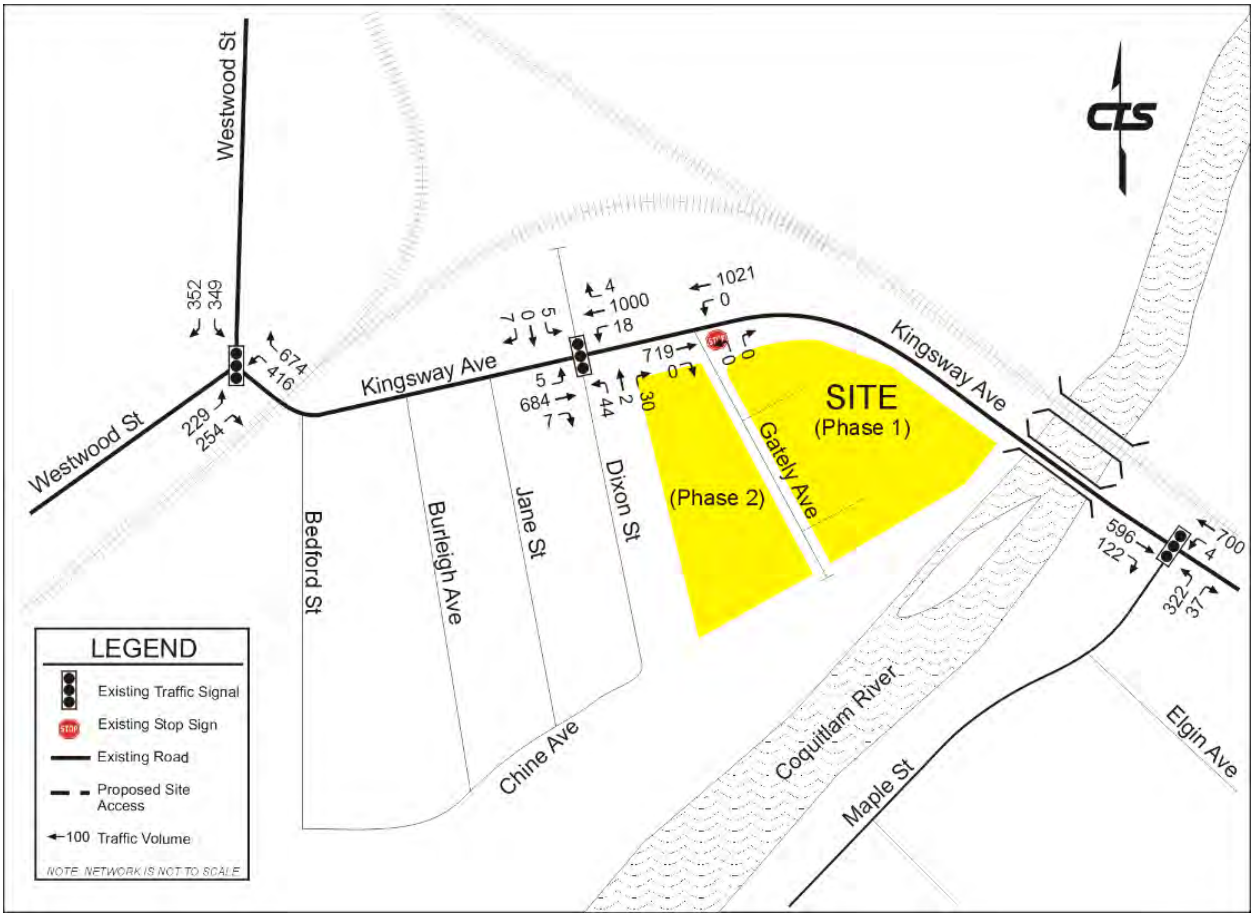
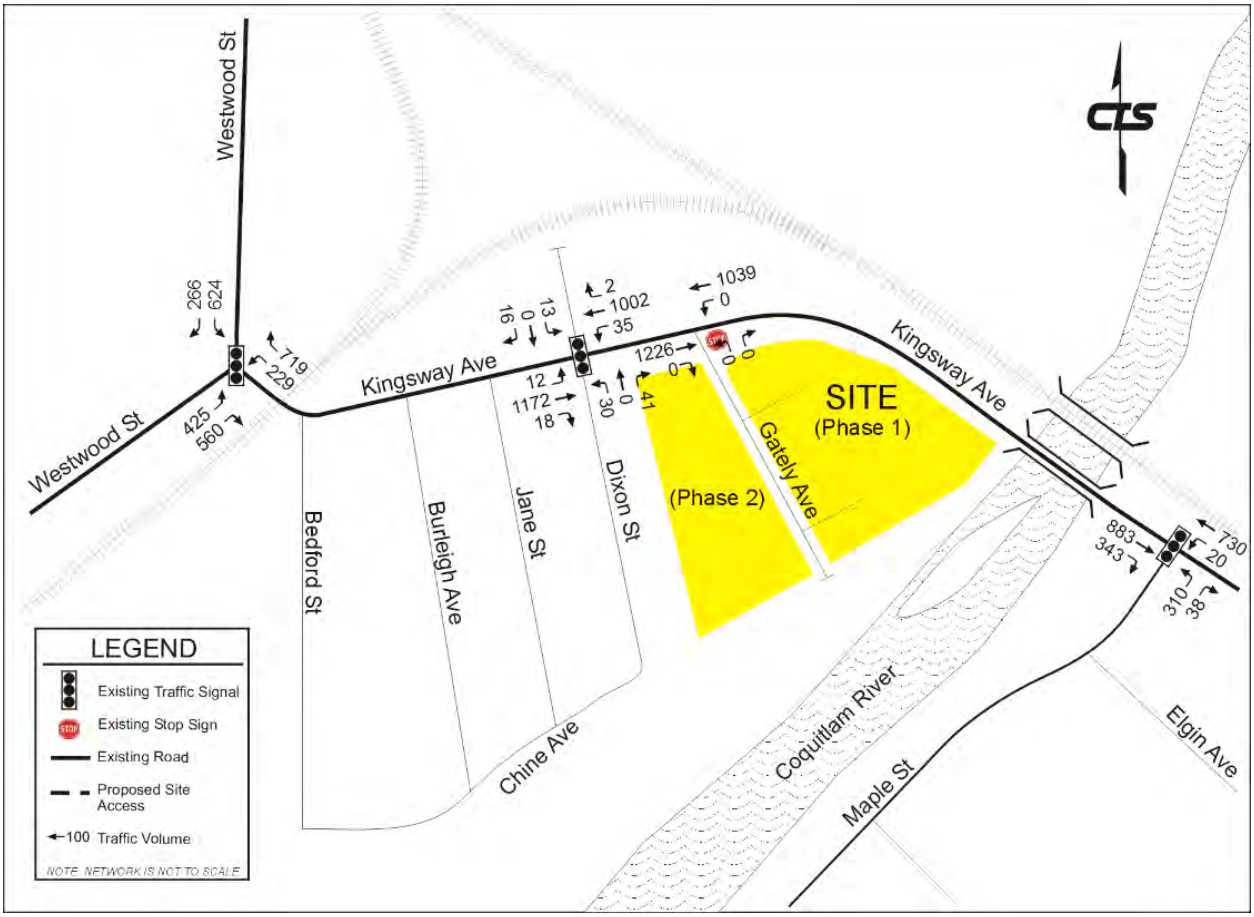


FIGURE 11
2030 WEEKDAY PM PEAK HOUR BASE TRAFFIC VOLUMES



3.0 SITE TRAFFIC VOLUMES

3.1 Trip Generation

The proposed housing development - Phase 1 will have 302 residential units and 4,000 ft^2 of day care space. The proposed housing development - Phase 2 will have up to 450 residential units. **TABLE 1** summarizes the projected site generated traffic with reference to the Institute of Transportation Engineers *Trip Generation Manual 10th Edition Code 221 – Multifamily Housing (Mid Rise)* and *Code 565 – Day Care*.

Note - Existing site generated traffic volumes were assumed to be zero so that the projected traffic volumes would represent the worst case scenario in that all traffic would be "new" traffic on the adjacent road network.

TABLE 1
SUMMARY OF SITE GENERATED VEHICLE TRIPS – PHASE 1 AND PHASE 2

Land Use			Peak Hour	Trip Generation Variable	Scope of Development	Vehicle Trip Generation Rate	Trip Rate Source	Directional Split		Peak Hour Volumes (vph)		
								% in	% out	in	out	total
Phase 1	Residential	Multi-Family (Mid-Rise)	Weekday Morning	Dwelling Units	302	0.36	ITE 10th Edition Code 221	26%	74%	28	81	109
			Weekday Afternoon		302	0.44	ITE 10th Edition Code 221	61%	39%	81	52	133
	Day Care		Weekday Morning	1,000 Sq. Ft. GFA	4.0	11.00	ITE 10th Edition Code 565	53%	47%	23	21	44
			Weekday Afternoon		4.0	11.12	ITE 10th Edition Code 565	47%	53%	21	24	45
	PHASE 1 TOTAL WEEKDAY MORNING PEAK HOUR									**51**	**102**	**153**
	PHASE 1 TOTAL WEEKDAY AFTERNOON PEAK HOUR									**102**	**76**	**178**
Phase 2	Residential	Multi-Family (Mid-Rise)	Weekday Morning	Dwelling Units	450	0.36	ITE 10th Edition Code 221	26%	74%	42	120	162
			Weekday Afternoon		450	0.44	ITE 10th Edition Code 221	61%	39%	121	77	198
	PHASE 2 TOTAL WEEKDAY MORNING PEAK HOUR									**42**	**120**	**162**
	PHASE 2 TOTAL WEEKDAY AFTERNOON PEAK HOUR									**121**	**77**	**198**
ALL TOTAL WEEKDAY MORNING PEAK HOUR										***93***	***222***	***315***
ALL TOTAL WEEKDAY AFTERNOON PEAK HOUR										***223***	***153***	***376***

From **TABLE 1**, the proposed housing development - Phase 1 is forecast to generate a total of 167 new vehicle trips (55 inbound, and 112 outbound) during the weekday AM peak hour and 195 vehicle trips (113 inbound and 82 outbound) during the weekday PM peak hour.

The proposed housing development - Phase 2 is forecast to generate a total of 162 new vehicle trips (42 inbound, and 120 outbound) during the weekday AM peak hour and 198 vehicle trips (121 inbound and 77 outbound) during the weekday PM peak hour.

3.2 Site Trip Distribution

Trip distribution percentages for site generated vehicle trips to/from for the proposed housing development - Phase 1 and Phase 2, were developed from existing traffic patterns entering and exiting the study area. The trip distribution percentages for the proposed housing development - Phase 1 and Phase 2 are summarized by **TABLE 2**.

TABLE 2
TRIP DISTRIBUTION PERCENTAGES
FOR PHASE 1 AND PHASE 2 SITE GENERATED TRAFFIC

FROM / TO	WEEKDAY MORNING PEAK HOUR		WEEKDAY AFTERNOON PEAK HOUR	
	INBOUND	OUTBOUND	INBOUND	OUTBOUND
North - Westwood St	31.3%	37.2%	29.9%	39.0%
East - Kingsway Ave	31.5%	26.0%	25.3%	31.6%
South- Maple St	15.5%	5.3%	11.7%	12.5%
South- Westwood St	21.6%	31.5%	33.1%	16.9%
TOTAL	**100.0%**	**100.0%**	**100.0%**	**100.0%**

The trip distribution percentages for the proposed housing development - Phase 1 and Phase 2 were used to calculate the trip distribution vehicle volumes for Phase 1 and Phase 2. The trip distribution vehicle volumes for the proposed housing development - Phase 1 and Phase 2 are summarized by **TABLE 3** and **TABLE 4**, respectively.

TABLE 3
TRIP DISTRIBUTION VEHICLE VOLUMES
FOR NEW SITE GENERATED TRAFFIC (PHASE 1)

FROM / TO	WEEKDAY MORNING PEAK HOUR		WEEKDAY AFTERNOON PEAK HOUR	
	INBOUND	OUTBOUND	INBOUND	OUTBOUND
North - Westwood St	16	38	31	30
East - Kingsway Ave	16	26	26	24
South- Maple St	8	6	12	9
South- Westwood St	11	32	33	13
TOTAL	51	102	102	76
	153		178	

TABLE 4
TRIP DISTRIBUTION VEHICLE VOLUMES
FOR NEW SITE GENERATED TRAFFIC (PHASE 2)

FROM / TO	WEEKDAY MORNING PEAK HOUR		WEEKDAY AFTERNOON PEAK HOUR	
	INBOUND	OUTBOUND	INBOUND	OUTBOUND
North - Westwood St	13	45	36	30
East - Kingsway Ave	13	31	31	24
South- Maple St	7	6	14	10
South- Westwood St	9	38	40	13
TOTAL	42	120	121	77
	162		198	

FIGURE 12 and **FIGURE 13** illustrate the new site generated traffic volumes for the proposed housing development - Phase 1 for the 2022 weekday AM and PM peak hours. Similarly, FIGURE **14** and **FIGURE 15** illustrate the new site generated traffic volumes for the proposed housing development - Phase 2 for the 2025 weekday AM and PM peak hours.

FIGURE 12
2022 WEEKDAY AM PEAK HOUR SITE GENERATED TRAFFIC VOLUMES (PHASE 1)

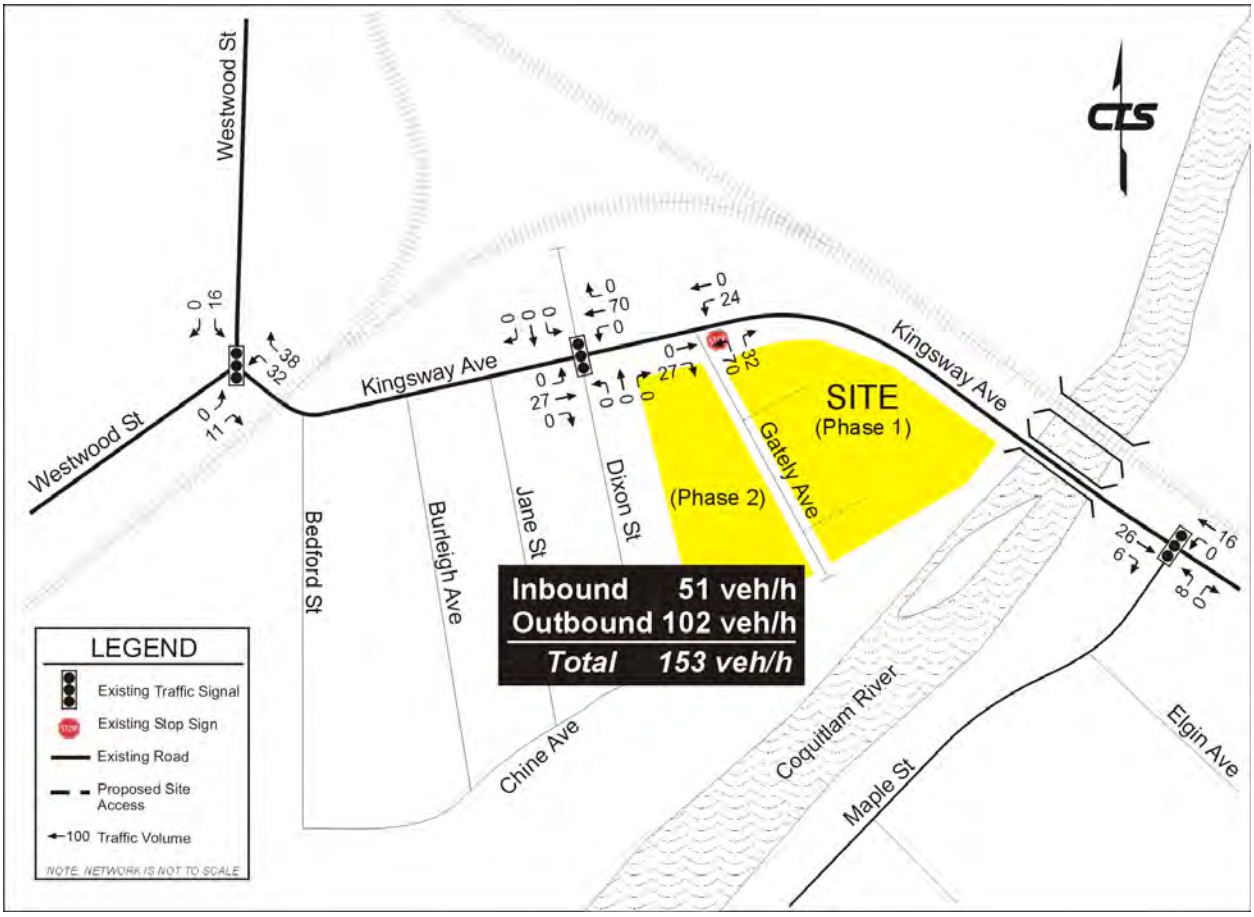


FIGURE 13
2022 WEEKDAY PM PEAK HOUR SITE GENERATED TRAFFIC VOLUMES (PHASE 1)

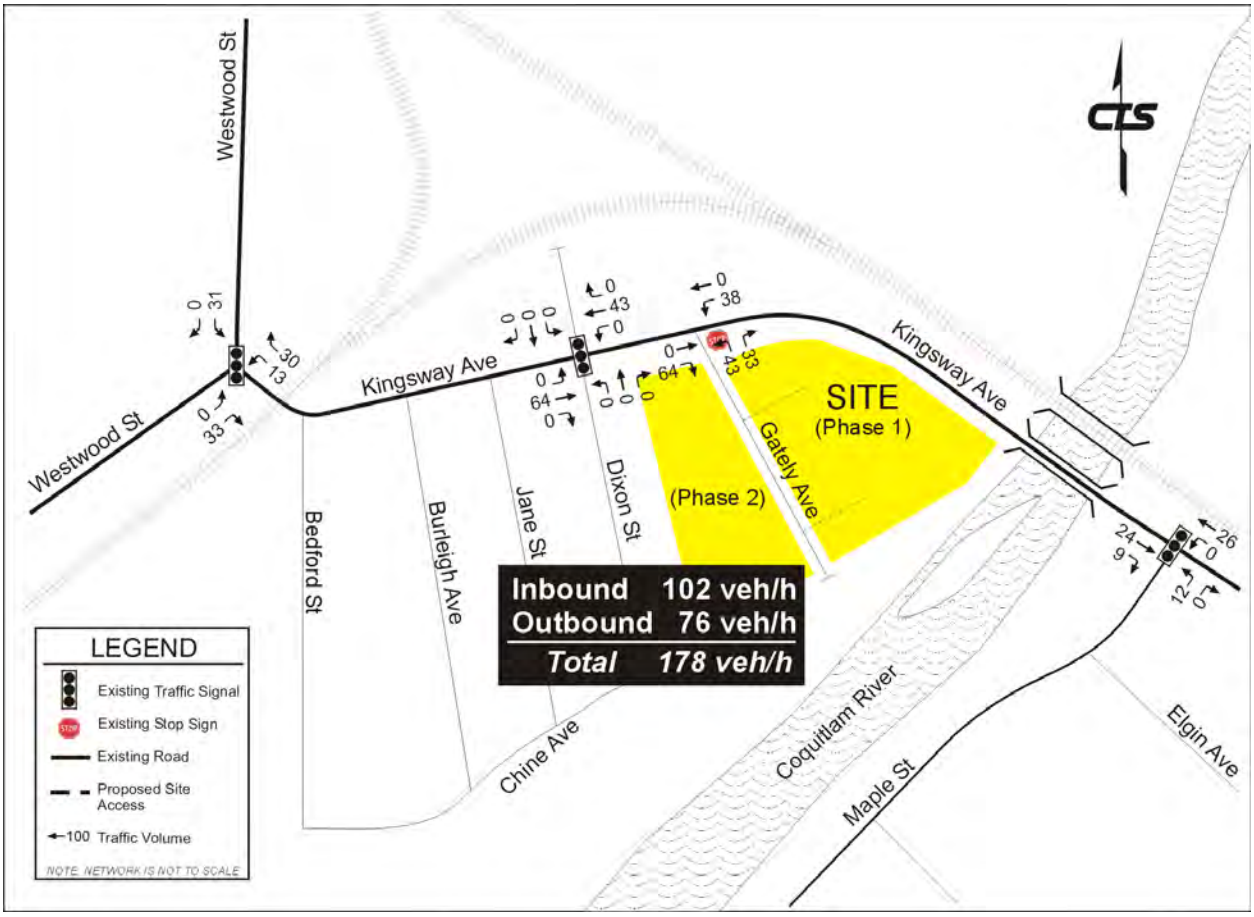


FIGURE 14
2025 WEEKDAY AM PEAK HOUR SITE GENERATION TRAFFIC VOLUMES (PHASE 2)

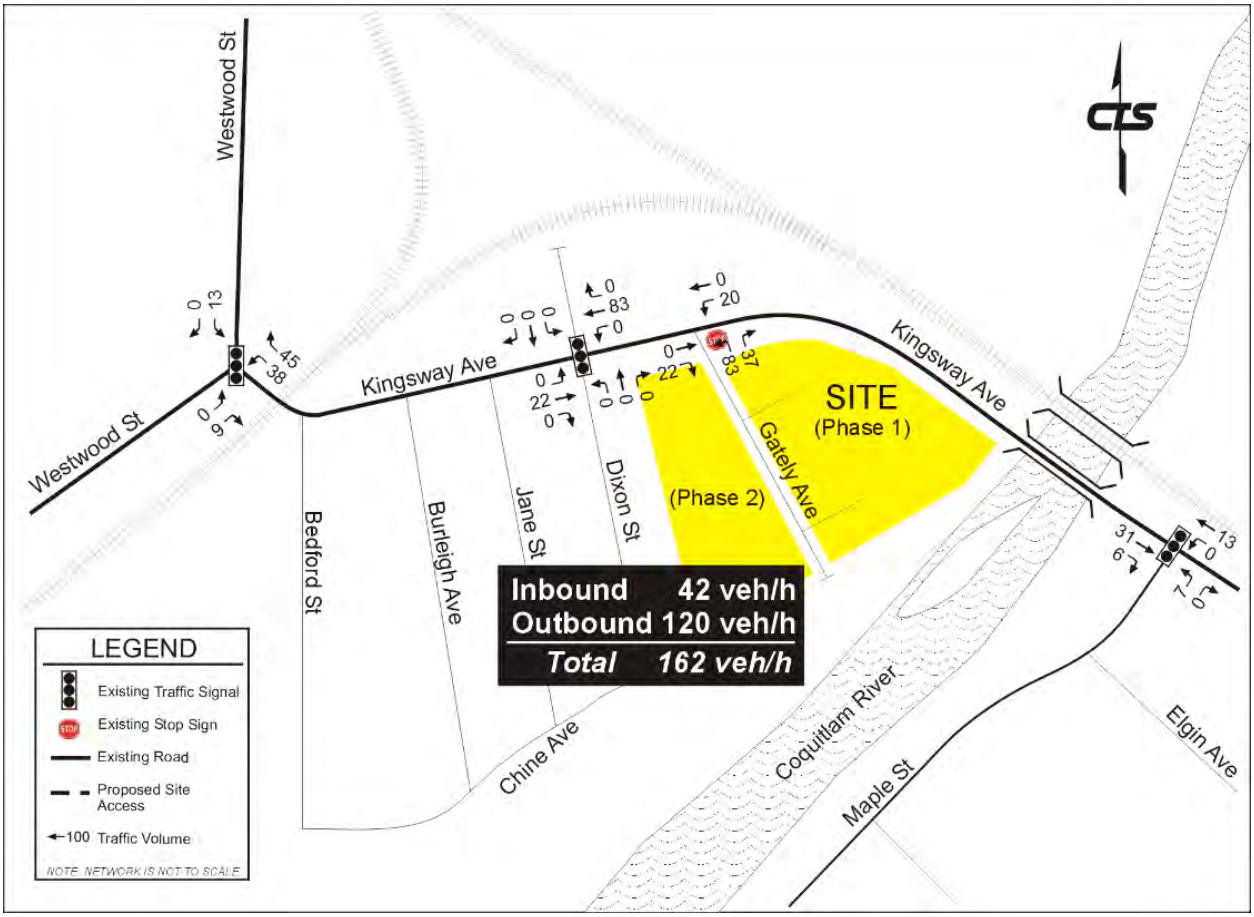
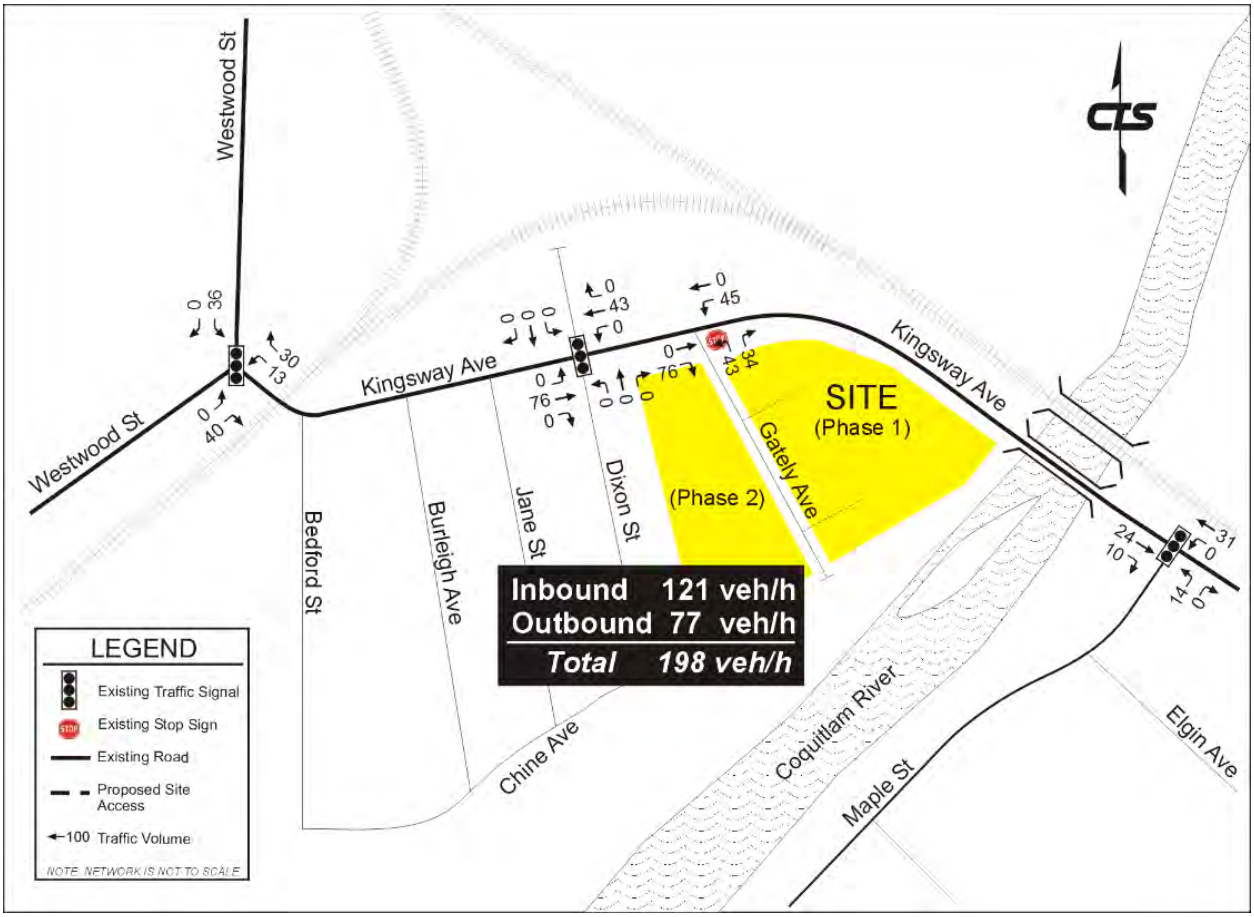


FIGURE 15
2025 WEEKDAY PM PEAK HOUR SITE GENERATION TRAFFIC VOLUMES (PHASE 2)



4.0 BASE + SITE TRAFFIC VOLUMES

FIGURE 16 and **FIGURE 17** illustrate the total projected traffic volumes for the future base and Phase 1 site generated traffic distributed to the adjacent street network for the year 2022.

FIGURE 18 and **FIGURE 19** illustrate the total projected traffic volumes for the future base and Phase 1 and Phase 2 site generated traffic distributed to the adjacent street network for the year 2025.

FIGURE 20 and **FIGURE 21** illustrate the total projected traffic volumes for the future base and Phase 1 and Phase 2 site generated traffic distributed to the adjacent street network for the year 2025 with a Chine Avenue connection.

FIGURE 22 and **FIGURE 23** illustrate the total projected traffic volumes for the future base and Phase 1 and Phase 2 site generated traffic distributed to the adjacent street network for the year 2030 with a Chine Avenue connection.

Note – Per the agreed upon Terms of Reference, the City of Port Coquitlam requires analyses of a Chine Avenue connection alternative to full movement access at the intersection of Gately Avenue and Kingsway Avenue. ***FIGURES 20-23*** *include a Chine Avenue connection for the 2025 and 2030 horizon years.*

FIGURE 16
2022 WEEKDAY AM PEAK HOUR BASE + PHASE 1 TRAFFIC VOLUMES

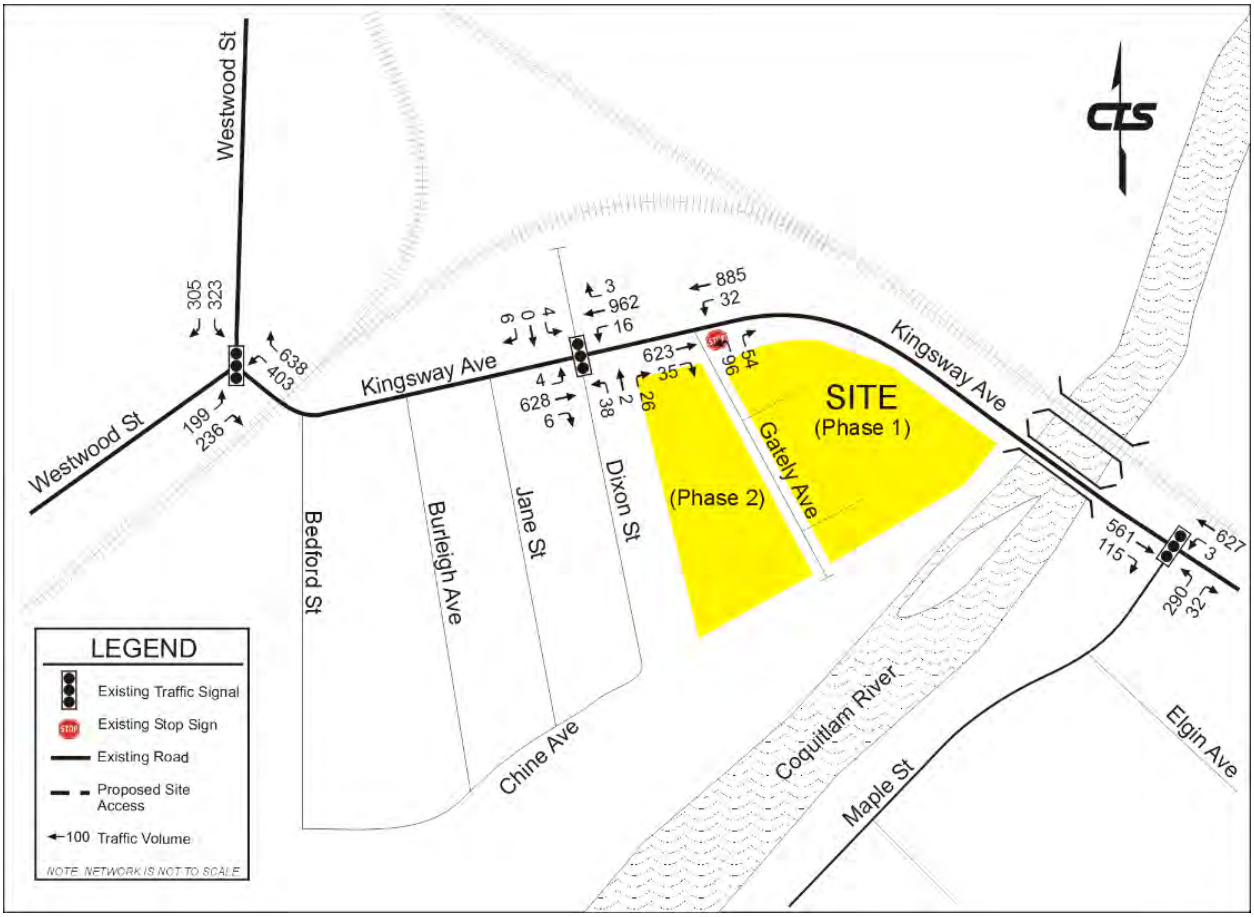


FIGURE 17
2022 WEEKDAY PM PEAK HOUR BASE + PHASE 1 TRAFFIC VOLUMES

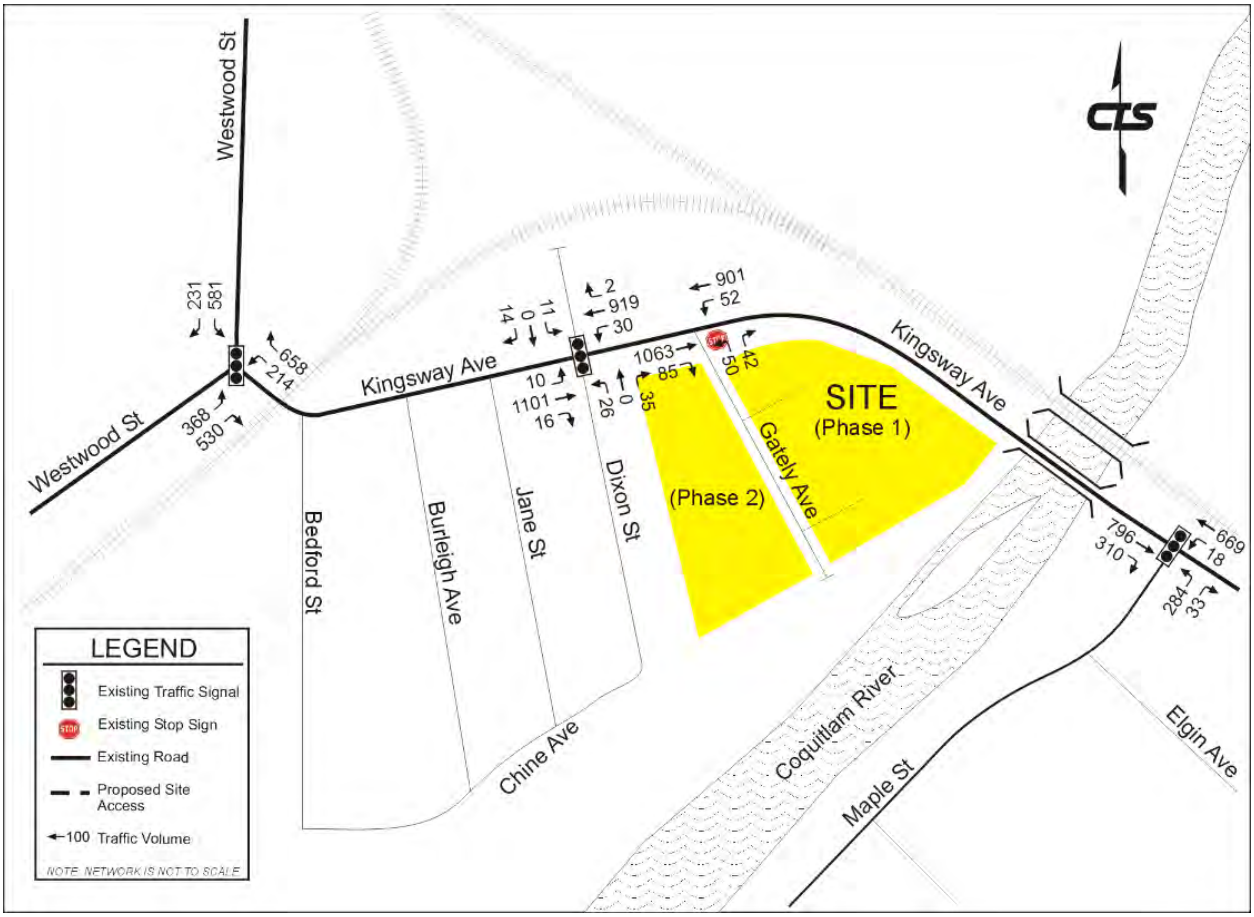


FIGURE 18
2025 WEEDAY AM PEAK HOUR BASE + PHASE 1 AND PHASE 2 TRAFFIC VOLUMES

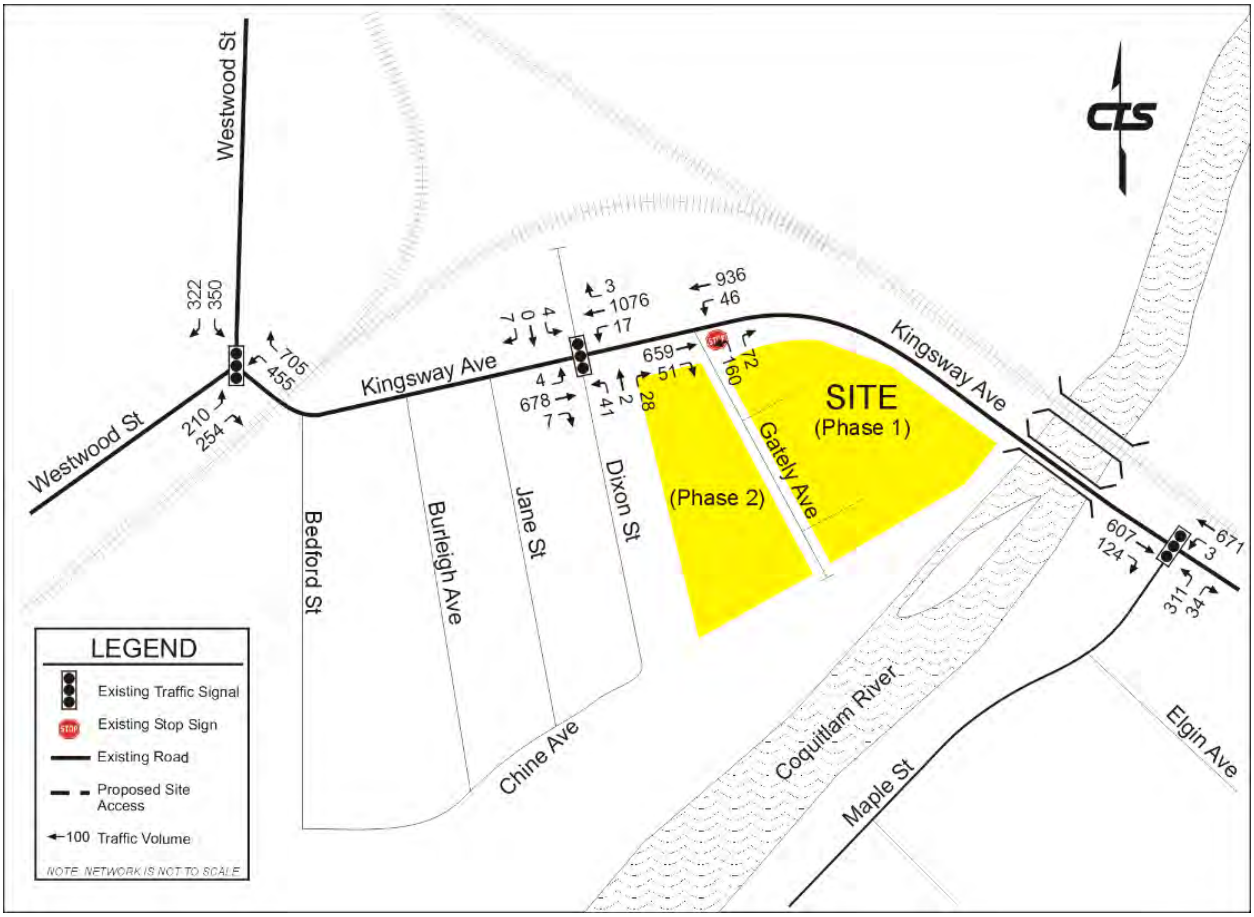


FIGURE 19
2025 WEEKDAY PM PEAK HOUR BASE + PHASE 1 AND PHASE 2 TRAFFIC VOLUMES

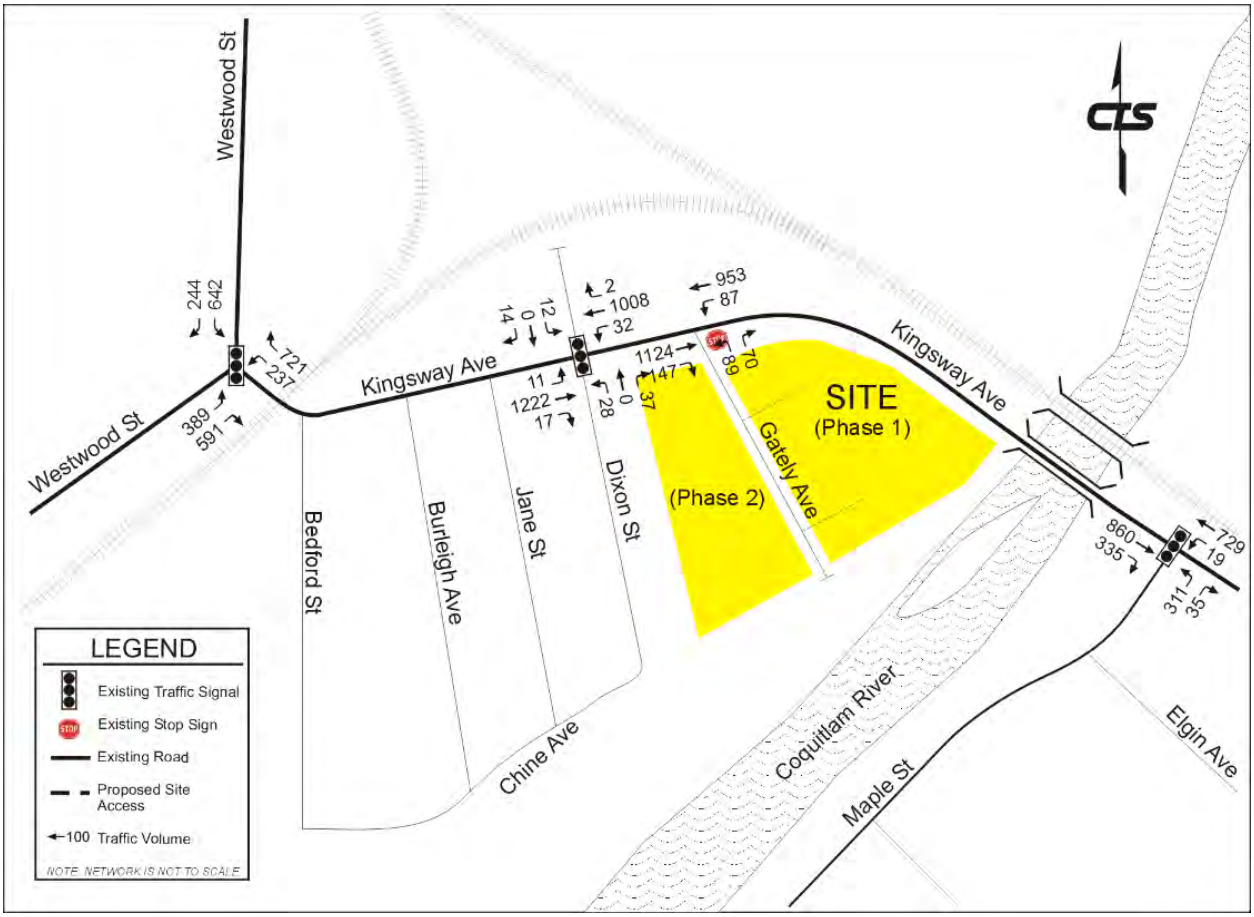


FIGURE 20
2025 WEEKDAY AM PEAK HOUR BASE + PHASE 1 AND PHASE 2 TRAFFIC VOLUMES WITH CHINE AVENUE CONNECTION

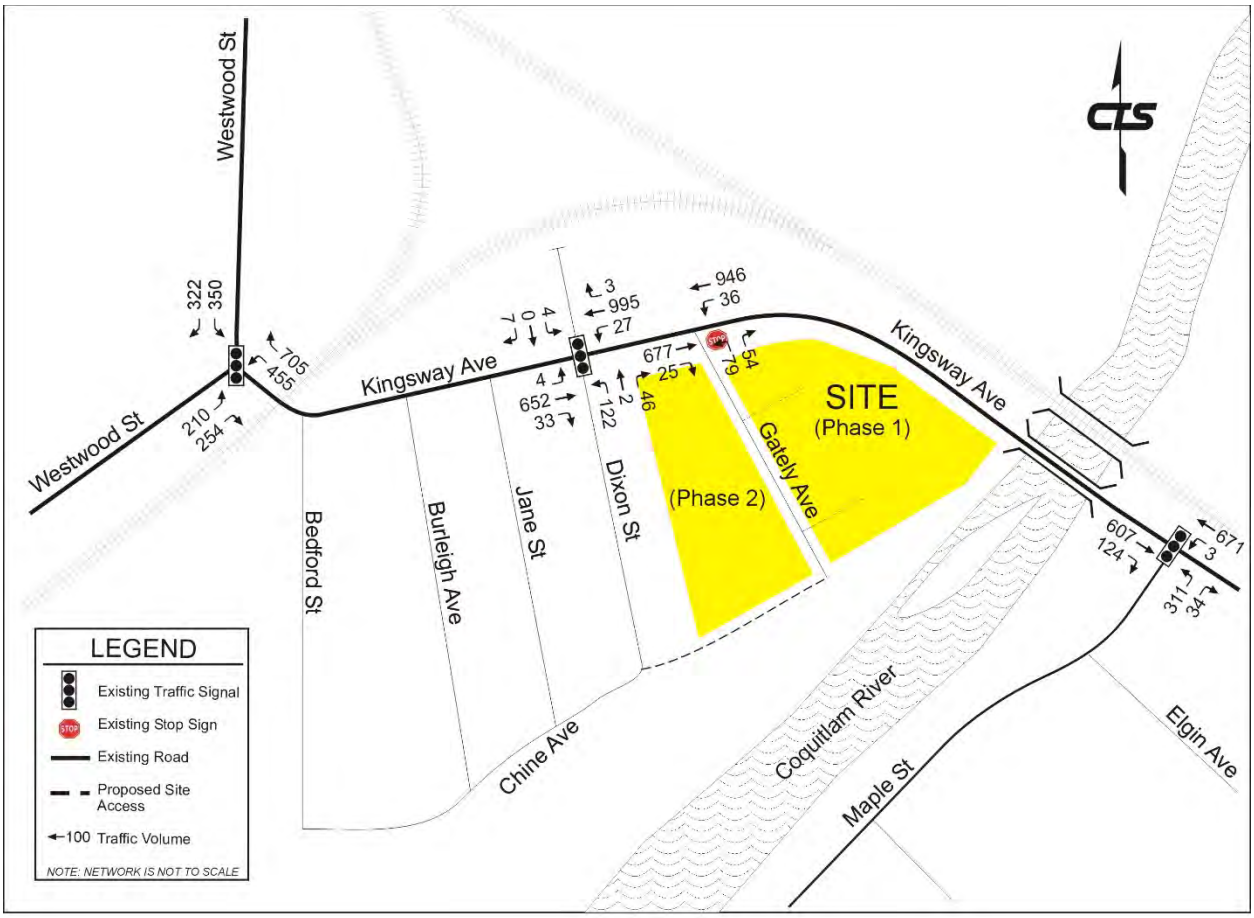


FIGURE 21
2025 WEEKDAY PM PEAK HOUR BASE + PHASE 1 AND PHASE 2 TRAFFIC VOLUMES WITH CHINE AVENUE CONNECTION

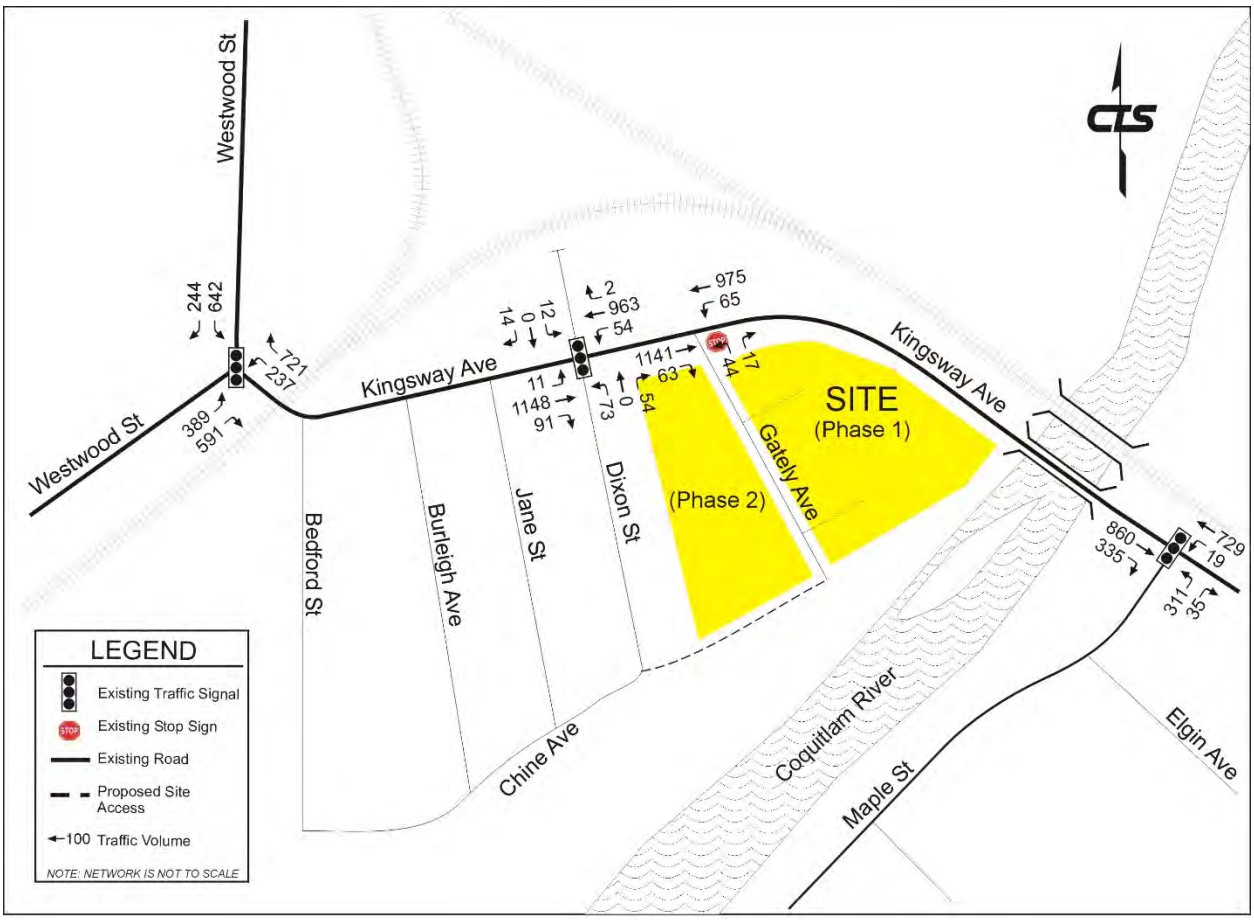


FIGURE 22
2030 WEEKDAY AM PEAK HOUR BASE + PHASE 1 AND PHASE 2 TRAFFIC VOLUMES WITH CHINE AVENUE CONNECTION

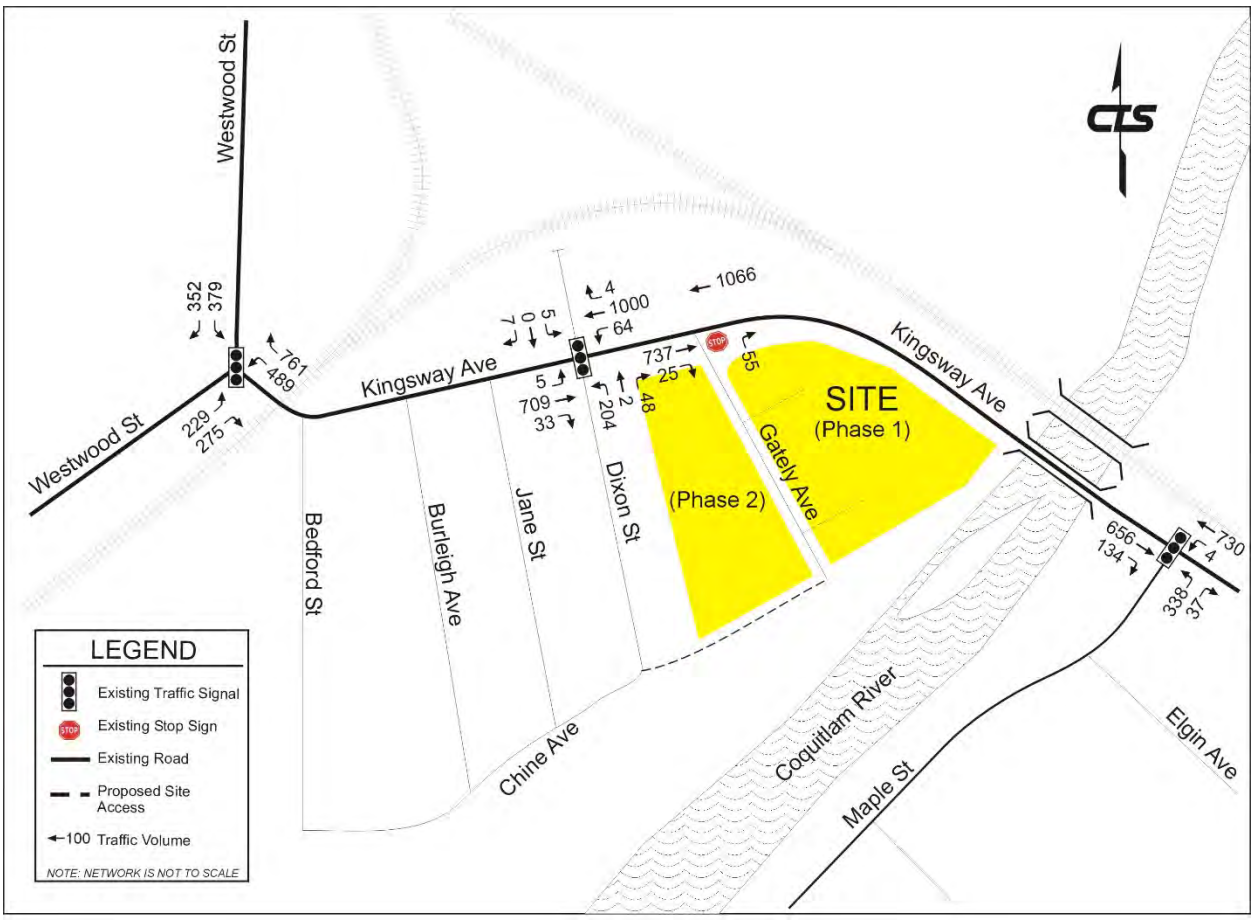
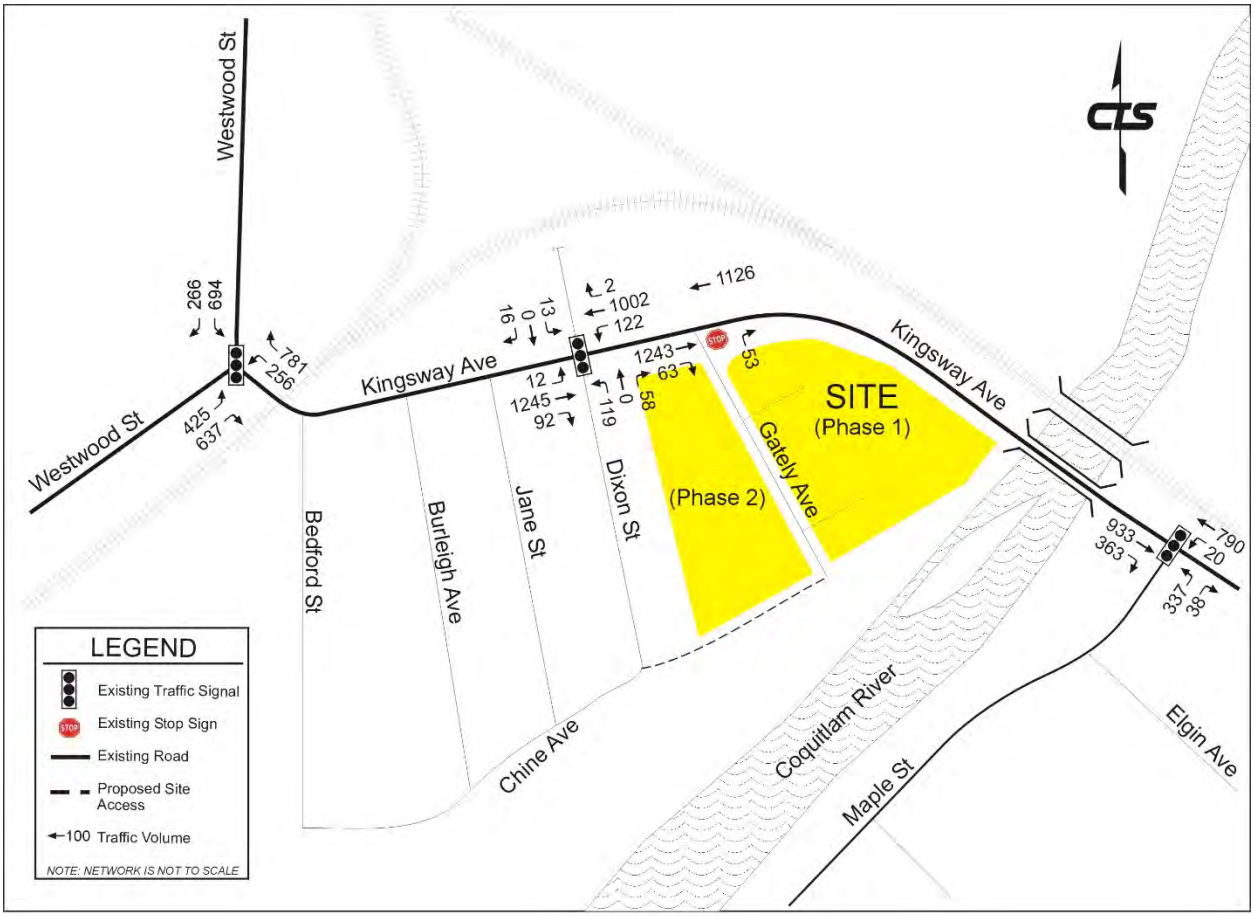


FIGURE 23
2030 WEEKDAY PM PEAK HOUR BASE + SITE TRAFFIC VOLUMES
2030 WEEKDAY PM PEAK HOUR BASE + PHASE 1 AND PHASE 2 TRAFFIC VOLUMES
WITH CHINE AVENUE CONNECTION



5.0 TRAFFIC ANALYSIS

5.1 Capacity Analysis

Capacity analysis was performed at each study intersection to determine the overall intersection and individual movement Level of Service (LOS) that is provided to motorists. The LOS for intersections and individual movements is defined in terms of delay (seconds per vehicle) which is a measure of driver discomfort and frustration, fuel consumption and lost travel time.

An intersection or movement LOS can range from "A" (Excellent) to "E" (Poor). A LOS of "F" (Fail) indicates that an intersection or individual movement is failing because the intersection or movement is over capacity and delays are excessive. A LOS of "D" (Fair) or better is considered acceptable by many public agencies for overall intersection, through and right turn movements and a LOS of "E" (Poor) or better is considered acceptable for left turn movements, at signalized intersections.

Synchro (Version 10.0) was used to analyze the intersection and individual movement level of service for signalized intersections. Highway Capacity Software (HCS 7) was used to analyze the intersection and individual movement level of service for unsignalized intersections.

With respect to the intersection and individual movement analysis, the following assumptions were made:

- Saturation flow rate → 1,800 passenger cars/hour of green/lane (pcphgpl).
- Truck percentage → 2% was used for all movements.
- Peak Hour Factor (PHF) → 0.93 for the weekday AM peak hour and 0.92 for the weekday PM peak hour which are an average of the PHF's from the traffic turning movement counts.

TABLE 5 summarizes and compares the delay in seconds and the 95th percentile queue in meters for each signalized intersection. **TABLE 6** summarizes and compares the delay in seconds and the 95th percentile queue for each unsignalized intersection. The capacity analysis summary sheets are included as **APPENDIX D**.

TABLE 5
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Intersection	Time of Day	Scenario	Performance Measure	Eastbound			Westbound			Northbound			Southbound			LOS	Notes
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Westwood Street (N/S) and Kingsway Avenue (E/W)	Weekday Morning Peak Hour	2020 Base	Volumes				355		574		191	216	296	293		B	OK. Existing signal timing.
			V/C				0.69		0.68		0.57	0.46	0.62	0.32			
			95% Queue (m)				113.2		28.3		70.9	20.9	98.0	17.4			
		2022 Base	Volumes				368		596		199	224	306	305		C	Optimized signal timing.
			V/C				0.70		0.69		0.60	0.25	0.64	0.25			
			95% Queue (m)				118.3		28.7		73.7	21.4	101.8	11.0			
		2022 Base + Phase 1	Volumes				403		638		199	236	323	305		C	Optimized signal timing.
			V/C				0.75		0.71		0.62	0.50	0.67	0.27			
			95% Queue (m)				130.1		30.0		74.8	22.2	108.3	13.9			
		2025 Base	Volumes				382		618		210	233	320	322		C	Optimized signal timing.
			V/C				0.73		0.70		0.63	0.48	0.66	0.36			
			95% Queue (m)				124.1		29.4		77.1	21.7	108.5	26.9			
		2025 Base + Phase 1 & Phase 2	Volumes				455		705		210	254	350	322		C	Optimized signal timing.
			V/C				0.80		0.74		0.67	0.53	0.73	0.38			
			95% Queue (m)				148.4		30.5		79.8	23.5	120.5	35.9			
		2030 Base	Volumes				416		674		229	254	349	352		C	Optimized signal timing.
			V/C				0.77		0.73		0.68	0.51	0.71	0.40			
			95% Queue (m)				135.3		31.9		85.0	22.8	118.3	37.6			
		2030 Base + Phase 1 & Phase 2	Volumes				489		761		229	275	379	352		C	Optimized signal timing.
			V/C				0.84		0.80		0.74	0.55	0.79	0.42			
			95% Queue (m)				174.7		66.7		86.9	24.5	140.6	47.2			
	Weekday Afternoon Peak Hour	2020 Base	Volumes				192		604		354	475	528	222		C	Existing signal timing. SBLT is near capacity.
			V/C				0.66		0.81		0.80	0.68	0.85	0.21			
			95% Queue (m)				73.8		42.9		134.9	41.8	193.8	6.6			
		2022 Base	Volumes				200		626		368	493	547	231		C	Optimized signal timing. SBLT is near cpacity.
			V/C				0.68		0.82		0.84	0.71	0.86	0.22			
			95% Queue (m)				76.7		44.8		145.7	53.3	203.2	6.7			
		2022 Base + Phase 1	Volumes				214		658		368	530	581	231		C	Optimized signal timing. NBTH & SNLT are near capacity.
			V/C				0.74		0.84		0.85	0.78	0.90	0.22			
			95% Queue (m)				83.4		47.7		146.8	78.8	218.6	9.1			
		2025 Base	Volumes				210		659		389	514	572	244		C	Optimized signal timing. WBRT, NBTH & SNLT are near capacity.
			V/C				0.71		0.85		0.87	0.74	0.91	0.23			
			95% Queue (m)				80.7		61.5		156.1	65.4	220.1	8.9			
		2025 Base + Phase 1 & Phase 2	Volumes				237		721		389	591	642	244		D	Optimized signal timing. WBRT, NB, SBLT are near capacity.
			V/C				0.81		0.91		0.92	0.90	0.96	0.23			
			95% Queue (m)				100.8		105.2		163.3	136.3	250.6	12.7			
		2030 Base	Volumes				229		719		425	560	624	266		D	Optimized signal timing. WBRT, NBTH & SNLT are near capacity.
			V/C				0.79		0.94		0.94	0.83	0.97	0.25			
			95% Queue (m)				95.1		115.4		179.0	105.9	246.8	13.9			
		2030 Base + Phase 1 & Phase 2	Volumes				256		781		425	637	694	266		E	Optimized signal timing. WBRT is near capacity. NB & SNLT are over capacity.
			V/C				0.83		0.98		1.05	1.00	1.05	0.26			
			95% Queue (m)				105.8		134.4		177.7	161.6	260.6	15.8			

Intersection approaching capacity (LOS 'D' or 'E'); or approach demand near capacity (v/c 0.85 to 0.99)

Intersection equals or exceeds capacity (LOS 'F'); or high approach demand over capacity (v/c => 1.0)

95% Queue length exceeds the capacity of existing storage bay.

TABLE 5 CONTINUED
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Intersection	Time of Day	Scenario	Performance Measure	Eastbound			Westbound			Northbound			Southbound			LOS	Notes
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Dixon Street (N/S) and Kingsway Avenue (E/W)	Weekday Morning Peak Hour	2020 Base	Volumes	4	579	6	15	853	3	37	2	25	4	0	6	A	OK. Existing signal timing.
			V/C	0.26	0.26	0.26	0.38	0.38	0.38	0.23			0.03				
			95% Queue (m)	18.3	18.3	18.3	30.0	30.0	30.0	10.6			0.0				
		2022 Base	Volumes	4	599	6	16	885	3	38	2	26	4	0	6	A	Optimized signal timing.
			V/C	0.26	0.26	0.26	0.39	0.39	0.39	0.24			0.03				
			95% Queue (m)	19.3	19.3	19.3	32.2	32.2	32.2	10.9			0.0				
		2022 Base + Phase 1	Volumes	4	628	6	16	962	3	38	2	26	4	0	6	A	Optimized signal timing.
			V/C	0.27	0.27	0.27	0.42	0.42	0.42	0.24			0.03				
			95% Queue (m)	20.4	20.4	20.4	36.2	36.2	36.2	11.6			0.0				
		2025 Base	Volumes	4	627	7	17	916	3	41	2	28	4	0	7	A	Optimized signal timing.
			V/C	0.28	0.28	0.28	0.41	0.41	0.41	0.25			0.03				
			95% Queue (m)	20.8	20.8	20.8	34.6	34.6	34.6	11.5			0.0				
		2025 Base + Phase 1 & Phase 2	Volumes	4	678	7	17	1076	3	41	2	28	4	0	7	A	Optimized signal timing.
			V/C	0.29	0.29	0.29	0.47	0.47	0.47	0.26			0.04				
			95% Queue (m)	23.1	23.1	23.1	44.1	44.1	44.1	13.2			0.0				
		2025 Base + Phase 1 & Phase 2 (with Chine Avenue Connection)	Volumes	4	652	22	27	995	3	122	2	46	4	0	7	A	Optimized signal timing.
			V/C	0.39	0.39	0.39	0.61	0.61	0.61	0.51			0.03				
			95% Queue (m)	35.5	35.5	35.5	63.0	63.0	63.0	34.1			0.0				
		2030 Base	Volumes	5	684	7	18	1000	4	44	2	30	5	0	7	A	Optimized signal timing.
			V/C	0.30	0.30	0.30	0.44	0.44	0.44	0.27			0.04				
			95% Queue (m)	23.5	23.5	23.5	40.0	40.0	40.0	12.9			0.0				
		2030 Base + Phase 1 & Phase 2 (with Chine Avenue Connection)	Volumes	5	709	33	64	1000	4	204	2	48	5	0	7	B	Optimized signal timing.
			V/C	0.46	0.46	0.46	0.74	0.74	0.74	0.72			0.02				
			95% Queue (m)	54.0	54.0	54.0	97.0	97.0	97.0	73.0			0.0				
	Weekday Afternoon Peak Hour	2020 Base	Volumes	10	993	15	29	841	2	25	0	34	11	0	13	A	OK. Existing signal timing.
			V/C	0.44	0.44	0.44	0.39	0.39	0.39	0.20			0.08				
			95% Queue (m)	31.8	31.8	31.8	26.2	26.2	26.2	5.5			0.3				
		2022 Base	Volumes	10	1030	16	30	873	2	26	0	35	11	0	14	A	Optimized signal splits
			V/C	0.45	0.45	0.45	0.41	0.41	0.41	0.21			0.09				
			95% Queue (m)	34.7	34.7	34.7	28.5	28.5	28.5	5.8			0.4				
		2022 Base + Phase 1	Volumes	10	1101	16	30	919	2	26	0	35	11	0	14	A	Optimized signal timing.
			V/C	0.48	0.48	0.48	0.43	0.43	0.43	0.22			0.09				
			95% Queue (m)	38.5	38.5	38.5	30.8	30.8	30.8	6.0			0.3				
		2025 Base	Volumes	11	1075	17	32	919	2	28	0	37	12	0	14	A	Optimized signal timing.
			V/C	0.47	0.47	0.47	0.43	0.43	0.43	0.23			0.09				
			95% Queue (m)	38.0	38.0	38.0	31.7	31.7	31.7	6.6			0.5				
		2025 Base + Phase 1 & Phase 2	Volumes	11	1222	17	32	1008	2	28	0	37	12	0	14	A	Optimized signal timing.
			V/C	0.56	0.56	0.56	0.50	0.50	0.50	0.25			0.10				
			95% Queue (m)	45.5	45.5	45.5	35.5	35.5	35.5	7.2			0.1				
		2025 Base + Phase 1 & Phase 2 (with Chine Avenue Connection)	Volumes	11	1148	91	54	963	2	73	0	54	12	0	14	A	Optimized signal timing.
			V/C	0.60	0.60	0.60	0.55	0.55	0.55	0.43			0.08				
			95% Queue (m)	65.7	65.7	65.7	53.0	53.0	53.0	19.8			0.0				
		2030 Base	Volumes	12	1172	18	35	1002	2	30	0	41	13	0	16	A	Optimized signal timing
			V/C	0.55	0.55	0.55	0.51	0.51	0.51	0.26			0.10				
			95% Queue (m)	45.3	45.3	45.3	37.7	37.7	37.7	8.1			0.7				
		2030 Base + Phase 1 & Phase 2 (with Chine Avenue Connection)	Volumes	12	1245	92	122	1002	2	119	0	58	13	0	16	B	Optimized signal timing
			V/C	0.65	0.65	0.65	0.83	0.83	0.83	0.64			0.10				
			95% Queue (m)	91.8	91.8	91.8	137.7	137.7	137.7	33.3			0.0				

Intersection approaching capacity (LOS 'D' or 'E'); or approach demand near capacity (v/c 0.85 to 0.99)

Intersection equals or exceeds capacity (LOS 'F'); or high approach demand over capacity (v/c => 1.0)

95% Queue length exceeds the capacity of existing storage bay.

TABLE 5 CONTINUED
SINGALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Intersection	Time of Day	Scenario	Performance Measure	Eastbound			Westbound			Northbound			Southbound			LOS	Notes
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Maple Street (N/S) & Kingsway Avenue (E/W)	Weekday Morning Peak Hour	2020 Base	Volumes		514	106	3	589		271		31				B	OK. Existing signal timing.
			V/C		0.75		0.01	0.70		0.55		0.05					
			95% Queue (m)		99.9		1.3	92.2		51.5		4.3					
		2022 Base	Volumes		532	109	3	610		281		32				B	Optimized signal timing.
			V/C		0.75		0.01	0.70		0.60		0.07					
			95% Queue (m)		93.2		1.1	86.1		60.0		5.9					
		2022 Base + Phase 1	Volumes		561	115	3	627		290		32				B	Optimized signal timing.
			V/C		0.78		0.01	0.71		0.62		0.07					
			95% Queue (m)		102.8		1.1	90.3		62.0		5.9					
		2025 Base	Volumes		547	112	3	641		295		34				B	Optimized signal timing.
			V/C		0.77		0.01	0.73		0.63		0.08					
			95% Queue (m)		97.9		1.1	94.0		63.2		6.1					
		2025 Base + Phase 1 & Phase 2	Volumes		607	124	3	671		311		34				B	Optimized signal timing.
			V/C		0.81		0.02	0.74		0.68		0.08					
			95% Queue (m)		114.9		1.1	97.4		75.0		6.2					
		2030 Base	Volumes		596	122	4	700		322		37				B	Optimized signal timing.
			V/C		0.81		0.02	0.78		0.69		0.08					
			95% Queue (m)		115.8		1.4	109.9		71.2		6.4					
		2030 Base + Phase 1 & Phase 2	Volumes		656	134	4	730		338		37				C	Optimized signal timing. EB is near capacity.
			V/C		0.86		0.03	0.78		0.75		0.09					
			95% Queue (m)		161.2		1.3	114.1		85.0		6.6					
	Weekday Afternoon Peak Hour	2020 Base	Volumes		744	289	17	616		262		32				D	Existing signal timing. EB is over capacity.
			V/C		1.09		0.16	0.63		0.64		0.08					
			95% Queue (m)		258.7		5.2	99.6		50.4		5.3					
		2022 Base	Volumes		770	300	18	640		271		33				C	Optimized signal timing. EB & NBLT are near capacity.
			V/C		0.98		0.20	0.57		0.90		0.11					
			95% Queue (m)		239.6		4.3	65.5		83.0		7.0					
		2022 Base + Phase 1	Volumes		796	310	18	669		284		33				C	Optimized signal timing. EB & NBLT are near capacity.
			V/C		0.99		0.26	0.58		0.92		0.11					
			95% Queue (m)		305.3		6.0	82.9		15.3		7.9					
		2025 Base	Volumes		810	315	19	669		284		35				C	Optimized signal timing. EB & NBLT are near capacity.
			V/C		0.99		0.26	0.57		0.95		0.12					
			95% Queue (m)		337.2		6.0	86.3		115.9		8.8					
		2025 Base + Phase 1 & Phase 2	Volumes		860	335	19	729		311		35				D	Optimized signal timing. EB & NBLT are over capacity.
			V/C		1.05		0.37	0.61		1.01		0.12					
			95% Queue (m)		432.7		11.1	116.6		147.7		11.2					
		2030 Base	Volumes		883	343	20	730		310		38				D	Optimized signal timing. EB & NBLT are over capacity.
			V/C		1.07		0.38	0.61		1.02		0.13					
			95% Queue (m)		449.1		12.4	115.0		48.1		117.0					
		2030 Base + Phase 1 & Phase 2	Volumes		933	363	20	790		337		38				E	Optimized signal timing. EB & NBLT are over capacity.
			V/C		1.12		0.38	0.66		1.14		0.13					
			95% Queue (m)		486.7		12.1	131.5		166.8		12.4					

Intersection approaching capacity (LOS 'D' or 'E'); or approach demand near capacity (v/c 0.85 to 0.99)

Intersection equals or exceeds capacity (LOS 'F'); or high approach demand over capacity (v/c => 1.0)

95% Queue length exceeds the capacity of existing storage bay.

TABLE 6
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Intersection	Time of Day	Scenario	Performance Measure	Eastbound			Westbound			Northbound			Southbound			LOS	Notes
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Gately Avenue (N/S) and Kingsway Avenue (E/W)	Weekday Morning Peak Hour	2020 Base	Volumes		599	9	9	851		20		21				A	OK
			Delay		0.0	0.0	8.9	0.0		21.1							
			95% Queue (veh)		0.0	0.0	0.0	0.0		0.6							
		2022 Base	Volumes		623	6	6	885		19		19				A	OK
			Delay		0.0	0.0	9.0	0.0		22.0							
			95% Queue (veh)		0.0	0.0	0.0	0.0		0.6							
		2022 Base + Phase 1 (Existing Lane Configuration)	Volumes		623	33	30	885		89		51				A	NB movements are over capacity.
			Delay		0.0	0.0	9.2	0.0		59.7							
			95% Queue (veh)		0.0	0.0	0.1	0.0		4.8							
		2022 Base + Phase 1 (Right-in/Right-out Access	Volumes		623	63		934				140				A	OK
			Delay		0.0	0.0		0.0				19.4					
			95% Queue (veh)		0.0	0.0		0.0				1.7					
		2022 Base + Phase 1 (WBLT Lane & NBLT Receiving Lane)	Volumes		623	33	30	885		89		51				A	OK
			Delay		0.0	0.0	9.2	0.0		18.2							
			95% Queue (veh)		0.0	0.0	0.1	0.0		1.6							
		2025 Base	Volumes		659	0	0	936		0		0				A	OK
			Delay		0.0	0.0	0.0	0.0		0.0							
			95% Queue (veh)		0.0	0.0	0.0	0.0		0.0							
		2025 Base + Phase 1 & Phase 2 (Right-in/Right-out Access)	Volumes		659	93		980				222				A	NBRT is approaching capacity.
			Delay		0.0	0.0		0.0				29.8					
			95% Queue (veh)		0.0	0.0		0.0				4.2					
		2025 Base + Phase 1 & phase 2 (WBLT Lane & NBLT Receiving Lane)	Volumes		659	49	44	936		153		69				A	NB movements are approaching capacity.
			Delay		0.0	0.0	9.5	0.0		27.4							
			95% Queue (veh)		0.0	0.0	0.2	0.0		3.9							
		2025 Base + Phase 1 & Phase 2 (Right-in/Right-out with Chine Avenue Connection)	Volumes		677	38		980				51				A	OK
			Delay		0.0	0.0		0.0				16.6					
			95% Queue (veh)		0.0	0.0		0.0				0.5					
		2030 Base	Volumes		719	0	0	1021		0		0				A	OK
			Delay		0.0	0.0	0.0	0.0		0.0							
			95% Queue (veh)		0.0	0.0	0.0	0.0		0.0							
		2030 Base + Phase 1 & Phase 2 (Right-in/Right-out Access)	Volumes		719	93		1065				222				A	NBRT is approaching capacity.
			Delay		0.0	0.0		0.0				36.9					
			95% Queue (veh)		0.0	0.0		0.0				0.5					
		2030 Base + Phase 1 & Phase 2 (WBLT Lane & NBLT Receiving Lane)	Volumes		719	49	44	1021		153		69				A	NB movements are approaching capacity.
			Delay		0.0	0.0	9.8	0.0		32.8							
			95% Queue (veh)		0.0	0.0	0.2	0.0		4.6							
		2030 Base + Phase 1 & Phase 2 (Right-in/Right-out with Chine Avenue Connection)	Volumes		737	38		1065				51				A	OK
			Delay		0.0	0.0		0.0				18.0					
			95% Queue (veh)		0.0	0.0		0.0				0.6					

Delay = Average Delay (seconds/vehicle)

Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays (25sec to <50sec)

Intersection equals or exceeds capacity (LOS 'F'); or high approach delays (=> 50sec)

95% Queue = UNSIGNALIZED QUEUE IS PER VEHICLE

TABLE 6 CONTINUED
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Intersection	Time of Day	Scenario	Performance Measure	Eastbound			Westbound			Northbound			Southbound			LOS	Notes
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Gately Avenue (N/S) and Kingsway Avenue (E/W)	Weekday Afternoon Peak Hour	2020 Base	Volumes		1022	16	12	866		6		11				A	NB movements are approaching capacity.
			Delay		0.0	0.0	11.0	0.0		34.3							
			95% Queue (veh)		0.0	0.0	0.1	0.0		0.4							
		2022 Base	Volumes		1063	14	10	901		4		6				A	NB movements are approaching capacity.
			Delay		0.0	0.0	11.2	0.0		36.4							
			95% Queue (veh)		0.0	0.0	0.1	0.0		0.3							
		2022 Base + Phase 1 (Existing Lane Configuration)	Volumes		1063	78	48	901		47		39				A	NB movements are over capacity.
			Delay		0.0	0.0	12.1	0.0		202.2							
			95% Queue (veh)		0.0	0.0	0.3	0.0		6.3							
		2022 Base + Phase 1 (Right-in/Right-out Access)	Volumes		1063	126		953				86				A	NBRT is approaching capacity.
			Delay		0.0	0.0		0.0				41.2					
			95% Queue (veh)		0.0	0.0		0.0				2.4					
		2022 Base + Phase 1 (WBLT Lane & NBLT Receiving Lane)	Volumes		1063	78	48	901		47		39				A	NB movements are approaching capacity.
			Delay		0.0	0.0	12.1	0.0		34.3							
			95% Queue (veh)		0.0	0.0	0.3	0.0		2.1							
		2025 Base	Volumes		1124	0	0	953		0		0				A	OK
			Delay		0.0	0.0	0.0	0.0		0.0							
			95% Queue (veh)		0.0	0.0	0.0	0.0		0.0							
		2025 Base + Phase 1 & Phase 2 (Right-in/Right-out Access)	Volumes		1124	223		1036				153				A	NBRT is over capacity.
			Delay		0.0	0.0		0.0				116.0					
			95% Queue (veh)		0.0	0.0		0.0				7.6					
		2025 Base + Phase 1 & phase 2 (WBLT Lane & NBLT Receiving Lane)	Volumes		1124	140	83	953		86		67				A	NB movements are over capacity.
			Delay		0.0	0.0	13.8	0.0		96.8							
			95% Queue (veh)		0.0	0.0	0.7	0.0		6.9							
		2025 Base + Phase 1 & Phase 2 (Right-in/Right-out with Chine Avenue Connection)	Volumes		1141	102		1036				50				A	NBRT is approaching capacity.
			Delay		0.0	0.0		0.0				36.8					
			95% Queue (veh)		0.0	0.0		0.0				1.3					
		2030 Base	Volumes		1226	0	0	1039		0		0				A	OK
			Delay		0.0	0.0	0.0	0.0		0.0							
			95% Queue (veh)		0.0	0.0	0.0	0.0		0.0							
		2030 Base + Phase 1 & Phase 2 (Right-in/Right-out Access)	Volumes		1226	223		1122				153				B	NBRT is over capacity.
			Delay		0.0	0.0		0.0				184.2					
			95% Queue (veh)		0.0	0.0		0.0				9.4					
		2030 Base + Phase 1 & Phase 2 (WBLT Lane & NBLT Receiving Lane)	Volumes		1226	140	83	1039		86		67				A	NB movements are over capacity.
			Delay		0.0	0.0	14.9	0.0		153.4							
			95% Queue (veh)		0.0	0.0	0.7	0.0		8.7							
		2030 Base + Phase 1 & Phase 2 (Right-in/Right-out with Chine Avenue Connection)	Volumes		1243	102		1122				50				A	NBRT is approaching capacity.
			Delay		0.0	0.0		0.0				46.2					
			95% Queue (veh)		0.0	0.0		0.0				1.7					

Delay = Average Delay (seconds/vehicle)

Intersection approaching capacity (LOS 'D' or 'E'); ; or medium approach delays (25sec to <50sec)

Intersection equals or exceeds capacity (LOS 'F'); or high approach delays (=> 50sec)

95% Queue = UNSIGNALIZED QUEUE IS PER VEHICLE

Based on the capacity analyses summarized by **TABLE 5** and **TABLE 6**, the following observations can be made:

Westwood Street (N/S) at Kingsway Avenue (E/W)

- The signalized intersection currently operates at an overall LOS B (Very Good) and LOS C (good) during the existing AM and PM peak hours with existing traffic signal timing. The southbound left turn movement is approaching capacity during the AM peak hour.
- By the year 2022 under base traffic conditions and with optimized signal timing, the overall intersection level of service is LOS C (Good) during the AM and PM peak hours. The southbound left-turn movement is approaching capacity in the PM peak hour.
- Addition of Phase 1 site traffic to 2022 base traffic conditions results in no change to the overall intersection level of service. The overall intersection level of service remains at C (Good) during the AM and PM peak hours. The northbound through and the southbound left turn movements are approaching capacity.
- By the year 2025 under base traffic conditions and with optimized signal timing, the overall intersection level of service is LOS C (Good) during the AM and PM peak hours. The westbound right turn, the northbound through, and the southbound left turn movements are approaching capacity during the PM peak hour.
- Addition of Phase 1 and Phase 2 site traffic to base 2025 base traffic conditions results in change to the overall intersection level of service. The overall intersection level of service remains at C (good) during the AM peak hour however, the overall intersection level of service is LOS D (Fair) during the PM peak hour. The westbound right-turn, the northbound through and right turn, and the southbound left turn movements are approaching capacity.
- By the year 2030 under base traffic conditions and with optimized signal timing, the overall intersection level of service is LOS C (Good) during the AM peak hour and LOS D (Fair) during the PM peak hour. The westbound right-turn, the northbound through, and the southbound left-turn movements are approaching capacity during the PM peak hour.
- For the year 2030 the overall intersection level of service is LOS C (Good) during the AM peak hour. However, the overall intersection level of service is projected to decrease to LOS E (Poor) during the PM peak hour. The westbound right turn movement is approaching capacity and the northbound through and right turn, and the southbound left-turn movements are over capacity.

Dixon Street (N/S) at Kingsway Avenue (E/W)

- The signalized intersection currently operates at an overall LOS A (Excellent) with the existing traffic signal timing, for the existing AM and PM peak hours.
- By the years 2022, 2025 and 2030 under base traffic conditions and with optimized signal timing, the overall intersection level of service remains at LOS A (Excellent) during the AM and PM peak hours.
- Addition of Phase 1 site traffic to 2022 base traffic conditions does not result in a change to the overall intersection level of service. It remains at LOS A (Excellent) during the AM and PM peak hours.
- Addition of Phase 1 and Phase 2 site traffic to 2025 base traffic conditions does not result in change to the overall intersection level of service. It remains at LOS A (Excellent) without and with a Chine Avenue connection, during the AM and PM peak hours.
- By the year 2030, the overall intersection level of service is LOS B (Very Good) without and with a Chine Avenue connection, during the AM and PM peak hours.

Maple Street (N/S) at Kingsway Avenue (E/W)

- The signalized intersection currently operates at an overall LOS B (Very Good) during the AM peak hour and LOS D (Fair) during the PM peak hour with the existing traffic signal timing. The eastbound movements are over capacity.
- By the year 2022 and 2025 under base traffic conditions and with optimized signal timing, the overall intersection level of service is LOS B (Very Good) during the AM peak hour and LOS C (Good) in the PM peak hour. However, the eastbound and the northbound left turn movements are approaching capacity in the PM peak hour.
- By the year 2030 under base traffic conditions and with optimized signal timing, the overall intersection level of service is LOS B (Very Good) during the AM peak hour and LOS D (Fair) in the PM peak hour. The eastbound and northbound left turn movements are over capacity.
- Addition of Phase 1 site traffic to 2022 base traffic conditions does not result in a change to the overall intersection level of service. It remains at LOS B (Very Good) during the AM peak hour and LOS C (Good) during the PM peak hour. The eastbound and northbound left turn movements are approaching capacity.
- Addition of Phase 1 and Phase 2 site traffic to 2025 base traffic conditions results in an overall intersection level of service of LOS B (Very Good) during the AM peak hour and LOS D (Fair) during the PM peak hour. The eastbound and northbound left turn movements are over capacity.
- By the year 2030 the overall intersection level of service is LOS C (Good) during the AM peak hour and at LOS E (Poor) during the PM peak hour. The eastbound and northbound left-turn movements are over capacity.

Gately Avenue (N/S) at Kingsway Avenue (E/W)

- This location currently operates as an unsignalized intersection with STOP control on Gately Avenue. For the existing conditions, the intersection operates at LOS A (Excellent) during the AM and PM peak hours. The northbound movements are approaching capacity during the PM peak hour.
- By the year 2022 under base traffic conditions, the overall intersection level of service remains at LOS A (Excellent) during the AM and PM peak hours. The northbound movements are approaching capacity during the PM peak hour.
- By the year 2025 and year 2030 under base traffic conditions, the overall intersection level of service remains at LOS A (Excellent) during the AM and PM peak hours.
- Addition of Phase 1 site traffic to 2022 base traffic conditions does not result in a change to the overall intersection level of service during the AM and PM peak hours. It remains at LOS A (Excellent). The northbound movements are over capacity during the AM and PM peak hours.
- To improve safety and the level of service for Gately Avenue at Kingsway Avenue in 2022, CTS considered two options:
    - Right-In/Right-Out only at the intersection of Gately Avenue and Kingsway Avenue.
    - A westbound left turn lane mirrored by a receiving lane for the northbound left turn movement, on Kingsway Avenue at Gately Avenue.

  The overall intersection level of service is LOS A (Excellent) during the AM and PM peak hours however the northbound movements are approaching capacity for both options during the PM peak hour.
- By the year 2025 base traffic condition with Phase 1 and Phase 2 site traffic, the overall intersection level of service is LOS A (Excellent) during the AM and PM peak hours.
- To improve safety and the level of service for Gately Avenue at Kingsway Avenue in 2025, CTS considered three options:
    - Right-In/Right-Out only at the intersection of Gately Avenue and Kingsway Avenue.
    - A westbound left turn lane mirrored by a receiving lane for the northbound left turn movement, on Kingsway Avenue at Gately Avenue.
    - Right-In/Right-Out at the intersection of Gately Avenue and Kingsway Avenue with a Chine Avenue connection.

  The northbound right turn is approaching capacity in the AM peak hour and over capacity in the PM peak hour for the right-in/right-out only option.

  The northbound left turn/through/right turn movements are approaching capacity in the AM peak hour and over capacity in the PM peak hour for the westbound left turn lane/receiving lane option.

The northbound right turn is approaching capacity in the PM peak hour for the right-in/right-out with a Chine Avenue connection.

- For the year 2030 base traffic condition with Phase 1 and Phase 2 site traffic, the overall intersection level of service is LOS A (Excellent) during both the AM and PM peak hours.
- To improve safety and the level of service for Gately Avenue at Kingsway Avenue in 2030, CTS considered three options:
    - Right-In/Right-Out only at the intersection of Gately Avenue and Kingsway Avenue.
    - A westbound left turn lane mirrored by a receiving lane for the northbound left turn movement, on Kingsway Avenue at Gately Avenue.
    - Right-In/Right-Out at the intersection of Gately Avenue and Kingsway Avenue with a Chine Avenue connection.

  The northbound right turn is approaching capacity in the AM peak hour and over capacity in the PM peak hour for the right-in/right-out only option.

  The northbound left turn/through/right turn movements are approaching capacity in the AM peak hour and over capacity in the PM peak hour for the westbound left turn lane/receiving lane option.

  The northbound right turn is approaching capacity in the PM peak hour for the right-in/right-out with a Chine Avenue connection.

6.0 ACCESS AND SIGHT LINES

6.1 Sight Lines

CTS reviewed the sight lines to/from the intersection of Gately Avenue given the horizontal curve on Kingsway Avenue to the east is limiting for vehicles turning left on to Kingsway Avenue from Gately Avenue or turning left on to Gately Avenue from Kingsway Avenue.

With reference to the Transportation Association of Canada *Geometric Design Guide for Canadian Roads 2017, Table 2.5.2: Stopping Sight Distance*, the stopping sight distance for a road posted at 50 km/h is 65 meters. CTS measured the stopping sight distance from the STOP bar on Gately Avenue east to a point on Kingsway Avenue westbound at 70 meters. CTS also measured the stopping sight distance from the intersection with Gately Avenue east to a point on Kingsway Avenue westbound at 85 meters. The left turn from Gately Avenue to Kingsway Avenue is the critical manoeuver.

CTS also tested a scenario assuming a vehicle approaching the intersection of Gately Avenue and Kingsway Avenue from the east is approaching at 60 km/h, a typical operating speed. In this instance the stopping sight distance would be 85 meters.

6.2 Access

To more safely accommodate left turns at the intersection of Gately Avenue and Kingsway Avenue, CTS considered the creation of a left turn lane and a receiving lane on Kingsway Avenue at Gately Avenue. Creation of the left turn lane and receiving lane on Kingsway Avenue at Gately Avenue was considered for the 2022 base traffic condition with Phase 1 site traffic as well as the 2025 and 2030 base traffic condition with Phase 1 and Phase 2 site traffic, analysis. The proposed laning is illustrated by **FIGURE 24**.

CTS also considered right-in/right-out on Kingsway Avenue at Gately Avenue. Creation of the right-in/right-out only on Kingsway Avenue at Gately Avenue was considered for the 2022 base traffic condition with Phase 1 site traffic as well as the 2025 and 2030 base traffic condition with Phase 1 and Phase 2 site traffic, analysis. The proposed laning is illustrated by **FIGURE 25**.

CTS also considered a Chine Avenue connection with right-in/right-out only on Kingsway Avenue at Gately Avenue. Creation of a Chine Avenue connection with right-in/right-out only on Kingsway Avenue at Gately Avenue was considered for the 2025 and 2030 base traffic condition with Phase 1 and Phase 2 site traffic, analysis. The proposed connection is illustrated by **FIGURE 26**.

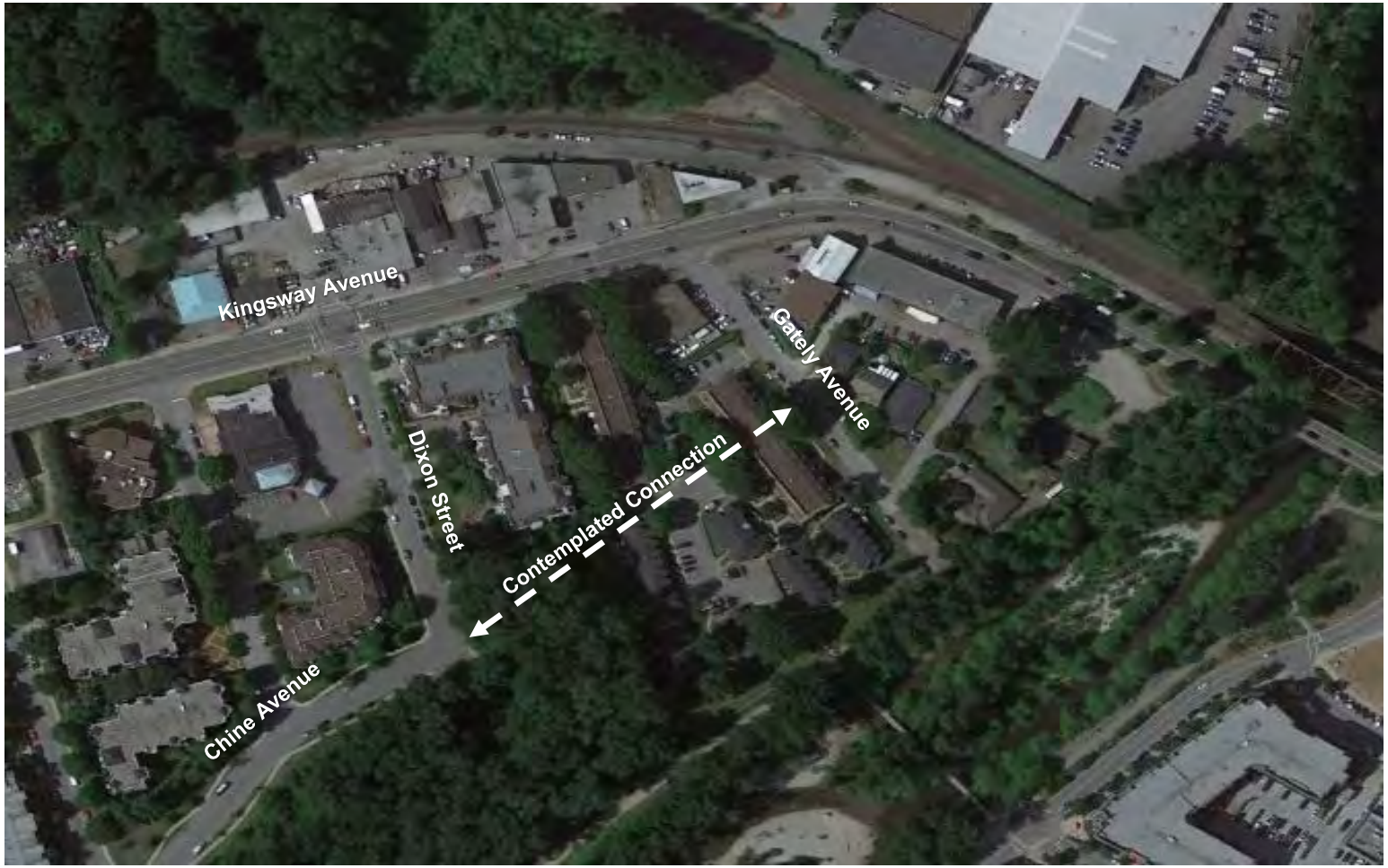
CTS did not consider signalization of the intersection of Kingsway Avenue at Gately Avenue given the following:

- The intersection spacing between Dixon Street and Gately Avenue does not meet the minimum with reference to the Transportation Association of Canada *Geometric Design Guide for Canadian Roads 2017, Section 9.4.2.1: Arterials*; and
- The turning sight distance does not meet the minimum with reference to the Transportation Association of Canada *Geometric Design Guide for Canadian Roads 2017, Table 9.9.4: Design Intersection Sight Distance*.

FIGURE 24
GATELY AVENUE AT KINGSWAY AVENUE – WESTBOUND LEFT TURN LANE/RECEIVING LANE

FIGURE 25
GATELY AVENUE AT KINGSWAY AVENUE – RIGHT-IN/RIGHT-OUT

FIGURE 26
CHINE AVENUE CONNECTION



7.0 PARKING AND LOADING

7.1 Vehicle Parking

With reference to the City of Port Coquitlam *Zoning Bylaw 4078 – Parking and Development Management,* 300 off-street vehicle parking spaces are required for the non-market housing and five (5) off-street parking spaces for a daycare. **TABLE 7** summarizes the vehicle parking requirement and provision.

TABLE 7
VEHICLE PARKING SUMMARY

USE	RATE (BYLAW)	SCOPE	REQUIRED	PROVIDED	DIFFERENCE
Phase 1 (Non-market Housing)	1 per dwelling unit	300	300	289	-11
Daycare	1 for each 10 children	50	5	5	

From **TABLE 7**, the development is proposing 294 off-street vehicle parking spaces. The proposed off-street vehicle parking requirement is therefore deficient and an eleven (11) vehicle parking space variance or a 0.96 parking space per unit rate, is being sought.

In support of a an eleven (11) vehicle parking space variance or a 0.96 parking space per unit rate, CTS referenced the Institute of Transportation Engineers (ITE) *Parking Generation Manual 5th Edition - Affordable Housing (Code 223)* wherein it notes that the parking space rate per unit can be as low as 0.32 parking spaces per unit for affordable non-market housing. It is also noted that the 85th percentile parking space rate can range between 0.86 and 1.33 parking spaces per unit and the 95% confidence interval parking space rate can range between 0.89 and 1.09 parking spaces per unit.

Given vehicle ownership amongst residents of affordable non-market housing is generally low, good access to transport modal infrastructure and with reference to the preceding statistics, it would be reasonable to accept an (11) vehicle parking space variance or a 0.96 parking space per unit parking space rate for this development site.

7.2 Bicycle Parking

With reference to the City of Port Coquitlam *Zoning Bylaw 4078 – Parking and Development Management,* there is no bicycle parking space requirement for the site.

7.3 Loading

With reference to the City of Port Coquitlam *Zoning Bylaw 4078 – Parking and Development Management,* there is no loading space requirement for the site.

8.0 SUMMARY & CONCLUSIONS

CTS conducted a Traffic Impact Study for a proposed housing development at the intersection of Gately Avenue at Kingsway Avenue in the City of Port Coquitlam. Based on the analysis documented, the following can be stated:

1) The proposed housing development is well serviced by the local street network.
2) Transport model infrastructure adjacent to the site provides localized access to walking, cycling and transit. There are opportunities for adding to the pedestrian and cycling network given the proximity to existing transport modal infrastructure.
3) The proposed housing development - Phase 1 is forecast to generate a total of 153 new vehicle trips (51 inbound, 102 outbound) during the weekday AM peak hour, and 178 new vehicle trips (102 inbound, 76 outbound) during the PM peak hour. The proposed housing development - Phase 2 is forecast to generate a total of 162 new vehicle trips (42 inbound, 120 outbound) during the weekday AM peak hour, and 198 new vehicle trips (121 inbound, 77 outbound) during the weekday PM peak hour.
4) CTS did not discount new vehicle trips generated by Phase 1 and Phase 2 by subtracting vehicle trips currently being generated by the existing land uses on the Phase 1 and Phase 2 housing development sites. Traffic volumes therefore represent the worst case scenario in that all traffic would be “new” traffic on the adjacent road network and the capacity analysis is considered conservative.
5) The signalized intersection at Westwood Street at Kingsway Avenue will operate well i.e. LOS C (Good) to LOS D (Fair) overall for all base condition scenarios though individual movements are nearing capacity. With the addition of Phase 1 and Phase 2 site traffic, the level of service remains okay i.e. LOS C (Good) to LOS E (Poor), overall for the year 2025 and 2030 scenarios. Individual movements however, are nearing or are over capacity.
6) The signalized intersection at Dixon Street at Kingsway Avenue will operate very well i.e. LOS A (Excellent) to LOS B (Very Good), overall for all scenarios without and with addition of Phase 1 and Phase 2 site traffic.
7) The signalized intersection at Maple Street at Kingsway Avenue will operate well i.e. LOS B (Very Good) to LOS D (Fair), overall for all base condition scenarios though individual movements are nearing capacity or over capacity. With the addition of Phase 1 and Phase 2 site traffic, the level of service remains okay i.e. LOS B (Very Good) to LOS E (Poor), overall for the year 2025 and 2030 scenarios. Individual movements however, are nearing or are over capacity.
8) The unsignalized intersection at Gately Avenue at Kingsway Avenue will operate well i.e. LOS A (Excellent) and LOS B (Very Good) overall, for all scenarios without and with the addition of Phase 1 and Phase 2 site traffic. However, the northbound movements experience significant delay, particularly in the PM peak hour.
9) To improve safety and the level of service for Gately Avenue at Kingsway Avenue, CTS considered two options for the 2022 base traffic condition and Phase 1 site

traffic:

- Right-In/Right-Out only at the intersection of Gately Avenue and Kingsway Avenue; and
- A westbound left turn lane mirrored by a receiving lane for the northbound left turn movement, on Kingsway Avenue at Gately Avenue.

Based on the capacity analysis, the overall level of service is acceptable for both options however, Gately Avenue northbound is approaching capacity in the PM peak hour with the right-in/right-out option and the westbound left turn lane/receiving lane option.

10) To improve safety and the level of service for Gately Avenue at Kingsway Avenue, CTS considered three options for the 2025 and 2030 base traffic condition and Phase 1 and Phase 2 site traffic:

- Right-In/Right-Out only at the intersection of Gately Avenue and Kingsway Avenue.
- A westbound left turn lane mirrored by a receiving lane for the northbound left turn movement, on Kingsway Avenue at Gately Avenue.
- Right-In/Right-Out at the intersection of Gately Avenue and Kingsway Avenue and a Chine Avenue Connection.

Based on the capacity analysis, the overall level of service is acceptable for all options however, Gately Avenue is approaching capacity in the AM peak hour and exceeding capacity in the PM peak hour with the right-in/right-out option and the westbound left turn lane/receiving lane option.

The level of service on Gately remains acceptable with the Right-In/Right-Out at the intersection of Gately Avenue and Kingsway Avenue and a Chine Avenue Connection.

11) As per the City of Port Coquitlam *Zoning Bylaw 40787 - Parking and Development Management*, an eleven (11) vehicle parking space variance is being sought. The bicycle parking and loading space requirements are met.

9.0 RECOMMENDATIONS

Based on the data, analysis and conclusions documented by this study, the following is recommended that:

1. The City of Port Coquitlam accept the data, analysis and conclusions documented by this study.
2. Sidewalks be provided along all frontages and that a multi-user pathway connection along Kingsway Avenue to the multi-user pathway network along the Coquitlam River, be provided.
3. For Phase 1 build-out:
    - That an interim westbound left turn lane mirrored by a receiving lane for the northbound left turn movement on Kingsway Avenue at Gately Avenue, be constructed; and
    - Signal timings be optimized.
4. For Phase 1 and Phase 2 build-out:
    - The Chine Avenue connection be constructed;
    - The intersection of Kingsway Avenue at Gately Avenue be right-in/right-out only; and
    - Signal timings be optimized.

    Note – The analysis by CTS was based on a general estimate of the potential density for Phase 2. Given the timing of the development of Phase 2 remains unclear at this point, CTS expects that the Chine Avenue connection or potentially signalizing Kingsway at Gately Avenue will be reviewed by the City of Port Coquitlam during the development application process for Phase 2.
5. For 5 years post Phase 1 and Phase 2 build-out:
    - Signal timings be optimized.
6. Given vehicle ownership amongst residents of affordable non-market housing is generally low, good access to transport modal infrastructure and with reference to Institute of Transportation Engineers (ITE) *Parking Generation Manual 5th Edition - Affordable Housing (Code 223)* wherein lower parking space rates are noted for affordable non-market housing, it would be reasonable to accept an (11) vehicle parking space variance or a 0.96 parking space per unit parking space rate for this development site.

In closing, CTS would like to thank Peak Tower Developments for the opportunity to assist you and your team with this unique assignment. Please call the undersigned should there be any questions and/or comments pertaining to this report or its contents.

Yours truly,

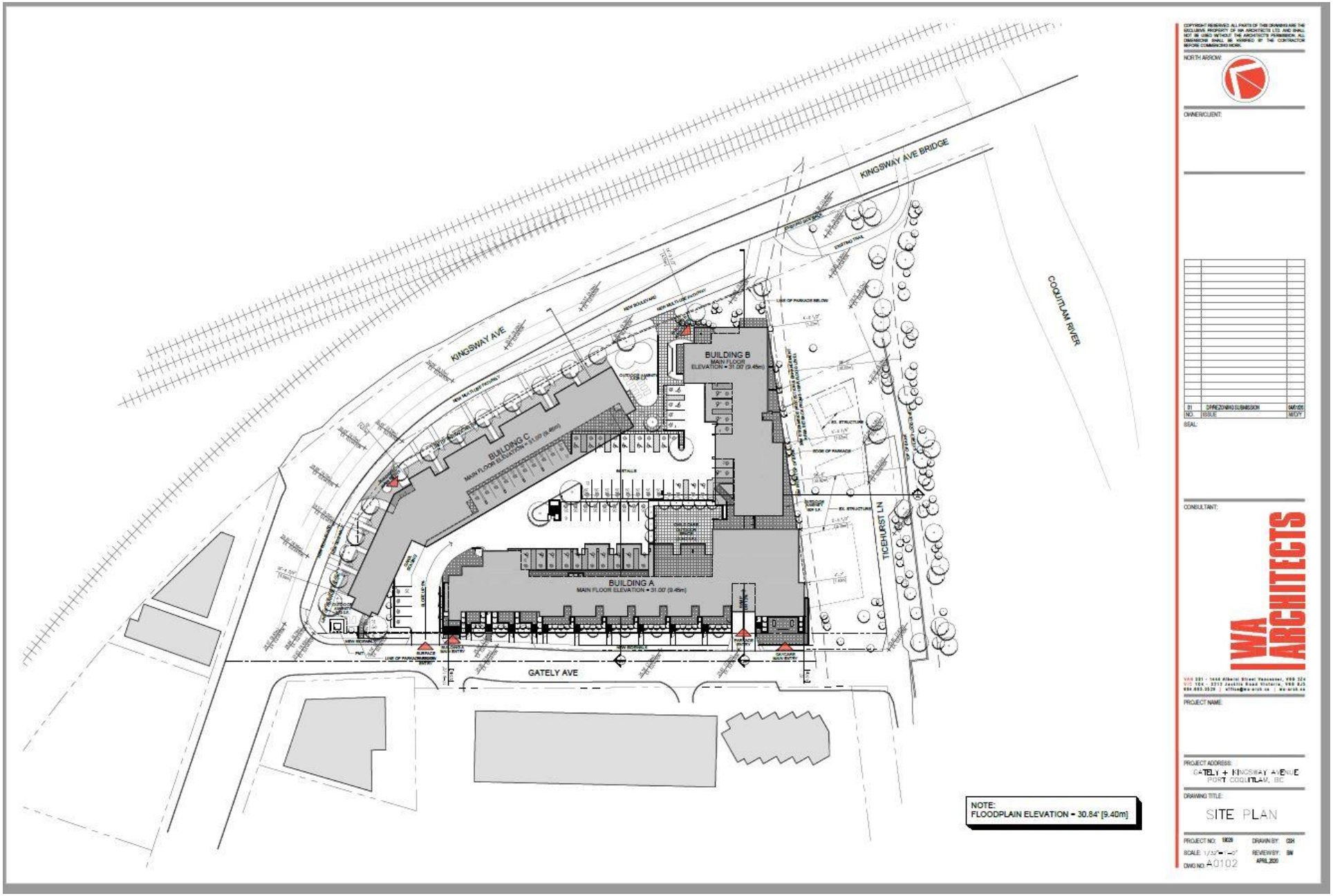
CREATIVE TRANSPORTATION SOLUTIONS LTD.

Brent A. Dozzi, P.Eng.
Senior Traffic Engineer

Phone: (604) 936-6190 x237
E-mail: bdozzi@cts-bc.com

APPENDICES

Appendix A
Site Plan


KINGSWAY AVE BRIDGE
KINGSWAY AVE
COQUITLAM RIVER
BUILDING B
MAIN FLOOR
ELEVATION = 31.00' (9.45m)
BUILDING C
MAIN FLOOR ELEVATION = 31.00' (9.45m)
BUILDING A
MAIN FLOOR ELEVATION = 31.00' (9.45m)
TICEHURST LN
GATELY AVE
NOTE:
FLOODPLAIN ELEVATION = 30.84' [9.40m]
NORTH ARROW:
OWNER/CLIENT:
01 DP/REZONING SUBMISSION 04/01/20
NO. ISSUE M/D/Y
SEAL:
CONSULTANT:
WA ARCHITECTS
PROJECT NAME:
PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC
DRAWING TITLE:
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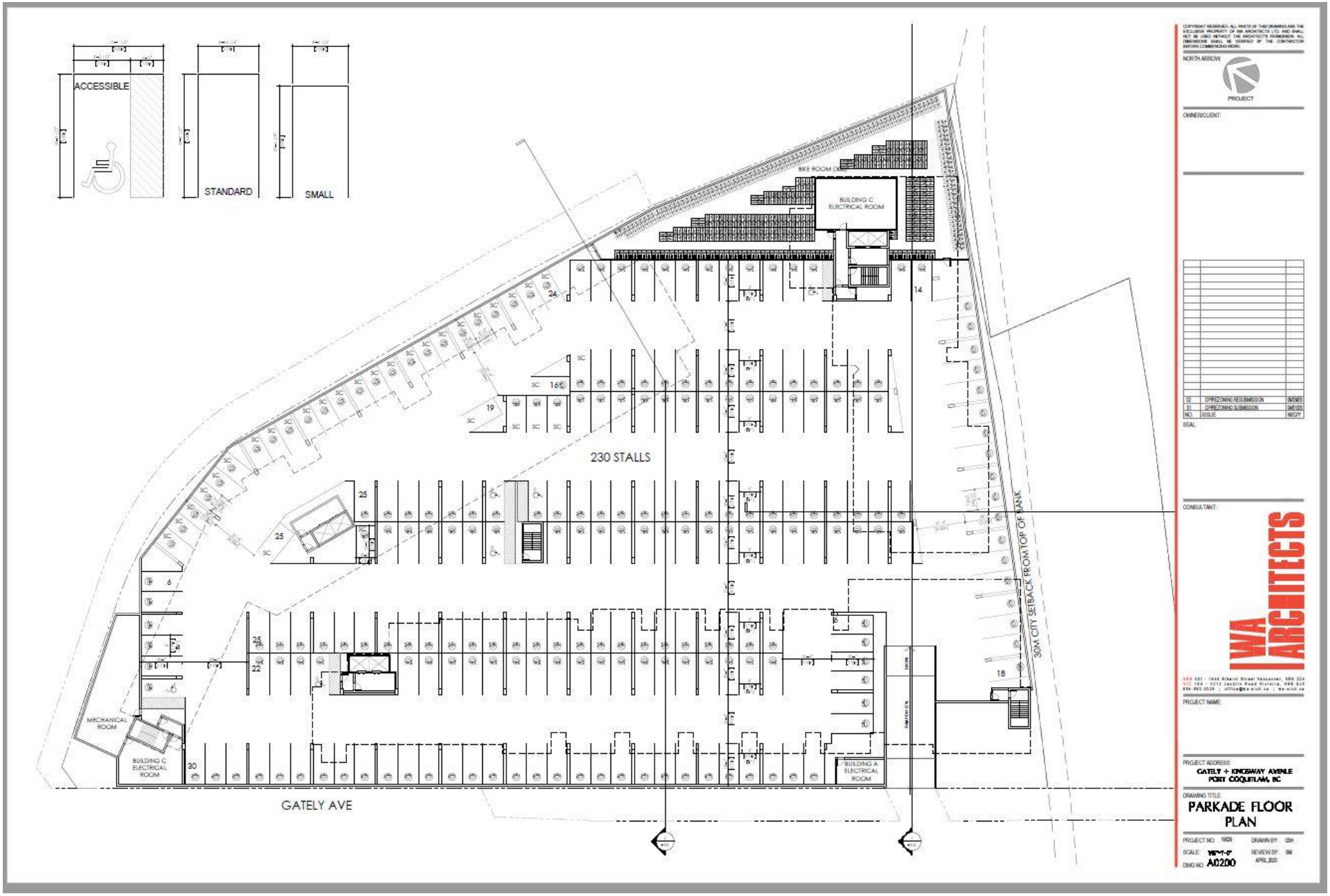
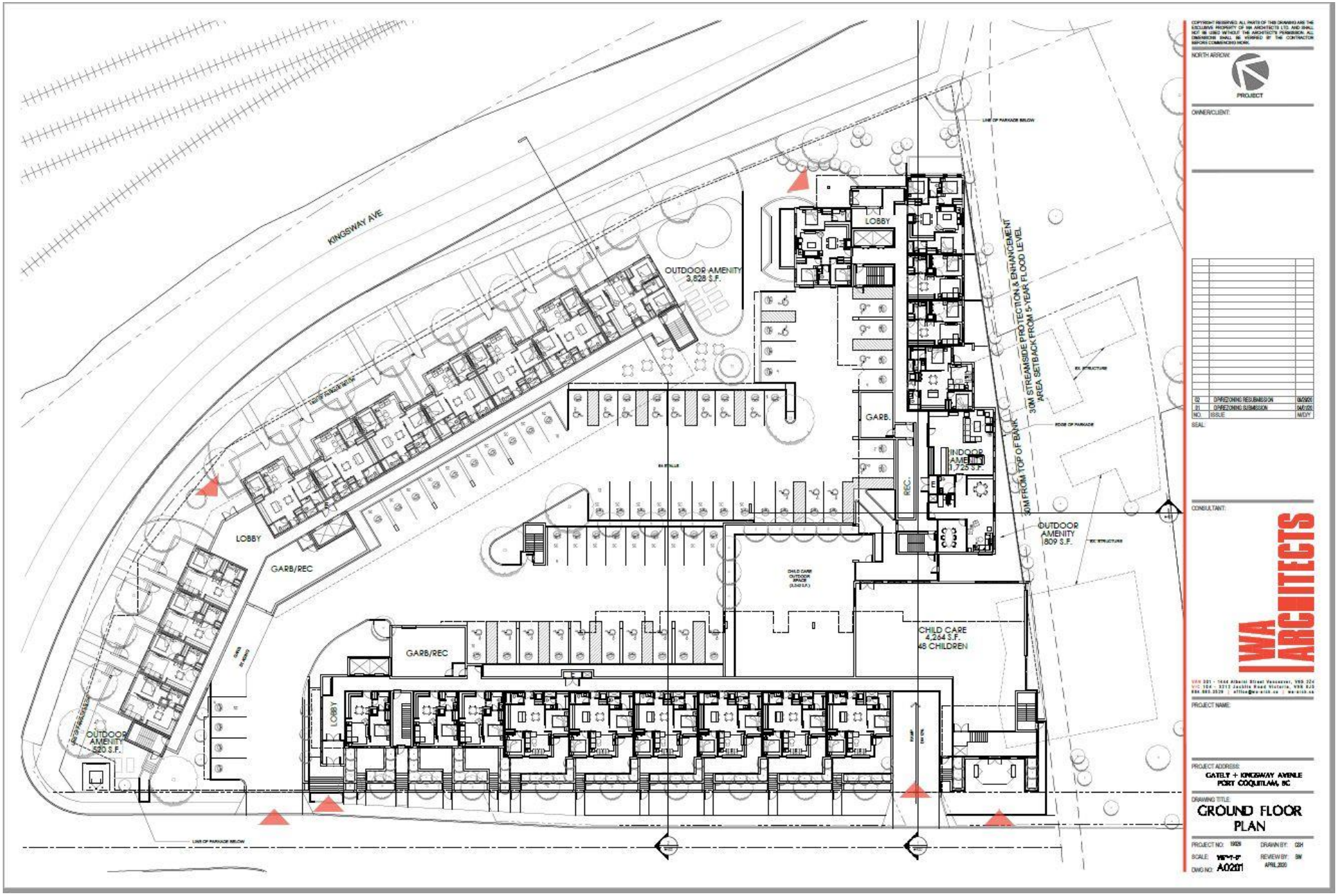
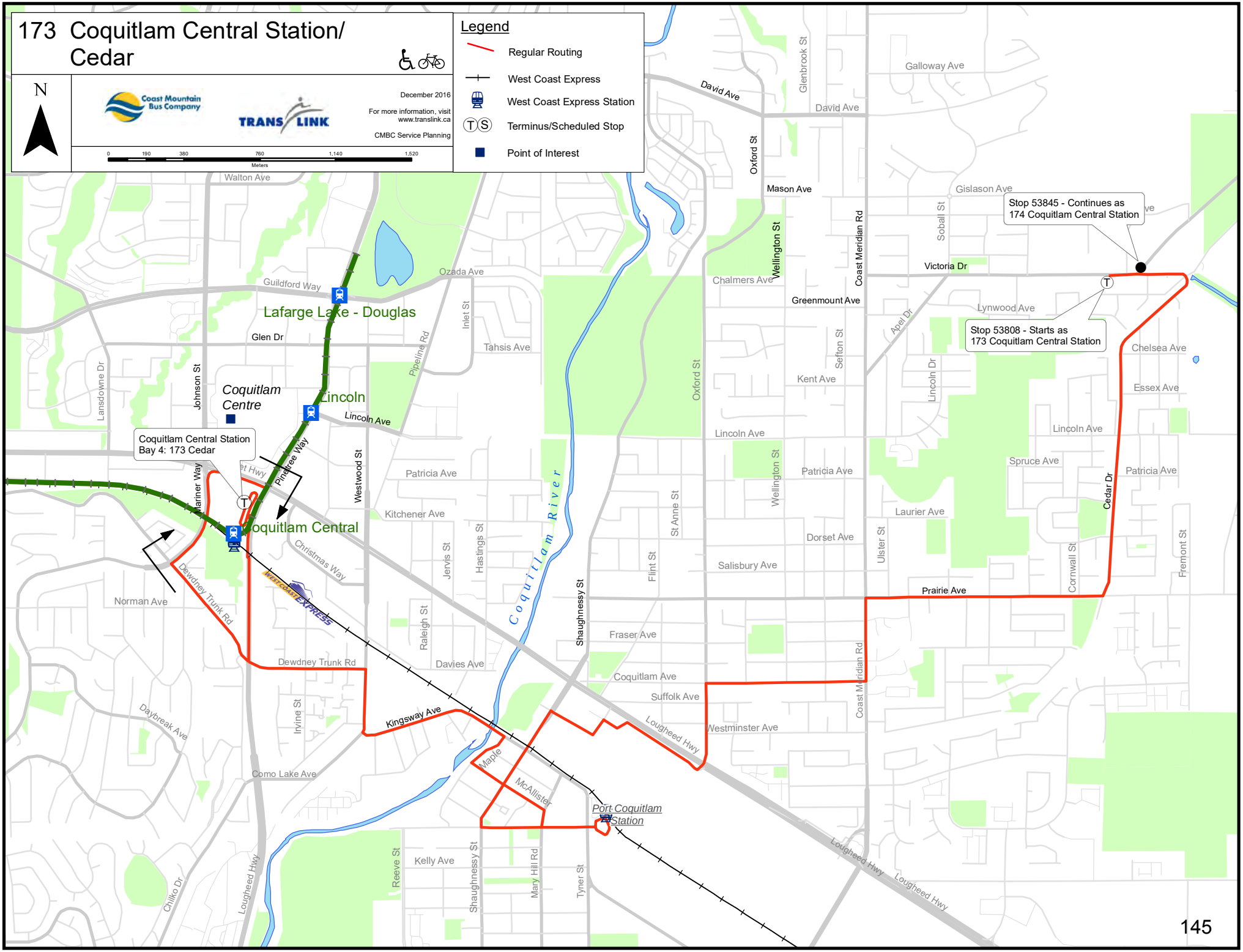
PROJECT NO: 19029
DRAWN BY: CSH
SCALE: 1/32"=1'-0"
REVIEW BY: BW
APRIL 2020
DWG NO: A0102


ACCESSIBLE
STANDARD
SMALL
BIKE ROOM
BUILDING C ELECTRICAL ROOM
230 STALLS
30M CITY SETBACK FROM TOP OF BANK
MECHANICAL ROOM
BUILDING C ELECTRICAL ROOM
BUILDING A ELECTRICAL ROOM
GATELY AVE
NORTH ARROW
PROJECT
OWNER/CLIENT:
02 DP/REZONING RESUBMISSION 06/08/
01 DP/REZONING SUBMISSION 04/05/
NO. ISSUE M/D/Y
SEAL:
CONSULTANT:
WA ARCHITECTS
PROJECT NAME:
PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC
DRAWING TITLE:
PARKADE FLOOR PLAN
PROJECT NO: 19029
DRAWN BY: CZH
SCALE: 1/8"=1'-0"
REVIEW BY: BW
DWG NO: A0200
APRIL 2020

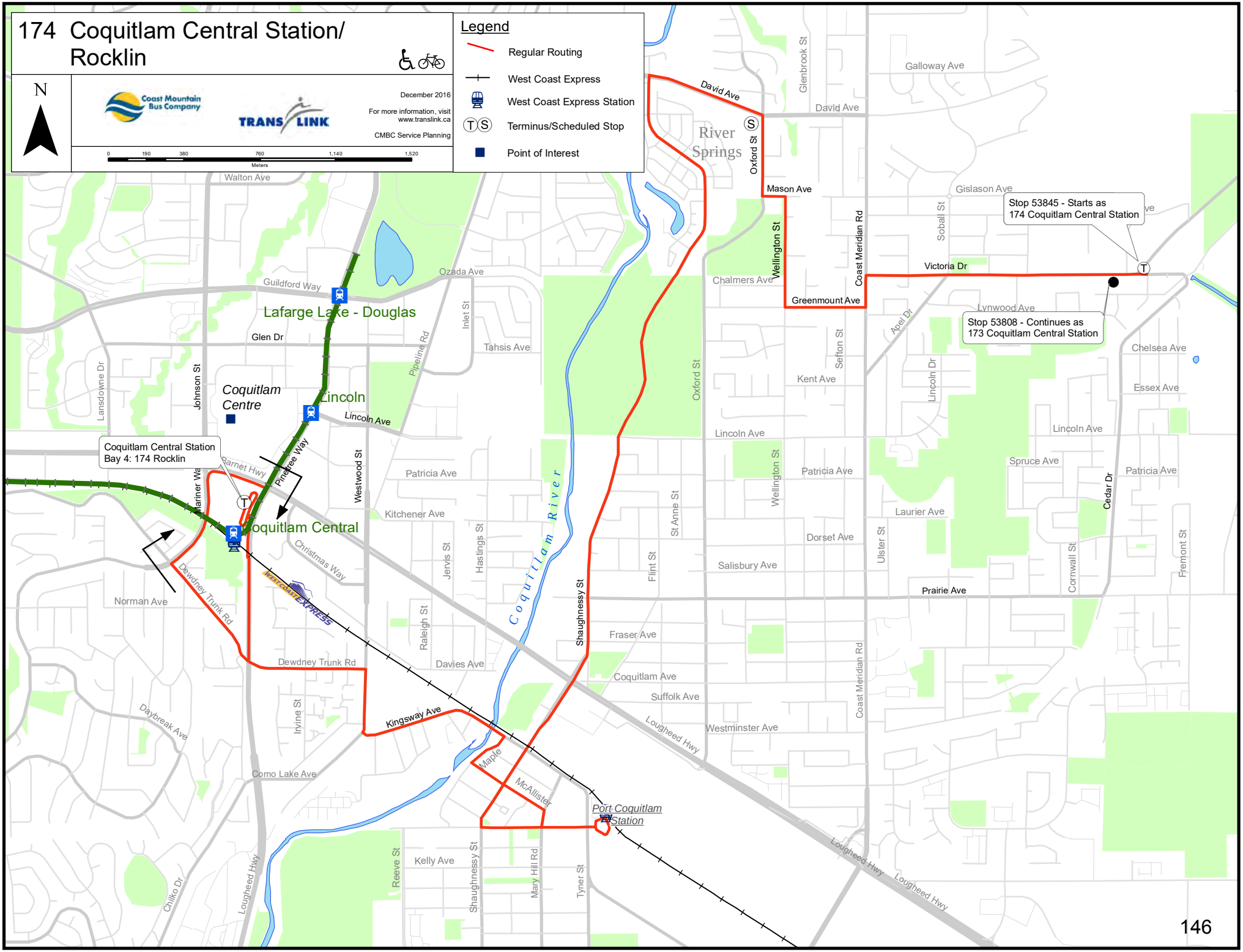

KINGSWAY AVE
OUTDOOR AMENITY
3,828 S.F.
LOBBY
GARB.
REC.
INDOOR AMENITY
1,725 S.F.
30M STREAMSIDE PROTECTION & ENHANCEMENT AREA SETBACK FROM 5-YEAR FLOOD LEVEL
30M FROM TOP OF BANK
OUTDOOR AMENITY
809 S.F.
LOBBY
GARB/REC
OUTDOOR AMENITY
520 S.F.
GARB/REC
LOBBY
CHILD CARE
4,264 S.F.
48 CHILDREN
LINE OF PARKADE BELOW
NORTH ARROW
PROJECT
OWNER/CLIENT:
CONSULTANT:
WA ARCHITECTS
PROJECT NAME:
PROJECT ADDRESS:
GATELY + KINGSWAY AVENUE
PORT COQUITLAM, BC
DRAWING TITLE:
GROUND FLOOR PLAN
PROJECT NO:
DRAWN BY:
SCALE:
REVIEW BY:
DWG NO: A0201
APRIL 2020
SEAL:
NO. ISSUE
01 DP/REZONING SUBMISSION
02 DP/REZONING RESUBMISSION

Appendix B
Transit Route Diagrams

173 Coquitlam Central Station/ Cedar



174 Coquitlam Central Station/ Rocklin



175 Coquitlam Central Station/ Meridian

January 2020

For route and schedule information, visit www.translink.bc.ca

CMBC Service Planning

N

0 250 500 1,000 1,500 2,000
Meters

LEGEND

- Regular Routing
- Limited Service Routing
- Millennium Line
- Expo Line
- Canada Line
- West Coast Express
- SeaBus/Ferry
- Route Terminus/Scheduled Stop
- SkyTrain/Canada Line/West Coast Express Station

Coquitlam Central Station
Bay 12: 175 Meridian

Port Coquitlam Station

Canada Line

Kebet Way

175 Coquitlam Central Station

Appendix C
Turning Movement Count Summary Sheets

Vehicle Classification Summary

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain

Time Period	Entering Intersection	Vehicle Classification					Total
		Passenger Cars	Heavy Vehicles (3 or more axles)				
Morning (07:00 - 09:00)	Volume	3,547	29				**3,576**
	%	99.2%	0.8%				**100.0%**
Midday (00:00 - 00:00)	Volume						
	%						
Afternoon (15:00 - 18:00)	Volume	6,940	11				**6,951**
	%	99.8%	0.2%				**100.0%**
Total (5 Hours)	**Volume**	**10,487**	**40**				**10,527**
	%	**99.6%**	**0.4%**				**100.0%**

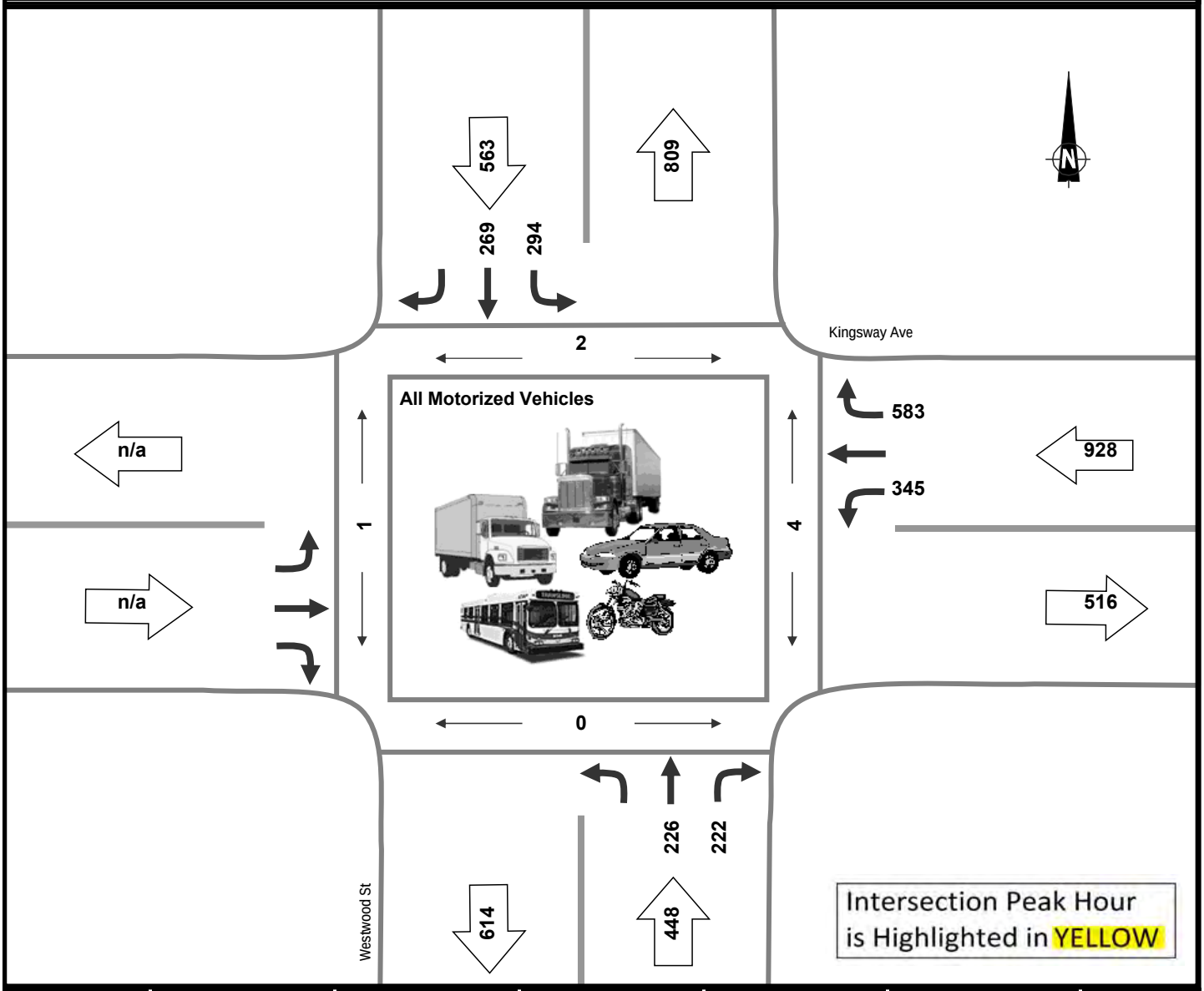
Westwood St & Kingsway Ave

Tuesday, January 21, 2020

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: All Motorized Vehicles

Peak Hour Traffic by Movement 8:00 AM to 9:00 AM

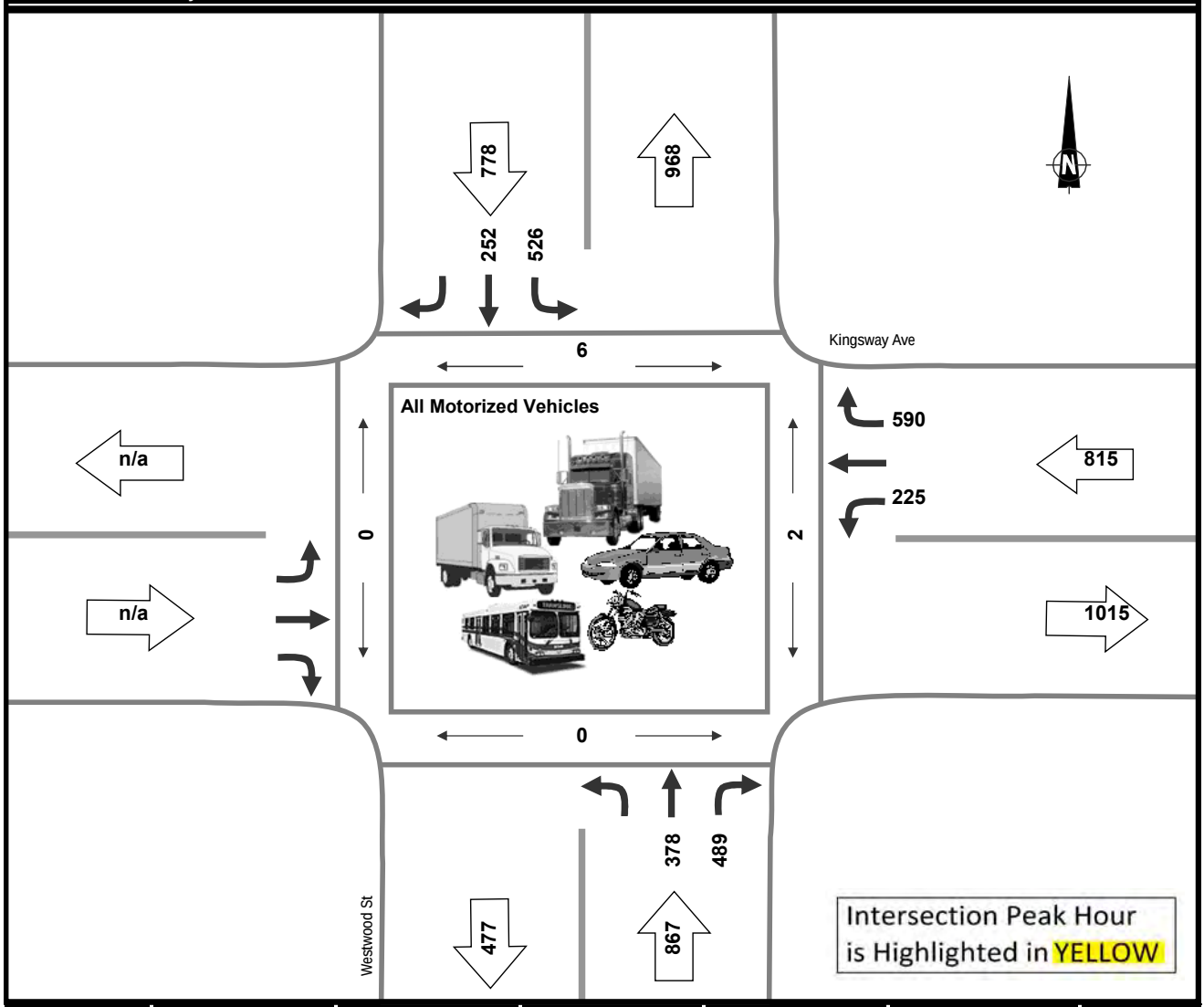


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**294**	**269**			**226**	**222**				**345**		**583**	**2**	**0**	**1**	**4**	**1,939**
PHF	0.80	0.93			0.82	0.82				0.85		0.92	0.25	0.00	0.25	0.33	0.94
Peak 15 X 4	368	288			276	272				404		632	8	0	4	12	2,068
Average Hour	280	291			166	209				353		490	2	0	1	3	1,789
Survey Total	560	582			332	417				706		979	4	0	1	6	3,576
7:00	43	45			24	36				76		80	0	0	0	0	304
7:15	66	102			17	45				85		90	0	0	0	0	405
7:30	63	70			31	52				103		106	0	0	0	0	425
7:45	94	96			34	62				97		120	2	0	0	2	503
8:00	56	67			50	53				94		149	0	0	0	0	469
8:15	75	67			54	61				101		147	0	0	0	1	505
8:30	71	63			53	40				63		158	2	0	0	3	448
8:45	92	72			69	68				87		129	0	0	1	0	517

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: All Motorized Vehicles

Peak Hour Traffic by Movement 4:30 PM to 5:30 PM



Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**526**	**252**			**378**	**489**				**225**		**590**	**6**	**0**	**0**	**2**	**2,460**
PHF	0.94	0.98			0.90	0.85				0.91		0.80	0.75	0.00	0.00	0.25	0.99
Peak 15 X 4	560	256			420	576				248		736	8	0	0	8	2,488
Average Hour	502	217			362	470				204		562	7	0	0	5	2,317
Survey Total	1,506	650			1,087	1,410				611		1,687	20	0	0	15	6,951
15:00	120	60			77	92				33		124	1	0	0	2	506
15:15	115	44			94	96				56		144	1	0	0	0	549
15:30	106	44			94	128				64		145	0	0	0	0	581
15:45	144	54			89	127				46		158	2	0	0	1	618
16:00	115	54			87	110				57		126	4	0	0	1	549
16:15	141	53			91	132				42		136	1	0	0	0	595
16:30	128	61			87	106				47		184	1	0	0	2	613
16:45	140	64			90	135				61		132	2	0	0	0	622
17:00	127	64			105	104				62		141	1	0	0	0	603
17:15	131	63			96	144				55		133	2	0	0	0	622
17:30	115	47			101	113				53		164	2	0	0	1	593
17:45	124	42			76	123				35		100	3	0	0	8	500

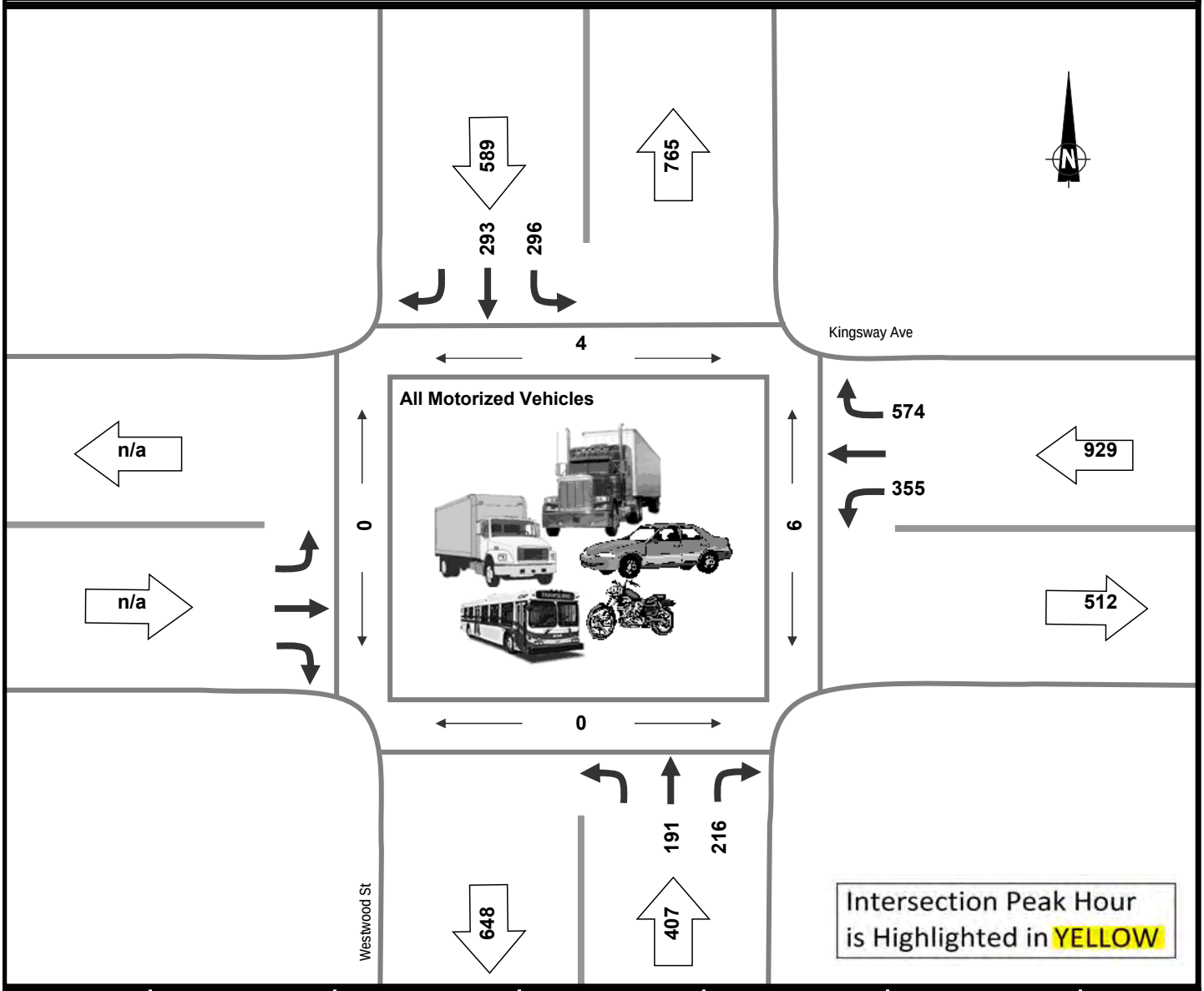
Westwood St & Kingsway Ave

Tuesday, January 21, 2020

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: All Motorized Vehicles
Note: Shifted Peak Hour

Peak Hour Traffic by Movement 7:45 AM to 8:45 AM

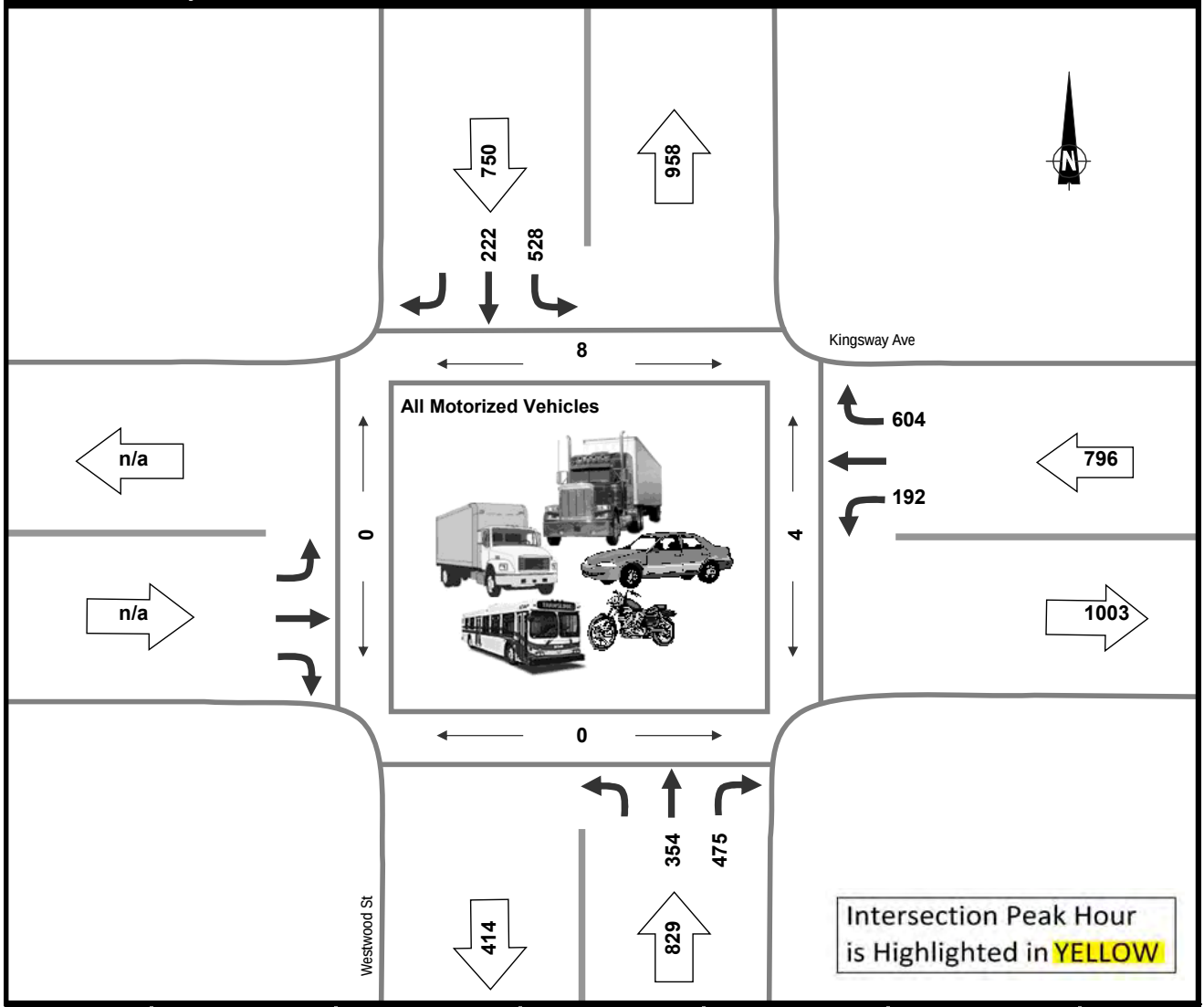


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**296**	**293**			**191**	**216**				**355**		**574**	**4**	**0**	**0**	**6**	**1,925**
PHF	0.79	0.76			0.88	0.87				0.88		0.91	0.50	0.00	0.00	0.50	0.95
Peak 15 X 4	376	384			216	248				404		632	8	0	0	12	2,020
Average Hour	280	291			166	209				353		490	2	0	1	3	1,789
Survey Total	560	582			332	417				706		979	4	0	1	6	3,576
7:00	43	45			24	36				76		80	0	0	0	0	304
7:15	66	102			17	45				85		90	0	0	0	0	405
7:30	63	70			31	52				103		106	0	0	0	0	425
7:45	94	96			34	62				97		120	2	0	0	2	503
8:00	56	67			50	53				94		149	0	0	0	0	469
8:15	75	67			54	61				101		147	0	0	0	1	505
8:30	71	63			53	40				63		158	2	0	0	3	448
8:45	92	72			69	68				87		129	0	0	1	0	517

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: All Motorized Vehicles
Note: Shifted Peak Hour

Peak Hour Traffic by Movement 3:45 PM to 4:45 PM



Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**528**	**222**			**354**	**475**				**192**		**604**	**8**	**0**	**0**	**4**	**2,375**
PHF	0.92	0.91			0.97	0.90				0.84		0.82	0.50	0.00	0.00	0.50	0.96
Peak 15 X 4	576	244			364	528				228		736	16	0	0	8	2,472
Average Hour	502	217			362	470				204		562	7	0	0	5	2,317
Survey Total	1,506	650			1,087	1,410				611		1,687	20	0	0	15	6,951
15:00	120	60			77	92				33		124	1	0	0	2	506
15:15	115	44			94	96				56		144	1	0	0	0	549
15:30	106	44			94	128				64		145	0	0	0	0	581
15:45	144	54			89	127				46		158	2	0	0	1	618
16:00	115	54			87	110				57		126	4	0	0	1	549
16:15	141	53			91	132				42		136	1	0	0	0	595
16:30	128	61			87	106				47		184	1	0	0	2	613
16:45	140	64			90	135				61		132	2	0	0	0	622
17:00	127	64			105	104				62		141	1	0	0	0	603
17:15	131	63			96	144				55		133	2	0	0	0	622
17:30	115	47			101	113				53		164	2	0	0	1	593
17:45	124	42			76	123				35		100	3	0	0	8	500

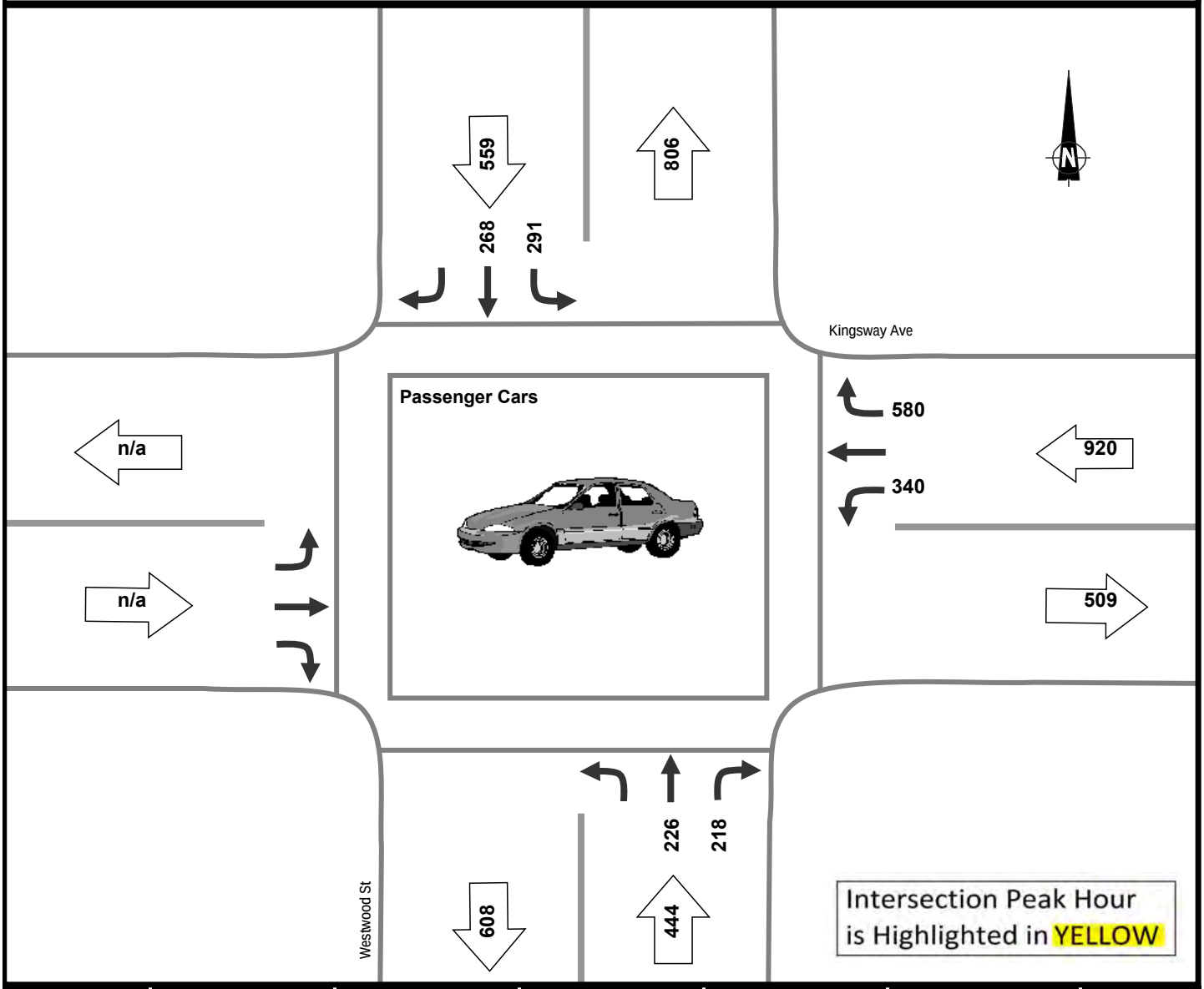
Westwood St & Kingsway Ave

Tuesday, January 21, 2020

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Passenger Cars

Peak Hour Traffic by Movement 8:00 AM to 9:00 AM



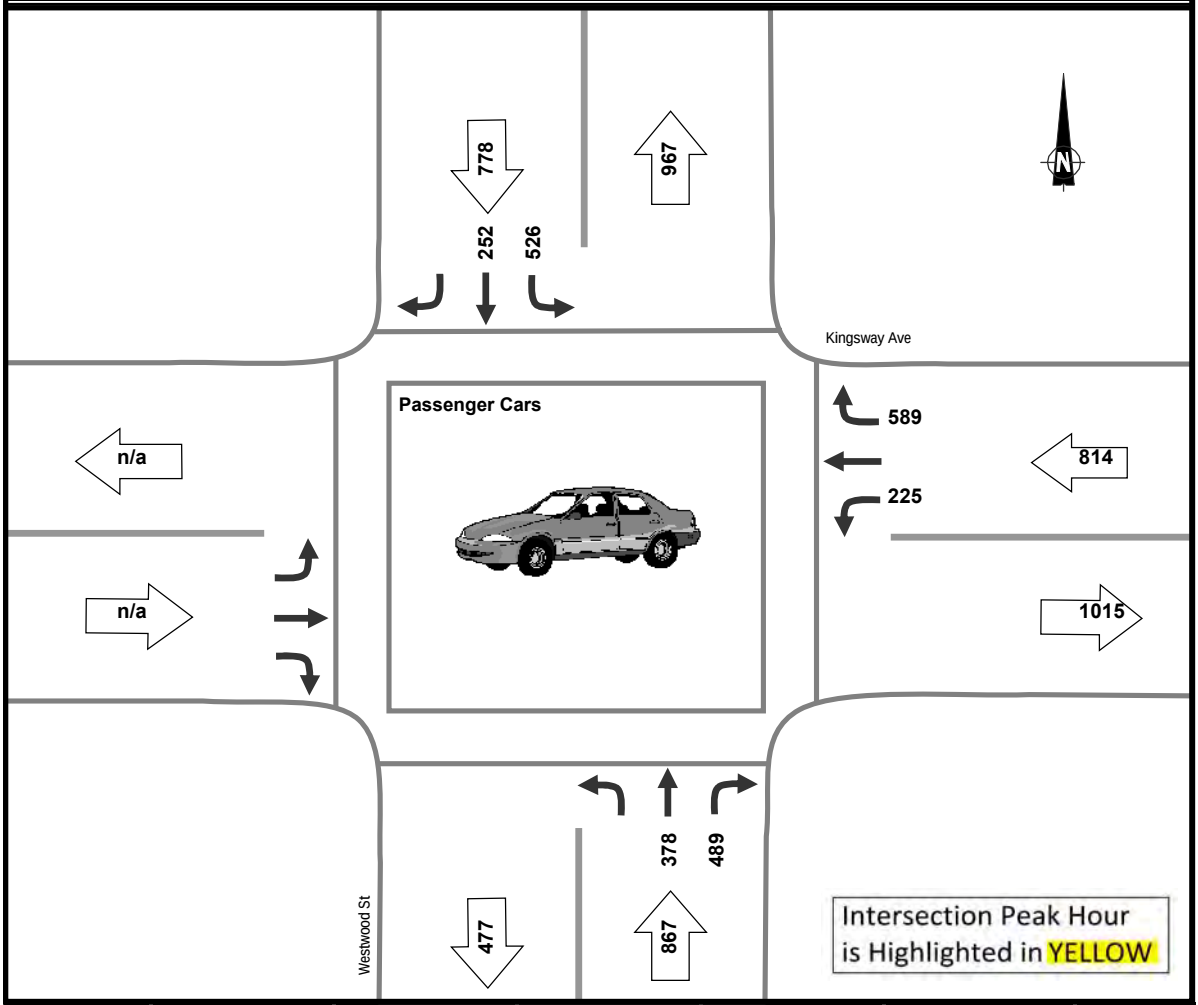
Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**291**	**268**			**226**	**218**				**340**		**580**					**1,923**
PHF	0.80	0.93			0.82	0.80				0.85		0.92					0.94
Peak 15 X 4	364	288			276	272				400		628					2,056
Average Hour	278	290			166	205				349		487					1,775
Survey Total	556	580			332	409				697		973					3,547
7:00	43	44			24	35				74		79					299
7:15	66	102			17	45				84		90					404
7:30	62	70			31	52				102		105					422
7:45	94	96			34	59				97		119					499
8:00	55	67			50	51				93		148					464
8:15	75	66			54	60				100		146					501
8:30	70	63			53	39				62		157					444
8:45	91	72			69	68				85		129					514

Westwood St & Kingsway Ave
Tuesday, January 21, 2020

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Passenger Cars

Peak Hour Traffic by Movement 4:30 PM to 5:30 PM

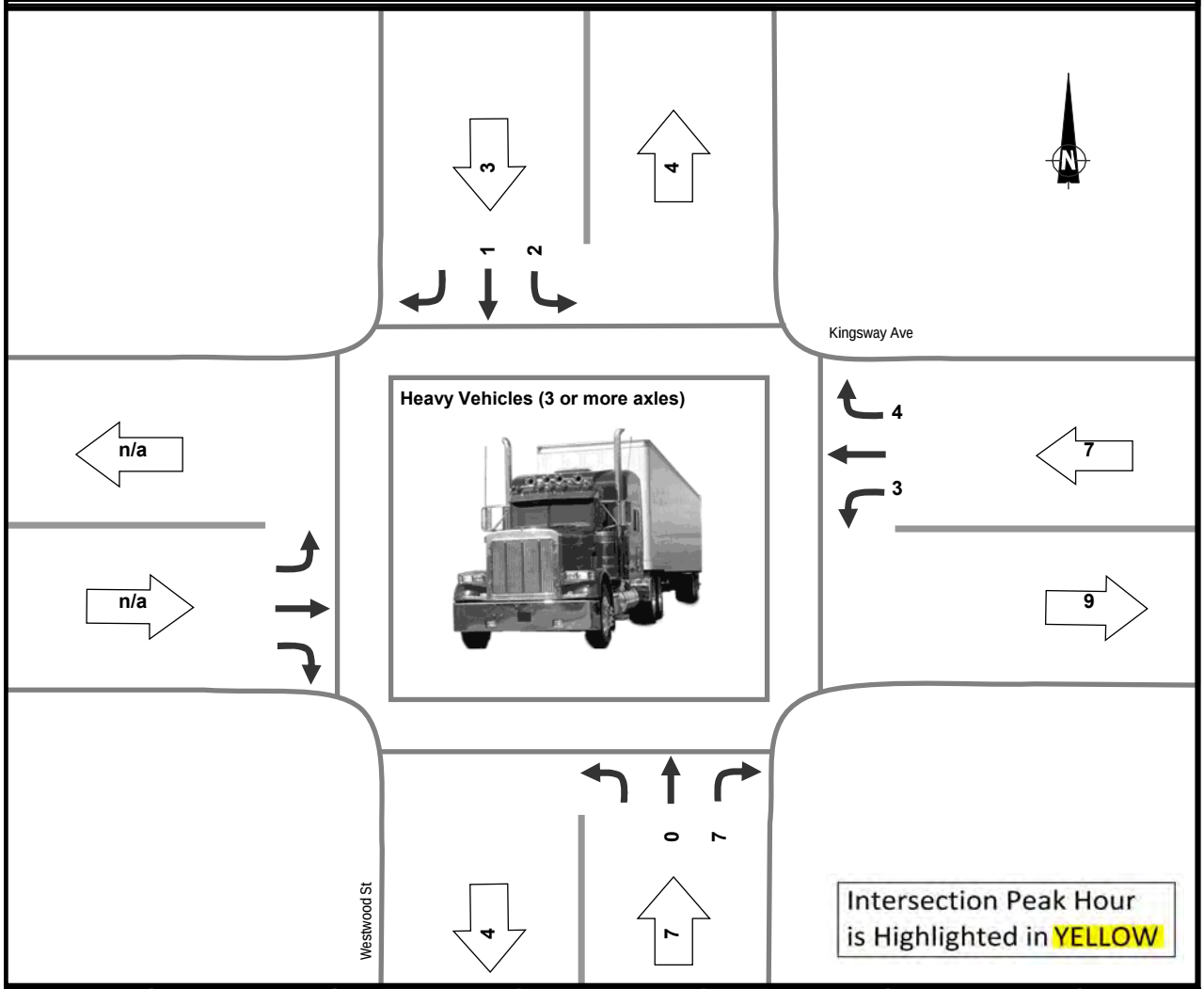


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**526**	**252**			**378**	**489**				**225**		**589**					**2,459**
PHF	0.94	0.98			0.90	0.85				0.91		0.80					0.99
Peak 15 X 4	560	256			420	576				248		736					2,488
Average Hour	502	217			361	470				203		561					2,314
Survey Total	1,505	650			1,084	1,409				610		1,682					6,940
15:00	120	60			77	92				33		124					506
15:15	115	44			91	95				56		143					544
15:30	106	44			94	128				64		144					580
15:45	144	54			89	127				46		158					618
16:00	114	54			87	110				57		125					547
16:15	141	53			91	132				42		135					594
16:30	128	61			87	106				47		184					613
16:45	140	64			90	135				61		132					622
17:00	127	64			105	104				62		140					602
17:15	131	63			96	144				55		133					622
17:30	115	47			101	113				53		164					593
17:45	124	42			76	123				34		100					499

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Heavy Vehicles (3 or more axles)

Peak Hour Traffic by Movement 7:45 AM to 8:45 AM

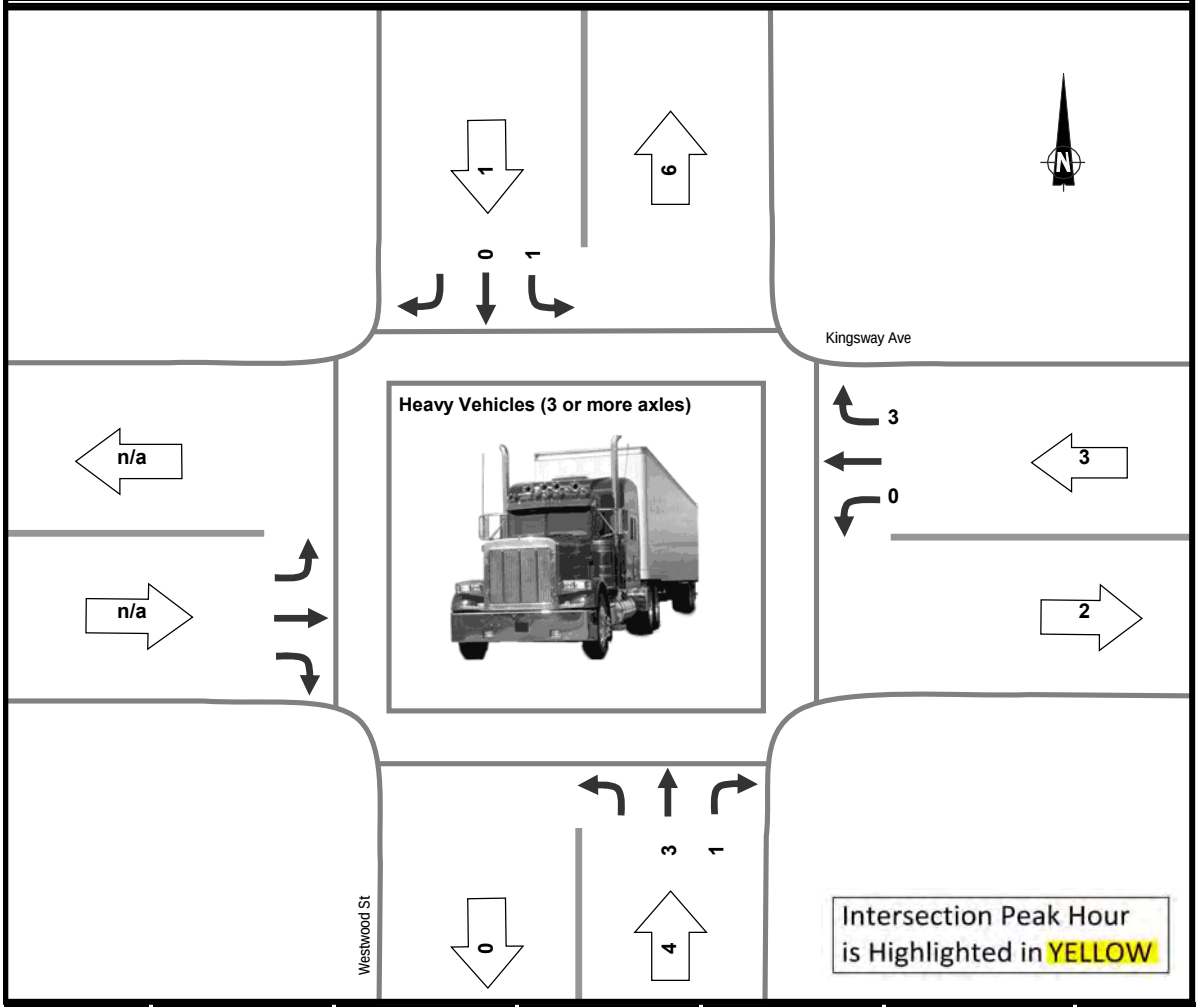


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**2**	**1**			**0**	**7**				**3**		**4**					**17**
PHF	0.50	0.25			0.00	0.58				0.75		1.00					0.85
Peak 15 X 4	4	4			0	12				4		4					20
Average Hour	2	1			0	4				5		3					15
Survey Total	4	2			0	8				9		6					29
7:00	0	1			0	1				2		1					5
7:15	0	0			0	0				1		0					1
7:30	1	0			0	0				1		1					3
7:45	0	0			0	3				0		1					4
8:00	1	0			0	2				1		1					5
8:15	0	1			0	1				1		1					4
8:30	1	0			0	1				1		1					4
8:45	1	0			0	0				2		0					3

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Heavy Vehicles (3 or more axles)

Peak Hour Traffic by Movement 3:15 PM to 4:15 PM

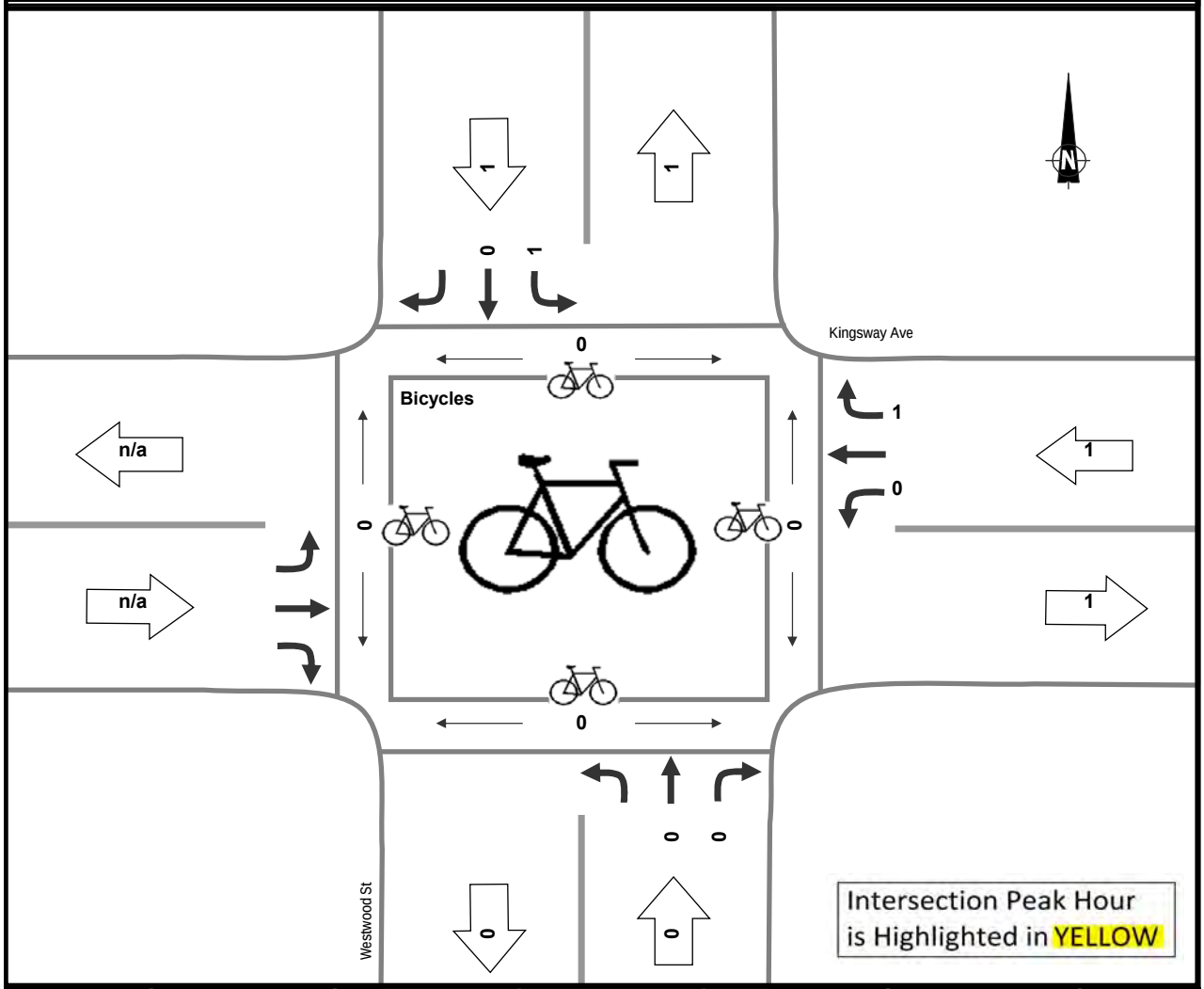


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**1**	**0**			**3**	**1**				**0**		**3**					**8**
PHF	0.25	0.00			0.25	0.25				0.00		0.75					0.40
Peak 15 X 4	4	0			12	4				0		4					20
Average Hour	0	0			1	0				0		2					3
Survey Total	1	0			3	1				1		5					11
15:00	0	0			0	0				0		0					0
15:15	0	0			3	1				0		1					5
15:30	0	0			0	0				0		1					1
15:45	0	0			0	0				0		0					0
16:00	1	0			0	0				0		1					2
16:15	0	0			0	0				0		1					1
16:30	0	0			0	0				0		0					0
16:45	0	0			0	0				0		0					0
17:00	0	0			0	0				0		1					1
17:15	0	0			0	0				0		0					0
17:30	0	0			0	0				0		0					0
17:45	0	0			0	0				1		0					1

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Bicycles

Peak Hour Traffic by Movement 8:00 AM to 9:00 AM

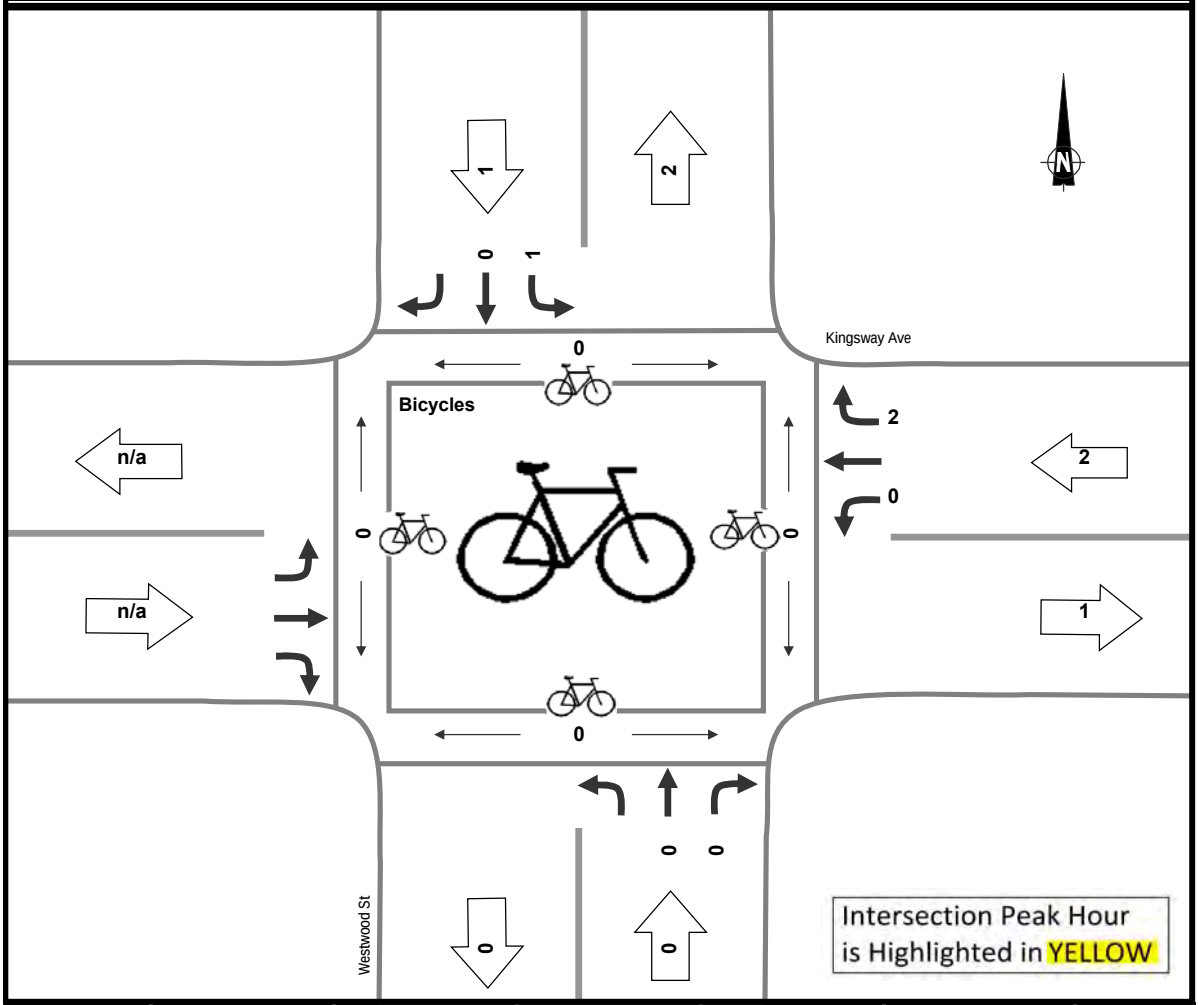


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			BIKES IN X-WALK				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**1**	**0**			**0**	**0**				**0**		**1**	**0**	**0**	**0**	**0**	**2**
PHF	0.25	0.00			0.00	0.00				0.00		0.25	0.00	0.00	0.00	0.00	0.50
Peak 15 X 4	4	0			0	0				0		4	0	0	0	0	4
Average Hour	1	0			0	0				0		1	0	0	0	0	2
Survey Total	1	0			0	0				0		1	0	0	0	0	2
7:00	0	0			0	0				0		0	0	0	0	0	0
7:15	0	0			0	0				0		0	0	0	0	0	0
7:30	0	0			0	0				0		0	0	0	0	0	0
7:45	0	0			0	0				0		0	0	0	0	0	0
8:00	0	0			0	0				0		0	0	0	0	0	0
8:15	0	0			0	0				0		1	0	0	0	0	1
8:30	0	0			0	0				0		0	0	0	0	0	0
8:45	1	0			0	0				0		0	0	0	0	0	1

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Bicycles

Peak Hour Traffic by Movement 3:30 PM to 4:30 PM



Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			BIKES IN X-WALK				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	**1**	**0**			**0**	**0**				**0**		**2**	**0**	**0**	**0**	**0**	**3**
PHF	0.25	0.00			0.00	0.00				0.00		0.50	0.00	0.00	0.00	0.00	0.38
Peak 15 X 4	4	0			0	0				0		4	0	0	0	0	8
Average Hour	0	0			0	1				0		1	0	0	0	0	2
Survey Total	1	0			0	2				0		2	0	0	0	0	5
15:00	0	0			0	0				0		0	0	0	0	0	0
15:15	0	0			0	0				0		0	0	0	0	0	0
15:30	1	0			0	0				0		1	0	0	0	0	2
15:45	0	0			0	0				0		0	0	0	0	0	0
16:00	0	0			0	0				0		0	0	0	0	0	0
16:15	0	0			0	0				0		1	0	0	0	0	1
16:30	0	0			0	1				0		0	0	0	0	0	1
16:45	0	0			0	0				0		0	0	0	0	0	0
17:00	0	0			0	0				0		0	0	0	0	0	0
17:15	0	0			0	1				0		0	0	0	0	0	1
17:30	0	0			0	0				0		0	0	0	0	0	0
17:45	0	0			0	0				0		0	0	0	0	0	0

Vehicle Classification Summary

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain

Time Period	Entering Intersection	Vehicle Classification					Total
		Passenger Cars	Heavy Vehicles (3 or more axles)				
Morning (07:00 - 09:00)	Volume	2,669	29				**2,698**
	%	98.9%	1.1%				**100.0%**
Midday (00:00 - 00:00)	Volume						
	%						
Afternoon (15:00 - 18:00)	Volume	5,542	11				**5,553**
	%	99.8%	0.2%				**100.0%**
Total (5 Hours)	**Volume**	**8,211**	**40**				**8,251**
	%	**99.5%**	**0.5%**				**100.0%**

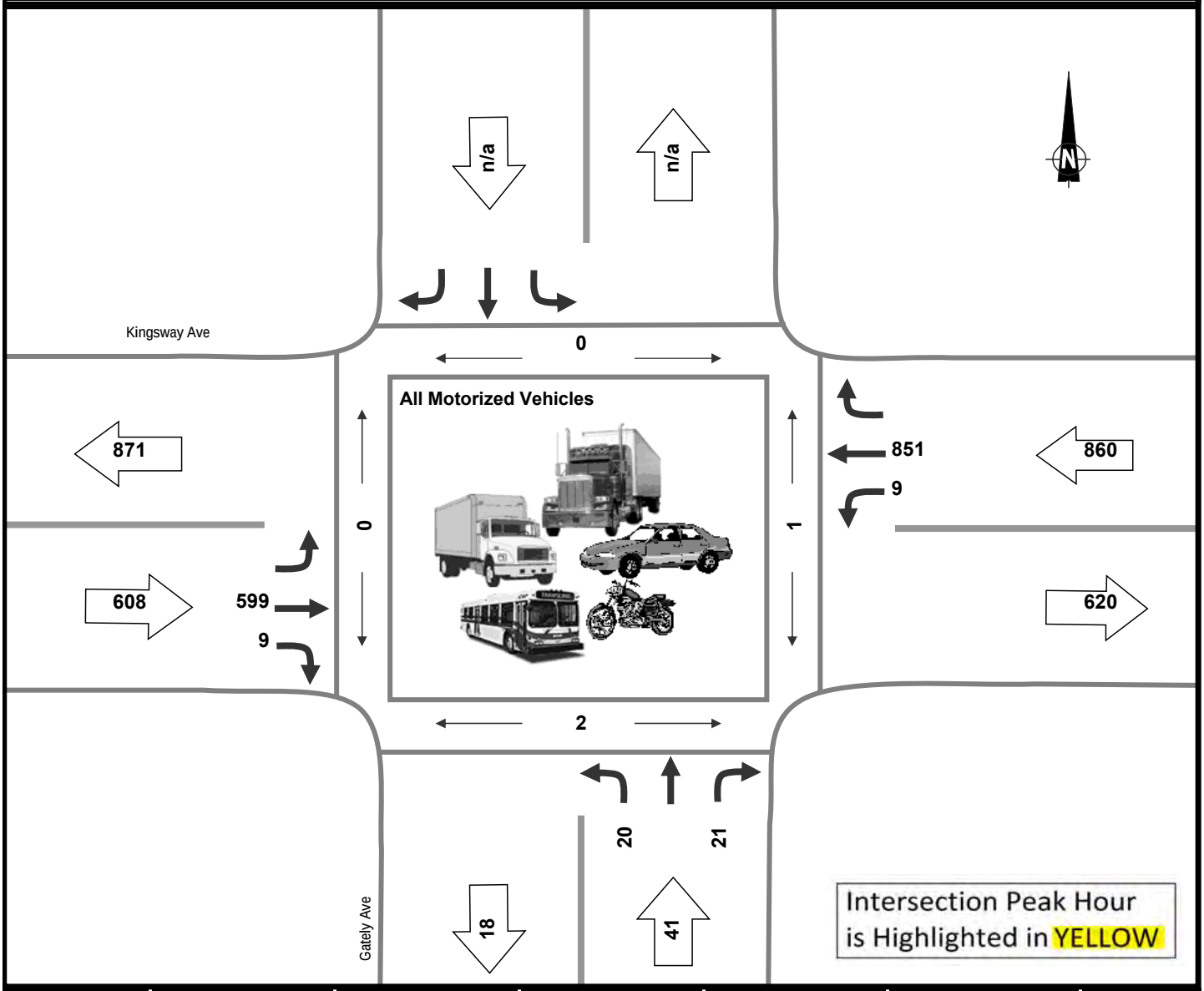
Gately Ave & Kingsway Ave

Tuesday, January 21, 2020

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: All Motorized Vehicles

Peak Hour Traffic by Movement 7:45 AM to 8:45 AM

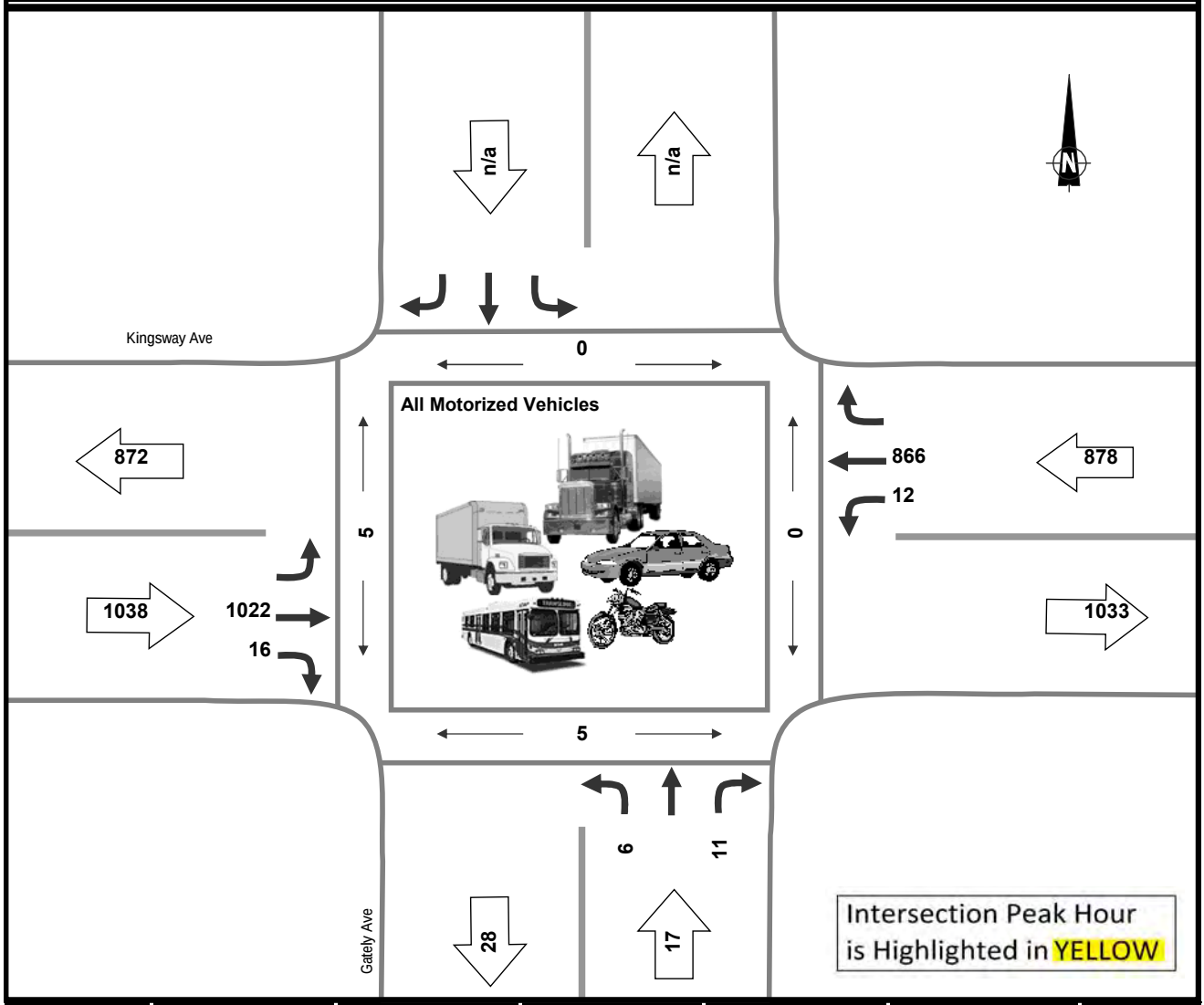


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**20**		**21**		**599**	**9**	**9**	**851**		**0**	**2**	**0**	**1**	**1,509**
PHF				0.83		0.75		0.83	0.75	0.75	0.97		0.00	0.50	0.00	0.25	0.92
Peak 15 X 4				24		28		724	12	12	880		0	4	0	4	1,640
Average Hour				15		16		541	9	10	761		1	3	1	1	1,352
Survey Total				29		31		1,081	17	19	1,521		1	6	1	1	2,698
7:00				2		1		79	2	3	134		0	1	0	0	221
7:15				3		4		116	5	2	145		0	1	0	0	275
7:30				1		3		117	0	4	185		1	0	0	0	310
7:45				6		7		181	3	3	210		0	1	0	0	410
8:00				3		6		118	1	1	220		0	0	0	0	349
8:15				5		1		157	2	3	202		0	0	0	0	370
8:30				6		7		143	3	2	219		0	1	0	1	380
8:45				3		2		170	1	1	206		0	2	1	0	383

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: All Motorized Vehicles

Peak Hour Traffic by Movement 3:45 PM to 4:45 PM

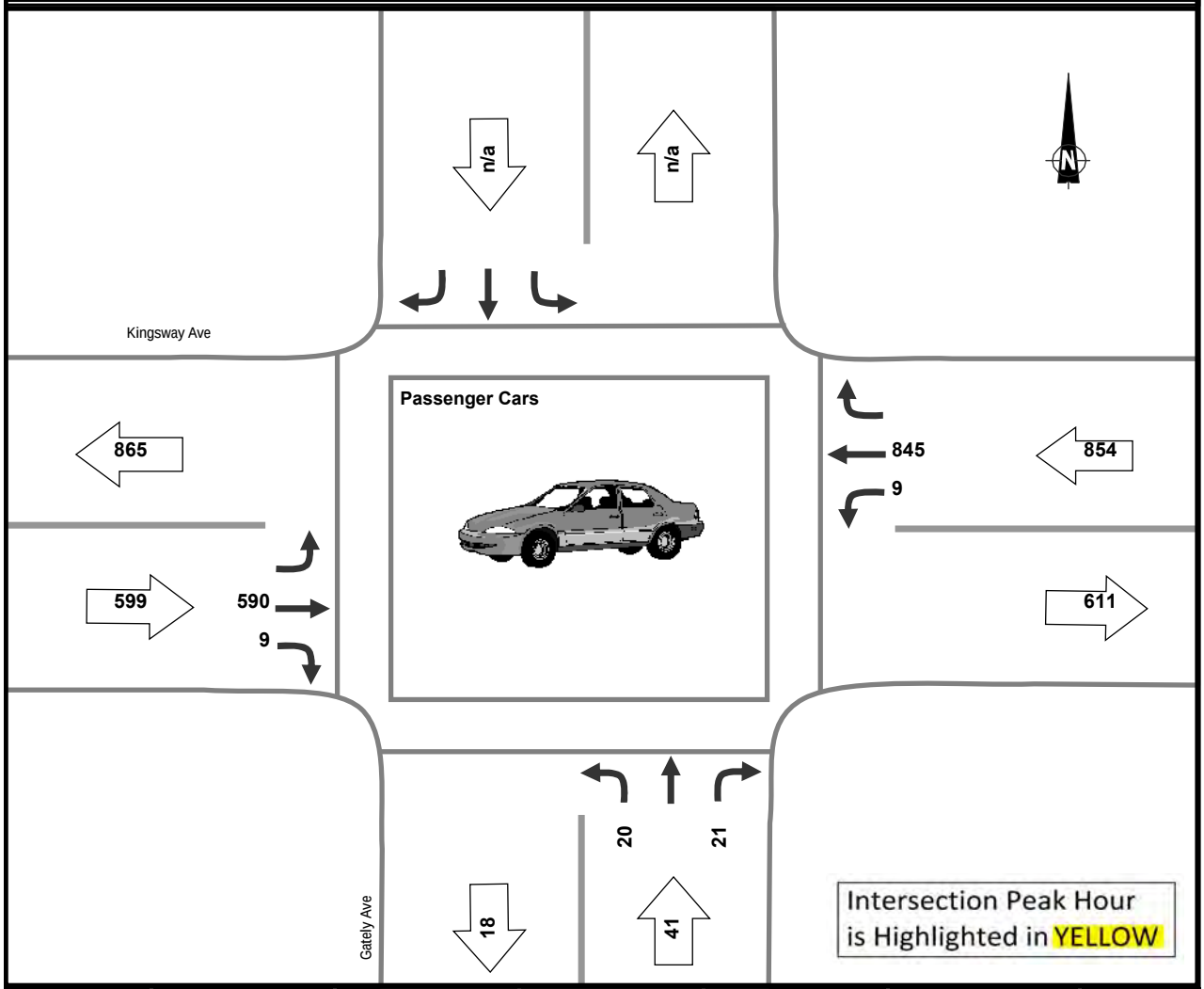


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**6**		**11**		**1022**	**16**	**12**	**866**		**0**	**5**	**5**	**0**	**1,933**
PHF				0.50		0.69		0.89	0.67	0.43	0.87		0.00	0.31	0.63	0.00	0.90
Peak 15 X 4				12		16		1,148	24	28	1,000		0	16	8	0	2,140
Average Hour				5		10		961	16	17	842		0	4	4	0	1,851
Survey Total				14		29		2,882	49	52	2,527		1	13	12	1	5,553
15:00				2		2		204	4	9	186		0	3	2	0	407
15:15				1		2		207	2	3	244		1	2	0	0	459
15:30				1		0		232	5	5	210		0	0	0	0	453
15:45				0		0		287	6	2	240		0	0	2	0	535
16:00				3		4		242	4	1	193		0	0	0	0	447
16:15				1		3		245	5	2	183		0	1	2	0	439
16:30				2		4		248	1	7	250		0	4	1	0	512
16:45				0		0		246	7	1	207		0	2	3	0	461
17:00				1		5		230	3	8	210		0	0	0	1	457
17:15				1		3		246	2	5	215		0	0	0	0	472
17:30				1		2		266	10	6	221		0	0	1	0	506
17:45				1		4		229	0	3	168		0	1	1	0	405

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Passenger Cars

Peak Hour Traffic by Movement 7:45 AM to 8:45 AM

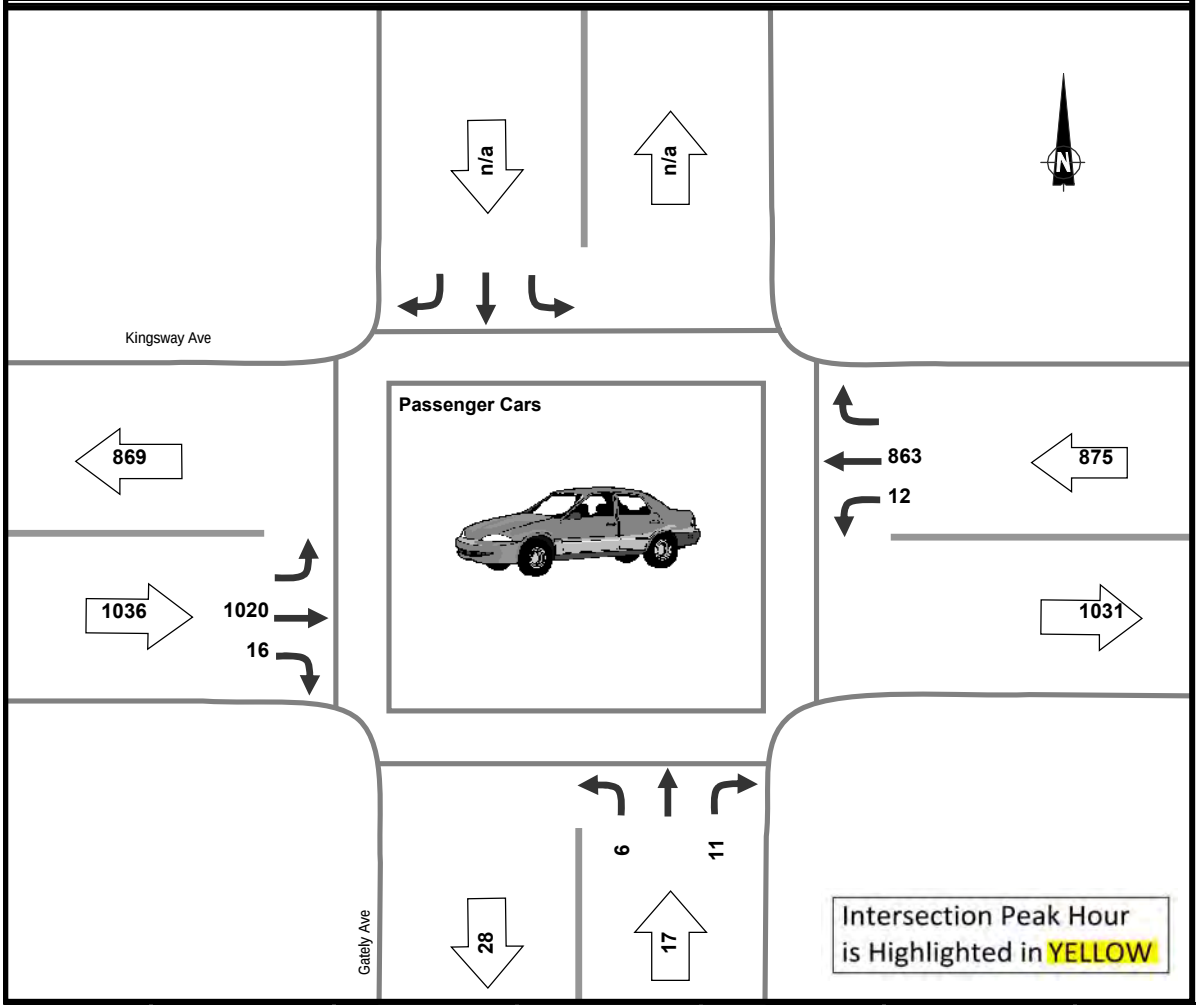


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**20**		**21**		**590**	**9**	**9**	**845**						**1,494**
PHF				0.83		0.75		0.83	0.75	0.75	0.96						0.92
Peak 15 X 4				24		28		708	12	12	876						1,620
Average Hour				15		16		534	9	10	753						1,337
Survey Total				29		31		1,067	17	19	1,506						2,669
7:00				2		1		79	2	3	130						217
7:15				3		4		114	5	2	143						271
7:30				1		3		116	0	4	183						307
7:45				6		7		177	3	3	209						405
8:00				3		6		115	1	1	219						345
8:15				5		1		156	2	3	200						367
8:30				6		7		142	3	2	217						377
8:45				3		2		168	1	1	205						380

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Passenger Cars

Peak Hour Traffic by Movement 3:45 PM to 4:45 PM

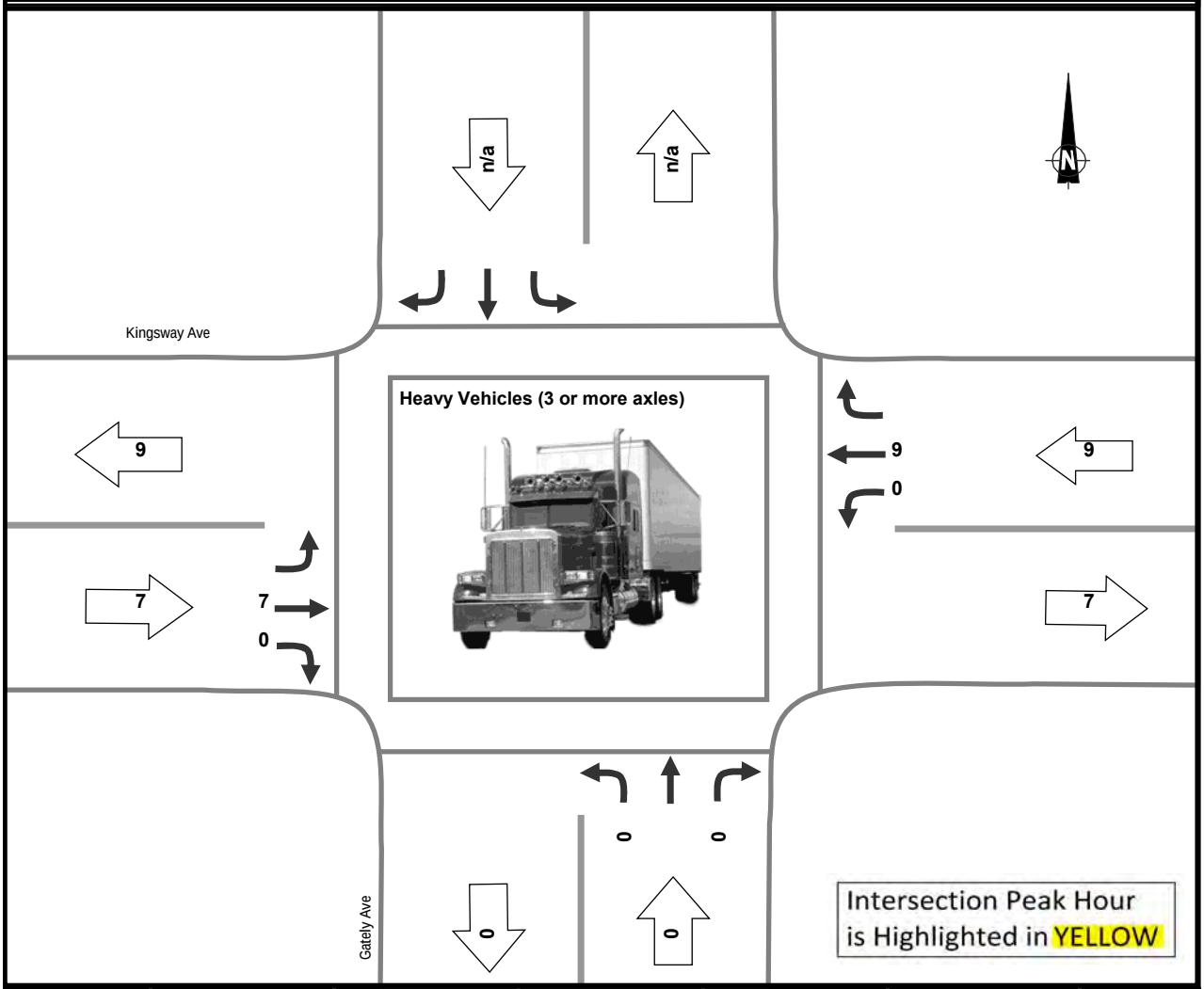


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**6**		**11**		**1020**	**16**	**12**	**863**						**1,928**
PHF				0.50		0.69		0.89	0.67	0.43	0.86						0.90
Peak 15 X 4				12		16		1,144	24	28	1,000						2,136
Average Hour				5		10		960	16	17	840						1,848
Survey Total				14		29		2,879	49	52	2,519						5,542
15:00				2		2		204	4	9	185						406
15:15				1		2		206	2	3	243						457
15:30				1		0		232	5	5	209						452
15:45				0		0		286	6	2	240						534
16:00				3		4		241	4	1	191						444
16:15				1		3		245	5	2	182						438
16:30				2		4		248	1	7	250						512
16:45				0		0		246	7	1	207						461
17:00				1		5		230	3	8	209						456
17:15				1		3		246	2	5	215						472
17:30				1		2		266	10	6	221						506
17:45				1		4		229	0	3	167						404

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Heavy Vehicles (3 or more axles)

Peak Hour Traffic by Movement 7:00 AM to 8:00 AM

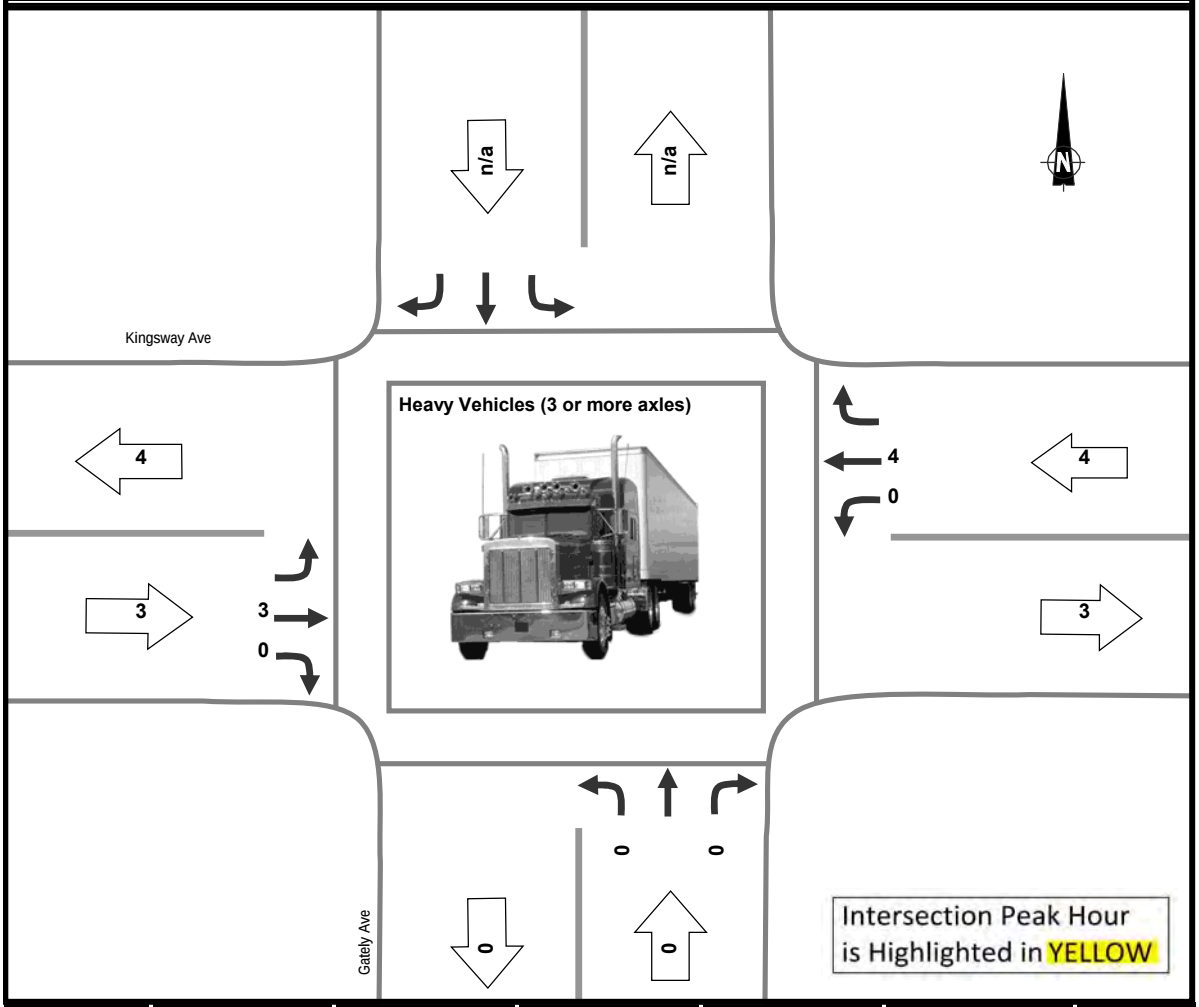


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**0**		**0**		**7**	**0**	**0**	**9**						**16**
PHF				0.00		0.00		0.44	0.00	0.00	0.56						0.80
Peak 15 X 4				0		0		16	0	0	16						20
Average Hour				0		0		7	0	0	8						15
Survey Total				0		0		14	0	0	15						29
7:00				0		0		0	0	0	4						4
7:15				0		0		2	0	0	2						4
7:30				0		0		1	0	0	2						3
7:45				0		0		4	0	0	1						5
8:00				0		0		3	0	0	1						4
8:15				0		0		1	0	0	2						3
8:30				0		0		1	0	0	2						3
8:45				0		0		2	0	0	1						3

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Heavy Vehicles (3 or more axles)

Peak Hour Traffic by Movement 3:15 PM to 4:15 PM

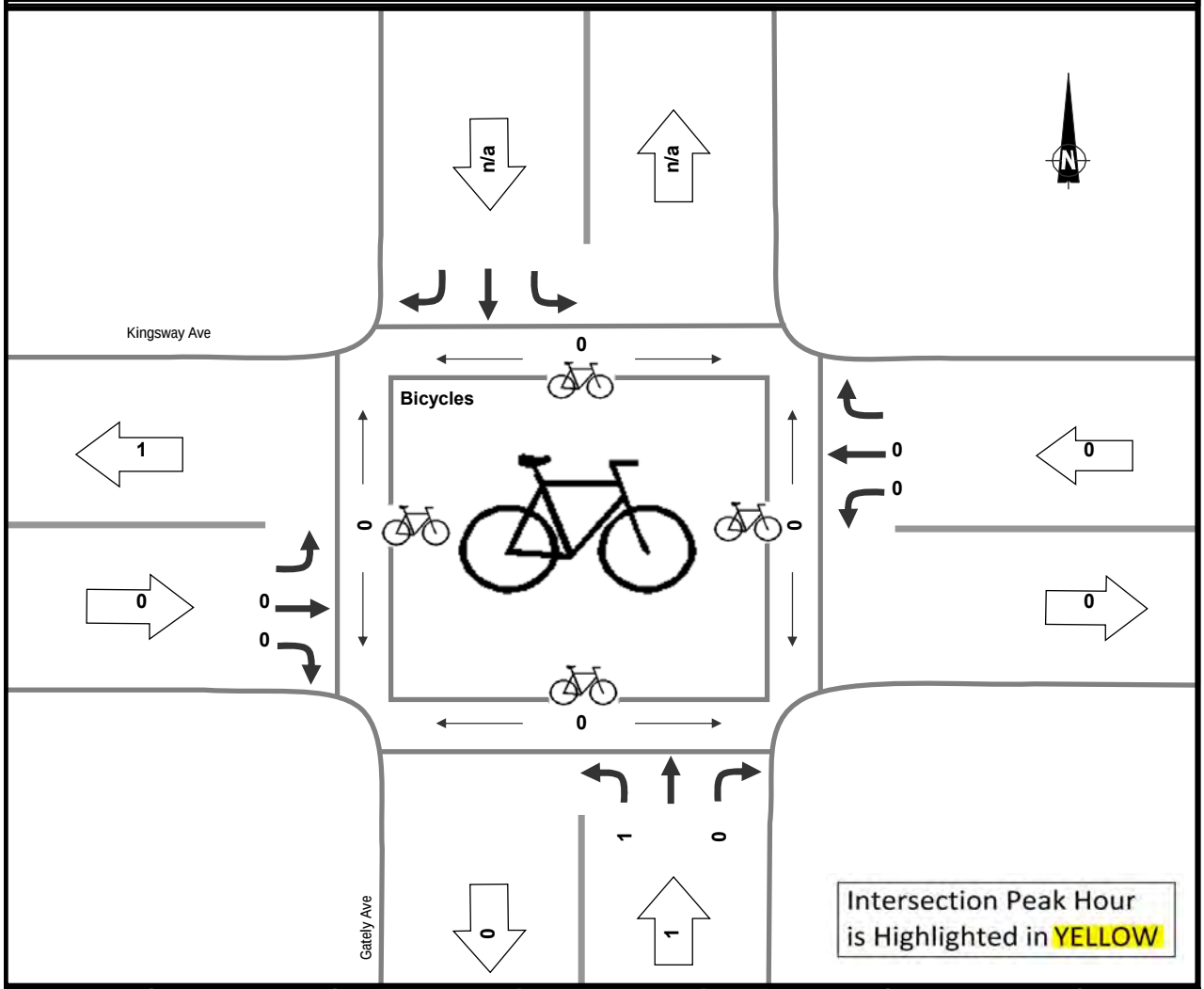


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**0**		**0**		**3**	**0**	**0**	**4**						**7**
PHF				0.00		0.00		0.75	0.00	0.00	0.50						0.58
Peak 15 X 4				0		0		4	0	0	8						12
Average Hour				0		0		1	0	0	3						4
Survey Total				0		0		3	0	0	8						11
15:00				0		0		0	0	0	1						1
15:15				0		0		1	0	0	1						2
15:30				0		0		0	0	0	1						1
15:45				0		0		1	0	0	0						1
16:00				0		0		1	0	0	2						3
16:15				0		0		0	0	0	1						1
16:30				0		0		0	0	0	0						0
16:45				0		0		0	0	0	0						0
17:00				0		0		0	0	0	1						1
17:15				0		0		0	0	0	0						0
17:30				0		0		0	0	0	0						0
17:45				0		0		0	0	0	1						1

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Bicycles

Peak Hour Traffic by Movement 7:30 AM to 8:30 AM

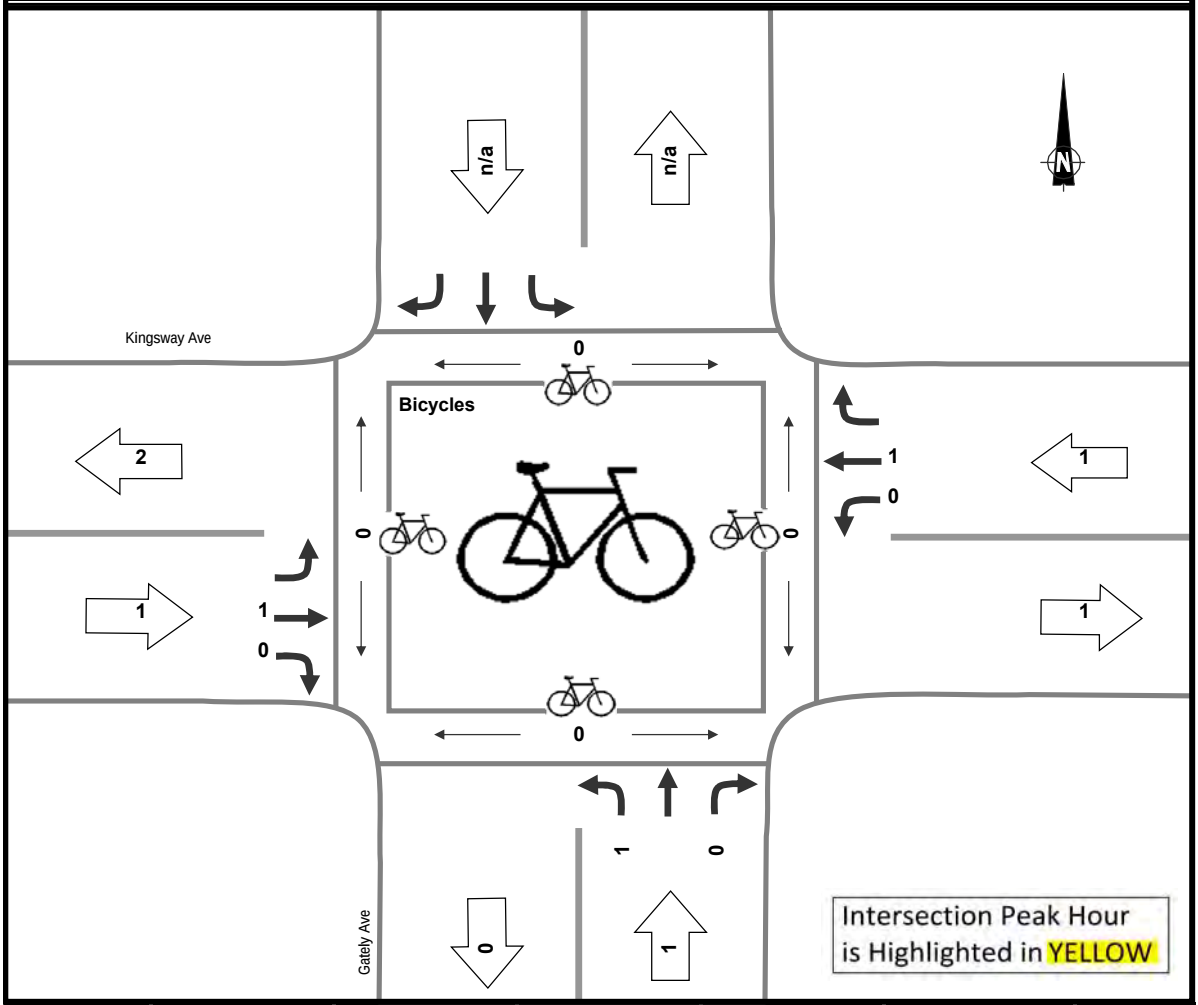


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			BIKES IN X-WALK				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**1**		**0**		**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**1**
PHF				0.25		0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.25
Peak 15 X 4				4		0		0	0	0	0		0	0	0	0	4
Average Hour				1		0		0	0	0	0		0	0	0	0	1
Survey Total				1		0		0	0	0	0		0	0	0	0	1
7:00				0		0		0	0	0	0		0	0	0	0	0
7:15				0		0		0	0	0	0		0	0	0	0	0
7:30				0		0		0	0	0	0		0	0	0	0	0
7:45				0		0		0	0	0	0		0	0	0	0	0
8:00				0		0		0	0	0	0		0	0	0	0	0
8:15				1		0		0	0	0	0		0	0	0	0	1
8:30				0		0		0	0	0	0		0	0	0	0	0
8:45				0		0		0	0	0	0		0	0	0	0	0

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Bicycles

Peak Hour Traffic by Movement 3:30 PM to 4:30 PM



Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			BIKES IN X-WALK				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**1**		**0**		**1**	**0**	**0**	**1**		**0**	**0**	**0**	**0**	**3**
PHF				0.25		0.00		0.25	0.00	0.00	0.25		0.00	0.00	0.00	0.00	0.38
Peak 15 X 4				4		0		4	0	0	4		0	0	0	0	8
Average Hour				1		0		1	0	0	1		0	0	0	0	3
Survey Total				2		0		2	0	0	2		0	0	0	0	6
15:00				0		0		0	0	0	0		0	0	0	0	0
15:15				0		0		0	0	0	0		0	0	0	0	0
15:30				0		0		1	0	0	0		0	0	0	0	1
15:45				0		0		0	0	0	0		0	0	0	0	0
16:00				0		0		0	0	0	0		0	0	0	0	0
16:15				1		0		0	0	0	1		0	0	0	0	2
16:30				1		0		0	0	0	0		0	0	0	0	1
16:45				0		0		0	0	0	0		0	0	0	0	0
17:00				0		0		0	0	0	0		0	0	0	0	0
17:15				0		0		1	0	0	0		0	0	0	0	1
17:30				0		0		0	0	0	0		0	0	0	0	0
17:45				0		0		0	0	0	1		0	0	0	0	1

Vehicle Classification Summary

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain

Time Period	Entering Intersection	Vehicle Classification					**Total**
		Passenger Cars	Heavy Vehicles (3 or more axles)				
Morning (07:00 - 09:00)	Volume	2,682	31				**2,713**
	%	98.9%	1.1%				**100.0%**
Midday (00:00 - 00:00)	Volume	0	0				**0**
	%	0.0%	0.0%				**#DIV/0!**
Afternoon (15:00 - 18:00)	Volume	5,617	11				**5,628**
	%	99.8%	0.2%				**100.0%**
Total (5 Hours)	**Volume**	**8,299**	**42**				**8,341**
	%	**99.5%**	**0.5%**				**100.0%**

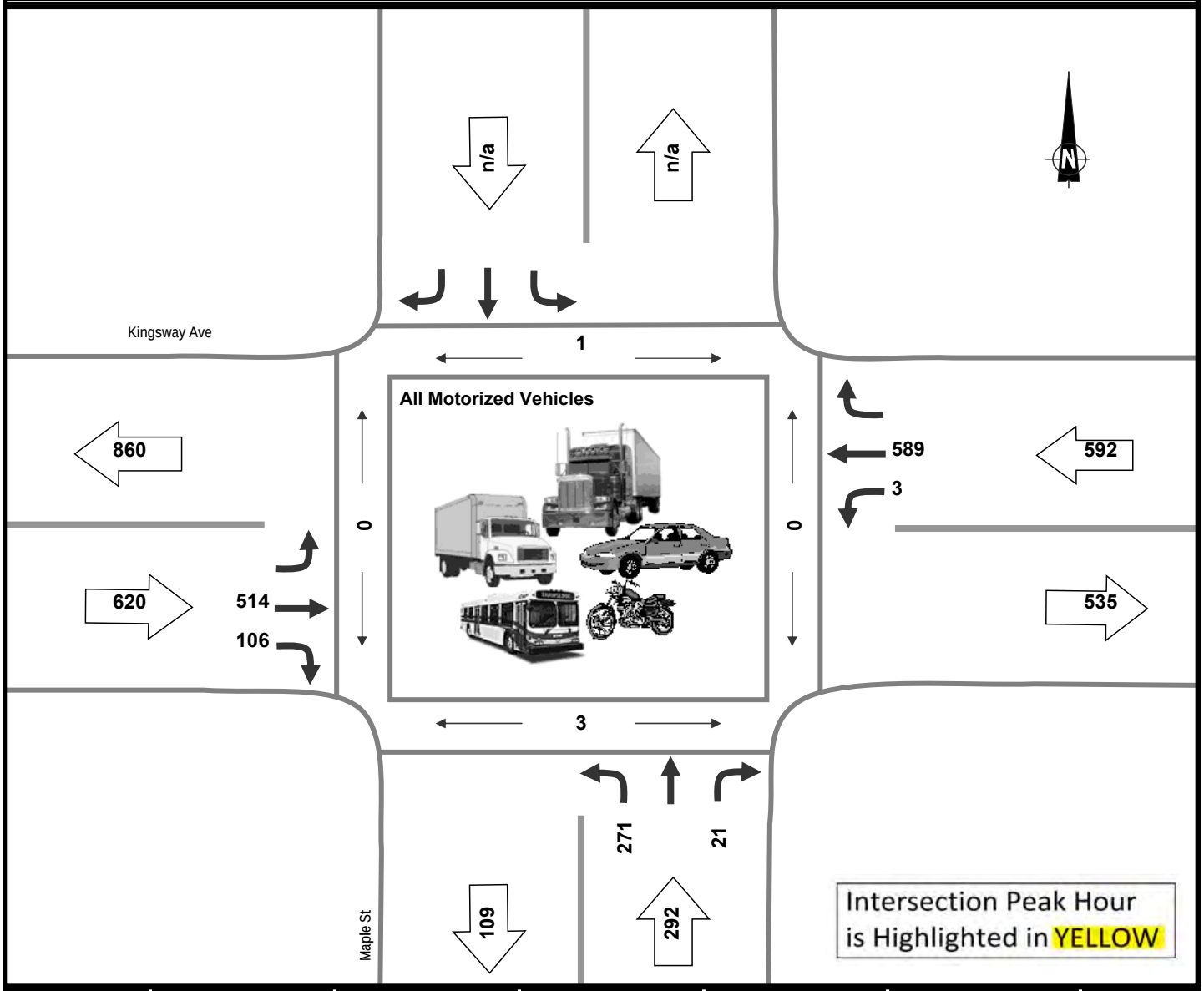
Maple St & Kingsway Ave

Tuesday, January 21, 2020

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: All Motorized Vehicles

Peak Hour Traffic by Movement 7:45 AM to 8:45 AM

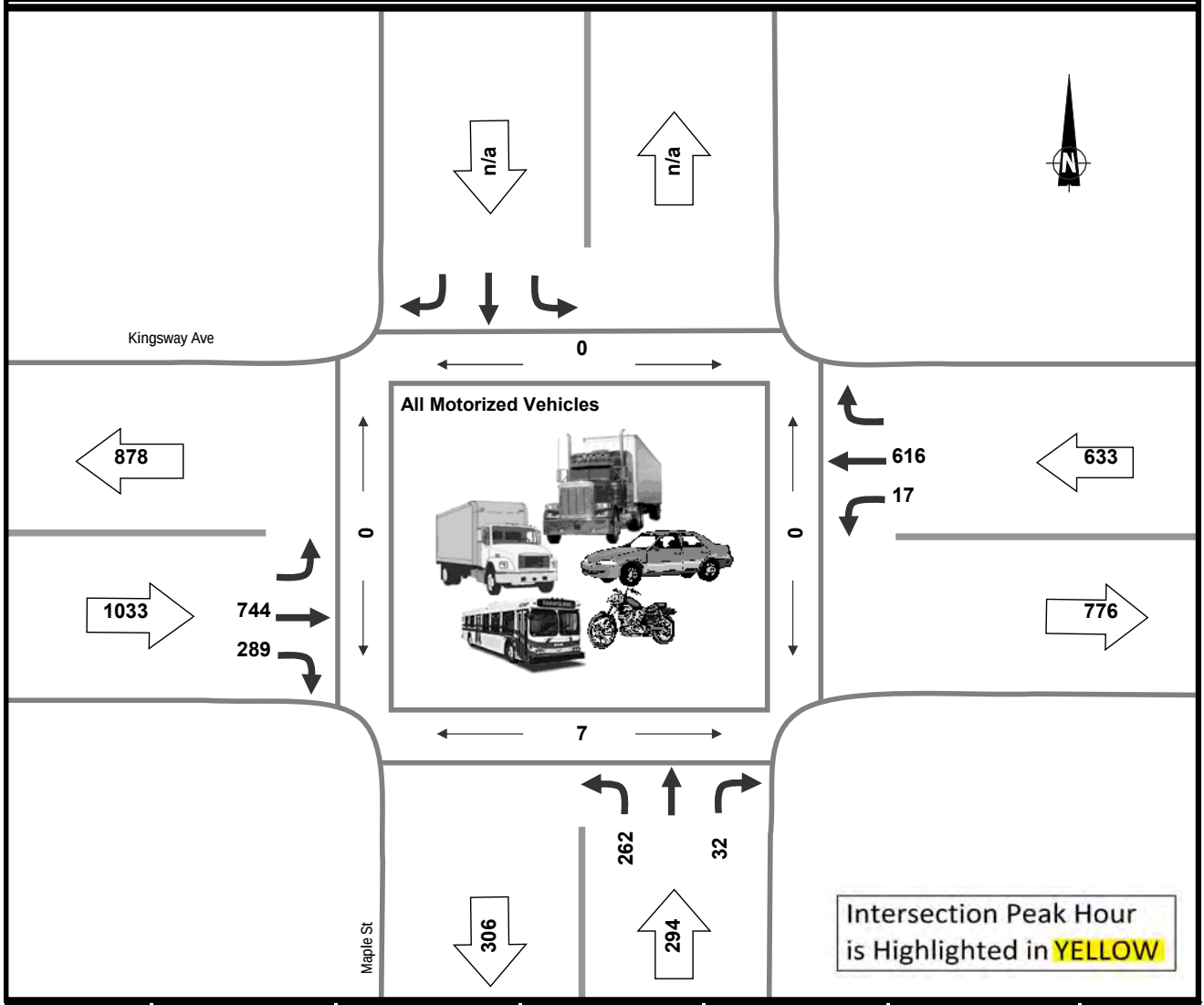


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**271**		**21**		**514**	**106**	**3**	**589**		**1**	**3**	**0**	**0**	**1,504**
PHF				0.89		0.53		0.76	0.60	0.75	0.93		0.25	0.75	0.00	0.00	0.91
Peak 15 X 4				304		40		672	176	4	636		4	4	0	0	1,648
Average Hour				262		24		460	96	7	509		1	4	0	0	1,358
Survey Total				523		48		920	192	13	1,017		1	8	0	0	2,713
7:00				49		2		66	14	2	88		0	0	0	0	221
7:15				63		8		105	15	2	84		0	3	0	0	277
7:30				68		6		100	20	4	121		0	1	0	0	319
7:45				54		10		168	20	1	159		1	1	0	0	412
8:00				74		1		107	17	0	147		0	1	0	0	346
8:15				67		6		133	25	1	138		0	0	0	0	370
8:30				76		4		106	44	1	145		0	1	0	0	376
8:45				72		11		135	37	2	135		0	1	0	0	392

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: All Motorized Vehicles

Peak Hour Traffic by Movement 3:45 PM to 4:45 PM

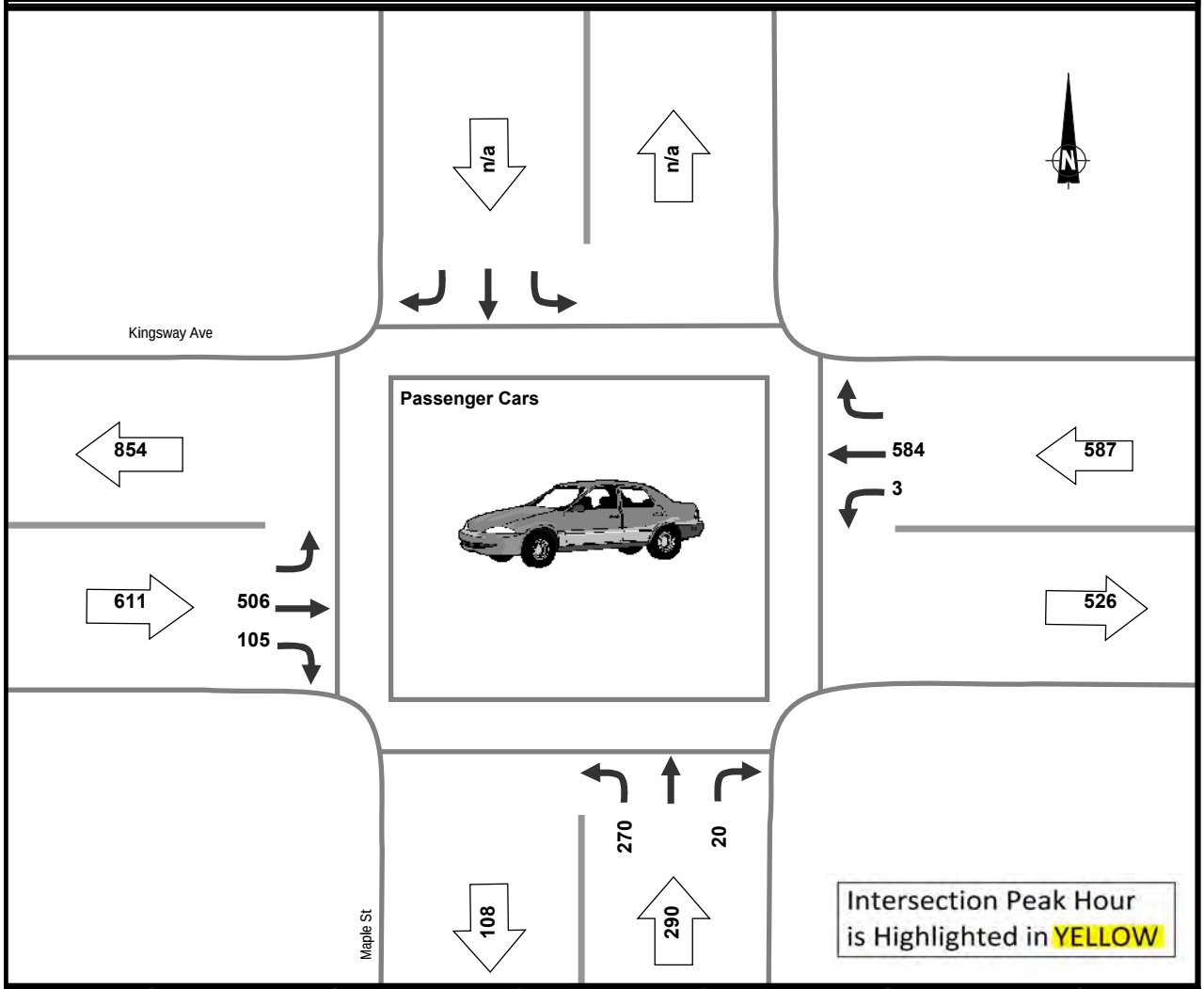


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**262**		**32**		**744**	**289**	**17**	**616**		**0**	**7**	**0**	**0**	**1,960**
PHF				0.81		0.73		0.85	0.94	0.53	0.88		0.00	0.44	0.00	0.00	0.91
Peak 15 X 4				324		44		872	308	32	704		0	16	0	0	2,160
Average Hour				277		32		689	282	14	583		1	6	0	0	1,877
Survey Total				832		96		2,066	845	41	1,748		2	18	0	1	5,628
15:00				55		11		156	50	2	140		1	2	0	0	414
15:15				76		6		153	56	2	171		0	1	0	0	464
15:30				71		9		180	52	2	144		0	1	0	0	458
15:45				76		7		218	69	4	166		0	4	0	0	540
16:00				42		11		171	75	2	152		0	0	0	0	453
16:15				63		5		171	77	3	122		0	2	0	0	441
16:30				81		9		184	68	8	176		0	1	0	0	526
16:45				79		11		155	91	2	129		0	3	0	0	467
17:00				74		6		163	72	1	144		0	2	0	0	460
17:15				68		12		171	78	2	153		1	0	0	1	484
17:30				77		3		188	80	8	150		0	1	0	0	506
17:45				70		6		156	77	5	101		0	1	0	0	415

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Passenger Cars

Peak Hour Traffic by Movement 7:45 AM to 8:45 AM



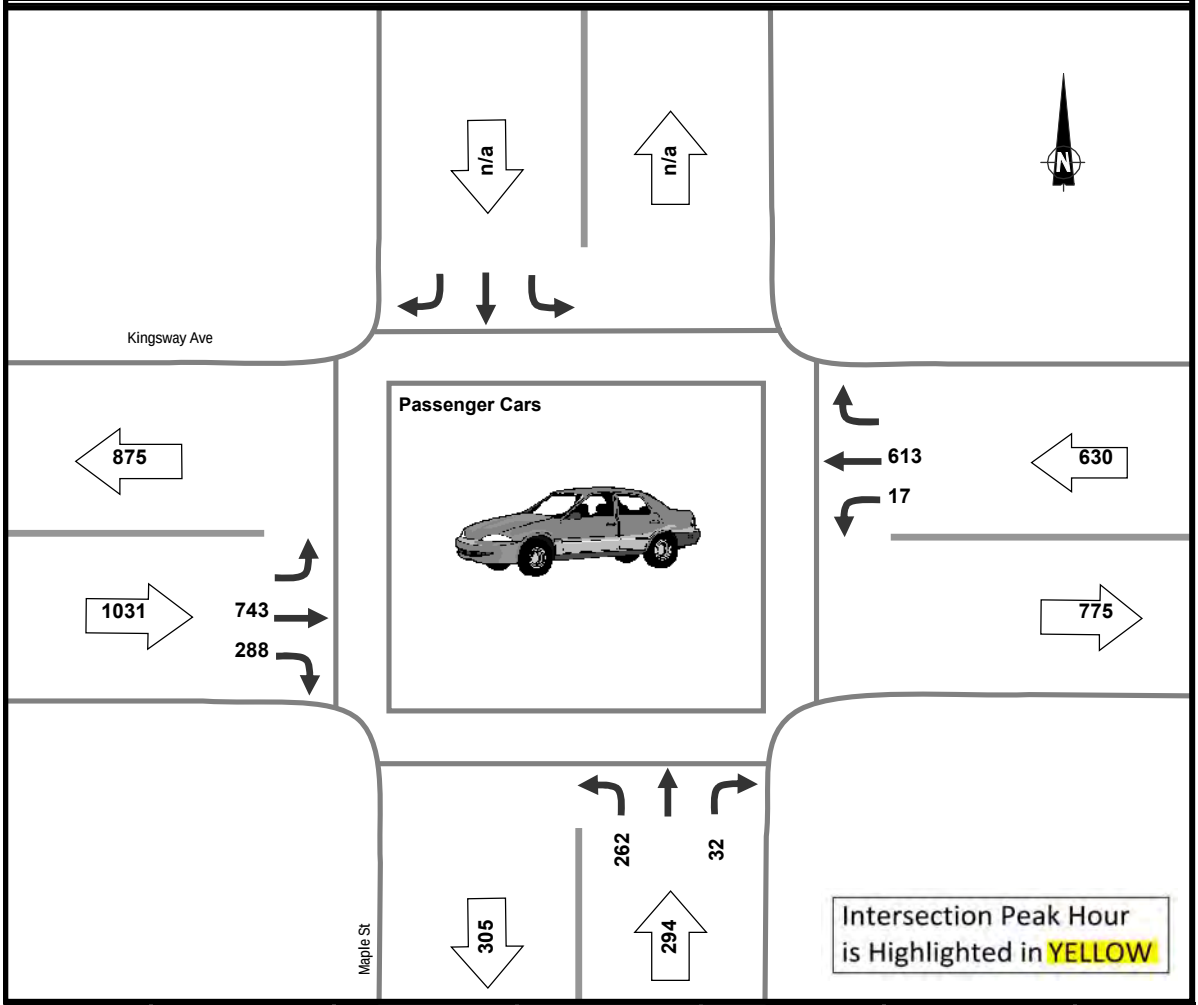
Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**270**		**20**		**506**	**105**	**3**	**584**						**1,488**
PHF				0.89		0.56		0.77	0.60	0.75	0.92						0.92
Peak 15 X 4				304		36		656	176	4	632						1,624
Average Hour				260		23		455	95	7	503						1,343
Survey Total				519		46		909	189	13	1,006						2,682
7:00				48		2		66	14	2	85						217
7:15				62		7		103	15	2	83						272
7:30				67		6		100	19	4	120						316
7:45				54		9		164	20	1	158						406
8:00				73		1		105	16	0	147						342
8:15				67		6		132	25	1	136						367
8:30				76		4		105	44	1	143						373
8:45				72		11		134	36	2	134						389

Maple St & Kingsway Ave
Tuesday, January 21, 2020

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Passenger Cars

Peak Hour Traffic by Movement 3:45 PM to 4:45 PM

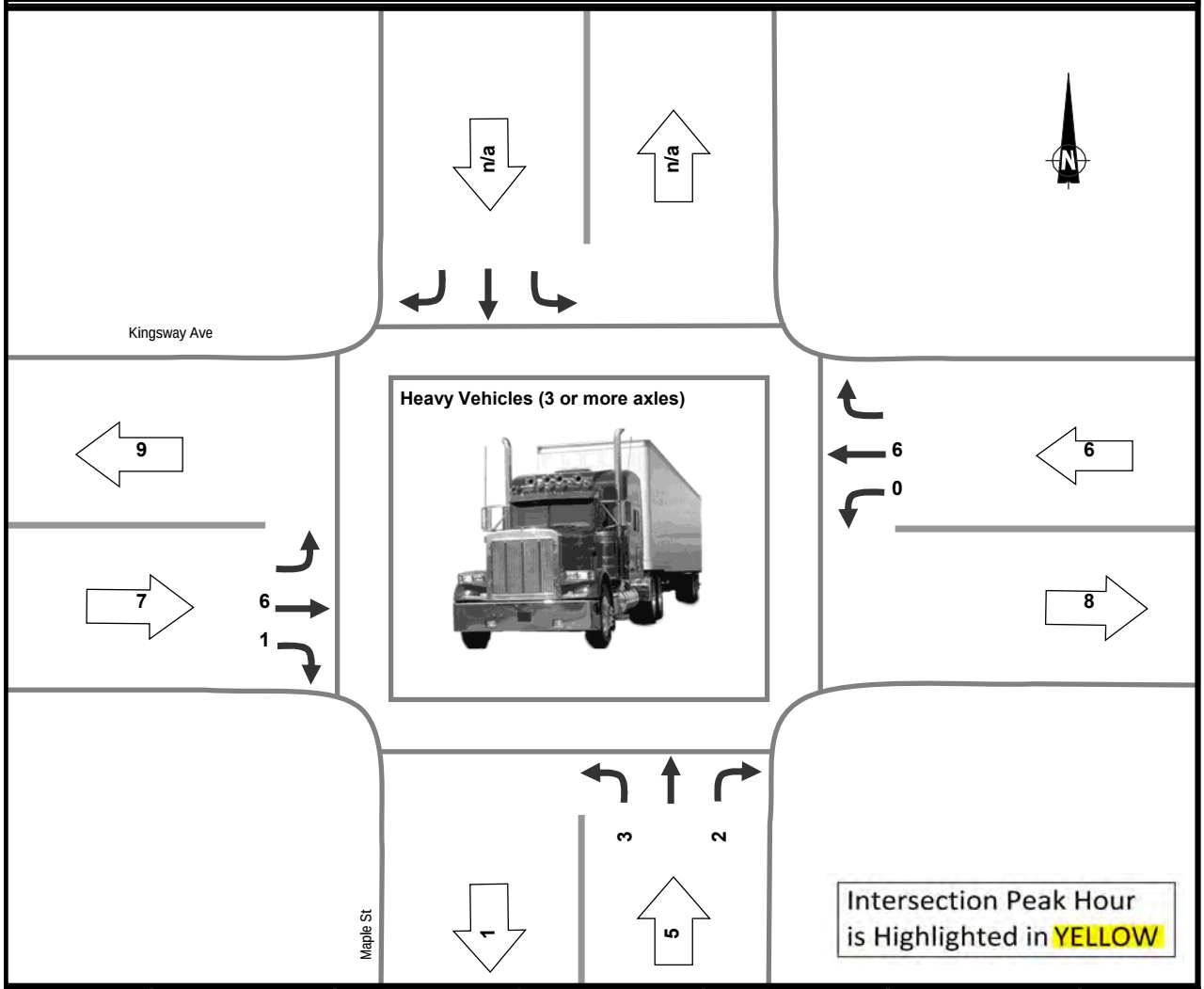


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**262**		**32**		**743**	**288**	**17**	**613**						**1,955**
PHF				0.81		0.73		0.86	0.94	0.53	0.87						0.91
Peak 15 X 4				324		44		868	308	32	704						2,156
Average Hour				277		32		688	281	14	580						1,872
Survey Total				832		96		2,064	844	41	1,740						5,617
15:00				55		11		156	50	2	139						413
15:15				76		6		152	56	2	170						462
15:30				71		9		180	52	2	143						457
15:45				76		7		217	69	4	166						539
16:00				42		11		171	74	2	150						450
16:15				63		5		171	77	3	121						440
16:30				81		9		184	68	8	176						526
16:45				79		11		155	91	2	129						467
17:00				74		6		163	72	1	143						459
17:15				68		12		171	78	2	153						484
17:30				77		3		188	80	8	150						506
17:45				70		6		156	77	5	100						414

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Heavy Vehicles (3 or more axles)

Peak Hour Traffic by Movement 7:00 AM to 8:00 AM

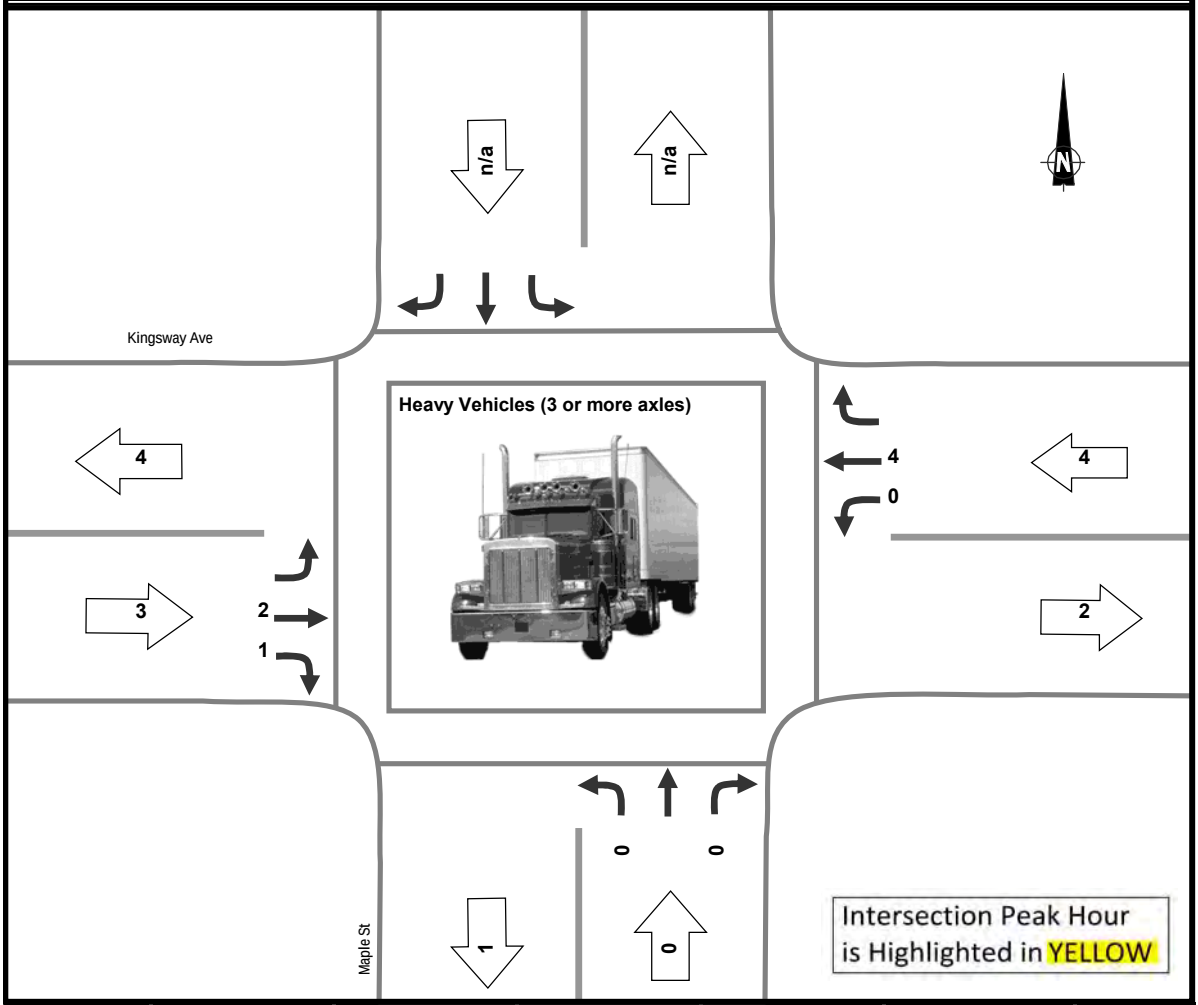


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**3**		**2**		**6**	**1**	**0**	**6**						**18**
PHF				0.75		0.50		0.38	0.25	0.00	0.50						0.75
Peak 15 X 4				4		4		16	4	0	12						24
Average Hour				2		1		6	2	0	6						17
Survey Total				4		2		11	3	0	11						31
7:00				1		0		0	0	0	3						4
7:15				1		1		2	0	0	1						5
7:30				1		0		0	1	0	1						3
7:45				0		1		4	0	0	1						6
8:00				1		0		2	1	0	0						4
8:15				0		0		1	0	0	2						3
8:30				0		0		1	0	0	2						3
8:45				0		0		1	1	0	1						3

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Heavy Vehicles (3 or more axles)

Peak Hour Traffic by Movement 3:15 PM to 4:15 PM

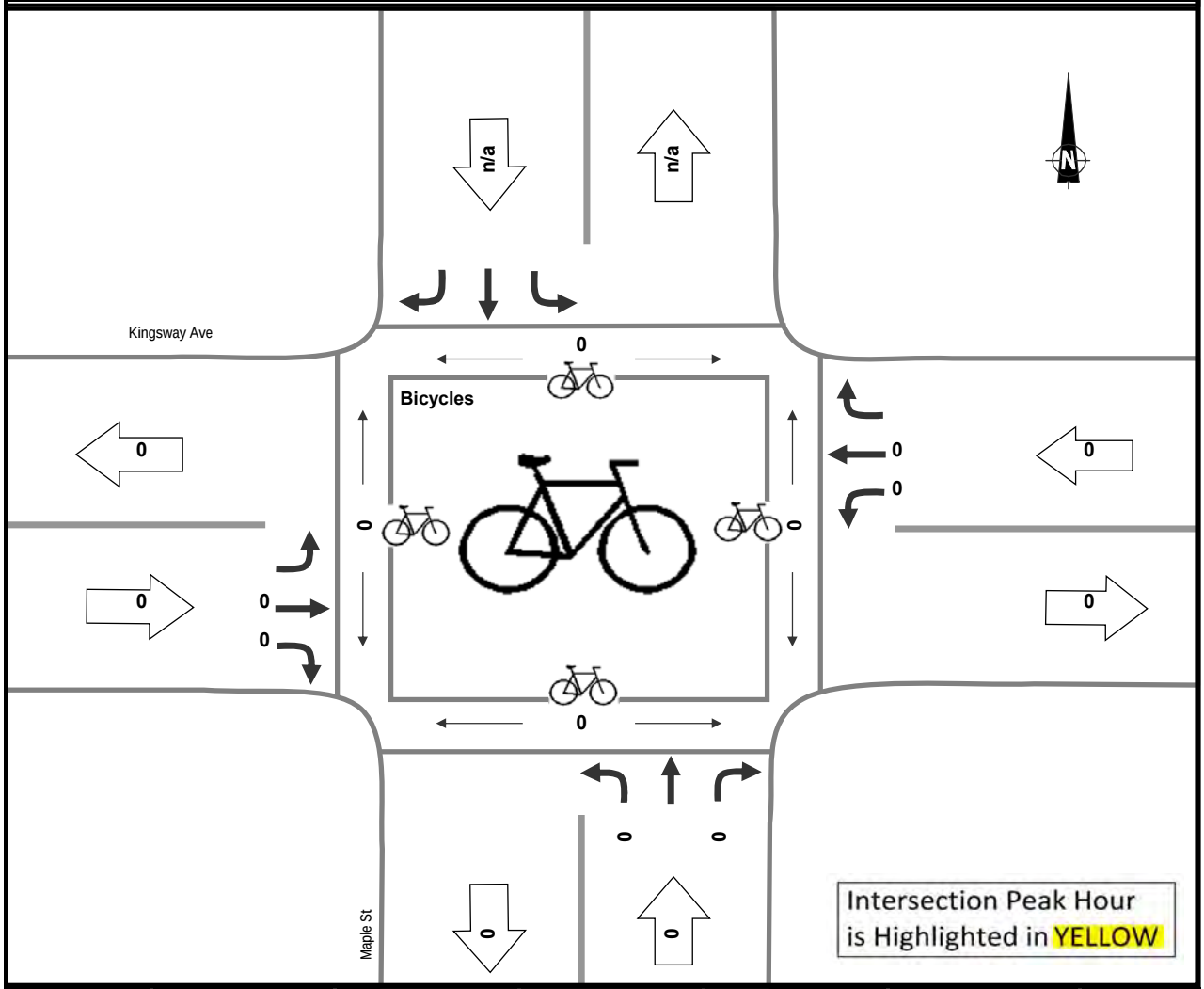


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			PEDESTRIANS				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**0**		**0**		**2**	**1**	**0**	**4**						**7**
PHF				0.00		0.00		0.50	0.25	0.00	0.50						0.58
Peak 15 X 4				0		0		4	4	0	8						12
Average Hour				0		0		1	0	0	3						4
Survey Total				0		0		2	1	0	8						11
15:00				0		0		0	0	0	1						1
15:15				0		0		1	0	0	1						2
15:30				0		0		0	0	0	1						1
15:45				0		0		1	0	0	0						1
16:00				0		0		0	1	0	2						3
16:15				0		0		0	0	0	1						1
16:30				0		0		0	0	0	0						0
16:45				0		0		0	0	0	0						0
17:00				0		0		0	0	0	1						1
17:15				0		0		0	0	0	0						0
17:30				0		0		0	0	0	0						0
17:45				0		0		0	0	0	1						1

Morning Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Bicycles

Peak Hour Traffic by Movement 7:00 AM to 8:00 AM



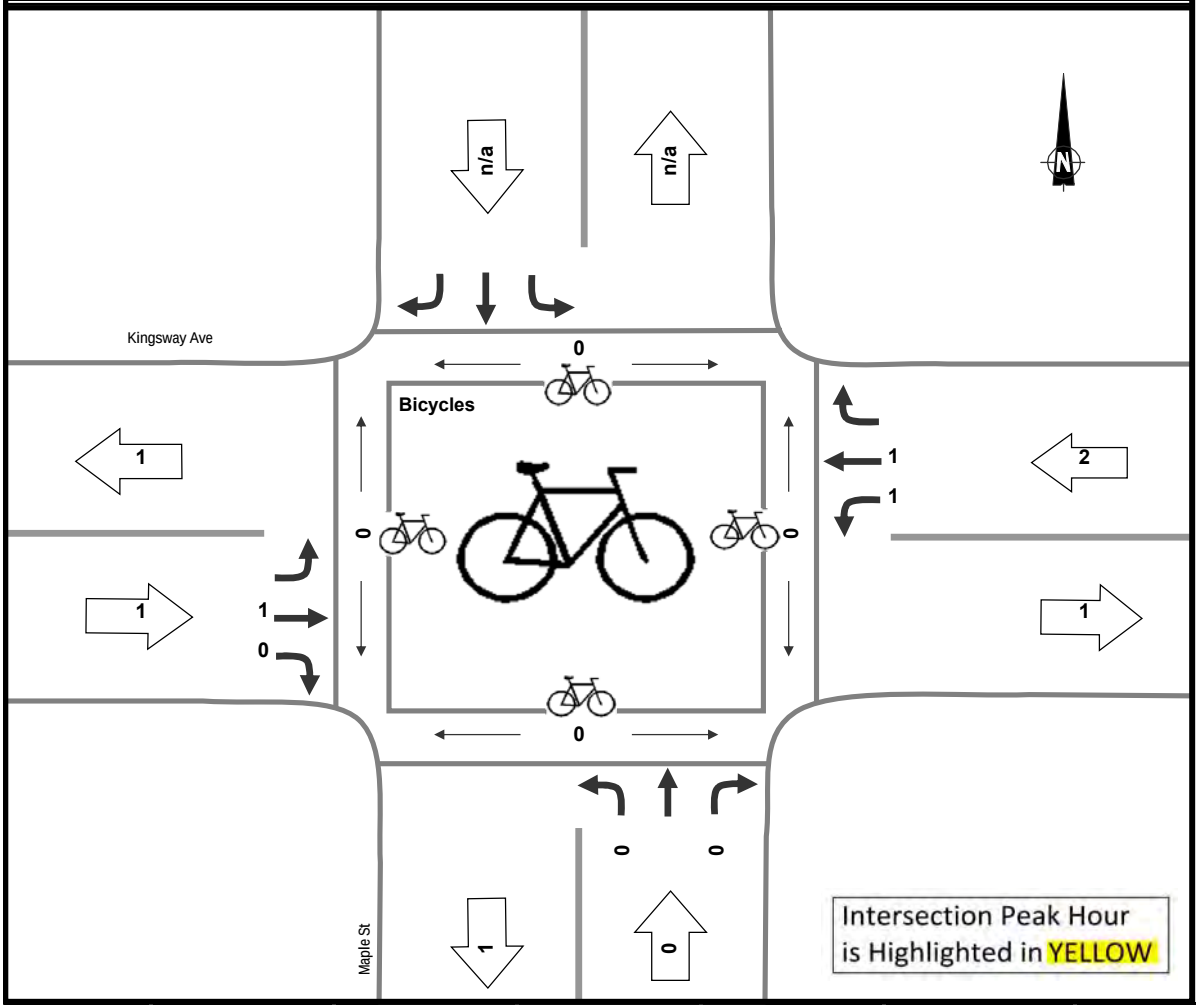
Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			BIKES IN X-WALK				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**0**		**0**		**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**
PHF				0.00		0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Peak 15 X 4				0		0		0	0	0	0		0	0	0	0	0
Average Hour				0		0		0	0	0	0		0	0	0	0	0
Survey Total				0		0		0	0	0	0		0	0	0	0	0
7:00				0		0		0	0	0	0		0	0	0	0	0
7:15				0		0		0	0	0	0		0	0	0	0	0
7:30				0		0		0	0	0	0		0	0	0	0	0
7:45				0		0		0	0	0	0		0	0	0	0	0
8:00				0		0		0	0	0	0		0	0	0	0	0
8:15				0		0		0	0	0	0		0	0	0	0	0
8:30				0		0		0	0	0	0		0	0	0	0	0
8:45				0		0		0	0	0	0		0	0	0	0	0

Maple St & Kingsway Ave
Tuesday, January 21, 2020

Afternoon Peak Period

Project: #7163: Affordable Housing Project Traffic Impact Study
Municipality: Port Coquitlam
Weather: Rain
Vehicle Class: Bicycles

Peak Hour Traffic by Movement 3:30 PM to 4:30 PM



Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			BIKES IN X-WALK				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour				**0**		**0**		**1**	**0**	**1**	**1**		**0**	**0**	**0**	**0**	**3**
PHF				0.00		0.00		0.25	0.00	0.25	0.25		0.00	0.00	0.00	0.00	0.38
Peak 15 X 4				0		0		4	0	4	4		0	0	0	0	8
Average Hour				0		0		0	0	0	1		0	0	0	0	1
Survey Total				0		0		1	1	1	2		0	0	0	0	5
15:00				0		0		0	0	0	0		0	0	0	0	0
15:15				0		0		0	0	0	0		0	0	0	0	0
15:30				0		0		1	0	1	0		0	0	0	0	2
15:45				0		0		0	0	0	0		0	0	0	0	0
16:00				0		0		0	0	0	0		0	0	0	0	0
16:15				0		0		0	0	0	1		0	0	0	0	1
16:30				0		0		0	0	0	0		0	0	0	0	0
16:45				0		0		0	0	0	0		0	0	0	0	0
17:00				0		0		0	0	0	0		0	0	0	0	0
17:15				0		0		0	1	0	1		0	0	0	0	2
17:30				0		0		0	0	0	0		0	0	0	0	0
17:45				0		0		0	0	0	0		0	0	0	0	0

Appendix D
Capacity Analysis Summary Sheets

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	355	574	296	293	191	216
Future Volume (vph)	355	574	296	293	191	216
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1500	1676	1500	1676	1500
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		617		272		232
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	382	617	318	315	205	232
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	47.0	47.0	42.0		31.0	31.0
Total Split (%)	39.2%	39.2%	35.0%		25.8%	25.8%
Maximum Green (s)	42.0	42.0	36.6		26.0	26.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	28.8	28.8	26.9	49.9	18.6	18.6
Actuated g/C Ratio	0.33	0.33	0.31	0.57	0.21	0.21
v/c Ratio	0.69	0.68	0.62	0.32	0.57	0.46
Control Delay	34.7	6.5	34.2	3.2	41.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	6.5	34.2	3.2	41.5	8.3
LOS	C	A	C	A	D	A
Approach Delay	17.3		18.7		23.9	
Approach LOS	B		B		C	
Queue Length 50th (m)	56.5	0.0	46.0	3.0	31.8	0.0

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Queue Length 95th (m)	113.2	28.3	98.0	17.4	70.9	20.9
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	896	1089	792	1124	563	658
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.57	0.40	0.28	0.36	0.35

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 87.3	
Natural Cycle: 65	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 19.1	Intersection LOS: B
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Westwood St & Kingsway Ave

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	368	596	306	224	199	224
Future Volume (vph)	368	596	306	224	199	224
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1500	1676	1500	1676	1500
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		641		241		241
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	396	641	329	241	214	241
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	48.0	48.0	40.2		31.8	31.8
Total Split (%)	40.0%	40.0%	33.5%		26.5%	26.5%
Maximum Green (s)	43.0	43.0	34.8		26.8	26.8
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	30.0	30.0	27.4	50.6	18.9	18.9
Actuated g/C Ratio	0.34	0.34	0.31	0.57	0.21	0.21
v/c Ratio	0.70	0.69	0.64	0.25	0.60	0.48
Control Delay	35.1	6.5	36.0	2.2	43.1	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	6.5	36.0	2.2	43.1	8.3
LOS	D	A	D	A	D	A
Approach Delay	17.5		21.7		24.6	
Approach LOS	B		C		C	
Queue Length 50th (m)	61.9	0.0	51.2	0.0	35.6	0.0

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Queue Length 95th (m)	116.7	28.1	104.2	11.2	73.2	21.2
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	894	1099	735	1105	565	665
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.58	0.45	0.22	0.38	0.36

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 89.3	
Natural Cycle: 65	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Westwood St & Kingsway Ave

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	403	638	323	236	199	236
Future Volume (vph)	403	638	323	236	199	236
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1500	1676	1500	1676	1500
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		686		233		254
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	433	686	347	254	214	254
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	48.0	48.0	42.0		30.0	30.0
Total Split (%)	40.0%	40.0%	35.0%		25.0%	25.0%
Maximum Green (s)	43.0	43.0	36.6		25.0	25.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	32.6	32.6	29.1	52.7	19.3	19.3
Actuated g/C Ratio	0.35	0.35	0.31	0.56	0.21	0.21
v/c Ratio	0.75	0.71	0.67	0.27	0.62	0.50
Control Delay	37.7	6.7	37.9	2.9	46.3	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	6.7	37.9	2.9	46.3	8.7
LOS	D	A	D	A	D	A
Approach Delay	18.7		23.1		25.9	
Approach LOS	B		C		C	
Queue Length 50th (m)	73.2	0.0	58.4	1.7	38.4	0.0

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Queue Length 95th (m)	130.1	30.0	108.3	13.9	74.8	22.2
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	848	1098	733	1062	501	626
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.62	0.47	0.24	0.43	0.41

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 94	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Westwood St & Kingsway Ave

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	382	618	320	322	210	233
Future Volume (vph)	382	618	320	322	210	233
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1500	1676	1500	1676	1500
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		665		244		251
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	411	665	344	346	226	251
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	47.0	47.0	41.0		32.0	32.0
Total Split (%)	39.2%	39.2%	34.2%		26.7%	26.7%
Maximum Green (s)	42.0	42.0	35.6		27.0	27.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	31.5	31.5	29.3	53.9	20.3	20.3
Actuated g/C Ratio	0.34	0.34	0.31	0.57	0.22	0.22
v/c Ratio	0.73	0.70	0.66	0.36	0.63	0.48
Control Delay	37.9	6.8	37.6	4.8	45.0	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	6.8	37.6	4.8	45.0	8.2
LOS	D	A	D	A	D	A
Approach Delay	18.7		21.1		25.6	
Approach LOS	B		C		C	
Queue Length 50th (m)	69.8	0.0	57.5	8.5	40.6	0.0

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Queue Length 95th (m)	124.1	29.4	108.5	26.9	77.1	21.7
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	824	1075	709	1095	537	651
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.62	0.49	0.32	0.42	0.39

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 94	
Natural Cycle: 65	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

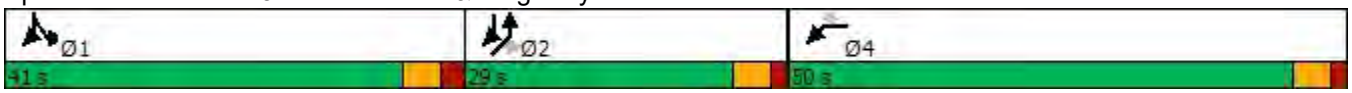
Splits and Phases: 3: Westwood St & Kingsway Ave

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	455	705	350	322	210	254
Future Volume (vph)	455	705	350	322	210	254
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1500	1676	1500	1676	1500
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		758		205		273
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	489	758	376	346	226	273
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	50.0	50.0	41.0		29.0	29.0
Total Split (%)	41.7%	41.7%	34.2%		24.2%	24.2%
Maximum Green (s)	45.0	45.0	35.6		24.0	24.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	37.2	37.2	31.3	55.8	20.3	20.3
Actuated g/C Ratio	0.37	0.37	0.31	0.55	0.20	0.20
v/c Ratio	0.80	0.74	0.73	0.38	0.67	0.53
Control Delay	40.9	6.8	42.8	6.8	51.4	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	6.8	42.8	6.8	51.4	8.9
LOS	D	A	D	A	D	A
Approach Delay	20.2		25.6		28.1	
Approach LOS	C		C		C	
Queue Length 50th (m)	99.5	0.0	76.6	15.2	48.5	0.0

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Queue Length 95th (m)	148.4	30.5	120.5	35.9	79.8	23.5
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	803	1113	645	989	436	592
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.68	0.58	0.35	0.52	0.46

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 101.4	
Natural Cycle: 80	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Westwood St & Kingsway Ave



Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	410	674	349	352	229	254
Future Volume (vph)	410	674	349	352	229	254
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1500	1676	1500	1676	1500
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		725		218		273
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	441	725	375	378	246	273
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	47.0	47.0	42.0		31.0	31.0
Total Split (%)	39.2%	39.2%	35.0%		25.8%	25.8%
Maximum Green (s)	42.0	42.0	36.6		26.0	26.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	33.8	33.8	31.3	57.0	21.4	21.4
Actuated g/C Ratio	0.34	0.34	0.32	0.57	0.22	0.22
v/c Ratio	0.77	0.73	0.71	0.40	0.68	0.51
Control Delay	41.2	7.2	40.8	6.4	49.2	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	7.2	40.8	6.4	49.2	8.3
LOS	D	A	D	A	D	A
Approach Delay	20.0		23.6		27.7	
Approach LOS	C		C		C	
Queue Length 50th (m)	86.1	0.0	72.0	15.6	49.8	0.0

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Queue Length 95th (m)	135.3	31.9	118.3	37.6	85.0	22.8
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	771	1081	681	1045	484	627
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.67	0.55	0.36	0.51	0.44

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 99.3	
Natural Cycle: 75	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 22.8	Intersection LOS: C
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Westwood St & Kingsway Ave

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	489	761	379	352	229	275
Future Volume (vph)	489	761	379	352	229	275
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1500	1676	1500	1676	1500
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		746		180		296
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	526	818	408	378	246	296
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	50.0	50.0	41.0		29.0	29.0
Total Split (%)	41.7%	41.7%	34.2%		24.2%	24.2%
Maximum Green (s)	45.0	45.0	35.6		24.0	24.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	40.2	40.2	33.3	58.9	21.4	21.4
Actuated g/C Ratio	0.37	0.37	0.31	0.55	0.20	0.20
v/c Ratio	0.84	0.80	0.79	0.42	0.74	0.55
Control Delay	45.1	10.3	47.8	8.9	56.5	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	10.3	47.8	8.9	56.5	8.9
LOS	D	B	D	A	E	A
Approach Delay	23.9		29.1		30.5	
Approach LOS	C		C		C	
Queue Length 50th (m)	115.9	11.4	92.3	25.1	57.1	0.0

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Queue Length 95th (m)	#174.7	66.7	#140.6	47.2	86.9	24.5
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	744	1081	598	958	404	586
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.76	0.68	0.39	0.61	0.51

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 107.4	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 26.8	Intersection LOS: C
Intersection Capacity Utilization 74.2%	ICU Level of Service D
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Westwood St & Kingsway Ave

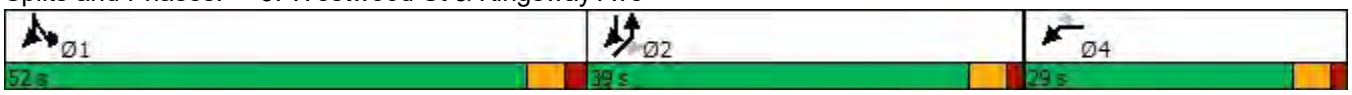
Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	192	604	528	222	354	475
Future Volume (vph)	192	604	528	222	354	475
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.98
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1458	1669	1500	1657	1470
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		657		241		480
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Confl. Peds. (#/hr)		8	4		8	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	209	657	574	241	385	516
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	29.0	29.0	52.0		39.0	39.0
Total Split (%)	24.2%	24.2%	43.3%		32.5%	32.5%
Maximum Green (s)	24.0	24.0	46.6		34.0	34.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	20.0	20.0	42.8	77.4	30.4	30.4
Actuated g/C Ratio	0.19	0.19	0.40	0.73	0.29	0.29
v/c Ratio	0.66	0.81	0.85	0.21	0.80	0.68
Control Delay	52.6	12.4	43.3	1.0	50.2	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	12.4	43.3	1.0	50.2	9.4
LOS	D	B	D	A	D	A
Approach Delay	22.1		30.8		26.9	

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Approach LOS	C		C		C	
Queue Length 50th (m)	47.3	0.0	123.3	0.0	85.0	6.3
Queue Length 95th (m)	73.8	42.9	#193.8	6.6	#134.9	41.8
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	412	853	791	1233	576	820
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.77	0.73	0.20	0.67	0.63

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 105.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 26.5 Intersection LOS: C
Intersection Capacity Utilization 73.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Westwood St & Kingsway Ave



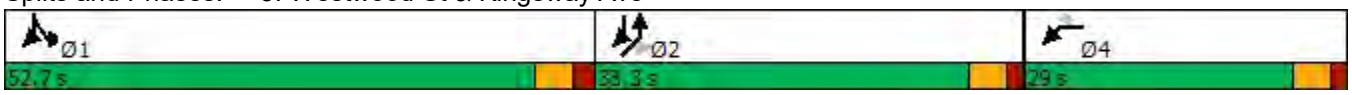
Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	200	626	547	231	368	493
Future Volume (vph)	200	626	547	231	368	493
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.98
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1458	1669	1500	1658	1470
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		680		251		472
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Confl. Peds. (#/hr)		8	4		8	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	217	680	595	251	400	536
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	29.0	29.0	52.7		38.3	38.3
Total Split (%)	24.2%	24.2%	43.9%		31.9%	31.9%
Maximum Green (s)	24.0	24.0	47.3		33.3	33.3
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	20.8	20.8	44.6	79.7	31.0	31.0
Actuated g/C Ratio	0.19	0.19	0.41	0.73	0.29	0.29
v/c Ratio	0.68	0.82	0.86	0.22	0.84	0.71
Control Delay	54.0	12.6	45.0	1.0	54.6	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	12.6	45.0	1.0	54.6	11.5
LOS	D	B	D	A	D	B
Approach Delay	22.6		32.0		29.9	

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Approach LOS	C		C		C	
Queue Length 50th (m)	49.3	0.0	130.0	0.0	90.8	11.6
Queue Length 95th (m)	76.7	44.8	#203.2	6.7	#145.7	53.3
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	395	863	771	1214	543	795
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.79	0.77	0.21	0.74	0.67

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 108.7	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Westwood St & Kingsway Ave



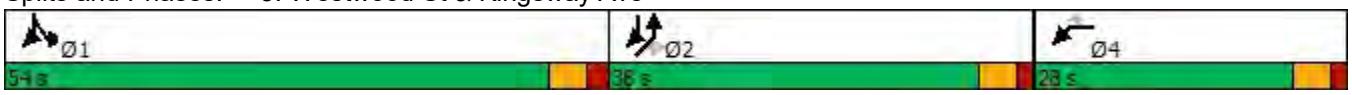
Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	214	658	581	231	368	530
Future Volume (vph)	214	658	581	231	368	530
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.98
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1458	1669	1500	1658	1470
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		715		213		451
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Confl. Peds. (#/hr)		8	4		8	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	233	715	632	251	400	576
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4			2	2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	28.0	28.0	54.0		38.0	38.0
Total Split (%)	23.3%	23.3%	45.0%		31.7%	31.7%
Maximum Green (s)	23.0	23.0	48.6		33.0	33.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	21.1	21.1	47.2	82.6	31.3	31.3
Actuated g/C Ratio	0.19	0.19	0.42	0.74	0.28	0.28
v/c Ratio	0.74	0.84	0.90	0.22	0.85	0.78
Control Delay	58.8	13.2	48.1	1.5	57.5	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	13.2	48.1	1.5	57.5	17.3
LOS	E	B	D	A	E	B
Approach Delay	24.4		34.8		33.8	

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Approach LOS	C		C		C	
Queue Length 50th (m)	54.2	0.0	144.3	2.3	93.4	26.8
Queue Length 95th (m)	83.4	47.7	#218.6	9.1	#146.8	78.8
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	366	877	763	1200	518	766
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.82	0.83	0.21	0.77	0.75

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 111.9	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 78.6%	ICU Level of Service D
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Westwood St & Kingsway Ave



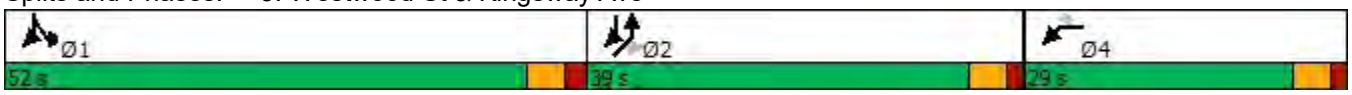
Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	210	659	572	244	389	514
Future Volume (vph)	210	659	572	244	389	514
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.98
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1458	1669	1500	1658	1470
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		696		236		464
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Confl. Peds. (#/hr)		8	4		8	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	228	716	622	265	423	559
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4				2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	29.0	29.0	52.0		39.0	39.0
Total Split (%)	24.2%	24.2%	43.3%		32.5%	32.5%
Maximum Green (s)	24.0	24.0	46.6		34.0	34.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	21.4	21.4	45.9	82.7	32.8	32.8
Actuated g/C Ratio	0.19	0.19	0.41	0.74	0.29	0.29
v/c Ratio	0.71	0.85	0.91	0.23	0.87	0.74
Control Delay	56.9	15.0	51.1	1.4	57.6	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	15.0	51.1	1.4	57.6	13.7
LOS	E	B	D	A	E	B
Approach Delay	25.1		36.3		32.6	

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Approach LOS	C		D		C	
Queue Length 50th (m)	52.2	4.0	142.9	1.7	98.1	17.6
Queue Length 95th (m)	80.7	#61.5	#220.1	8.9	#156.1	65.4
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	378	868	727	1198	530	782
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.82	0.86	0.22	0.80	0.71

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 112.2
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 31.2 Intersection LOS: C
Intersection Capacity Utilization 79.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Westwood St & Kingsway Ave



Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	237	721	642	244	389	591
Future Volume (vph)	237	721	642	244	389	591
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.98
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1458	1669	1500	1658	1470
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		717		180		431
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Confl. Peds. (#/hr)		8	4		8	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	258	784	698	265	423	642
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4			2	2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	28.0	28.0	55.0		37.0	37.0
Total Split (%)	23.3%	23.3%	45.8%		30.8%	30.8%
Maximum Green (s)	23.0	23.0	49.6		32.0	32.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	22.5	22.5	51.1	87.3	32.2	32.2
Actuated g/C Ratio	0.19	0.19	0.43	0.74	0.27	0.27
v/c Ratio	0.81	0.91	0.96	0.23	0.92	0.90
Control Delay	65.5	21.9	59.0	2.1	69.4	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	21.9	59.0	2.1	69.4	30.5
LOS	E	C	E	A	E	C
Approach Delay	32.7		43.3		45.9	

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Approach LOS	C		D		D	
Queue Length 50th (m)	61.0	14.1	167.6	5.2	101.9	57.3
Queue Length 95th (m)	#100.8	#105.2	#250.6	12.7	#163.3	#136.3
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	342	868	726	1167	469	722
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.90	0.96	0.23	0.90	0.89

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 117.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 40.6 Intersection LOS: D
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Westwood St & Kingsway Ave

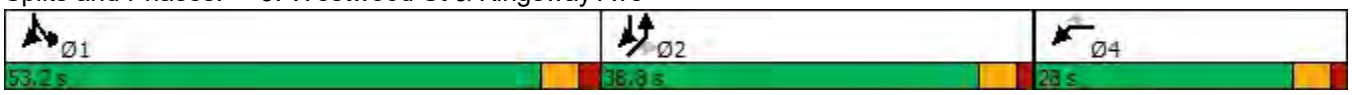
Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	229	719	624	266	425	560
Future Volume (vph)	229	719	624	266	425	560
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.98
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1458	1669	1500	1659	1470
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		692		191		437
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Confl. Peds. (#/hr)		8	4		8	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	249	782	678	289	462	609
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4			2	2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	28.0	28.0	53.2		38.8	38.8
Total Split (%)	23.3%	23.3%	44.3%		32.3%	32.3%
Maximum Green (s)	23.0	23.0	47.8		33.8	33.8
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	22.3	22.3	49.2	87.7	34.5	34.5
Actuated g/C Ratio	0.19	0.19	0.42	0.74	0.29	0.29
v/c Ratio	0.79	0.94	0.97	0.25	0.94	0.83
Control Delay	64.1	26.0	62.3	2.2	70.6	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	26.0	62.3	2.2	70.6	21.6
LOS	E	C	E	A	E	C
Approach Delay	35.2		44.3		42.7	

Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Approach LOS	D		D		D	
Queue Length 50th (m)	58.5	19.2	163.9	6.1	112.3	41.8
Queue Length 95th (m)	#95.1	#115.4	#246.8	13.9	#179.0	#105.9
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	341	848	699	1167	495	741
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.92	0.97	0.25	0.93	0.82

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 118	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 40.7	Intersection LOS: D
Intersection Capacity Utilization 85.1%	ICU Level of Service E
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Westwood St & Kingsway Ave



Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	256	781	694	266	425	637
Future Volume (vph)	256	781	694	266	425	637
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.98
Frt		0.850		0.850		0.850
Flt Protected	0.950		0.950		0.950	
Satd. Flow (prot)	1676	1500	1676	1500	1676	1500
Flt Permitted	0.950		0.950		0.950	
Satd. Flow (perm)	1676	1460	1670	1500	1660	1471
Right Turn on Red		Yes		Yes		Yes
Satd. Flow (RTOR)		715		157		416
Link Speed (k/h)	50		50		50	
Link Distance (m)	144.0		193.8		222.3	
Travel Time (s)	10.4		14.0		16.0	
Confl. Peds. (#/hr)		8	4		8	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	278	849	754	289	462	692
Turn Type	Prot	Perm	Prot	pt+ov	Prot	Perm
Protected Phases	4		1	1 2	2	
Permitted Phases		4			2	2
Detector Phase	4	4	1	1 2	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	23.0	23.0	10.4		23.0	23.0
Total Split (s)	26.0	26.0	51.0		33.0	33.0
Total Split (%)	23.6%	23.6%	46.4%		30.0%	30.0%
Maximum Green (s)	21.0	21.0	45.6		28.0	28.0
Yellow Time (s)	3.4	3.4	3.4		3.4	3.4
All-Red Time (s)	1.6	1.6	2.0		1.6	1.6
Lost Time Adjust (s)	-1.0	-1.0	-1.4		-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	5.0		3.0	3.0
Recall Mode	None	None	None		None	None
Walk Time (s)	10.0	10.0			10.0	10.0
Flash Dont Walk (s)	8.0	8.0			8.0	8.0
Pedestrian Calls (#/hr)	0	0			0	0
Act Effct Green (s)	22.0	22.0	47.0	80.0	29.0	29.0
Actuated g/C Ratio	0.20	0.20	0.43	0.73	0.26	0.26
v/c Ratio	0.83	0.98	1.05	0.26	1.05	1.00
Control Delay	63.8	35.4	80.3	2.7	96.1	50.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	35.4	80.3	2.7	96.1	50.7
LOS	E	D	F	A	F	D
Approach Delay	42.4		58.8		68.9	

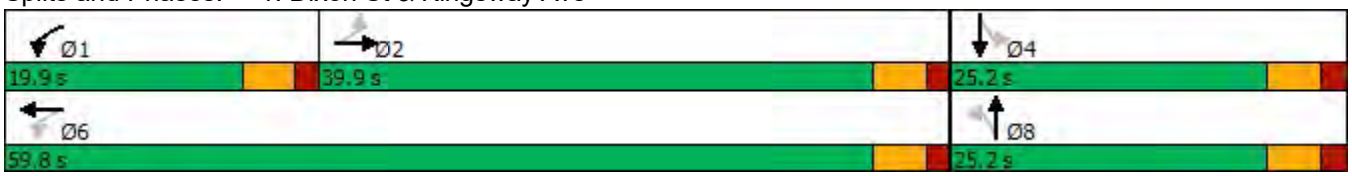
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	579	6	15	853	3	37	2	25	4	0	6
Future Volume (vph)	4	579	6	15	853	3	37	2	25	4	0	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.999						0.947			0.919	
Flt Protected					0.999			0.972			0.980	
Satd. Flow (prot)	0	3349	0	0	3349	0	0	1613	0	0	1574	0
Flt Permitted		0.951			0.944			0.816			0.839	
Satd. Flow (perm)	0	3185	0	0	3165	0	0	1351	0	0	1345	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			27			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	2		3	3		2	3		4	4		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	633	0	0	936	0	0	69	0	0	10	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.9	20.9		9.9	17.9		23.2	23.2		23.2	23.2	
Total Split (s)	39.9	39.9		19.9	59.8		25.2	25.2		25.2	25.2	
Total Split (%)	46.9%	46.9%		23.4%	70.4%		29.6%	29.6%		29.6%	29.6%	
Maximum Green (s)	35.0	35.0		15.0	54.9		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		31.6			31.6			8.4			8.3	
Actuated g/C Ratio		0.78			0.78			0.21			0.20	
v/c Ratio		0.26			0.38			0.23			0.03	
Control Delay		3.4			4.1			12.9			0.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.4			4.1			12.9			0.1	
LOS		A			A			B			A	
Approach Delay		3.4			4.1			12.9			0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			B			A	
Queue Length 50th (m)		9.4			15.7			3.3			0.0	
Queue Length 95th (m)		18.3			30.0			10.6			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2738			3165			747			771	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.23			0.30			0.09			0.01	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 40.6
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 4.2 Intersection LOS: A
Intersection Capacity Utilization 50.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



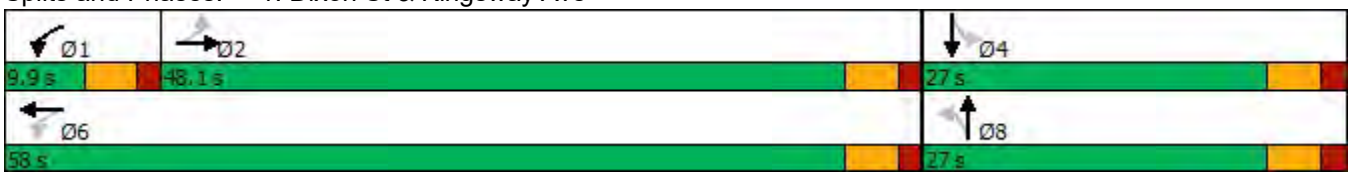
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	599	6	16	885	3	38	2	26	4	0	6
Future Volume (vph)	4	599	6	16	885	3	38	2	26	4	0	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.999						0.947			0.919	
Flt Protected					0.999			0.972			0.980	
Satd. Flow (prot)	0	3349	0	0	3349	0	0	1613	0	0	1574	0
Flt Permitted		0.951			0.943			0.816			0.838	
Satd. Flow (perm)	0	3185	0	0	3161	0	0	1351	0	0	1343	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			28			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	2		3	3		2	3		4	4		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	654	0	0	972	0	0	71	0	0	10	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.9	20.9		9.9	17.9		23.2	23.2		23.2	23.2	
Total Split (s)	48.1	48.1		9.9	58.0		27.0	27.0		27.0	27.0	
Total Split (%)	56.6%	56.6%		11.6%	68.2%		31.8%	31.8%		31.8%	31.8%	
Maximum Green (s)	43.2	43.2		5.0	53.1		21.8	21.8		21.8	21.8	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		32.1			32.1			8.5			8.5	
Actuated g/C Ratio		0.78			0.78			0.21			0.21	
v/c Ratio		0.26			0.39			0.24			0.03	
Control Delay		3.5			4.2			13.0			0.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.5			4.2			13.0			0.1	
LOS		A			A			B			A	
Approach Delay		3.5			4.2			13.0			0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			B			A	
Queue Length 50th (m)		9.8			17.0			3.4			0.0	
Queue Length 95th (m)		19.3			32.2			10.9			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		3047			3161			800			820	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.21			0.31			0.09			0.01	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 41.2
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 4.3 — Intersection LOS: A
Intersection Capacity Utilization 52.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



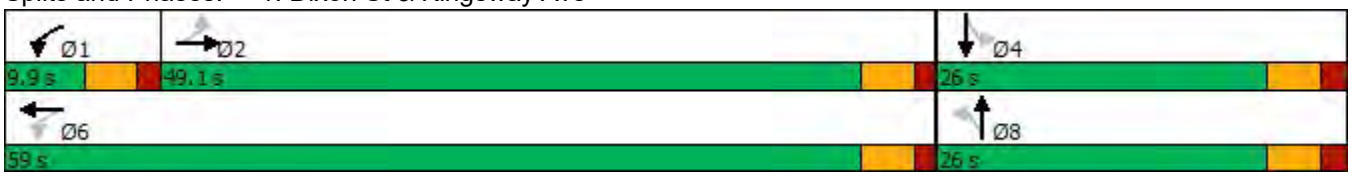
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	628	6	16	962	3	38	2	26	4	0	6
Future Volume (vph)	4	628	6	16	962	3	38	2	26	4	0	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.999						0.947			0.919	
Flt Protected					0.999			0.972			0.980	
Satd. Flow (prot)	0	3349	0	0	3349	0	0	1613	0	0	1574	0
Flt Permitted		0.950			0.943			0.816			0.838	
Satd. Flow (perm)	0	3181	0	0	3161	0	0	1351	0	0	1343	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			28			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	2		3	3		2	3		4	4		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	685	0	0	1054	0	0	71	0	0	10	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.9	20.9		9.9	17.9		23.2	23.2		23.2	23.2	
Total Split (s)	49.1	49.1		9.9	59.0		26.0	26.0		26.0	26.0	
Total Split (%)	57.8%	57.8%		11.6%	69.4%		30.6%	30.6%		30.6%	30.6%	
Maximum Green (s)	44.2	44.2		5.0	54.1		20.8	20.8		20.8	20.8	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		33.7			33.7			8.6			8.5	
Actuated g/C Ratio		0.79			0.79			0.20			0.20	
v/c Ratio		0.27			0.42			0.24			0.03	
Control Delay		3.4			4.2			13.9			0.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.4			4.2			13.9			0.1	
LOS		A			A			B			A	
Approach Delay		3.4			4.2			13.9			0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			B			A	
Queue Length 50th (m)		10.5			19.0			3.6			0.0	
Queue Length 95th (m)		20.4			36.2			11.6			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2999			3161			743			766	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.23			0.33			0.10			0.01	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 42.8
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 4.3 Intersection LOS: A
Intersection Capacity Utilization 54.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



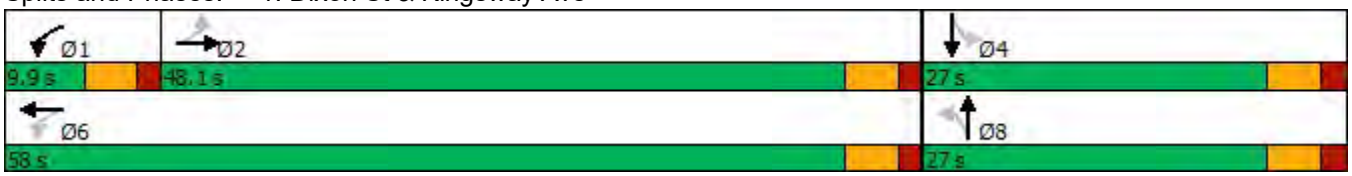
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	627	7	17	916	3	41	2	28	4	0	7
Future Volume (vph)	4	627	7	17	916	3	41	2	28	4	0	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.998						0.947			0.910	
Flt Protected					0.999			0.972			0.984	
Satd. Flow (prot)	0	3345	0	0	3349	0	0	1613	0	0	1563	0
Flt Permitted		0.951			0.941			0.815			0.861	
Satd. Flow (perm)	0	3181	0	0	3155	0	0	1349	0	0	1366	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			30			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	2		3	3		2	3		4	4		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	686	0	0	1006	0	0	76	0	0	12	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.9	20.9		9.9	17.9		23.2	23.2		23.2	23.2	
Total Split (s)	48.1	48.1		9.9	58.0		27.0	27.0		27.0	27.0	
Total Split (%)	56.6%	56.6%		11.6%	68.2%		31.8%	31.8%		31.8%	31.8%	
Maximum Green (s)	43.2	43.2		5.0	53.1		21.8	21.8		21.8	21.8	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		32.2			32.2			8.7			8.5	
Actuated g/C Ratio		0.78			0.78			0.21			0.21	
v/c Ratio		0.28			0.41			0.25			0.03	
Control Delay		3.6			4.3			13.1			0.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.6			4.3			13.1			0.2	
LOS		A			A			B			A	
Approach Delay		3.6			4.3			13.1			0.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			B			A	
Queue Length 50th (m)		10.5			17.9			3.7			0.0	
Queue Length 95th (m)		20.8			34.6			11.5			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		3036			3155			795			829	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.23			0.32			0.10			0.01	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 41.4
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 4.4 Intersection LOS: A
Intersection Capacity Utilization 54.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



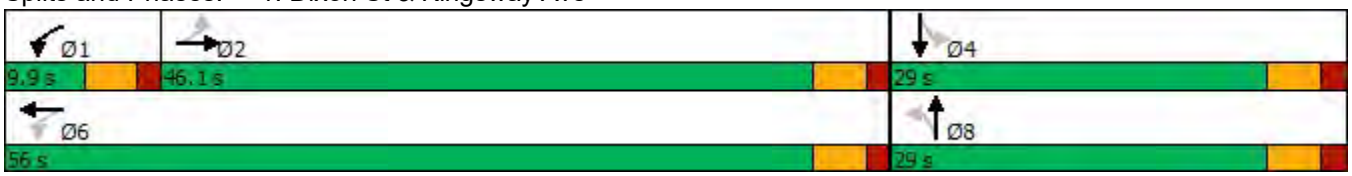
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	652	22	27	995	3	122	2	46	4	0	7
Future Volume (vph)	4	652	22	27	995	3	122	2	46	4	0	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.995						0.964			0.910	
Flt Protected					0.999			0.965			0.984	
Satd. Flow (prot)	0	3333	0	0	3349	0	0	1634	0	0	1563	0
Flt Permitted		0.950			0.927			0.780			0.907	
Satd. Flow (perm)	0	3166	0	0	3108	0	0	1317	0	0	1439	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			1			22			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	2		3	3		2	3		4	4		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	729	0	0	1102	0	0	182	0	0	12	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.9	20.9		9.9	17.9		23.2	23.2		23.2	23.2	
Total Split (s)	46.1	46.1		9.9	56.0		29.0	29.0		29.0	29.0	
Total Split (%)	54.2%	54.2%		11.6%	65.9%		34.1%	34.1%		34.1%	34.1%	
Maximum Green (s)	41.2	41.2		5.0	51.1		23.8	23.8		23.8	23.8	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		30.2			30.2			13.3			13.3	
Actuated g/C Ratio		0.58			0.58			0.26			0.26	
v/c Ratio		0.39			0.61			0.51			0.03	
Control Delay		7.0			9.2			20.3			0.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.0			9.2			20.3			0.1	
LOS		A			A			C			A	
Approach Delay		7.0			9.2			20.3			0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			C			A	
Queue Length 50th (m)		16.0			29.3			11.2			0.0	
Queue Length 95th (m)		35.5			63.0			34.1			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2694			2952			663			756	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.27			0.37			0.27			0.02	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 51.7
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.4 Intersection LOS: A
Intersection Capacity Utilization 73.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



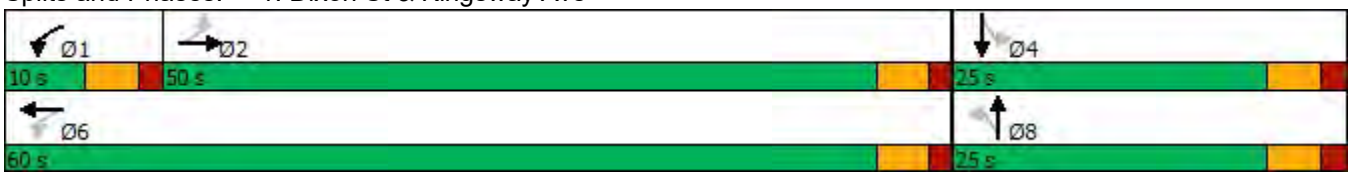
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	678	7	17	1076	3	41	2	28	4	0	7
Future Volume (vph)	4	678	7	17	1076	3	41	2	28	4	0	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.998						0.947			0.910	
Flt Protected					0.999			0.972			0.984	
Satd. Flow (prot)	0	3345	0	0	3349	0	0	1613	0	0	1563	0
Flt Permitted		0.950			0.942			0.815			0.889	
Satd. Flow (perm)	0	3178	0	0	3158	0	0	1349	0	0	1410	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			30			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	2		3	3		2	3		4	4		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	741	0	0	1178	0	0	76	0	0	12	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.9	20.9		9.9	17.9		23.2	23.2		23.2	23.2	
Total Split (s)	50.0	50.0		10.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.8%	58.8%		11.8%	70.6%		29.4%	29.4%		29.4%	29.4%	
Maximum Green (s)	45.1	45.1		5.1	55.1		19.8	19.8		19.8	19.8	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		36.2			36.2			8.9			8.7	
Actuated g/C Ratio		0.80			0.80			0.20			0.19	
v/c Ratio		0.29			0.47			0.26			0.04	
Control Delay		3.4			4.5			15.1			0.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.4			4.5			15.1			0.2	
LOS		A			A			B			A	
Approach Delay		3.4			4.5			15.1			0.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			B			A	
Queue Length 50th (m)		12.0			23.3			4.1			0.0	
Queue Length 95th (m)		23.1			44.1			13.2			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2927			3158			670			729	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.25			0.37			0.11			0.02	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 45.5
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 4.5 Intersection LOS: A
Intersection Capacity Utilization 59.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



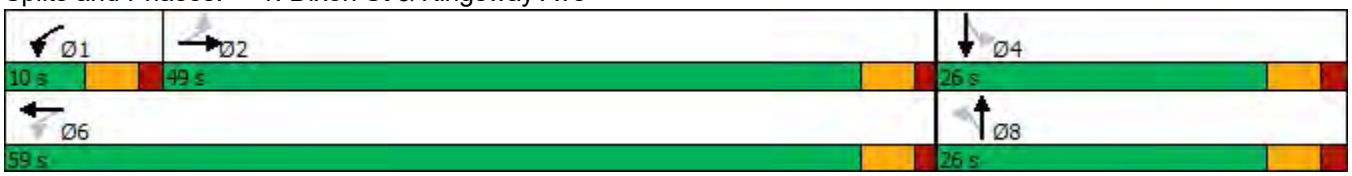
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	684	7	18	1000	4	44	2	30	5	0	7
Future Volume (vph)	5	684	7	18	1000	4	44	2	30	5	0	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.998			0.999			0.947			0.917	
Flt Protected					0.999			0.972			0.981	
Satd. Flow (prot)	0	3345	0	0	3346	0	0	1613	0	0	1572	0
Flt Permitted		0.949			0.940			0.814			0.876	
Satd. Flow (perm)	0	3175	0	0	3148	0	0	1348	0	0	1401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			32			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	2		3	3		2	3		4	4		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	748	0	0	1098	0	0	81	0	0	13	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.9	20.9		9.9	17.9		23.2	23.2		23.2	23.2	
Total Split (s)	49.0	49.0		10.0	59.0		26.0	26.0		26.0	26.0	
Total Split (%)	57.6%	57.6%		11.8%	69.4%		30.6%	30.6%		30.6%	30.6%	
Maximum Green (s)	44.1	44.1		5.1	54.1		20.8	20.8		20.8	20.8	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		34.1			34.1			8.9			8.7	
Actuated g/C Ratio		0.79			0.79			0.21			0.20	
v/c Ratio		0.30			0.44			0.27			0.04	
Control Delay		3.6			4.5			14.1			0.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.6			4.5			14.1			0.2	
LOS		A			A			B			A	
Approach Delay		3.6			4.5			14.1			0.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			B			A	
Queue Length 50th (m)		12.1			20.8			4.2			0.0	
Queue Length 95th (m)		23.5			40.0			12.9			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2965			3148			734			788	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.25			0.35			0.11			0.02	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 43.4
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 4.5 Intersection LOS: A
Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	709	33	64	1000	4	240	2	48	5	0	7
Future Volume (vph)	5	709	33	64	1000	4	240	2	48	5	0	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.993			0.999			0.977			0.917	
Flt Protected					0.997			0.960			0.981	
Satd. Flow (prot)	0	3325	0	0	3339	0	0	1650	0	0	1572	0
Flt Permitted		0.949			0.853			0.754			0.896	
Satd. Flow (perm)	0	3156	0	0	2857	0	0	1292	0	0	1434	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1			13			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	2		3	3		2	3		4	4		3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	802	0	0	1148	0	0	312	0	0	13	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	20.9	20.9		9.9	17.9		23.2	23.2		23.2	23.2	
Total Split (s)	41.0	41.0		10.0	51.0		34.0	34.0		34.0	34.0	
Total Split (%)	48.2%	48.2%		11.8%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	36.1	36.1		5.1	46.1		28.8	28.8		28.8	28.8	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		36.7			36.7			22.0			22.0	
Actuated g/C Ratio		0.55			0.55			0.33			0.33	
v/c Ratio		0.46			0.74			0.72			0.02	
Control Delay		10.8			15.7			31.2			0.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.8			15.7			31.2			0.1	
LOS		B			B			C			A	
Approach Delay		10.8			15.7			31.2			0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			B			C			A	
Queue Length 50th (m)		30.6			55.2			33.4			0.0	
Queue Length 95th (m)		54.0			97.0			73.0			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		1997			2096			619			725	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.55			0.50			0.02	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 67.3
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 87.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave

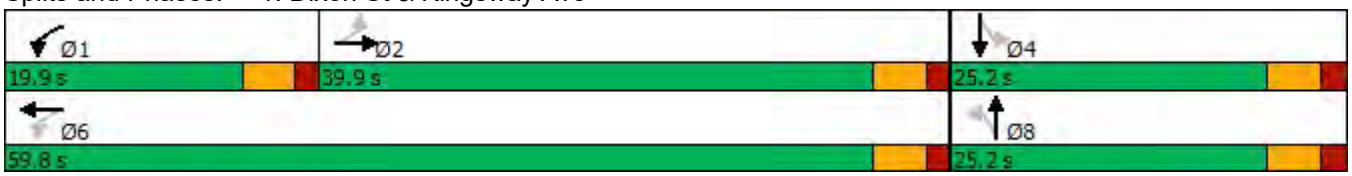
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	993	15	29	841	2	25	0	34	11	0	13
Future Volume (vph)	10	993	15	29	841	2	25	0	34	11	0	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			0.98	
Frt		0.998						0.922			0.927	
Flt Protected					0.998			0.979			0.977	
Satd. Flow (prot)	0	3345	0	0	3346	0	0	1568	0	0	1583	0
Flt Permitted		0.946			0.902			0.851			0.821	
Satd. Flow (perm)	0	3164	0	0	3024	0	0	1360	0	0	1322	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2						87			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1106	0	0	948	0	0	64	0	0	26	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	39.9	39.9		19.9	59.8		25.2	25.2		25.2	25.2	
Total Split (%)	46.9%	46.9%		23.4%	70.4%		29.6%	29.6%		29.6%	29.6%	
Maximum Green (s)	35.0	35.0		15.0	54.9		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		32.0			32.0			7.3			7.3	
Actuated g/C Ratio		0.80			0.80			0.18			0.18	
v/c Ratio		0.44			0.39			0.20			0.08	
Control Delay		3.7			3.5			5.2			0.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.7			3.5			5.2			0.5	
LOS		A			A			A			A	
Approach Delay		3.7			3.5			5.2			0.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			A			A	
Queue Length 50th (m)		17.2			14.1			0.0			0.0	
Queue Length 95th (m)		31.8			26.2			5.5			0.3	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2747			3024			790			769	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.31			0.08			0.03	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 40
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 3.6 Intersection LOS: A
Intersection Capacity Utilization 61.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



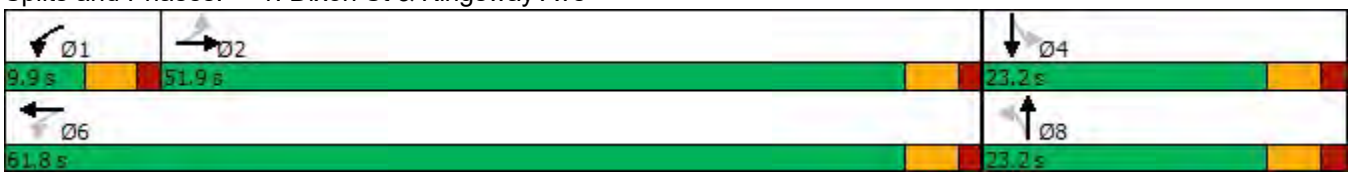
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1030	16	30	873	2	26	0	35	11	0	14
Future Volume (vph)	10	1030	16	30	873	2	26	0	35	11	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			0.98	
Frt		0.998						0.922			0.925	
Flt Protected					0.998			0.979			0.978	
Satd. Flow (prot)	0	3345	0	0	3346	0	0	1568	0	0	1581	0
Flt Permitted		0.946			0.899			0.850			0.825	
Satd. Flow (perm)	0	3164	0	0	3014	0	0	1358	0	0	1325	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			87			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1148	0	0	984	0	0	66	0	0	27	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	51.9	51.9		9.9	61.8		23.2	23.2		23.2	23.2	
Total Split (%)	61.1%	61.1%		11.6%	72.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	47.0	47.0		5.0	56.9		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		33.1			33.1			7.3			7.3	
Actuated g/C Ratio		0.80			0.80			0.18			0.18	
v/c Ratio		0.45			0.41			0.21			0.09	
Control Delay		3.8			3.6			5.6			0.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.8			3.6			5.6			0.6	
LOS		A			A			A			A	
Approach Delay		3.8			3.6			5.6			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			A			A	
Queue Length 50th (m)		18.2			14.8			0.0			0.0	
Queue Length 95th (m)		34.7			28.5			5.8			0.4	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		3145			3014			694			678	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.37			0.33			0.10			0.04	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 41.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 3.7 Intersection LOS: A
Intersection Capacity Utilization 63.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



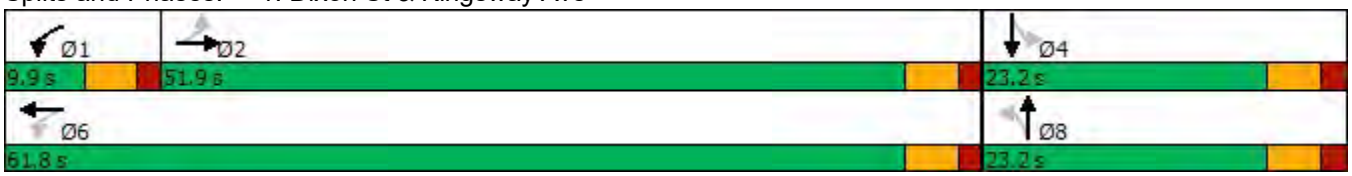
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1101	16	30	919	2	26	0	35	11	0	14
Future Volume (vph)	10	1101	16	30	919	2	26	0	35	11	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			0.98	
Frt		0.998						0.922			0.925	
Flt Protected					0.998			0.979			0.978	
Satd. Flow (prot)	0	3345	0	0	3346	0	0	1568	0	0	1581	0
Flt Permitted		0.946			0.896			0.850			0.825	
Satd. Flow (perm)	0	3164	0	0	3004	0	0	1358	0	0	1325	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						87			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1225	0	0	1034	0	0	66	0	0	27	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	51.9	51.9		9.9	61.8		23.2	23.2		23.2	23.2	
Total Split (%)	61.1%	61.1%		11.6%	72.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	47.0	47.0		5.0	56.9		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		35.0			35.0			7.4			7.4	
Actuated g/C Ratio		0.81			0.81			0.17			0.17	
v/c Ratio		0.48			0.43			0.22			0.09	
Control Delay		3.9			3.6			5.8			0.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.9			3.6			5.8			0.6	
LOS		A			A			A			A	
Approach Delay		3.9			3.6			5.8			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			A			A	
Queue Length 50th (m)		20.3			16.1			0.0			0.0	
Queue Length 95th (m)		38.5			30.8			6.0			0.3	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		3104			3004			672			657	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.39			0.34			0.10			0.04	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 43.2
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 3.8 Intersection LOS: A
Intersection Capacity Utilization 64.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



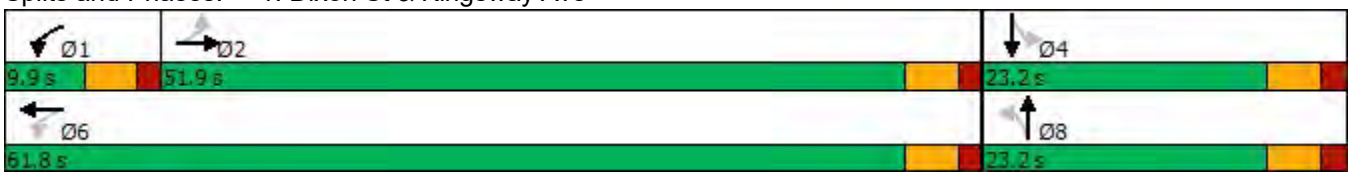
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1075	17	32	919	2	28	0	37	12	0	14
Future Volume (vph)	11	1075	17	32	919	2	28	0	37	12	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			0.98	
Frt		0.998						0.923			0.928	
Flt Protected		0.999			0.998			0.979			0.977	
Satd. Flow (prot)	0	3341	0	0	3346	0	0	1570	0	0	1585	0
Flt Permitted		0.944			0.893			0.848			0.817	
Satd. Flow (perm)	0	3157	0	0	2994	0	0	1357	0	0	1317	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						87			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1198	0	0	1036	0	0	70	0	0	28	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	51.9	51.9		9.9	61.8		23.2	23.2		23.2	23.2	
Total Split (%)	61.1%	61.1%		11.6%	72.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	47.0	47.0		5.0	56.9		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		34.0			34.0			7.4			7.4	
Actuated g/C Ratio		0.80			0.80			0.17			0.17	
v/c Ratio		0.47			0.43			0.23			0.09	
Control Delay		4.0			3.7			6.1			0.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.0			3.7			6.1			0.6	
LOS		A			A			A			A	
Approach Delay		4.0			3.7			6.1			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			A			A	
Queue Length 50th (m)		19.6			16.1			0.0			0.0	
Queue Length 95th (m)		38.0			31.7			6.6			0.5	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		3121			2994			681			663	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.38			0.35			0.10			0.04	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 42.4
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 3.9 Intersection LOS: A
Intersection Capacity Utilization 66.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



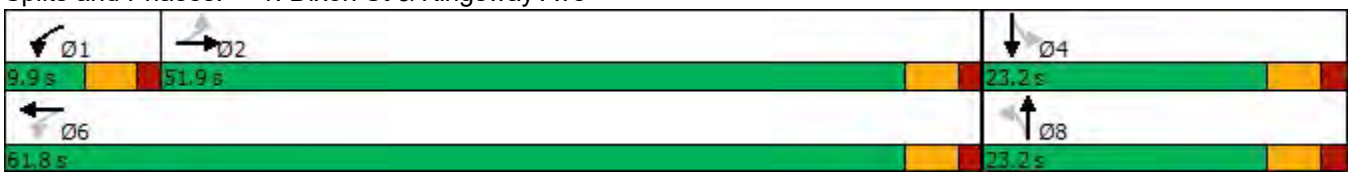
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1148	91	54	963	2	73	0	54	12	0	14
Future Volume (vph)	11	1148	91	54	963	2	73	0	54	12	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.989						0.942			0.928	
Flt Protected					0.997			0.972			0.977	
Satd. Flow (prot)	0	3308	0	0	3343	0	0	1597	0	0	1585	0
Flt Permitted		0.944			0.820			0.807			0.868	
Satd. Flow (perm)	0	3123	0	0	2749	0	0	1322	0	0	1401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16						87			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1359	0	0	1108	0	0	138	0	0	28	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	51.9	51.9		9.9	61.8		23.2	23.2		23.2	23.2	
Total Split (%)	61.1%	61.1%		11.6%	72.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	47.0	47.0		5.0	56.9		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		37.2			37.2			9.7			9.7	
Actuated g/C Ratio		0.73			0.73			0.19			0.19	
v/c Ratio		0.60			0.55			0.43			0.08	
Control Delay		6.5			6.3			14.1			0.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.5			6.3			14.1			0.5	
LOS		A			A			B			A	
Approach Delay		6.5			6.3			14.1			0.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			B			A	
Queue Length 50th (m)		30.7			24.1			3.9			0.0	
Queue Length 95th (m)		65.7			53.0			19.8			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2858			2663			567			598	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.48			0.42			0.24			0.05	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 51.2
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 6.8 Intersection LOS: A
Intersection Capacity Utilization 89.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



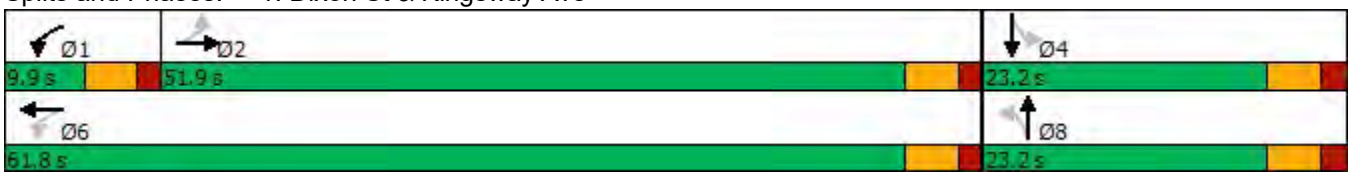
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1222	17	32	1008	2	28	0	37	12	0	14
Future Volume (vph)	11	1222	17	32	1008	2	28	0	37	12	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			0.98	
Frt		0.998						0.923			0.928	
Flt Protected					0.998			0.979			0.977	
Satd. Flow (prot)	0	3345	0	0	3346	0	0	1570	0	0	1585	0
Flt Permitted		0.944			0.886			0.848			0.850	
Satd. Flow (perm)	0	3157	0	0	2970	0	0	1357	0	0	1370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						87			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1358	0	0	1133	0	0	70	0	0	28	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	51.9	51.9		9.9	61.8		23.2	23.2		23.2	23.2	
Total Split (%)	61.1%	61.1%		11.6%	72.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	47.0	47.0		5.0	56.9		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		37.2			37.2			7.5			7.5	
Actuated g/C Ratio		0.77			0.77			0.15			0.15	
v/c Ratio		0.56			0.50			0.25			0.10	
Control Delay		4.8			4.3			7.0			0.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.8			4.3			7.0			0.7	
LOS		A			A			A			A	
Approach Delay		4.8			4.3			7.0			0.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			A			A	
Queue Length 50th (m)		24.3			18.7			0.0			0.0	
Queue Length 95th (m)		45.5			35.5			7.2			0.1	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2933			2970			608			613	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.46			0.38			0.12			0.05	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 48.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 4.6 Intersection LOS: A
Intersection Capacity Utilization 69.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



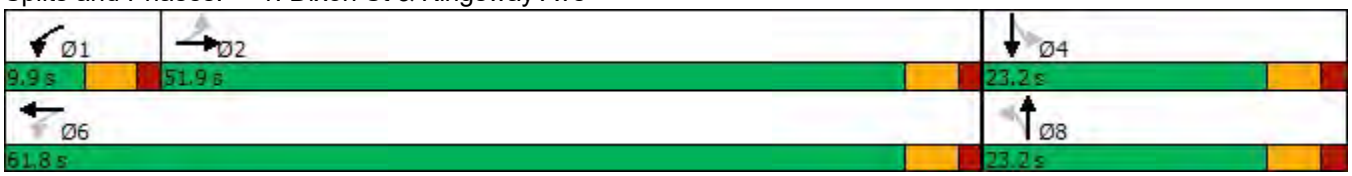
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1172	18	35	1002	2	30	0	41	13	0	16
Future Volume (vph)	12	1172	18	35	1002	2	30	0	41	13	0	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			0.98	
Frt		0.998						0.922			0.926	
Flt Protected					0.998			0.979			0.978	
Satd. Flow (prot)	0	3345	0	0	3346	0	0	1568	0	0	1583	0
Flt Permitted		0.942			0.882			0.849			0.864	
Satd. Flow (perm)	0	3150	0	0	2957	0	0	1357	0	0	1390	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						87			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1307	0	0	1129	0	0	78	0	0	31	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	51.9	51.9		9.9	61.8		23.2	23.2		23.2	23.2	
Total Split (%)	61.1%	61.1%		11.6%	72.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	47.0	47.0		5.0	56.9		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		34.9			34.9			7.7			7.7	
Actuated g/C Ratio		0.75			0.75			0.17			0.17	
v/c Ratio		0.55			0.51			0.26			0.10	
Control Delay		5.0			4.7			7.5			0.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.0			4.7			7.5			0.9	
LOS		A			A			A			A	
Approach Delay		5.0			4.7			7.5			0.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			A			A	
Queue Length 50th (m)		22.7			18.6			0.0			0.0	
Queue Length 95th (m)		45.3			37.7			8.1			0.7	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		3028			2957			631			645	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.43			0.38			0.12			0.05	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 46.5
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 4.9 Intersection LOS: A
Intersection Capacity Utilization 71.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



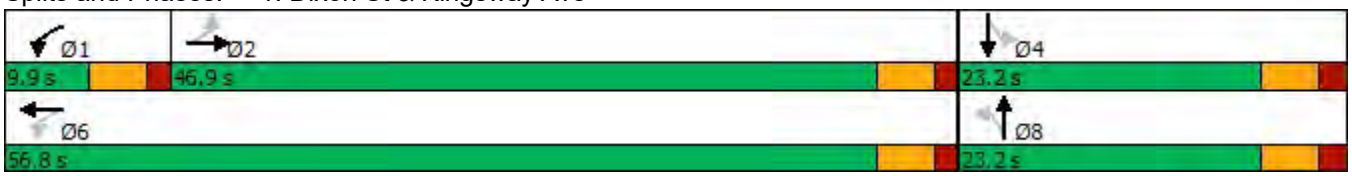
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1245	92	122	1002	2	119	0	58	13	0	16
Future Volume (vph)	12	1245	92	122	1002	2	119	0	58	13	0	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.990						0.956			0.926	
Flt Protected					0.995			0.967			0.978	
Satd. Flow (prot)	0	3312	0	0	3336	0	0	1617	0	0	1583	0
Flt Permitted		0.941			0.610			0.779			0.867	
Satd. Flow (perm)	0	3117	0	0	2045	0	0	1298	0	0	1398	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14						93			93	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1466	0	0	1224	0	0	192	0	0	31	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	46.9	46.9		9.9	56.8		23.2	23.2		23.2	23.2	
Total Split (%)	58.6%	58.6%		12.4%	71.0%		29.0%	29.0%		29.0%	29.0%	
Maximum Green (s)	42.0	42.0		5.0	51.9		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		52.7			52.7			12.5			12.5	
Actuated g/C Ratio		0.72			0.72			0.17			0.17	
v/c Ratio		0.65			0.83			0.64			0.10	
Control Delay		7.9			15.5			25.4			0.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.9			15.5			25.4			0.6	
LOS		A			B			C			A	
Approach Delay		7.9			15.5			25.4			0.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			B			C			A	
Queue Length 50th (m)		46.0			51.6			13.1			0.0	
Queue Length 95th (m)		91.8			#137.7			33.3			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2246			1494			411			437	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.65			0.82			0.47			0.07	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 73.2
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 99.6% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Dixon St & Kingsway Ave



Lane Group	WBL	WBR	SBL	SBR	NEL	NER
Approach LOS	D		E		E	
Queue Length 50th (m)	60.7	35.7	~186.6	7.7	~113.6	76.4
Queue Length 95th (m)	#105.8	#134.4	#260.6	15.8	#177.7	#161.6
Internal Link Dist (m)	120.0		169.8		198.3	
Turn Bay Length (m)						
Base Capacity (vph)	335	864	716	1133	441	694
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.98	1.05	0.26	1.05	1.00

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Natural Cycle: 110
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 56.7 Intersection LOS: E
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

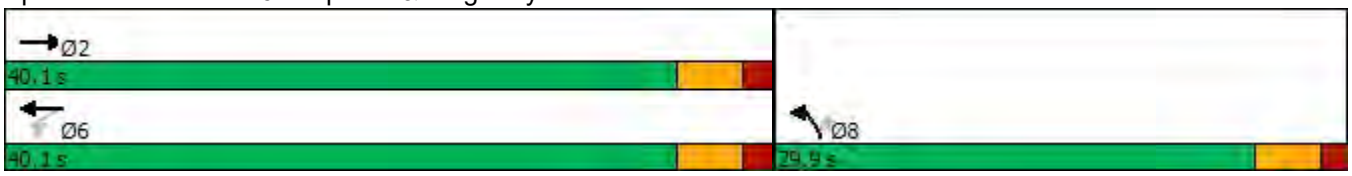
Splits and Phases: 3: Westwood St & Kingsway Ave

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	514	106	3	589	271	21
Future Volume (vph)	514	106	3	589	271	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt	0.977					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1717	0	1676	1765	1676	1500
Flt Permitted			0.251		0.950	
Satd. Flow (perm)	1717	0	442	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	22					23
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	667	0	3	633	291	23
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	40.1		40.1	40.1	29.9	29.9
Total Split (%)	57.3%		57.3%	57.3%	42.7%	42.7%
Maximum Green (s)	35.0		35.0	35.0	25.0	25.0
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	25.2		25.2	25.2	15.5	15.5
Actuated g/C Ratio	0.51		0.51	0.51	0.31	0.31
v/c Ratio	0.75		0.01	0.70	0.55	0.05
Control Delay	16.2		7.3	14.8	19.8	7.1
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	16.2		7.3	14.8	19.8	7.1
LOS	B		A	B	B	A
Approach Delay	16.2			14.8	18.9	
Approach LOS	B			B	B	
Queue Length 50th (m)	40.0		0.1	37.8	21.0	0.0
Queue Length 95th (m)	99.9		1.3	92.2	51.5	4.3
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1320		338	1352	940	851
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.51		0.01	0.47	0.31	0.03

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 49.3	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Maple St & Kingsway Ave

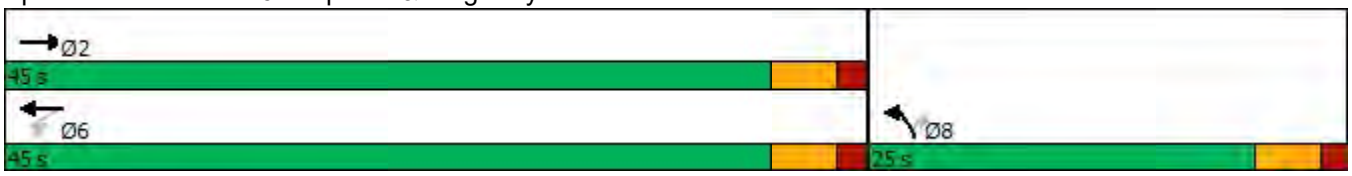


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	532	109	3	610	281	32
Future Volume (vph)	532	109	3	610	281	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt	0.977					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1717	0	1676	1765	1676	1500
Flt Permitted			0.248		0.950	
Satd. Flow (perm)	1717	0	437	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					34
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	689	0	3	656	302	34
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	45.0		45.0	45.0	25.0	25.0
Total Split (%)	64.3%		64.3%	64.3%	35.7%	35.7%
Maximum Green (s)	39.9		39.9	39.9	20.1	20.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	27.0		27.0	27.0	15.2	15.2
Actuated g/C Ratio	0.53		0.53	0.53	0.30	0.30
v/c Ratio	0.75		0.01	0.70	0.60	0.07
Control Delay	15.0		6.3	13.8	23.0	7.3
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	15.0		6.3	13.8	23.0	7.3
LOS	B		A	B	C	A
Approach Delay	15.0			13.8	21.4	
Approach LOS	B			B	C	
Queue Length 50th (m)	41.7		0.1	39.7	23.5	0.0
Queue Length 95th (m)	93.2		1.1	86.1	60.0	5.9
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1405		356	1439	748	688
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.49		0.01	0.46	0.40	0.05

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 50.8	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 59.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Maple St & Kingsway Ave

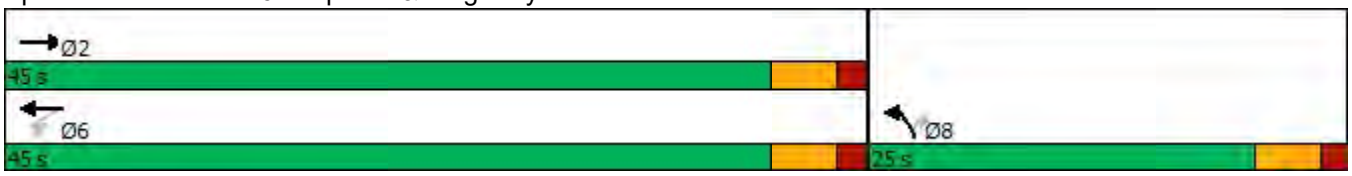


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	561	115	3	627	290	32
Future Volume (vph)	561	115	3	627	290	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt	0.977					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1717	0	1676	1765	1676	1500
Flt Permitted			0.223		0.950	
Satd. Flow (perm)	1717	0	393	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	26					34
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	727	0	3	674	312	34
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	45.0		45.0	45.0	25.0	25.0
Total Split (%)	64.3%		64.3%	64.3%	35.7%	35.7%
Maximum Green (s)	39.9		39.9	39.9	20.1	20.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	28.4		28.4	28.4	15.8	15.8
Actuated g/C Ratio	0.54		0.54	0.54	0.30	0.30
v/c Ratio	0.78		0.01	0.71	0.62	0.07
Control Delay	16.4		6.3	14.3	24.2	7.4
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	16.4		6.3	14.3	24.2	7.4
LOS	B		A	B	C	A
Approach Delay	16.4			14.2	22.5	
Approach LOS	B			B	C	
Queue Length 50th (m)	48.0		0.1	43.7	26.2	0.0
Queue Length 95th (m)	102.8		1.1	90.3	62.0	5.9
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1359		310	1391	719	663
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.53		0.01	0.48	0.43	0.05

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 52.8	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 16.8	Intersection LOS: B
Intersection Capacity Utilization 62.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Maple St & Kingsway Ave

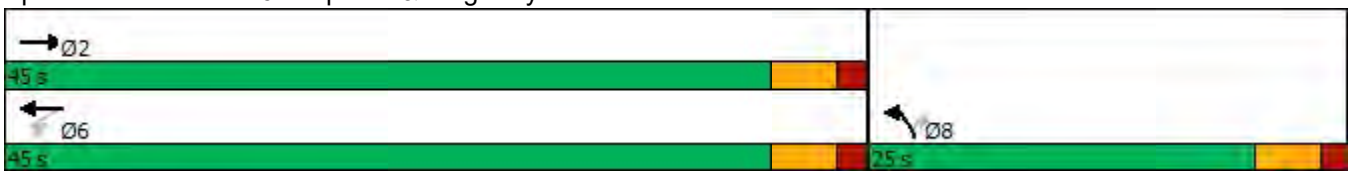


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	547	112	3	641	295	34
Future Volume (vph)	547	112	3	641	295	34
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt	0.977					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1717	0	1676	1765	1676	1500
Flt Permitted			0.233		0.950	
Satd. Flow (perm)	1717	0	411	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					37
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	708	0	3	689	317	37
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	45.0		45.0	45.0	25.0	25.0
Total Split (%)	64.3%		64.3%	64.3%	35.7%	35.7%
Maximum Green (s)	39.9		39.9	39.9	20.1	20.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	27.7		27.7	27.7	15.8	15.8
Actuated g/C Ratio	0.53		0.53	0.53	0.30	0.30
v/c Ratio	0.77		0.01	0.73	0.63	0.08
Control Delay	16.0		6.3	15.1	23.9	7.1
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	16.0		6.3	15.1	23.9	7.1
LOS	B		A	B	C	A
Approach Delay	16.0			15.0	22.2	
Approach LOS	B			B	C	
Queue Length 50th (m)	45.6		0.1	45.1	26.1	0.0
Queue Length 95th (m)	97.9		1.1	94.0	63.2	6.1
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1372		327	1405	730	674
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.52		0.01	0.49	0.43	0.05

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 52.1	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Maple St & Kingsway Ave



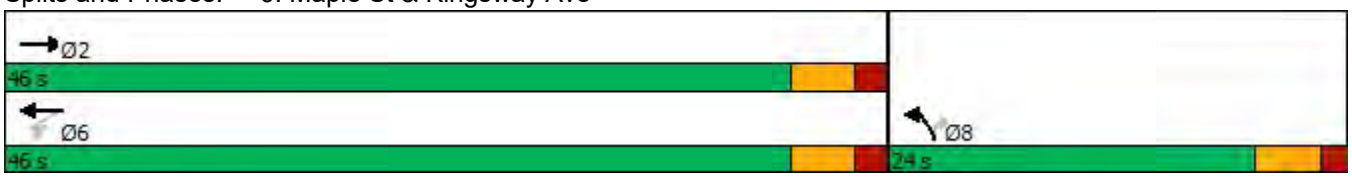
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	607	124	3	671	311	34
Future Volume (vph)	607	124	3	671	311	34
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt	0.977					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1717	0	1676	1765	1676	1500
Flt Permitted			0.193		0.950	
Satd. Flow (perm)	1717	0	340	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	26					37
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	786	0	3	722	334	37
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	46.0		46.0	46.0	24.0	24.0
Total Split (%)	65.7%		65.7%	65.7%	34.3%	34.3%
Maximum Green (s)	40.9		40.9	40.9	19.1	19.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	31.3		31.3	31.3	16.4	16.4
Actuated g/C Ratio	0.56		0.56	0.56	0.29	0.29
v/c Ratio	0.81		0.02	0.74	0.68	0.08
Control Delay	17.9		6.0	14.8	28.4	7.6
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	17.9		6.0	14.8	28.4	7.6
LOS	B		A	B	C	A
Approach Delay	17.9			14.7	26.4	
Approach LOS	B			B	C	
Queue Length 50th (m)	61.1		0.1	53.8	32.9	0.0
Queue Length 95th (m)	114.9		1.1	97.4	#75.0	6.2
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1309		258	1340	638	594
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.60		0.01	0.54	0.52	0.06

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 56.3	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 66.6%	ICU Level of Service C
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



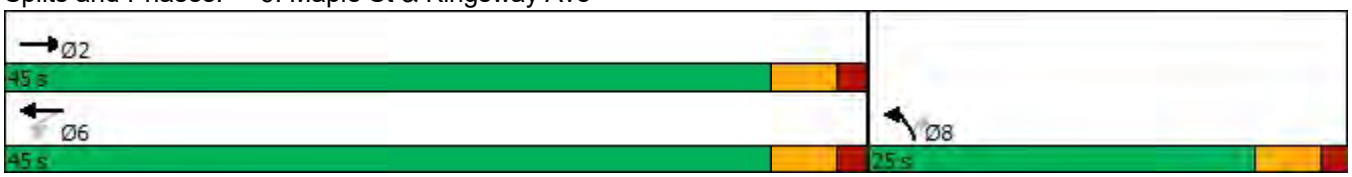
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	596	122	4	700	322	37
Future Volume (vph)	596	122	4	700	322	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt	0.977					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1717	0	1676	1765	1676	1500
Flt Permitted			0.195		0.950	
Satd. Flow (perm)	1717	0	344	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					40
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	772	0	4	753	346	40
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	45.0		45.0	45.0	25.0	25.0
Total Split (%)	64.3%		64.3%	64.3%	35.7%	35.7%
Maximum Green (s)	39.9		39.9	39.9	20.1	20.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	30.8		30.8	30.8	16.9	16.9
Actuated g/C Ratio	0.55		0.55	0.55	0.30	0.30
v/c Ratio	0.81		0.02	0.78	0.69	0.08
Control Delay	18.4		6.5	16.9	27.7	7.2
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	18.4		6.5	16.9	27.7	7.2
LOS	B		A	B	C	A
Approach Delay	18.4			16.9	25.6	
Approach LOS	B			B	C	
Queue Length 50th (m)	60.6		0.2	59.0	33.9	0.0
Queue Length 95th (m)	115.8		1.4	109.9	#71.2	6.4
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1287		256	1316	670	624
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.60		0.02	0.57	0.52	0.06

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 56.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 19.2	Intersection LOS: B
Intersection Capacity Utilization 66.5%	ICU Level of Service C
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



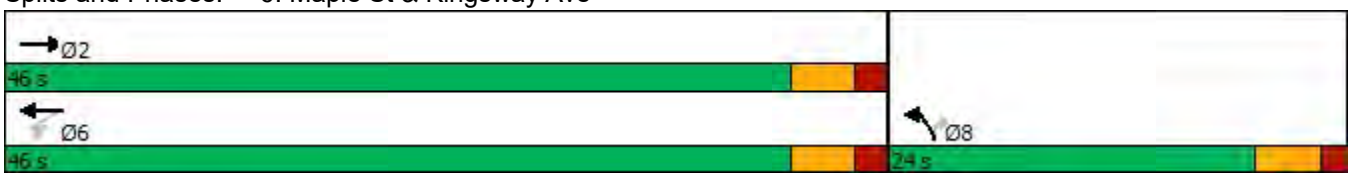
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	656	134	4	730	338	37
Future Volume (vph)	656	134	4	730	338	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					
Frt	0.977					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1717	0	1676	1765	1676	1500
Flt Permitted			0.158		0.950	
Satd. Flow (perm)	1717	0	279	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	26					40
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	4	785	363	40
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	46.0		46.0	46.0	24.0	24.0
Total Split (%)	65.7%		65.7%	65.7%	34.3%	34.3%
Maximum Green (s)	40.9		40.9	40.9	19.1	19.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	34.6		34.6	34.6	17.5	17.5
Actuated g/C Ratio	0.57		0.57	0.57	0.29	0.29
v/c Ratio	0.86		0.03	0.78	0.75	0.09
Control Delay	21.3		6.2	16.6	33.0	7.4
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	21.3		6.2	16.6	33.0	7.4
LOS	C		A	B	C	A
Approach Delay	21.3			16.6	30.4	
Approach LOS	C			B	C	
Queue Length 50th (m)	79.0		0.2	69.2	43.4	0.0
Queue Length 95th (m)	#161.2		1.3	114.1	#85.0	6.6
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1237		200	1264	581	546
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.69		0.02	0.62	0.62	0.07

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 60.5
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 21.3 Intersection LOS: C
Intersection Capacity Utilization 71.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	744	289	17	616	262	32
Future Volume (vph)	744	289	17	616	262	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					
Frt	0.962					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1681	0	1676	1765	1676	1500
Flt Permitted			0.108		0.950	
Satd. Flow (perm)	1681	0	191	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	41					35
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		7	7			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1123	0	18	670	285	35
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	40.1		40.1	40.1	29.9	29.9
Total Split (%)	57.3%		57.3%	57.3%	42.7%	42.7%
Maximum Green (s)	35.0		35.0	35.0	25.0	25.0
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	36.9		36.9	36.9	16.3	16.3
Actuated g/C Ratio	0.60		0.60	0.60	0.27	0.27
v/c Ratio	1.09		0.16	0.63	0.64	0.08
Control Delay	73.5		11.4	12.4	26.5	6.5

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	73.5		11.4	12.4	26.5	6.5
LOS	E		B	B	C	A
Approach Delay	73.5			12.3	24.3	
Approach LOS	E			B	C	
Queue Length 50th (m)	~151.4		0.8	43.6	29.1	0.0
Queue Length 95th (m)	#258.7		5.2	99.6	50.4	5.3
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1029		115	1063	712	657
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.09		0.16	0.63	0.40	0.05

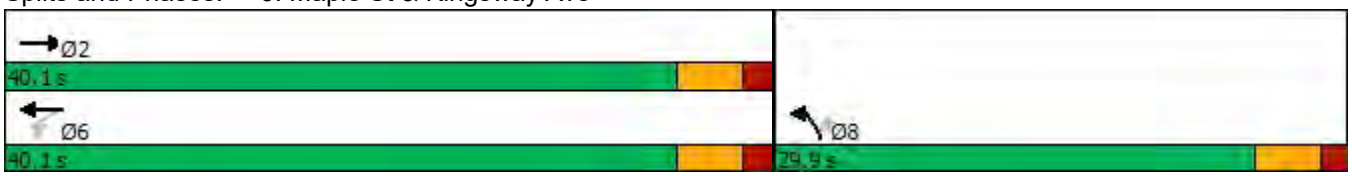
Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 61.2
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 46.4 Intersection LOS: D
Intersection Capacity Utilization 82.1% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



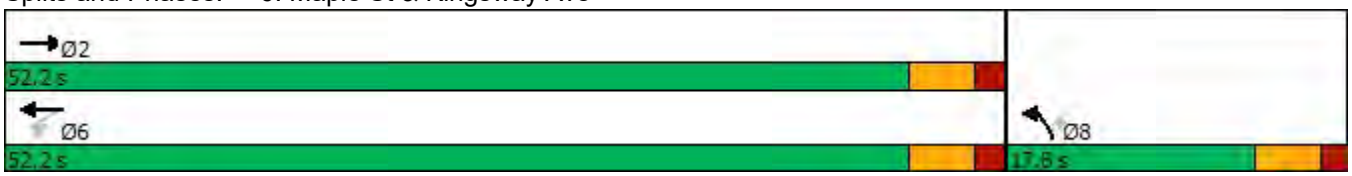
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	770	300	18	640	271	33
Future Volume (vph)	770	300	18	640	271	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					
Frt	0.962					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1682	0	1676	1765	1676	1500
Flt Permitted			0.082		0.950	
Satd. Flow (perm)	1682	0	145	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	64					36
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		7	7			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1163	0	20	696	295	36
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	52.2		52.2	52.2	17.8	17.8
Total Split (%)	74.6%		74.6%	74.6%	25.4%	25.4%
Maximum Green (s)	47.1		47.1	47.1	12.9	12.9
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	48.6		48.6	48.6	13.8	13.8
Actuated g/C Ratio	0.69		0.69	0.69	0.20	0.20
v/c Ratio	0.98		0.20	0.57	0.90	0.11
Control Delay	35.5		9.6	7.9	60.4	9.8

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	35.5		9.6	7.9	60.4	9.8
LOS	D		A	A	E	A
Approach Delay	35.5			7.9	54.9	
Approach LOS	D			A	D	
Queue Length 50th (m)	122.6		0.8	40.5	40.0	0.0
Queue Length 95th (m)	#239.6		4.3	65.5	#83.0	7.0
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1181		99	1218	328	322
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.98		0.20	0.57	0.90	0.11

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70.4
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 29.5 Intersection LOS: C
Intersection Capacity Utilization 84.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



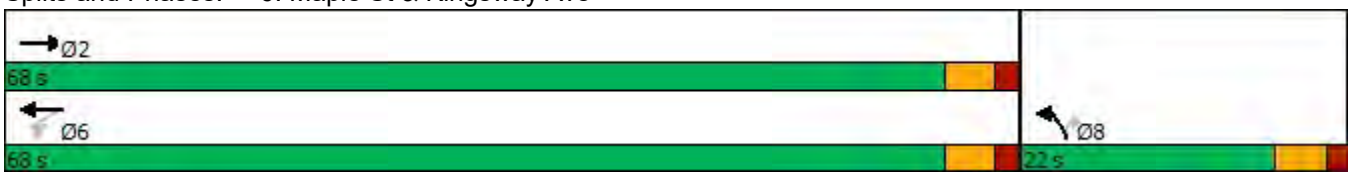
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	796	310	18	669	284	33
Future Volume (vph)	796	310	18	669	284	33
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					
Frt	0.962					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1680	0	1676	1765	1676	1500
Flt Permitted			0.062		0.950	
Satd. Flow (perm)	1680	0	109	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	54					36
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		7	7			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1202	0	20	727	309	36
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	68.0		68.0	68.0	22.0	22.0
Total Split (%)	75.6%		75.6%	75.6%	24.4%	24.4%
Maximum Green (s)	62.9		62.9	62.9	17.1	17.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	64.0		64.0	64.0	18.0	18.0
Actuated g/C Ratio	0.71		0.71	0.71	0.20	0.20
v/c Ratio	0.99		0.26	0.58	0.92	0.11
Control Delay	38.5		14.4	8.7	70.3	11.2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	38.5		14.4	8.7	70.3	11.2
LOS	D		B	A	E	B
Approach Delay	38.5			8.8	64.1	
Approach LOS	D			A	E	
Queue Length 50th (m)	177.3		1.1	55.0	55.6	0.0
Queue Length 95th (m)	#305.3		6.0	82.9	#105.3	7.9
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1210		77	1255	335	328
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.99		0.26	0.58	0.92	0.11

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 32.7 Intersection LOS: C
Intersection Capacity Utilization 87.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



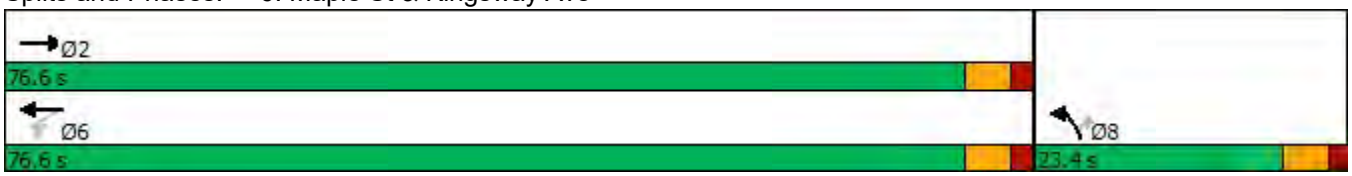
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	810	315	19	669	284	35
Future Volume (vph)	810	315	19	669	284	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					
Frt	0.962					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1679	0	1676	1765	1676	1500
Flt Permitted			0.063		0.950	
Satd. Flow (perm)	1679	0	111	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	51					38
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		7	7			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1222	0	21	727	309	38
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	76.6		76.6	76.6	23.4	23.4
Total Split (%)	76.6%		76.6%	76.6%	23.4%	23.4%
Maximum Green (s)	71.5		71.5	71.5	18.5	18.5
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	72.6		72.6	72.6	19.4	19.4
Actuated g/C Ratio	0.73		0.73	0.73	0.19	0.19
v/c Ratio	0.99		0.26	0.57	0.95	0.12
Control Delay	38.3		14.1	8.5	80.2	11.8

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	38.3		14.1	8.5	80.2	11.8
LOS	D		B	A	F	B
Approach Delay	38.3			8.7	72.8	
Approach LOS	D			A	E	
Queue Length 50th (m)	202.9		1.2	58.7	62.9	0.0
Queue Length 95th (m)	#337.2		6.0	86.3	#115.9	8.8
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1232		80	1281	325	321
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.99		0.26	0.57	0.95	0.12

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 100	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	860	335	19	729	311	35
Future Volume (vph)	860	335	19	729	311	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					
Frt	0.962					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1677	0	1676	1765	1676	1500
Flt Permitted			0.045		0.950	
Satd. Flow (perm)	1677	0	79	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	44					31
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		7	7			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1299	0	21	792	338	38
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	92.0		92.0	92.0	28.0	28.0
Total Split (%)	76.7%		76.7%	76.7%	23.3%	23.3%
Maximum Green (s)	86.9		86.9	86.9	23.1	23.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	88.0		88.0	88.0	24.0	24.0
Actuated g/C Ratio	0.73		0.73	0.73	0.20	0.20
v/c Ratio	1.05		0.37	0.61	1.01	0.12
Control Delay	55.9		26.8	10.2	99.5	17.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	55.9		26.8	10.2	99.5	17.3
LOS	E		C	B	F	B
Approach Delay	55.9			10.7	91.2	
Approach LOS	E			B	F	
Queue Length 50th (m)	~347.2		1.7	83.2	~85.6	1.4
Queue Length 95th (m)	#432.7		11.1	116.6	#147.7	11.2
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1241		57	1294	335	324
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.05		0.37	0.61	1.01	0.12

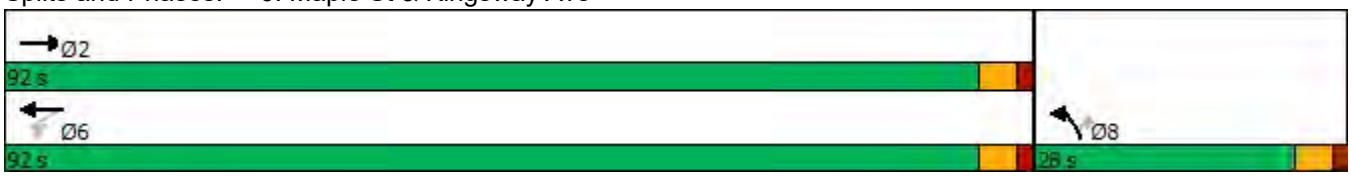
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 120
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 46.5 Intersection LOS: D
Intersection Capacity Utilization 94.4% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



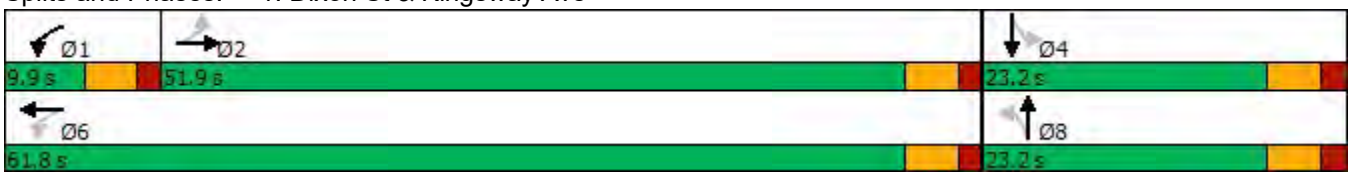
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1110	171	49	960	2	122	0	51	12	0	14
Future Volume (vph)	11	1110	171	49	960	2	122	0	51	12	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	
Frt		0.980						0.961			0.928	
Flt Protected					0.998			0.966			0.977	
Satd. Flow (prot)	0	3272	0	0	3346	0	0	1625	0	0	1585	0
Flt Permitted		0.944			0.825			0.772			0.873	
Satd. Flow (perm)	0	3088	0	0	2766	0	0	1294	0	0	1410	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33						87			87	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		155.9			135.0			181.2			78.6	
Travel Time (s)		11.2			9.7			13.0			5.7	
Confl. Peds. (#/hr)	9		5	5		9	4		11	11		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1405	0	0	1098	0	0	188	0	0	28	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.9	22.9		9.9	24.5		23.2	23.2		23.2	23.2	
Total Split (s)	51.9	51.9		9.9	61.8		23.2	23.2		23.2	23.2	
Total Split (%)	61.1%	61.1%		11.6%	72.7%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	47.0	47.0		5.0	56.9		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.4	3.4		3.4	3.4		3.4	3.4		3.4	3.4	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		-0.9			-0.9			-1.2			-1.2	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	Min		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			6.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)		36.6			36.6			12.1			12.1	
Actuated g/C Ratio		0.64			0.64			0.21			0.21	
v/c Ratio		0.70			0.62			0.55			0.08	
Control Delay		9.4			8.4			18.6			0.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		9.4			8.4			18.6			0.4	
LOS		A			A			B			A	
Approach Delay		9.4			8.4			18.6			0.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			B			A	
Queue Length 50th (m)		40.4			29.4			8.2			0.0	
Queue Length 95th (m)		85.6			63.4			31.0			0.0	
Internal Link Dist (m)		131.9			111.0			157.2			54.6	
Turn Bay Length (m)												
Base Capacity (vph)		2675			2599			506			547	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.53			0.42			0.37			0.05	

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 56.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 9.6 Intersection LOS: A
Intersection Capacity Utilization 89.5% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Dixon St & Kingsway Ave



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	933	363	20	790	337	38
Future Volume (vph)	933	363	20	790	337	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		0.0	55.0		0.0	50.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					
Frt	0.962					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1677	0	1676	1765	1676	1500
Flt Permitted			0.045		0.950	
Satd. Flow (perm)	1677	0	79	1765	1676	1500
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	45					30
Link Speed (k/h)	50			50	50	
Link Distance (m)	261.1			211.7	342.5	
Travel Time (s)	18.8			15.2	24.7	
Confl. Peds. (#/hr)		7	7			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1409	0	22	859	366	41
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	23.1		15.1	15.1	11.9	11.9
Total Split (s)	93.0		93.0	93.0	27.0	27.0
Total Split (%)	77.5%		77.5%	77.5%	22.5%	22.5%
Maximum Green (s)	87.9		87.9	87.9	22.1	22.1
Yellow Time (s)	3.4		3.4	3.4	3.4	3.4
All-Red Time (s)	1.7		1.7	1.7	1.5	1.5
Lost Time Adjust (s)	-1.1		-1.1	-1.1	-0.9	-0.9
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Min		Min	Min	None	None
Walk Time (s)	8.0					
Flash Dont Walk (s)	10.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	89.0		89.0	89.0	23.0	23.0
Actuated g/C Ratio	0.74		0.74	0.74	0.19	0.19
v/c Ratio	1.12		0.38	0.66	1.14	0.13
Control Delay	84.0		27.2	10.8	137.7	19.4

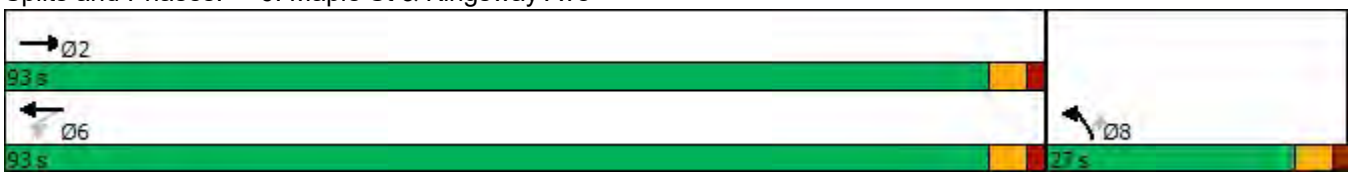
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	84.0		27.2	10.8	137.7	19.4
LOS	F		C	B	F	B
Approach Delay	84.0			11.2	125.8	
Approach LOS	F			B	F	
Queue Length 50th (m)	~401.2		1.7	92.9	~105.9	2.3
Queue Length 95th (m)	#486.7		12.1	131.5	#166.8	12.4
Internal Link Dist (m)	237.1			187.7	318.5	
Turn Bay Length (m)			55.0			50.0
Base Capacity (vph)	1255		58	1309	321	311
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	1.12		0.38	0.66	1.14	0.13

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 66.5	Intersection LOS: E
Intersection Capacity Utilization 101.7%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Maple St & Kingsway Ave



HCS7 Two-Way Stop-Control Report

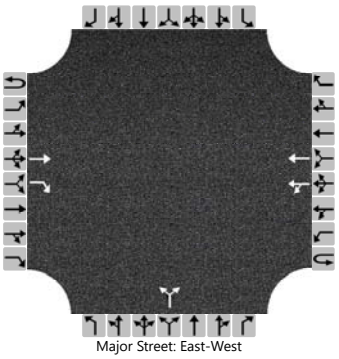
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	AM Peak Hr
Analysis Year	2020
Time Analyzed	Base
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			599	9		9	851			20		21				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					44					
Capacity, c (veh/h)						927					267					
v/c Ratio						0.01					0.17					
95% Queue Length, Q_{95} (veh)						0.0					0.6					
Control Delay (s/veh)						8.9					21.1					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.2				21.1							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

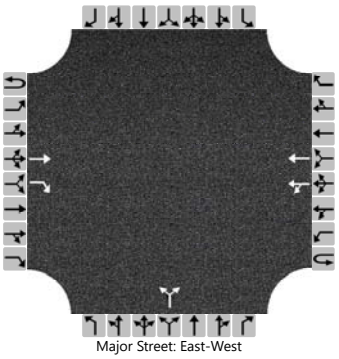
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	AM Peak Hr
Analysis Year	2022
Time Analyzed	Base
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			623	6		6	885			19		19				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

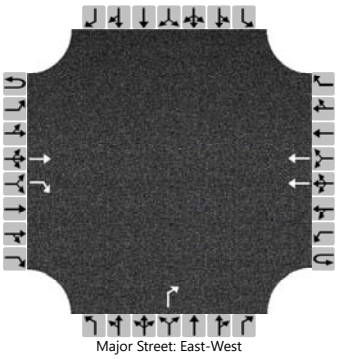
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						6					41					
Capacity, c (veh/h)						909					253					
v/c Ratio						0.01					0.16					
95% Queue Length, Q_{95} (veh)						0.0					0.6					
Control Delay (s/veh)						9.0					22.0					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				22.0							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	AM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2022	North/South Street	Gately Avenue
Time Analyzed	Base+Site (RIRO & Dixon)	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			623	39			934					51				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

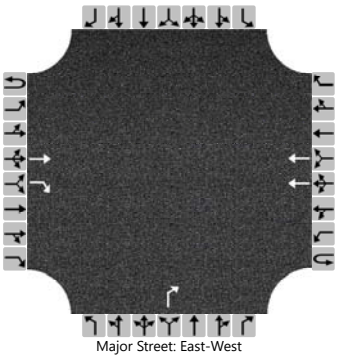
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												55				
Capacity, c (veh/h)												399				
v/c Ratio												0.14				
95% Queue Length, Q_{95} (veh)												0.5				
Control Delay (s/veh)												15.5				
Level of Service (LOS)												C				
Approach Delay (s/veh)									15.5							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	AM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2022	North/South Street	Gately Avenue
Time Analyzed	Base+Site (RIRO)	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			623	63			934					140				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

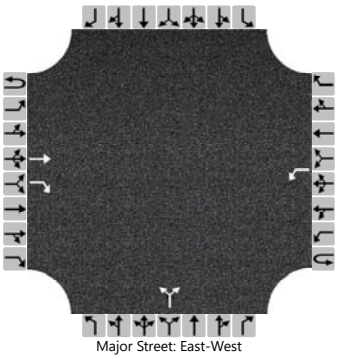
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												151				
Capacity, c (veh/h)												399				
v/c Ratio												0.38				
95% Queue Length, Q_{95} (veh)												1.7				
Control Delay (s/veh)												19.4				
Level of Service (LOS)												C				
Approach Delay (s/veh)									19.4							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	AM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2022	North/South Street	Gately Avenue
Time Analyzed	Base+Site (WBLT & NBLT)	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	0	0		0	1	0		0	0	0
Configuration			T	R		L					LR					
Volume (veh/h)			623	33		30				89		51				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

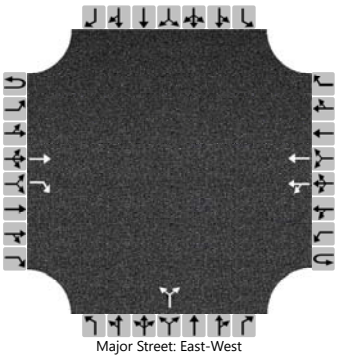
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32					151					
Capacity, c (veh/h)						891					422					
v/c Ratio						0.04					0.36					
95% Queue Length, Q_{95} (veh)						0.1					1.6					
Control Delay (s/veh)						9.2					18.2					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					9.2				18.2							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	AM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2022	North/South Street	Gately Avenue
Time Analyzed	Base+Site (Existing Lane)	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			623	33		30	885			89		51				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32					151					
Capacity, c (veh/h)						887					205					
v/c Ratio						0.04					0.73					
95% Queue Length, Q_{95} (veh)						0.1					4.8					
Control Delay (s/veh)						9.2					59.7					
Level of Service (LOS)						A					F					
Approach Delay (s/veh)					0.6				59.7							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

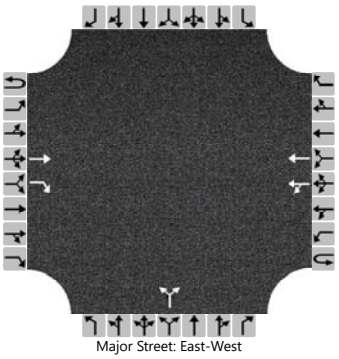
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	AM Peak Hr
Analysis Year	2025
Time Analyzed	Base
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			659	0		0	936			0		0				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

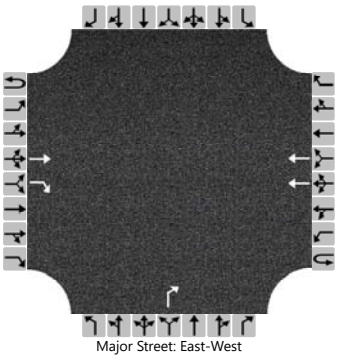
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						884										
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						9.1										
Level of Service (LOS)						A										
Approach Delay (s/veh)					0.0											
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	AM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2025	North/South Street	Gately Avenue
Time Analyzed	Base+Site (RIRO & Dixon)	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			677	38			980					51				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												55				
Capacity, c (veh/h)												365				
v/c Ratio												0.15				
95% Queue Length, Q_{95} (veh)												0.5				
Control Delay (s/veh)												16.6				
Level of Service (LOS)												C				
Approach Delay (s/veh)									16.6							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

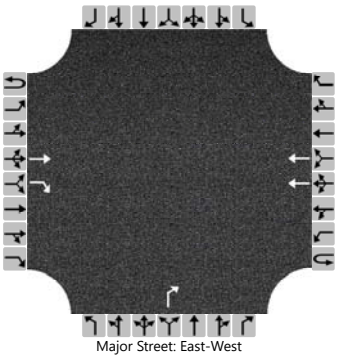
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	AM Peak Hr
Analysis Year	2025
Time Analyzed	Base+Site (RIRO)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			659	93			980					222				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												239				
Capacity, c (veh/h)												376				
v/c Ratio												0.64				
95% Queue Length, Q_{95} (veh)												4.2				
Control Delay (s/veh)												29.8				
Level of Service (LOS)												D				
Approach Delay (s/veh)									29.8							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

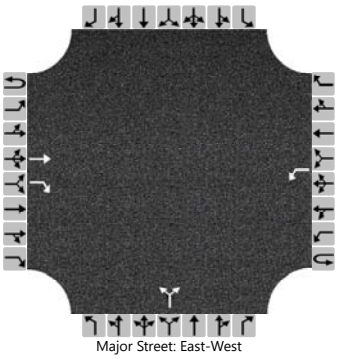
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	AM Peak Hr
Analysis Year	2025
Time Analyzed	Base+Site (WBLT & NBLT)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	0	0		0	1	0		0	0	0
Configuration			T	R		L					LR					
Volume (veh/h)			659	49		44				153		69				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						47					239					
Capacity, c (veh/h)						849					393					
v/c Ratio						0.06					0.61					
95% Queue Length, Q_{95} (veh)						0.2					3.9					
Control Delay (s/veh)						9.5					27.4					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)					9.5				27.4							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

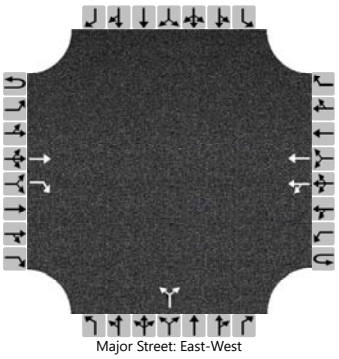
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	AM Peak Hr
Analysis Year	2030
Time Analyzed	Base
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			719	0		0	1021			0		0				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

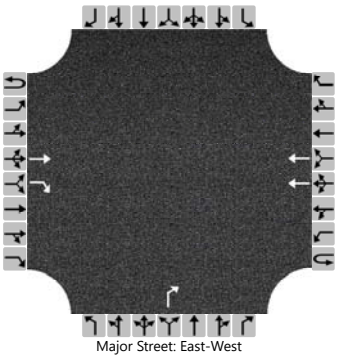
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						836										
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						9.3										
Level of Service (LOS)						A										
Approach Delay (s/veh)					0.0											
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	AM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2030	North/South Street	Gately Avenue
Time Analyzed	Base+Site (RIRO & Dixon)	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			737	38			1065					51				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

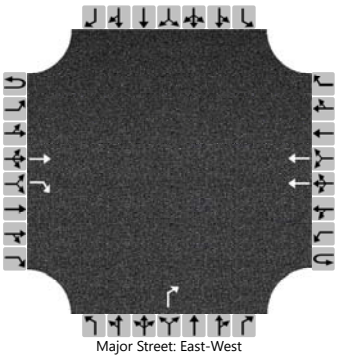
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												55				
Capacity, c (veh/h)												331				
v/c Ratio												0.17				
95% Queue Length, Q_{95} (veh)												0.6				
Control Delay (s/veh)												18.0				
Level of Service (LOS)												C				
Approach Delay (s/veh)									18.0							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	AM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2030	North/South Street	Gately Avenue
Time Analyzed	Base+Site (RIRO)	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			719	93			1021					222				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												239				
Capacity, c (veh/h)												341				
v/c Ratio												0.70				
95% Queue Length, Q_{95} (veh)												5.0				
Control Delay (s/veh)												36.9				
Level of Service (LOS)												E				
Approach Delay (s/veh)									36.9							
Approach LOS									E							

HCS7 Two-Way Stop-Control Report

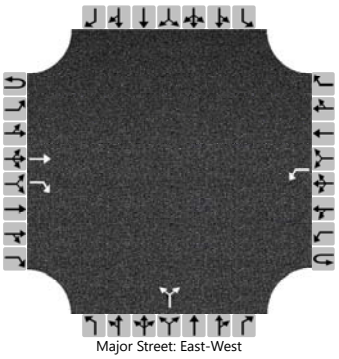
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	AM Peak Hr
Analysis Year	2030
Time Analyzed	Base+Site (WBLT & NBLT)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	0	0		0	1	0		0	0	0
Configuration			T	R		L					LR					
Volume (veh/h)			719	49		44				153		69				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

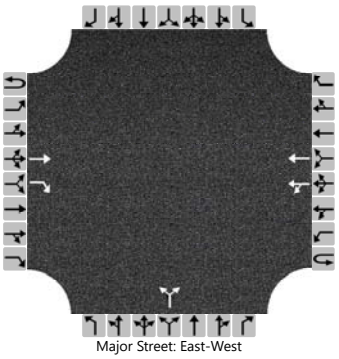
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						47					239					
Capacity, c (veh/h)						803					359					
v/c Ratio						0.06					0.66					
95% Queue Length, Q_{95} (veh)						0.2					4.6					
Control Delay (s/veh)						9.8					32.8					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)					9.8				32.8							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	PM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2020	North/South Street	Gately Avenue
Time Analyzed	Base	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			1022	16		12	866			6		11				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13					18					
Capacity, c (veh/h)						614					141					
v/c Ratio						0.02					0.13					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						11.0					34.3					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.4				34.3							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

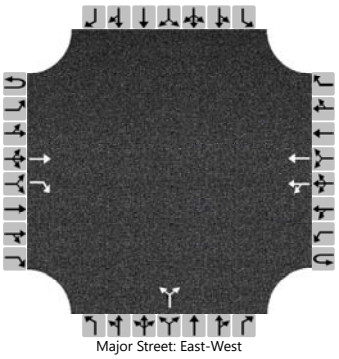
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2022
Time Analyzed	Base
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			1063	14		10	901			4		6				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					11					
Capacity, c (veh/h)						591					125					
v/c Ratio						0.02					0.09					
95% Queue Length, Q_{95} (veh)						0.1					0.3					
Control Delay (s/veh)						11.2					36.4					
Level of Service (LOS)						B					E					
Approach Delay (s/veh)					0.3				36.4							
Approach LOS									E							

HCS7 Two-Way Stop-Control Report

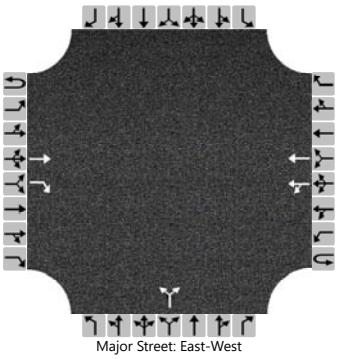
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2022
Time Analyzed	Base+Site (No Change)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			1063	78		48	901			47		39				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						52					93					
Capacity, c (veh/h)						556					88					
v/c Ratio						0.09					1.07					
95% Queue Length, Q_{95} (veh)						0.3					6.3					
Control Delay (s/veh)						12.1					202.2					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					1.7				202.2							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

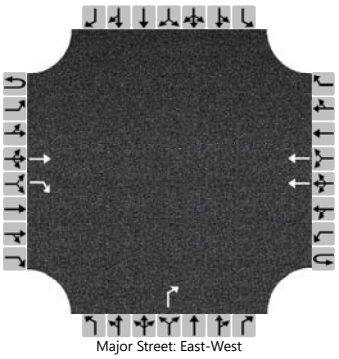
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2022
Time Analyzed	Base+Site (RIRO & Dixon)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			1063	88			953					39				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												42				
Capacity, c (veh/h)												190				
v/c Ratio												0.22				
95% Queue Length, Q_{95} (veh)												0.8				
Control Delay (s/veh)												29.4				
Level of Service (LOS)												D				
Approach Delay (s/veh)									29.4							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

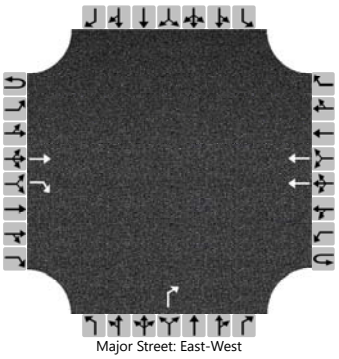
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2022
Time Analyzed	Base+Site (RIRO)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			1063	126			953					86				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

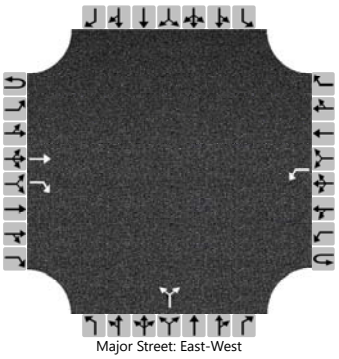
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												93				
Capacity, c (veh/h)												190				
v/c Ratio												0.49				
95% Queue Length, Q_{95} (veh)												2.4				
Control Delay (s/veh)												41.2				
Level of Service (LOS)												E				
Approach Delay (s/veh)									41.2							
Approach LOS									E							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	PM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2022	North/South Street	Gately Avenue
Time Analyzed	Base+Site (WBLT & NBLT)	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	0	0		0	1	0		0	0	0
Configuration			T	R		L					LR					
Volume (veh/h)			1063	78		48				47		39				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						52					93					
Capacity, c (veh/h)						560					214					
v/c Ratio						0.09					0.44					
95% Queue Length, Q_{95} (veh)						0.3					2.1					
Control Delay (s/veh)						12.1					34.3					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					12.1				34.3							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

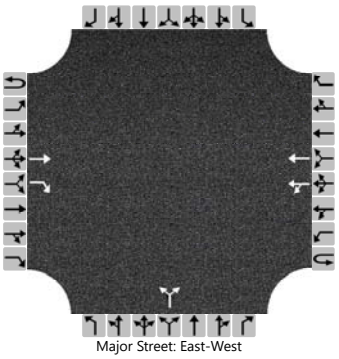
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2025
Time Analyzed	Base
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			1124	0		0	953			0		0				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

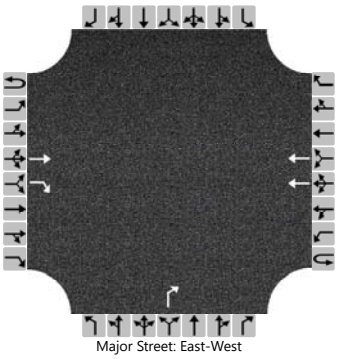
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						565										
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						11.4										
Level of Service (LOS)						B										
Approach Delay (s/veh)					0.0											
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	PM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2025	North/South Street	Gately Avenue
Time Analyzed	Base+Site (RIRO & Dixon)	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			1141	102			1036					50				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												54				
Capacity, c (veh/h)												166				
v/c Ratio												0.33				
95% Queue Length, Q_{95} (veh)												1.3				
Control Delay (s/veh)												36.8				
Level of Service (LOS)												E				
Approach Delay (s/veh)									36.8							
Approach LOS									E							

HCS7 Two-Way Stop-Control Report

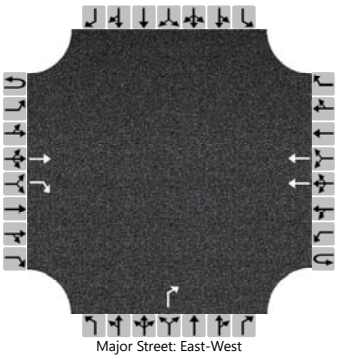
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2025
Time Analyzed	Base+Site (RIRO)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			1124	223			1036					153				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												166				
Capacity, c (veh/h)												171				
v/c Ratio												0.97				
95% Queue Length, Q_{95} (veh)												7.6				
Control Delay (s/veh)												116.0				
Level of Service (LOS)												F				
Approach Delay (s/veh)									116.0							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

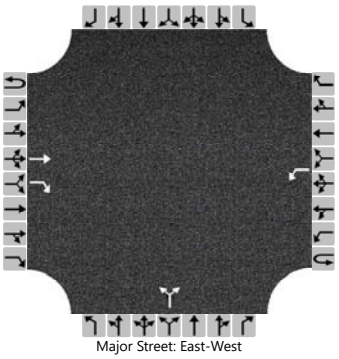
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2025
Time Analyzed	Base+Site (WBLT & NBLT)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	0	0		0	1	0		0	0	0
Configuration			T	R		L					LR					
Volume (veh/h)			1124	140		83				86		67				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						90					166					
Capacity, c (veh/h)						498					183					
v/c Ratio						0.18					0.91					
95% Queue Length, Q_{95} (veh)						0.7					6.9					
Control Delay (s/veh)						13.8					96.8					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					13.8				96.8							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

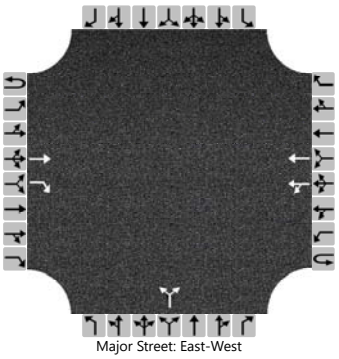
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2030
Time Analyzed	Base
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	1	0		0	0	0
Configuration			T	R		LT	T				LR					
Volume (veh/h)			1226	0		0	1039			0		0				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

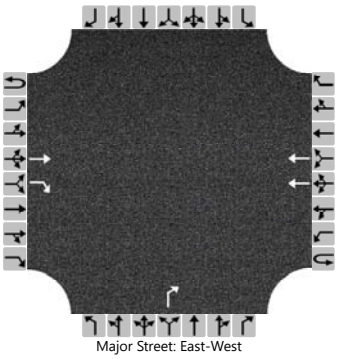
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						513										
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
Control Delay (s/veh)						12.0										
Level of Service (LOS)						B										
Approach Delay (s/veh)					0.0											
Approach LOS																

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	PM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2030	North/South Street	Gately Avenue
Time Analyzed	Base+Site (RIRO & Dixon)	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			1243	102			1122					50				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												54				
Capacity, c (veh/h)												140				
v/c Ratio												0.39				
95% Queue Length, Q_{95} (veh)												1.7				
Control Delay (s/veh)												46.2				
Level of Service (LOS)												E				
Approach Delay (s/veh)									46.2							
Approach LOS									E							

HCS7 Two-Way Stop-Control Report

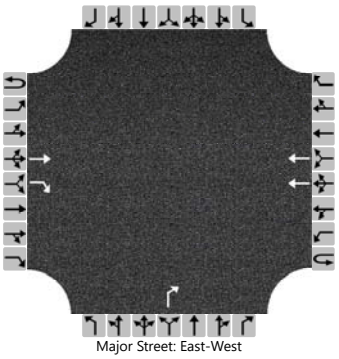
General Information

Analyst	RC
Agency/Co.	CTS
Date Performed	PM Peak Hr
Analysis Year	2030
Time Analyzed	Base+Site (RIRO)
Intersection Orientation	East-West
Project Description	7163 - Affordable Housing Project TIS

Site Information

Intersection	Gately Ave & Kingsway Ave
Jurisdiction	Port Coquitlam, BC
East/West Street	Kingsway Avenue
North/South Street	Gately Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	2	0		0	0	1		0	0	0
Configuration			T	R			T					R				
Volume (veh/h)			1226	223			1122					153				
Percent Heavy Vehicles (%)												2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No								No							
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)												6.9				
Critical Headway (sec)												6.94				
Base Follow-Up Headway (sec)												3.3				
Follow-Up Headway (sec)												3.32				

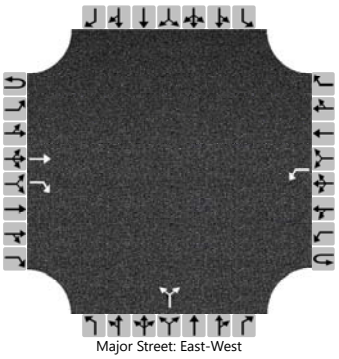
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)												166				
Capacity, c (veh/h)												144				
v/c Ratio												1.16				
95% Queue Length, Q_{95} (veh)												9.4				
Control Delay (s/veh)												184.2				
Level of Service (LOS)												F				
Approach Delay (s/veh)									184.2							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RC	Intersection	Gately Ave & Kingsway Ave
Agency/Co.	CTS	Jurisdiction	Port Coquitlam, BC
Date Performed	PM Peak Hr	East/West Street	Kingsway Avenue
Analysis Year	2030	North/South Street	Gately Avenue
Time Analyzed	Base+Site (WBLT & NBLT)	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	7163 - Affordable Housing Project TIS		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	0	0		0	1	0		0	0	0
Configuration			T	R		L					LR					
Volume (veh/h)			1226	140		83				86		67				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No															
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.12				6.42		6.22				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						90					166					
Capacity, c (veh/h)						452					154					
v/c Ratio						0.20					1.08					
95% Queue Length, Q_{95} (veh)						0.7					8.7					
Control Delay (s/veh)						14.9					153.4					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					14.9				153.4							
Approach LOS									F							

#1-1001 Royal Avenue New Westminster, BC, V3M 1K3

AFFORDABLE HOUSING SOCIETIES
SERVING THE LOWER MAINLAND SINCE 1983

www.affordablehousingsocieties.ca

September 28th, 2020

To: Barry Weih, Architect, WA Architects L:td.

Re: Parking Rationale for Proposed Kingsway and Gately Building

Dear Barry

The proposed Peak Towers/AHS development at Kingsway and Gately provides 294 parking stalls for 300 units of housing. While the proposed parking ratio comes a few spaces short of meeting the City of Port Coquitlam's recommended parking ratio for this type of building, the Affordable Housing Societies (AHS) is comfortable with this ratio and feels the number of parking stalls will exceed the needs of its tenants for the following reasons:

1. Across 63 properties and 3600 units of rental housing throughout the Lower Mainland, the parking ratio over the entire AHS portfolio is approximately 0.7. In many AHS buildings (especially those with walking distance access to public transit and amenities the parking spot usage is only 0.5).
2. The proposed building has excellent walking distance access to public transit, and the many amenities available in downtown Port Coquitlam. As such AHS will be marketing the property as one where certain tenants will be able to make a home without having to depend on a vehicle – and thus being able to make healthier and more environmentally friendly choices for them and their families.
3. AHS would expect that many of the bachelor and 1-bedroom units will be occupied by seniors who need an affordable rental option. AHS's experience in its current buildings suggests that seniors' units typically only require a 0.5 parking ratio. We would expect to experience a similar need in the proposed new building – especially as it provides such easy access to grocery stores, pharmacies, medical clinics, and many other amenities.
4. This building will provide an affordable rental option in Port Coquitlam for families and individuals whose income is less than the median income in Port Coquitlam. Our experience is that many of these individuals and families make economic choices not to have a vehicle – especially when they live in a building with excellent walkability and transit access.

Thank you,

Stephen Bennett, CEO

BKL

301 – 3999 Henning Drive, Burnaby, BC, Canada V5C 6P9
T 604-988-2508 W www.bkl.ca E sound@bkl.ca

September 24, 2020

File: 4054-20A

Peak Towers Development Ltd
c/o WA Architects Inc.
#228-237 Keefer Street
Vancouver, BC
V6A 1X6

Attention: Barry Weih

Dear Barry:

Re: Affordable Housing Project – 2492 Kingsway Avenue, Port Coquitlam, BC
Environmental Noise Study

As requested, BKL Consultants Ltd. (BKL) has undertaken an environmental noise study of the affordable housing development proposed for the above project site. The site spans the area between the intersections of Gately Avenue, Kingsway Avenue, and the Coquitlam river. We have determined that the most significant exterior noise sources for this project are road traffic on Kingsway avenue and rail noise from train movements on the CP railway corridor. The development includes three 6-story residential buildings, with the north facing facades of Building B and Building C having exposure to both road traffic on Kingsway Avenue and the rail corridor.

Our two-part analysis for this project first involved an assessment of the traffic noise exposure at the building facades. The second part was a review of the project design, including exterior facade construction. The interior noise levels were assessed according to ISO 12354.

Acoustical Criteria

We were provided with a list of comments from the City, which included the following note:

4. **Noise Mitigation:** In addition to the proximity of rail operations, Kingsway Avenue is an arterial road and a truck route which can have noise impacts to adjacent residential uses. Please submit a report from an acoustic consultant assessing the potential noise impacts to the future residents at the site along with proposed mitigation measures to address highway and train noise.

As you are aware, neither the City of Port Coquitlam noise or zoning bylaws currently include requirements for sound isolation of exterior building elements in residential developments (i.e., resulting indoor sound levels from exterior noise sources). While multiple internationally accepted standards for indoor sound levels exist, the Canada Mortgage and Housing Corporation (CMHC) indoor

noise level criteria would be most applicable, given their general acceptance within other municipalities in British Columbia. The interior sound level requirements are summarized below:

Table 1: CHMC Interior Noise Criteria

Portion of Dwelling Unit	Maximum Permissible Interior Noise Level ($L_{A,eq,24hr}$)
Bedrooms	35
Living, dining, recreation rooms, dens	40
Kitchen, bathrooms, hallways	45

Site Noise Exposure

A continuous 48-hour noise measurement was conducted at the site by BKL between September 8-10, 2020. A sound level meter was installed on the rooftop north east corner of an existing building at 2470 Kingsway Avenue (see attached site description and measurement locations). We observed, that 24-hour equivalent sound level ($L_{A,eq,24hr}$) moving averages over the full measurement period were mostly consistent at 70 dBA, when rounded to integer values. The measurements included shielding and reflection effects from surrounding buildings. When adjusting for the distance between the location of the proposed façade and the measurement position, the 24-hour noise impact for this development is **$L_{A,eq,24hr}$ = 69 dBA.**

According to Canada Mortgage and Housing Corporation (CMHC) criteria, an outdoor noise level between 55 dBA and 75 dBA is considered to be "normally unacceptable" for housing. This generally means that adequate acoustical measures are required to achieve acceptable indoor noise levels.

The following detailed review of the project design is based on the above stated indoor noise level criteria and on project drawings received. We offer the following comments to satisfy the development requirements of the City:

Sound Isolation of Exterior Elements

The sound isolation requirements for the exterior elements are subject to two main factors: floor area and glazing/exterior wall ratios. Given typical exterior wall assemblies, greater ratios of glazing result in increased sound isolation requirements. The most-affected dwelling units of the development have been identified and assessed to determine the required minimum Outdoor-to-Indoor Transmission Class (OITC) acoustic performance to meet the internal noise design criteria. The residential units facing the inner yard of the development are not expected to be significantly impacted by road traffic noise and, therefore, any practical window assembly is considered appropriate.

Exterior Walls

The drawing set under review did not contain information regarding the exterior wall construction assemblies, although based on subsequent email communications with the project architect, it was confirmed that the predominant exterior assembly facing Kingsway Avenue is proposed to be:

- 1/2” Plywood sheathing
- 2 X 6 Wood Studs, with batt insulation filling the cavity
- 1 Layer of 5/8” GWB,

which will provide adequate noise isolation to interior spaces, with the exception of the Kingsway Avenue facing suites in Buildings B and C, where the highest noise exposures are experienced and, as such, the façade treatments should be upgraded to include a second layer of 1/2" plywood (on the exterior side lining), as well as a second layer of 5/8” GWB (on the interior side) of bedrooms and/or living rooms.

Exterior Windows and Balcony/Patio Doors

A standard glazing detail, assumed to be two layers of 3 mm glass separated by a 13 mm airspace (OITC 25) will provide adequate noise isolation to all interior spaces with the exception of the Kingsway Avenue facing suite windows, which will require glazing assemblies capable of an OITC 30 rating. For residential living, dining, recreation rooms, and dens, the requirement is OITC 25.

The following table summarizes the required minimum OITC rating, including an *example* window glazing:

Table 2: Example Window Glazing for Required Minimum OITC Ratings

Minimum OITC Rating	Example Window Glazing
30	6_{Lam}-11-6_{Lam} (one pane of 6 mm laminated glass separated by a minimum 11 mm airspace)

Sliding and outswing glass doors typically have lower OITC ratings compared to casement windows with the same airspace and glazing thicknesses. Therefore, OITC ratings should be confirmed by measurements conforming to ASTM E90.

All of the windows and doors should be specified to meet the A3 performance rating for Air Tightness found in the CSA standard CAN/CSA-A440-08, or latest revision. Any other windows or doors meeting the required OITC ratings are acceptable. Note that the OITC rating varies with panel dimensions. As such, any test data or predicted OITC performance must reasonably reflect the panel dimensions adopted for this project. Any increase in glazing thickness or separating airspace thickness beyond that shown above is also acceptable. Effective weatherstripping should be installed in the exterior doorways.

Ventilation

The rated facade noise isolation can only be achieved when the windows are tightly closed. When exterior noise levels exceed 55 dBA (as indicated above), alternative forms of ventilation for occupied spaces is typically required. Please note that the design of the ventilation system is within the scope of the mechanical consultant.

Additional Considerations

Given its surroundings, the site can be considered as a moderately high noise exposure area. In such locations, the required envelope treatments for acoustic isolation can be technically challenging and costly to the project.

While the CMHC acoustical requirements should be consider desirable for residential living and targeted for all spaces within the project, for non-acoustical reasons the municipality may consider that the need for housing could outweigh the acoustical requirements. In such cases, the layout of the noise-sensitive rooms may enable a slight relaxation in the CMHC standards for a limited number of rooms.

Closing

This report completes our environmental noise study of this project. Please note that recommendations contained herein address only the acoustical requirements with respect to exterior noise ingress. Other requirements should be examined for compatibility with our recommendations. Please let us know if you have any questions regarding this report.

Sincerely,

BKL Consultants Ltd.

per:

Joonas Niinivaara, MSc
Project Consultant
niinivaara@bkl.ca

Enclosures: Site Notes

Residential Site - Gately + Kingsway Avenue, Port Coquitlam

Project ID:	4054-20A	Address:	2470 Kingsway Ave, Port Coquitlam
Start Date:	September 9, 2020	Instrument:	01dB DUO
Start Time:	12:00	Serial No:	11004
Duration:	24 hours	Measured by:	ES

Location Description

The microphone was located 8.5 m above the ground on the northwest rooftop corner of the 2470 Kingsway Ave existing building. The microphone position is 14 m from the Kingsway Ave and 45 m from the rail line centrelines, respectively.

Ambient Noise Description

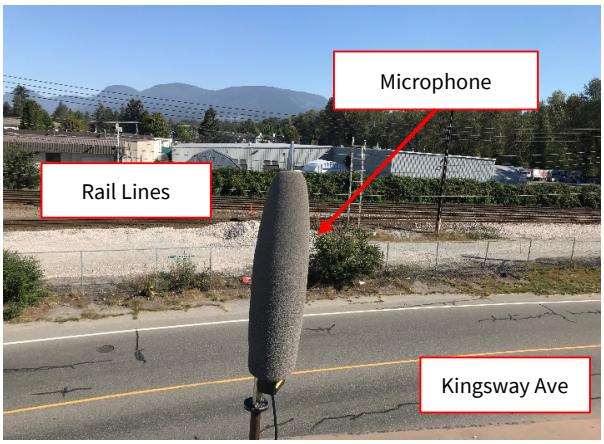
The dominant noise source was train and road traffic. Train whistles and emergency vehicle sirens can be heard.

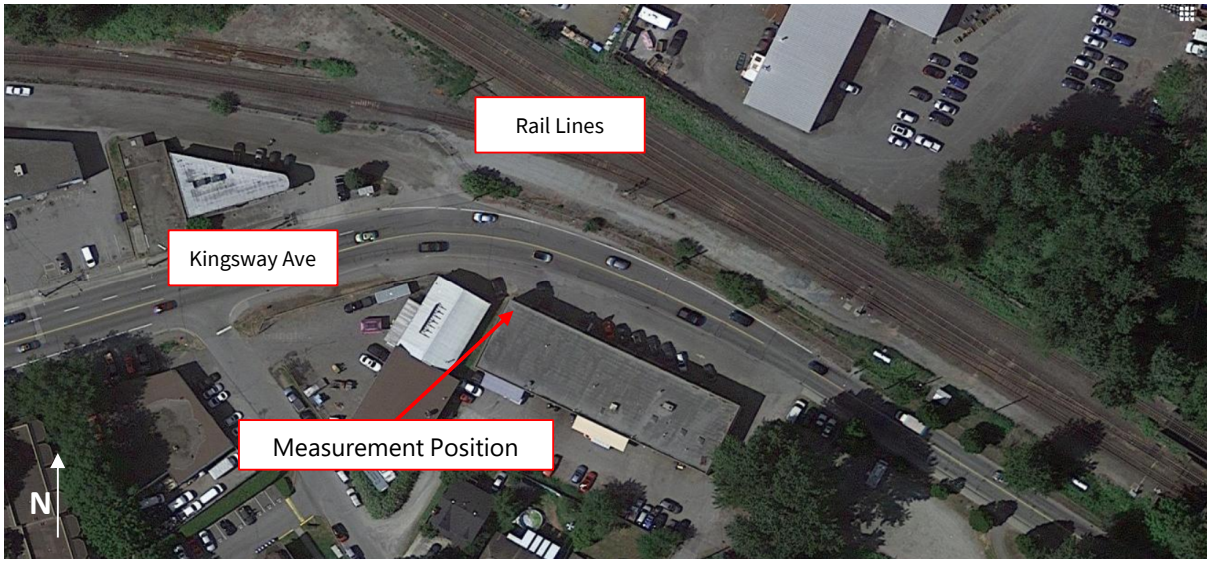
Environmental Conditions

The weather was sunny throughout the measurement period with calm winds.

Purpose of Monitoring Location

This monitoring location is representative of the current environmental noise condition near 2470 Kingsway Ave, Port Coquitlam.

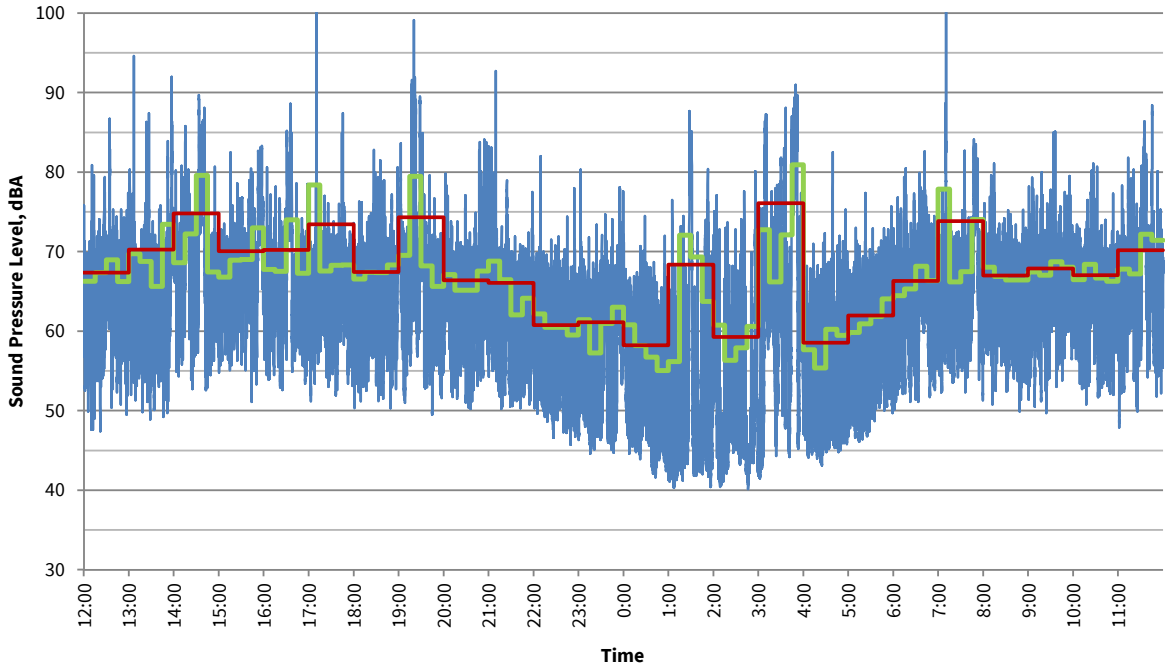




BKL Consultants Ltd.

Residential Site - Gately + Kingsway Avenue, Port Coquitlam

The graph below shows the measured, and calculated time histories beginning on September 9, 2020



1 second measured L_{eq}
15 minute calculated L_{eq}
1 hour calculated L_{eq}

Hourly Interval Report starting at September 9, 2020
All Sound Pressure Levels presented in dBA

Date	Time	Duration	L_{eq}	L_{max}	L_{min}	L_1	L_5	L_{10}	L_{50}	L_{90}	L_{99}
Total	-	24:00:00	70	105	40	82	73	70	64	48	43
Sep 9	12:00:00	1:00:00	67	87	47	75	71	70	66	58	51
Sep 9	13:00:00	1:00:00	70	95	49	83	72	70	65	58	51
Sep 9	14:00:00	1:00:00	75	90	53	86	83	78	68	61	55
Sep 9	15:00:00	1:00:00	70	83	51	81	75	73	68	62	56
Sep 9	16:00:00	1:00:00	70	89	53	80	75	74	67	61	55
Sep 9	17:00:00	1:00:00	73	105	51	76	72	70	67	60	54
Sep 9	18:00:00	1:00:00	67	83	50	77	72	70	66	58	52
Sep 9	19:00:00	1:00:00	74	99	50	87	80	74	67	59	52
Sep 9	20:00:00	1:00:00	66	84	50	75	71	69	64	57	52
Sep 9	21:00:00	1:00:00	66	93	50	76	71	69	61	53	51
Sep 9	22:00:00	1:00:00	61	82	46	69	67	65	56	50	47
Sep 9	23:00:00	1:00:00	61	80	45	70	67	65	55	47	45
Sep 10	0:00:00	1:00:00	58	75	41	68	66	64	49	45	43
Sep 10	1:00:00	1:00:00	68	88	40	80	78	69	47	43	41
Sep 10	2:00:00	1:00:00	59	80	40	72	66	62	47	43	41
Sep 10	3:00:00	1:00:00	76	91	42	87	85	82	63	45	42
Sep 10	4:00:00	1:00:00	59	83	43	69	65	62	48	46	44
Sep 10	5:00:00	1:00:00	62	77	46	71	68	67	56	49	47
Sep 10	6:00:00	1:00:00	66	83	50	75	71	70	64	55	51
Sep 10	7:00:00	1:00:00	74	104	51	82	77	74	66	58	53
Sep 10	8:00:00	1:00:00	67	81	50	74	71	70	66	59	53
Sep 10	9:00:00	1:00:00	68	85	50	76	72	70	66	59	53
Sep 10	10:00:00	1:00:00	67	81	51	75	71	69	66	59	53
Sep 10	11:00:00	1:00:00	70	88	48	80	74	72	67	59	52

BKL Consultants Ltd.

Consultation Summary

Input was received from 9 respondents over a 24 day consultation period beginning August 20th and ending September 13th. Thirteen issues were raised as noted below.

Issue	**Frequency** (number of respondents)
support for more non-market housing in the community	4
concern about the height of the buildings	1
concern about the density of the development	1
interest in opportunities for onsite gardening	1
concern about loss of tree canopy	1
support for the look of the project	2
desire to see social supports for low income families	1
concern about availability of on-street parking in the broader neighbourhood	1
concern about population growth on the neighbourhood/ecosystem/river	1
concern about parking impact of places of worship in the neighbourhood	1
concern about vehicle access to Kingsway Avenue	1
concern about homelessness and drug use in the neighbourhood	1
concern about resident behavior in the River Woods development	1

CITY OF PORT COQUITLAM

PROPERTY STANDARDS AND NUISANCE ABATEMENT BYLAW, 2020

Bylaw No. 4190

A Bylaw of the City of Port Coquitlam to regulate, prohibit, and impose requirements in relation to property maintenance, the abatement of nuisance, and to provide for recovery of the costs of nuisance abatement where undertaken by the City.

1. CITATION

This Bylaw is cited as "Property Standards and Nuisance Abatement Bylaw, 2020, No. 4190".

2. INTERPRETATIONS

2.1 Words or phrases defined in the British Columbia *Interpretation Act, Motor Vehicle Act, Community Charter* or *Local Government Act or* any successor legislation, shall have the same meaning when used in this Bylaw unless otherwise defined in this Bylaw.

2.2 If any part of this Bylaw is for any reason held invalid by any court of competent jurisdiction, the invalid portion shall be severed and the severance shall not affect the validity of the remainder.

3. DEFINITIONS

3.1 In this Bylaw:

"**Building Materials**" means items used in the construction of structures or in landscaping, including, but not limited to lumber, gypsum board, windows, doors, roofing materials, scaffolding, equipment, tools, bricks, building blocks, fill, sand, and soil;

"Building Inspector" means any building inspector or official including Chief Building Inspector and Manager of Building;

"Bylaw Enforcement Officer" means every person employed by the City for the purpose of enforcement of the City's bylaws and includes members of the Royal Canadian Mounted Police;

"Bylaw Services Manager" means the person appointed as Bylaw Services Manager or their designate;

"Council" means the Municipal Council of the Corporation of the City of Port Coquitlam;

"Derelict" means

a) physically wrecked or dilapidated;

b) in the case of a Motor Vehicle, incapable of operating under its own power or lacking number plates for the current year pursuant to the regulations under the *Motor Vehicle Act*, RSBC 1996, c. 318; and

c) in the case of a trailer, incapable of being towed in the manner a trailer is normally towed.

"**Discarded Materials**" include all materials not in use for the construction or maintenance of a building situated on that property, appliances, Motor Vehicle parts, machinery, firewood, unless it is neatly piled or stacked against a wall or fence, and any other chattels in a dismantled state or not in use for the purpose for which the manufacturer intended;

"**Fire Inspector"** means any Fire Prevention Officer including Fire Prevention Inspectors, Fire Prevention Captains or Deputy Fire Chief, Fire Protective Services & Public Education;

"**Graffiti**" includes one or more letters, symbols, writing, pictures or marks, however made, posted, scratched, etched, painted or drawn on any structure or thing but does not include any of the following:

a) a sign, public notice or traffic control devices authorized by the Director of Engineering appointed by Council of the City of Port Coquitlam;

b) a sign authorized by the Sign Bylaw, No. 2638 as amended or replaced from time to time;

c) a public notice authorized by a City bylaw or by provincial or federal legislation; or

d) a letter, symbol or mark on a building or structure for which the owner or tenant of the building or structure has given prior, written authorization, such as a mural;

"**Public Place**" includes every street, road, land, boulevard, sidewalk, lane, bridge, viaduct and any other way open to public use and any park, building, conveyance, private place or passageway to which the public has, or is permitted to have access or is invited;

"Motor Vehicle" means a device in, upon, or by which a person or thing is or may be transported or drawn upon a highway, except a device designed to be moved by human power or used exclusively upon stationary rails or tracks;

"**Noxious Weed**" means any weed designated by regulation to be a Noxious Weed pursuant to the *British Columbia Weed Control Act* RSBC 1996 Chapter 487;

"Nuisance Abatement Fees" means the fees, charges and amounts stated in the City's *Fees and Charges Bylaw No. 3892;*

"Nuisance at Law" means the essence of the tort of nuisance is interference with the enjoyment of land.

"Nuisance Service Call" means a response by a bylaw enforcement officer, building inspector member of the fire department or member of the RCMP to, or abatement of,

any activity, conduct or condition occurring on or near real property that is contrary to a provision within sections 3, 4, 5 or 6 of this bylaw;

"**Rubbish**" means solid and semi-solid wastes, dead animals, paper, trash, refuse, cardboard, waste material, demolition material, cans, bottles, yard clippings, wood, rubber, plastics, glass, bedding, mattresses, crates, pallets, rags, barrels, boxes, scrap iron and other metal, scrap paving material, broken flower pots, discarded tanks of fuel and propane, dilapidated motor vehicles, discarded household appliances, and discarded furniture.

4. GENERAL PROHIBITION

4.1 No owner or occupier of real property shall cause or permit any act to be done on that real property which constitutes a nuisance at law.

4.2 No owner or occupier of real property shall cause or permit any act which unreasonably interferes with another person or owner's use and enjoyment of their property or of a public place.

4.3 No owner or occupier of real property shall cause or permit any act which is an offence under the *Controlled Drugs and Substances Act,* 1996 chapter 19, *Criminal Code of Canada R.S.C., 1985, c. C-46,* or the *Liquor Control and Licensing Act, R.S.B.C.*, *c. 267.*

5. LIGHTING

5.1 An owner or occupier of real property shall ensure that an outdoor light on the property is shielded by a shade or fixture such that the light source does not create a nuisance.

5.2 This section does not apply to outdoor lighting emanating from:

a) streetlights;

b) vehicle lights;

c) lights on playing fields;

d) lights on school playgrounds.

6. GENERAL PROPERTY MAINTENANCE

6.1 An owner or occupier of real property must not cause, allow or permit with respect to that real property:

a) the storage of Discarded Materials, Rubbish, Derelict Vehicles or Motor Vehicle parts, household chattels and fixtures, furniture, appliances, and other household items of value unless the item is in a closed building or permitted temporary structure;

b) the parking or storage of a Motor Vehicle, boat, trailer or recreational vehicle:

(i) on a landscaped portion of real property; or

(ii) on a landscaped portion of a boulevard; or

(iii) in a dismantled condition or state of disrepair including, but not limited to, mould growth or one or more flat tires unless the item is in a closed building or permitted temporary structure;

c) grass, weeds or similar ground cover to be over 15 centimeters in height;

d) a building or structure or parts thereof to become dilapidated, collapsed or unfinished, including to have holes, breaks, rot, crumbling, cracking, peeling, rusting, missing siding, one or more tarps or plastic covering a roof, or any other evidence of physical decay or neglect or excessive use or lack of maintenance;

e) the accumulation of building materials for more than 15 days in a calendar year unless they are in a closed building or structure such that they are not visible from any other property or public place;

f) a fence, retaining wall, or wood ties to become unstable or unsafe, or be rotting, crumbling, cracking, leaning, peeling, or rusting;

g) the accumulation or growth of Noxious Weeds;

h) the accumulation of uncontrolled growth, cut tree branches, dead trees, leaves, dead bushes or other growth, unstacked firewood, dirt piles, or uncontained compost material;

i) Graffiti to remain on Motor Vehicles, buildings, walls, fences or elsewhere in, or visible from a public place;

j) water to collect or accumulate in a pond, swimming pool, hot tub or as surface water such that it becomes sufficiently stagnant to permit the breeding of mosquitoes, other insects, mould, algae or other similar organisms.

6.2 For the purpose of section 6.1, storage within a building or structure does not include covering an item with a tarp or other cover.

7. OBJECTIONABLE NOISE

7.1 No owner or occupier of real property shall allow or permit such real property to be used so that noise or sound which emanates therefrom is liable to disturb the quiet, peace, rest, enjoyment, comfort, or convenience of individuals or the public, including, but not limited to yelling, shouting, screaming or profane language.

7.2 No owner or occupier of real property shall make, cause, or permit to be made or caused, noise or bass sound of a radio, television, player, or other sound playback device, public address system, or any other music or voice amplification equipment, musical instrument, whether live or recorded or live, whether

amplified or not, in or on private property in such manner that is liable to disturb the quiet, peace, rest, enjoyment, comfort, or convenience of individuals or the public.

8. COMPLIANCE ORDER

8.1 If an owner or occupier of real property fails to comply with a requirement of this Bylaw, then a Bylaw Enforcement Officer may issue an order requiring that an owner or occupier of the real property bring the real property into compliance with the provisions of this Bylaw within such time as a Bylaw Enforcement Officer considers appropriate in the circumstances.

8.2 If an owner or occupier of real property fails to comply with the Bylaw Enforcement Officer's Compliance Order within the time period specified in such notice, the City, by its workers or others, may, at all reasonable times and in a reasonable manner, enter the real property and bring about such compliance at the cost of the defaulting owner or other responsible person.

8.3 Such costs shall consist of all costs and expenses incurred by the City to achieve compliance with Section 6 of this Bylaw including, without limitation, administrative costs, costs to attend property by City employees or its contractors as stipulated in Schedule N, of the City's Fees and Charges No. 3892 and the costs of removal, clean up and disposal.

8.4 If an owner or occupier of real property defaults in paying the cost referred to in Section 8.2 to the City within 30 days after receipt of a demand for payment from the City, the City may either recover from the owner or occupier, in any court of competent jurisdiction, the cost as a debt due to the City, or if such costs remain unpaid by December 31 of the year in which they are owing, the costs may be recovered as property taxes in arrears in accordance with Part 14 of the *Community Charter*.

8.5 Service of the Compliance Order referred to in Section 8 will be sufficient if a copy of the order is:

a) served personally or mailed by prepaid registered mail to the owner of the real property as shown on the current year's real property assessment roll;

b) regular mail; and

c) either posted on the real property or delivered to the occupier of the real property.

8.6 When an order is not served in accordance with Section 8.5 (a), such order is deemed to have been served on the third day after mailing in accordance with Section 8.5 (b).

9. FIRST APPEAL AGAINST COMPLIANCE ORDER

9.1 The owner of real property who may be subject to a Compliance Order, may appeal to the Bylaw Services Manager at least 7 days prior to the expiration of the time given in the Compliance Order.

9.2 The owner of the real property may only appeal in written form.

9.3 The Bylaw Services Manager shall determine the appeal by confirming, amending or rescinding the Compliance Order.

10. FINAL APPEAL AGAINST COMPLIANCE ORDER

10.1 The owner of real property who may be subject to a Compliance Order, may appeal to Council at least 72 hours prior to the expiration of the time given in the Compliance Order.

10.2 The owner of the real property must be given 72 hours advance notice of the meeting at which Council will hear an appeal.

10.3 The owner of the real property may appeal in person or in written form.

10.4 Council shall determine the appeal by confirming, amending or rescinding the Compliance Order.

10.5 Council's decision shall be final.

11. REPEAT NUISANCE SERVICE CALLS

11.1 Where a Bylaw Enforcement Officer, member of the fire department or member of the RCMP are required to respond to real property for:

a) more than one Nuisance Service Call within a 24 hour period; or

b) more than three Nuisance Service Calls within a 12 month period;

the owner of the real property shall be liable to pay Nuisance Abatement Fees in accordance with the amounts set out in the City's *Fees and Charges Bylaw No. 3892* or each additional Nuisance Service Call responded to at that same real property within the 12 month period following the date of the notice referred to in Section 11.3.

11.2 Despite section 11.1 of this Bylaw, where legal title to the real property is transferred, Nuisance Service Calls occurring before the date the new owner obtains legal title to the real property shall not apply to the determination under section 11.1 of this bylaw whether Nuisance Abatement Fees are payable or with respect to the amount that is payable. The new owner shall, in any event, be liable for all unpaid Nuisance Abatement Fees imposed against the real property in respect of past Nuisance Service Calls.

11.3 Before an owner of real property is liable to pay Nuisance Abatement Fees, the City shall provide written notice to the owner that:

a) describes the nature of the contravention or nuisance conduct, activity or condition that have resulted in Nuisance Service Calls; and

b) advises the owner of Nuisance Abatement Fees and that such fees are in addition to the City's right to seek other legal remedies or actions for abatement of the nuisance or contravention.

11.4 Service of the notice referred to in 11.3 will be sufficient if the notice:

a) in the case of service on an individual, is served personally or mailed by prepaid registered mail to the address of the owner shown on the current year's real property assessment roll for the real property for which the notice is issued;

b) in the case of service on a corporation, is served personally on a director, officer or manager of the corporation or by leaving it at or mailing it by prepaid registered mail to the registered office of the corporation.

11.5 Nuisance Abatement Fees shall be paid by the owner within 30 days of receipt of an invoice from the City.

11.6 If Nuisance Abatement Fees are imposed in relation to real property remains unpaid by December 31 of the year in which it is owing, the fee may be recovered as property taxes in arrears in accordance with the *Community Charter*.

11.7 The City may impose Nuisance Abatement Fees despite a person not being charged with an offence relating to a contravention of this Bylaw or the person being charged with an offence relating to a contravention of this Bylaw being acquitted of any or all charges, including because the charges are withdrawn, stayed or otherwise do not proceed.

12. APPEAL AGAINST NUISANCE ABATEMENTS FEES

11.1 The owner of real property who may be subject to Nuisance Abatement Fees may appeal to Council within 14 days of receipt of a notice to pay.

11.2 The owner of the real property must be given 72 hours advance notice of the meeting at which Council will hear an appeal.

11.3 The owner of the real property may appeal in person or in written form.

11.4 Council shall determine the appeal by confirming, amending or rescinding the Nuisance Abatement Fees.

11.5 Council's decision shall be final.

13. ENFORCEMENT & INSPECTIONS

13.1 The provisions of this Bylaw may be enforced by any Bylaw Enforcement Officer.

13.2 Any Bylaw Enforcement Officer may enter, in accordance with Section 16 of the *Community Charter*, upon any property subject to this Bylaw in order to inspect and determine whether all regulations, restrictions and requirements are being met.

13.3 No person shall interfere with, or attempt to obstruct a Bylaw Enforcement Officer who is conducting an inspection or enforcement action in relation to this Bylaw.

13.4 No person shall provide false or misleading information to a Bylaw Enforcement Officer.

14. OFFENCE AND PENALTIES

14.1 Notwithstanding the offence and penalties as provided under the *Community Charter* or *Local Government Act*, the following will apply:

a) a violation of any of the provisions identified in this Bylaw will result in liability for penalties and late payment amounts established in the City's Bylaw Notice Enforcement Bylaw.

b) a Person who:

(i) contravenes, violates or fails to comply with any provision of this Bylaw;

(ii) suffers or allows any act or thing to be done in contravention or violation of this Bylaw; or

(iii) fails or neglects to do anything required to be done under this Bylaw;

is deemed to have committed an infraction of, or an offence against, this Bylaw; and is liable on summary conviction to a fine of not more than $50,000.00; and

c) each day such infraction is caused, or allowed to continue, constitutes a separate offence.

15. NO DUTY OF CARE

Neither failure to enforce this Bylaw, nor any error, omission, or other neglect in relation to the enforcement of this Bylaw, shall be interpreted as giving rise to a cause of action in favour of any person.

16. REPEAL

The City of Port Coquitlam Property Maintenance Bylaw, No. 2943 as amended, is repealed.

READ A FIRST TIME this	13th	day of	October, 2020
READ A SECOND TIME this	13th	day of	October, 2020
READ A THIRD TIME this	13th	day of	October, 2020
ADOPTED this		day of	, 2020

Mayor

Corporate Officer

CITY OF PORT COQUITLAM

FEES AND CHARGES AMENDMENT BYLAW, 2020

Bylaw No. 4191

1. CITATION

This Bylaw is cited as "Fees and Charges Bylaw, 2015, No. 3892, Amendment Bylaw, 2020, No. 4191".

2. ADMINISTRATION

2.1 Fees and Charges Amendment Bylaw, 2015, No. 3892 is amended by adding "Schedule N" which is attached hereto and forming part of this Bylaw.

READ A FIRST TIME this	13th day of	October, 2020
READ A SECOND TIME this	13th day of	October, 2020
READ A THIRD TIME this	13th day of	October, 2020
ADOPTED this	day of	, 2020

Mayor

Corporate Officer

SCHEDULE "N"

Property Standards and Nuisance Abatement Fees & Charges

This Schedule to the Fees and Charges Bylaw implements costs referred to in Section 7 and 10 of the Property Standards and Nuisance Abatement Bylaw No. 4190 and are determined in part by a flat fee for each separate attendance, time spent and equipment used by individuals involved in the abatement of a nuisance. They are calculated in part by multiplying average hourly rates and vehicle costs.

	INSPECTION FEES
Bylaw Enforcement Officer	$300.00
RCMP	$300.00
Fire Inspector	$300.00
Building Inspector	$300.00
** An administrative fee of 15% will be added to the rates above	

CITY OF PORT COQUITLAM

BYLAW NOTICE ENFORCEMENT AMENDMENT BYLAW, 2020

Bylaw No. 4192

1. CITATION

This Bylaw is cited as "Bylaw Notice Enforcement Bylaw, 2020, No. 3814, Amendment Bylaw, 2020, No. 4192".

2. ADMINISTRATION

2.2 That Schedule "A" – Property Maintenance Bylaw No. 2945 (now repealed) be replaced with Schedule "A" - Property Standards and Nuisance Abatement Bylaw No. 4190 attached hereto and forming part of this Bylaw.

READ A FIRST TIME this	13th day of	October, 2020
READ A SECOND TIME this	13th day of	October, 2020
READ A THIRD TIME this	13th day of	October, 2020
ADOPTED this	day of	, 2020

Mayor

Corporate Officer

SCHEDULE "A"
Designated Bylaw Contraventions and Penalties

Property Standards and Nuisance Abatement Bylaw No. 4190

Column 1	Column 2	Column 3	Column 4	Column 5
OFFENCE	SECTION NO. IN BYLAW	DISCOUNTED PENALTY IN $ (within 14 days)	FULL PENALTY IN $ (after 14 days)	COMPLIANCE AGREEMENT DISCOUNT)
Nuisance at law	4.1	$200.00	$250.00	N/A
Act which unreasonably interferes	4.2	$400.00	$500.00	N/A
Offence under CDSA, CCC, LCLA	4.3	$400.00	$500.00	N/A
Lighting which creates nuisance	5.1	$125.00	$250.00	N/A
Storage of material	6.1 (a)	$200.00	$250.00	N/A
Storage of vehicle	6.1 (b)	$200.00	$250.00	N/A
Over height ground cover	6.1 (c)	$200.00	$250.00	N/A
Dilapidated building	6.1 (d)	$200.00	$250.00	N/A
Accumulated materials	6.1 (e)	$200.00	$250.00	N/A
Dilapidated fence	6.1 (f)	$200.00	$250.00	N/A
Noxious weeds	6.1 (g)	$200.00	$250.00	N/A
Piles of natural material	6.1 (h)	$200.00	$250.00	N/A
Graffiti	6.1 (i)	$200.00	$250.00	N/A
Water collection	6.1 (j)	$200.00	$250.00	N/A
Noise which disturbs	7.1	$200.00	$300.00	N/A
Noise from device which disturbs	7.2	$200.00	$300.00	N/A
Obstruct Officer	13.3	$250.00	$500.00	N/A
Provide false information to Officer	13.4	$250.00	$500.00	N/A

CITY OF PORT COQUITLAM

TICKET INFORMATION UTILIZATION AMENDMENT BYLAW, 2020

Bylaw No. 4193

1. CITATION

This Bylaw is cited as "Ticket Information Utilization Bylaw, 1992, No. 2743, Amendment Bylaw, 2020, No. 4193".

2. ADMINISTRATION

2.1 That Schedule 6 – Property Maintenance Bylaw No. 2945 (now repealed) be replaced with Schedule "A" - Property Standards and Nuisance Abatement Bylaw No. 4190 attached hereto and forming part of this Bylaw.

2.2 That Schedule 18 be amended to reflect the City's current "Controlled Substance Nuisance Bylaw, 2017, No. 3972".

READ A FIRST TIME this	13th day of	October, 2020
READ A SECOND TIME this	13th day of	October, 2020
READ A THIRD TIME this	13th day of	October, 2020
ADOPTED this	day of	, 2020

Mayor

Corporate Officer

SCHEDULE 6

Property Standards & Nuisance Abatement Bylaw No. 4190

Column 1	SECTION Column 2	FINE Column 3	REDUCED FINE If paid within 30 Days of Service Column 4
• Nuisance at law	4.1	$250.00	$200.00
• Act which unreasonably interferes	4.2	$500.00	$400.00
• Offence under CDSA, CCC, LCLA	4.3	$500.00	$400.00
• Lighting which creates nuisance	5.1	$250.00	$125.00
• Storage of material	6.1 (a)	$250.00	$200.00
• Storage of vehicle	6.1 (b)	$250.00	$200.00
• Over height ground cover	6.1 (c)	$250.00	$200.00
• Dilapidated building	6.1 (d)	$250.00	$200.00
• Accumulated materials	6.1 (e)	$250.00	$200.00
• Dilapidated fence	6.1 (f)	$250.00	$200.00
• Noxious weeds	6.1 (g)	$250.00	$200.00
• Piles of natural material	6.1 (h)	$250.00	$200.00
• Graffiti	6.1 (i)	$250.00	$200.00
• Water collection	6.1 (j)	$250.00	$200.00
• Noise which disturbs	7.1	$300.00	$200.00
• Noise from device that disturbs	7.2	$300.00	$200.00
• Obstruct Officer	13.3	$500.00	$250.00
• Provide false information to Officer	13.4	$500.00	$250.00

CITY OF PORT COQUITLAM

DELEGATION OF AUTHORITY AMENDMENT BYLAW, 2020

Bylaw No. 4194

1. CITATION

This Bylaw is cited as "Delegation of Authority Bylaw, 2014, No. 3876, Amendment Bylaw, 2020, No. 4194".

2. ADMINISTRATION

2.1 Delegation of Authority Bylaw, 2014, No. 3876 is amended by removing section 3 and replacing it with the following section 3:

BYLAW ENFORCEMENT

3. It is acknowledged by the Council of the City of Port Coquitlam that by virtue of their appointment, Bylaw Officers are "Peace Officers" in the course of performing their duties. A Bylaw Enforcement Officer may exercise the following powers on behalf of the City:

a) enforcement of the City's regulatory bylaws and related policies;

b) entry onto or into private premises to verify compliance with the Council's regulations, prohibitions or requirements pursuant to Section 16 of the *Community Charter*;

c) the service of summons pursuant to Section 28 of the *Offence Act;*

d) for certainty, the issuance of Municipal Ticket Information as provided by the Ticket Information Utilization Bylaw, 1992, No. 2743 and the Bylaw Notice Enforcement Bylaw, 2012, No. 3814.

e) in accordance with Section 70(1)(b) of the *Police Act* upon the appointment of a Bylaw Officer by the City of Port Coquitlam Council or delegate, each employee must complete the Oath/Affirmation in BC Regulation 136/2002M199/2002 (see Schedule A).

2.2 Delegation of Authority Bylaw, 2014, No. 3876 is amended by adding "Schedule A" attached hereto and forming part of this Bylaw.

2.3 Delegation of Authority Bylaw, 2014, No. 3876 is further amended in the LAND USE AND DEVELOPMENT APPROVALS section by:

a) adding the words "or a temporary use permit" after 'development variance permit' in clause 9 (e);

b) removing the words “issue and” in clause 9. (b); and

c) removing the words “temporary use permits” in clause 19.

READ A FIRST TIME this	13th day of	October, 2020
READ A SECOND TIME this	13th day of	October, 2020
READ A THIRD TIME this	13th day of	October, 2020

Mayor

Corporate Officer

SCHEDULE A

PEACE OFFICER RESOLUTION

1. As per the authority at section 36 of the Police Act, R.S.B.C. 1996, c. 367, as amended, the City of Port Coquitlam ("City") through its Mayor and Council or delegate appoints **(INSERT NAME)** as a bylaw enforcement officer for the City commencing **(DATE)** for the purposes of enforcing all City's bylaws and in accordance with the statutory authority granted within the Community Charter, S.B.C. 2003, c. 26, as amended, is authorized to exercise such statutory authority.

2. For the purposes of this resolution the City also designates (insert full legal name here) as a peace officer, as that term is defined in section 29 of the Interpretation Act, R.S.B.C. 1996, c. 238, as amended, for the preservation and maintenance of public peace within the City, with the full powers, privileges and responsibilities of a peace officer while carrying out their duties for the City.

3. This appointment will expire immediately when (insert full legal name here) is either no longer employed by the City; is no longer appointed to the position of bylaw enforcement officer; or if City Council rescinds their appointment.

   As per the oath of office, it is taken under the authority of section 70 of the *Police Act* and B.C. Reg. 136/2002. Consider the following:

   I, **(insert full legal name here)**, do solemnly affirm that:

   a) I will be faithful and bear true allegiance to Her Majesty Queen Elizabeth the Second, Queen of Canada, Her Heirs and Successors; and

   b) I will faithfully, honestly and impartially perform my duties as bylaw enforcement officer for the City of Port Coquitlam.

   Solemnly affirmed by me, at the City of Port Coquitlam, Province of British Columbia, on

   (insert day, month, year here).

   _____
   (Insert full legal name here), Bylaw Enforcement Officer

   _____
   A Commissioner for Administering Oaths

Development Variance Permit – 2481 Welcher Avenue

RECOMMENDATION:

That Council approve Development Variance Permit DVP00073 for 2481 Welcher Avenue.

PREVIOUS COUNCIL/COMMITTEE ACTION

October 6, 2020 – Committee of Council:

That the Committee of Council:

1) Approve in principle Development Permit DP00041, regulating a 5-storey 63-unit, multi-family residential development at 2481 Welcher Avenue;

2) Pursuant to s. 498 of the Local Government Act, authorize staff to provide notice of an application to vary building height and floor area regulations; and

3) Forward Development Variance Permit DVP00073 to Council with support for consideration, subject to comments from neighbourhood input.

OPTIONS (✓= Staff Recommendation)

	#	Description
✓	1	Approve Development Variance Permit.
	2	Request further information.
	3	Deny Development Variance Permit.

2481 Welcher Avenue – Development Permit and Development Variance Permit Applications

RECOMMENDATION:

That Committee of Council:

1. Approve in principle Development Permit DP000441, regulating a 5-storey 63-unit, multi-family residential development at 2481 Welcher Avenue.
2. Pursuant to s. 498 of the Local Government Act, authorize staff to provide notice of an application to vary building height and floor area regulations; and
3. Forward Development Variance Permit DVP00073 to Council with support for consideration, subject to comments from neighbourhood input.

PREVIOUS COUNCIL/COMMITTEE ACTION

None.

REPORT SUMMARY

This report describes two applications from Metro Vancouver Housing for a property at 2481 Welcher Avenue. The first is a development permit application to regulate the form and character for a non-market rental residential building. And the second, an application to vary the height of the building and density bonus payment for additional floor area to permit the construction of an additional 13 units. The proposal includes a five storey high performance and energy efficient 63 unit building. Metro Vancouver will be the owner and operator of this non-market rental housing development. Staff recommends Committee provide approval in principle to the development permit, advise Council that Committee supports further consideration of the requested variances and authorize staff to provide public notification of the variances.

BACKGROUND

Proposal: The applicant, Metro Vancouver Housing, has applied for a development permit and development variance permit to facilitate development of a 5-storey, 63-unit non-market rental housing project at 2481 Welcher Avenue.

Context: The 2,700m^2 (29,062 ft^2) site is located at the corner of Welcher Avenue and Reeve Street, with Gates Park located directly to the west of the site. The site is comprised of three lots currently occupied by two empty single residential houses. The subject properties within an area already development with apartment residential uses; Gates Park and Riverside Secondary School are located to the west and southwest of Reeve Street respectively.

Location map

Policy and Regulations: The Official Community Plan designates the site as Apartment Residential that allows for lower profile attached residential uses. The property is zoned RA1 (Residential Apartment 1), which permits residential uses.

The objectives of the site's Downtown, Intensive Residential, and Environmental Conservation development permit area designations are intended to:

- Create a sense of community in intensive residential areas by improving the relationship and connection between public and private space along intensive residential streets.
- Facilitate the orderly development of the area and to encourage coordination of the siting, form, and volume of intensive residential buildings and their areas for parking, storage, and landscaping
- Encourage sustainable development and building design, efficient use of energy, water and other resources, and the reduction of waste and pollution.

OCP policies also support meeting housing affordability objectives and promote amenities for diverse families through opportunities to encourage the development of rental housing and ensure options for households that do not want or cannot afford to own their home.

Project Description: The proposed development is a 5-storey, non-market rental housing building with 63 apartment units. The applicant has designed the building to be family oriented, with a number of larger units and an accessible design to support people of all ages and abilities. The proposed unit breakdown consists of 6 studio, 5 one-bedroom, 34 two-bedroom, and 18 three-bedroom units. The units will range in size from 38m^2 (410 ft^2) to 96m^2 (1,033 ft^2) and each will have a balcony or patio.

2481 Welcher Avenue – Development Permit and Development Variance Permit Applications

	Bylaw Regulations [1]	Proposed [2]	Proposed Variance
Site area minimum	1000 m^2	2,700 m^2	-
Floor area ratio	1.5 / 2.0	1.79	0.21
Dwelling units (total)	-	63	-
Adaptable units	-	57	
Family-oriented units	16	18	-
Building lot coverage	50%	50%	-
Setbacks:			
Front (south)	4.0 m	5.4 m	-
Rear (north)	7.5 m	8.5 m	-
Interior side (east)	3.0 m	3.3 m	-
Exterior side (west)	4.0 m	4.2 m	-
Building height	15 m	17.7 m	2.7 m
Parking: Total	63	66	
Residents	63	63	-
Staff	n/a	3	-
Small car	25% (16)	23% (15)	
Bicycle parking			
Long-term	63 (1 per res unit)	63	-
Short-term	6	6	-
Indoor recreation area	126 m^2	136.6 m^2	-
Outdoor recreation area	220.5 m^2	278.1 m^2	-

Looking east at the corner of Welcher Avenue and Reeve Street

Looking northwest along Welcher Avenue

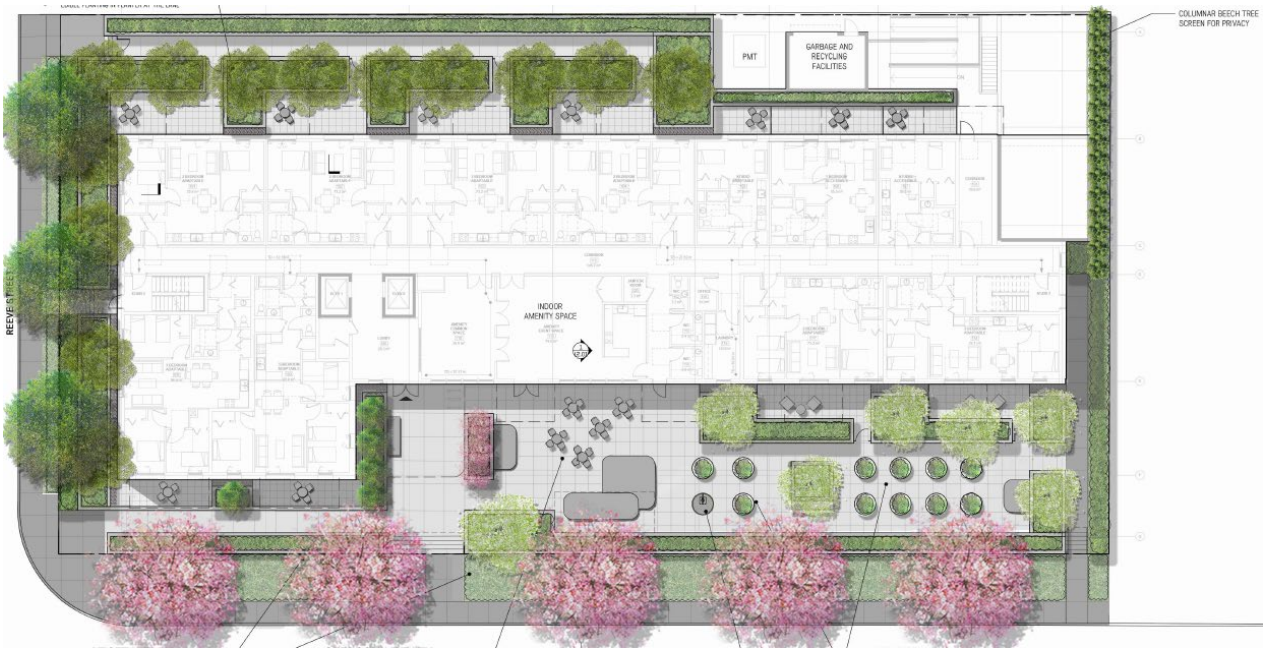
[1] Refer to Zoning Bylaw No. 3630, Parking and Development Management Bylaw No. 4078 and Building and Plumbing Bylaw No. 3710 for specific regulations.
[2] Information provided by applicant.

The applicant advises that the development is intended to respect the scale and quality of the existing residential neighborhood and adjacent greenspace while ensuring a strong focus on community and quality of life for tenants. The building orientation provides for strong corner presence with a focus on a street-oriented, pedestrian environment; the main pedestrian entrance is on Welcher Avenue and this frontage provides for a generous amount of common outdoor courtyard space plus private patios intended to support a vibrant streetscape and facilitate opportunities to provide safe and attractive pedestrian connections into the building. Along Reeve Street, there are substantive landscape elements, including street trees, maintaining continuous street character. Vehicular access to the underground parking is to be located off the rear lane at the northeast corner of the site.

The design of the building has been largely influenced by the intent to reduce energy consumption to meet BC Energy Step Code 4 energy requirements, and potentially achieve a Net-Zero Energy performance. Passive design strategies, such as simple building form, external (non-recessed) balconies, and orientation to consider summer and winter heat gain have been used to this end. The applicant advised that since energy performance would be compromised with additional building envelope articulation, such as stepping back higher stories of the building, they have instead addressed building massing by using horizontal material changes to break down the massing and increase the pedestrian experience at the human scale. The inclusion of dark brick at the base is intended to give the building a strong foundation at the ground level with light cladding above to reduce the presence of upper storeys. The impact of the fifth floor to the adjacent building to the east is further mitigated by limiting the size of windows and eliminating balconies on this elevation and increasing the setback.

The proposed colour palette is reflective of the neighbouring buildings and includes elements which are sympathetic to the City's heritage character. This includes a substantive amount of brick and metal panels, with a mixture of colours, textures and substantial glazing to increase light into the units.

The common outdoor courtyard on Welcher Avenue connects directly to an indoor amenity space used as an area for residents to socialize and host events. The outdoor space includes movable tables and chairs, terraced concrete benches and a moveable long table for events. Equipment for children includes a water play pump, chalkboard wall and there will be a community garden beds for all residents with a potting table and garden tool storage. Each unit is also provided with their own private balcony or terrace.



Landscaping on-site including street trees along Welcher Avenue and Reeve Street

All required vehicular parking is located in the parkade structure, along with secured bicycle storage and three staff parking stalls for Metro Vancouver Housing building management and maintenance staff. A vehicle wash station would be provided within a staff parking stall. Three short term bike racks are provided next to the front entrance for visitors. The garbage and recycling facility is located in a secured structure off of the rear lane.

In order to accommodate the development, 56 trees on-site and two off-site trees would need to be removed. An arborist report was submitted and identified the majority of tree species are fast growing Cottonwood and Laurel species. No significant trees were identified.

The proposed landscaping includes vegetated, concrete planters around the edges of the site with various shrubs and trees evenly spaced. The landscape architect has advised that the development can accommodate a total of 38 replacement trees which will include Red Maple, European Beech, Yoshino Cherry, and Lavalle Hawthorne. The addition of 10 trees along the northeast of the property was provided for increased screening based on concerns expressed by abutting residents. Replacement trees will be placed primarily around the perimeter of the site, on the boulevard and within the outdoor courtyard. A total of 973 shrubs and extensive groundcover will be comprised of Salal, Japanese Holly, and Viburnum. In accordance with the City's Tree Bylaw, cash-in-lieu

Trees to be protected at 2437 Welcher Ave

may be provided for the replacement trees that cannot be accommodated on-site.

There are four trees located on 2437 Welcher and one tree within the boulevard, in close proximity to the property line. In accordance with the City's Tree Bylaw, protective fencing will be installed along the east side of the property to ensure that buffering trees are not impacted by the development.

Environmental Conservation

The applicant have confirmed they intend to construct the building to meet Step 4 of the BC Energy Step Code, which incorporates critical energy reducing measures into the architectural, mechanical and electrical design of the building to provide for the potential of Net-Zero Energy performance. The proposal goes beyond the City's current requirements for any large residential buildings, which is Energy Step Code 2. The Net-Zero Energy performance that has been incorporated into building design includes Passive House performance level envelope, high efficiency heat recovery, heat pumps for domestic hot water use, and passive design strategies. Energy meters will be installed so that residents are aware of the impacts their choices make.

A complete list of conservation measures are provided in Schedule A of the draft development permit.

Offsite requirements

In accordance with the Subdivision Servicing Bylaw, servicing work includes upgrading Welcher Avenue and Reeve Street (curb and gutter, sidewalk, road drainage and street lighting), undergrounding of utilities in the lane and the extension and construction of water, storm and sanitary to service the site. These will be conditions of building permit issuance. The City has identified the need for 3m x 3m corner cut at the intersections of Reeve/Welcher and Welcher/lane.

Variances to Zoning Regulations:

The applicant has requested a 2.7 m height variance to facilitate construction of the fifth storey of affordable rental units, The construction of a fifth storey has also resulted in a floor area ratio of 1.79, and applicant has also requested a variance to the zoning bylaw provision which requires a contribution in the amount of $50 per square foot for floor area in excess of 1.5 FAR.

DISCUSSION

The proposed residential building is attractive and, while heavily influenced by extraordinary energy performance measures, has used a variety of architectural approaches to ensure the design meets the intent of the development permit guidelines and is reflective of the existing form and character of the surrounding residential developments. The additional height has been mitigated through the reduction of windows and balconies on this elevation and the increase in setback and substantive landscaping to buffer the adjacent residential buildings. The location of the building on a corner and across from Gates Park limits further impacts of the additional height. The formal entrance and programmed common terrace along Welcher Avenue will provide for

ample opportunities for building community within the building, an attractive pedestrian experience and increase “eyes on the street”.

The development also aligns with the City’s OCP and associated policies to explore and support the development of rental housing, encourage housing affordability and promote a range of housing options to meet the needs of our diverse community.

In accordance with municipal policy, staff recommend the additional 13 units of non-market housing be considered a community benefit and height limits and the $50 per square foot requirements be waived subject to a Housing Agreement. Staff also recommend the City’s requirements for corner cuts be secured through this process.

Staff recommend Committee provide approval in principle of the development permit (consideration of approval would then be timed with the development variance permit at Council) and recommend approval of the development variance permit to Council.

FINANCIAL IMPLICATIONS

In accordance with the Processing of Development Applications Policy, the City did not require Development Permit application fees, an approximate value of $9,025. Metro Vancouver Housing may also apply to the City for a grant from the Special Needs Housing Reserve for a maximum of $63,000 ($1,000 per dwelling unit).

This property generated $7,675.22 in Port Coquitlam property tax revenue in 2020, based on an assessment of $2,920,000. Once the property is developed for the purposes of providing housing, it will be exempt from taxation under section 361 of the Local Government Act which provides exemptions for properties owned or held by a regional district and used for the regional district’s purposes.

PUBLIC CONSULTATION

A sign has been posted on the site to inform area residents of the application. The applicant has also provided a four page informational handout to residents on all sides that are directly impacted by the development. The handout also provided a link to a Metro Vancouver webpage for further information, where residents could contact the applicant to express any concerns or ask questions.

Comments have been received in respect to the proposed height, landscaping, parking and potential tenants. The consultation summary provided by Metro Vancouver Housing indicates residents’ concerns over decreased property value of neighbouring buildings, and loss of existing views. The applicant has amended their application to increase landscaping to buffer units in the adjacent building (including the addition of 10 trees along the northeast edge of the property) and

to reduce the street massing and has provided clarity to neighbouring residents as to the nature of the non-market housing proposal. Further comments expressed from residents included excitement for the project and questions about the tenant selection process, project timelines, and unit and parking confirmation.

OPTIONS (✓= Staff Recommendation)

	#	Description
✓	1	Approve Development Permit DP000441 in principle and authorize notification of Development Variance Permit application DVP00073, and recommend Council consider approval of the development varince permit and development permit at a future Council meeting.
	2	Request additional information or amendments if Committee is of the opinion that such information or amendment would assist in its evaluation of how the design complies with the development permit area designation or variances to regulations.
	3	Refuse the applications if the Committee is of the opinion the application does not conform to the design guidelines or does not support the variances to regulations.

ATTACHMENTS

Attachment 1: Draft Development Permit

Attachment 2: Draft Development Variance Permit

Attachment 3: Consultation Package

Attachment 4: Green Energy Checklist

Attachment 5: Arborist Report

Lead author(s): Graeme Muir

THE CORPORATION OF THE CITY OF PORT COQUITLAM

"DEVELOPMENT PROCEDURES BYLAW, 2013, NO. 3849"

DEVELOPMENT PERMIT

NO. DP000441

Issued to: Metro Vancouver Housing Corporation, INC. No. 129319
(Owner as defined in the Local Government Act, hereinafter referred to as the Permittee)

Address: 4730 Kingsway, Burnaby, BC V5H 0C6

1. This Development 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 Permit applies to and only to those lands within the Municipality described below, and any and all buildings, structures and other development thereon:

Address:	2481 Welcher Avenue
Legal Description:	LOT 1, DISTRICT LOT 174, GROUP 1, NEW WEST DISTRICT, PLAN EPP91668
P.I.D.:	031-117-490

3. The above property has been designated as a Development Permit Area under Section 9.0 – Development Permit Area in the "Official Community Plan Bylaw, 2013, No. 3838".

4. "Port Coquitlam Zoning Bylaw, 2008, No. 3630" and "Parking and Development Management Bylaw, 2018, No.4078" are varied, supplemented or both in accordance with the following:

   a. The form and character of the building, including the siting, height and general design, shall be as shown on drawings numbered DP000441 (1) to (21) which are attached hereto and form part of this permit.

   b. The form and character of on-site landscaping shall be as shown on drawings numbered DP000441 (12) to (20) and the following standards for landscaping are imposed:

      (i) All landscaping works and planting materials shall be provided in accordance with the landscaping plan and specifications thereon, which form part of this permit and is attached hereto.

(ii) All planting materials shall be able to survive for a period of one year from the date of the site landscape approval by the Municipality.

c. The building and landscaping shall provide the energy conservation, water conservation and GHG emission reduction elements as shown on Schedule A to the drawings which are attached hereto and form part of this permit.

5. **Landscape Security**

(a) As a condition of the issuance of this permit, the security set out below will be held by the Municipality prior to the issuance of a building permit to ensure satisfactory provision of landscaping in accordance with the terms and conditions as set forth in Clause 4 above. There is filed accordingly an irrevocable Letter of Credit or cash security in the amount **$516,058.00** for the purpose of landscaping.

(b) Should any interest be earned upon the security, it shall accrue to the Permittee and be paid to the Permittee if the security is returned. A condition of the posting of the security is that should the Permittee fail to carry out the works or services as hereinabove stated, according to the terms and conditions of this permit within the time provided, the Municipality may use the security to complete these works or services by its servants, agents or contractors, and any surplus shall be paid over to the Permittee.

(c) The Permittee shall complete the landscaping works required by this permit within six months of the final inspection for the final phase of the development. Within the six month period, the required landscaping must be installed by the Permittee, and inspected and approved by the Municipality.

If the landscaping is not approved within the six month period, the Municipality has the option of continuing to hold the security until the required landscaping is completed or has the option of drawing the security and using the funds to complete the required landscaping, and recoup additional costs from the Permittee if necessary. In such a case, the Municipality or its agents have the irrevocable right to enter into the property to undertake the required landscaping for which the security was submitted.

(d) Should the Permittee carry out the works and services permitted by this permit within the time set out above, the security shall be returned to the Permittee.

6. The land described herein shall be developed strictly in accordance with the terms and conditions and provisions of this permit and any plans and specifications attached to this permit, which shall form a part hereof.

7. This permit shall lapse if the Permittee does not substantially commence the construction permitted by this permit within two years of the (issuance) date of this permit.

8. The terms of this permit or any amendment to it, are binding on all persons who acquire an interest in the land affected by this permit.

9. This permit is not a building permit.

APPROVED BY COUNCIL THE _____ DAY OF _____, 2020.

SIGNED THIS _____ DAY OF _____,2020.

_____
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)

WELCHER AVENUE MULTI-FAMILY

SITE PLANNING DATA

CIVIC ADDRESS:	3435 & 3437 Welcher Avenue, Port Coquitlam BC 3477 Welcher Avenue, Port Coquitlam, BC 3471 Welcher Avenue, Port Coquitlam, BC
PARCEL IDENTIFIER:	031-117-439
LEGAL DESCRIPTION:	LOT 1 DISTRICT LOT 174 GROUP 1 NEW WESTMINSTER DISTRICT PLAN EPP91668
ZONING:	RA1
SITE AREA:	2,760.4m²
FOOTPRINT:	1,318 1m² - Building (Including Deck Structures, Excluding Canopy) 2,257.3m² - Semi-Underground Parking 23.8m² - Recycling Facilities Structure

ZONING CALCULATIONS	PERMITTED	PROPOSED
LOT COVERAGE:	50%*	49.8%**
FLOOR AREA:	5,409.8m²	4,608.3m²
FLOOR AREA RATIO (FAR):	1.5 / 2.0***	1.79
MINIMUM INDOOR AMENITY AREA:	2m² / UNIT (126m²)	138.6m²
MINIMUM COMMON OUTDOOR AREA:	3.6m² / UNIT (226.8m²)	278.1m²
SETBACKS:		
NORTH (Rear):	7.5m	8.5m^
EAST (Side Internal):	3.9m	3.3m^^
SOUTH (Front):	4.9m	3.4m^^
WEST (Side External):	4.9m	4.3m^^
BUILDING HEIGHT:	18.0m	17.7m^
RECYCLING FACILITIES:	6.19m² / UNIT + 50% (18.6m²)	19.0m²

PARKING	REQUIRED	PROPOSED
TOTAL:	1 / UNIT (63)	66
RESIDENT:	63	63
VISITOR:	-	0
STAFF:	-	3
SMALL CAR:	≤25% (15)	22% (15)
ACCESSIBLE:	-	6
LOADING BAY:	N/A	
DRIVEWAY:	8.0m WIDTH	6.0m WIDTH

BICYCLE PARKING:	REQUIRED	PROPOSED
LONG TERM:	1 / UNIT (63)	63
HORIZONTAL	≤60% (38)	60% (38)
VERTICAL	≥40% (25)	40% (25)
TEMPORARY	6	6

PROJECT AREAS**

Level	Program Type	Count	Gross Floor Area	Area of Exclusions	Floor Area
Ground Level	AMENITY	1	136.6 m²	0.0 m²	136.6 m²
Ground Level	CIRCULATION	7	225.9 m²	225.9 m²	0.0 m²
Ground Level	COMMON SPACE	2	19.6 m²	0.0 m²	19.6 m²
Ground Level	DWELLING UNITS (ACCESS.)	2	98.0 m²	0.0 m²	98.0 m²
Ground Level	DWELLING UNITS (ADAPT.)	9	669.0 m²	18.0 m²	650.0 m²
Ground Level	SERVICES	3	12.2 m²	12.2 m²	0.0 m²
			1161.4 m²	256.2 m²	905.2 m²
Level 02	CIRCULATION	5	182.5 m²	182.5 m²	0.0 m²
Level 02	COMMON SPACE	1	20.2 m²	0.0 m²	20.2 m²
Level 02	DWELLING UNITS (ACCESS.)	1	55.5 m²	0.0 m²	55.5 m²
Level 02	DWELLING UNITS (ADAPT.)	12	928.1 m²	24.2 m²	902.1 m²
Level 02	SERVICES	2	9.2 m²	9.2 m²	0.0 m²
			1195.5 m²	215.7 m²	977.8 m²
Level 03	CIRCULATION	5	182.2 m²	182.2 m²	0.0 m²
Level 03	COMMON SPACE	1	20.5 m²	0.0 m²	20.5 m²
Level 03	DWELLING UNITS (ACCESS.)	1	55.5 m²	0.0 m²	55.5 m²
Level 03	DWELLING UNITS (ADAPT.)	12	926.1 m²	24.0 m²	902.1 m²
Level 03	SERVICES	2	9.2 m²	9.2 m²	0.0 m²
			1195.5 m²	215.7 m²	979.8 m²
Level 04	CIRCULATION	5	182.5 m²	182.5 m²	0.0 m²
Level 04	COMMON SPACE	1	20.2 m²	0.0 m²	20.2 m²
Level 04	DWELLING UNITS (ACCESS.)	1	55.5 m²	0.0 m²	55.5 m²
Level 04	DWELLING UNITS (ADAPT.)	12	926.1 m²	24.0 m²	902.1 m²
Level 04	SERVICES	2	9.2 m²	9.2 m²	0.0 m²
			1195.5 m²	215.7 m²	979.8 m²
Level 05	CIRCULATION	5	182.5 m²	182.5 m²	0.0 m²
Level 05	COMMON SPACE	1	18.6 m²	0.0 m²	18.6 m²
Level 05	DWELLING UNITS (ACCESS.)	1	55.5 m²	0.0 m²	55.5 m²
Level 05	DWELLING UNITS (ADAPT.)	12	926.1 m²	24.0 m²	902.1 m²
Level 05	SERVICES	3	12.8 m²	12.8 m²	0.0 m²
			1195.5 m²	217.3 m²	978.3 m²
			5923.7 m²	1114.3 m²	4809.3 m²

UNIT SUMMARY

Unit Type	Count	% of Total Count	Adaptable	Accessible	Unit Area Min. - Max.**
1 BEDROOM	5	7.9%	0	5	55.5 m²
2 BEDROOM	34	54.0%	34	0	73.2 m² ... 74.1 m²
3 BEDROOM	18	28.6%	18	0	91.2 m² ... 94.4 m²
STUDIO	6	9.5%	5	1	37.9 m² ... 49.5 m²
TOTAL	63		57	6	

NOTES:
* MAXIMUM LOT COVERAGE INCREASED BY 15% AS PER ZONING BYLAW #6630 TABLE 2.4 NOTE #9
** HIGH PERFORMANCE ENVELOPE OUTBOARD OF SHEATHING EXCLUDED FROM SETBACK, LOT COVERAGE, FLOOR AREA AND UNIT AREA CALCULATIONS
*** MAXIMUM FLOOR AREA RATIO INCREASED TO 1.5 AS PER ZONING BYLAW #6630 TABLE 2.4 NOTE #10 WITH ADDITIONAL INCREASE UP TO 2.0 FAR GIVEN CONTRIBUTIONS TO CITY RESERVE FUNDS
^ BUILDING HEIGHT TAKEN FROM THE HIGHEST POINT OF ROOF SURFACE OF FLAT ROOF AS PER BYLAW BYLAW #6630 SECTION 1 HEIGHT DEFINITION

ARCHITECTURAL DRAWING LIST

A001	COVER SHEET
A100	SITE PLAN
A200	PARKING LEVEL PLAN (P1)
A201	GROUND FLOOR PLAN (L1)
A202	LEVEL 2 FLOOR PLAN (L2)
A203	LEVEL 3 FLOOR PLAN (L3)
A204	LEVEL 4 FLOOR PLAN (L4)
A205	LEVEL 5 FLOOR PLAN (L5)
A206	ROOF PLAN
A300	ELEVATIONS
A400	BUILDING SECTIONS

CONSULTANTS

ARCHITECTURAL	**Local Practice Architecture + Design** 4302 - 960 Georgia Street, Vancouver, BC V6A 0H9
LANDSCAPE	**Hapa Collaborative** 403 – 375 West Fifth Avenue, Vancouver, BC V5Y 1J6
ENVELOPE/ ENERGY	**RDH Building Science** 4333 Still Creek Drive #400 Burnaby, BC V5C 6S6
STRUCTURAL	**Fast + Epp** 201 - 672 West 1st Ave, Vancouver, BC V5Z 1G1
MECHANICAL	**Rocky Point Engineering** 208 20171 92A Avenue, Langley, BC V1M 3A5
ELECTRICAL	**O'M Engineering** 556 Park Place - 666 Burrard Street, Vancouver, BC V6C2B1
CIVIL	**H.Y. Engineering** #200 - 9128 152 Street, Surrey, BC V3R 4E7

SYMBOL LEGEND

WF01	WALL / FLOOR / ROOF / CEILING TAG
001	DOOR TAG
001	WINDOW TAG
Room name 101 150 m2	ROOM TAG
Name Elevation 1 A101	LEVEL MARKER
Ref 0 A101 0 Ref	BUILDING ELEVATION TAG
Ref 0 A101 0 Ref	INTERIOR ELEVATION TAG
1 A101 Ref	SECTION MARKER
Ref 1 A101	DETAIL SECTION MARKER
Ref 1 A101	DETAIL CALLOUT
N 358 57°	TRUE NORTH ARROW
	SPOT ELEVATION
℄	CENTER LINE
℄	PROPERTY LINE
23 20	REVISION TAG
TD = 45.00 m	TRAVEL DISTANCE TAG

ABBREVIATIONS

ALUM	ALUMINUM
ANOD	ANODIZED
ARCH	ARCHITECTURAL
BO	BOTTOM OF
CIP	CAST-IN-PLACE
CL	CLOSET
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTROL
CTRL	CONTINUOUS
CW	COMPLETE WITH
DIA	DIAMETER
ELEC	ELECTRICAL
EXIST	EXISTING
FD	FLOOR DRAIN
FLG	FLASHING
FRR	FIRE RESISTANCE RATING
GEN	GENERATOR
GRT	GRATING
GWB	GYPSUM WALL BOARD
GALV	GALVANIZED
HB	HOSE BIBB
HMF	HOLLOW METAL FRAME
HR	HR
INSUL	INSULATION
LARC	LANDSCAPE
MECH	MECHANICAL
MF	METAL FRAME
MTL	METAL
OC	ON CENTER
PREFIN	PREFINISHED
PTD	PAINTED
RWL	RAIN WATER LEADER
ST	STEEL
STRL	STRUCTURAL
TO	TOP OF
W/	WITH

GENERAL NOTES

1. THE GENERAL NOTES ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS & ALL OTHER DISCIPLINES DOCUMENTS
2. DO NOT SCALE DRAWINGS.
3. ALL DIMENSIONS ARE IN MM, UNLESS OTHERWISE NOTED
4. ALL DIMENSIONS SHALL BE VERIFIED AND COORDINATED BY THE CONTRACTOR ON SITE BEFORE PROCEEDING WITH ANY WORK.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL OF THE WORK OF THE CONTRACTOR & ALL OTHER TRADE CONTRACTORS.
6. ENSURE ALL FIRESTOPPING OF SERVICES ARE EXECUTED AS SPECIFIED BY THE RESPECTIVE DIVISIONS 15 AND 16 AND IS IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS
7. ALL WORK IS TO BE IN COMPLIANCE WITH CURRENT BUILDING PRACTICE AND ALL BUILDING REGULATIONS
8. THE ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES OR INTERPRETATIONS OF ALL ASPECTS OF THE WORK
9. WHERE EXISTING COMPONENTS ARE AFFECTED OR DAMAGED BY THE WORK OF THIS CONTRACT, ALL SUCH AREAS ARE TO BE MADE GOOD.
10. CONTROL JOINTS ARE TO BE PROVIDED FOR ALL MATERIALS IN ACCORDANCE WITH ACCEPTED INDUSTRY PRACTICE
11. UNLESS OTHERWISE DETAILED PROVIDE CONTINUOUS SEALS AT JOINT OF WALLS, CEILINGS, PARTITIONS, PLENUMS AND DOORS TO ENSURE CONTINUITY OF FIRE SEPARATIONS.
12. FIRE SEPARATIONS AND FIRE RATED WALLS ARE TO EXTEND FULL HEIGHT AND BE FIRE-STOPPED AT U/S OF ROOF ABOVE AND AT ALL PENETRATIONS TO PROVIDE A COMPLETE FIRE-RATED ASSEMBLY. REFER TO WRITTEN SPECIFICATIONS AND DETAILS FOR APPROVED FIRE STOPPING MATERIALS AND REQUIREMENTS. TYPE 'X' GYPSUM WALL BOARD REQUIRED AT ALL FIRE-RESISTANT RATED ASSEMBLIES
13. ALL PENETRATIONS IN RATED ASSEMBLIES TO BE FIRE-STOPPED AS SPECIFIED
14. ADDESS PANELS IN DRYWALL SURFACES ARE NOT PERMITTED EXCEPT WHERE SHOWNING ON ARCHITECTURAL DRAWINGS.
15. MANUFACTURER LOGOS AND NAMES ON MATERIALS AND COMPONENTS ARE NOT ACCEPTABLE IN PUBLIC AREAS
16. DRYWALL TRADE CONTRACTOR IS TO VERIFY STUD AND WALL THICKNESSES AND GAUGES ARE ADEQUATE TO PROVIDE STRUCTURAL CONFORMANCE WITH CODES AND STANDARDS FOR THEIR RESPECTIVE SPANS AND TO PROVIDE BRACING AS REQUIRED. SIGNED AND SEAL SHOP DRAWINGS ARE REQUIRED
17. PROVIDE IMPACT RESISTANT GYPSUM WALL BOARD IN ALL ROOMS.
18. ALL EXPOSED EXTERIOR CONCRETE TO BE CLEAN, SEALED, ARCHITECTURAL FINISH CONCRETE WITH ANTI-GRAFFITI COATING
19. CAST-IN-PLACE CONCRETE: REFER TO STRUCTURAL DRAWINGS FOR CONCRETE TYPES, ADMIXTURES AND REINFORCEMENT.
20. REFER TO STRUCTURAL DRAWINGS FOR ALL CONCRETE THICKNESS, DETAILS AND REINFORCEMENT. IMMEDIATELY REPORT ANY DISCREPANCIES BETWEEN STRUCTURAL AND ARCHITECTURAL TO ARCHITECT
21. TYPE 'X' MOISTURE RESISTANT DRYWALL TO BE USED IN ALL WET AREAS.

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notes

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issue

No.	Description	Date
1	Issued for Development Permit	20/07/13
2	Reissued for Development Permit	20/09/09

seal

REGISTERED ARCHITECT ANTHEA WOODFORD BRITISH COLUMBIA

2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LF/LS/JT	MW

scale	date
As indicated	20/09/09

title

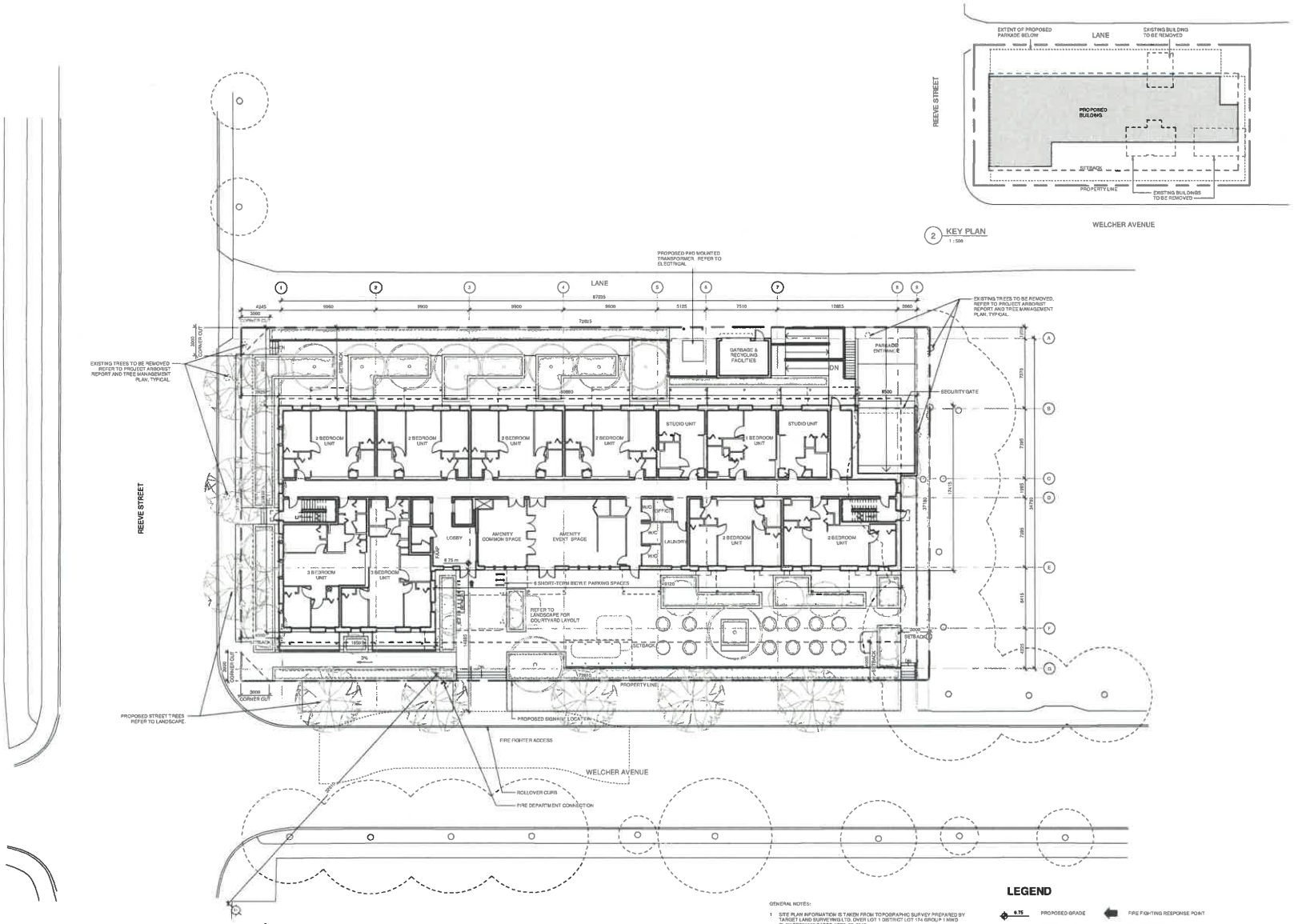
COVER SHEET

sheet

A001

metro vancouver | local. | HAPA COLLABORATIVE | RDH BUILDING SCIENCE | Fast + Epp | ROCKY POINT ENGINEERING LTD | O'M | HY ENGINEERING LTD

DP000441(1)



1 Site Plan
1 : 200

2 KEY PLAN
1 : 500

GENERAL NOTES:

1. SITE PLAN INFORMATION IS TAKEN FROM TOPOGRAPHIC SURVEY PREPARED BY TARGET LAND SURVEYING LTD. OVER LOT 1 DISTRICT LOT 174 GROUP 1 NWD PLAN EPP91668 DATED APRIL 08, 2019
2. ALL DIMENSIONS ARE PARALLEL/PERPENDICULAR TO THE PROPOSED BUILDING. EXCLUDING PROPERTY DIMENSIONS.
3. REFER TO MECHANICAL, ELECTRICAL AND CIVIL FOR REQUIRED SERVICE CONNECTIONS
4. REFER TO LANDSCAPE DRAWINGS FOR DETAILED GRADING AND PLANTING PLANS

LEGEND

- 6.75 — PROPOSED GRADE
- PROPERTY LINE
- SETBACK
- FIRE FIGHTING ACCESS ROUTE
- FIRE FIGHTING RESPONSE POINT
- FAP — FIRE FIGHTING ANNUNCIATOR PANEL
- FIRE HYDRANT
- FIRE DEPT. CONNECTION

N 359.57°

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No.	Description	Date
1	Issued for Development Permit	20/07/13
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seal

REGISTERED ARCHITECT ANTHONY WOODCOCK BRITISH COLUMBIA
2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LF/LS/JT	MW

scale	date
As Indicated	20/09/09

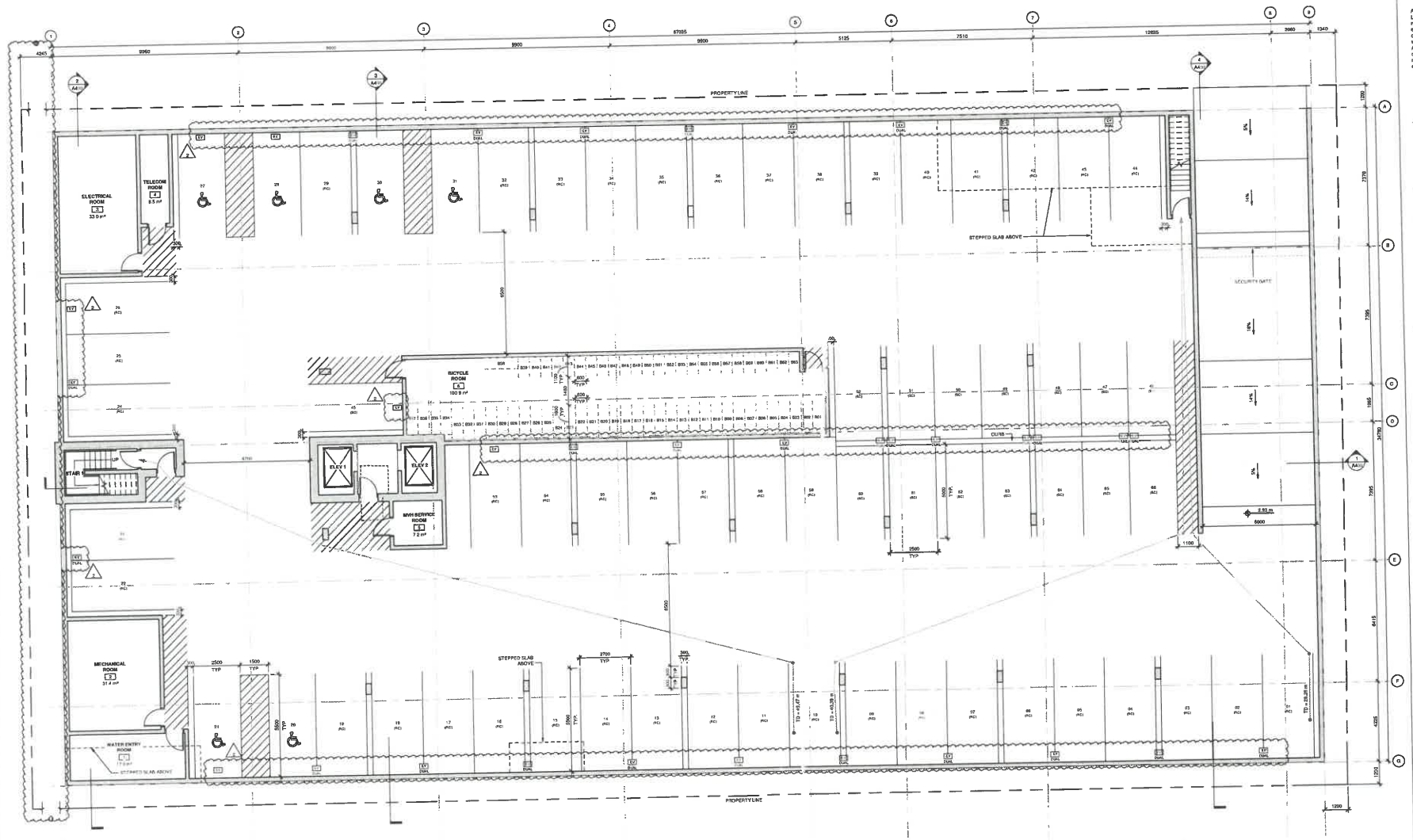
title

SITE PLAN

sheet

A100

DP000441 (2)



1 Parking Level
1:100

LEGEND

(RC)	REGULAR CAR STALL
(SC)	SMALL CAR STALL
	ACCESSIBLE CAR STALL
EV	ELECTRIC VEHICLE CHARGER ROUGH-IN
EV DUAL	DUAL ELECTRIC VEHICLE CHARGER ROUGH-IN

N 359 57°

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DO NOT SCALE DRAWINGS

notes

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No.	Description	Date
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seal

REGISTERED ARCHITECT
MATTHEW WOODFIELD
BRITISH COLUMBIA
2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LR/LS/JT	MW

scale	date
1:100	20/09/09

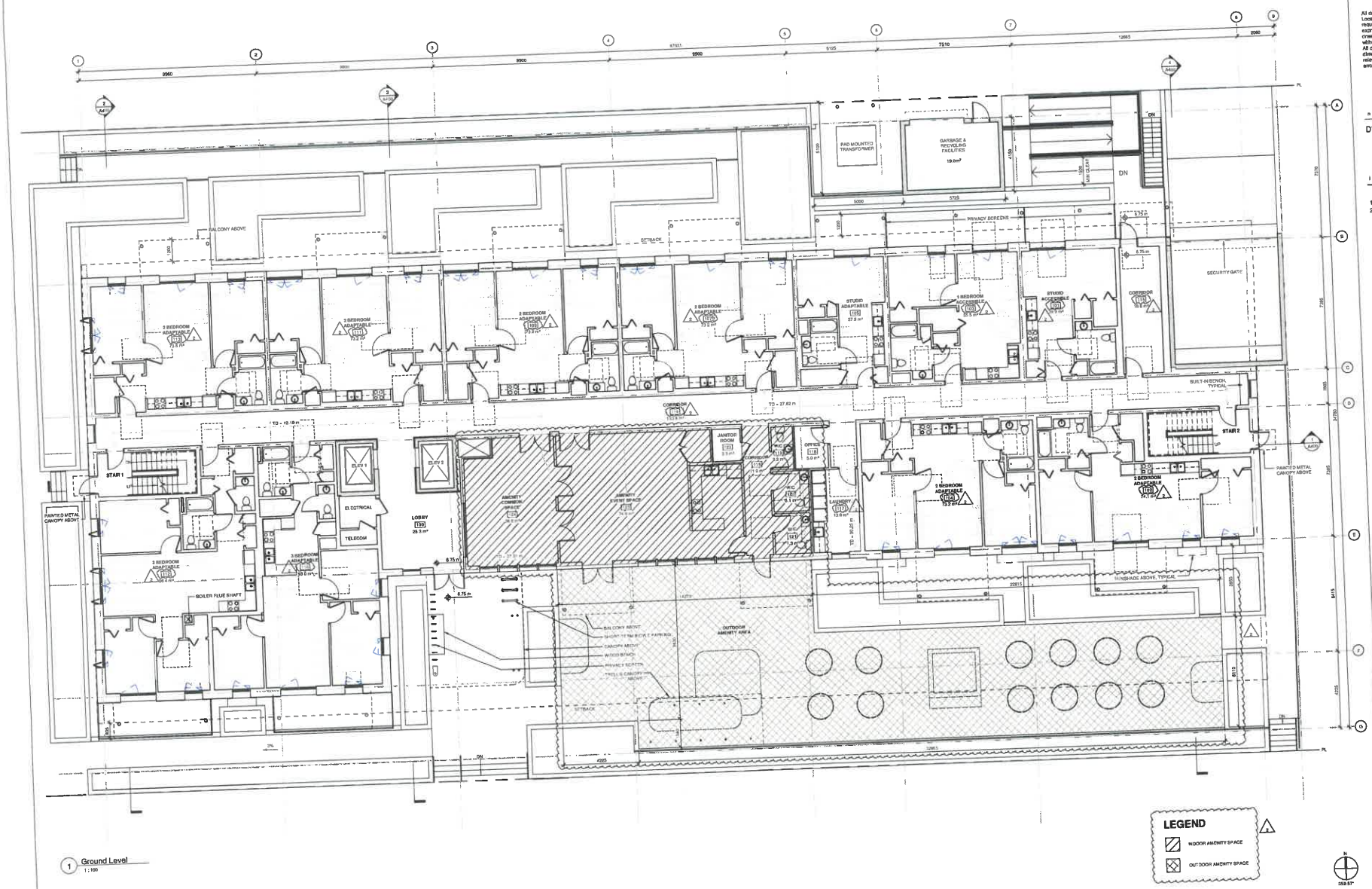
title

PARKING LEVEL PLAN (P1)

sheet

A200

DP000441(3)



1 Ground Level
1 : 100

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seal

REGISTERED ARCHITECT
MATTHEW WOODSUM
BRITISH COLUMBIA
2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LPA/SUT	MW

scale	date
1 : 100	20/09/09

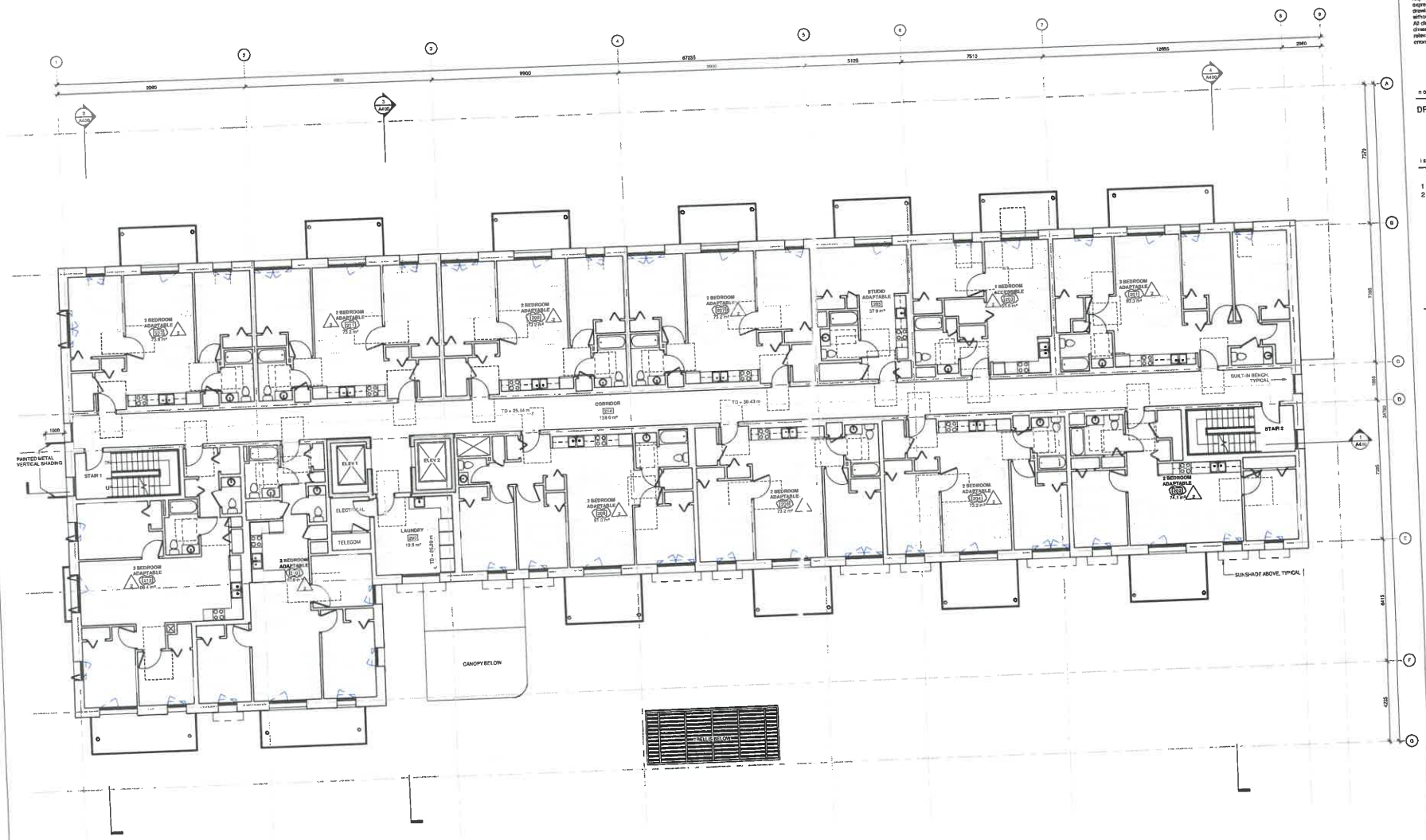
title

GROUND FLOOR PLAN (L1)

sheet

A201

DP000441(4)



1 Level 02
1 : 100

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notes

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No.	Description	Date
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seal

REGISTERED ARCHITECT MATTHEW WOODRUFF BRITISH COLUMBIA
2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LR/LS/JT	MW

scale	date
1 : 100	20/09/09

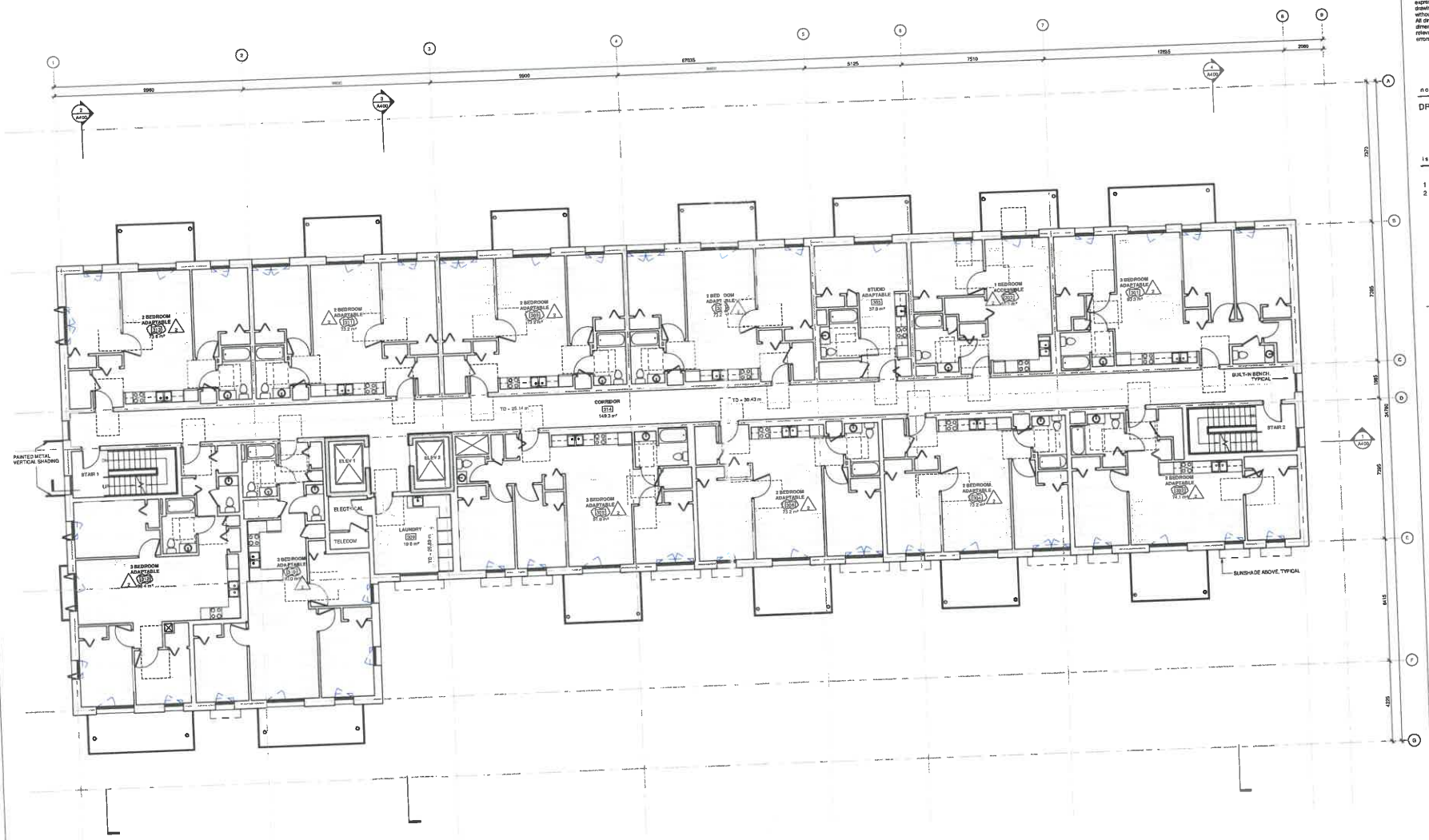
title

LEVEL 2 FLOOR PLAN (L2)

sheet

A202

DP000441 (5)



1 Level 03
1 : 100

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DO NOT SCALE DRAWINGS

notes

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seal

REGISTERED ARCHITECT
MATTHEW WOODRUFF
BRITISH COLUMBIA
2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LF/LS/JT	MW

scale	date
1 : 100	20/09/09

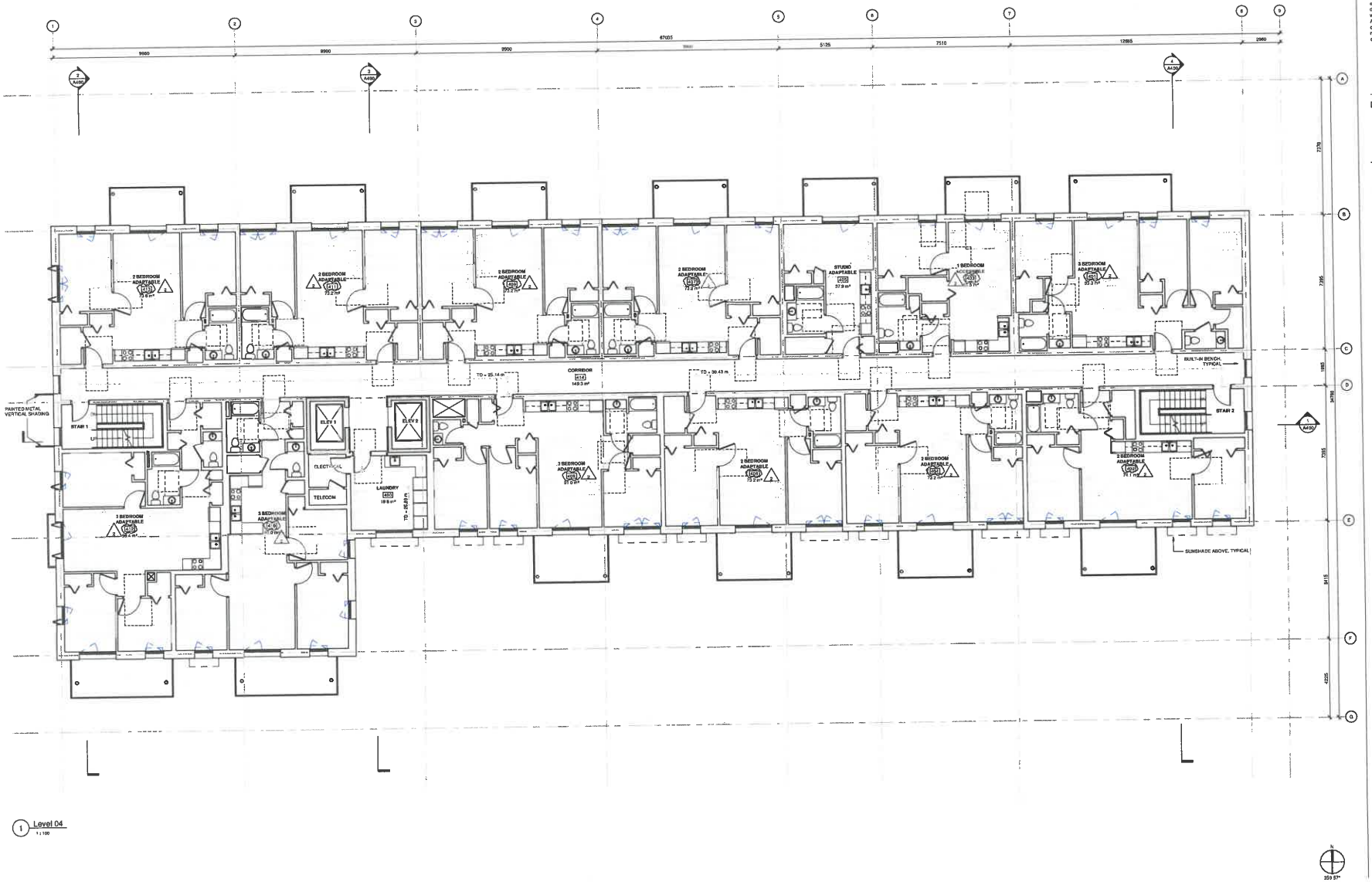
title

LEVEL 3 FLOOR PLAN (L3)

sheet

A203

DP0003441 (6)



1 Level 04
1 : 100

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notes

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2	Reissued for Development Permit	20/09/09

seal

REGISTERED ARCHITECT
BRITISH COLUMBIA
2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LF/LS/JT	MW

scale	date
1 : 100	20/09/09

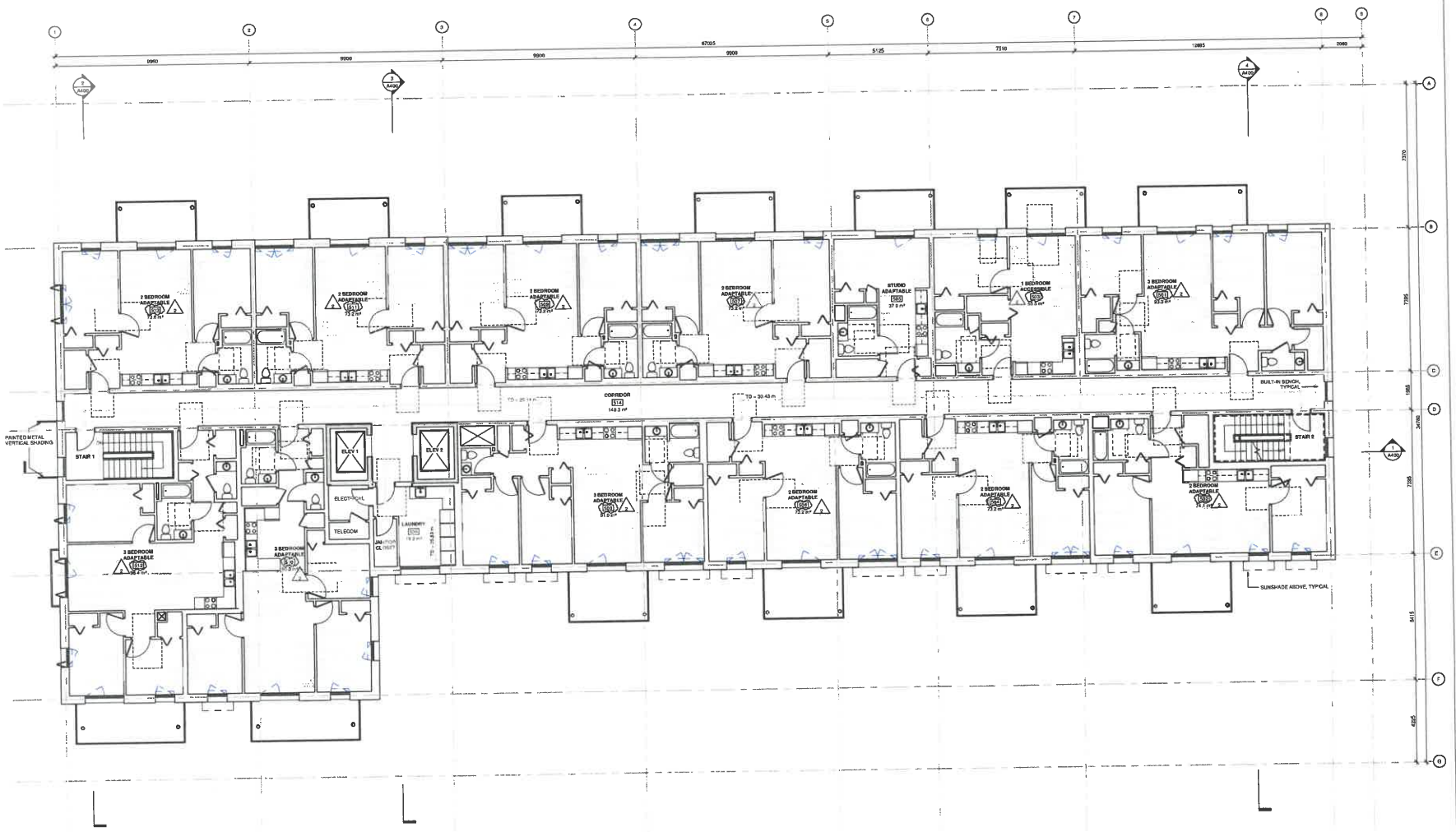
title

LEVEL 4 FLOOR PLAN (L4)

sheet

A204

DP000441(7)



1 Level 05
1 : 100

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notes

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No.	Description	Date
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seal

REGISTERED ARCHITECT MATTHEW WOODHOUSE BRITISH COLUMBIA

2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LF/LSJT	MW

scale	date
1 : 100	20/09/09

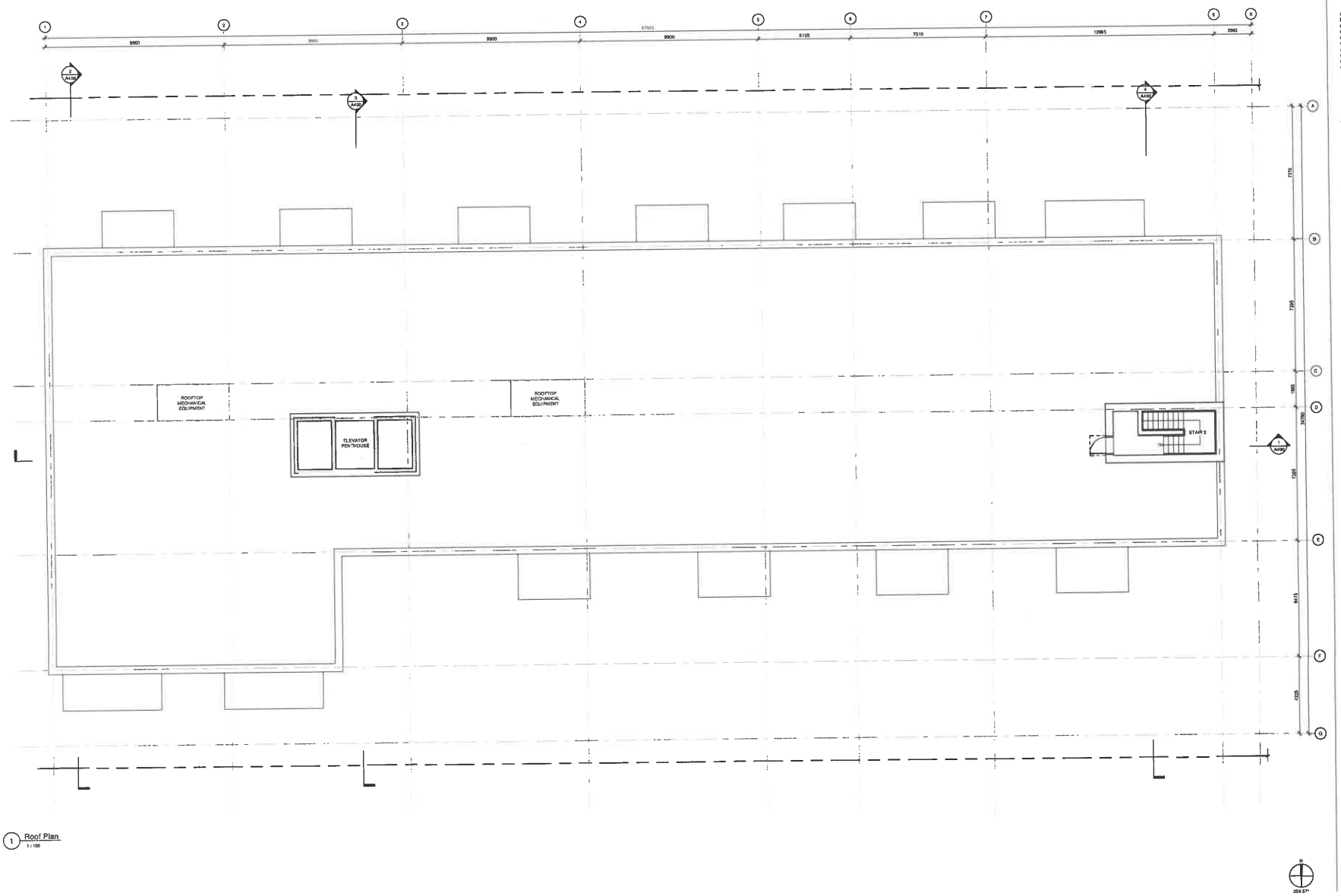
title

LEVEL 5 FLOOR PLAN (L5)

sheet

A205

DP000441(8)



1 Roof Plan
1 : 100

local

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notes

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issue

No.	Description	Date
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seal

REGISTERED ARCHITECT
MATTHEW WOODWARD
BRITISH COLUMBIA
2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LR/LS/JT	MW

scale	date
1 : 100	20/09/09

title

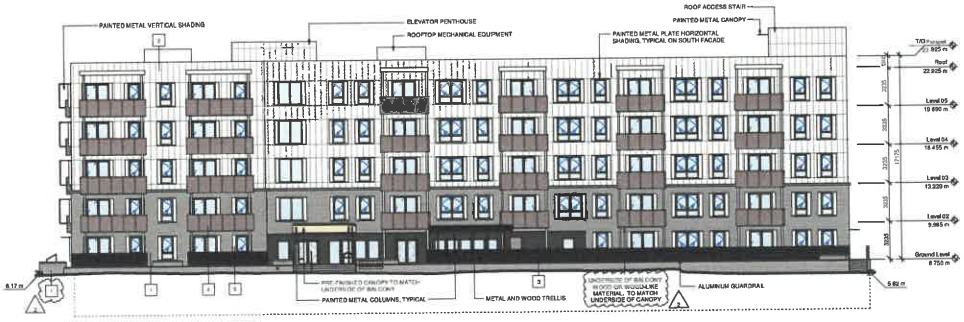
ROOF PLAN

sheet

A206

DP000441(9)

1 West Elevation
1 : 200



2 South Elevation
1 : 200

3 East Elevation
1 : 200

4 North Elevation
1 : 200

MATERIAL LEGEND

1	BRICK - DARK GREY
2	METAL PANEL - LIGHT GREY
3	METAL PANEL - DARK GREY
4	PERFORATED PRE-FINISHED METAL - BURGUNDY
5	PRE-FINISHED METAL - WHITE

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seal

REGISTERED ARCHITECT MATTHEW WOODWORTH BRITISH COLUMBIA
2020-09-09

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LR/LSJT	MW

scale	date
As indicated	20/09/09

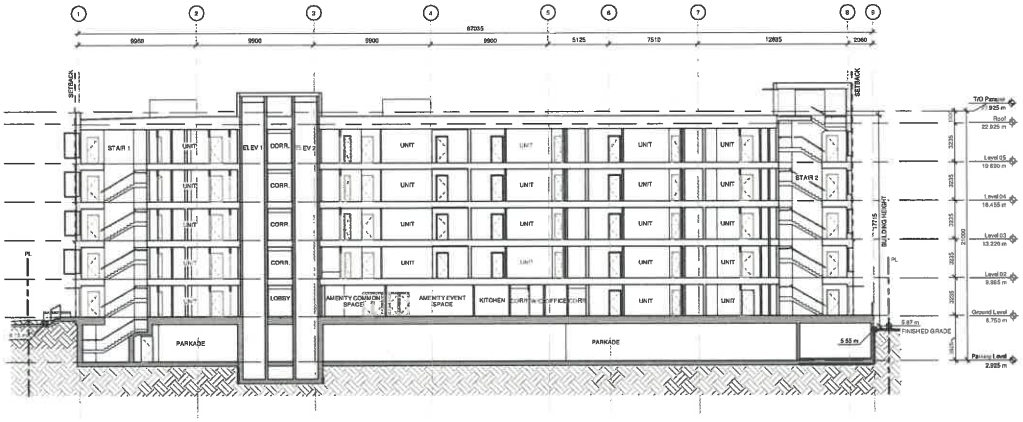
title

ELEVATIONS

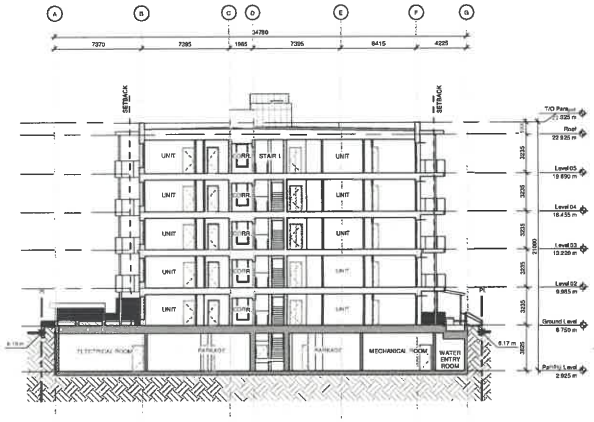
sheet

A300

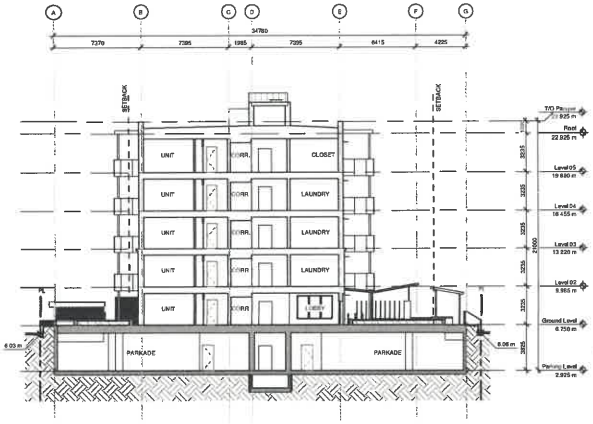
DP000441(10)



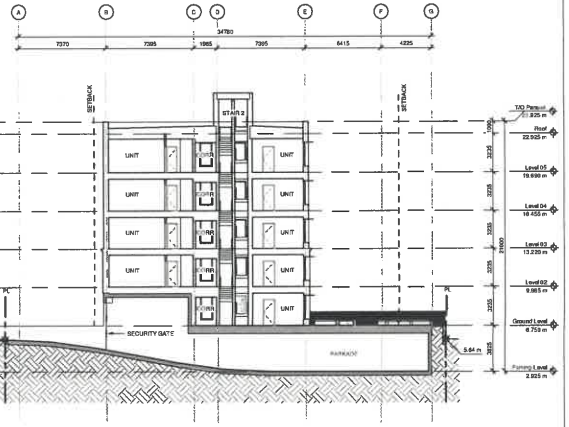
1 West East Section A
1 : 200



2 North South Section A
1 : 200



3 North South Section B
1 : 200



4 North South Section C
1 : 200

local

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notes

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No.	Description	Date
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seal

client

Metro Vancouver Housing Corporation

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	LF/LS/JT	MW

scale	date
1 : 200	20/09/09

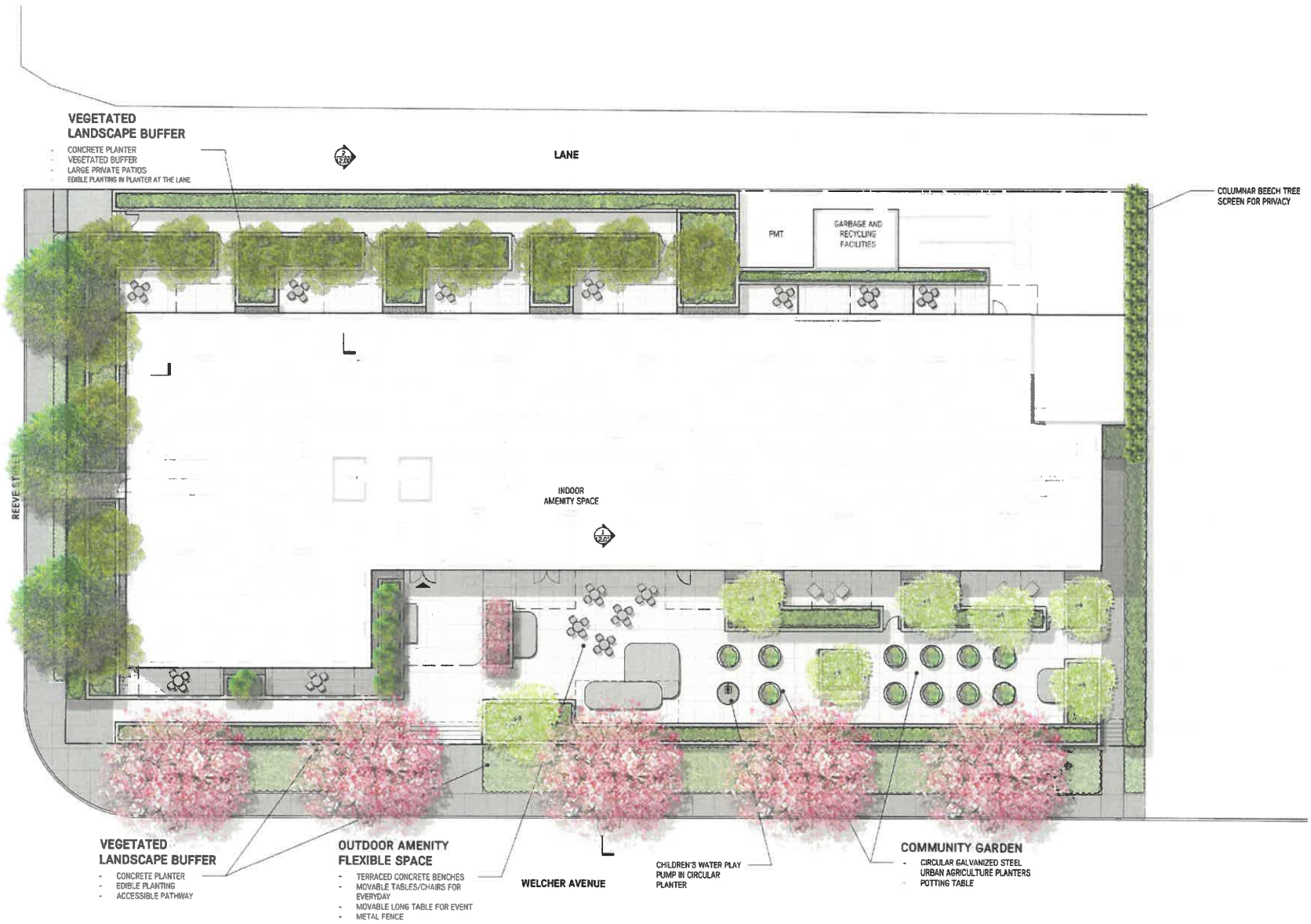
title

BUILDING SECTIONS

sheet

A400

DP000441(11)



HAPA COLLABORATIVE

Landscape Architecture
Urban Design

403 - 375 West Fifth Avenue
Vancouver BC, V5Y 1J6

604 909 4150
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No.	Description	Date
3	Re-Issued for Development Permit	Sep 11/20
2	Issued for Development Permit	Aug 26/20
1	Issued for Development Permit	July 13/20

Welcher Avenue
Multi-Family Residential

Port Coquitlam, BC

Concept Plan

Ground Level

Date	Feb. 10/20	Drawing Number
Project No.	1943	L1.00
Scale	1:125	
Drawn/Checked	pd | GC	

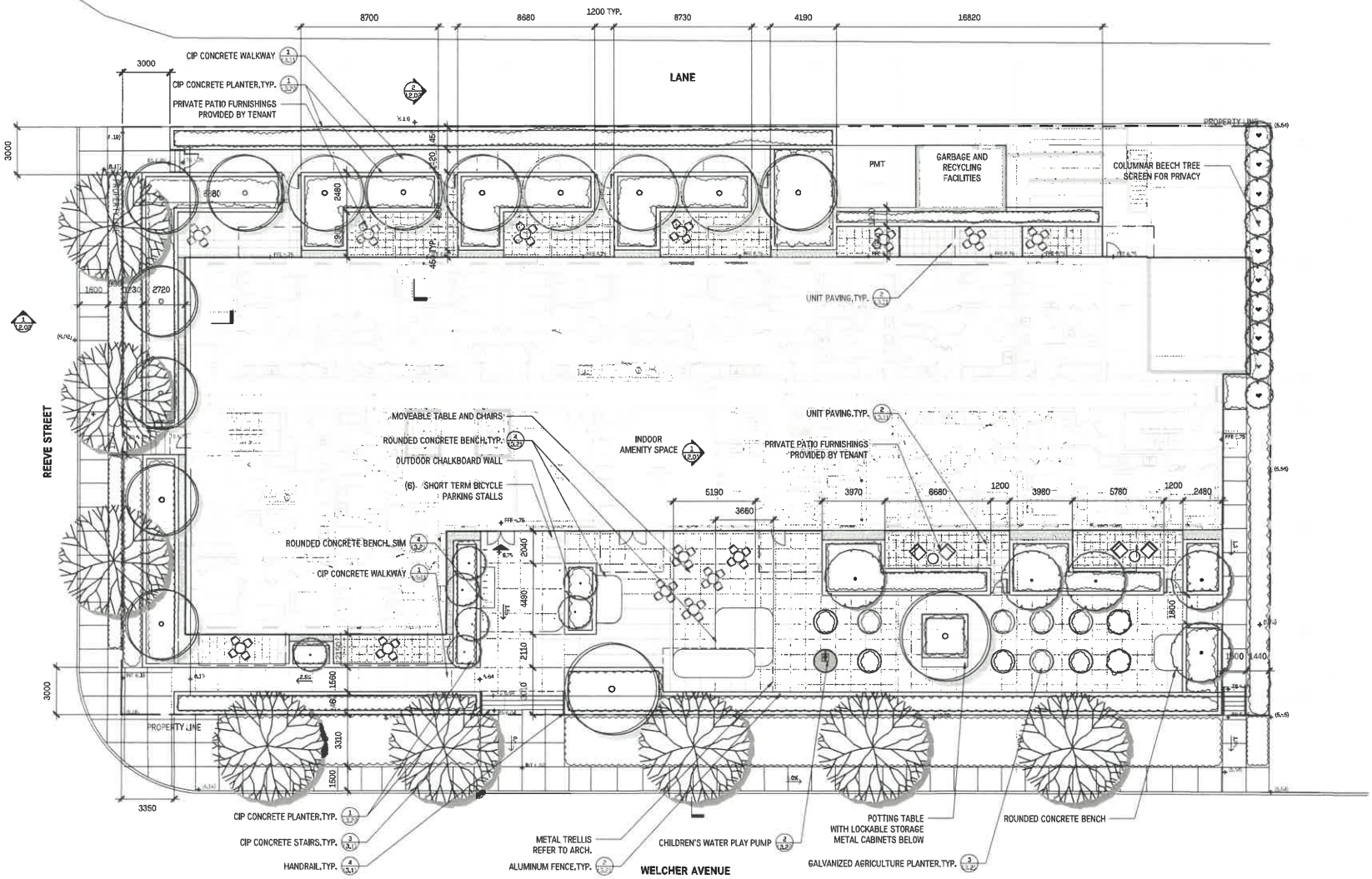
DP000441(12)

LEGEND

DETAIL SECTION
DETAIL NUMBER
SHEET ON WHICH DETAIL IS SHOWN
PRIMARY SECTION
EXTERIOR ELEVATION
REVISION

AD	AREA DRAIN	+00.00	PROPOSED ELEVATION	0.0 %	DIRECTION OF SLOPE
BW	BOTTOM OF WALL	+TW	TOP OF WALL	+TS	TOP OF STAIRS
CJ	CONTROL JOINT	+BW	BOTTOM OF WALL	+BS	BOTTOM OF STAIRS
EJ	EXPANSION JOINT	+FFE	FINISH FLOOR ELEVATION	+TC	TOP OF CURB
EQ	EQUIDISTANT	+TB	TOP OF BENCH	+BC	BOTTOM OF CURB
PA	PLANTING AREA	+AD	AREA DRAIN	+(00.00)	EXISTING SPOT ELEVATION AS PER SURVEY
PD	PLANTER DRAIN	+TD	TRENCH DRAIN		
RAD	RADIUS				
TW	TOP OF WALL				
TYP	TYPICAL				
HB	HOSE BIB				

1. ALL DIMENSIONS ARE NOMINAL; DIMENSIONS ARE BASED ON ARCHITECTURAL GRID.
2. REFER TO DETAILS AND SECTIONS FOR ALL LANDSCAPE IMPROVEMENTS.
4. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS. REFER TO SOIL DEPTH DETAILS FOR SOIL DEPTH AND VOIDING.
5. ALL ELEVATIONS ARE NOMINAL AND ARE BASED ON ARCHITECTURAL GRID AND ELEVATIONS PROVIDED BY ARCHITECT. CONTRACTOR TO VERIFY ALL MEASUREMENTS.
6. ALL PROPOSED ELEVATIONS ARE TO TOP OF FINISHED GRADE UNLESS NOTED OTHERWISE.
7. THIS PLAN IS "NOT FOR CONSTRUCTION" AND IS TO BE SUBMITTED FOR REVIEW TO ENGINEERING SERVICES A MINIMUM OF 8 WEEKS PRIOR TO THE START OF ANY CONSTRUCTION PROPOSED FOR PUBLIC PROPERTY. NO WORK ON PUBLIC PROPERTY MAY BEGIN UNTIL SUCH PLANS RECEIVE "FOR CONSTRUCTION" APPROVAL AND RELATED PERMITS ARE ISSUED. PLEASE CONTACT ENGINEERING, DEVELOPMENT SERVICES AND/OR YOUR ENGINEERING, BUILDING SITE INSPECTOR FOR DETAILS.



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No.	Description	Date
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1	Issued for Development Permit	July 13/20

Welcher Avenue Multi-Family Residential

Port Coquitlam, BC

Materials, Layout & Grading Plan
Ground Level

Date	Feb. 10/20	Drawing Number
Project No.	1943	L1.11
Scale	1:125	
Drawn/Checked	pd / GC	

DP000441(13)

PLANT SCHEDULE - GROUND LEVEL

SYM	QTY	BOTANICAL NAME	COMMON NAME	PLANTED SIZE	COMMENTS
TREES					
AG	8	ACER GINNALA 'RED NOVEMBER'	RED NOVEMBER AMUR MAPLE	2.4M HT., B&B	WELL BRANCHED, DENSE TREE, SINGLE LEADER
AP	5	ACER 'WARRENRED' PACIFIC SUNSET	PAINTED MAPLE	8cm CAL., B&B	UNIFORM BRANCHING, DENSE TREE, 2.1M STD.
CL	2	CRATAEGUS X LAVALLEI	LAVALLE HAWTHORNE	7cm CAL., B&B	UNIFORM BRANCHING, DENSE TREE, 1.8M STD.
FR	3	FRAXINUS OXYCARPA 'RAYWOOD'	RAYWOOD ASH	7cm CAL., B&B	UNIFORM BRANCHING, DENSE TREE
FS	10	FAGUS SYLVATICA 'FASTIGIATA'	EUROPEAN BEECH	8cm CAL., B&B	UNIFORM BRANCHING, DENSE TREE, 6M
MA	5	MALUS X 'ADIRONDACK'	ADIRONDACK CRABAPPLE	8cm CAL., B&B	WELL BRANCHED, DENSE TREE
PY	5	PRUNUS X YEDOENSIS	YOSHINO CHERRY	7cm CAL., B&B	UNIFORM BRANCHING, DENSE TREE, 1.8M STD.
SHRUBS					
cy	200	CEANOTHUS GRISEUM HORIZONTALIS 'YANKEE POINT'	YANKEE POINT CEANOTHUS	#1 POT, 450 O.C.	FULL
gs	688	GAULTHERIA SHALLON	SALAL	#3 POT, 600 O.C.	FULL
ic	52	ILEX CRENATA 'SKY PENCIL'	SKY PENCIL JAPANESE HOLLY	1.2M HT., 600 O.C.	FULL
od	22	OSMANTHUS DELAVAYI	SWEET OLIVE	#3 POT, 900 O.C.	FULL
vb	11	VIBURNUM X BODANTENSE 'DAWN'	DAWN VIBURNUM	#3 POT, 900 OC	FULL

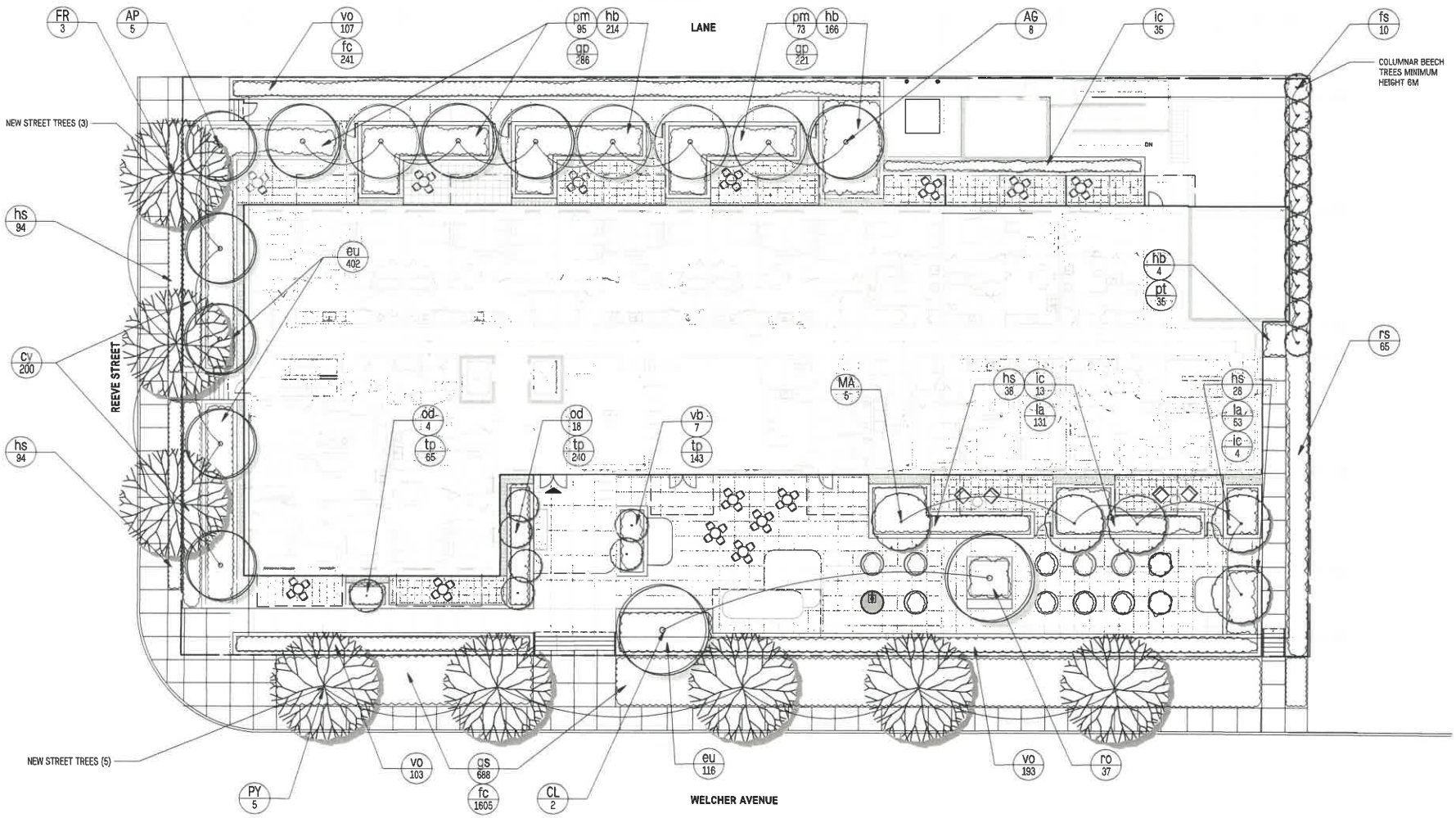
PERENNIALS / GROUNDCOVERS / GRASSES / VINES					
eu	518	EUPHORBIA AMYGDALOIDES 'ROBBIAE'	MRS. ROBB'S BONNET	#1 POT, 380 O.C.	FULL, WELL ESTABLISHED
fc	1846	FRAGARIA CHILOENSIS	BEACH STRAWBERRY	#1 POT, 300 O.C.	FULL, WELL ESTABLISHED
gp	507	GAULTHERIA PROCUMBENS	WINTERGREEN	#1 POT, 300 O.C.	FULL, WELL ESTABLISHED
hb	380	HELLEBORUS 'ROYAL HERITAGE'	ROYAL HERITAGE LENTEN ROSE	#1 POT, 300 O.C.	FULL, WELL ESTABLISHED
hs	254	HELICTOTRICHON SEMPERVIRENS	BLUE OAT GRASS	#1 POT, 600 O.C.	FULL, WELL ESTABLISHED
la	184	LAVANDULA ANGUSTIFOLIA'HIDCOTE'	HIDCOTE LAVENDER	#1 POT, 400 O.C.	FULL, WELL ESTABLISHED
rs	65	RIBES SANGUINEUM 'KING EDWARD VII'	KING EDWARD FLOWERING CURRANT	#2 POT, 1000 O.C.	FULL, WELL ESTABLISHED
ro	37	ROSMARINUS OFFICINALLIS 'ARP'	ARP ROSEMARY	#1 POT, 450 O.C.	FULL, WELL ESTABLISHED
pm	168	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	#1 POT, 450 O.C.	FULL, WELL ESTABLISHED
tp	533	THYMUS PRAECOX 'COCCINEUS'	CREEPING THYME	10CM POT, 150 O.C.	FULL, WELL ESTABLISHED
vo	403	VACCINIUM OVATUM 'THUNDERBIRD'	THUNDERBIRD EVERGREEN HUCKLEBERRY	#3 POT, 450 O.C.	FULL, WELL ESTABLISHED

PLANTING NOTES:

1. ALL PLANT MATERIAL TO BCNTA AND BCSLA STANDARDS. REFER TO THE BCSLA LANDSCAPE STANDARD, LATEST EDITION.
2. SPECIMEN PLANT LOCATION TO BE DETERMINED ONSITE BY LANDSCAPE ARCHITECT.
3. INSTALL ALL PLANT MATERIAL MEETING MUNICIPAL REQUIREMENTS AND BC LANDSCAPE STANDARD, LATEST EDITION. AREA OF SEARCH: PACIFIC NORTHWEST INCLUDING WASHINGTON, AND OREGON;
4. AUTOMATIC HIGH-EFFICIENCY IRRIGATION TO BE PROVIDED FOR ALL PLANTED AREAS.
5. PROVIDE DESIGN BUILD IRRIGATION FOR ALL PLANTER AREAS ONSITE IN COMPLIANCE WITH PROJECT SPECIFICATION.
6. ALL URBAN AGRICULTURE PLANTERS TO BE SERVICED WITH HOSE BIBS FOR HAND-WATERING.
7. FINAL LOCATION, QUANTITY, STREET TREE SPECIES TO THE SATISFACTION OF THE CITY OF PORT COQUITLAM.
8. STREET TREE PLANTINGS IN CITY BOULEVARD MUST HAVE A MINIMUM OF 10 CUBIC METRES OF SOIL.

TREES

SHRUBS



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Welcher Avenue Multi-Family Residential

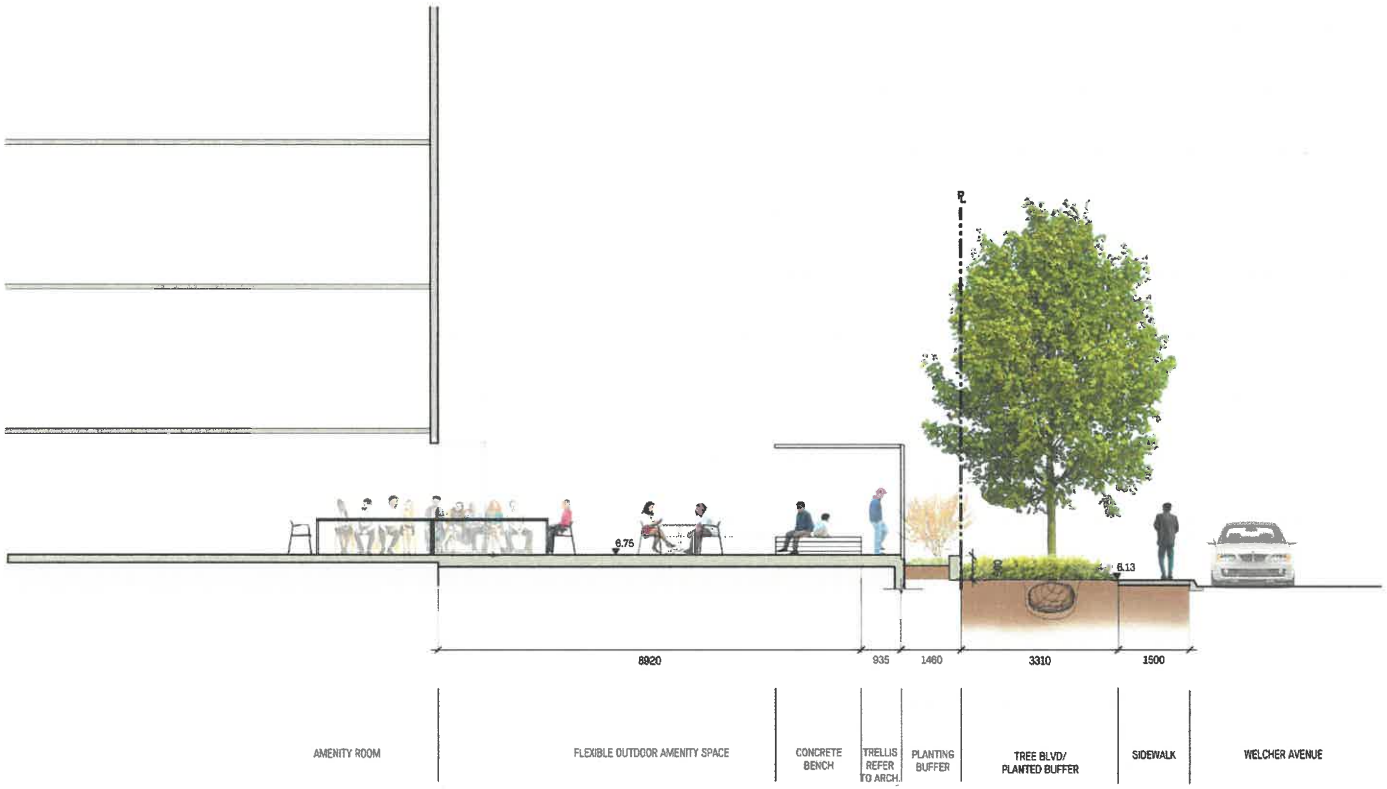
Port Coquitlam, BC

Planting Plan

Ground Level

Date	Feb. 10/20	Drawing Number
Project No.	1943	L1.21
Scale	1:125	
Drawn/Checked	pd / GC	

DP000441 (14)



1 / 2.01 Ground Floor Section at Welcher Ave.
1:50

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2	Issued for Development Permit	Aug 26/20
1	Issued for Development Permit	July 13/20

Welcher Avenue Multi-Family Residential

Port Coquitlam, BC

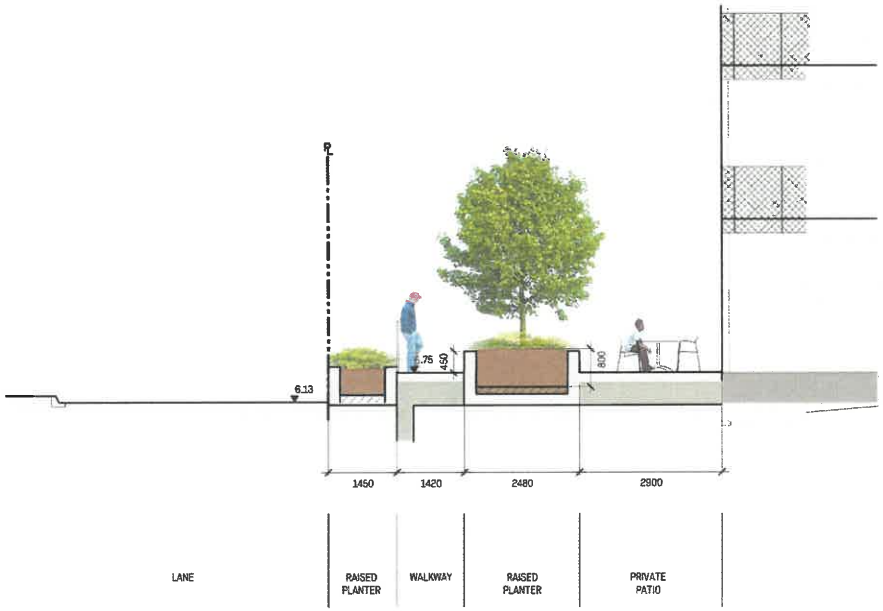
Landscape Section

Ground Floor

Date	Feb. 10/20	Drawing Number
Project No.	1943	L2.01
Scale	as noted	
Drawn/Checked	pd / gc	

DP000441(15)

1 / L2.02 Ground Floor Section at Reeve Street
1:50



2 / L2.02 Ground Floor Section at Lane
1:50

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No.	Description	Date
3	Re-Issued for Development Permit	Sep 11/20
2	Issued for Development Permit	Aug 26/20
1	Issued for Development Permit	July 13/20

Welcher Avenue Multi-Family Residential

Port Coquitlam, BC

Landscape Section

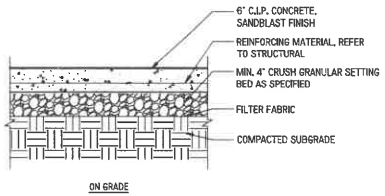
Ground Floor

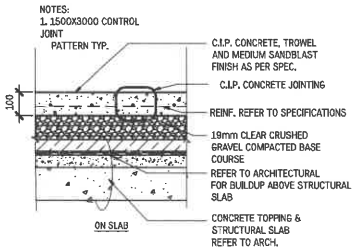
Date	Feb. 10/20	Drawing Number
Project No.	1943	L2.02
Scale	as noted	
Drawn/Checked	pd / SC	

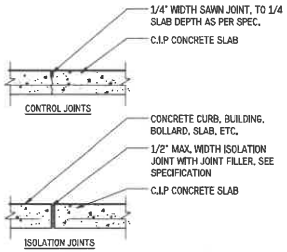
DP000441(16)

NOTES:

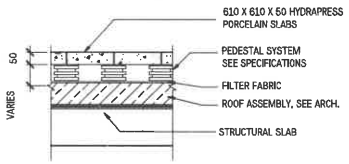
1. REFER TO SPECIFICATION FOR GENERAL CONDITIONS;
2. CONSTRUCT ALL CONTROL JOINTS AT CONSISTENT WIDTH;
3. CUT JOINTS BEFORE RANDOM CRACKING OCCURS.







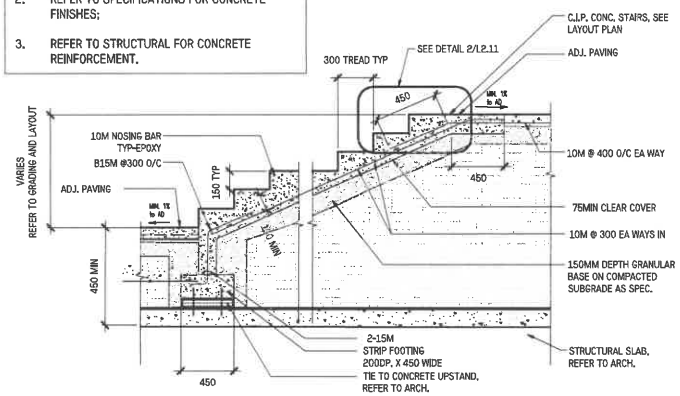
1 / 3.11 C.I.P. CONCRETE, TYP.
1:10



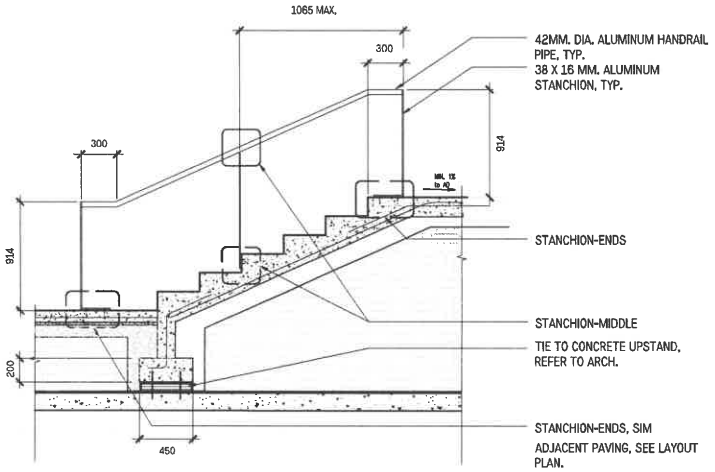
2 / 3.11 PAVING ON PEDESTALS
1:10

NOTES:

1. REFER TO GRADING PLAN FOR TOP/BOTTOM OF STAIR ELEVATIONS;
2. REFER TO SPECIFICATIONS FOR CONCRETE FINISHES;
3. REFER TO STRUCTURAL FOR CONCRETE REINFORCEMENT.



3 / 3.11 C.I.P. CONCRETE STAIRS, TYP.
1:20



4 / 3.11 HANDRAIL, TYP.
1:20

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Welcher Avenue Multi-Family Residential

Port Coquitlam, BC

Details

Paving & Stairs

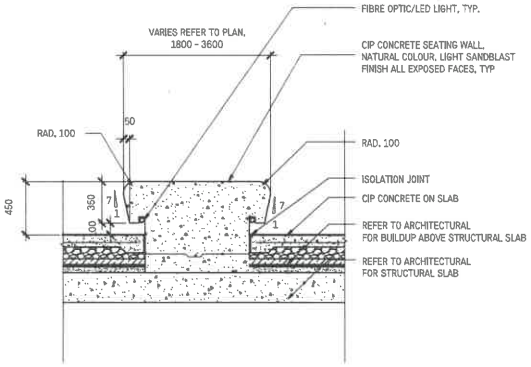
Date	Feb. 10/20	Drawing Number
Project No.	1943	L3.11
Scale	as noted	
Drawn/Checked	pd / GC	

DP0003441 (17)

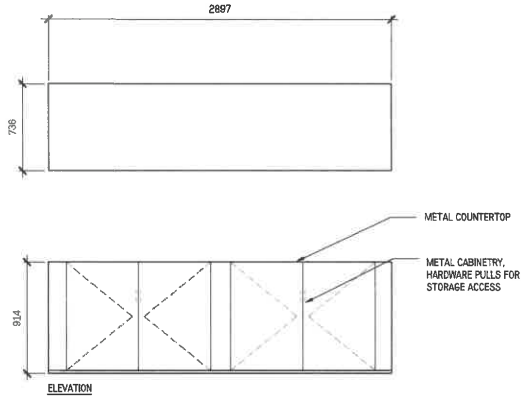
1 / L3.21 METAL TRELLIS PRECEDENT
1:20

2 / L3.21 ALUMINUM FENCE
NTS

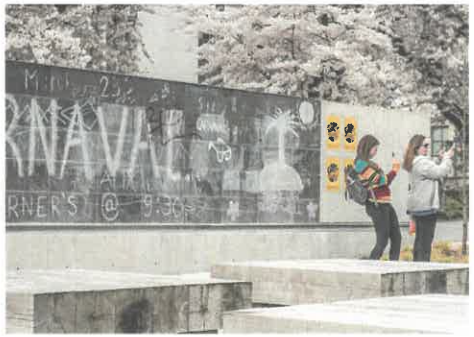
3 / L3.21 GALVANIZED METAL PLANTER, TYP.
1:10



4 / L3.21 CIP CONCRETE ROUNDED BENCHES
1:20



5 / L3.21 POTTING TABLE AND LOCKABLE METAL CABINET STORAGE
1:20



6 / L3.21 OUTDOOR CHALKBOARD WALL PRECEDENT
NTS

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Welcher Avenue Multi-Family Residential

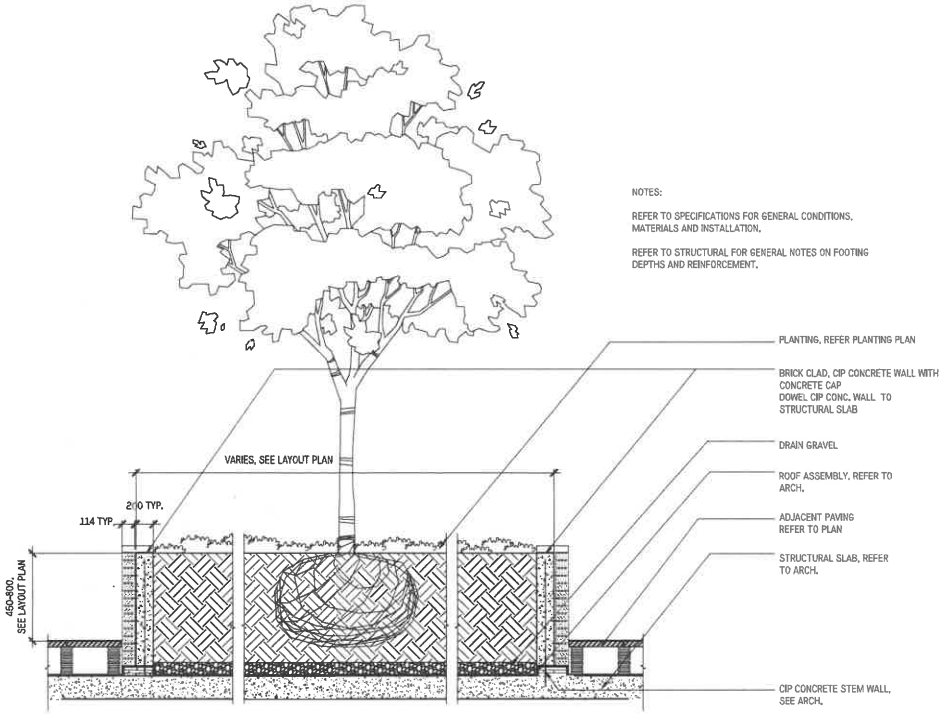
Port Coquitlam, BC

Details

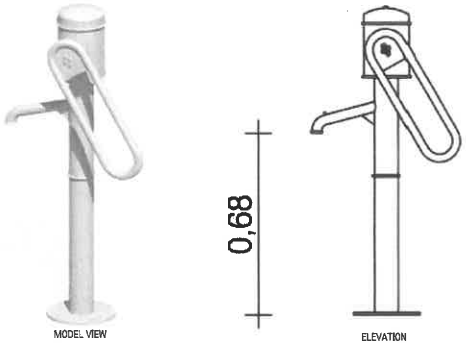
Site Furnishing

Date	Feb. 10/20	Drawing Number
Project No.	1943	L3.21
Scale	as noted	
Drawn/Checked	pd / GC	

DP000441 (18)



1 / L3.22 BRICK CLAD, CIP CONCRETE PLANTER, TYP.
1:20



2 / L3.22 CHILDREN'S WATER PLAY PUMP
NTS

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Welcher Avenue Multi-Family Residential

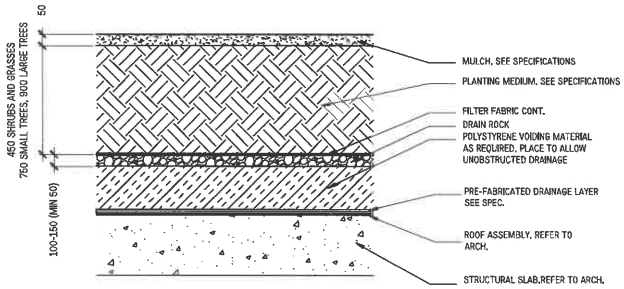
Port Coquitlam, BC

Details

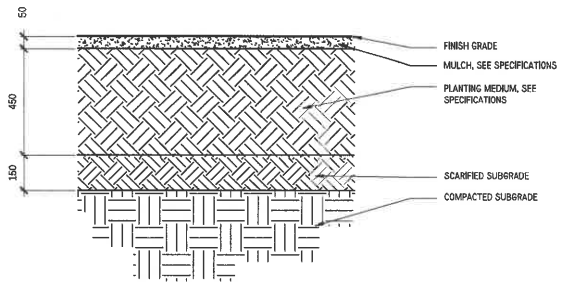
Site Furnishing

Date	Feb. 10/20	Drawing Number
Project No.	1943	L3.22
Scale	as noted	
Drawn/Checked	pd | GC	

DP000441 (19)

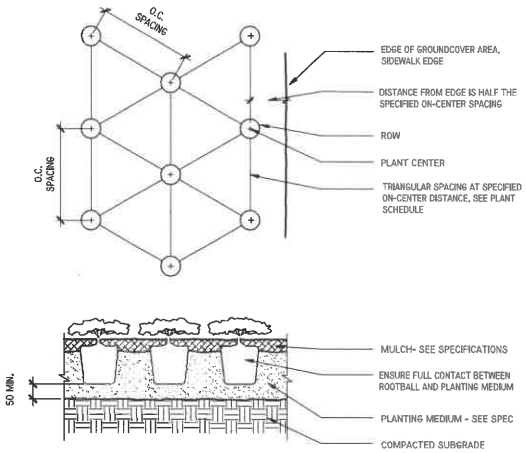


SHRUB AND TREE PLANTING ON SLAB

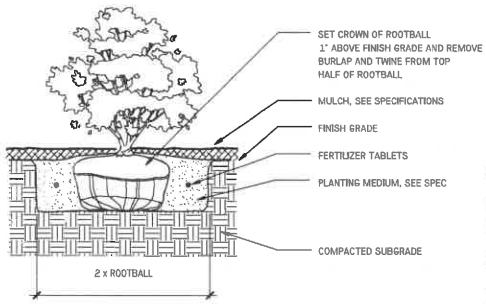


SHRUB PLANTING AREAS

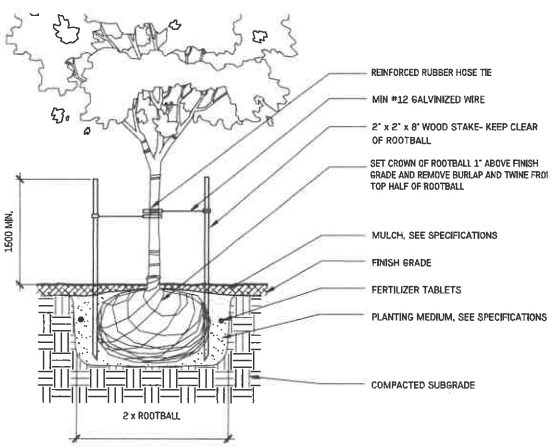
1 / L3.31 SOIL PROFILES
NTS



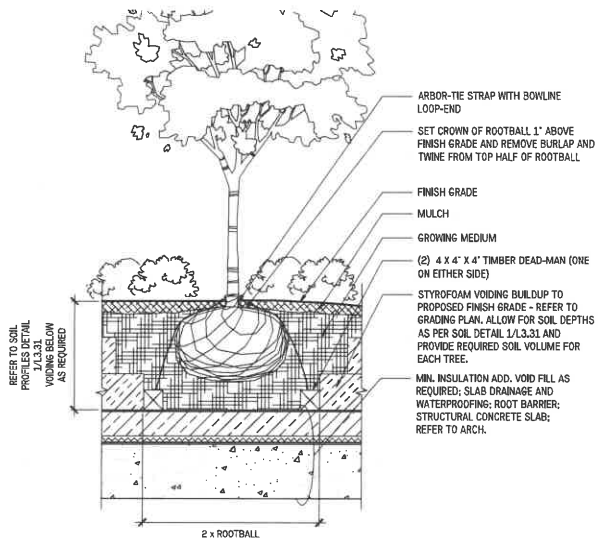
2 / L3.31 GROUNDCOVER PLANTING
NTS



3 / L3.31 SHRUB PLANTING
NTS



4 / L3.31 TREE PLANTING - ON GRADE
NTS



5 / L3.31 TREE PLANTING - ON SLAB
NTS

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Welcher Avenue Multi-Family Residential

Port Coquitlam, BC

Details

Planting

Date	Feb. 10/20	Drawing Number
Project No.	1943	L3.31
Scale	as noted	
Drawn/Checked	pd / GC	

DP000441/20

Schedule A

Energy Conservation:

Conservation Measure	Verification Method
Energy Star rated appliances to be used	BP stage; written confirmation by applicant along with staff review of BP submission
Location and size of windows will increase natural ventilation and natural daylight	DP and BP stage; staff review of BP submission
Step 4 of the Energy Step Code will be met	DP and BP stage; staff review of BP submission
High efficiency (COP) mechanical systems with heat recovery	BP stage; staff review of BP submission
Rough in for future photo-voltaic panels	BP stage; staff review of BP submission

Water conservation:

Conservation Measure	Verification Method
Low flow plumbing fixtures	BP stage; written confirmation by applicant along with staff review of BP submission
drought-tolerant and indigenous tree, shrub, and plant species	DP and BP stage; City arborist will review and complete landscape inspection
automated, high-efficiency mechanical irrigation systems;	DP and BP stage; City arborist will review and complete landscape inspection

GHG Reduction:

Conservation Measure	Verification Method
Accessible storage space for garbage and recycling will be provided	DP and BP stage; staff review of BP submission
Electric vehicle charging stations	DP and BP stage; staff review of BP submission
Prioritize reusable, renewable, recyclable and biodegradable materials	BP stage; written confirmation by applicant along with staff review of BP submission
Adequate storage space for garbage, recycling and organic materials provided in easily accessible, secure location.	DP and BP stage; staff review of BP submission

per OCP Sec. 9.11 Environmental Conservation DPA designation

DP00041 (2)

THE CORPORATION OF THE CITY OF PORT COQUITLAM

"DEVELOPMENT PROCEDURES BYLAW, 2013, NO. 3849"

DEVELOPMENT VARIANCE PERMIT

NO. DVP00073

Issued to: Metro Vancouver Housing Corporation, INC. No. 129319
(Owner as defined in the Local Government Act,
hereinafter referred to as the Permittee)

Address: 4730 Kingsway, Burnaby, BC V5H 0C6

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, and any and all buildings, structure and other development thereon:

Address:	2481 Welcher Avenue
Legal Description:	LOT 1, DISTRICT LOT 174, GROUP 1, NEW WEST DISTRICT, PLAN EPP91668
P.I.D.:	031-117-490

3. The Zoning Bylaw, 2008, No. 3630 is varied as follows:

   - Table 2.4: Residential Zones Regulations is varied to permit a maximum height of 17.7 metres.
   - Table 2.4: Residential Zones Regulations, Note 10 is varied to permit a maximum floor area ratio of 1.79 without the requirement of providing a contribution in the amount of $50 per square foot of floor area provided to City reserve funds for community amenities and social housing amenities.

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

5. This permit shall lapse if the Permittee does not substantially commence the construction permitted by this permit within two (2) years of the date of this permit.

6. This permit is not a building permit.

APPROVED BY COUNCIL THE _____ DAY OF _____, 2020.

SIGNED THIS _____ DAY OF_____,2020.

_____
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)

August 17, 2020

CONFIDENTIAL/PERSONAL/REGISTERED MAIL/HAND DELIVERED (or delete if not needed)
Title FirstName Surname, Position (if position title long - move to next line)
Division/Section
Company OR c/o FirstName Surname
Address
City, Prov/State (3 spaces) Postal Code
VIA EMAIL: email.address@metrovancouver.org (or delete if not sending electronically)

Metro Vancouver Housing: Welcher Avenue Affordable Rental Housing Project

Dear Neighbour:

Metro Vancouver Housing is preparing to develop a new affordable, family-oriented, rental housing project at 2481 Welcher Avenue in Port Coquitlam. The development proposal includes 63 homes with a focus on larger family units, and accessible, age-friendly design to support people of all ages and abilities. This will provide much needed homes for families in central Port Coquitlam and delivers on Metro Vancouver Housing's commitment to creating more affordable rental homes across the region.

This project is currently in the design phase, with construction estimated to be complete by 2023.

As a close neighbour, we want to share information with you early on. We will keep you informed and are available to answer any questions you have:

- For questions about the proposed project, contact Metro Vancouver Housing at housing.inquiries@metrovancouver.org or 604-451-6635
- For questions about the City's development approval process, contact the City of Port Coquitlam Planning Division at 604-927-5442

Who is Metro Vancouver Housing?

Metro Vancouver Housing is owned by the Metro Vancouver Regional District and provides affordable rental housing for over 9,400 people on 49 sites throughout the region. Our sites are diverse, mixed-income communities that include families, seniors, and people with disabilities.

Metro Vancouver Housing is actively working to create more affordable rental homes across the region. We work closely with municipalities to identify the specific needs within each community, and develop housing that is affordable, accessible, and sustainable, and fits well within existing neighbourhoods.

Where is the site?

The site is located at the corner of Welcher Avenue and Reeve Street, with Gates Park located directly to the west. The site currently includes two houses and a vacant lot.

Site Map (Site indicated with red dashed outline):

What is being proposed?

The proposed development is a five-storey building with 63 homes and is thoughtfully designed to consider the existing neighbourhood context.

Neighbourhood Fit: The design reflects the style of buildings in the surrounding neighbourhood as well as the City's design guidelines. It includes features to ensure a good fit within the existing neighbourhood, such as:

- An L-shaped building to reduce the building mass near our neighbours to the east
- Brick cladding on lower portions of the building to complement surrounding buildings
- Lighter material on upper stories to reduce the overall visual impact
- Balconies to fit with the existing neighbourhood character and provide an interesting building façade
- A large open courtyard with attractive landscaping, garden space, and an outdoor plaza to support tenants and provide an attractive link to the existing neighbourhood and public space.

Parking: The design meets and exceeds city-required parking. It also includes secure bicycle parking. Neighbourhood impacts for street parking and traffic were thoughtfully considered in the design.

Sustainability: The proposed development will meet BC Energy Code's Step Code 4, balancing affordability with energy-efficient design and features to support tenant comfort and help meet local climate goals. The

project's commitment to sustainability, including the specific requirements for Step Code 4, have played a large role in the design and form of the building.

Units: The homes will include a mix of unit sizes, with over 80% larger family units (2-and 3-bedrooms), adaptable design, and accessible units to support people of all ages and abilities.

Future Tenants: Homes will support a diverse mix of families, couples, singles, and seniors with a mix of incomes.

Affordability: All homes will offer a level of affordability, with some provided at the low-end-of-market, and others provided at rent-geared-to-income. Metro Vancouver is seeking to partner with provincial and federal governments to support deeper affordability.

What is the process and timing?

Metro Vancouver Housing is working closely with the City to ensure the proposed design meets all City requirements and fits well within the existing neighbourhood. Pending the City's approval of the Development Permit and Variance application, Metro Vancouver Housing will apply for a Building Permit and then proceed to construction in spring 2021. If approved, construction is estimated to be complete with residents moving in as of spring 2023.

For more information:

Please visit metrovancouver.org and search 'Welcher'. Any feedback or questions are welcome to housing.inquiries@metrovancouver.org or 604-451-6635.

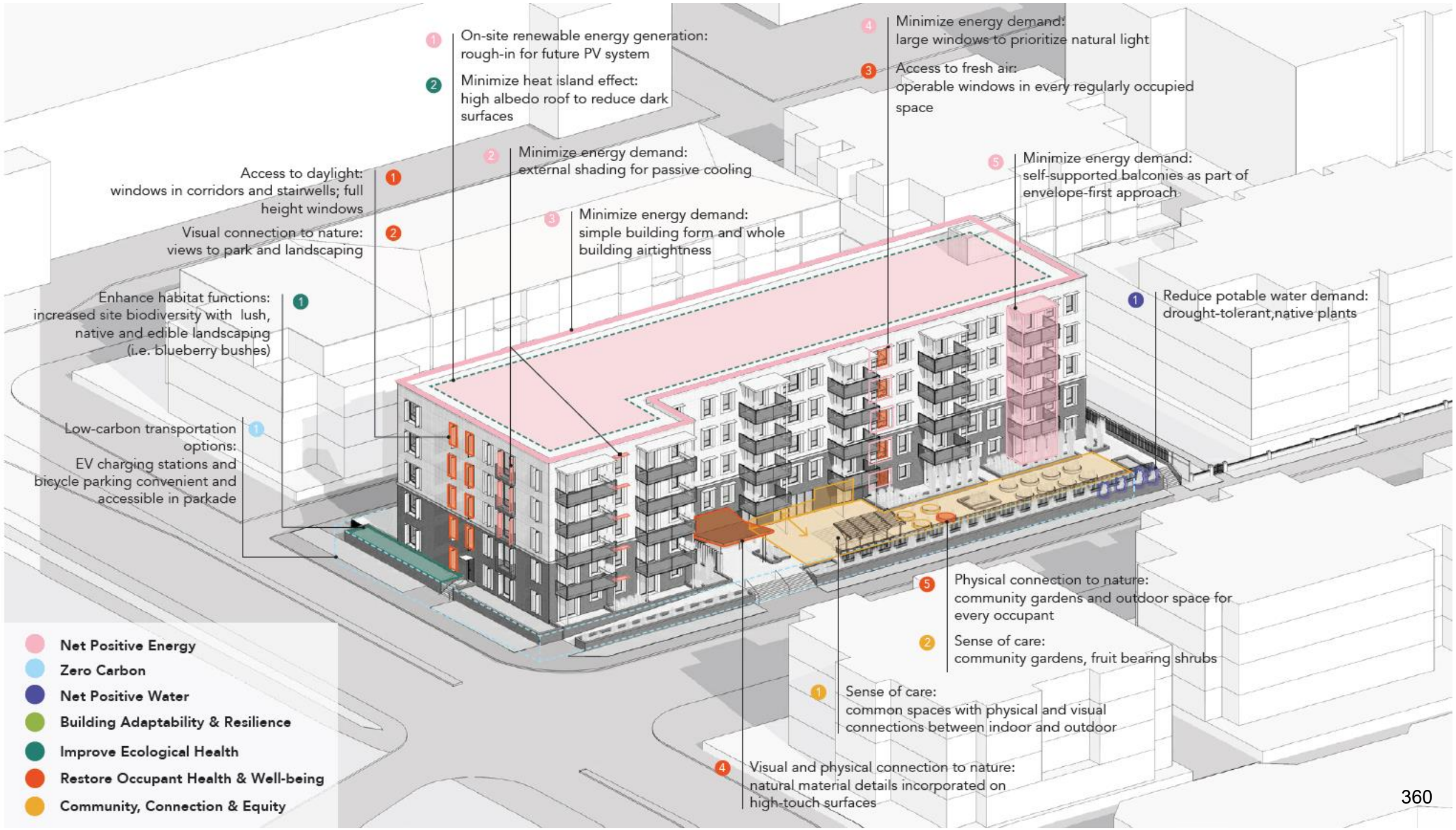
Sincerely,

Laurel Cowan
Program Manager, Housing Planning & Policy, Metro Vancouver Housing

Proposed Building Design

Southeast perspective, along Welcher Avenue

South-west perspective, corner of Reeve Street and Welcher Avenue


On-site renewable energy generation: rough-in for future PV system
Minimize heat island effect: high albedo roof to reduce dark surfaces
Minimize energy demand: large windows to prioritize natural light
Access to fresh air: operable windows in every regularly occupied space
Minimize energy demand: external shading for passive cooling
Minimize energy demand: self-supported balconies as part of envelope-first approach
Access to daylight: windows in corridors and stairwells; full height windows
Minimize energy demand: simple building form and whole building airtightness
Visual connection to nature: views to park and landscaping
Enhance habitat functions: increased site biodiversity with lush, native and edible landscaping (i.e. blueberry bushes)
Reduce potable water demand: drought-tolerant,native plants
Low-carbon transportation options: EV charging stations and bicycle parking convenient and accessible in parkade
Physical connection to nature: community gardens and outdoor space for every occupant
Sense of care: community gardens, fruit bearing shrubs
Sense of care: common spaces with physical and visual connections between indoor and outdoor
Visual and physical connection to nature: natural material details incorporated on high-touch surfaces
Net Positive Energy
Zero Carbon
Net Positive Water
Building Adaptability & Resilience
Improve Ecological Health
Restore Occupant Health & Well-being
Community, Connection & Equity

Arborist Report / Tree Management Plan

For Construction Phase

2471, 2477, 2487 & 2495 Welcher Avenue,

Port Coquitlam, B.C.

Aerial image of the subject property. Source: City of Port Coquitlam public GIS map/image

Prepared for:
Jotty Gill, Dipl.T.
Housing Technician,
Metro Vancouver Housing
c. 604.612.5414 / t. 604.451.6508

Prepared by:
Lucian Serban RPF
Senior Consulting Arborist / Urban Forester
Davey Resource Group
200-8208 Swenson Way, Delta, BC. V4G 1J6
Cell: 604.346.9498
Email: lucian-liviu.serban@davey.com
ISA Certified Arborist Municipal Specialist PN-7558AM

June 2nd, 2020

Check List for City of Port Coquitlam Arborist's Report

☐	Civic address	2471, 2477, 2487 & 2495 Welcher Avenue, Port Coquitlam, BC
☐	Site visit dates	January 11th, 2019 and June 2nd, 2020
☐	Report submission date	*(Client to add)*
☐	Name of Arborist & Company Address Phone number Email	Lucian Serban RPF/ Davey Resource Group 200-8208 Swenson Way, Delta, BC. 604.346.9498 lucian-liviu.serban@davey.com
☐	Arborist's ISA Certification Numbers	PN-7558AM
☐	City of Port Coquitlam business licence no.	Pending Release
☐	Property owner name Phone number Email	Metro Vancouver Housing 604.451.6508 Jotty.Gill@metrovancouver.org
☐	Site conditions & site description	2 undeveloped lots (2487 & 2495) with natural regenerated and unmaintained vegetation. Two previously developed lots with two demolished houses (2471 & 2477). All four lots are intended to be developed under one separate project.
☐	Wind-firm boundary assessment	Not applicable
☐	Description of work or development	Multi-family housing project on all four lots.
☐	Identification and discussion of probable tree impacts	Due to their conflicting location with the proposed development fifty-eight (58) trees (including the trees in the hedge) are recommended for removal. One municipal and all neighboring properties trees to be retained and protected. Two "City" boulevard trees in poor condition are proposed for removal and replacement with good formed trees to serve as boulevard trees. City of Coquitlam approval is requested. Root pruning and tree protection measures are required for neighbours' trees.
☐	Tree protection measures for retain trees	See tree protection specifications
☐	Tree inventory and assessment (DBH >10 cm)	See attached tree inventory table
☐	Tree management plan showing location of all trees and site survey.	See attached site plan (Fig. 1 / Appendix 1)
☐	Summary table of quantity of trees removed/retained Trees removed for the DEMOLITION phase are not considered and counted.	

Owner	On Site	Off-site Municipal boulevard trees	Neighbouring property	Total Trees
Removed Trees	56	2	0	58
Retained Trees	0	1	4	5
Total Trees	**56**	**3**	**4**	**63**

☐	Tree protection fencing dimensions for on and off-site trees	See attached tree protection measures specifications and the site plan showing the tree protection fence location
☐	Requirement for arborist to be on site for excavation in CRZ	See attached tree protection measures specifications
☐	Labeled photographs	See attached photos (Appendix 2).
☐	Tree replacement requirements for on and off-site trees	Pending the approval of the tree removals, the City of Port Coquitlam representative will determine the number and location of the replacement trees required. The prescribed replacement trees shall be included in the landscaping plan and shall be planted after construction is finalized at the landscaping phase.

Summary / Scope of Work

This Arborist Report / Tree Management Plan was developed to assist in managing the subject trees located at 2471, 2477, 2487 & 2495 Welcher Avenue in Port Coquitlam and vicinity and to serve as a guide to ensure tree health, structure and esthetic are protected during proposed development (Fig. 1).
This document addresses tree impacts associated with the construction of a multi-family housing project as proposed for 2471, 2477, 2487 & 2495 Welcher Avenue, Port Coquitlam, BC.
The proposed work requires the removal of fifty-six (56) trees on the subject property and two (2) trees on the City property. All other trees located on the subject property and outside property boundaries will be retained and protected. The proposed construction appears to require excavation within the Critical Root Zones (CRZ) of four (4) trees on neighboring property to the East and one (1) boulevard tree on Welcher Avenue.
Prescribed tree protection measures shall be followed during the construction phase. All soil excavations and soil gradings in the critical root zone of the retained trees will be supervised by the project arborist.

Assignment

The Davey Resource Group (DRG) was contracted by Jotty Gill of Metro Vancouver Housing (herein referred to as the Client) to provide an Arborist's Report and Tree Management Plan for the property at 2471, 2477, 2487 & 2495 Welcher Avenue, Port Coquitlam, BC. to be submitted in support of a Development Permit application.

Limitations of the Assignment

Arborists, tree experts and tree risk assessors are not able to predict with absolute certainty the exact date and conditions of a tree death, health decline or failure. The recommendations in this report are based on observations and data collection reflective of the current state of the subject trees at the time of the site inspection.
This arborist report and tree preservation plan are based on the project scope and details provided in the site plan and discussions with the Client. Estimates, measurements and comments regarding trees preservation are dependent on the accuracy of the site plan provided by the client.
The Client should incorporate the information and recommendations provided in this report into their future tree care plans, in a reasonable manner.
This arborist report was prepared in good faith and to the arboricultural best practices standards within its scope and using the documentation provided by the client.

Methods

- Tree locations are based on supplied Surveyor's plan.
- The subject site and trees were assessed and inventoried by the project arborist.
- Diameters at the breast height (DBH) were measured at a height of 1.4 m from the ground using a metric diameter tape.
- Photos were taken during field visits to better document the findings.

Key Observations

- The City of Port Coquitlam regulates trees on both private and public lands through the Bylaw #3474/2005.
- The proposed development plans require extensive excavations and removal of the trees located in a conflicting position.
- There are 63 inventoried subject trees on or adjacent to the subject property (trees to be removed for demolition were not considered).
- Fifty-sis (56) trees are located on the subject property, forty (40) of them are located along the Reeves Street and planted in a row as a hedge.
- Three (3) trees are located on the municipal property as boulevard trees. One of these trees is in good condition and located on the Welcher Avenue. Two mountain ash trees, both in poor condition are located on Reeve Street.
- Four (4) trees in good condition are located on the neighboring property to the East.
- The proposed construction requires the removal of 56 trees on the subject property.
- The proposed development requires excavation within the Critical Root Zone (CRZ) of one (1) boulevard and four (4) neighboring trees.
- There are no significant trees identified on the subject property or vicinity.
- Root pruning of trees along the line of excavation can mitigate some of the root damage and negative health effects.
- The total proposed development area size is 2694 m2.
- Pending the approval of the tree removal application, the City of Port Coquitlam representative will determine the number and location of the replacement trees required. All replacement planting shall be included in the Landscaping Plan and to be completed after the construction is completed (see the proposed Landscaping Plan for details).

Key Recommendations

- Construction phase: Apply for permits to remove a total of fifty-six (56) trees from the subject site and two (2) boulevard trees (#230 and 231).
- Confer with City of Port Coquitlam and neighbor to the East regarding development impacts to trees located adjacent to the excavation (trees “A” respectively “B”, “C”, “D” and “E”) (Fig. 1).
- Review the Tree Management Plan and recommendations with the site supervisor.
- Remove trees once permits are issued.
- Engage a Certified Arborist to lay out tree protection zones and direct the tree protection fence installation. The tree protection fence shall be installed parallel to the Eastern property boundary at 1 m West from the property line, as shown on the TMP and Fig: 1.
- Engage a Certified Arborist to precut roots within the CRZ of neighboring trees prior to excavation (trees “A”, “B”, “C”, “D” and “E”).
- After excavation is complete, engage a Certified Arborist with Tree Risk Assessor qualification to assess the neighbor’s retained trees for safety.
- Monitor, water and aerate impacted neighboring trees to help mitigate root loss.

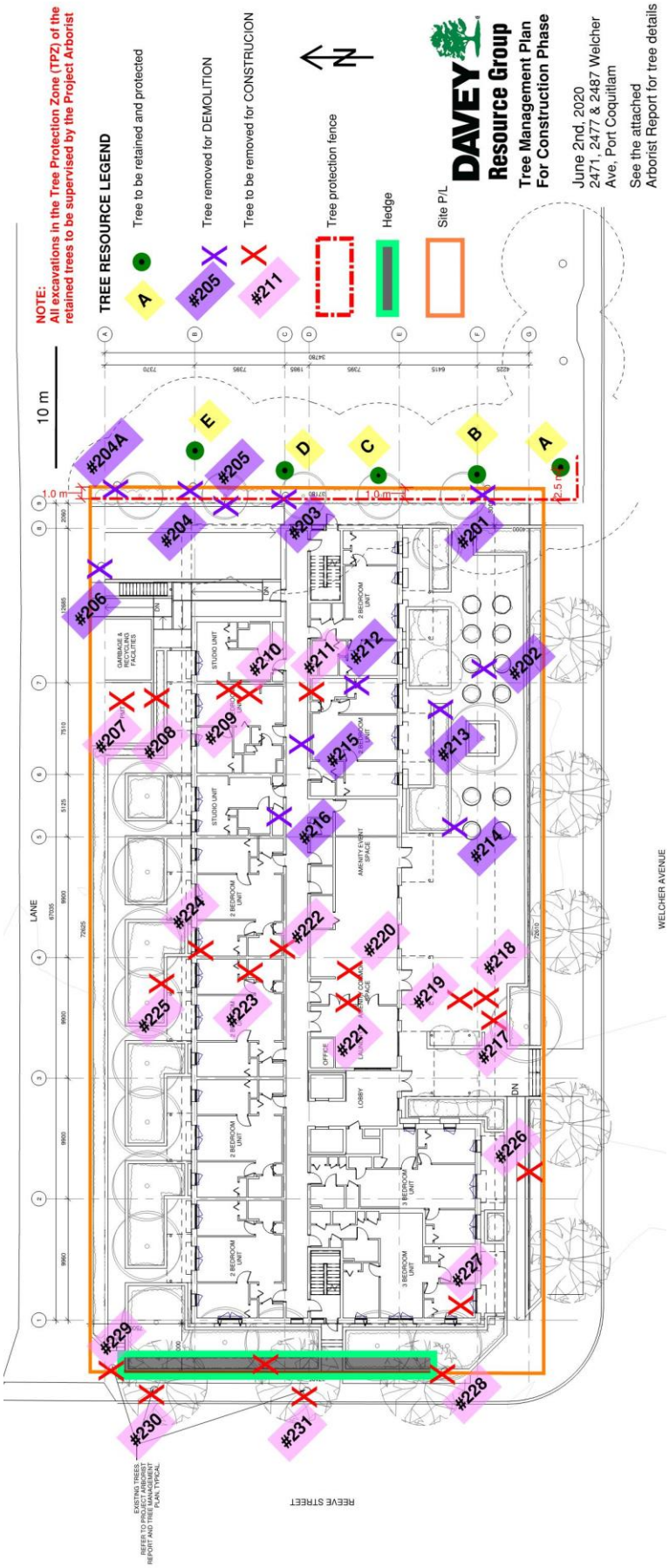


Fig. 1: Subject site outlined in orange (not to scale) and subject trees identified and represented with their tag number.
Trees proposed for protection are represented by green round symbols.
Trees proposed for removal at the construction phase are represented by red "X" and pink ID label.
The trees removed at the demolition stage are identified with purple ID and "X".
(The site plan provided by Local Practice Architecture + Design Ltd. Was used as base map for this Tree Management Plan.)

Table 1: Tree Inventory Table

Tree ID	Old Tree Tag	Species	Tree location	DBH (cm)	Protected Root Zone Radius (dripline) (m)	Crown Radius (m)	Health (Good, Fair, Poor, Dead)	Structural Condition (Good, Fair, Poor)	Bylaw Protected Tree?	Bylaw Significant Tree?	Comments	Recommendations
201	N/A	Cascara	2471 Welcher Ave.	30	4	4	Fair	Fair	Yes	No	Multi-stem tree	Tree removed for DEMOLITION
202	N/A	Red maple	2471 Welcher Ave.	12	1	1	Good	Good	No	No	Planted	Tree removed for DEMOLITION
203	N/A	Cottonwood	2471 Welcher Ave.	80	6	6	Fair	Fair	Yes	No	Scar of a large limb failure	Tree removed for DEMOLITION
204	N/A	Cherry	2471 Welcher Ave.	22	3	3	Poor	Poor	Yes	No		Tree removed for DEMOLITION
204A	N/A	Birch	2471 Welcher Ave.	22	3	3	Fair	Fair	Yes	No	No tag	Tree removed for DEMOLITION
205	N/A	Laurel	2471 Welcher Ave.	24	4	4	Good	Fair	Yes	No	Multi-stem tree	Tree removed for DEMOLITION
206	N/A	Laurel	2471 Welcher Ave.	26	4	4	Good	Fair	Yes	No		Tree removed for DEMOLITION
207	N/A	Laurel	2471 Welcher Ave.	28	4	4	Good	Fair	Yes	No	Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
208	N/A	Pyrenean oak	2471 Welcher Ave.	34	4	4	Fair	Fair	Yes	No	Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
209	N/A	Birch	2471 Welcher Ave.	42	5	5	Poor	Poor	Yes	No	Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
210	N/A	Laurel	2471 Welcher Ave.	22	5	5	Poor	Poor	Yes	No	Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
211	N/A	Laurel	2471 Welcher Ave.	28	5	5	Poor	Poor	Yes	No	Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
212	N/A	Arborvitae X3	2471 Welcher Ave.	28	1	1	Good	Fair	Yes	No		Tree removed for DEMOLITION
213	N/A	English oak	2477 Welcher Ave.	30	3	3	Good	Good	Yes	No		Tree removed for DEMOLITION
214	N/A	Bigleaf maple	2477 Welcher Ave.	24	4	4	Good	Fair	Yes	No		Tree removed for DEMOLITION
215	N/A	Apple	2477 Welcher Ave.	24	3	3	Poor	Poor	Yes	No		Tree removed for DEMOLITION
216	N/A	Dwarf spruce	2477 Welcher Ave.	24	1	1	Good	Fair	Yes	No		Tree removed for DEMOLITION
217	N/A	Cottonwood	2487 Welcher Ave.	16	2	2	Good	Fair	No	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
218	N/A	Cottonwood X2	2487 Welcher Ave.	24	3	3	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
219	N/A	Cottonwood x4	2487 Welcher Ave.	40	4	4	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
220	N/A	Cottonwood x2	2487 Welcher Ave.	38	5	5	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
221	N/A	Cottonwood x2	2487 Welcher Ave.	30	3	3	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
222	N/A	Cottonwood x2	2487 Welcher Ave.	32	3	3	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
223	N/A	Cottonwood	2487 Welcher Ave.	24	3	3	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
224	N/A	Cottonwood x2	2487 Welcher Ave.	28	3	3	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
225	N/A	Cottonwood x3	2487 Welcher Ave.	30	3	3	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
226	N/A	Cottonwood x8	2495 Welcher Ave.	42	5	5	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
227	N/A	Cottonwood x9	2495 Welcher Ave.	34	4	4	Good	Fair	Yes	No	Natural regenerated Tree location in conflict with construction	Tree to be removed for CONSTRUCTION
228	N/A	Western hemlock	2495 Welcher Ave.	20	2	2	Fair/Poor	Fair/Poor	Yes	No	South end of the hedge 40+ stem planted as a hedge 10 to 20cm DBH; some dead or dying Trees location in conflict with construction	Trees to be removed for CONSTRUCTION
229	N/A	Western hemlock	2495 Welcher Ave.	20	3	3	Fair	Fair	Yes	No	North end of the hedge Trees inventoried as a hedge group Trees in the middle not tagged Trees location in conflict with construction	Trees to be removed for CONSTRUCTION
230	N/A	Mountain ash	Boulevard tree Reeve Str.	26	2	2	Poor	Poor	Yes	No	Advanced health decline Trees location in conflict with construction Obtain approval from the City of Port Coquitlam for this tree removal.	Tree to be removed for CONSTRUCTION
231	N/A	Mountain ash	Boulevard tree Reeve Str.	28	2	2	Poor	Poor	Yes	No	Advanced health decline Trees location in conflict with construction Obtain approval from the City of Port Coquitlam for this tree removal.	Tree to be removed for CONSTRUCTION
A	N/A	Red maple	Boulevard tree Welcher Ave.	35	4	4	Good	Good	Yes	No	No tag	**Retain and protect**
B	156	Sweetgum	2435 Welcher Ave.	16	3	3	Good	Good	No	No		**Retain and protect**
C	157	Red maple	2435 Welcher Ave.	18	2	2	Good	Good	No	No		**Retain and protect**
D	158	Sweetgum	2435 Welcher Ave.	25	3	3	Good	Good	Yes	No		**Retain and protect**
E	159	Sweetgum	2435 Welcher Ave.	28	3	3	Good	Good	Yes	No		**Retain and protect**
Note: Metal tags were attached to the trees above the yes level.												
Legend:			Trees removed for demolition phase.									

Discussion

Tree Removal

Construction of the multi-family housing project requires the removal of 56 trees located on the subject property and 2 boulevard trees in poor condition.
Due to the size and location of these trees, we recommend the tree removal be completed by a certified arborist.
If removed with care, we do not anticipate any damage to the remaining tree inventory or adjacent buildings.

Tree Protection Measures

Tree preservation starts at the development's planning stage and follows through excavation, construction, grading, landscaping, acceptance and into post construction. The goal is that each retained tree remains a long-term asset to the community.
One key strategy to achieve this goal is minimizing damage and disturbance to the above ground tree and its underground roots. The objectives of this strategy are to protect:

- Tree roots from: Ripping/Tearing, Suffocation, Drought and desiccation;
- Tree trunks from: Vascular and structural damage;
- Tree branches from: Breakage and tearing;
- Tree buds and leaves from: Scorching and desiccation

Another key strategy to attain the goal is to direct tree protection funds where they will do the most good.
The objectives of this strategy are to:

- Preserve the healthiest, most structural sound trees.
- Protect the species the most tolerant of construction disturbance.
- Maintain or mimic natural process need for tree health
- Provide the best growing conditions for replacement trees
- Educate site workers

Tree Protection Zone

The Tree Protection Zone is a volume both above and below the ground that is to be left undisturbed. This volume is primarily defined by a Tree Protection Zone fence placed some distance from the trunk. The City of Port Coquitlam requires the minimum distance for barrier fencing is a tree's drip line. The City of Port Coquitlam also requires an additional 1 m distance directly outside the fence to be a "hand dig zone". Together the drip line and the hand dig zone define the Critical Root Zone (CRZ).

Critical Root Zone (CRZ)

Work within the CRZ of any tree would be considered to have the potential for serious root injury and would leave the tree with a high risk of structural failure or serious decline. Fence surrounding existing trees on the TMP are based on the drip-lines recorded in the field and represent a 'best case scenario' for tree protection needs. The on-site project arborist will have final approval of tree protection requirements.
If operationally necessary, removal or relocation of the tree protection fence shall be discussed and pre-approved by the project arborist.

Root Pruning Protocol

The roots provide nutrients and water to the leaves and branches while supporting the tree in wind storms and preventing failure. Trees are remarkable, in that the upper canopy can be completely green and full while most of the roots below have been removed; leaving the tree highly prone to failure and imminent death within a few years. Once a tree is injured, that injury is never completely "healed" but instead the tree allocates a great deal of energy to try and repair itself, often at the expense of its vitality and sometimes leading to a mortality spiral that may not be noticed until years later.

Root pruning is a practice to minimize injuries to trees. Roots in comparison to upper canopy limbs store a great deal of energy and reserves for trees to survive and must be removed with the utmost care and consideration.
Like pruning the upper canopy of the tree, roots are best removed (if needed) via target pruning practices and not by being torn off. Roots must be assessed by a qualified and experienced arborist and then pruned properly with a sharp tool.
Root pruning is not a common skill set and should be performed by a qualified arborist familiar with root excavation and root pruning. Tree's roots are underground and are otherwise not detectible without physical exploration – i.e., using a Supersonic Air Tool (SSAT) such as an AirSpade® or Daylighting vehicle (Hydro-Vac with pressure not to exceed 500 psi inside any TPZ). Root pruning trenches must be at least the depth of the deepest root (usually 30-60 cm) and about 15 cm wide.
Roots are assessed by the arborist regarding the effects construction may have on the tree, and then either pruned with a sharp tool, possibly recommended for removal, or a design change may be needed on-site to accommodate. The use of a rotary saw is not acceptable to prune the roots of trees.

Tree Protection Fence

Tree protection barriers shall be installed as outlined in the tree protection plan and maintain in good shape during the entire project period. Tree Protection Fencing (TPF) is used on construction sites to ensure that damage to the tree and its root zone is prevented. This distance is typically located by the CRZ. However, it must be understood that sometimes this distance is not achievable due to infrastructure being too close. It must be further understood the fence distance sometimes must accommodate a larger TPZ (than the typical CRZ distance) due to a limited root growing area/volume (this area is typically defined by the project arborist.) Fence locations should be field marked by the project arborist, and fence installation will be installed by the contractor. This fence must be anchored to the ground and must be installed to the lines defined by the project arborist.

Problems will arise for tree preservation efforts when anyone removes the hoarding, even temporarily. It takes one instance of soil compaction from a heavy machine for roots to suffer from air and water deprivation and for the tree to become stressed. It is imperative to install and maintain in good condition the fence to prevent this from happening before and throughout the entire Demolition. For this project Tree Protection Fence should be aligned as shown on the site plan (Fig. 1) for the duration of the project.

Arborist's Tree Monitoring

Roots are buried, out-of-site and unpredictable. It is possible that even the best application of Tree Friendly excavation techniques can still damage a tree to the point of destabilization. During excavation within the Tree Protection Zone a Certified Arborist, with Tree Risk Assessment Qualifications should be present on site to monitor the stability and safety of protected trees.
If excavation risks destabilizing the tree the arborist may stop the work and advise on possible risk mitigation techniques including tree removal.

Branch Pruning

Tree branches within the TPZ should be selectively pruned under the supervision of a Certified Arborist to facilitate construction clearances. The project arborist and the construction contractor should work together to determine necessary construction clearances. It is unlikely that retained trees on neighbor's land will require clearance pruning.

Vehicle Idling

Vehicle and equipment exhaust can damage the tender tree parts such as leaves and buds can be scorch and/or desiccate if exposed to prolonged exhaust gases. Therefore, idling the engines of vertically piped vehicles such as heavy trucks and equipment such as compressors or excavators is prohibited under tree canopies.

Post construction Care

The proposed construction work, specifically during the excavations and soil gradings, will remove an estimated 5 to 10% of the neighbor's trees' roots. Therefore, these subject trees require supplementary care to help mitigate the damage. Three activities required: supplementary watering.

- Supplementary Water - Adding irrigation water as required to ensure that root zone is at field capacity.

The owners of neighboring trees impacted by the work should be provided aftercare instructions. Roots damaged by excavation are subject to decay. Decaying roots may destabilize a tree and place the tree at risk of failure. The trees should be routinely monitored in 3 to 5 future years by a Qualified Tree Risk Assessor for changes. Additionally, tree owners should be instructed to routinely monitor the trees for changes after extreme wind and or rain events.

Tree Protection Signage

It is recommended for the Client to post Tree Protection Signs displayed on the tree protection fencing. These signs could be made in bulk at a discounted rate and installed on the fence in various locations. Signage informs the public and reminds the contractors the significance of the TPZs and the efforts put forward by the Client in tree preservation.

Staging Areas

All staging areas are understood to be outside the TPZ. At no time are materials, vehicles, traffic or debris to be stacked, staged, or piled inside the Tree Protection Fencing.

If the tree preservation measures specified in this plan will be implemented with care, we do not anticipate negative impact on the health or structural conditions of the retained trees.

Conditions of Assessment Agreement

This Conditions of Assessment Agreement is made pursuant to and as a provision of Davey Resource Group, a division of The Davey Tree Expert Co. of Canada, Limited ("Davey"), providing tree assessment services as agreed to between the parties, the terms and substance of which are incorporated in and made a part of this Agreement (collectively the "Services").

Trees are living organisms that are subject to stress and conditions and which inherently impose some degree or level of risk. Unless a tree is removed, the risk cannot be eliminated entirely. Tree conditions may also change over time even if there is no external evidence or manifestation. In that Davey provides the Services at a point in time utilizing applicable standard industry practices, any conclusions and recommendations provided are relevant only to the facts and conditions at the time the Services are performed. Given that Davey cannot predict or otherwise determine subsequent developments, Davey will not be liable for any such developments, acts, or conditions that occur including, but not limited to, decay, deterioration, or damage from any cause, insect infestation, acts of god or nature or otherwise.

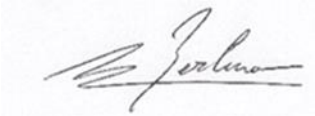
Unless otherwise stated in writing, assessments are performed visually from the ground on the above-ground portions of the tree(s). However, the outward appearance of trees may conceal defects. Therefore, to the extent permitted by law, Davey does not make and expressly disclaims any warranties or representations of any kind, express or implied, with respect to completeness or accuracy of the information contained in the reports or findings resulting from the Services beyond that expressly contracted for by Davey in writing, including, but not limited to, performing diagnosis or identifying hazards or conditions not within the scope of the Services or not readily discoverable using the methods applied pursuant to applicable standard industry practices. Further,

Davey's liability for any claim, damage or loss caused by or related to the Services shall be limited to the work expressly contracted for.

In performing the Services, Davey may have reviewed publicly available or other third- party records or conducted interviews and has assumed the genuineness of such documents and statements. Davey disclaims any liability for errors, omissions, or inaccuracies resulting from or contained in any information obtained from any third- party or publicly available source.

Except as agreed to between the parties prior to the Services being performed, the reports and recommendations resulting from the Services may not be used by any other party or for any other purpose. The undersigned also agrees, to the extent permitted by law, to protect, indemnify, defend and hold Davey harmless from and against any and all claims, demands, actions, rights and causes of action of every kind and nature, including actions for contribution or indemnity, that may hereafter at any time be asserted against Davey or another party, including, but not limited to, bodily injury or death or property damage arising in any manner from or in any way related to any disclaimers or limitations in this Agreement.

Submitted on behalf of Davey Resource Group,



Lucian Serban, RPF
Senior Consulting Arborist / Urban Forester
ISA Certified Arborist Municipal Specialist PN-7558AM
ISA Tree Risk Assessment Qualified (TRAQ)
ISA Professional Member #215405
Association of BC Forest Professionals Member #5179

Appendix 2 - Tree Photos

Trees #207, 208, 209 and 210 – REMOVE

Trees "A" and "B" – RETAIN and PROTECT

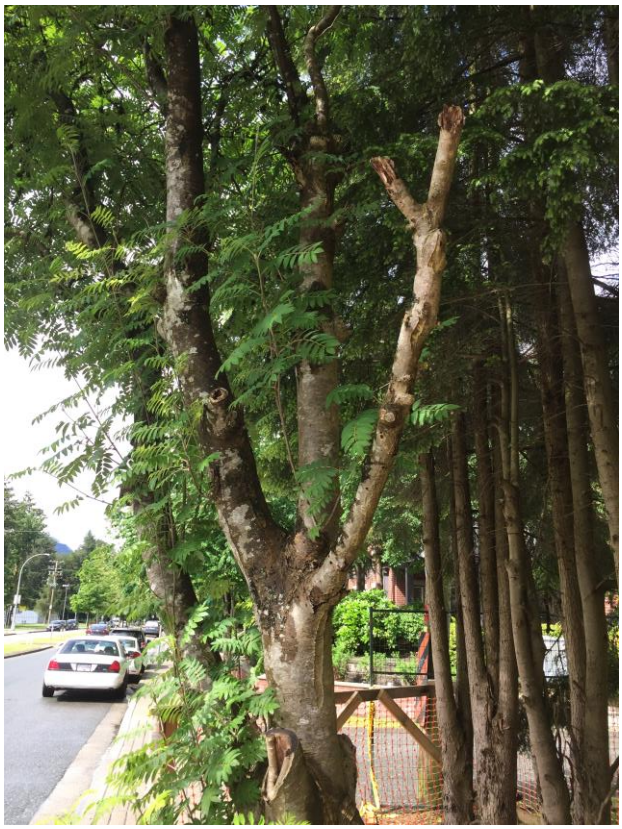
Tree #217 to 225 Natural regenerated cottonwood - REMOVE

Tree #226, 228 Natural regenerated cottonwoods - REMOVE

Tree #228 the hedge, tree #229 Western hemlocks and the boulevard trees #230 & 231 - REMOVE

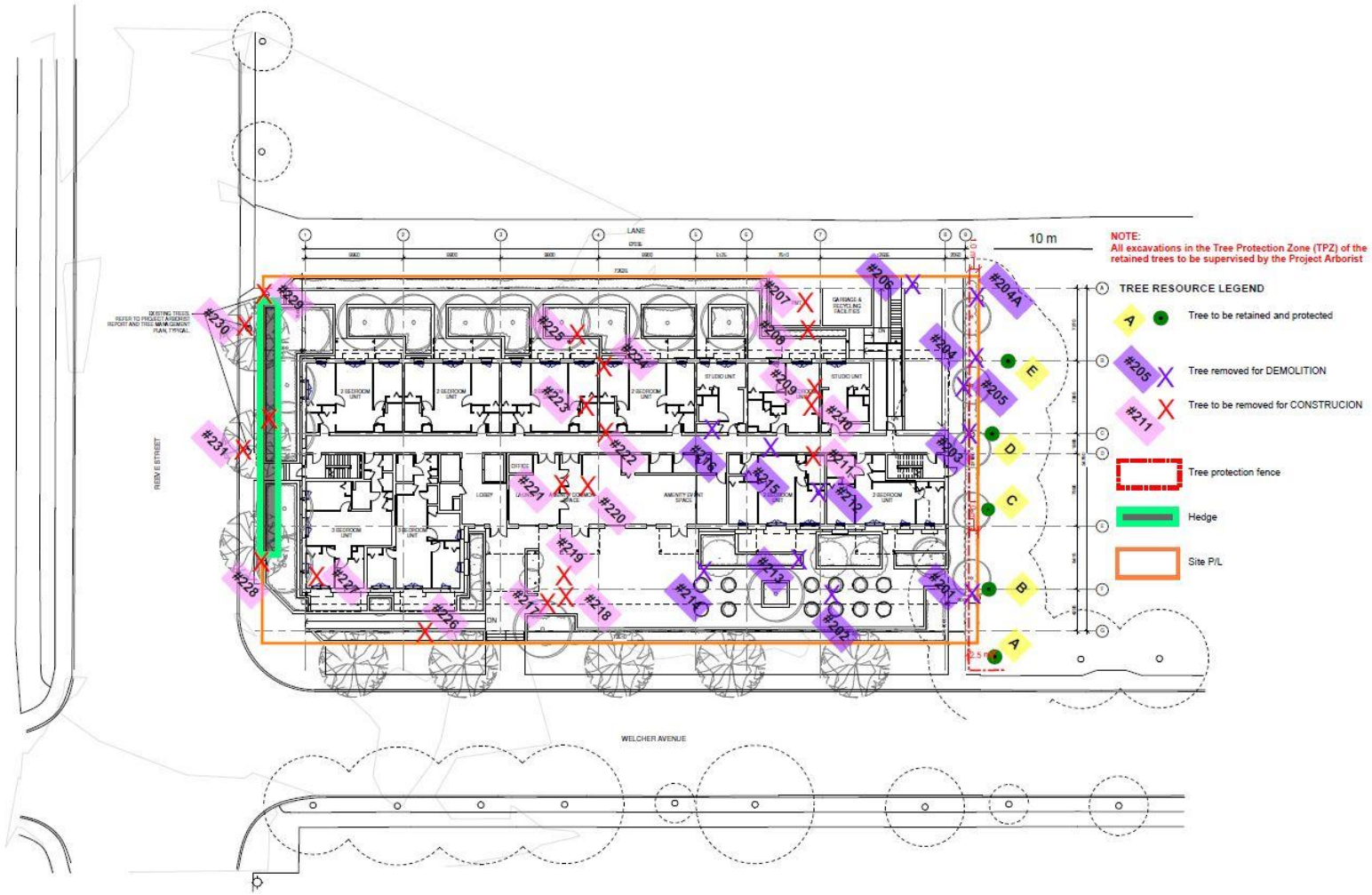
Trees #230 Boulevard mountain ash – REMOVE

Trees #230 Boulevard mountain ash – REMOVE



Trees #230 Boulevard mountain ash – REMOVE

Trees #230 Boulevard mountain ash – REMOVE



1 Site Plan
1:200

local.

Local Practice Architecture + Design Ltd.
14417 Hornby Street Vancouver BC V6Z 1W8
604.343.4525 localpractice.ca

DO NOT SCALE DRAWINGS

notes

DRAFT- NOT FOR CONSTRUCTION

issue

No.	Description	Date

consultants

DAVEY Resource Group

Tree Management Plan
For Construction Phase

June 2nd, 2020
2471, 2477 & 2487 Welcher Ave, Port Coquitlam

See the attached Arborist Report for tree details

Original plan size: 34 X 22 inch

project

Welcher Avenue Multi-Family

project no.	drawn	reviewed
1904	JT/JR/LS	JT
scale	**date**	
1 :200	2020/05/29	

title

SITE PLAN

sheet

A100

[redacted]
[redacted] 2437 Welcher Avenue ● Port Coquitlam ● BC ● V3C 1X8
[redacted]

October 20, 2020

To His Worship Mayor Brad West and Honorable Members of City Council
Submitted electronically to publichearings@portcoquitlam.ca

Dear Mayor West and Members of City Council:

RE: Support in favour of proposed Metro Vancouver Housing project for 2481 Welcher Avenue
Public Meeting – Tuesday, October 27, 2020, 6:00 pm, Port Coquitlam Community Centre

In lieu of not being able to attend the above-named public meeting in person, I am delighted to submit this letter in full support of the proposed affordable housing project by Metro Vancouver Housing Authority for 2481 Welcher Avenue.

I first moved to Port Coquitlam in 2006, and recently purchased a condominium at 2437 Welcher Avenue, immediately to the east of the subject property. My [redacted] condo faces directly west toward the proposed housing project. After consulting with City planner Graeme Muir about the project, I contacted Metro Vancouver Housing Authority and learned from Julia Dugaro that the existing trees on the eastern perimeter of the subject property were to be removed and replaced with low-growing flowering bushes as part of the landscape design.

When I purchased my condo in September of this year, the current view toward the proposed housing project, with the greenery of the existing mature trees, was a key selling feature. In fact, the seller's agent highlighted the view of the greenery from those trees in the property description on MLS. My concern was that removal of the existing trees on the northeast side of the development and replacement with low-growing flowering bushes would do little to conceal the housing project's underground parking garage, which I would be looking directly into.

After a few back-and-forth emails between myself and Ms. Dugaro, a solution was reached. The project's landscape architect agreed to change the original landscape design to protect the existing sight-lines between my condominium and the new housing project by planting 10 columnar beach trees in the northeastern section of the site. These trees will be 6 meters (20 feet) tall when they are planted, and the landscape architect noted that these would be the most similar option to the current trees in this area of the site. This display of trust and cooperation between the developer and neighbours won my favor!

I have always been a champion of mixed-used development and affordable housing wherever I've lived in the world. The Metro Vancouver project at 2481 Welcher Avenue will provide 63 much-needed affordable homes in response to the ongoing housing crisis which exists throughout Metro Vancouver and, as such, I trust that City Council will approve the project.

I look forward to my neighbourhood growing into a welcoming, accepting, inclusive mix of individuals and families from all walks of life who are able to make this wonderful community of PoCo their home.

Sincerely,

[redacted]

cc: Julia Dugaro, Graeme Muir