



General Purposes Committee

**Council Chambers, City Hall
6911 No. 3 Road**

**Monday, July 6, 2020
4:00 p.m.**

Pg. # ITEM

MINUTES

GP-7 *Motion to adopt the **minutes** of the meeting of the General Purposes Committee held on June 15, 2020.*

COUNCILLOR KELLY GREENE

- 1. **TRANSLINK EMERGENCY OPERATING FUNDING**
(File Ref. No.)

GP-16

See Page GP-16 for materials

RECOMMENDATION

That the City of Richmond calls upon the federal and provincial governments to provide emergency operating funds to protect vital public transportation services. Letters to be written to the Parliamentary Secretary for TransLink; provincial Ministers of Transportation, Environment, and Finance; and federal Ministers of Transportation and Finance; with copies to Richmond MLAs and MPs.

Pg. # ITEM

FINANCE AND CORPORATE SERVICES DIVISION

2. **UPDATE ON CITY OF RICHMOND COVID-19 ECONOMIC RESPONSE AND RECOVERY MEASURES**
(File Ref. No. 08-4150-01) (REDMS No. 6477062)

GP-17

See Page GP-17 for full report

Designated Speaker: Katie Ferland

STAFF RECOMMENDATION

That the staff report titled “Update on City of Richmond COVID-19 Economic Response and Recovery Measures”, dated June 26, 2020, be received for information.



ENGINEERING AND PUBLIC WORKS DIVISION

3. **TILBURY PHASE 2 LNG EXPANSION PROJECT**
(File Ref. No. 10-6125-30-010) (REDMS No. 6432227 v. 10)

GP-40

See Page GP-40 for full report

Designated Speaker: Chad Paulin

STAFF RECOMMENDATION

That the comments outlined in the staff report titled “Tilbury Phase 2 LNG Expansion Project”, dated June 1, 2020, from the Director, Sustainability and District Energy be endorsed and submitted to the BC Environmental Assessment Office and the Impact Assessment Agency of Canada to support the provincial and federal environmental assessments.



COMMUNITY SAFETY DIVISION

4. **SOIL USE FOR THE PLACEMENT OF FILL APPLICATION FOR THE PROPERTY LOCATED AT 5800 NO. 7 ROAD (MAHAL)**
(File Ref. No. 12-8080-12-01) (REDMS No. 6471502 v. 12)

GP-48

See Page GP-48 for full report

Designated Speaker: Carli Williams

STAFF RECOMMENDATION

That the ‘Soil Use for the Placement of Fill’ application submitted by Paul Mahal (the “Applicant”) proposing to deposit soil on the property located at 5800 No. 7 Road to transition a former cranberry bog to allow for the growing of vegetables and ornamental trees be authorized for referral to the Agricultural Land Commission (ALC) for the ALC to review and determine the merits of the proposal from an agricultural perspective as the Applicant has satisfied all of the City’s current reporting requirements.



5. **OPTIONS FOR A RESIDENTIAL BACKYARD CHICKEN PROGRAM**

(File Ref. No. 12-8000-01) (REDMS No. 6483312)

GP-190

See Page GP-190 for full report

Designated Speaker: Douglas Liu

STAFF RECOMMENDATION

That “Option 2: Allow the keeping of backyard chickens on all ALR properties and properties outside of the ALR with a parcel size of no less than 2,000 m²” as outlined in the staff report titled “Options for a Residential Backyard Chicken Program” from the General Manager, Community Safety, dated June 22, 2020, be approved.



COMMUNITY SERVICES DIVISION

6. **STEVESTON TRAM FEASIBILITY STUDY**

(File Ref. No. 11-7000-01) (REDMS No. 6474329)

GP-206

See Page GP-206 for full report

Designated Speaker: Marie Fenwick

STAFF RECOMMENDATION

That Option 1: Maintain Current Tram Program as detailed in the report titled “Steveston Tram Feasibility Study”, dated May 29, 2020, from the Director, Arts, Culture & Heritage Services be endorsed.



PLANNING AND DEVELOPMENT DIVISION

7. **QUADRICYCLE BUSINESS – PROPOSED VEHICLE FOR HIRE BYLAW AMENDMENT TO PERMIT PERMANENT OPERATION**
(File Ref. No. 12-8275-06) (REDMS No. 6468151)

GP-220

See Page GP-220 for full report

Designated Speaker: Lloyd Bie

STAFF RECOMMENDATION

- (1) *That the third reading of Vehicle for Hire Bylaw No. 6900, Amendment Bylaw No. 10128, to add regulations and requirements for the operation of a quadricycle, be rescinded.*
- (2) *That Vehicle for Hire Bylaw No. 6900, Amendment Bylaw No. 10218, to add revised regulations and requirements for the operation of a quadricycle, be given third reading.*



8. **APPLICATION BY CITY VANCOUVER ACADEMY INC. FOR A TEMPORARY COMMERCIAL USE PERMIT FOR THE PROPERTY AT UNITS 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165 AND 2170 - 8766 MCKIM WAY**
(File Ref. No. TU 20-890760) (REDMS No. 6486096)

GP-224

See Page GP-224 for full report

Designated Speakers: Wayne Craig & Nathan Andrews

STAFF RECOMMENDATION

- (1) *That the application by City Vancouver Academy Inc. for a Temporary Commercial Use Permit (TCUP) for the property at Units 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165 and 2170 - 8766 McKim Way to permit education use (limited to an independent school offering grades 10 to 12) be considered for one year from the date of issuance; and*
- (2) *That this application be forwarded to the September 8, 2020 Public Hearing at 7:00 p.m. in the Council Chambers of Richmond City Hall.*



9. **APPLICATION BY IBI GROUP ARCHITECTS TO AMEND SCHEDULE 2.10 OF OFFICIAL COMMUNITY PLAN BYLAW 7100 (CITY CENTRE AREA PLAN) AND REZONE 5740, 5760, AND 5800 MINORU BOULEVARD FROM “INDUSTRIAL RETAIL (IR1)” TO “SCHOOL AND INSTITUTION USE (SI)” AND “HIGH DENSITY MIXED USE AND AFFORDABLE RENTAL HOUSING (ZMU46) – LANSDOWNE VILLAGE (CITY CENTRE)”**
(File Ref. No. RZ 18-807640) (REDMS No. 6401336)

GP-241

See Page GP-241 for full report

Designated Speakers: Wayne Craig & Suzanne Carter-Huffman

STAFF RECOMMENDATION

- (1) *That Official Community Plan Bylaw 7100, Amendment Bylaw 10136, to amend Schedule 2.10 of Official Community Plan Bylaw 7100 (City Centre Area Plan), to amend:*
- (a) *Section 2.2 “Jobs and Business” and the “Specific Land Use Map: Lansdowne Village”, to encourage office development along the east side of Minoru Boulevard (between Ackroyd Road and Alderbridge Way) and pedestrian-oriented retail uses at grade along Lansdowne Road (between No. 3 Road and Minoru Boulevard); and*
 - (b) *Section 4.0 “Implementation & Phasing Strategies”, to clarify City Centre Area Plan density bonusing requirements with respect to the Richmond Affordable Housing Strategy and Official Community Plan Market Rental Housing Policy, and permit bonus density to be increased, on a site-specific basis, for rezoning applications that provide additional affordable housing to address community need,*
- be introduced and given first reading.*
- (2) *That Official Community Plan Bylaw 7100, Amendment Bylaw 10137, for amending Schedule 2.10 of Official Community Plan Bylaw 7100 (City Centre Area Plan), to facilitate the construction of a high-rise, high density, mixed use development, including the designation of a 7 m (23 ft.) wide strip of land along the north side of 5740 Minoru Boulevard as City “Park” and the remainder of 5740, 5760, and 5800 Minoru Boulevard as “Village Centre Bonus” area (to permit an additional 1.0 floor area ratio for office use only), be introduced and given first reading.*
- (3) *That Bylaw 10136 and Bylaw 10137, having been considered in conjunction with:*
- (a) *the City’s Financial Plan and Capital Program; and*

General Purposes Committee Agenda – Monday, July 6, 2020

Pg. # ITEM

(b) the Greater Vancouver Regional District Solid Waste and Liquid Waste Management Plans;

are hereby found to be consistent with said program and plans, in accordance with Section 477(3)(a) of the Local Government Act.

ADJOURNMENT



General Purposes Committee

- Date: Monday, June 15, 2020
- Place: Council Chambers
Richmond City Hall
- Present: Mayor Malcolm D. Brodie, Chair
Councillor Chak Au (attending via teleconference)
Councillor Carol Day (attending via teleconference)
Councillor Kelly Greene (attending via teleconference)
Councillor Alexa Loo (attending via teleconference)
Councillor Bill McNulty (attending via teleconference)
Councillor Linda McPhail (attending via teleconference)
Councillor Harold Steves (attending via teleconference)
Councillor Michael Wolfe (attending via teleconference)
- Call to Order: The Chair called the meeting to order at 4:01 p.m.

MINUTES

It was moved and seconded

That the minutes of the meeting of the Special General Purposes Committee held on May 25, 2020 and General Purposes Committee held on June 1, 2020, be adopted as circulated.

CARRIED

General Purposes Committee
Monday, June 15, 2020

COUNCILLOR HAROLD STEVES

1. A NEW COASTAL STRATEGY

(File Ref. No.) (REDMS No.)

It was moved and seconded

- (1) That Richmond request the BC Government to develop and enact a Coastal Strategy and Law to leverage and coordinate the work of provincial ministries, First nations, local communities, and stakeholders groups to preserve coastal and ocean health, halt coastal habitat loss, accelerate the completion of a network of marine protected areas to benefit fisheries, biodiversity and the economy, set marine environmental quality objectives, and help communities adopt ecosystem-based approaches to manage risk from flooding due to extreme weather events, sea level rise, climate change and ocean acidification; and*
- (2) That the City of Richmond write a letter of support and requesting action to the Union of British Columbia Municipalities, BC Minister of Environment, Minister of Agriculture, Minister of Indigenous Affairs and Reconciliation, and the Premier of British Columbia in support of a Coastal Protection Strategy.*

The question on the motion was not called as discussion ensued with regard to (i) the history and the disbanding of the Fraser River Estuary Management Program, (ii) Richmond's jurisdiction over its coastal areas, (iii) Port of Vancouver's coastal strategy and proposed projects, and (iv) coastal environmental regulatory and enforcement capacities of senior levels of government.

The question on the motion was then called and it was **CARRIED**.

COUNCILLOR CHAK AU

1A. RICHMOND CULTURAL HARMONY PLAN – IMPLEMENTATION OF STRATEGIC DIRECTIONS

(File Ref. No.) (REDMS No.)

It was moved and seconded

- (1) That staff be directed to propose by November 1, 2020 an implementation plan to include timelines, cost estimates, and cultural heritage value for the restoration of the First Nations Bunk House located at the Britannia Heritage Shipyards site being an opportunity pursuant to item #3 of Strategic Direction One of the Richmond Cultural Harmony Plan 2019-2029 report;*

2.

General Purposes Committee
Monday, June 15, 2020

- (2) *That staff be directed to implement item #5 of Strategic Direction Two of the Richmond Cultural Harmony Plan 2019-2029 to:*
 - (a) *pursue programs and funding opportunities provided by senior levels of government regarding cultural harmony initiatives; and*
 - (b) *report progress back to General Purposes Committee in 12 months; and*

- (3) *That staff be directed to implement item #4 of Strategic Direction Five of the Richmond Cultural Harmony Plan 2019-2029 to:*
 - (a) *strengthen relationships with various cultural and ethnic communities in order to integrate their arts, cultural and heritage practices into the City's programs and events; and*
 - (b) *report progress back to General Purposes Committee in 12 months.*

The question on the motion was not called as discussion ensued with regard to (i) the proposed restoration of the First Nations Bunkhouse, including cost estimates, construction timelines and funding opportunities, (ii) potential future programming of the Bunkhouse, (iii) current programs and organizations in the community dedicated to cultural harmony, and (iv) encouraging dialogue on issues related to First Nation and Black Canadian communities

As a result of the discussion, staff were directed to refer the proposed implementation of strategic directions of the City's Cultural Harmony Plan to the Richmond Intercultural Advisory Committee.

In reply to queries from Committee, staff noted that staff will provide regular updates regarding Steveston Heritage sites and the City's Cultural Harmony initiative. Also, staff noted that the City regularly examines funding opportunities from senior levels of government.

The question on the motion was then called and it was **CARRIED**.

COUNCIL/SCHOOL BOARD LIAISON COMMITTEE

1B. LIVESTREAM OF COUNCIL/SCHOOL BOARD LIAISON COMMITTEE MEETINGS

(File Ref. No.) (REDMS No.)

Discussion ensued with regard to (i) public accessibility of the City's Committee meetings, (ii) coordination of potential live streaming of the Council/School Board Liaison Committee meetings with Richmond School District No. 38, and (iii) reviewing the technical assistance provided to the City's advisory committees.

General Purposes Committee
Monday, June 15, 2020

As a result of the discussion, staff liaisons to advisory committees were directed to reach out to their committees to assess their needs for assistance to meet remotely.

Mayor Brodie noted that all of the City's standing committees are being live streamed, however none of the City's advisory committees are currently being live streamed.

As a result of the discussion, the following **referral motion** was introduced:

It was moved and seconded

That staff be directed to review the possibility of live-streaming to the City of Richmond's YouTube Channel all Standing Committee meetings and the Council-School Board Liaison Committee meetings and report back.

CARRIED

COMMUNITY SAFETY DIVISION

2. **APPLICATION TO REQUEST A FOOD PRIMARY ENTERTAINMENT ENDORSEMENT FOR FOOD PRIMARY LIQUOR LICENCE # 303817 - WC HOTELS LLP (WESTIN WALL CENTRE, VANCOUVER AIRPORT) - 3099 CORVETTE WAY**
(File Ref. No. 12-8275-30-001) (REDMS No. 6463853)

It was moved and seconded

(1) That the application from WC Hotels LLP (Westin Wall Centre, Vancouver Airport), doing business as, The Apron, operating at 3099 Corvette Way, requesting a Food-Primary Patron Participation Entertainment Endorsement to Food-Primary Liquor Licence No. 303817, to enable patrons to dance at the establishment, be supported with;

(a) No change to person capacity currently in place; and

(b) No change to service hours currently in place; and

(2) That a letter be sent to the Liquor and Cannabis Regulation Branch, which includes the information attached as Appendix A, advising that Council supports the amendment for a Patron Participation Entertainment Endorsement on Food-Primary Liquor Licence No. 303817 as this request has been determined, following public consultation, to be acceptable in the area and community.

CARRIED

General Purposes Committee
Monday, June 15, 2020

PLANNING AND DEVELOPMENT DIVISION

3. PROPOSED AMENDMENTS TO TRAFFIC BYLAW NO. 5870 - ENGINE BRAKE AND CYCLIST CROSSWALK REGULATIONS

(File Ref. No. 12-8060-02-01) (REDMS No. 6457707 v. 7)

It was moved and seconded

- (1) That Traffic Bylaw No. 5870, Amendment Bylaw No. 10184, to prohibit the use of engine brakes on municipal roads in Richmond and permit cyclists to ride in crosswalks with elephant's feet markings, be introduced and given first, second and third reading;*
- (2) That Municipal Ticket Information Authorization No. 7321, Amendment Bylaw No. 10185, to assign a fine for the prohibited use of engine brakes on municipal roads in Richmond, be introduced and given first, second and third reading;*
- (3) That staff be directed to send a letter to the British Columbia Trucking Association advising of the proposed bylaw amendments with respect to the prohibited use of engine brakes; and*
- (4) That Traffic Bylaw No. 5870, Amendment Bylaw No. 10184 and Municipal Ticket Information Authorization No. 7321, Amendment Bylaw No. 10185 be reviewed in 12 months' time.*

The question on the motion was not called as discussion ensued with regard to (i) limiting use of engine brakes by truck drivers and enforcement options for repeat offenders, (ii) clarifying cycling and pedestrian regulations, (iii) consulting with cycling groups such as HUB, and (iv) installing signage advising of engine brake restrictions in residential areas.

In reply to queries from Committee, staff noted that the proposed regulations will apply to all municipal roads in Richmond. Staff added that cyclists have the option of using the roadway, however when using pedestrian crosswalks and multi-use pathways, cyclists must abide by the regulations related to their use.

The question on the motion was then called and it was **CARRIED**.

4. APPLICATION BY YUANHENG SEASIDE DEVELOPMENTS LTD./YUANHENG SEAVIEW DEVELOPMENTS LTD. FOR A ZONING TEXT AMENDMENT TO THE "RESIDENTIAL/LIMITED COMMERCIAL AND COMMUNITY AMENITY (ZMU30) – CAPSTAN VILLAGE (CITY CENTRE)" ZONE AT 3399 CORVETTE WAY AND 3311 & 3331 NO. 3 ROAD

(File Ref. No. 12-8060-20-010189; ZT 19-872212) (REDMS No. 6466184 v. 3)

General Purposes Committee Monday, June 15, 2020

In accordance with Section 100 of the *Community Charter*, Cllr. Au declared to be in a conflict of interest as a family member is a potential buyer of a unit from the proposed development at 3399 Corvette Way and 3311 and 3331 No. 3 Road, and Cllr. Au left the meeting – 5:01 p.m.

Staff reviewed the application, highlighting that (i) the applicant is seeking to relocate approximately 10,000 ft² of the proposed development's unbuilt floor area to the second phase, increase the number of proposed units to 941, and defer completion of the proposed community centre at 3311 No. 3 Road to December 31, 2023, (ii) the proposed unit sizes are consistent with other developments in the area, (iii) should the application move forward, the application will proceed to a Public Hearing, (iv) a staff report on the governance of the proposed community centre will be forthcoming prior to its completion, and (v) staff anticipate that the Capstan Station will be completed by mid-2022.

It was moved and seconded

- (1) *That Richmond Zoning Bylaw 8500, Amendment Bylaw 10189, for a Zoning Text Amendment to the “Residential/Limited Commercial and Community Amenity (ZMU30) – Capstan Village (City Centre)” zone, a site-specific zone applicable at 3399 Corvette Way and 3311 & 3331 No. 3 Road, to:*
 - (a) *increase the maximum number of permitted dwelling units from 850 to 941 (without any increase in total residential floor area); and*
 - (b) *relocate 964 m² (10,371 ft²) of permitted (unbuilt) floor area from the development's first phase at 3331 No. 3 Road to its second phase at 3311 No. 3 Road and third phase at 3399 Corvette Way;*

be introduced and given first reading; and
- (2) *That the terms of the voluntary developer community amenity contribution secured through the original rezoning of 3399 Corvette Way and 3311 & 3331 No. 3 Road (RZ 12-603040) be amended to permit the completion of the proposed City Centre North Community Centre, at 3311 No. 3 Road, be deferred from December 31, 2021 to December 31, 2023.*

The question on the motion was not called as discussion ensued with regard to the estimated completion date of the proposed community centre.

The question on the motion was then called and it was **CARRIED** with Cllr. Wolfe opposed.

Cllr. Au returned to the meeting – 5:08 p.m.

General Purposes Committee
Monday, June 15, 2020

COMMUNITY SERVICES DIVISION

5. **PHOENIX NET LOFT PUBLIC CONSULTATION PROCESS**

(File Ref. No. 11-7000-01) (REDMS No. 6445923 v. 2)

It was moved and seconded

That staff be authorized to proceed with Phase One of the Phoenix Net Loft Public Consultation Process as described in the staff report titled “Phoenix Net Loft Public Consultation Process”, dated May 22, 2020, from the Director, Arts, Culture and Heritage Services.

The question on the motion was not called as discussion ensued with regard to expanding the primary list of stakeholders and identifying individual representatives of the community groups participating in the consultation process.

In reply to queries from Committee, staff noted that expanding the stakeholder list is possible but may lengthen the consultation process. Also, staff noted that a broader consultation will take place in Phase Two of the consultation process.

As a result of the discussion, the following **amendment motion** was introduced:

It was moved and seconded

That staff add the Steveston Community Society, Richmond School District No. 38, the Richmond Seniors Advisory Committee, the Richmond Centre for Disability, youth groups, and the Musqueam First Nation to the primary list of stakeholders in the consultation process.

The question on the amendment motion was not called as discussion ensued with regard to identifying a specific youth group for consultation participation and exploring potential funding options for the project.

The question on the amendment motion was then called and it was **CARRIED**.

The question on the main motion, as amended, which reads as follows:

- (1) *That staff be authorized to proceed with Phase One of the Phoenix Net Loft Public Consultation Process as described in the staff report titled “Phoenix Net Loft Public Consultation Process”, dated May 22, 2020, from the Director, Arts, Culture and Heritage Services; and*

General Purposes Committee
Monday, June 15, 2020

(2) *That staff add the Steveston Community Society, Richmond School District No. 38, the Richmond Seniors Advisory Committee, the Richmond Centre for Disability, youth groups, and the Musqueam First Nation to the primary list of stakeholders in the consultation process.*

was then called and it was **CARRIED**.

ENGINEERING AND PUBLIC WORKS DIVISION

6. **PHOENIX NET LOFT DECONSTRUCTION AND SALVAGE**

(File Ref. No. 06-2052-25-PNET1) (REDMS No. 6469794 v. 12)

Discussion ensued regarding identifying shovel-ready projects in Richmond and exploring funding options for the proposed Phoenix Net Loft project.

In reply to queries from Committee, staff noted that staff will provide periodic updates on the matter and that the subject site's artifacts will be relocated to a City site on 7400 River Road. Staff added that traffic and parking logistics related to the upcoming 2020 Richmond Maritime Festival will be discussed with Community Services staff.

It was moved and seconded

That staff be authorized to proceed with the deconstruction and salvage of heritage elements of the Phoenix Net Loft as described under Option 1 on Page 3, in the staff report titled "Phoenix Net Loft Deconstruction and Salvage", dated May 21, 2020, from the Director, Facilities and Project Development.

CARRIED

PLANNING AND DEVELOPMENT DIVISION

7. **POTENTIAL TEMPORARY ROAD CHANGES IN STEVESTON VILLAGE**

(File Ref. No. 10-6360-06-01) (REDMS No. 6475103)

It was moved and seconded

That pedestrian, cyclist and motorist operations continue to be monitored in the Steveston Village for crowding and physical distancing issues and staff report back to Council on the need for any temporary measures to add additional space for pedestrians and cyclists, should the traffic volume of these modes consistently exceed the capacity of existing infrastructure.

8.

General Purposes Committee
Monday, June 15, 2020

The question on the motion was not called as discussion ensued with regard to (i) the survey results and low support by area merchants for the potential temporary road changes, (ii) exploring alternative traffic configurations to allow for one-way traffic along Moncton Street and Bayview Street, and (iii) expanding the availability of accessible parking in the area.

In reply to queries from Committee, staff noted that area merchants have expressed concern with regard to potential loss of parking as a result of the proposed traffic configurations. Staff added that the current pedestrian, cyclist and motorist activity is being monitored and that staff will bring forward new recommendations if required.

The question on the motion was then called and it was **CARRIED** with Cllrs. Au and Wolfe opposed.

ADJOURNMENT

It was moved and seconded
That the meeting adjourn (5:46 p.m.).

CARRIED

Certified a true and correct copy of the Minutes of the meeting of the General Purposes Committee of the Council of the City of Richmond held on Monday, June 15, 2020.

Mayor Malcolm D. Brodie
Chair

Evangel Biason
Legislative Services Associate

Motion: That the City of Richmond calls upon the federal and provincial governments to provide emergency operating funds to protect vital public transportation services. Letters to be written to the Parliamentary Secretary for TransLink; provincial Ministers of Transportation, Environment, and Finance; and federal Ministers of Transportation and Finance; with copies to Richmond MLAs and MPs.

Rationale: Access to public transportation is necessary to support essential and front-line workers and a recovering economy. Public transportation also makes our communities more livable and fights climate change. TransLink is losing \$75M per month during the pandemic and necessary physical distancing measures are stressing the ability to provide reliable service.

For additional reading please see: <https://dailyhive.com/vancouver/translink-emergency-operating-funding>



City of Richmond

Report to Committee

To: General Purposes Committee **Date:** June 26, 2020
From: Andrew Nazareth **File:** 08-4150-01/2020-Vol
 General Manager, Finance and Corporate 01
 Services
Re: **Update on City of Richmond COVID-19 Economic Response and Recovery Measures**

Staff Recommendation

That the staff report titled "Update on City of Richmond COVID-19 Economic Response and Recovery Measures", dated June 26, 2020, be received for information.

Andrew Nazareth
 General Manager, Finance and Corporate Services
 (604-276-4095)

REPORT CONCURRENCE	
SENIOR STAFF REPORT REVIEW	INITIALS:
APPROVED BY CAO	

Staff Report

Origin

COVID-19 was declared a global pandemic by the World Health Organization on March 11, 2020. This has had a dramatic impact on local, national and international economies as orders and recommendations necessary to mitigate risks to public health have forced businesses to close and people to stay at home.

Unprecedented financial relief programs have been introduced by all levels of government to address immediate liquidity challenges resulting from the sudden closure of businesses and related income and employment losses.

The City of Richmond (the “City”) has also undertaken measures to address the significant impact on local businesses, residents and workers. This report discusses the impacts on the local economy and outlines some of the actions taken, underway or planned to help mitigate the permanent loss of businesses and jobs in Richmond, and to support economic recovery. It will be distributed broadly to ensure that key stakeholders, local businesses, and the community are aware of the important measures taken and planned by the City.

Analysis

Economic Impacts

According to the Canadian Survey on Business Conditions undertaken jointly by Statistics Canada and the Canadian Chamber of Commerce from April 3 to April 24, 2020, nearly three-quarters of businesses reported being negatively affected by physical distancing measures, and over half of all businesses reported a decline in revenue greater than 20 per cent. Over one-quarter of businesses requested credit from financial institutions to cover operating costs due to revenue shortfalls, and many were forced to lay off staff either temporarily or permanently.

The Statistics Canada Labour Force Survey showed that from February to April more than three million Canadians lost their jobs due to COVID-19, and an additional two and a half million were working substantially reduced hours. In May as the country’s economy gradually began to re-open some temporary layoffs were reversed but the national unemployment rate climbed to 13.7 per cent as some people also re-entered the labour force looking for work.

In its May B.C. Economic Forecast, Central 1 Credit Union forecasted a 6.8 per cent contraction to B.C.’s GDP in 2020 followed by a gradual rebound as governments balance the risk to public health with economic recovery and growth. Some sectors including tourism and customer-facing service sectors are expected to experience longer lasting challenges.

Local Economic Impacts

In Richmond, impacts to some sectors have been more severe than others. This includes those that were ordered to close such as personal care services and dine-in restaurants, as well as those

reliant on cross-border travel such as film. The tourism sector has also been particularly hard hit due to orders and guidelines restricting travel and major events. A 2017 study showed that the tourism sector, excluding Vancouver International Airport (YVR), directly accounted for an estimated 12 per cent of all jobs in Richmond and was responsible for nearly \$2 billion in direct spending by visitors¹. Hotels that have remained open are operating at record low occupancy rates. Many other tourism-related businesses such as tour and transportation operators, event organizers, cruise and airline suppliers, equipment rental companies and restaurants have lost a significant amount, if not all, of their revenue.

The airport itself is a major economic driver. Normally 30,000 people are employed on Sea Island, and another 126,000 jobs throughout other areas of Richmond and B.C. are directly related to airport activities such as airline catering, aircraft maintenance, security and transportation. Passenger volumes at YVR for March and April 2020 decreased by 80 per cent over the same period last year as travel restrictions became widespread and the airline industry was grounded. The Vancouver Airport Authority is forecasting only eight to 15 million annual passengers for the next three years, compared to a record breaking 26.4 million passengers in 2019². Airport operations have been downsized as a result of these projections, which will impact many additional jobs on Sea Island, in Richmond, and throughout B.C.

Longer term local economic impacts to these and other sectors will be monitored and will vary depending on the duration of the pandemic and the impact of targeted policy support.

Economic Response (Immediate and Ongoing Actions)

In addition to ensuring public health and community safety, supporting local businesses and economic recovery is a top priority for the City. On March 23, 2020 the Richmond COVID-19 Community Task Force was struck to facilitate information sharing, collaboration and a coordinated community response. Co-chaired by the Mayor and the Chair of the Richmond Chamber of Commerce, it includes representatives from all levels of government and key stakeholders.

The City established a virtual Business Support Centre to provide a centralized source of information and resources for local businesses impacted by the pandemic. Additional communication and engagement methods including regular electronic COVID-19 Business Bulletins and daily social media posts have been used to connect local businesses to City services and initiatives described in this report and outlined in greater detail in Attachment 1.

Support for Local Businesses and Workers

Many businesses have faced significant challenges unique to their operation or their industry. During the response phase, the City provided businesses with immediate support and resources, while connecting them to new opportunities. Many of these actions are ongoing and include:

- Undertaking a ‘support local’ social media campaign.

¹ Tourism Richmond 2017 Economic Impact Assessment

² Source: Vancouver Airport Authority public statement from May 11, 2020

- Connecting local suppliers and manufacturers with government procurement opportunities.
- Curating a list of alternate distribution channels for local goods.
- Sharing current job opportunities with displaced workers.
- Expanding the Richmond Food Recovery Network program to connect more surplus food to social agencies.

Financial Relief Measures

Financial aid programs have been introduced by all levels of government to help households and firms withstand the significant economic shock caused by necessary public health measures and the resulting loss of income. These programs include wage subsidies, business credit accounts, rent relief, and many others which have been communicated to businesses through the City's Business Support Center. Specific financial relief measures undertaken by the City are as follows:

- Reduced the municipal tax increase from 4.98% to 2.97%. The Province also reduced the school tax rate by 50% in 2020 for all commercial properties.
- Extended the property tax penalty due date to after September 30, 2020.
- Extended the payment due dates for flat rate, metered utility and district energy utility payments.
- Allowed delay of business licence renewal fee payment for businesses that temporarily closed.

Public Health and Community Safety

Ensuring the health and safety of the community, which includes local businesses, continues to be the top priority in the City's COVID-19 response. Actions include the following:

- Enhanced police patrol throughout the City, in particular on Sea Island, in the City Centre and in business parks, and launched a new mobile app which includes an Online Crime Reporting Tool.
- Acting as a second line of defence against the COVID-19 pandemic as mandated by the Province by monitoring and enforcing public health orders, and providing public education on maintaining physical distance in parks and open spaces by a team of roving Community Ambassadors.
- Prioritized fire and life safety inspections for businesses that were expected to open in the near future.
- Reintroduced Tower Crane inspections in May to allow new construction to begin.
- Introduced temporary on-street walking and cycling on the south side of Bayview Street to allow for distancing in the Steveston Village.
- Communicating orders, notices and guidance from the Provincial Health Officer to local businesses.

Economic Recovery (Medium and Longer Term Actions)

While many actions taken during the economic response phase are still relevant and underway, the economy has been gradually re-opening in line with the Province of BC's Restart Plan. The City is undertaking the following actions in support of local economic recovery:

Business Retention and Resilience

The economic recovery phase in the City's COVID-19 response presents the most significant opportunity to mitigate the number of permanent business and job losses in the community. The following actions have been taken or planned by the City to help businesses successfully return to operations and adapt to their new environment.

- Tracking of temporary business closures and streamlining the business licensing process when they are ready to safely re-open.
- Using the City's Business Support Center to help local businesses prepare their COVID-19 safety plans by communicating operating guidelines developed by WorkSafeBC and industry associations.
- Introduction of an Expedited Temporary Patio Program for restaurants, cafes and pubs to quickly expand their outdoor seating area.
- Launch of the Richmond Business Resilience Program to provide local entrepreneurs with free training and guidance from experts to help adapt and strengthen their businesses, and withstand future economic shocks.
- Implementation of the MyBusiness online business services portal to streamline the business licence process - targeted for fall 2020.

Support for the Visitor Economy

Tourism has become a significant economic driver in Richmond under a successful partnership model between the City, the Richmond Hotel Association and Tourism Richmond where hotel tax revenue is used to fund destination marketing and development. Many tourism related businesses have been severely impacted by widespread restrictions on travel and plummeting consumer demand. The City and its partners are committed to supporting these businesses and the visitor economy. Actions taken or planned by the City include:

- Working closely with Tourism Richmond and the Richmond Chamber of Commerce to develop and maintain the WeAreRichmondBC microsite, an online hub showcasing local businesses and virtual experiences, and fostering community pride of place.
- Rescheduling of sporting events that have been postponed, notably the 2020 CARHA Hockey World Cup which is expected to generate \$12-\$15 million in economic impact for Richmond.
- Building local capacity in key areas including food tourism i.e. by working with local food producers to inform them of signage options and digital marketing opportunities, and exploring the development of a Richmond Berry Trail.
- Participating on the Metro Vancouver Tourism and Hospitality Industry Response and Recovery Task Force to represent Richmond in regional tourism recovery efforts.

Infrastructure and Capital Projects

Moving forward with major projects and capital works ensures that the necessary infrastructure is in place to support residents and businesses, and can stimulate economic activity by creating local employment. Some highlights of projects underway or planned include:

- Continuing with the Council-endorsed Engineering and Public Works capital program worth \$82.7 million for 2020 including both design and construction related costs.
- Working with agencies including the Province of BC and TransLink to advance key transportation projects including the George Massey Crossing Replacement and the Capstan Canada Line Station.
- Assessing specific City projects that could leverage federal infrastructure stimulus funding opportunities in anticipation of program details from the Federal Government's Infrastructure Minister.
- Seeking new funding opportunities that could accelerate the implementation of large infrastructure projects such as the construction of new energy plants and the addition of new low carbon energy sources. Currently, Lulu Island Energy Company has plans to invest \$20 million on infrastructure projects over the next five years estimated to create approximately 50 full-time local construction jobs.

Planning, Building and Development

Recognizing the importance of the construction industry's role in the economy, the City has adjusted its application review and permitting processes to ensure that building and development projects continue to move along expeditiously. Specific measures include the following:

- Receiving and reviewing plan submissions electronically and working on further enhancements including digital permit issuance.
- Ensuring ongoing dialogue between the City and the development industry including a special liaison committee meeting with the Urban Development Institute.
- Making proactive adjustments to building permit reviews in consultation with industry, professional organizations and other building departments within the region to provide a level of service comparable to pre-pandemic time.
- Continuing to provide building permit inspections by using remote techniques including photographs, real time videos, and professional field reviews as validity for code compliance.
- Restructuring advisory committee meetings to a remote format to ensure applications continue to benefit from independent advice as part of the typical application review process.
- Advancing the Industrial Land Intensification Initiative to recommend policy and bylaw changes that would facilitate increased economic activity on a limited industrial land base.
- Proceeding with the planned upgrade to the City's AMANDA property records, permitting and licensing system to streamline the processing of applications.

Financial Impact

None.

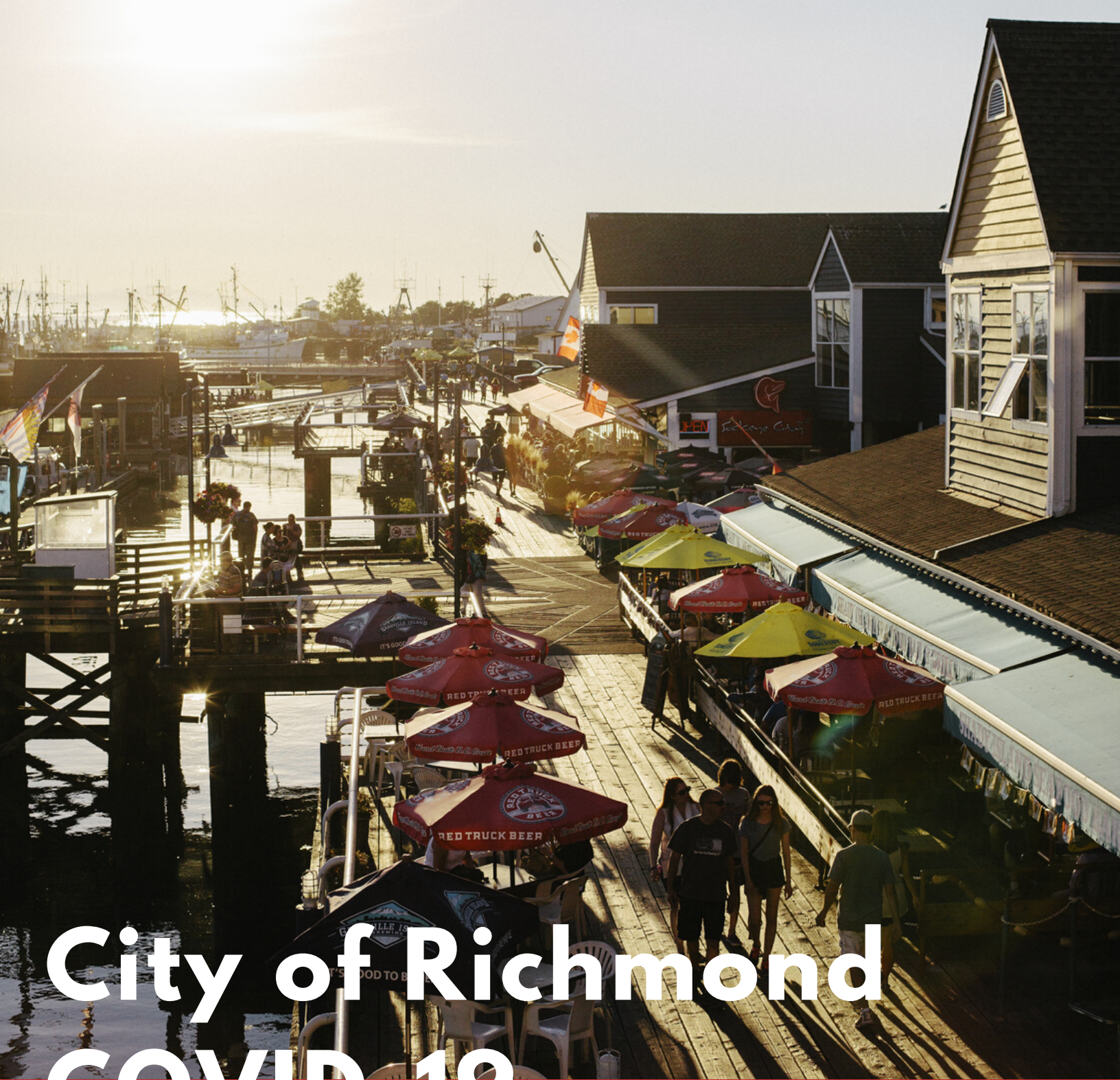
Conclusion

The COVID-19 pandemic has had a dramatic impact on local, national and international economies as orders and recommendations necessary to mitigate risks to public health have forced businesses to close and people to stay at home. Unprecedented financial relief programs have been introduced by all levels of government to support individuals and businesses. The City of Richmond has also undertaken measures to address the significant impact on local businesses, residents and workers, and to support economic recovery.

A handwritten signature in blue ink that reads "K Ferland". The signature is written in a cursive style with a large initial "K".

Katie Ferland
Manager, Economic Development
(604-247-4923)

Att. (1): City of Richmond COVID-19 Economic Response & Recovery Report



City of Richmond COVID-19

ECONOMIC RESPONSE & RECOVERY REPORT

JUNE 2020

GP – 24





INTRODUCTION

The COVID-19 pandemic has had a dramatic impact on local, national and international economies as orders and recommendations necessary to mitigate risks to public health have forced businesses to close and people to stay at home.

In addition to ensuring public health and community safety, supporting local businesses and economic recovery is a top priority for the City of Richmond.

Proactive economic response measures have been undertaken by the City to address the significant impact on local businesses, residents and workers. This report outlines some of the actions taken, underway or planned by the City to help mitigate the permanent loss of businesses and jobs in Richmond, and to support economic recovery.

This report was prepared by the City's Economic Development Office, recognizing that economic response and recovery in Richmond is a concerted effort involving the entire City organization, partner agencies, key stakeholders, local businesses and the community.



RICHMOND COVID-19 COMMUNITY TASK FORCE

The Richmond COVID-19 Community Task Force was struck on March 23, 2020 and is co-chaired by the City of Richmond Mayor Malcolm Brodie and the Richmond Chamber of Commerce Chair Fan Chun.

It is intended to facilitate information sharing, collaboration and a coordinated community response to the pandemic. Other key stakeholders represented include Vancouver Coastal Health, the RCMP, local elected officials from the Provincial and Federal Governments, local media outlets, educational institutions, Tourism Richmond and the Vancouver International Airport. The Task Force meets virtually on a weekly basis.

While this report outlines City of Richmond actions and initiatives, each organization represented on the Task Force has played an important role in the community's pandemic response and will be integral to continuing to support local businesses and economic recovery.

JOB OPPORTUNITIES FOR DISPLACED WORKERS

Many local workers lost their jobs either temporarily or permanently due to the sudden economic shock from the pandemic, particularly in the hospitality, aviation and personal service industries. Meanwhile other sectors such as food production, grocery retail and logistics have experiencing a surge in demand. Other businesses in technology and other sectors are also hiring.

A collection of job boards and job opportunities has been developed to help displaced workers find new opportunities. This resource also includes a listing of the various employee support programs that are available.



www.businessinrichmond.ca/jobs



604-276-4114
businesshelp@richmond.ca
www.businessinrichmond.ca

COVID-19 BUSINESS SUPPORT CENTRE

The City of Richmond COVID-19 implemented a Business Support Centre to provide a centralized, virtual source of accurate and timely information and resources for local businesses impacted by the pandemic. The Support Centre helps businesses to:

- Get information about support programs and resources for businesses from all levels of government and other agencies.
- Learn about current City of Richmond initiatives for businesses.
- Find out how to access City services for businesses.

RICHMOND-MADE PPE AND COVID-19 SAFETY SUPPLIES

Canadian governments initiated significant procurement programs for goods and services necessary for the pandemic response including personal protective equipment (PPE). Some local businesses were already suppliers of key medical equipment and supplies and others have been connected to funding and other programs to help them to pivot or retool their operations in order to sell these goods and services to the government and to other businesses.

A list has been compiled of Richmond-made PPE and COVID-19 safety supplies including hand sanitizer, face shields, protective barriers, contact tracing technology, signage, and temperature sensors.



www.businessinrichmond.ca/suppliers



Over
304,000
meals
created



www.businessinrichmond.ca/foodrecovery



RICHMOND FOOD RECOVERY NETWORK PROGRAM

Launched in late 2019 by the City, this program is an online marketplace that safely matches unsold food to an online network of charities and businesses, helping reduce waste and feed more. Due to COVID-19, there has been an increased demand for food from local charities and meal programs, as well as an increased desire from local food businesses to participate. This program has acted as a central distribution hub for businesses and charities and has become a key resource for the City and Vancouver Coastal Health. In just five months, the program has nearly met or exceeded all of the one-year deliverables:

- **206,905 kg food rescued** (target 225,000 kg)
- **304,413 meals created** (target 300,000)
- **42 network partners joined** (target 30)
- **\$1.04 million in savings** to food brands and charities (target \$1.25)



110+
businesses
listed

WEARERICHMONDBC.CA SUPPORT LOCAL INITIATIVE

The City of Richmond, Tourism Richmond and the Richmond Chamber of Commerce have partnered to create an online hub to support local businesses and help bring the community together. The website includes an 'Open for Business' marketplace, a compilation of resources for businesses and residents, and a collection of virtual experiences that people can enjoy from the comfort of their home.

As the economy continues to gradually re-open, the site will include additional features including newly launched customizable 'We're Open - Support Local' signage that businesses can download, print and display.



**SUPPORT LOCAL.
EXPLORE OUR COMMUNITY HUB.**

WEARERICHMONDBC.CA





www.businessinrichmond.ca/resilience

POWERED BY
SPRING

City of Richmond

Business Resilience Program



This program provides entrepreneurs with free training to adapt their businesses so they can emerge from the crisis thriving and able to withstand future economic shocks. It includes tools and resources from experts such as videos, templates and worksheets.

Users also have access to an online community of local entrepreneurs sharing their best practices and ideas, as well as one-on-one support from the City's Economic Development Office.

ALTERNATE DISTRIBUTION CHANNELS FOR LOCAL GOODS

Some local businesses are experiencing difficulties accessing their established distribution channels due to the closure of physical retail establishments and the disruption of supply chains. A list of alternative channels have been curated for local businesses including:

- BC Local Root (an online grocery platform for delivery and curbside pick-up of locally made products)
- London Drugs Local Central (free shelf space in center aisles for local products)
- Skipper Otto (a direct-to-consumer community supported fishery model for local seafood)



www.businessinrichmond.ca/distribution



www.businessinrichmond.ca/covid-19

EXPEDITED TEMPORARY PATIO PROGRAM

The City of Richmond has introduced an Expedited Temporary Outdoor Patio program to allow restaurants, cafes and pubs to quickly expand outdoor seating, either by using private property, parking lots or approved space on City sidewalks. There is no cost to apply.

Council also provided a one-time pre-approval to the BC Liquor and Cannabis Regulation Branch for the temporary expansion of service to outdoor areas for liquor license holders. This will eliminate the need for multi-approvals, further reducing the approval time for businesses.



“Thanks so much for all the team at the City is doing to help businesses to survive and thrive in Richmond during these challenging times.”
– Susan Ness, Costco Wholesale Richmond



ECONOMIC RESPONSE & RECOVERY MEASURES

SUPPORT FOR LOCAL BUSINESS

- Established a COVID-19 Business Support Centre.
- Introduced an Expedited Temporary Patio Program for restaurants, cafes and pubs to quickly expand their outdoor seating area.
- Expanded the Richmond Food Recovery Network program to connect more surplus food to social agencies and meal programs.
- Undertaking ongoing 'support local' social media campaign.
- Connecting local suppliers and manufacturers with government procurement opportunities.
- Curating a list of alternate distribution channels for local goods.
- Sharing job opportunities with displaced workers.
- Tracking of temporary business closures and streamlining the business licensing process when they are ready to safely re-open.
- Delivering the Richmond Business Resilience Program to help local entrepreneurs adapt and strengthen their businesses, and withstand future economic shocks.
- Implementation of the MyBusiness online business services portal to streamline the business licence process - targeted for fall 2020.

FINANCIAL RELIEF MEASURES

- Reduced the municipal tax increase from 4.98% to 2.97%.
- Extended the property tax penalty due date to after September 30, 2020.
- Extended the payment due dates for flat rate, metered utility and district energy utility payments.
- Allowed delay of business licence renewal fee payment for businesses that temporarily closed.



PUBLIC HEALTH AND COMMUNITY SAFETY

- Enhanced police patrol throughout the City, in particular on Sea Island, in the City Centre and in business parks, and launched a new mobile app which includes an Online Crime Reporting Tool.
- Acting as a second line of defence against the COVID-19 pandemic as mandated by the Province by monitoring and enforcing health orders, and providing public education on maintaining physical distance in parks and open spaces by a team of roving Community Ambassadors.
- Prioritized fire and life safety inspections for businesses that were expected to open in the near future.
- Reintroduced Tower Crane inspections in May to allow new construction to begin.
- Introduced temporary on-street walking and cycling on the south side of Bayview Street to allow for distancing in the Steveston Village.
- Communicating orders, notices and guidance from the Provincial Health Officer to local businesses.



SUPPORT FOR THE VISITOR ECONOMY

- Working closely with Tourism Richmond and the Richmond Chamber of Commerce to develop and maintain the WeAreRichmondBC microsite, an online hub showcasing local businesses and virtual experiences, and fostering community pride of place.
- Rescheduling of sporting events that have been postponed, notably the 2020 CARHA Hockey World Cup which is expected to generate \$12-\$15 million in economic impact for Richmond.
- Building local capacity in key areas including food tourism i.e. by working with local food producers to inform them of signage options and digital marketing opportunities, and exploring the development of a Richmond Berry Trail.
- Participating on the Metro Vancouver Tourism and Hospitality Industry Response and Recovery Task Force to represent Richmond in regional tourism recovery efforts.



INFRASTRUCTURE AND CAPITAL PROJECTS

- Continuing with the Council-endorsed Engineering and Public Works capital program worth \$82.7 million for 2020 including both design and construction related costs.
- Working with agencies including the Province of BC and TransLink to advance key transportation projects including the George Massey Crossing Replacement and the Capstan Canada Line Station.
- Assessing specific City projects that could leverage federal infrastructure stimulus funding opportunities..
- Seeking new funding opportunities that could accelerate the implementation of large infrastructure projects such as the construction of new energy plants and the addition of new low carbon energy sources. Currently, Lulu Island Energy Company has plans to invest \$20 million on infrastructure projects over the next five years estimated to create approximately 50 full-time local construction jobs.



PLANNING, BUILDING AND DEVELOPMENT

- Receiving and reviewing plan submissions electronically and working on further enhancements including digital permit issuance.
- Ensuring ongoing dialogue between the City and the development industry including a special liaison committee meeting with the Urban Development Institute.
- Making proactive adjustments to building permit reviews in consultation with industry, professional organizations and other building departments within the region to provide a level of service comparable to pre-pandemic time.
- Continuing to provide building permit inspections by using remote techniques including photographs, real time videos, and professional field reviews as validity for code compliance.
- Restructuring advisory committee meetings to a remote format to ensure applications continue to benefit from independent advice as part of the typical application review process.
- Advancing the Industrial Land Intensification Initiative to recommend policy and bylaw changes that would facilitate increased economic activity on a limited industrial land base.
- Proceeding with the planned upgrade to the City's AMANDA property records, permitting and licensing system to streamline the processing of applications.



COMMUNICATIONS REPORT

Since the announcement of COVID-19 as a worldwide pandemic, communications through the Economic Development Office's online channels have been used to keep the local business community informed of key information, resources and initiatives. Below are statistics for three months from March 15 - June 15, 2020.

TWITTER

139K Impressions

1.5K Impressions/Day

1438 Engagements

BUSINESSINRICHMOND.CA

4.7K Unique Visitors

11.3K Page Views

FACEBOOK

205 Posts

149K Reach

187K Impressions

9.9K Engagements

E-NEWSLETTER

11 COVID-19 Business Bulletins

40% Average Open Rate


8% Average Click Rate



@RichmondEDO



@RichmondEDO



Richmond-based Salt Spring Coffee donated 1,000lbs of coffee to British Columbian hospitals and healthcare facilities.

CELEBRATING LOCAL RESILIENCE AND INNOVATION DURING COVID-19

Richmond's economy was not spared the devastating effects of the COVID-19 pandemic. Despite the significant difficulties they faced, many businesses were quick to pivot their everyday 'business as usual' to adapt and respond to the challenge. This is a collection of stories highlighting local resiliency and innovation. These and other stories are shared in weekly 'Feel Good Friday' social media posts, and included in the regular COVID-19 Business Bulletins.



Skipper Otto's Community Supported Fishery began offering home delivery for their seafood products caught by local fishing families.



Applied Biological Materials (ABM) joined forces with a research lab at Simon Fraser University by supplying the novel RNA Mango dye to help develop COVID-19 testing kits.



FLIR, a global leader in thermal imaging infrared cameras, launched a smart thermal sensor solution for industrial monitoring and elevated skin temperature.



Herbaland, Canada's largest nutritional gummy manufacturer, donated 15,000 bottles of their Immune Plus vitamins to healthcare workers in the Lower Mainland.



Cascades began supplying recycled plastic for medical visors needed in the fight against COVID-19, with the goal of producing a minimum of 1 million pre-cut visors.



Fuggles & Warlock Craftworks pivoted their business practice to begin offering contactless, one-day, front door delivery.



bioLytical Laboratories Inc. received over \$600k in funding from the National Research Council of Canada Industrial Research Assistance Program to develop a one-minute COVID-19 antibody test.



Richmond eatery Goodbowl launched a phone app for consumers to buy food items from restaurant suppliers instead of grocery stores.



Lulu Island Winery has been turning its wine into highly concentrated hand sanitizer for donation and to purchase.




Organic Ocean pivoted from selling to high-end restaurants to refrigerated, contactless, home deliver, at wholesale prices.



The Great Little Box Company teamed up with the University of Saskatchewan to design an innovative sturdy, inexpensive emergency bed made from cardboard that can be used in public health emergencies.



London Drugs has created Local Central, an area within their stores dedicated to selling local small business products.



**"Richmond Economic Development, you guys have been awesome with keeping us posted on all things Richmond. Especially during this time, highlighting local businesses is so important! So thank you."
-Caroline Chiu, Richmond resident**

**"Thanks for the mention Richmond Economic Development. Proud to be among great company in Richmond!"
- Salt Spring Coffee**

**"We are very honoured to be recognized by our local community during this unprecedented time. Remaining innovative and forward thinking is key for our industry. Thank you for all the support over the past few months and always!"
- Levy Show Service Inc.**



facebook.com/richmondedo



twitter.com/richmondedo



economicdev@richmond.ca



www.businessinrichmond.ca





To: General Purposes Committee
From: Peter Russell, RPP
Director, Sustainability and District Energy
Re: Tilbury Phase 2 LNG Expansion Project

Date: June 1, 2020
File: 10-6125-30-010/Vol 01

Staff Recommendation

That the comments outlined in the staff report titled “Tilbury Phase 2 LNG Expansion Project”, dated June 1, 2020, from the Director, Sustainability and District Energy be endorsed and submitted to the BC Environmental Assessment Office and the Impact Assessment Agency of Canada to support the provincial and federal environmental assessments.

Peter Russell, RPP
Director, Sustainability and District Energy
(604-276-4130)

Att. 3

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Engineering Transportation	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

This report introduces the FortisBC, Tilbury Phase 2 Liquefied Natural Gas (LNG) Expansion Project and summarizes the provincial and federal environmental assessment processes currently underway. This report also recommends that comments regarding this project be endorsed and submitted to the BC Environmental Assessment Office and the Impact Assessment Agency of Canada to support the provincial and federal environmental assessment phases.

This report supports Council's Strategic Plan (2018-2022), Strategy #2: A Sustainable and Environmentally Conscious City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.

2.1 Continued leadership in addressing climate change and promoting circular economic principles.

Analysis

FortisBC (Fortis) is proposing the second and final expansion of its existing LNG facility located on Tilbury Island, in the City of Delta (Attachment 1). The proposed upgrades (the Project) will include a new LNG storage tank (and related infrastructure) to increase LNG storage capacity at the site to 163,000 m³ and LNG production capacity by more than 50%. Fortis is planning to begin construction within two years and intends to commission a marine jetty, also currently pursuing an environmental assessment to access offshore LNG markets by 2028. Fortis notes that it does not anticipate future expansion at this site beyond this Project. Fortis operates and maintains a network of LNG transmission lines throughout Metro Vancouver, including a transmission line in Richmond that crosses the Fraser River, west of Nelson Road. No alterations or upgrades are proposed for this transmission line or within the City's limits.

The Project's storage and liquefaction capacity triggers a review under BC's *Environmental Assessment Act* and the federal *Impact Assessment Act* to determine if environmental certificates are required. Fortis prepared an Initial Project Description that was accepted by the BC Environmental Assessment Office and Impact Assessment Agency of Canada in February 2020 to initiate the provincial Early Engagement phase and federal Planning phase of the environmental assessment processes. The purpose of these early phases is to identify key issues and concerns early in the processes to better inform a plan for resolution during the assessments. Illustrations of the provincial and federal environmental assessment timelines are included in Attachment 2. The timelines for these preliminary assessment phases have been extended in consideration of COVID-19 and continue to be assessed by the agencies to support meaningful consultation.

Liquefied Natural Gas Expansion on Tilbury Island

The LNG facility on Tilbury Island has been operational since 1971. The original facility included a single storage tank (still in place), related infrastructure and a truck loading bay. The original facility was capable of producing 60 tonnes of LNG daily and had a LNG storage capacity of 28,000 m³. Phase 1 (A and B) facility upgrades began in 2014. Phase 1A improvements, completed in 2018, included the construction of a new storage tank and truck loading facilities to increase LNG storage and production. Fortis is currently working on Phase 1B improvements which include commissioning the new storage tank and new transmission lines between Tilbury Gate Station and the Tilbury LNG facility. Phase 1B upgrades are expected to be operational by 2022. Phase 2 upgrades include decommissioning the facility's original storage tank and constructing a new tank. The final configuration will include two final storage tanks if approved. Phase 1 improvements were authorized by the provincial government in 2013, under the *Utilities Commissions Act*, and did not trigger provincial or federal environmental assessments under the BC *Environmental Assessment Act* or the federal *Canadian Environmental Assessment Act* at that time.

Wespac Midstream – Vancouver LLC (WesPac) is also pursuing federal and provincial Environmental Assessment Certificates to construct a marine jetty (and related infrastructure), adjacent to the Fortis site that will facilitate the shipment of LNG to offshore markets. Staff have been engaged on this project since 2015 as a Working Group member. This project is currently in the Application Review stage and staff are working with the Province to address concerns related to climate change, security and the protection of the community's dike infrastructure. The BC Environmental Assessment Office has deliberated on the technical information presented by Wespac during the assessment and is preparing a draft referral package to inform provincial and federal decisions. Staff will keep Council informed on the status of this project.

Local Government Consultation and Staff Comments

The BC Environmental Assessment Office and the federal Impact Assessment Agency are leading a coordinated approach to obtain comments from the public (and stakeholders) regarding the Project. A 45 day public comment period will be held between June 1, 2020 and July 16, 2020. Two virtual Open Houses are also planned on June 18 and 23, 2020 that will include presentations from each agency and Fortis. Staff will attend the virtual Open Houses. The City has also been invited to provide general comments, concerns and issues related to the project. Comments and concerns will not be limited to these events, the City will have ample opportunity to submit future concerns or comments if needed.

Staff have reviewed Fortis' Initial Project Description and are seeking Council's endorsement for the following comments to be forwarded to the BC Environmental Assessment Office and the Impact Assessment Agency of Canada:

- The City is concerned with the proposed volumes of LNG that will be stored at the facility should the Project be approved. The volatile material poses a risk to the community and Fraser River in terms of spills, accidents, malfunctions and potential security breaches.

- The Project represents another industrial upgrade that is further contributing to the industrialization of the Fraser River estuary and its sensitive ecosystems. There are currently a number of major projects (proposed and/or approved), at or near the Fraser River estuary including the Robert's Bank Terminal 2 Project, the Delta Grinding Facility Project, the Vancouver Airport Fuel Delivery Project and the George Massey Tunnel Replacement Project (Attachment 3). The City relies on the ecosystem functions of the Fraser River estuary to reduce the impacts of flooding and improve the community's quality of life. Recent updates under BC's *Environmental Assessment Act* and federal *Impact Assessment Act* have not been tested and have the potential to not adequately mitigate the long-term cumulative effects of climate change caused by the Project and others.
- The Project does not align with Metro Vancouver's regional air quality objectives. Richmond is concerned that the Project will impact the region's air quality during construction and operation as volumes of contaminants (nitrogen oxides, carbon dioxide, sulfur dioxide, hydrocarbons, and particulate matter) are expected to be released from the Project's related infrastructure.
- Fortis is proposing to increase LNG production and storage capacity, and is preparing their operations to include marine shipping to offshore markets. Staff have concerns with the potential impacts that increased noise, light and atmospheric pollution will have on local wildlife and the community.
- It is unclear if the City's road network will be impacted from increased LNG truck movements as a result of the Project. Fortis states that up to 500 temporary workers will be required to access the site during construction. A Traffic Impact Assessment is required to determine whether or not the Project should proceed until the long-term improvements to the George Massey Crossing, as well as the Steveston Highway and Highway 17A interchanges, are complete.
- The site is currently located on land in the City of Delta that is designated for industrial uses. Fortis will be required to occupy additional land outside of the proposed project footprint for temporary construction laydown and staging areas. Land within the provincial Agricultural Land Reserve should not be developed to support these areas during construction.
- This project does not align with local, provincial national strategies to reduce greenhouse gas emissions and reduce BC's economic reliance on fossil fuels. Fortis should be directed to develop alternative and renewable fuel sources that have less socio-economic and environmental impacts than drilling, processing and transporting LNG.
- Fortis states that additional work will be required to commission the marine jetty, should that project be approved (under separate environmental assessment). The City expects that this additional work be detailed as part of this Project so potential, related issues can be fully assessed.

Next Steps

If endorsed, the comments above will be submitted to the BC Environmental Assessment Office and the federal Impact Assessment Agency to inform the early phases of the environmental assessment processes. The BC Environmental Assessment Office and federal Impact Assessment Agency will produce a joint report following the public comment period to summarize key

concerns following the public consultation period. Fortis then has up to one year to consider these concerns and prepare a Detailed Project Description to inform a regulatory readiness decision. The agencies will have numerous options at that time including requesting revisions to the Detailed Project Description, terminating the project from the assessment process, issuing an exemption, and proceeding with environmental assessments. Notice of a future decision will be posted publicly. Staff will provide updates accordingly.

Financial Impact

None.

Conclusion

FortisBC has been executing Phase 1 (A and B) upgrades at its LNG facility on Tilbury Island since 2014 to increase storage and production capacity. Fortis is now proposing Phase 2 construction to commission the Phase 1 improvements and prepare to ship LNG to offshore markets, with connection to a marine jetty.

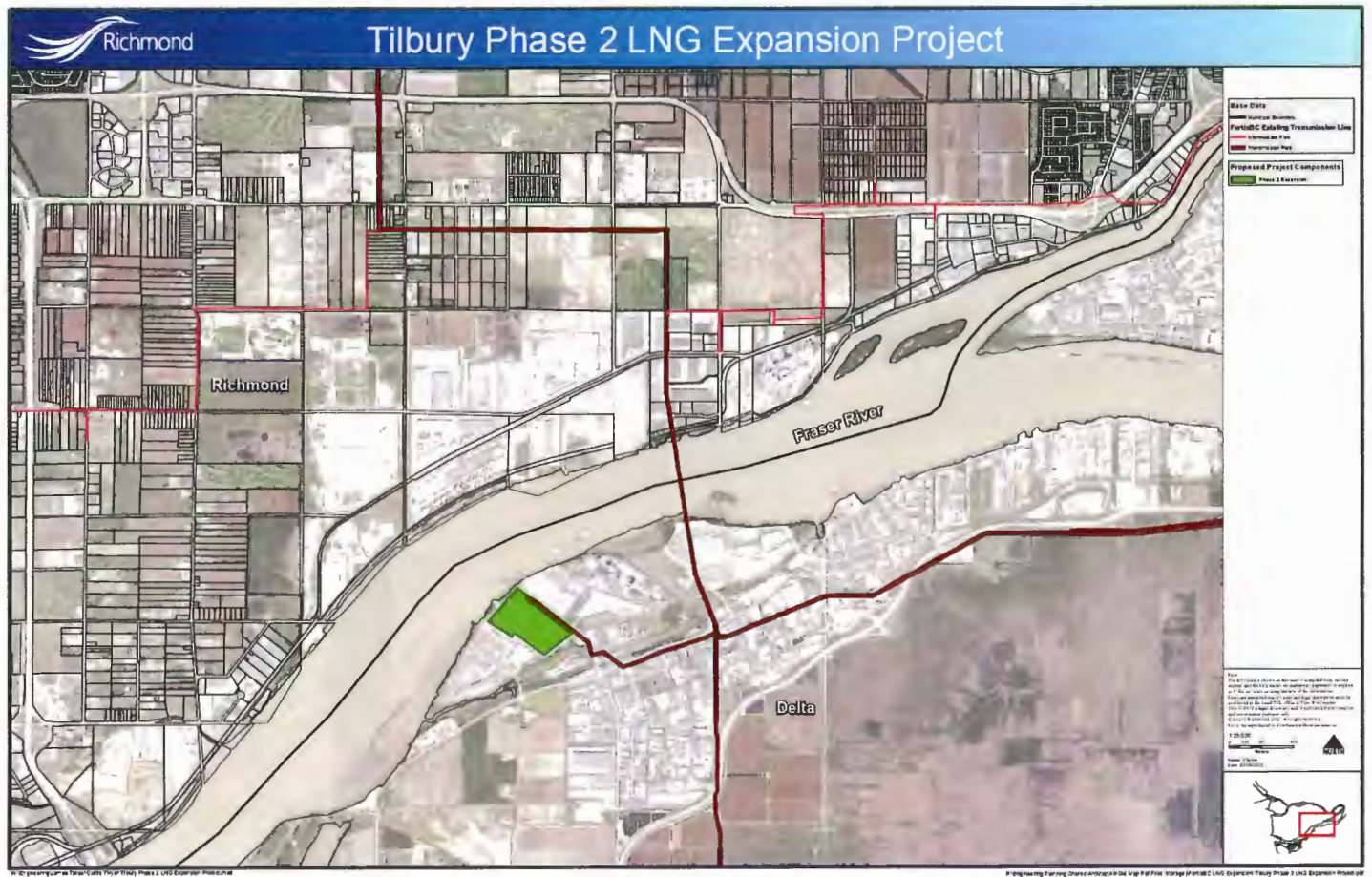
Staff are seeking Council's endorsement of the comments detailed in this report, in response to Fortis' Initial Project Description. Staff will remain engaged during these early stages and will participate on the Technical Advisory Committee, should the Project proceed to provincial and federal environmental assessments.



Chad Paulin, M.Sc., P.Ag
Manager, Environment
(604-247-4672)

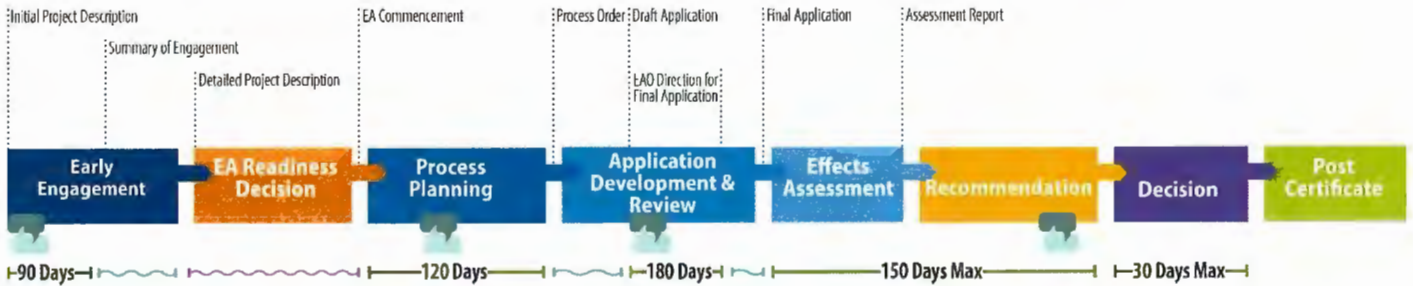
- Att. 1: Tilbury Phase 2 LNG Expansion Project Site Location
- 2: Provincial and Federal Environmental Assessment Timelines
- 3: Locations of Projects and Transportation Corridors

Attachment 1: Project Site Location

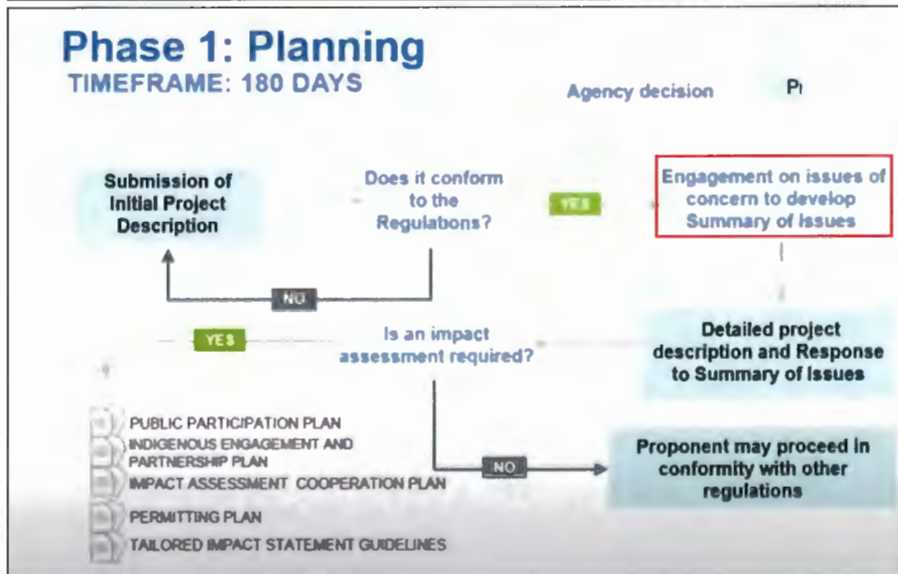


Environmental Assessment (2018) Timeline

Timeline
 ~ EAO Time
 ~ Proponent Time
 ~ Public Engagement & comment Period



We Are Here



We Are Here

Attachment 3 - Locations of Projects and Transportation Corridors





City of Richmond

Report to Committee

To: General Purposes Committee **Date:** June 9, 2020
From: Cecilia Achiam **File:** 12-8080-12-01/Vol 01
 General Manager, Community Safety
Re: **Soil Use for the Placement of Fill Application for the Property Located at 5800 No. 7 Road (Mahal)**

Staff Recommendation

That the 'Soil Use for the Placement of Fill' application submitted by Paul Mahal (the "Applicant") proposing to deposit soil on the property located at 5800 No. 7 Road to transition a former cranberry bog to allow for the growing of vegetables and ornamental trees be authorized for referral to the Agricultural Land Commission (ALC) for the ALC to review and determine the merits of the proposal from an agricultural perspective as the Applicant has satisfied all of the City's current reporting requirements.

Cecilia Achiam
 General Manager, Community Safety
 (604-276-4122)

Att. 6

REPORT CONCURRENCE	
ROUTED TO:	CONCURRENCE
Engineering	<input checked="" type="checkbox"/>
Policy Planning	<input checked="" type="checkbox"/>
Sustainability	<input checked="" type="checkbox"/>
Transportation	<input checked="" type="checkbox"/>
SENIOR STAFF REPORT REVIEW	INITIALS:
APPROVED BY CAO 	

Staff Report

Origin

The City of Richmond is in receipt of a ‘Soil Use for the Placement of Fill’ application for the property located at 5800 No. 7 Road (the “Property”). The intent of the application is to deposit soil for the purpose of transitioning a former cranberry bog, which the Applicant’s agrologist-of-record has advised is agriculturally limited due to “soil wetness [...], undesirable soil structure [...], and fertility limitations due to high acidic soils and nutrient deficiencies.” The Applicant intends to grow vegetables and ornamental trees following completion of the project.

The Property is situated within the Agricultural Land Reserve (ALR) and is subject to provisions of the *Agricultural Land Commission Act* and its regulations (the “Regulations”), and the City’s *Soil Removal and Fill Deposit Regulation Bylaw No. 8094* (the “Soil Bylaw”).

Pursuant to applicable Provincial regulations, a ‘Soil Use for the Placement of Fill’ application requires authorization from local government in order to be referred to the Agricultural Land Commission (ALC) for their review and approval. As such, this application must be submitted to the City for review and a decision from Council. Should the application be referred to the ALC and should it subsequently be approved by the ALC, the Applicant would be required to satisfy the City’s requirements outlined in the Soil Bylaw before a soil deposit permit would be issued by the City.

The Applicant has satisfied all of the City’s referral requirements for submission to the ALC.

This report supports Council’s Strategic Plan 2018-2022 Strategy #2 A Sustainable and Environmentally Conscious City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City’s unique biodiversity and island ecology.

2.1 Continued leadership in addressing climate change and promoting circular economic principles.

2.3 Increase emphasis on local food systems, urban agriculture and organic farming.

Analysis

The Property is zoned AG1 (Agriculture). The Property contains an Environmentally Sensitive Area (ESA); however, the Applicant’s proposal will not disturb the ESA. The current zoning permits a wide range of farming and compatible uses consistent with the provisions of the *ALC Act* and *Regulations* and the City’s *Official Community Plan* and *Zoning Bylaw*. The Applicant is proposing to deposit 110,000 cubic metres of soil over approximately 9.0 ha of the 29.16 ha Property at an average depth of 1.3m.

Uses on Adjacent Lots

- To the North: ALR – Golf Course
- To the East: ALR – Residential
- To the South: ALR – Land is in agricultural production
- To the West: ALR – Land is in agricultural production

Table 1: Existing Information and Proposed Changes for the Property

Item	Existing
Owner(s)	Mahal Farms Ltd. (Paul Mahal; Nick Mahal; Kalvinder Mahal; and Satwant Grewal)
Lot Size	29.16 ha (72.05 acres)
Applicant	Paul Mahal
Authorized Agent	Carly Wilson, Hexcel Construction Ltd. (the “Agent”)
Authorized Consultant	Jessica Stewart, P. Ag., GIT (Madrone Environmental Services Ltd.)
Current Land Uses	A portion of the Property is currently under production (nursery and vegetable crops)
Proposed Land Uses	Transition former cranberry field to vegetable farm and to grow ornamental trees
Official Community Plan Designation	Agriculture
ALR Designation	Property is within the ALR
Zoning	AG1
Riparian Management Area (RMA)	Yes – No disturbance proposed
Environmental Sensitive Area (ESA)	Yes – No disturbance proposed

Project Overview

The Applicant’s family has farmed the Property since 1949 and is applying to deposit 110,000 cubic metres of soil over approximately 9.0 ha of the 29.16 ha Property at an average depth of 1.3m. The objective is to improve the agricultural capability to transition a field formerly used to grow cranberries to soil-based vegetable farming and ornamental trees. This would expand the farming operations on the Property which currently includes a nursery and vegetables crops.

The Applicant has provided a Farm Plan (the “Farm Plan”) and a Soil Placement Plan (the “Placement Plan”) developed by a qualified agrologist, Jessica Stewart, P. Ag., GIT, Madrone Environmental Services Ltd. (the “Agrologist”).

The Farm Plan (Attachment 1) summarizes the following:

- Property assessment (ie. current soil and agricultural conditions);

- Soil importation and land preparation; and
- Proposed crops and reason(s) for diversification.

The Placement Plan (Attachment 2) summarizes the following:

- Site description and current land use;
- Land capability assessment (ie. current soil conditions);
- Agrologist recommendations regarding soil placement and management of the native topsoil which includes the stockpiling and re-use of the native topsoil;
- Current hydrology;
- Post-fill agricultural capability;
- Recommendations to ensure the project is satisfactorily completed; and
- Summary of the Agrologist's recommendations.

The proposed soil deposit area has remained fallow for the past three to four years. The Agrologist has advised that the current conditions in the proposed soil deposit area are considered to be excessively wet with the soil deemed to be highly acidic and nutrient poor. The Farm Plan states that should the project receive approval and the appropriate soil be imported/deposited as proposed, the addition of the soil will improve the agricultural capability from 4W limitation to a Class 2WF. As per the Agrologist, Class 2WF corresponds to minor limitations due to excess wetness and fertility. The fertility limitations can be further improved, as is proposed and noted in the reports, with soil amendments and careful soil testing.

The Applicant has advised that the project will take two years to complete. The timeline for completion is heavily dependent on ensuring the appropriate soil – as recommended by the Agrologist – is sourced to complete the project. Soil sourcing has not commenced at this time due to the considerable period of time involved with respect to the soil deposit application process and seeking approval from the City and ALC.

While there is no requirement in City bylaws, the Applicant and his Agent, Hexcel Construction, have offered an additional \$100,000 security bond (Attachment 3) to be retained by the City until the Farm Plan has been implemented. The City will not return the bond until such time as the Agrologist has provided a report to the City confirming implementation of the Farm Plan.

Staff Comments

The proposal aligns with a number of Council endorsed strategies and direction including concerns about the use of Richmond soil. Other objectives satisfied by the project are described as follows:

- The Applicant's desire to utilize Richmond soil where possible provides for a reduction in carbon emissions as there will be a considerable decrease in mileage as trucks will not be traveling back and forth from City approved development projects to the Fraser Valley as is common practice;
- Following completion of the project, the Applicant's Farm Plan will include expansion of current vegetable growing operations in Richmond by up to 22 acres;

- The proposal to raise the Property to improve the agricultural viability is consistent with the City’s current Flood Protection Management Strategy which identifies raising land levels within all areas of the City as a key overall long-term objective. At the January 27, 2020 Regular Council Meeting, Council made a referral for staff to review the FPMS and provide comments with regard to the raising of land, specifically as it relates to agricultural land and agricultural viability. Staff are preparing a response to this referral;
- The Applicant will be stockpiling and utilizing native topsoil to complete the project; and
- The Applicant will not be impacting the large portion of the Property designated as an Environmentally Sensitive Area

Richmond Food Security and Agricultural Advisory Committee (FSAAC) Consultation

The Applicant presented the proposal to the FSAAC on May 21, 2020. The FSAAC unanimously supported the proposal and passed the following motion:

That the Food Security and Agricultural Advisory Committee support the Soil Use for Placement of Fill Application at 5800 No. 7 Road subject to the applicant providing a performance bond equal to the revenue from tipping fees minus the cost to implement the farm plan.

Agricultural Considerations

The City has been advised that cranberry production ceased on the Property in 2016 as the Owner was no longer able to sell his crop. The owners have since determined that they want to move away from cranberry farming and diversify operations. As an alternative to cranberries, the owners wish to expand the farm and grow vegetable crops and ornamental trees.

The Farm Plan identifies that the top 30 cm of native topsoil will be stripped and stockpiled to be used to cap the imported soil. The stripping and stockpiling would be completed prior to importation of soil to the site. This practice would be similar in nature to the Council endorsed project currently underway at 14791 Westminster Highway (Sixwest Holdings). Soil deposit permit (the “Permit”) requirements would dictate that the Agrologist oversee the stripping and stockpiling to ensure the existing topsoil is not degraded.

Following completion of the proposed soil deposition, the Agrologist has noted that manure or compost in addition to lime may be required to improve and amend the pre-existing soil due to deficiencies in nutrients and soil acidity from the previously noted cranberry farming. Following project completion, the improvements to the Property will provide for a more diversified farm with more crop types to be sold locally on the Property.

In addition, the Applicant has submitted a Technical Memorandum (the “Soil Memo”) regarding soil source sites (Attachment 4). The Soil Memo highlights that the objective is to utilize available Richmond soil to complete the project and outlines the benefits to using Richmond soil. As per the Soil Memo, “[o]btaining soils from more distant sources comes with significant environmental and social costs, such as increased vehicle emissions due to extensive travel...” It also provides additional information on soil types suitable to complete the project as well as the types of soil that should not be imported and source sites that should be avoided.

Bruce McTavish (MSc, MBA, PAg, RPBio) has reviewed the proposal from an agricultural perspective on behalf of the City and has no concerns regarding the soil assessment as it relates to the current conditions of the Property. In addition, Mr. McTavish has confirmed that the proposal meets all requirements of *ALC Policy P-10 - Criteria for Agricultural Capability Assessments*.

Drainage & Geotechnical Considerations

The Applicant has provided a Technical Memorandum (Drainage and Suitability of Excess Water Management Options) outlining water management options for the Property. The memorandum outlines current drainage issues for the Property and water management options for the Property.

As per the memorandum (Attachment 5):

“Seasonal high water table at, near or above ground surface would restrict land application of nutrient sources both during times of water table being above ground surface, but also during periods of generally high water table whereby precipitation /infiltration/ dispersion would result in direct transmission of nutrients to groundwater/nearby watercourse.”

In the opinion of the author of the memorandum (Thomas R. Elliot, PhD, P. Ag., P. Geo – Madrone Environmental Services Ltd), soil placement offers the best opportunity to improve the Property and current soil conditions. In addition, the City’s current Flood Protection Management Strategy identifies raising land levels within all areas of the City as a key overall long-term objective, especially where such raising meets other objectives, such as agricultural viability. City Engineering staff have reviewed and are satisfied with the Placement Plan. Staff do not anticipate any negative impacts to City infrastructure or neighbouring properties following completion of the project.

A geotechnical report has not been required by the City as the soil deposition area will have a substantial setback of 6+ metres from property lines. Permit conditions will provide staff the latitude to request a geotechnical report at any time should the City consider it necessary.

Environmental Considerations

The proposed soil deposition area is outside of the Riparian Management Area located along No. 7 Road. There is no RMA within proximity to the proposed access point on Westminster Highway. Soil placement is not proposed to occur within an ESA located east of the soil deposition area (see Figure 3 within the Placement Plan). In addition, no trees will be impacted due to soil deposit operations.

As per Permit conditions, all work undertaken in or around a watercourse, must be completed in compliance with the *Water Sustainability Act*, under the guidance of a Qualified Environmental Professional (QEP). The City will require that erosion and sediment control measures (ESC) be installed and inspected by a QEP, if deemed necessary by staff.

Financial Costs and Considerations for the Applicant

Due to ongoing development within the City of Richmond and the Lower Mainland, developers and contractors must find a location (the “End Site”) that will accept soil that needs to be excavated and removed off-site to facilitate development. Due to such demand, a market has been created in which End Site owners can generate income via tipping fees. Such fees are variable depending on the location, type and volume of soil, and season. Contractors are willing to pay a premium based on the location (the “Source Site”) of the soil to the End Site in order to reduce considerable trucking costs.

Although End Site owners derive income due to such tipping fees, soil deposit projects are not without significant costs to the Permit holder. It is anticipated that this project may generate approximately \$1.3 million in tipping fees. However, the income derived through tipping fees may be offset by costs estimated to be in excess of \$940,000 due to upfront reporting expenditures, site preparation, project management (ie. soil monitoring), daily personnel and equipment costs, drainage upgrades, and final reporting expenses. An estimate of these costs has been provided by the Applicant and is provided in Attachment 6.

Following FSAAC’s motion to support the proposal with the condition that the Applicant provide a bond in an amount estimated to be the potential in profit via tipping fees, the Agent has agreed to provide an additional \$100,000 security bond. This bond will be held by the City until the Farm Plan is implemented. Staff have concluded that the \$100,000 bond, while not the sum requested by FSAAC (estimated to be \$400,000), is appropriate given that the Applicant will be expected to provide a significant performance bond to the ALC (see Security Bonds section). In addition, the estimated difference between cost and profit are volatile as tipping fees and project costs could vary due to unforeseen circumstances, especially due to the long duration of the project. This bond is not a requirement of the City’s Bylaws but rather a submission from the Applicant that recognizes their commitment to the project and to farming this portion of Property.

Road and Traffic Considerations

A Traffic Management Plan (TMP) has been submitted to and reviewed by Transportation staff. Staff are satisfied with the TMP.

Soil Deposit Permit Requirements and City Inspection and Project Oversight Protocols

Should the proposal receive ALC and City approval, City staff will prepare a comprehensive Permit that sets out a number of conditions, including but not limited to:

- Oversight by a professional agrologist;
- Source site inspection requirements;
- On-site monitoring and reporting requirements;
- Requirements for protection of the RMA along the western property line;
- Measures needed to eliminate impacts, including drainage, to neighbouring properties and City infrastructure;
- Permitted hours/days of operation;

- An approved Traffic Management Plan; and
- Security deposits (further explained below).

Site monitoring, source site inspection and Qualified Professional reporting requirements are intended to be similar to the requirements for the Sixwest Holdings project. This will include an on-site monitor inspecting each load of soil prior to deposition on the Property. The Agrologist will be required to inspect and approve all source sites and maintain an accurate daily log of trucks depositing soil on the site. At the sole discretion of the City, alternate measures may be required (i.e. survey) in order to determine the volume of soil deposited on the Property.

In addition to the expected reporting requirements of an agrologist or other qualified professionals to the City and ALC, City staff will maintain proactive inspection and enforcement on the Property that will include the following:

- multiple site inspections per week of the Property at the onset of the project to ensure conditions of the Permit are being maintained;
- weekly site assessments to continue to be undertaken when soil importation is underway to ensure the Permit conditions are respected;
- meet on-site with the site supervisor a minimum of two times per month;
- maintain communication with the Agrologist and Agent on a regular basis;
- review reports to ensure conditions of the Permit are being satisfied; and
- advise the ALC of concerns relative to the project and request that ALC staff undertake inspections to ensure compliance with the approval conditions when deemed necessary by City staff.

Security Bonds

Should the soil deposit project receive approval, the City will require that the Applicant provide the following security bonds:

- \$5,000 pursuant to s. 8(d) of the current *Boulevard and Roadway Protection Regulation Bylaw No. 6366* to ensure that roadways and drainage systems are kept free and clear of materials, debris, dirt, or mud resulting from the soil deposit activity;
- \$10,000 pursuant to s. 4.2.1 of the current *Soil Removal and Fill Deposit Regulation Bylaw No. 8094* to ensure full and proper compliance with the provisions of this Bylaw and all other terms and conditions of the Permit; and
- In addition to the security bonds detailed above, the Applicant has also proposed a \$100,000 bond to the City for implementation of the Farm Plan. Beyond completion of the soil project, this bond will provide security that the Farm Plan will be implemented.

In addition to the security bonds provided to the City, the ALC has the authority to require a performance bond to ensure that all required mitigation and monitoring measures are completed. The bond required by the ALC is also intended ensure the rehabilitation of the Property in the event the project is not completed. ALC performance bonds and the approved volumes from four previous approvals for projects within the City are as follows:

- \$70,000 – 17,500m³ (Athwal - approved May 2020)
- \$160,000 – 48,000m³ (City of Richmond - approved June 2017)
- \$290,000 – 140,000m³ (Sixwest Holdings - approved January 2017)
- \$500,000 – 102,080m³ (Sunshine Cranberry Farms Ltd. - approved January 2014)

As per the Permit conditions, security deposits will not be returned until all conditions as stated in the Permit and the ALC approval are satisfied in their entirety, to the satisfaction of the City. This will include confirmation that the Farm Plan has been completed as per a final report from the owner's agrologist-of-record. City staff is to conduct a final inspection and receive confirmation from the ALC that the project has been completed as per ALC approval prior to closing the file.

Alternatives to Council Approval

Should Council not authorize staff to refer the proposal to the ALC for their review and decision; the application will be considered to be rejected. Council may add additional recommendations for ALC consideration and/or conditions within a referral to the ALC, similar to conditions already provided within this report.

Financial Impact

None.

Conclusion

Staff is recommending that the 'Soil Use for the Placement of Fill' application for the Property located at 5800 No. 7 Road be endorsed and referred to the ALC to determine the merits of the proposal from an agricultural perspective as the Applicant has satisfied all of the City's current reporting requirements.



Mike Morin
Soil Bylaw Officer, Community Bylaws
(8625)



Carli Williams, P.Eng.
Manager, Business Licence and Bylaws
(4136)

- Att. 1: Farm Plan (27 May 2020)
 2: Soil Placement Plan (18 Mar 2019)
 3: Letter of Commitment re. Farm Plan security bond (03 Jun 2020)
 4: Technical Memorandum re. Soil Source Sites (07 Jan 2020)
 5: Drainage & Suitability of Excess Water Management Options Technical Memorandum (27 Jan 2020)
 6: Project Cost Table (Feb 2020)



FARM PLAN

**5800 No. 7 Road
Richmond, BC**

FOR:

**Mr. Paul Mahal
Mahal Farms Ltd.
5800 No. 7 Road, Richmond B.C.**

BY:

Jessica Stewart, P.Ag., P.Geo.

Madrone Environmental Services Ltd.

March 18, 2019

Revised: May 27, 2020

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TABLE OF CONTENTS

1	INTRODUCTION	1
2	AREA DESCRIPTION AND FIELD ASSESSMENT.....	2
2.1	LOCATION AND SITE DESCRIPTION	2
2.2	ZONING AND ADJACENT LAND USES	4
2.3	LANDFORM, TOPOGRAPHY & DRAINAGE	5
2.4	NATIVE SOILS AND LAND CAPABILITY FOR AGRICULTURE.....	6
3	SOIL PLACEMENT, POST-FILLING LAND PREPARATIONS	7
3.1	SOIL IMPORTATION.....	7
3.2	LAND PREPARATION.....	8
4	FARM PLANNING.....	8
4.1	GARLIC CROP	9
4.1.1	GARLIC PLANTING PLAN	10
4.1.2	IRRIGATION FOR GARLIC PLANTS.....	12
4.1.3	WEEDS, PESTS, AND DISEASE MANAGEMENT.....	12
4.1.4	GARLIC HARVESTING	13
4.2	CARROT CROP.....	13
4.2.1	CARROT PLANTING PLAN	15
4.2.2	IRRIGATION.....	15
4.2.3	WEEDS, PESTS, AND DISEASE MANAGEMENT.....	16
4.2.4	CARROT HARVESTING	18

4.3	IRRIGATION AND WATER SOURCES.....	19
5	FARM ESTABLISHMENT COSTS	20
5.1	GARLIC	20
5.2	CARROTS.....	21
5.3	OTHER COSTS – APPLICABLE TO ALL CROPS.....	22
6	CONCLUSIONS	23
APPENDIX 1		
COST TABLES – CROP ESTABLISHMENT AND HARVESTING.....		
APPENDIX 2		
MAPS		

LIST OF PHOTOS

PHOTO 1. WET HARVEST OF CRANBERRIES ON THE PROPERTY. DATE OF PHOTO UNKNOWN, VIA THE BC CRANBERRY MARKETING COMMISSION.....	3
PHOTO 2. LOOKING DUE EAST ACROSS THE FORMER CRANBERRY BOG. THIS PHOTO IS FROM EARLY OCTOBER DURING A PARTICULARLY WARM AND DRY PERIOD.	4
PHOTO 3. PANORAMIC VIEW OF THE FIELD AND GREENHOUSES SITUATED JUST WEST OF THE CENTRE OF THE PROPERTY AT WESTMINSTER HIGHWAY. THIS IMAGE IS FROM 2017 VIA GOOGLE™MAPS.	5
PHOTO 4. SPANISH ROJA GARLIC VARIETY FROM THE MANITOBA, CANADA GARLIC “SEED” SELLER JOHN BOY FARMS. PHOTO COURTESY OF JOHN BOY FARMS AT: HTTPS://GARLICSEED.CA/COLLECTIONS/ALL-VARIETIES/PRODUCTS/SPANISH-ROJA	10
PHOTO 5. RED CARROTS USED IN INDIAN CUISINE.	14
PHOTO 6. PURPLE CARROTS FOUND IN NORTHERN INDIA.	14

LIST OF FIGURES

FIGURE 1. IRRIGATION CANAL SITUATED THROUGH THE CENTRE OF THE PROPERTY. OVERHEAD SPRINKLER SYSTEMS AND DRIP IRRIGATION CAN BE CONNECTED TO THIS. MAP IMAGERY FROM IMAPBC 4.0.....	19
FIGURE 2. RICHMOND'S TOP CROPS BY LAND USED IN THEIR PRODUCTION, 2011.....	24

FARM PLAN

5800 No. 7 Road Richmond, BC

1 Introduction

Madrone Environmental Services Ltd. (Madrone) was retained by Mr. Paul Mahal of Mahal Farms Ltd. (Mahal Farms) to prepare a Farm Plan for his property located at 5800 No. 7 Road in Richmond, BC (PID: 007-436-815). The Farm Plan will be submitted to the City of Richmond and the Agricultural Land Commission (ALC) as part of a Soil Deposit Permit Application.

The proposed vegetable farm will be established in approximately 9.0 ha of land in the northwest corner of the 29.5 ha property following improvement through proposed soil importation. Madrone has prepared a separate Soil Placement Plan that is intended to be read in conjunction with this farm plan.

The soil placement plan proposes to import approximately 110,000 m³ of good-quality fill over 9.0 ha of the property to improve soil wetness (predominantly 4W limitation), undesirable soil structure (3D limitation), and fertility limitations due to highly acidic soils and nutrient deficiencies (4F limitation). The intent of soil placement is to improve the aforementioned conditions that limit agricultural capability. After the addition of soil which will raise the existing land surface by an average of 1.3 m, followed by soil profile construction as Mr. Butt, P. Ag. and I have recommended, the agricultural capability will improve to an estimated 2WF.

The site of the proposed vegetable farm was previously used for cranberry farming up until 2016. After improving the agricultural capability of the land by soil importation, Mr. Mahal has proposed the following farm plans in this area instead of cranberries:

- Ornamental trees;
- Indian Vegetable varieties such as Indian carrots, peppers, squash, garlic, eggplant, and bhindi (okra);
- Other locally grown vegetables such as kale, sweet corn, and peas.

For this farm plan, I have selected two vegetable varieties to demonstrate establishment effort and costs; garlic and carrots. Mr. Mahal can grow multiple vegetable crops if desired or rotate in new crops after 2-3 seasons. Diversifying crop production can help the viability of the overall vegetable farm operation.

Paul Mahal of Mahal Farms is a third-generation farmer. His family has farmed the property since 1949. There are currently other active farming ventures on site – these are described in this report as well (Section 2). The property has active farm status with BC Assessment.

2 Area Description and Field Assessment

2.1 Location and Site Description

The farm will be established in the northwest corner of the property at 5800 No. 7 Road in Richmond, BC. The property is situated approximately 6.6 km east of Richmond centre on Lulu Island (**Figure 1, Appendix 2**). The legal description of the property is: Block 4N Part1 S Section 2 Range 5W Land District 36 Except Plan 27718. The Property Identification number is 007-436-815.

The northwest corner of the property was previously farmed for cranberries. The cranberries were sold in the Ocean Spray cranberry collective (**Photos 1 and 2**). To facilitate cranberry farming, there are berms (or dykes) established around the perimeter, as well as an irrigation canal/ditch on the south side of the proposed farm area (to flood the field as a wet harvest). As a legacy of cranberry farming, the native soil was found in our soil testing to be very acidic and severely deficient in both nitrogen and phosphorous. Another legacy of this farming activity is the diversity of mulches that were placed on the soil, including wood chips and sand.

The northeast corner of the property is approximately 5.1 ha in extent and is designated as an Environmentally Sensitive Area (ESA) by the City of Richmond, specifically “Old Fields and Shrublands”. This area was previously farmed for trees (abutting the east side of the cranberry field). There are no plans to further develop this portion of the property. City

of Richmond mapping¹ also shows that the southeast portion of the property is still situated in the ESA but as of 2018 is being farmed for ornamental trees.

Approximately 1.7 ha of land in the northern parcel will not be farmed due to City of Richmond 15 m Riparian Management Area (RMA) setbacks from the watercourse (ditch) along No. 7 Road and the irrigation canal located through the centre of the property.



PHOTO 1. WET HARVEST OF CRANBERRIES ON THE PROPERTY. DATE OF PHOTO UNKNOWN, VIA THE BC CRANBERRY MARKETING COMMISSION².

The remaining southern half of the property is actively farmed by either Mahal Farms or is leased to local farmers. The current farming uses reported by Mahal Farms are vegetables (field and greenhouse), hedging cedar (field-based near No. 7 Road), and tree nurseries (container and caliper trees). A 2018 Google™Earth Pro image shows that at least 0.75 ha of the property is occupied by greenhouses, situated in the approximate centre of the southern portion of the lot (**Photo 3**).

¹ http://map2.richmond.ca/Html5Viewer_2_0/Index.html?viewer=RIM City of Richmond Interactive Map. Accessed November 3, 2018.

² <https://heritagebc.ca/south-asian-canadian-location/mahal-cranberry-farm-richmond/> Mahal Cranberry Farm Photo, Heritage BC. Accessed November 3, 2018.



PHOTO 2. LOOKING DUE EAST ACROSS THE FORMER CRANBERRY BOG. THIS PHOTO IS FROM EARLY OCTOBER DURING A PARTICULARLY WARM AND DRY PERIOD.

2.2 Zoning and Adjacent Land Uses

The property is 29.5 ha and is zoned AG-1 (Agricultural) according to Richmond Zoning Bylaw 2011. The property is in the Agricultural Land Reserve (ALR).

The surrounding area has a mix of uses, including but not limited to:

- Forage and cereal crops;
- Wineries (Lulu Island Winery Ltd.);
- Specialty plants (Hawaiian Botanicals and Water Gardens);
- Dense residential (to the east);
- Golf courses (to the north and northwest);
- Multiple vegetable farms (both open field and greenhouse) and tree nurseries.



PHOTO 3. PANORAMIC VIEW OF THE FIELD AND GREENHOUSES SITUATED JUST WEST OF THE CENTRE OF THE PROPERTY AT WESTMINSTER HIGHWAY. THIS IMAGE IS FROM 2017 VIA GOOGLE™ MAPS.

2.3 Landform, Topography & Drainage

The property is near level with a reported elevation (on the west side of the property) of 1.65 m above sea level (a.s.l.)³. The surrounding area is part of the Fraser River delta and features broadly flat terrain that is at or near sea level. There is no topographic land survey available for the property at this time. The dykes that surround the proposed farm area have been raised above the natural grade of the land. Using Google™ Earth Pro imagery, I have calculated the area occupied by the dykes to be approximately 1.6 ha.

There is no bedrock in this area. The floodplain is characterized by silty to silt clay loam up to 2 m thick overlying up to 15 m of deltaic and tidal flat deposits (Fraser River sediments). Post-glacial bog, swamp and shallow lake deposits have also been mapped in this area by Armstrong (1980); these are the post-glacial Salish Sediments. In our soil assessment we found that parent materials correlate well to the Fraser River sediments only.

³ http://a100.gov.bc.ca/pub/mascotw/protected/final_long.html?Q_GCM_NO=274696 Geodetic Control Marker Number 274696. GeoBC Reference Systems and Survey Monuments. Accessed November 3, 2018

There are no mapped watercourses within the property. The entire west side of the property is bound by the No. 7 Road ditch, which is classified as a watercourse and riparian management area by the City of Richmond Official Community Plan Bylaw 9000, Section 9.0⁴. The RMA has a 15 m setback, as measured perpendicular from top-of-bank. The setback is to remain free from development unless authorized by the City of Richmond⁵.

The irrigation canal on the property is not designated as a watercourse and does not have connectivity to the No. 7 Road ditch. There are no plans to alter the irrigation canal, either following soil placement or establishment of the farm. It is used for the farming ventures on the southern half of the property, as described above.

2.4 Native Soils and Land Capability for Agriculture

Madrone conducted a soil assessment in October of 2018 for our Soil Placement Plan. We found that the soils on the property correlate best with the Delta soil series of Luttermerding (1980), who described these soils as “moderately-fine to fine textured deltaic deposits and have a silt loam to silty clay loam textures”. Delta soils are poorly drained and often subject to seasonal ponding. In our soil assessment, we observed mottling caused by high seasonal water tables in the subsoil.

We found the dominant soil limitation to be excess water (W), specifically a 4W limitation due to uniformly poorly drained soils. During the growing season, the water table will be within the rooting zone, restricting the range of crops that can be successfully grown without managing water (via installing drainage systems or raising the land surface via fill).

A second, less serious limitation is present in the native soils due to a dense Btg horizon. The dense subsoils cause an impediment to root growth (“root-restricting horizon”). For the majority of the assessed area, this correlated to a 3D limitation.

As part of our agricultural assessment, we collected soil samples for soil testing (nutrients and salinity). Soil nutrient testing performed by AGAT Labs shows that there is an additional agricultural limitation of fertility (4F) due to very strong acid soils with pH

⁴ https://www.richmond.ca/_shared/assets/OCP_9000_environment34172.pdf Main 2041 Official Community Plan - Bylaw 9000 - Schedule 1. Accessed November 3, 2018

⁵ https://www.richmond.ca/_shared/assets/info_2332212.pdf Riparian Management Areas – Multifamily Residential, Commercial and Industrial Developments. Accessed November 3, 2018

ranges between 3.75 to 4.31 and nutrient deficiencies, specifically nitrogen and phosphorus. There was no salinity limitation reported for the native soils, which was unexpected given the tidal environment of the Fraser River delta. High soil salinity may exist at a deeper depth (> 1m) in this area.

To improve the agricultural capability of the land, we proposed to import soil to the site to increase the elevation of the land by an average of 1.3 m and introduce a well-draining, loose growing medium with improved fertility. We determined that soil importation will improve the Class 4W/4F/3D limitations to a Class 2WF and support a broad variety of soil-based agricultural crops, including vegetables.

3 Soil Placement, Post-Filling Land Preparations Soil

3.1 Importation

Elevating the land by an average of 1.3 m and introducing a well-draining and fertile soil over 9.0 ha corresponds to a proposed importation volume of approximately 110,000 m³. As detailed in the Soil Placement Plan report⁶, the deposited fill material should ideally be a medium-textured loam or sandy loam (less ideal but acceptable in lesser quantities: silty loam and loamy sand) with less than 10% coarse fragments which are defined as sediment sizes 2.5 cm or larger).

If the imported soil contains a high density of coarse fragments such that it presents a significant problem, then stone removal must be carried out to enable proper cultivation. Tractors and other farm machinery, including precision seeders, can be damaged by excessively stony fills. This can be avoided if loads of soils are inspected for stone content prior to off-loading on the property. In our soil placement plan, we supplied an example standard operating procedure (SOP) that could be adopted to minimize the importation of stony fills to the site.

Prior to placement, the upper 30 cm of native topsoil will be stripped and stockpiled. The depth to the native topsoil was found to vary between our soil pits on site and in some places is 20 cm deep (shallow). We have applied the 30 cm stripping parameter to acquire the majority of the topsoil but a small quantity of subsoil will ultimately be “grabbed” by the machine.

⁶ Soil Placement Plan for 5800 No. 7 Road, Richmond, BC. Madrone Environmental Services. January 22, 2019.

Following fill placement, the land will be graded with subtle 1-2% slopes to the east and west; we recommend a crown in the centre of the 9.0 ha field to facilitate a drainage divide but the contractor can vary the grading as the project proceeds to ensure the fill drains prior to topsoil placement, which will occur after the subsoil is placed.

3.2 Land Preparation

As part of land preparations prior to crop establishment, the soil will be tilled or plowed to reduce the density of the fill and topsoil. This will also provide a loose growing bed for the eventual vegetable crops. It is recommended that the plowing or tilling be completed at least one month before seeding any crops. I will describe specific pre-planting plans for each crop in Section 4 – Farm Planning.

Following tilling, soil nutrient and pH testing should be conducted over the entirety of the 9.0 ha area to determine the need for applications of manure or compost and lime⁷ due to nutrient imbalances or overly acidic or alkaline soils respectively. Manure or compost should be surface applied (preferably in the spring, though fall seeding of vegetables may dictate earlier application before heavy rains commence) and worked into the upper 20 cm to 30 cm of soil via plowing, roto-tilling or disking. Since most of the vegetables will be grown in raised beds, bedmaking will also be done after the soil is decompacted and tilled.

The City of Vancouver landfill in Delta sells nutrient-rich compost to the public, produced on site from public yard and garden waste. This organic fertilizer option is a sustainable and locally convenient option but can be expensive at \$8/m³. There are many other options for organic soil amendments, including locally sourced chicken and mushroom manure. We discourage applying wood shavings, saw dust, or wood chips as organic amendments. Except when judiciously applied as mulch on the soil surface.

4 Farm Planning

Mr. Mahal of Mahal Farms intends to convert his former cranberry field into a vegetable and ornamental tree farm. For this farm plan, I have selected two vegetable varieties (specifically from a list of desired Indian vegetable varieties that Mr. Mahal supplied to Madrone) and describe the basic establishment tasks and costs of each crop.

⁷ For lime applications, I strongly suggest utilizing a 'lime calculator' or chart to determine the lime requirements to correct acidity of the soil, based on its pH and soil buffer pH.

For simplicity, I have divided the proposed 9.0 ha farm area into three fields with an extent of 3.0 ha each (for the first year, one 3.0 ha field can remain vacant due to high initial investments costs of establishing each crop). Each plot is approximately 160 m (east-west) by 185 m (north-south). Mr. Mahal may decide to plant more than two crops and vary the proportions of each crop depending on demand, prices, and difficulty of farming a particular crop. He may also rotate the crops over a period of several years to manage nutrients and prevent the build-up of crop-specific resistant weeds and pests.

I understand that Mr. Mahal resides on the farm and has relatives also residing nearby. For costing estimates however I have assumed that Mahal Farms will hire farm workers for all farming activities, including planting, preparation, and harvest. The cost of farm labour is accounted for in this farm plan as it will form a significant portion of the establishment, maintenance, and harvesting costs. The costs of the soil placement are not included in this farm plan.

4.1 Garlic Crop

Garlic can be grown in open fields or in greenhouses. For this farm plan, I have assumed an open field environment for the garlic as the cost of greenhouses may be considerable (Quonset greenhouse structures can be affordable but will likely still require building permits, which can carry a considerable initial cost as well as time investment).

Garlic is a perennial plant that requires a cold period to initiate growth. For cool climates such as that in coastal British Columbia, garlic is generally planted during the fall and harvested the following summer. It is possible to plant in the spring in the South Coast region – this can be achieved by placing bulbs in cold storage prior to planting. This will encourage proper development of the bulbs⁸.

If cold storage is not possible, close monitoring of early spring temperatures will be necessary to ensure it is cool enough for the cloves to develop adequate root systems. There are no set temperature thresholds for garlic cold storage, though this should be cool enough to simulate local fall temperatures.

⁸ <http://www.omafra.gov.on.ca/english/crops/facts/09-011w.htm> Ontario Ministry of Agriculture, Food, and Rural Affairs. Garlic Production Fact Sheet. Accessed December 10, 2018

There are several varieties of garlic grown in British Columbia. White skin garlic is popular in grocery stores whereas varieties such as pink-skinned varieties such as Spanish Roja are sold in farmer's markets and roadside stands (**Photo 4**, below)⁹.

The field should be prepared prior to planting of the cloves. Soil testing can determine whether the pH is ideal for garlic planting. The soil pH should range from 6.0 - 7.5 for garlic. This crop will certainly require lime applications to the soil prior to planting.

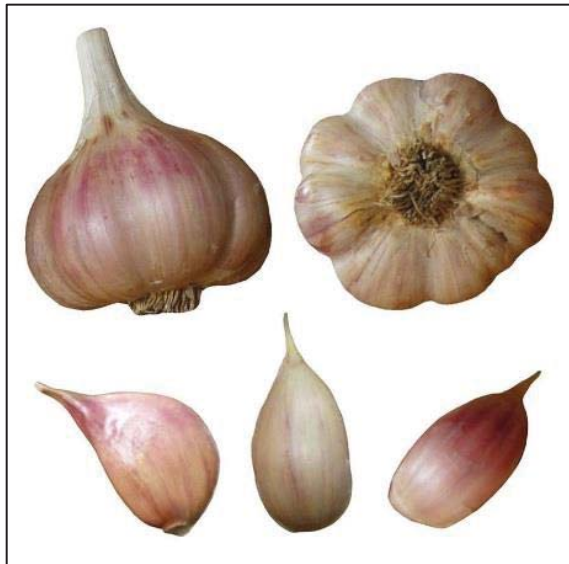


PHOTO 4. SPANISH ROJA GARLIC VARIETY FROM THE MANITOBA, CANADA GARLIC “SEED” SELLER JOHN BOY FARMS. PHOTO COURTESY OF JOHN BOY FARMS AT: [HTTPS://GARLICSEED.CA/COLLECTIONS/ALL-VARIETIES/PRODUCTS/SPANISH-ROJA](https://garlicseed.ca/collections/all-varieties/products/spanish-roja)

4.1.1 Garlic Planting Plan

Garlic bulbs can be purchased by reputable garlic sellers throughout North America. The bulbs are separated (or cracked) by hand or by machine to obtain individual cloves that can then be propagated. Cracking by hand is less damaging but requires high labour inputs. The separation of the cloves from the bulbs should not be done until shortly before planting to avoid deterioration. I have assumed for this farm plan that a machine will be purchased to split the bulbs.

⁹ <https://www2.gov.bc.ca/gov/content/industry/agriservice-bc/production-guides/vegetables/garlic> BC Ministry of Agriculture Garlic Production Guide. Accessed December 10, 2018

A single clove will produce an entire garlic bulb, but cloves must be planted every season in the interests of preserving genetic stock. The clove should be planted with the pointed end facing up at a depth of 3 to 5 cm – cloves placed in an incorrect orientation may develop but with misshapen bulbs and shoots⁸. Depending on weed control methods (such as tilling), rows can be planted as close as 20 cm, with garlic clove plant spacing of 7 to 12 cm within the row¹⁰.

If the 3.0 ha field (160 m x 185 m) is planted using the above parameters, this equates to a maximum of 925 rows oriented east-west, with 1300 plants per row (low density planting at 12 cm between plants). Accounting for row breaks for farm machinery (i.e. tractors), as well as adequate spacing between adjacent crops (carrots, eggplants, okra, beans) in the interests of pest and weed management, I have reduced the planting parameters to 800 rows with 1000 plants per row. This equates to 800,000 garlic plants.

The entire 3.0 ha field is intended for garlic cultivation however, it is not necessary to plant the full extent of the field in the first season. A preliminary crop that is a fraction of this size can be grown in the first season and expanded as the farm grows. For this farm plan, I will use an estimated crop size of 200,000 plants for the first season. This is still a significant initial establishment and will allow for Mahal Farms to determine which varieties respond well to local growing conditions, and assess demand for certain cultivars (i.e. Russian Red, Italian Purple, Spanish Roja, and Music varieties).

Garlic can be planted in single rows or in multi-row beds and the beds themselves may be raised or flat. Note this estimate does **not** take into account the any loss of garlic plants to disease, stunted growth, or poor aesthetic characteristics. For example, hardneck varieties require scape removal to ensure high yield of the bulbs. Retention of the scape can reduce the bulb size by up to 30%.

To protect the young cloves against freeze-thaw (if fall planting) or temperature fluctuations (if spring planting) mulch should be applied to the beds at a depth of at least 10 cm. Mulching will also help maintain even soil moisture. Recommended mulch materials include alfalfa, swamp grass, shredded leaves and reeds. The application of grain straw is not advised due to the potential for host mites to attack the young garlic cloves. Harsh winters (with cooler than seasonal temperatures and/or above average snowfall) may dictate the need for additional mulch application – this can be pulled back in the spring.

¹⁰ <https://www2.gov.bc.ca/gov/content/industry/agriservice-bc/production-guides/vegetables/garlic> BC Ministry of Agriculture Garlic Production Guide. Accessed December 10, 2018

4.1.2 Irrigation for Garlic Plants

The property area is designated as 3A (1) in the Climatic Capability for Agriculture scheme of Coligado, 1980¹¹. Class 3 aridity limitations indicate drought or aridity between May 1 and September 30 resulting in moisture deficits, which are limiting to plant growth and could require moderately intensive management.

Summer moisture deficits will initially have to be offset by irrigation; a new drip irrigation system can be employed (short intervals every day). For a farm of this size, hand watering by a pump is not practical. Basic research shows that drip irrigation costs approximately \$1 per metre¹². Thus initial irrigation installation costs will be considerable.

Garlic bulbs are shallow rooted and as a result are susceptible to moisture stress. A garlic bulb will require between 2.5 and 5.0 cm of water per week, with sandy soils requiring the upper limit of this estimate (the native soils on site would require the lower limit)¹³. The bulbs should not be irrigated in the last two weeks before harvesting.

4.1.3 Weeds, Pests, and Disease Management

Prior to planting, weed management will be required as garlic yields are sensitive to weed competition. Tilling between rows and applications of herbicides (pre-emergence and post-emergence) will be required if weed growth presents an issue at planting time. Between herbicide applications, mulching can reduce weed development and assist with maintaining moisture around the young cloves while they develop into bulbs.

A common herbicide for annual grasses and broadleaf weeds that affect garlic crops is Devrinol 50-DF. This can be applied at a rate of 2.24 to 4.5 kg/ha. Herbicide should only be applied once per season and weeds must be well tilled into the soil prior to planting of garlic cloves.

¹¹ https://www.alc.gov.bc.ca/assets/alc/assets/library/agricultural-capability/climatic_capability_for_agriculture_in_bc_1981.pdf Climatic Capability for Agriculture in BC. Coligado, 1981.

¹² <http://www.irrigationdirect.ca/Drip-Irrigation-Kits-For-Row-Crops-Using-Drip-Tape/> Canadian drip irrigation sales - \$275 for 300 m installation kit. December 10, 2018

¹³ <https://www2.gov.bc.ca/gov/content/industry/agriservice-bc/production-guides/vegetables/garlic> BC Ministry of Agriculture Garlic Production Guide. Accessed December 10, 2018.

Garlic pests and diseases include fusarium basal plate rot, penicillium mould, leek moth, and bulb and stem nematode¹⁴. Tests can be done on the soil prior to planting to detect many of these pests. Control recommendations include using clean seeds, clean irrigation water, and rotation on all fields with a non-host crop every three years.

The cost of herbicides, pesticides, and insecticides largely varies and their use will greatly depend on the quality of the seed (i.e. disease-free) and local growing conditions. For this farm plan I have included the cost of herbicides for weed management but not pesticides in the event that Mahal Farms wishes to be an organic farm (and utilize natural integrated pest management strategies).

4.1.4 Garlic Harvesting

The harvest time depends on whether the garlic was planted in the fall or spring. If a fall harvest is undertaken (the most common method), the first garlic bulbs will be ready for harvest the following spring or early summer. Garlic maturity is indicated by browning and drying of the leaves. A good point to harvest is once 30% to 50% of the leaves have died back. If the bulbils are to be harvested (scape is retained), then it is recommended to harvest later than normal. The bulbils will be ready once they are pushing their capsules open.

The garlic may be hand harvested or mechanically harvested by tractor. There are specialized machines and machine implements available for both planting and harvest but these require a high initial investment. For this reason, I have assumed that bulbs will be harvested by manual farm labour for the first season.

Once harvested, curing can be facilitated by tying and hanging or in the field by using covered vegetable bins. The purpose of curing is to increase storage life by minimizing microbial and fungal infection and water loss. Once cured, both the tops and roots of the garlic should be removed. Curing lasts approximately one month. I have accounted for the curing costs in my cost establishment table for Garlic.

4.2 Carrot Crop

Mahal Farms has indicated interest in planting Indian carrot varieties. Indian carrots are non-hybrid, natural varieties such as Purple (or black) carrots or “kali gajar” and red

¹⁴ <http://www.omafra.gov.on.ca/english/crops/facts/09-011w.htm> Garlic production guide – Ontario Ministry of Agriculture, Food and Rural Affairs. Accessed December 10, 2018

carrots or “desi gajar”. Orange carrots commonly found in grocery stores are a result of selective plant breeding in Europe, specifically the Netherlands, in the 17th century¹⁵.



PHOTO 5. RED CARROTS USED IN INDIAN CUISINE.



PHOTO 6. PURPLE CARROTS FOUND IN NORTHERN INDIA.

Regardless of the specific cultivars grown, the establishment inputs are similar. There may be slight variations in costs for the seeds as Indian carrot varieties are less commonly grown. Rare varieties should be ordered well in advance of planting to ensure availability.

¹⁵ <https://www.zmescience.com/other/purple-carrots-21032011/> ZME Science, “Purple Carrots”. Accessed December 10, 2018

Only reputable sellers should be selected. **Pre-treated seeds can be purchased to avoid significant crop loss from insects and disease (i.e. coated by protectant fungicide or insecticides).**

4.2.1 Carrot Planting Plan

A 3.0 ha field can be prepared for carrot cultivation following final soil placement. Prior to planting, the soil should be tested for nutrients (particularly P, N, and K) and amended with fertilizers if needed. Carrots will tolerate a pH range of 5.5 – 7.0 but an ideal range is between 6.0 and 6.8.

The field can be prepared by running a roto-tiller or chisel plow through the tested and amended soil. The soils should be worked to a depth of 30 to 40 cm for good root penetration of the carrot plants (a chisel plow may be best for this).

Optimal seeding times depend on how well-draining the field is. The placement of soil according to our placement plan will improve drainage and allow earlier seeding. Carrots can be planted in well-draining fields in mid-March (if soil temperatures exceed 7°C) but no later than the beginning of July. Seeds can be sown at 3 week intervals for continuous harvest.

Carrot seeds are sown shallowly due to their small size; approximately 5 mm deep, with 4 seeds per 2 cm¹⁶. The seeds are planted in raised beds that are at least 10 cm high. The BC Ministry of Agriculture Crop Production Guide (Carrots)¹⁷ recommends seeding in rows of 3, with each row being 46 to 48 cm apart. These form a single bed. This can be done by using a precision seeder with a special shoe that seeds 3 lines per row. Belts allow 6 to 7 seeds per 30 cm of line. Using this method, approximately 7 kg/ha of coated seed are required, resulting in a final population of about 1,000,000 plants/ha.

4.2.2 Irrigation

The soil should be well-irrigated prior to planting. Following planting, the surface of the soil should be kept moist until seeds germinate, which takes approximately 14-21 days

¹⁶ <https://www.westcoastseeds.com/products/deep-purple> West Coast Seeds. Deep Purple Seeds. Accessed December 10, 2018

¹⁷ <https://www2.gov.bc.ca/gov/content/industry/agriservice-bc/production-guides/vegetables/carrots> BC Ministry of Agriculture Crop Production Guides – Carrots. Accessed December 10, 2018

(long germination). An overhead sprinkler system can be utilized for the 3.0 ha carrot crop.

Irrigation systems should be designed and operated in accordance with the BC Sprinkler Irrigation Manual¹⁸. Sprinkler irrigation products are available through several large companies in the Lower Mainland, including Southern Irrigation and WaterTec North America. Using a conservative estimate of \$750 per hectare¹⁹, I have estimated that overhead sprinklers for the 3.0 ha carrot crop will run approximately \$2250.

4.2.3 Weeds, Pests, and Disease Management

Carrots compete poorly with weeds and without proper weed management (which can host carrot pests such as nematodes) yields can be reduced by up to 90%. Weeds also reduce harvest efficiency.

According to the Ontario Ministry of Agriculture, Food, and Rural Affairs “Weed Management in Carrots” Factsheet²⁰:

“There are two separate periods in the life cycle of the carrot crop when weed control is very important. These are 1) early season - the Critical Weed-free Period and 2) late season - the harvest period (Figure 1). During the critical weed-free period, weeds are controlled to protect yield, and, during the harvest period, weeds are controlled to facilitate crop harvestability and future production.”

For carrots, herbicide can be incorporated into the soil prior to planting (i.e. with a chisel plow). A suitable herbicide is trifluralin (Bonanza 480); this can be applied 3 weeks before planting and incorporated thoroughly within 24 hours to 8 to 10 cm deep²¹. Post-emergence weeds can be treated with many types of herbicides including Select (clethodim), Guardsman/ Agricultural Weedkiller No. 1, and Excel Super

¹⁸ <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/water/irrigation/sprinkler-irrigation-manual> B.C. Sprinkler Irrigation Manual. Accessed December 10, 2018

¹⁹ <http://calag.ucanr.edu/Archive/?article=ca.v050n01p11> Farmers describe irrigation costs, benefits: Labor costs may offset water savings of sprinkler systems. December 10, 2018

²⁰ <http://www.omafra.gov.on.ca/english/crops/facts/09-045w.htm> Ontario Ministry of Agriculture, Food, and Rural Affairs “Weed Management in Carrots” Factsheet. December 10, 2018

²¹ <https://www2.gov.bc.ca/gov/content/industry/agriservice-bc/production-guides/vegetables/carrots> BC Ministry of Agriculture Crop Production Guides – Carrots. Accessed December 10, 2018

(fenoxaprop-p-ethyl). Alternatively, if Mahal Farms wishes to obtain organic farm status, they may wish to utilize an integrated pest management system and manage weeds using labour and machinery instead of pesticide sprays.

Carrot plants can be killed by insects, in particular the carrot rust fly (or carrot maggot) and wireworms, which are the larva of click beetles (the name comes from the act of the larva becoming rigid as wire when squeezed by hand). The following methods may be undertaken to prevent plant damage and death²²:

Carrot Rust Fly

- The avoid the worst infestation period, consider not planting the first carrot seeds until the start of June;
- Use a floating row cover or garden fabric over the crop (carrot rust fly cannot fly very high);
- Use predatory nematodes in the spring, when the larvae are most active.

Wireworm

- Ensure carrot beds are raised and well-drained (the larva prefer moist soils);
- Interplant with mustard leaf, which dries the roots of the carrots (discouraging wireworms from eating the roots) and acts as a flavour deterrent;
- As for Carrot Rust Fly, consider purchasing predatory nematodes to kill larva when they emerge from eggs in the spring.

There are numerous diseases that affect carrots, including aster yellows (spread by aster leafhoppers), foliar blights, root-knot nematode, black root rot, and rusty root (lateral root dieback). Aster yellows in particular affect crops situated near forage legume fields, weedy areas (i.e. ditches), or and crops such as lettuce. This is why crops should be well-spaced in the field, leaving plenty of room between plants and nearby ditches, woodlands, and neighbouring fields and properties. If aster yellows symptoms (indicated by yellowing followed by bronzing of foliage, hairy roots, stunted growth) are evident, insecticide application will be required.

²² <https://www.westcoastseeds.com/products/deep-purple> West Coast Seeds, Carrot Diseases and Pests. Accessed December 10, 2018

Carrots are highly susceptible to root knot nematodes. These can be prevented by testing the soil for nematode populations and fumigating in the fall (or before planting in the spring, as long as average soil temperatures exceed 10°C or soil temperatures at 15 cm are at least 13°C)²³. The soil should be loose; any clods or lumps must be broken up with a tractor prior to fumigation. The soil should also be moist.

Common fumigants include Basamid and Vapam. The BC Vegetable Guide: Planting section on Soil Fumigation²⁴ recommends applying Basamid at rates of 325 to 500 kg per hectare and to a depth of at least 15 cm. The fumigant can be applied by hand (gloved) and by a fertilizer spreader for larger fields. Prior to seeding, soils should be well aerated following fumigation.

4.2.4 Carrot Harvesting

Carrots will mature in approximately 75 days from seeding. With seeding between April and mid-July (note: sowing of seeds should be delayed until early June if soil testing returns high populations of nematodes), carrots can be harvested between July and November.

The flavour of the carrot is best when the colours are bright and well-developed. Harvesting a mature, adequate-sized carrot also ensures sweetness and good storage potential. The two methods of harvesting carrots are: 1) by using a machine to pull carrots by the tops and topping them in the field, or 2) by hand cutting the stem and using a digger to bring the carrots to the surface. Topping of the stem involves removing the foliage and retaining approximately 2.5 to 5 cm of the stem²⁵.

Carrots can be left under soil during the winter or stored in cold storage at temperatures just above freezing (frozen carrots will become damaged and therefore should be removed

²³ <https://www2.gov.bc.ca/gov/content/industry/agriservice-bc/production-guides/vegetables/carrots>
BC Ministry of Agriculture Crop Production Guides – Carrots. Accessed December 10, 2018

²⁴ https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agriservicebc/production-guides/vegetables/planting_bc_vegetable_production_guide.pdf
BC Ministry of Agriculture Vegetable Production Guide: Planting. Accessed December 10, 2018

²⁵ <https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/crops-and-irrigation/horticultural-crops/vegetables/carrot-production>
Government of Saskatchewan Agriculture, Natural Resources, and Industry, Carrot Production Guide. Accessed December 10, 2018

from fields as well if an early winter and harsh temperatures occur)²⁶. Mahal Farms can store the carrots on site if they have refrigerators.

4.3 Irrigation and Water Sources

Richmond experiences a moisture deficit during the summer months²⁷ and as such, irrigation may be necessary (Land Capability limitation: 2A). To determine actual crop-specific water requirements and irrigation schedules, such factors as temperature, humidity, soil type, crop age and health, stage of crop development and presence or absence of mulch must be considered. I have described the water needs of each crop in this farm plan but detailed irrigation schedules are beyond the scope of this report.

The property has a large, approximately 10 m wide irrigation canal that runs through the approximate centre (**Figure 1**). This canal also has a pump house. There is thus adequate water for irrigation needs on site. Nearby ditches on No. 7 Road and Westminster Highway are kept artificially high by the City of Richmond during the summer and early fall.



FIGURE 1. IRRIGATION CANAL SITUATED THROUGH THE CENTRE OF THE PROPERTY. OVERHEAD SPRINKLER SYSTEMS AND DRIP IRRIGATION CAN BE CONNECTED TO THIS. MAP IMAGERY FROM IMAPBC 4.0.

²⁶ <https://www.westcoastseeds.com/products/deep-purple> West Coast Seeds, Harvesting Information, Purple Carrots. Accessed December 10, 2018

²⁷ http://climate.weather.gc.ca/climate_normals/index_e.html Richmond Nature Park climate station. Accessed December 10, 2018

5 Farm Establishment Costs

Following soil placement, the establishment of the vegetable crops will require a number of inputs including land preparation, soil nutrient testing, the purchase of materials and machine time (fuel, machinery use and repair costs), as well as the initial investment of large stocks of plants and seeds.

Estimating costs of farming is largely speculative; costs not included in this farm plan include farm marketing (i.e. signs), permit costs for roadside stands, specialty farm products such as bird netting (for protection of shallow carrot seeds, for example), or consulting costs for nutrient and pest management, for example.

Mr. Mahal has assisted with this farm plan by providing a list of desired crop types he wishes to grow and contribute to his community in Richmond. I have calculated the estimated costs of soil preparation, seeds or plants, planting, and harvest of both a garlic crop and a carrot crop (Mr. Mahal may plant more as the farm becomes established), as well as estimated other costs to take into account for the farm as a whole, such as irrigation and soil testing.

As previously mentioned, Mahal Farms will hire farm workers for the farm establishment. I have assumed labour costs at \$15.00 per hour (manual labour, hand harvesting), and \$22.00 per hour for machine labour. These estimates are higher than the reported wages to the Agricultural Labour Pool²⁸. I understand from Mr. Mahal and other farmers that I have worked with in the Richmond area that acquiring manual farm labour is very difficult and thus high wages may be required to attract employees. These costs are shown in Tables 1 and 2 (for each crop) in Appendix 1.

5.1 Garlic

The available field size for garlic cultivation is approximately 160 m by 185 m (3.0 ha). At low density planting and adding in space between rows for row breaks as well as spacing between the adjacent vegetable crops, approximately 800,000 garlic cloves (producing a single bulb each) could conceivably be planted in the prepared field. For this farm plan, I have proposed an initial planting that is one-quarter this, or 200,000 garlic cloves in the initial planting. A percentage of the bulbs will not be harvested due to disease or poor growth characteristics.

²⁸ <http://www.agri-labourpool.com/wage-info.aspx> Agricultural Labour Pool, Industry Wage Information for the Lower Mainland. Accessed January 30, 2019

Garlic is not propagated by seed and as such garlic is sold by the bulb (although this is called a “seed” by some suppliers). I have researched Canadian garlic “seed” sellers and found that garlic bulb prices vary between varieties and bulb sizes. The variation can be between \$1.85 per bulb for small bulb of common varieties such as Russian Red, to approximately \$4.85 for jumbo bulbs²⁹. I will use an average price of \$2.00 per bulb to account for a variety of garlic types that may be grown on the property. The cost decreases if purchased as a large bulk order (i.e. 10 bulbs or more).

The number of clove ‘seeds’ in each bulb differs greatly between garlic varieties – between 4 and 20 seeds in cases. A good average estimate is 10 cloves per bulb. Thus for 200,000 plants, it may be necessary to purchase up to 20,000 bulbs. **This would translate to an initial bulb investment of \$40,000.**

It is important to note that garlic bulbils from the first harvest can be retained to propagate more garlic – this would negate the need to purchase new bulbs for the second season.

In the Lower Mainland, garlic can fetch \$14/lb in local markets (2017 prices). Wholesale/bulk prices are \$9/lb³⁰. The wholesale crop value of 200,000 garlic bulbs (approximately 28,000 lbs³¹ of garlic) before all machine and material costs is roughly \$250,000. Shortages in competing markets (i.e. United States, China, South American countries) can result in higher prices. If only half of the crop is ultimately harvested and sold at wholesale prices, revenue of \$125,000 could be expected.

5.2 Carrots

For the proposed establishment of a carrot farm, I have calculated the estimated level of effort and basic costs for growing and harvesting a 3.0 ha crop amounts to approximately \$60,000.

Using 7 kg per hectare of covered seed produces approximately 1,000,000 plants per ha, or over 3 million carrots for a 3.0 ha planted field. If a medium-sized carrot is approximately 0.15 lb, this translates to a potential yield of 450,000 lbs. Carrots can be

²⁹ <https://garlicseed.ca/collections/all-varieties> John Boy Farms online garlic seed prices for 2018/2019. Manitoba, Canada. Accessed December 10, 2018

³⁰ <http://organicpricetracker.ca/index.php/getprice/lower-mainland-bc/27> Organic Price Tracker. Accessed December 10, 2018

³¹ 1 lb of garlic equates to approximately 7 bulbs (both hardneck and softneck varieties) <https://sowtrueseed.com/how-much-seed-garlic-do-i-need/> Accessed December 10, 2018

seeded at intervals such that harvest occurs at continuous intervals as the plants mature. Carrots that are coloured other than orange are often marketed as “rainbow carrots” and sold in bunches in grocery stores. Rainbow carrots fetch between \$3 and \$4 a bunch, which is approximately 2 lbs (bagged) for a price of \$1.50 per pound³². Prices may differ at farmer’s markets and local specialty stores such as Whole Foods Market and Fruitariana.

If approximately 50% of the crop is harvested (or 225,000 lbs) in good condition and sold for \$0.75 per lb, this amounts to revenue of approximately \$168,000. Mahal Farms may sell their carrot crop to a farmer’s market or distributor for a reduced profit but overall, the financial viability of a carrot farm is good (\$60,000 establishment and harvesting costs vs. potential revenue for 50% of a harvested crop using provincially-recommended spacing and expected yields).

5.3 Other Costs – Applicable to All Crops

Soil Testing

Local laboratory nutrient and pH testing is approximately \$1500 per crop area – reputable labs such as Exova and AGAT Labs charge no less than \$1000 for soil testing (major nutrients, available) and pH testing. Consultants hired to conduct soil sampling will charge at least \$500 for field work and reporting. Thus soil testing costs (nutrients, pH) will amount to approximately \$3000 for the initial establishment of two crops in the 9.0 ha site.

Soil testing may need to be conducted on an annual basis to identify persistent nutrient deficiencies and potentially improve crop yields. Thus this cost may be repeated each season.

Pest and Nutrient Management, Farm Supplies, Marketing, Accounting

The success of the first crops may dictate the need for professional assistance if pests and poor yields (due to poor nutrients) become an issue. I have not included these costs for the initial establishment of the proposed crops at this time.

³² <https://thehealthybutcher.com/organic-rainbow-carrots-2-lb.-bag.html> Organic Rainbow Carrots Bag. United States retailer “The healthy butcher”. Accessed February 1, 2019

I have assumed that Mahal Farms employs a bookkeeper or accountant for their current farm operations. These costs have not been quantified in this report. Similarly, costs related to the marketing of the farm products (i.e. farmers market sales, U-pick, or roadside stand signage), purchase of office supplies, and the purchase of miscellaneous farm equipment such as containers or pallets, twine for tying garlic, and temporary shed structures for cold vegetable storage and curing may be considerable.

6 Conclusions

Mahal Farms wishes to convert a pre-existing cranberry farm (last farmed in 2016) into a vegetable farm that occupies 9.0 ha of the northwest corner of their property. Prior to establishing vegetable crops, they wish to overcome a combination of agricultural limitations that include excess wetness (4W limitation), undesirable soil structure (3D limitation), and soil infertility (due to high acidity and low nitrogen and phosphorus, 4F limitation).

We proposed that in order to improve the land, 110,000 m³ of good-quality soil imported to the site and prepared according to our accompanying Soil Placement Plan report will enable soil-based agriculture for vegetable crops.

Mahal Farms wishes to diversify their farm by growing vegetables used predominantly in local Indian cuisine and improve the supply of locally grown produce. In the winter of 2018, Canadian news outlets reported that 2019 grocery prices would rise and “vegetables will see the biggest price jumps — between four and six per cent”.³³

According to the City of Richmond³⁴, “cranberries are the most dominant crop in Richmond, with almost 858 ha (2,120 ac) in production. In 2011, Richmond accounted for approximately 33% of BC’s cranberry acreage.” Blueberries are next at over 556 ha in production during the 2011 year, and third place is “Other hay” crops comprising 320 ha of production (**Figure 2**, below). Thus moving away from cranberry production will also help Mahal Farms diversify the City of Richmond’s crops and improve the supply of local fresh vegetables. I understand that Mahal Farms recently retained a consultant to view their old cranberry farm and were advised that new cranberry plants would cost

³³ <https://business.financialpost.com/news/economy/average-family-to-pay-400-more-for-groceries-next-year-report-estimates> Big Price Spikes Ahead For Vegetables As Average Family Pays \$400 More For Groceries Next Year, Report Predicts. Financial Post. December 4, 2018

³⁴ <https://www.richmond.ca/plandev/planning2/agriculture/about.htm> About Agriculture in Richmond. Accessed December 4, 2018.

approximately \$25,000 USD (plants are purchased from the United States) per acre at this time. For a 22 acre cranberry bog this would be approximately \$550,000 USD.

Land Used in Crop Production - Top 10				
Crop	Hectares	% of crops	% of census farms	% of ALR
Cranberries	858	38.9%	11.4%	21.5%
Blueberries	556	25.2%	33.2%	13.9%
Other Hay	320	14.5%	8.1%	8.0%
Potatoes	88	4.0%	2.8%	2.2%
Cabbage	64	2.9%	4.7%	1.6%
Strawberries	57	2.6%	2.4%	1.4%
Sweet Corn	52	2.4%	4.7%	1.3%
Chinese Cabbage	51	2.3%	10.0%	1.3%
Pumpkins	25	1.1%	5.2%	0.6%
Squash and Zucchini	21	1.0%	7.1%	0.5%
Total	2,092	94.7%	89.6%	52.4%

FIGURE 2. RICHMOND'S TOP CROPS BY LAND USED IN THEIR PRODUCTION, 2011

The accompanying tables (Appendix 1) shows costs related to the establishment effort, level of management and production value for both a 1.0 ha (first crop) garlic crop and 3.0 ha carrot crop.

I estimate that total costs for the land preparation, planting/seeding, and maintenance of both crops amounts to approximately \$160,000 for the first year. There is an additional cost of approximately \$3000 related to soil testing at the start of the farm establishment (prior to planting and seeding). This is necessary to determine fertilizer and lime amendment quantities, if required.

Other costs such as pest and disease management (consulting, testing, purchase of insecticides and pesticides, fumigating, purchase of predatory nematodes) may be considerable in the first few seasons while the farm is established.

In order to maintain farm status with BC Assessment, the total farm sales required by Mahal Farms (which is 29.5 ha in extent) is \$2,500 plus five per cent of the actual value of any farm land in excess of 4 hectares³⁵. According to BC Assessment³⁶, the land was assessed in July of 2018 at \$4,085,914. Using this metric, the farm would be required to report farm sales of over \$210,000. Currently, several crops (nursery trees, cedar hedging, greenhouse and field vegetables) are being produced and sold from the southern half of the property thus Mahal Farms is meeting the minimum farm gate sales required by BC Assessment without this vegetable farm establishment.

Using both conservative estimates of yields and prices (wholesale), I have determined that in the 2021 tax year (assuming 2020 soil placement, land preparation, and planting/seeding), planting only two vegetables crops will generate approximately \$293,000 in revenue (assuming only 50% of each crop is ultimately harvested and sold due to mortality, disease etc.) and require approximately \$163,000 in establishment costs, for an estimated profit of \$130,000 for the first year. It is important to note that the purchase costs of the garlic bulbs (estimated at \$40,000 for the first planting) is a one-time cost as garlic bulbils can be propagated by retaining the cloves for a fixed period of time, before they need to be replaced.

³⁵ <https://info.bcassessment.ca/Services-products/property-classes-and-exemptions/farm-land-assessment/farm-classification-in-british-columbia/Apply-for-farm-classification> BC Assessment: Classifying Farm Land. Accessed January 3, 2019

³⁶ <https://www.bcassessment.ca/> BC Assessment. Accessed January 3, 2019

A vegetable farm at Mahal Farms will contribute locally-grown vegetables to Richmond consumers and contribute towards diversifying the crop types grown in Richmond's farmland and the Agricultural Land Reserve.

Prepared by:

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MADRONE ENVIRONMENTAL SERVICES LTD.



APPENDIX 1

Cost Tables – Crop Establishment and Harvesting

Table 1. Estimated Costs of Establishing a Garlic Crop (First Planting: 1 ha)

Farming Activity/ Requirement	Description of Work	Units or Machine Time	Unit Costs	Total (\$C, 2019 estimated)
Site Preparation	Tilling or rotovating field, applying manure, mulching	24 hours/ha x 1.0 ha	\$110/hr ^a	\$2400
	Machine Costs (Rental, Fuel) ^c	12 hours/ha x 1.0 ha	\$25/hr	\$300
Planting, 400 rows x 500 plants (low density planting, ¼ of field)	Purchase garlic bulbs (one-time purchase)	20,000 bulbs (10 cloves per bulb – 200,000 cloves)	\$2.00/bulb ^d	\$40,000
	Cracking bulbs for cloves (machine) ^e	\$1000 for a splitting machine, 400 kg/hr	\$1000/machine	\$1000
Fertilizer (Compost, Lime) ^g	Plant garlic cloves	200 hrs/ha x 1.0 ha	\$15/hr ^f	\$3000
	Purchase	Compost: 150 yards/1.0 ha Lime: 50 lbs/1.0 ha	Compost - \$40/yard Lime - \$1.50/lb	\$3000 \$75
Herbicide (napropamide)	Purchase	2kg/ha x 1.0 ha	\$30/kg	\$60
	Application (Pre-Emergence)	12 hrs/ha x 1.0 ha	\$15/hr	\$180
Maintenance Of Crop During Growing	Weed control, additional applications of fertilizer, herbicide.	48 hours/ha x 1.0 ha	\$15/hr	\$720
	Hand harvest labour, tying, curing	3000 hours x 1.0 ha	\$15/hr	\$45,000
Irrigation (Drip)	Purchase & Installation by Irrigation Company (Local)	\$1/ m planted x 5000 m (first planting at 60 m x 80 m)	\$1/m	\$5000
TOTAL				\$100,000 (rounded)

^a \$22.00 per hour machine labour cost per employee, 5 employees for the 1.0 ha field establishment (labour intensive).

^b Soil testing costs from a reputable testing laboratory such as Exova, AGAT Labs. Current 2019 pricing.

^c February 2019 Diesel Price in Richmond is \$1.33/L, via <https://www.gasbuddy.com/Station/77015>

^d Average price per bulb from online retailer John Boy Farms. <https://garlicseed.ca/collections/all-varieties>

^e A garlic bulb splitting machine can be purchased for approximately \$1000 and process up to 400 kg of garlic in 1 hour.

^f \$15.00 per hour manual labour cost per employee.

^{g,h} Fertilizer costs, units, and labour inputs for planting and harvesting are via: Southwest British Columbia Small-Scale Farm Enterprise Budget: Garlic. Kwantlen Polytechnic University. <https://www.kpu.ca/sites/default/files/ISFS/Garlic.pdf>

Table 2. Estimated Costs of Establishing a 3.0 ha Carrot Crop

Farming Activity/ Requirement	Description of Work	Units or Machine Time	Unit Costs	Total (\$C, 2019 estimated)
Site Preparation	Chisel plow field, management of weeds, applying fertilizer, irrigating prior to planting (5 employees)	12 hours/ha x 3.0 ha	\$110/hr	\$4000
Planting	Machine Costs (rental, fuel)	12 hours for 3.0 ha field	\$25/hr	\$300
	Purchase carrot seeds (pre-treated)	7 kg/ha x 500,000 seeds/kg = 3.5 million seeds ^a	\$70 per 25,000 seeds ^b	\$9800
Fertilizer ^c	Purchase precision seeder (tractor mounted)	\$4000 for a tractor mounted seeder	\$4000/machine ^c	\$4000
	Plant carrot seeds with precision seeder	4 hrs/ha x 3.0 ha	\$50/hr ^d	\$600
	Purchase	70 kg/ha - Nitrogen x 3.0 ha 40 kg/ha - Potash x 3.0 ha	\$0.55/kg \$0.40/kg	\$120 \$50
Herbicide (trifluralin, Bonanza 480)	Application	Continuous applications over growing period (weekly)	\$66/hr	Estimated \$1000
	Purchase	1.25 L/ha x 3.0 ha	\$10/L	\$40
Maintenance of crop during growing period, after harvesting	Application (applied with 100 L/ha of water at 275 kPa), 2 employees	3 hrs/ha x 3.0 ha	\$30/hr	\$270
	Weed control, additional applications of herbicide, pesticide. Assessing carrot crop for pests such as nematode (prior to planting), fumigating.	50 hrs /ha x 3.0 ha	\$15/hr	\$2250
Irrigation	Purchase of overhead sprinkler system	\$750/ha x 3.0 ha	\$750/ha	\$2250
	Installation of irrigation, 3 employees	12 hrs/ha x 3.0 ha	\$45/hr	\$1600
Harvest	Machine harvest of carrots using carrot harvester (attached to tractor), topping carrots, cold storage	100 hrs / ha x 3.0 ha	\$110/hr	\$33,000
TOTAL				\$60,000

^a Number of seeds determined via the BC Ministry of Agriculture Crop Production Guide for Carrots (planting spacing) and size of field at 3.0 ha.

^b Deep Purple Carrot price from West Coast Seeds: <https://www.westcoastseeds.com/products/deep-purple>

^c Precision Seeder, Tractor Mounted. <https://woodwardcrossingscountrybasics.com/product/jph-4-jiang-seeder/>

^d Combined cost of \$22/hr machine labour, 1 employee and 25/hr machine costs (fuel, maintenance)

^e Fertilizer prices are current to 2019 in North America, via <https://farmlanddaily.illinois.edu/2018/09/fertilizer-prices-higher-for-2019-crop.html>

APPENDIX 2

Maps



FIGURE 1. OVERVIEW OF 5800 NO. 7 ROAD ON GOOGLE™ EARTH PRO. THE 15 M RIPARIAN MANAGEMENT AREA (RMA) SETBACK FROM THE NO. 7 ROAD DITCH IS SHOWN, AS IS THE ENVIRONMENTALLY SENSITIVE AREA (ESA) IN THE 5.1 HA RECTANGLE IN THE NORTHEAST CORNER OF THE PROPERTY. THE VEGETABLE FARM AREA IS 9.0 HA.



SOIL PLACEMENT PLAN

5800 No. 7 Road, Richmond, BC

FOR:

**Mahal Farms Ltd., Mr. Paul Mahal
c/o Mr. Ron Wilson
Hexcel Construction Ltd.**

BY:

**Jessica Stewart, A.Ag., G.I.T.
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Madrone Environmental Services Ltd.**

March 18, 2019

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TABLE OF CONTENTS

1	INTRODUCTION	1
2	SITE DESCRIPTION	3
2.1	HISTORICAL LAND USE – AIRPHOTO REVIEW	3
2.2	CURRENT LAND USE – PROPERTY AND SURROUNDING AREA	8
2.3	CLIMATE	8
2.4	LANDSCAPE AND TOPOGRAPHY	9
2.5	PUBLISHED SOILS AND LAND CAPABILITY DATA	11
3	SOILS AND LAND CAPABILITY FOR AGRICULTURE ASSESSMENT	12
3.1	SOILS – DETERMINED FROM ASSESSMENT	13
3.2	SOIL NUTRIENT, PH, AND SALINITY ANALYSIS	16
3.2.1	NITRATE (NO ₃ -N)	16
3.2.2	PHOSPHORUS	18
3.2.3	POTASSIUM	19
3.2.4	SULPHUR	19
3.2.5	PH (ACIDITY OR ALKALINITY)	20
3.2.6	SALINITY	23
4	LAND CAPABILITY FOR AGRICULTURE	23
4.1	LAND CAPABILITY FOR AGRICULTURE OF THE PROPERTY	23
4.2	IMPROVEMENT	24
4.3	SOIL MANAGEMENT RECOMMENDATIONS	25

5 SOIL PLACEMENT PLAN 26

5.1 TOPSOIL MANAGEMENT..... 27

5.2 SOURCED SOIL 28

5.2.1 PHYSICAL PROPERTIES OF ACCEPTABLE SOURCE SOIL..... 28

5.2.2 CHEMICAL PROPERTIES OF ACCEPTABLE FILL MATERIAL..... 29

5.3 CONSTRUCTED SOIL PROFILE 29

6 HYDROLOGY 31

7 POST-FILL LAND CAPABILITY FOR AGRICULTURE 32

8 SUMMARY OF RECOMMENDATIONS 32

8.1 MONITORING 33

8.2 REPORTING..... 34

9 CONCLUSIONS 34

10 REFERENCES 35

11 LIMITATIONS 37

LIST OF APPENDICES

APPENDIX A.....	MAPS AND FIGURES
APPENDIX B.....	SOIL PIT DESCRIPTIONS & PHOTOGRAPHS
APPENDIX C.....	LAND CAPABILITY FOR AGRICULTURE OVERVIEW
APPENDIX D	SOIL ANALYTICAL RESULTS – AGAT LABS
APPENDIX E.....	INCLUSION IN FILL IMPORTATION ASSESSMENT REPORTS
APPENDIX F	SOP: STONY SOILS IN IMPORTED FILLS

LIST OF PHOTOS AND DRAWINGS

PHOTO 1. THIS PHOTO SHOWS THE SUBSOIL PROFILE OF PIT 1.	15
PHOTO 2. LOOKING DUE WEST ACROSS THE MAHAL FARM (PROPOSED SOIL PLACEMENT AREA).	15
PHOTO 3. WOOD SHAVINGS PRESENT AT THE TOP OF THE AH LAYER IN SOIL PIT 7.	16
DRAWING 1 (LEFT). SOIL PH SCALE AND GENERAL SOIL PH CLASSES (BLACK BRACKET).	21
DRAWING 2 (RIGHT). SOIL PH INFLUENCE ON AVAILABILITY OF NUTRIENTS	21

LIST OF TABLES

TABLE 1. AIRPHOTO INTERPRETATION.....	4
TABLE 2. SUMMARY OF MAPPED SOIL PROPERTIES	12
TABLE 3. SUMMARY OF SOIL OBSERVATIONS FROM PIT INVESTIGATION.....	14
TABLE 4. SUMMARY OF SOIL ANALYSES – NUTRIENTS PACKAGE (8 SAMPLES)	22
TABLE 5. CRITERIA FOR LAND CAPABILITY CLASS 1	30

Synopsis

Mahal Farms Ltd., the owner of the property at 5800 No.7 Road, proposes to import approximately 110,000 m³ of good-quality fill over 9.0 ha of land located in the un-farmed northwest portion of the 29.5 ha property to improve soil wetness (predominantly 4W limitation), undesirable soil structure (3D limitation), and fertility limitations due to highly acidic soils and nutrient deficiencies (4F limitation).

The intent of soil placement is to improve the aforementioned conditions that limit agricultural capability. After the addition of soil which will raise the existing land surface by an average depth of 1.3 m, followed by soil profile construction as we have recommended, the agricultural capability will improve to a 2WF.

Mahal Farms intends to engage Hexcel Construction Ltd. to source and import the soil. We have proposed the following basic plan for the site:

- 1** Prior to any importation, strip approximately 0.2 - 0.3 m of the existing topsoil (and overlying peat, vegetation, woodchips, and compost) over the 9.0 ha area. This approximates to 36,000 m³. This can proceed in stages as determined by the earthworks contractor.
- 2** All stripped soil should be stockpiled on site for later use. No soil shall be stockpiled in proximity (<10 m) to property lines or ditches. There is a required 15 m setback from the riparian management area (RMA) on the west side of the property at No. 7 Road.
- 3** Import good-quality soil (as described in this report in Sections 5.2 and 5.3) on the stripped land, which is level with slopes less than 2% and situated at elevations less than 2 m above sea level.
- 4** Sourced soil should consist of clean soil from an uncontaminated source; it should have less than 20% coarse fragments, should not be clay-rich (<20%), and should not contain any non-soil material. Madrone can assist with screening soil sites for potential contaminants (desktop preliminary studies and site visits) and assessing coarse fragment content of incoming soil loads. Sites should also be checked for potential invasive plant species.

- 5 The final surface after completion of fill placement should be graded with an even 1-2% grade; we recommend sloping the soil to the east and west, with a crown in the centre. As the project nears completion, drainage will be assessed and the drainage plan revised if needed (i.e. ponding observed and ditches installed within the placement area to direct drainage where preferred).
- 6 The original topsoil (stripped) should be spread evenly over the final graded surface in such a way as to avoid compaction.
- 7 After spreading the surface should be seeded with an appropriate forage mix to prevent erosion and maintain soil fertility. Manure and liming will be necessary to improve soil nutrients and acidity. We recommend soil testing after amending the soil to assess nutrients prior to any planting.
- 8 The soil placement operation should be monitored at regular intervals through the process. We recommend monitoring reports every 3000 m³ in the first year of the project, in addition to extra monitoring visits required by the City of Richmond at their request.
- 9 Once complete a final report should be issued on the condition and final, improved land capability of the filled area. This is required by the ALC for the return of security bonds posted for the duration of the project.

SOIL PLACEMENT PLAN

5800 No. 7 Road, Richmond, BC

1 Introduction

Hexcel Construction Ltd (Hexcel) retained Madrone Environmental Services Ltd. (Madrone) on behalf of Mahal Farms Ltd. (the property owners) to prepare a Soil Placement Plan for a portion of the property located at 5800 No. 7 Road, Richmond B.C. (**Figure 1**). In addition to preparing a placement plan that adheres to local bylaws¹ and the Agricultural Land Commission (ALC) Act², (and specifically Policy L-23³) a Soil Placement Plan comprises a soil survey of the existing property, soil and climatic restrictions to agriculture, as well as a determination of the land capability for agriculture based on our field assessment.

Previously, Mahal Farms applied to the ALC for subdivision approval; their intent in this application was to divide the 29.5 ha (73 acre) property into two lots (referred to as Lot A, north and Lot B, south in application documents). According to a City of Richmond report⁴ prepared by the Agricultural Advisory Committee Meeting conducted on November 15, 2015, Mahal Farms wished to subdivide the lot into two parcels to “manage its financial risk and liability by aligning its land holdings with its separate [farm] enterprises”. This report was provided to the ALC for their review of the proposal.

¹https://www.richmond.ca/_shared/assets/BL809447443.pdf Soil Removal and Fill Deposit Regulation Bylaw No. 8094. City of Richmond. Accessed October 15, 2018

²http://www.bclaws.ca/Recon/document/ID/freeside/00_02036_01 BC Laws; Agricultural Land Commission (ALC) Act. Accessed October 15, 2018

³https://www.alc.gov.bc.ca/assets/alc/assets/legislation-and-regulation/policies/alc_-_policy_l-23_-_placement_of_fill_for_soil_bound_agricultural_activities.pdf Policy L-23, Placement of Fill For Soil Bound Agricultural Activities. ALC.

⁴https://www.richmond.ca/_shared/assets/14_ALR_Appeal_Mahal_Farms43899.pdf *Agricultural Land Reserve Appeal Application by Mahal Farms Ltd. for Subdivision at 5800 No. 7 Road*. Report to Committee. City of Richmond, March 1, 2016. [Accessed October 15, 2018]

The ALC declined the subdivision proposal in July of 2016, finding that subdivision approval would not be consistent with the Agricultural Land Commission Act to preserve agricultural land, citing that subdividing the ALR into smaller parcels can limit agricultural opportunities on these lands.

Since this decision, Mahal Farms have revised their plans and now wish to farm the majority (9.0 ha) of the under-utilized northern parcel, (which is 15.8 ha total according to a land survey prepared in June of 2014 by J.C. Tam and Associates Land Surveyors, as part of the original subdivision application) **without** subdividing.

This plan pertains to approximately 9.0 ha of land located in the northwest corner of the property (the “soil placement area”). This part of the property was previously farmed for cranberries for Ocean Spray (cooperative); the last year of cranberry farming in this area was 2016 (two years ago). The northeast portion of the northern property parcel is approximately 5.1 ha and is designated as an Environmentally Sensitive Area (ESA)⁵, specifically “Old Fields and Shrublands”. This area will not be developed; it was previously used for growing ornamental trees. The southeast part of the property at Westminster Highway is also located in the City of Richmond ESA.

The remaining 1.7 ha of land in the northern parcel will not be farmed due to City of Richmond 15 m Riparian Management Area setbacks⁶ from the watercourse (ditch) along No. 7 Road and the irrigation canal located through the centre of the property (**see Figure 2**), which is south of the proposed soil placement area.

The planned use of the property is to develop the northwest corner into productive soil-based farmland for vegetable crops, specifically, Indian Vegetable varieties, for which there is a high demand in the Richmond area. However, with evidence of excess free water in the soil (class W limitation), dense, root-restricting subsoils (class D limitation), and acidic and nutrient deficient subsoil conditions (Class F limitation), the owners of the property are seeking a permit to deposit good-quality subsoil to improve the land capability for agriculture. The native topsoil on site is good quality (as described in our soil assessment in Section 4 of this report) and will be stripped, stockpiled, then re-spread over the placed soil. The plan is located in Section 5 of this report.

⁵ <https://maps.richmond.ca/rim/> City of Richmond Interactive Map V1.11. Accessed October 11, 2018

⁶ https://www.richmond.ca/shared/assets/info_2332212.pdf Riparian Management Areas. City of Richmond. Accessed October 15, 2018

2 Site Description

The proposed soil deposit site is located in the northwest corner of the property at 5800 No. 7 Road in Richmond, BC, approximately 6.6 km east of Richmond centre on Lulu Island (**Figure 2**). The property is bound to the north by Mayfair Lakes Golf and Country Club, to the west by No. 7 Road, to the south by Westminster Highway, and to the east by a dense residential area.

The legal description of the property is: Block 4N Part1 S Section 2 Range 5W Land District 36 Except Plan 27718. The Property Identification number is 007-436-815. The property is 29.5 ha (73 acres) in extent. The property is zoned AG1 (Agricultural) according to the Richmond Zoning Bylaw 2011 and the property is within the Agricultural Land Reserve (ALR).

The property does not form a complete rectangular parcel as there is a separate 2.0 ha (5.0 acres) property parcel on the southwest side with the civic address of 5780 No. 7 Road. This parcel is also owned by Mahal Farms. The legal description of this property is Block 4N Part1 S Section 2 Range 5W Land District 36 Except Plan 27718 (PID: 007-436-815). This Soil Placement Plan does not include this separate property despite its location and ownership.

2.1 Historical Land Use – Airphoto Review

According to Mr. Paul Mahal, the property has been farmed by the Mahal family since they purchased the farm in 1949. The residence located in the southwestern corner of the property is a heritage farmhouse known as “Rathburn House”. Currently, two of eight family members (third generation farmers) reside on the property (in separate residences with different residential addresses than 5800 No. 7 Road) and are active in the farming operations on site.

We obtained aerial photographs (airphotos) from the Geographic Information Centre at the University of British Columbia to review the historical farm use of the property. The airphotos we received span the time period of 1938 to 2009. We supplemented these photos with two airphotos from 2013 and 2016, available through the City of Richmond Interactive Map program⁷. The airphotos were reviewed by Sharon Podesta, P.Ag. of Madrone; the observations are summarized in Table 1, below.

⁷ <https://maps.richmond.ca/rim/> Richmond Interactive Map program. Accessed October 27, 2018

Table 1. Airphoto Interpretation

Year	Site (5800 No. 7 Road, Richmond)	North	South	East	West
2016 (Richmond Interactive Map)	<p>Agricultural: cranberry fields along the north half of the property, a drainage ditch oriented east-west in the approximate middle of the Site, and greenhouses/rows of plants, sheds, a house along the southern side of the property. The southeastern side of the property looks unused but the soil is disturbed.</p> <p>A small portion of the area is shown as 5780 No. 7 Road and has a house and some rows of crops visible, but it takes up less than 25% of the total area of the site.</p>	<p>Mayfair Lakes Golf and country Club, a few houses, a barn or greenhouse, some accessory/shed/outbuildings; Highway 91 abuts the golf course to the north.</p>	<p>Houses and agriculture (greenhouses, fields). Lulu Island Winery is to the southeast.</p>	<p>Kartner Road and a residential development. Smaller parcels with single family homes and lawns. No cultivation visible.</p>	<p>No. 7 Road, followed by 2 fields and a dwelling, followed by greenhouses and more fields.</p>
2013 (Richmond Interactive Map)	No change.	No change.	No change (other than a couple of the houses in 2016 are under construction or not there in 2013).	No change.	No change.
2009 (SRS 7964 - 484)	No change.	No change.	No change.	No change.	No change.

Year	Site (5800 No. 7 Road, Richmond)	North	South	East	West
2002 (SRS 6600 - 268-269)	<p>North side: the northwest and middle cranberry fields are present; shifting use in northwest corner (cranberry production not consistent). There is a small drainage ditch running northwest to southeast and some access roads or access paths.</p> <p>The drainage ditch still bisects the property in the approximate middle.</p> <p>Southwest corner: buildings are present, as well as a field and crops.</p> <p>South-middle: Fill has been placed and spread, greenhouses are not yet present. A couple access roads are visible running north-south. The dwelling/building along Westminster Highway is still present here (though in the present it is now surrounded by nursery plants).</p> <p>Southeast: a house is visible and the rest of the area has nursery plant rows with a couple of access paths.</p>	No change.	No change.	No change.	No change. (Greenhouses not present)
1997 (FFC VCR9700 L-4 #110-111)	<p>North half: Fields - not clear if they are in use but very different from the 3 distinct cranberry fields that are present in 2016 airphotos.</p> <p>Drainage ditch still bisects the middle (between north and south halves).</p> <p>Southwest corner: buildings in the corner as today, some soil disturbance around the house (perhaps a crop rotation or change).</p> <p>South-middle and southeast: House fronts on Westminster highway, nursery plants apparent from green rows.</p>	No change.	No change - the large houses present today are not there.	No change.	No change.
1991 (FF 9131 #.80-.81)	<p>North half: Fields with some patches of vegetation. No clear pattern of cultivation.</p> <p>Ditch bisects the property in the middle (first airphoto appearance; therefore constructed sometime between 1984 and 1991).</p> <p>Southwest corner: a house and trailer or shed, and some small cultivated fields oriented north-south.</p> <p>Southeast corner: The house fronts on Westminster highway and is surrounded by a green field, no pattern of cultivation. The area to the east of the house appears to have rows of plants or trees and there is a patch of fill just northeast of the house.</p>	No change.	No change.	No change.	No change.

Year	Site (5800 No. 7 Road, Richmond)	North	South	East	West
1984 (15BC 84013 No 188- 189)	The house and trailer/shed has been built in the southwest corner. The rest of the property consists of fields, and the drainage ditch bisecting the property later is not visible (a smaller ditch may be there, but it isn't readily visible as in later years). There is no house fronting on Westminster Highway.	Fields and a house and a barn/sheds or accessory buildings. The area encompassed by the golf course at present appears to be a vacant field, with no natural lakes or any water present.	No change.	No change.	No change.
1979 (BC7901 6 No. 112-113)	House fronts on No. 7 Road and there are a few sheds/accessory buildings and a barn, plus a second house that appears to have driveway access from Westminster Highway. The rest of the property is fields and the large drainage ditch is NOT present in the middle of the property running east-west. It may be a hay field/cattle (the southwestern field has cattle in it.) There are small access roads around each of the fields (in the form of tracks, not proper roads). Some darker patches in the east fields might be wetness but it not obvious.	Same as 1984. The field appears to be cultivated for hay - there are tractor tracks throughout but no obvious crops.	Lots of greenhouses and nursery type properties, where presently there are fields.	The residential development and roads are there, but it isn't as densely developed as it appears later. Same basic layout and use though.	Fields and a dwelling.
1975 (BC5650 0061- 0062)	No change.	No change.	No change.	No change.	No change.
1969 (BC5320- 070-071)	No change. Some dark patches which could be wetness are seen throughout the fields. There is also a strip that runs northwest to southeast in the northeast corner of the Site that appears to be pooled water. The northeast field has the most evidence of wetness (dark patches)	No change. Drainage ditches are seen around the fields.	No change	Residential development is still there but much less dense.	No change. Some wet patches in the field are visible.

Year	Site (5800 No. 7 Road, Richmond)	North	South	East	West
1963 (BC5063: 233-234)	The only access to the house is from Westminster Highway in the southwest corner. 2 houses are present and some sheds, but it appears that the barn is not in place. The rest of the Site is fields. There are apparently small drainage ditches running throughout the property but no obvious flooding or dark patches.	No change.	Greenhouses are not present (maybe a few small ones). Mostly houses and fields fronting on Westminster Highway.	Small residential development (1 house) and fields.	Fields and agricultural dwellings.
1954 (BC 1672: 69)	No change - a few dark patches in the southeastern field and what appears to be a remnant stream running northwest to southeast in the northeastern corner of the field. Some dark patches in the south-central field as well.	No change.	All fields and a dwelling.	Fields and a couple houses fronting on Westminster Highway. No residential development or Kartner Road yet.	Fields and drainage channels (perhaps altered natural streams)
1949 (BC 782:32- 33)	No change. The property has numerous dark patches throughout the western fields and lines which could be natural drainages here until development altered their paths.	No change. A drainage is apparent running northwest to southeast and intersects the Site in the northeast corner.	Fields, no change.	No change.	No change.
1938 (A5937:69)	No change.	No change.	No change.	No change.	No change.

2.2 Current Land Use – Property and Surrounding Area

The northern half (approximate) of the property is not actively farmed as of the 2016 field season. It was previously farmed for cranberries (for Ocean Spray) and ornamental trees. The southern half is currently (as of the time of this report) farmed by either Mahal Farms or by farmers leasing the land. The current farm uses in the southern portion are:

- Vegetables (field and greenhouse);
- Hedging cedar (field-based near No. 7 Road); and
- Nursery (container and caliper trees).

The surrounding area is actively farmed. There is currently a large forage crop farm located across No. 7 Road to the west and hobby farms, nurseries, specialty plant growers, and a winery to the south across Westminster Highway⁸.

2.3 Climate

The nearest Environment Canada weather station is at Richmond Nature Park⁹, located approximately 3.5 km to the west at an elevation of 3 m above mean sea level. The records from 1981 to 2010 show a mean annual precipitation of 1262 mm, a daily average temperature of 11°C (among the highest in Canada), and 2244 effective growing (> 5°C) degree days (Environment Canada, 2011).

Due to the distribution of when precipitation falls, the property is designated a 3A(1) in the Climatic Capability for Agriculture scheme of Coligado, 1980. Class 3 aridity limitations indicate drought or aridity between May 1 and September 30 resulting in moisture deficits, which are limiting to plant growth and could require moderately intensive management. This will dictate that certain crops will require irrigation for dry periods in mid-summer to early fall.

⁸ Farm Activity information in the surrounding area gathered by data from City of Richmond Interactive Map Program, BC Assessment, and Google Earth Pro imagery for 2018.

⁹ http://climate.weather.gc.ca/climate_normals/index_e.html Richmond Nature Park climate station. Accessed October 15, 2018

By incorporating meteorologic data from Richmond Nature Park spanning the period of 1981 – 2010, the cumulative moisture deficit can be calculated by subtracting mean annual precipitation (reported above) and the evaporation potential of the area, which is a function of temperature, windspeed, and solar radiation. Using the ClimateWNA_Map model from UBC Forestry¹⁰, the cumulative moisture deficit is calculated to be 181 mm/year – which corresponds to the 3A aridity limitation of climate capability.

The Thermal class assigned in the same report is 1, meaning there are no significant temperature limitations during the growing season.

2.4 Landscape and Topography

The property is situated on the Fraser River delta and features flat topography with no visually discernible slopes or natural terrain features such as bedrock or streams. A Geodetic Control Marker (GCM) located at No. 7 Road on the west property line is situated at 1.65 m above sea level (a.s.l.)¹¹. This is the main topographic information I have found for this area; there are no topographic land survey data or contours available from iMapBC or the Richmond Interactive Map. This topographic elevation data was used to prepare our soil volume cross-sections.

There are dykes located in the northern half of the property; these were constructed for the cranberry farm. The area of the dykes is approximately 1.6 ha (4.0 acres). To accurately determine the elevation of the dykes relative to the native land, a topographic survey would need to be performed¹². An approximately 10 m wide irrigation canal also runs through the centre of the property, oriented east-west. It terminates approximately 10 m from both the east and west property lines; **the canal does not connect to the No. 7 Road ditch**. There are farm machinery access roads on either side of the canal; these run across the dykes as well. The proposed soil importation area is east of the No. 7 Road ditch and north of the irrigation canal.

¹⁰ <http://www.climatewna.com/ClimateWNA.aspx> ClimateWNA_Map. Accessed October 15, 2018

¹¹ http://a100.gov.bc.ca/pub/mascotw/protected/final_long.html?Q_GCM_NO=274696 Geodetic Control Marker Number 274696. GeoBC Reference Systems and Survey Monuments. Accessed October 15, 2018

¹² Note that there is very little elevation differences over the property; the area lies at 1.65 m GSC according to the Geodetic Control Marker on No. 7 Road at the property line.

The surficial geology of this area was mapped by Armstrong (1980) as Fraser River Sediments, specifically overbank silty to silt clay loam up to 2 m thick overlying up to 15 m of deltaic and tidal flat deposits.

The very southwest corner of the property is mapped as post-glacial Salish Sediments. These sediments are composed of bog, swamp and shallow lake deposits. More specifically, these deposits are characterized by organic rich sandy to clay loams 15 to 45 cm thick overlying Fraser River deltaic and tidal flat deposits.

The description of surficial geology conforms well to our field observations of silt loams and silty clay loams (Fraser River Sediments). We did not observe significant differences in surficial geology (indicated by soil texture) in our soil survey, nor did we observe bog, swamp, or shallow lake deposits that are characteristic of the Salish Sediments mapped by Armstrong (1980).

We found the following native vegetation in the northern half of the property during our field assessment:

- Hardhack (*Spiraea douglasii*)
- Sheep sorrel (*Rumex acetosella*);
- Cultivated Cranberry (*Vaccinium macrocarpon*);
- Reed canary grass (*Phalaris arundinacea*);
- Paper birch (*Betula papyrifera*);
- Orchard grass (*Dactylis glomerata*);
- Silverweed (*Argentina anserina*);
- Bulrush (*Typha latifolia*);
- Canada thistle (*Cirsium canadensis*);
- Vetch weed (*Vicia* sp.).

2.5 Published Soils and Land Capability Data

This section of the report summarizes the characteristics of the surveyed soils and the Land Capability for Agriculture (LCA) ratings for the property. LCA ratings describe the general suitability of the land for agriculture as seven classes for mineral soil and seven classes for organic soil. The capability classes are modified into subclasses when limitations to agriculture exist. There are twelve subclasses for mineral soils and nine subclasses for organic soils. A detailed description of LCA rating classes and subclasses is provided in Appendix C.

The soils in this area were mapped by Luttmerding in the 1980's. The soil maps were printed at a scale of 1:25,000 and are based on a reconnaissance level soil survey and air photo interpretation and represent a broad interpretation of soils and agricultural capability. We provide a site-specific assessment of the agricultural capability of the property in Section 3, below.

Existing soil survey maps indicate that the soils in the assessment area are most commonly the Blundell and Delta soil series (Luttmerding, 1980), with the majority of the property mapped as 70% Delta soils and 30% Blundell soils. According to the Province of B.C. Soil Information Finder Tool (SIFT)¹³ which is based on data collected from Provincial Soil Surveys, the assessed capability of land for agriculture for the Delta and Blundell soil complex is Class 4W.

The Canadian Soil Information Service (CanSIS)¹⁴ describes the Delta soil series (the predominantly-mapped unit here) as poorly drained:

*“Water is removed so slowly in relation to supply that the soil remains wet for a comparatively large part of the time the soil is not frozen. Excess water is evident in the soil for a large part of the time. Subsurface flow or groundwater flow, or both, in addition to precipitation are the main water sources; there may also be a perched water table, with precipitation exceeding evapotranspiration. Soils have a wide range in available water storage capacity, texture, and depth, and are gleyed subgroups, Gleysols, and Organic soils. . . . Delta soils are good agricultural soils and are utilized for a variety of crops, including forages, cereal grain, potatoes, vegetables and some small fruits. **Watertable control through artificial drainage, however, is required for optimum utilization.**”*

¹³ <https://www2.gov.bc.ca/gov/content/environment/air-land-water/land/soil/soil-information-finder> Soil Information Finder Tool. Accessed October 15, 2018

¹⁴ <http://sis.agr.gc.ca/cansis/soils/bc/DLT/sad~~~/A/description.html> CanSIS. Accessed October 15, 2018

The subcategory, W, indicates excess free water present during the growing season that potentially inhibit plant growth or damage crops (Coligado, 1980). Soils with a Class 4W limitation are amenable to improvement through drainage or well-draining fill, with the SIFT data indicating a potential mixed Class 2 and/or 3 improved status for this property.

Other limitations for the Blundell and Delta soils include:

- salinity (N, due to tidal environment of the deeper horizons) and;
- undesirable soil structure (D, due to firm and clay-enriched subsoils with low perviousness)

Blundell Soils can be improved to mixed 30% Class 3N and 70% 2N. Delta Soils can be improved to 2D.

The soils are organized into associations, groups of soils that occur together on the same parent material, to form a land pattern (SCWG, 1998). In this case the above mentioned soils are formed from deltaic sediments. Soil properties are summarized in Table 2.

Table 2. Summary of Mapped¹⁵ Soil Properties

Soil Series	Parent Material	Texture	Drainage	Classification
Blundell	10 – 40 cm organic material over medium-textured deltaic deposits	Poorly decomposed organic surface with medium grained sandy silt loam under layering. Saline and peaty conditions present.	Poor to very poor; high groundwater table	Rego Gleysol
Delta	Medium to moderately fine-textured deltaic deposits	Silt loam or silty clay loam grading to silty clay loam or silty clay. Saline conditions present.	Poor; high groundwater table	Orthic Humic Gleysol

3 Soils and Land Capability for Agriculture Assessment

Gordon Butt, P.Ag., and Jessica Stewart, A.Ag. visited the property on October 10, 2018 to carry out a detailed soil survey. Conditions were clear with excellent visibility. We were met on site by Mr. Mahal of Mahal Farms. Hexcel had brought an excavator on site for our soil investigation.

¹⁵ Based on mapping by Luttmerding (1980) and the Soil Information Finder Tool; actual soils on site are described in Section 4.0 of this report.

We described soil profiles in eight excavated soil pits that ranged in depth from 0.8 m to 1.3 m. Soil pit locations were randomly chosen in the northern part of the property and were marked by GPS in the field (**Figure 2** in Appendix A). Detailed observations of soil properties, including soil texture, drainage, consistency, structure, colour, horizon classification and thickness, and evidence of gleying or mottling were noted during our assessment. Soil Pit Descriptions and photos are located in Appendix B.

We made additional surface observations in the areas around the test pits, such as the location of ditches, vegetation, and other features such as dykes and irrigation canals.

Based on my soil profile descriptions, we correlated the site soils to soils described in the Soils of the Langley-Vancouver Map Area, MoE Technical Report 15 (Luttmerding, 1980). The report also provides Land Capability for Agriculture (LCA) ratings for the assessment area. In this section we indicate our LCA ratings for the property that is proposed to receive soil, which are summarized in Table 3 below.

We also collected eight soil samples for laboratory testing, specifically for nutrient, salinity, and textural analysis. The samples were taken at random sites from the northern parcel (soil placement area) to depths of up to 0.8 m. As such, the sampled horizons include the Btg or IIBg horizons we observed in our soil pits (subsoils sampled only). All soil samples were collected using lab-provided containers. The sealed samples were placed in a cooler and delivered under chain-of-custody documentation to AGAT Laboratories in Burnaby.

3.1 Soils – Determined from Assessment

The soils described in all eight pits correlate best with the Delta soil series of Luttermerding (1980), who described these soils as “moderately-fine to fine textured deltaic deposits and have a silt loam to silty clay loam textures”. He further stated that Delta soils are poorly drained and often subject to seasonal ponding. We stress that where differences occur in soils mapping, our findings should be accepted due to the much higher sampling density (i.e. not based on airphoto interpretation and soil surveys over large areas).

We observed mottling caused by high seasonal water tables in the subsoil; mottling starts at 20-25 cm below the surface for most soil pits, with the exception of Pit 7 (12 cm below surface) and Pit 8 (60 cm below the surface). Mottling and oxidized root channels are encountered in the Btg horizon, which is a firm to very firm horizon that restricts root

growth (Class D limitation). This soil is agriculturally limited by both 1) excess free water and 2) dense subsoils/undesirable soil structure in the Btg horizon.

Wetness subclass information can be found in Appendix C.

Table 3. Summary of Soil Observations from Pit Investigation

Test Pit	Textures (by horizon)	Drainage and LCA Class	Soil Classification	Correlation
1	Silt loam, silty clay loam, fine sandy loam, to loamy sand	Poorly-drained, Class 4W, 3D	Orthic Luvisol Gleysol	Delta
2	Sandy loam, silty clay loam, silt loam, to fine sandy loam containing lenses of fine sand.	Poorly-drained, Class 4W, 3D	Orthic Luvisol Gleysol	Delta
3	Silt loam (-silty clay loam), silty clay loam, silt loam, to (very) fine sandy loam	Poorly-drained, Class 4W, 3D	Orthic Luvisol Gleysol	Delta
4	Silt loam, silty clay loam, fine sandy loam	Poorly-drained, Class 4W, 3D	Orthic Luvisol Gleysol	Delta
5	Sandy loam, silty clay loam, silt loam, to fine sandy loam	Poorly-drained, Class 4W, 3D	Orthic Luvisol Gleysol	Delta
6	Sandy loam, silty clay loam, silty clay loam, to (very) fine sandy loam	Poorly-drained, Class 4W, 3D	Orthic Luvisol Gleysol	Delta
7	Silt loam, silty clay loam, silty clay loam, to loamy sand. Fine.	Poorly-drained, Class 4W, 3D	Orthic Luvisol Gleysol	Delta
8	Sandy loam, silt loam (-silty clay loam), silty clay loam, to fine to medium, sand	Poorly-drained, Class 4W, 2D	Orthic Luvisol Gleysol	Delta

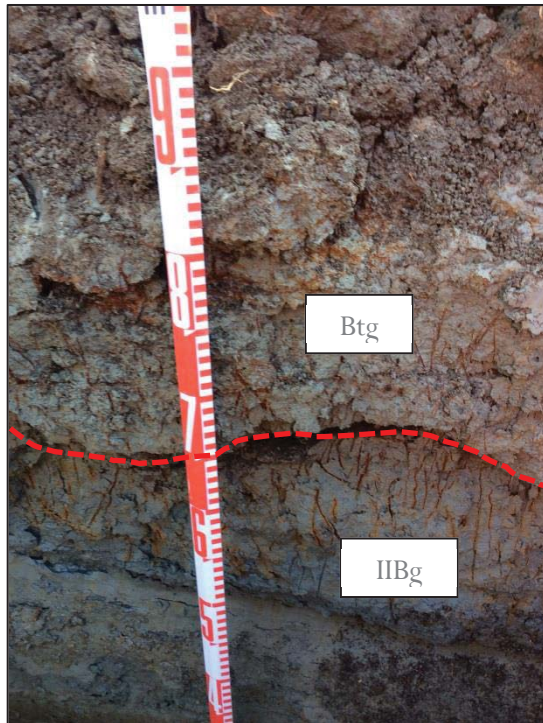


PHOTO 1. THIS PHOTO SHOWS THE SUBSOIL PROFILE OF PIT 1.

Note strong angular blocky structure, generally grey matrix colours and lack of roots. The distinction between Btg and IIBg represents a difference in the deposition mode; the Btg was developed from finely textured shallow marine deposits; the coarser textured IIBg was developed from river deposits.



PHOTO 2. LOOKING DUE WEST ACROSS THE MAHAL FARM (PROPOSED SOIL PLACEMENT AREA).

Vegetation includes Hardhack, Sheep sorrel, Cultivated Cranberry Reed canary grass (Phalaris arundinacea), and Orchard grass.



PHOTO 3. WOOD SHAVINGS PRESENT AT THE TOP OF THE AH LAYER IN SOIL PIT 7.

These were brought in for the cranberry farm previously located here. Cranberries have not been harvested since 2016. We did not observe these shavings anywhere else on the property during our assessment.

3.2 Soil Nutrient, pH, and Salinity Analysis

Soil analytical results generated by AGAT Laboratories of Burnaby, B.C. are presented in Table 4 for the eight samples collected by Mr. Butt on site. Copies of AGAT's full analytical laboratory reports are contained in Appendix D. The results of the nutrient, pH and salinity tests are discussed as follows. Note that the eight samples do not correlate to the eight test pits (i.e. they are located at various points of the northern parcel but not from the pits themselves). The soil samples are from subsoils, not topsoils.

3.2.1 Nitrate (NO₃-N)

The concentration of nitrate in the tested soil is a good indicator of how much nitrogen is available to plants. Nitrate is present in agricultural soils either as a result of direct addition (manure) or due to microbial fixation and transformation of soil nitrogen to nitrate.

The B.C. Ministry of Agriculture 2017 study titled "Tracking Post-Harvest Soil Nitrate in Agricultural Fields in the Hullcar Valley¹⁶, B.C."¹⁷ describes nitrogen in agricultural soils as follows:

¹⁶ This is near the City of Vernon in the Okanagan.

¹⁷ <https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/soil-nutrients/nutrient-management/technical-reports/soil->

“Nitrogen may be added to soil as a crop nutrient that is required by plants in large amounts, and crops take up N as nitrate from the soil root zone. In addition to plant uptake, microbes can ‘immobilize’ nitrate and make nitrate part of soil organic N, the largest portion of N in soil, or the nitrate can be lost from the root zone of the soil by leaching or by transformation into gases that escape into the atmosphere.

*Various factors control the rates of uptake, transformations, or losses of N. For example, favourable soil temperatures and moisture conditions during the growing season promote the microbial conversion of organic N to nitrate and the plant uptake of nitrate (biological processes). Rainfall or irrigation water favours nitrate leaching (physical process) any time the infiltrating water exceeds the water-holding capacity of soil or when the water flows through burrows or cracks in the soil (Jarvis 2007). **The producer’s goal is to manage nitrate for crop uptake or to keep nitrate in the soil root zone for later crop uptake.**”*

The required soil nitrate-nitrogen (NO₃-N) for specific crops varies from crop to crop but in general, a concentration range of 10-50 mg/kg is desired¹⁸. Within this range, 20-40 mg/kg is considered optimal for most crops, including the vegetables that Mahal Farms intends to farm here.

The soil analysis shows that available nitrate is less than 5.0 mg/kg (also equivalent to 5.0 ppm¹⁹) for all soil samples. Six out of eight of the samples have nitrate that is actually below the reported laboratory detection limit of 2.0 mg/kg. **These analyses show that nitrate is severely limited in these subsoils²⁰**. Sampling was done in the fall, approximately two years since the last crop rotation of cranberries. The soils have not been amended by fertilizers since the last rotation.

[nutrient-studies/post-harvest_nitrate_study_-_final_report_-_sep_2017.pdf](#) Tracking Post-Harvest Soil Nitrate in Agricultural Fields in the Hullcar Valley, B.C. Accessed November 19, 2018

¹⁸ <http://www.horiba.com/us/en/application/material-property-characterization/water-analysis/water-quality-electrochemistry-instrumentation/support/application-support/application-notes/ion/nitrate/soil-nitrate-measurement-for-determination-of-plant-available-nitrogen/> Accessed November 19, 2018

¹⁹ Mg/kg is roughly equivalent to ppm: we use both in this report as these units are both used in soil BC Ministry of Agriculture and other pertinent publications.

²⁰ We expect that the nitrate-nitrogen in topsoils will be much higher.

3.2.2 Phosphorus

According to the United States Department of Agriculture²¹ after nitrogen, phosphorus (P) is often the most limiting nutrient for crop and forage production. The primary role of phosphorus in plants is to store and transfer energy produced by photosynthesis for use in growth and reproductive processes. Phosphorus loss in soils is mainly associated with erosion and runoff rather than leaching out of the root zone (via rainfall or irrigation processes).

The availability of phosphorus to plants depends on factors such as soil pH, soil texture and mineralogy²². The B.C. Ministry of Agriculture Sustainable Agriculture Management Branch states that a soil pH of 6.0 to 7.0 is the optimum range for phosphorus availability. As soil pH increases above 7.0, or decreases below 6.0, phosphorus binds with cations (i.e., calcium, aluminum, or iron) and becomes unavailable for immediate plant uptake. Phosphorus is bound by clay particles and oxides in low pH soils²³.

According to the B.C. Ministry of Agriculture “Phosphorus Considerations for Nutrient Management” Factsheet²⁴, the optimal range of phosphorus in soils is between 41 – 75 ppm (41-75 mg/kg of tested soil).

In our survey, phosphorus concentrations ranged from 7 mg/kg to 47 mg/kg for the eight samples. Six out of eight of samples are below the optimal rates for soil phosphorus. The

²¹https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053254.pdf
Accessed November 19, 2018

²² https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/soil-nutrients/nutrient-management/response_to_comments_questions_2011_p_seminars_final_july2013.pdf Ministry of Agriculture: Phosphorus Seminars, 2011. Accessed November 19, 2018

²³ https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/soil-nutrients/nutrient-management/response_to_comments_questions_2011_p_seminars_final_july2013.pdf Accessed November 19, 2018

²⁴ https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/soil-nutrients/nutrient-management/631500-4_phosphorus_considerations_factsheet_no6_sep2010.pdf Phosphorus Considerations for Nutrient Management Factsheet. Accessed November 19, 2018

soils are thus limited by phosphorus availability as well. We emphasize that these results are for the tested subsoils.

3.2.3 Potassium

Phosphorus (P) and potassium (K) are two of the three macronutrients (the other being nitrogen) required by plants for optimum growth. They are required in larger amounts compared to the micronutrients (e.g., zinc, iron, boron, etc.)²⁵.

B.C. Ministry of Agriculture classifies 0 to 80 ppm (or mg/kg) of Potassium in soils as “low”²⁶. Optimal potassium concentrations are reported between approximately 131 and 175 ppm or mg/kg.

Of the eight soil samples, only one has a “very high” potassium concentration of 329 mg/kg. Two other samples have “moderate” potassium concentrations that are below optimal, and the remaining five samples have “low” to “very low” potassium concentrations that are not optimal for plant growth of any crop.

3.2.4 Sulphur

Sulphur (S, along with magnesium, iron, manganese, copper and zinc) is sometimes deficient in soil for optimum crop production. Soil pH is also lowered (when desired) using elemental sulphur, sulphuric acid, aluminum sulfate and iron sulfate (ferrous sulfate)²⁷.

The optimal sulfur range in soils is reported to be between 20 and 35 mg/kg (or ppm)²⁸. The soils we sampled on site have sulfur concentrations ranging from 3 to 33 mg/kg.

²⁵ <https://www.uaex.edu/publications/PDF/FSA-2118.pdf> Accessed November 19, 2018

²⁶ https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/soil-nutrients/600-series/634200-2_soil_test_p_and_k_interpretations.pdf Accessed November 19, 2018

²⁷ file:///U:/Nutrient%20Management_BC%20Vegetable%20Production%20Guide.pdf Nutrient Management_BC Vegetable Production Guide.pdf Accessed November 19, 2018

²⁸ https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/soil-nutrients/600-series/631004-1_sulphur_deficiencies_in_central_bc.pdf Sulphur Deficiencies in Central British Columbia. Accessed November 19, 2018

Seven of the eight samples have low to very low concentrations outside of the optimal range (7-20 mg/kg); only one sample has an optimal sulphur concentration for crops.

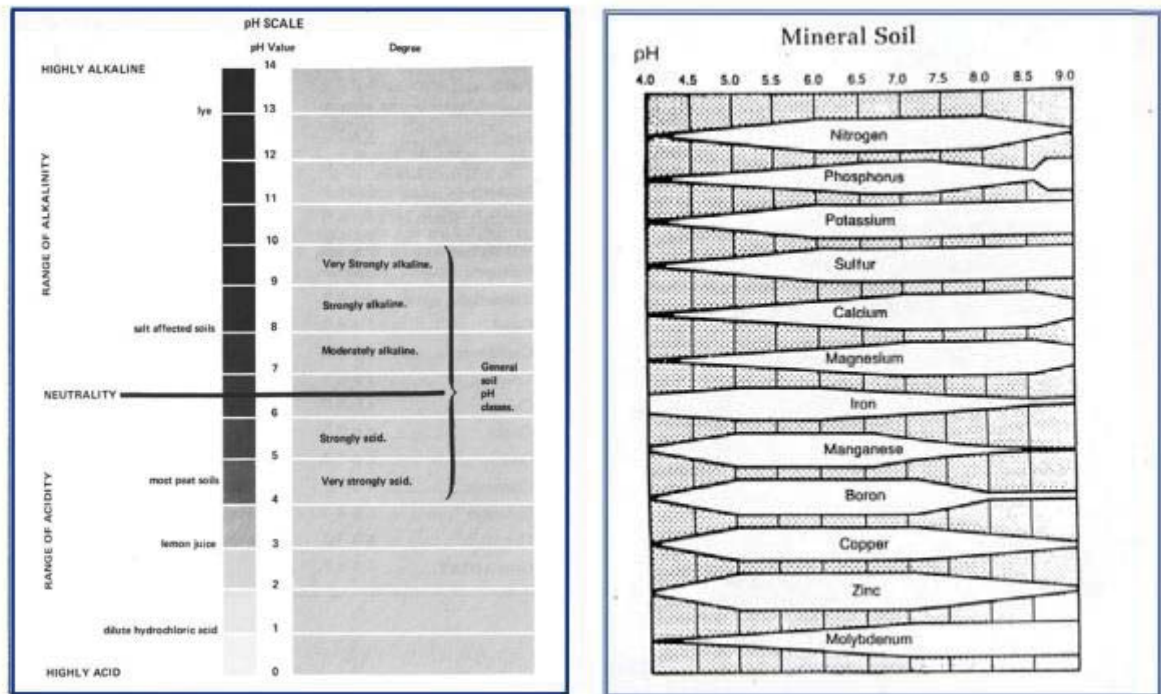
In the B.C. Ministry of Agriculture soil factsheet titled “Sulphur Deficiencies in Central British Columbia”, it is reported that “*serious economic losses have occurred when crops have failed to respond to nitrogen fertilizer when soil sulphur levels were low. Knowledge of available soil sulphur levels is important in formulating appropriately balanced fertilizer blends that avoids crop failures*”.

3.2.5 PH (Acidity Or Alkalinity)

According to the B.C. Ministry of Agriculture Soil pH Factsheet:

“Soil pH refers to the degree of acidity or alkalinity of the soil. [The] pH scale shows how pH numbers relate to acidity or alkalinity. The scale ranges from 1 to 14, pH 7.0 being the neutral point. A reading below 7.0 indicates the degree of acidity; a reading above pH 7.0 indicates the degree of alkalinity. Soil pH is normally determined on all agricultural soil samples sent to soil testing laboratories. Materials are available that when applied to the soil will change the pH to a point more favourable for crop production. These materials are referred to as soil amendments.”

According to our laboratory test results, the soil pH of our eight samples range from 3.75 to 4.31. This range is defined on the Soil pH factsheet as “very strongly acid”. This range is characteristic of most peat soils (Fibrisols, Mesisols, and Humisols) but our surveyed soils were not found to be peaty. Soil pH influences the solubility of plant nutrients and thus, their availability to plants. Low pH values in mineral soils correlate to unfavourable influence on element availability (readily available forms).



**DRAWING 1 (LEFT). SOIL PH SCALE AND GENERAL SOIL PH CLASSES (BLACK BRACKET).
 DRAWING 2 (RIGHT). SOIL PH INFLUENCE ON AVAILABILITY OF NUTRIENTS (MINERAL SOILS).**

For reference, optimal soil pH’s for crops that Mahal Farm’s intends to grow are as follows:

- Vegetables (General): 6.5-8.0
- Asparagus: 6.5-8.0
- Broccoli, Cabbage: 6.0-7.0
- Beans, Peas: 6.0-7.0
- Potato: 5.0-6.5

As such, the soils in their current state are too acidic for optimal vegetable crop yields and would require amendments such as lime to raise the pH ideally to 6.0. Liming depends on the pH of the imported soil and highlights the need for soil nutrient testing prior to any spreading of manure or other amendments. To summarize, the native subsoils are very infertile for a combination of low N, P and very low pH and this is a further reason that soil importation is required to improve the agricultural viability of this portion of the property for vegetable crops (desired by Mr. Mahal).

Table 4. Summary of Soil Analyses – Nutrients Package (8 samples)

Parameter	Unit	Soil Sample Description / Sample Number								
		18.0429-1	18.0429-2	18.0429-3	18.0429-4	18.0429-5	18.0429-6	18.0429-7	18.0429-8	
Available Nitrate (NO3-N)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.0	2.5
Available Phosphorus (P)	mg/kg	42	7	47	12	19	15	24	24	24
Available Potassium (K)	mg/kg	62	63	68	42	329	63	114	114	81
Available Sulphur (S04-S)	mg/kg	11	3	9	6	33	8	7	7	20
pH (1:1 extraction)	pH units	3.95	4.24	3.97	4.12	4.31	4.11	3.75	3.75	3.82
Electrical Conductivity (1:1: extraction)	dS/m	0.14	0.06	0.1	0.07	0.2	0.08	0.13	0.13	0.13
Organic Matter (W-B Wet Oxidation)	%	7.58	2.18	5.53	2.74	14.3	2.79	3.34	3.34	16.5

3.2.6 Salinity

As mentioned in Section 3.5, both the Delta and Blundell soil series mapped in this area by Luttemerding (1980) have salinity limitations due to their origin as deltaic deposits in a tidal zone. Salinity (N) is identified as a land capability limitation subclass, and includes soils affected by soluble salts that can restrict the range of crops grown. The salt content of soils is tested by creating a water-saturated paste and measuring the electrical conductivity. This value is commonly reported as mS/cm (millisiemens per centimeter).

Our electrical conductivity results ranged from 0.06 to 0.20 mS/cm for the eight samples tested. This correlates to a class 1, or no limitation for crop growth due to salinity. There is no salinity limitation found in the sampled soils, which was not expected for these soils. High salinity values may be confined to the deep horizons (> 1 m) that were not sampled on site. However the proposed crops for this area are shallow-rooted vegetables that will not be affected by salinity in subsoils of greater depth than 1 m.

4 Land Capability for Agriculture

4.1 Land Capability for Agriculture of the Property

Using the specific criteria presented in Land Capability Classification for Agriculture in British Columbia (Kenk and Cotic, 1983), we rated the agricultural capability of the proposed soil deposit area, which is dependent upon the existing soil and site conditions.

Based on our soil pit observations, we found the dominant soil limitation to be excess water (W), specifically a 4W limitation due to uniformly poorly drained soils. During the growing season, the water table will be within the rooting zone, restricting the range of crops that can be successfully grown without managing water (via installing drainage systems or raising the land surface via fill). Excess water limitations are determined based on soil drainage characteristics, the duration that the water saturates the soil, and the season of the soil saturation. Soil saturation characteristics are defined based on the presence of redoximorphic features in the soil profile (mottling, oxidized root channels, red and orange colours).

We also determined there is a significant limitation in the native subsoils, namely impediment to root extension due to high bulk density (the Btg horizon). This is rated as Class 3D for seven of the eight soil pits we investigated. This can be improved to a 2D

overall (although this would not improve the next limitation, which is fertility) with sufficient deep ploughing or ripping to break up the dense subsoil. Deep ripping must be done when the soil is as dry as possible, generally Mid to late summer). It may be required more than once, since soils can regain high bulk densities over time.

The soil pit sites did not show evidence of other limitations, due to erosion, salinity, stoniness, bedrock, topographic or permafrost.

Finally, the soil nutrient testing performed by AGAT Labs shows that there is an additional agricultural limitation of fertility (4F) due to very strong acid soils with pH ranges between 3.75 to 4.31 and nutrient deficiencies.

4.2 Improvement

The 4F limitation can only be improved to the next most serious limitation, which is excess water 4W in the northern proposed fill area. We are seeking to improve the fertility limitation by importing high quality fills, then re-spreading topsoil. Note that cranberries require low pH, but cranberries are not an economic crop²⁹ at the present time.

Improvement of the 4W limitation will be challenging. Drainage requires ditches with water levels lower than that in the field; and because water levels are high through the winter months throughout Richmond, it is not practical to achieve any relief of high water tables. Furthermore, the ditches on No. 7 road have mapped connectivity to fish habitat in the Fraser River. Control would depend on regional drainage and pumping to areas with lower winter water tables. Drainage is further impeded by the surrounding dykes (installed for cranberry cultivation) which impede drainage in spring and fall.

Fertility limitations can be ameliorated through liming although initial amounts of lime may be large. On-going fertilization will be required in addition to the application of micro-nutrients through spraying of crops.

²⁹ We understand that currently there is an oversaturated market for both blueberries and cranberries.

Local blueberry farmers operating in poorly-drained, native soils have reported (to Madrone) the following complications during farming operations:

- The development of deep ruts in the ground by harvest machinery if hand harvesting is not performed;
- Resulting damage to farm equipment when stuck, and further damage to surrounding plants when machinery needs to be towed out;
- Narrow harvest windows means hand-harvest is not ideal (machine-harvest for optimum crop harvest);
- Difficulty of acquiring labourers for hand-harvest of crops.

Given the significant constraints for drainage improvement we suggest that the most practical way of improving the soil is to import clean subsoil and cover with a minimum of 0.3 m of good quality topsoil or organic soil stripped from the study area, stockpiled and re-spread over the surface after grading. Any soil imported would have to be monitored to ensure it does not contain:

- Excessive coarse gravel, cobbles or stones;
- Contaminants;
- Foreign material;
- Excessive clay; or
- Other undesirable substances.

4.3 Soil Management Recommendations

Soils described in the Langley-Vancouver soil survey have been sorted into soil management groups according to soil characteristics that are significant for agricultural production. Soil management recommendations describe general types and levels of management inputs required to overcome soil limitations to crop production (Bertrand *et al.*, 1991; Luttmerding 1984).

The Delta soil series is a member of The Delta soil management group . The soils are mainly friable to firm silt loam, with poorly drained soils and high water holding capacity. The high water tables associated with Delta soils are usual during winter and early parts of the growing season. Surface ponding is common, which all contribute to the deterioration of surface soil structure and can result in fungal infection to crops.

Unfortunately, subsoiling will not improve water movement due to the high water tables and considerable drainage installations and/or pumping of water out of drainage ditches would be necessary to improve rooting distribution and depth.

The Delta soils have high to very high nutrient holding capability and a surface-layer of high organic content (Bertrand *et al.*, 1991; Luttmerding, 1984). Our soil survey shows that our soils are in fact highly deficient in N, P and S and have a very low pH, so that even though they have a high nutrient holding capacity, they are in fact quite infertile, except for the shallow surface organic horizon, which contains most of the nutrients in the soil.

5 Soil Placement Plan

We recommend that soil placement proceed through a series of well-defined steps.

Step 1. Protection of water courses

The first step on this property is to install any erosion and sediment control (ESC) measures on site and have these assessed for effectiveness prior to the arrival of any machinery on site. We also recommend measuring and flagging the 15 m setback from the Riparian Management Area (RMA) situated on the west side of the fill area; this is measured from the top of the bank of the No. 7 Road ditch. Madrone can assist with flagging this setback prior to any earthworks activities on site, to ensure that the RMA is not disturbed.

Step 2. Preparation for fill

Following proper placement of ESC measures, the earthworks operators will proceed strip approximately 0.3 m of the topsoil (**but not the nutrient-deficient subsoils**) This can occur in stages, with some areas being stripped and filled with soil prior to other areas; we will defer the exact sequence of topsoil stripping and storage to the earthworks operators.

All stripped topsoils and organics should be stored in stockpiles on site, preferably in rows directly next to their source fill areas so as not to mix sourced fills and topsoils. The limited removal of topsoils is prescribed so as to not extend into the local water table while conducting a fill operation.

Step 3. Importation and monitoring of soil

Next, good quality well-draining (i.e. loam, sandy loam) soil ideally sourced from local sites (Richmond, Vancouver South, and Burnaby) is spread over the deposit area, graded to an average depth of **1.3 m**, and graded. Finally, the stockpiled topsoil will be spread over the fill. The intent of soil placement is to construct a consistent soil profile that is suited to vegetable, soil-based agriculture across the filled area.

We estimate that approximately 110,000 m³ of fill will be spread over the site area of 9.0 ha. Deposited soil will be placed with slightly varying thicknesses, although an average final grade (above the existing grade, which varies by approximately 0.3 m) of 1.3 m is desired. We recommend sloping the fill to the east and west such that it drains into the ditches (west) and ESA (east) areas. All fill will be confined within the pre-existing berms/dykes constructed around the fill area.

There will be slight settling of fill material through time, however if a primarily mineral-fill (i.e. not organics) is used, there will be minimal disruption of the intended final grade.

5.1 Topsoil Management

The topsoil on the property should be retained and managed such that it can be used at the surface of the constructed soil profile. It is important to ensure no topsoil resources are lost to erosion and that topsoil quality is not degraded while it is stored. Topsoil should be stored for the duration of the project.

Topsoil stockpiles can be placed directly on the existing land surface and adjacent to the fill area. They should be no more than 5 m high, with 2:1 (horizontal to vertical) slopes. They should be constructed such that water cannot accumulate on the surface. Topsoil stockpiles should be seeded with an acceptable mix of grass and legume seeds if they are allowed to stand for longer than six months, otherwise they should be covered with straw or plastic to protect the topsoil from wind erosion.

To ensure topsoil does not become compacted, it should be handled only with moisture contents equivalent to field capacity—the moisture content of a soil after free water drainage has ceased. For practical purposes, field capacity for the soils on site usually occurs 36 hours after a saturating rainfall.

We recommend stripping the topsoil in all areas to ensure there is sufficient topsoil for constructing the final soil profile. The uppermost 0.2 to 0.3 m represents the growing portion of the in-situ soil and should be conserved.

Prior to topsoil stripping, Madrone should be contacted by Hexcel to ensure that the proper depth is excavated. Deep excavations are discouraged as this will result in too much of the Btg horizon being mixed into the topsoil. This soil is firm to very firm and is not a desirable growing medium (i.e. within 0.5 m of the surface). Our analysis shows that subsoils are also highly infertile. Excavating subsoils and mixing them with topsoil will result in ‘dilution’ of the topsoil and reduction of its value in reconstructing the soil profile. It may be necessary to import additional topsoil, compost, manure, or other suitable organic-rich amendment to achieve the objectives of a final soil that will be highly suitable of supporting soil-bound agriculture.

5.2 Sourced Soil

5.2.1 Physical Properties of Acceptable Source Soil

Soil sourced and brought to site should be coarse-textured, preferably sandy loam or loamy sand, to promote subsurface drainage. Soils containing high clay content or coarse fragments larger than fine gravels (2.5 cm or greater) are not desirable and should be avoided. Soils should be checked for these parameters ideally before arriving on site to ensure they are suitable as subsoils. If stony soils are unintentionally brought onto the site, the soils should be raked or sorted to remove the stones. A standard operating procedure (SOP) can be followed – an example SOP has been included in Appendix F.

Soils should be free of foreign or non-soil material and uncontaminated. Foreign material includes but is not limited to concrete, asphalt, waste, garbage, and lumber. As a large quantity of soil is sourced from properties featuring recently-demolished residences, we advise Hexcel and any contracted earthworks operators to check that demolished house waste has been removed from the source site prior to any excavations and transfers of soil to the property.

5.2.2 Chemical Properties of Acceptable Fill Material

All imported fill must meet the Soil Standards for Agricultural Land (Column II of Schedule 5 of Contaminated Sites Regulation³⁰ of the *Environmental Management Act*).

Contaminated soils must not be used as fill. The supplier should warrant that the source soil is free from contamination. Fill should not come from areas that have histories of industrial or commercial land use. If contaminated fill material is brought onto the site, Mahal Farms will assume liability for remediating the site or removing the contaminated material. We encourage Mahal Farms and Hexcel to include an agreement that assigns liability for contaminated soils.

Currently, Madrone conducts a desktop environmental assessment as well as a site visit to assess for any visible non-soil material and invasive species in each fill site. We also recommend obtaining Phase 1 reports for large sites (i.e. >3000 m³ of soil) that are less than 2 years old from contractors. If a Phase 1 report is not available, we encourage Hexcel to contact Madrone for a pre-importation site assessment and desktop study.

We recommend that all fills be inspected before it is imported to the receiving site.

5.3 Constructed Soil Profile

The constructed soil profile will have approximately 0.3 m of stockpiled topsoil at the surface. Below this, the upper 0.3-0.5 m of the subsoils should consist of soil fill that meets the criteria for Land Capability Class 1; these are listed in Table 5. The key parameters that must be met to achieve this capability class are textures of loam, sandy loam, loamy sand, and organic matter content greater than 2%.

³⁰ http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/375_96_07

Table 5. Criteria for Land Capability Class 1

Source of Criteria	Soil Parameter	Subsoil 40-80 cm	Topsoil 0-40 cm
Land Capability Classification for Agriculture in British Columbia	Soil Moisture Deficiency	N/A	<40 mm
	Available water storage capacity	>45 mm	>76 mm
	depth to root-restricting layer	N/A	>75
	texture	coarser than silty clay loam	fine sandy loam, silt loam, loam
	permeability	>1.0 cm/hour	>1.0 cm/hour
	erosion	N/A	not eroded or very slightly eroded
	salinity	<2 mS/cm	<2 mS/cm
	inundation	N/A	no damage to crops
	stoniness	<20% total (>2.5 cm) and <5% cobbles and stones (>7.5)	<5% total (>2.5 cm) and <.01% cobbles and stones (>7.5)
	topography	N/A	simple slopes <5% complex slopes <2%
	excess water	soils are freely draining	no damage to crops
	fertility	N/A	no restriction to crop growth
Modified from ALC reclamation criteria	reaction	5.0 to 7.5	5.5 to 7.0
	base saturation	20-80%	30-60%
	texture	<30% clay and <80% sand	sandy loam, loam
	moist consistence	friable or loose	friable
	organic C	0.5-2%	>2%

This subsoil must be placed on the graded surface. Soils destined to form the profile within 40 cm of the surface should either be free of cobbles and stones OR removed by screening or crushing to meet these criteria.

Weed or invasive species control should be practiced, under the direction of the monitoring Agrologist. After the soil profile has been constructed, the site should be inspected to determine if further treatments are necessary before establishing the crop. If subsoils remain compacted, then the Professional Agrologist may prescribe decompaction, using ripper or chisel blades. Decompaction should extend to a depth of 60 cm.

Finally in preparation for crop establishment, a top-dressing of organic amendment will be applied. Such an amendment will add further organic matter to enhance the physical structure ('tilth'), nutrient and moisture retention in the upper part of the soil profile, but will also encourage the development of a microbial community that can facilitate nutrient transformation. This can be compost or manure that meets certain criteria. **Products of**

wood-processing such as wood shavings, sawdust or wood chips are not appropriate.

All amendments should be tested through laboratory analysis prior to application; in addition, top-dressings of amendments should undergo experimentation by application of 'test areas' a year before widespread application. Typical application rates should be in the order of 10 Tonnes per acre or 2.5 T/ha.

6 Hydrology

There are no mapped or observed natural watercourses on site. The property features an irrigation canal through the centre but surface flow to this is blocked by the presence of raised dykes. Placed soil can be graded with a local topographic high through the approximate centre, and subtle slopes (1-2%) to the east and west. This will allow surface and subsurface (<0.5 m) water to flow east and west towards the ESA and the No. 7 Road ditch, respectively.

With proper runoff management (i.e. gently sloping stockpiles and final soil profiles), we do not anticipate that the hydrology of this area will change. The land will be raised by approximately 1.0 m, which will effectively raise the upper growing medium above seasonally ponded waters and high water tables. **The site should be assessed for the need for subsurface drainage when the site fill is complete or nearly complete. If it is deemed necessary, subsurface drainage will be installed.**

The only shared property line with the soil will be to the north; these are Mayfair Lakes golf course and a 0.25 hectare residential property to the northwest. **Drainage will not be directed towards these sites.** We recommend that soil placement in the north side of the property is ideally performed during the drier weather periods (i.e. late spring to early fall, after heavy precipitation) to ensure that surface erosion and run-off is limited while the soil profile is constructed and the surface is seeded. If wet conditions prevail, machinery can move to work on other parts of the site, for example.

There will be a required 15 m setback from the No. 7 Road ditch; silt fencing will be installed along the perimeter of soil on the west side to prevent surface run-off to the ditch. The RMA will not be disturbed during site activities (including removal of any vegetation in this area).

7 Post-Fill Land Capability for Agriculture

Following proper soil placement as per our recommendations, we estimate that the post-fill Land Capability for Agriculture ratings will improve from Class 4W with excess water limitations to a Class 2W with minor excess water limitations. The undesirable soil structure/root restricting layer limitation (3D) will be eliminated or improved to 2D. The existing subsurface will then be too deep to affect the growth of crops (undesirable Btg horizon is >0.75 m below the surface, as per the Land Capability Classification for Agriculture criteria).

Finally, the fertility limitation due to acidic and nutrient deficient subsoils in the upper 0.5 m will be completely resolved (no limitation) with the placement of good-quality, more alkaline soil (ideally pH 5.0 to 6.5). The topsoil can also be limed following placement to reduce natural acidity in this horizon. We will test the final reclaimed soil to assess nutrient status and pH; if additional amendments are necessary they will be done.

8 Summary of Recommendations

Mahal Farms intends to engage Hexcel Construction Ltd. to source and place the soil on site. We have proposed the following basic plan for the site:

- 1 Prior to any importation, strip between 0.2 and 0.3 m of the existing topsoil (and overlying peat, vegetation) over the 9.0 ha area. This approximates to 36,000 m³. This can proceed in stages as determined by the earthworks contractor.
- 2 All stripped soil should be stockpiled on site for later use. No soil shall be stockpiled in proximity (<10 m) to property lines, ditches, or riparian areas (RMA along No. 7 Road).
- 3 Placing locally sourced (if possible), good-quality soil on the stripped land, which is level with slopes less than 2% and situated at elevations less than 2 m above sea level.
- 4 Sourced soil should consist of clean soil from an uncontaminated source; it should have less than 10% coarse fragment, should not be clay-rich, and should not contain any foreign material. Madrone can assist with screening soil sites for potential contaminants (preliminary studies) and assessing coarse fragment content of incoming soil loads. Sites should also be checked for potential invasive plant species.
- 5 The final surface after completion of fill placement should be graded with an even 1-2% grade; we recommend sloping the soil to the east and west, with a crown in the centre.

- 6 The original topsoil (stripped) should be spread evenly over the final graded surface in such a way as to avoid compaction.
- 7 After spreading the surface should be seeded with an appropriate forage mix to prevent erosion and maintain soil fertility. Manure and liming will be necessary to improve soil nutrients and acidity of the Ah/Ap horizon. We recommend soil testing after amending the soil to assess nutrients prior to any planting.
- 8 The soil placement operation should be monitored at regular intervals through the process.
- 9 Once complete a final report should be issued on the condition and final, improved land capability of the filled area.

8.1 Monitoring

Should your soil placement application be jointly approved by the ALC and the City of Richmond, the terms of the soil deposit permit will indicate that Madrone is expected to conduct inspections of the site and materials and to provide inspection reports. Mahal should contact Madrone before it begins any site preparation work or soil placement to develop a monitoring schedule that meets the conditions of its permit and conforms to our recommendations for the site.

Monitoring visits should be scheduled to coincide with important project milestones and randomly when the site is active. The important milestones are:

- The installation of Erosion and Sediment Control measures on site, including the flagging of the RMA to the west of the fill area along No. 7 Road;
- At the start of topsoil stripping to ensure that an appropriate amount of topsoil is being stripped; we have indicated in our report that this is roughly 0.2 to 0.3 m. This will likely require the use of a smaller excavator with a smaller bucket;
- After extreme storm events to inspect stripping and stockpiled soil and the ESC measures;
- Once the fill has been graded, prior to spreading topsoil. If this proceeds in a sequence (i.e. cells are stripped and soil is placed in sequence), we will inspect each soil placement prior to the spreading of soil to ensure that there is no undesirable debris or high quantities of coarse fragments;
- When the reclaimed soil profile has been constructed.

Furthermore, we will inspect the site for the spread of any invasive plant species or soil erosion and transport issues (i.e. stockpiles sloping too steeply, resulting in rill erosion).

8.2 Reporting

We recommend preparing periodic monitoring reports every 3000 m³ of imported soil during the first year, and reports every 5000 m³ after the first year if there are no significant project issues (such as excessive soil stoniness, invasive species spread). In addition, a closure report should be prepared once the project is complete. The report should include an assessment of the final land capability for agriculture ratings and a comparison between the initial and final LCA ratings. It should contain an estimate of the volume of fill placed and details about fill source site. We recommend that accurate and complete records of all fill brought to the site, including truck counts, be kept. We are aware that Hexcel is currently completing a similar project on Westminster Highway and is informed of, and prepared for, the reporting and record-keeping requirements described in this plan.

9 Conclusions

Mahal Farms, with the assistance of earthworks experts Hexcel, proposes to place approximately 110,000 m³ of good-quality fill over 9.0 ha of the northwest portion of the property to improve soil wetness, undesirable soil structure, and soil fertility (due to high acidity) limitations. This will enable soil-based agriculture for vegetable crops.

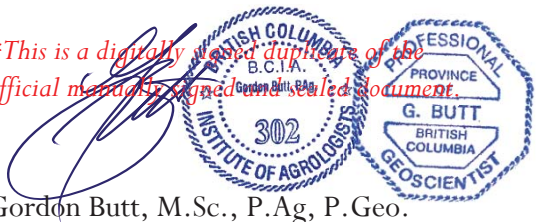
The primary intent of soil placement is to improve drainage conditions that limit agricultural capability. By raising the land (and as a result, introduce 1.3 m of a good growing medium), the undesirable soil structure and fertility (due to high acidity) limitations are also improved. This proposal will also allow Mahal Farms to diversify their crop rotations, from cranberries to vegetables, particularly varieties used in Indian cuisine such as chili peppers, eggplants, and indian carrots.

Prepared by:

**This is a digitally signed duplicate of the official manually signed and sealed document.*

Jessica Stewart, A.Ag., G.I.T.

Field assessment and supervision:

**This is a digitally signed duplicate of the official manually signed and sealed document.*

Gordon Butt, M.Sc., P.Ag, P.Geo.

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11 Limitations

The evaluations contained in this report are based on professional judgment, calculations, and experience. They are inherently imprecise. Soil, agricultural, hydrological, and drainage conditions other than those indicated above may exist on the site. If such conditions are observed, Madrone should be contacted so that this report may be reviewed and amended accordingly.

The recommendations contained in this report pertain only to the site conditions observed by Madrone at the time of the inspection. This report was prepared considering circumstances applying specifically to the client. It is intended only for internal use by the client for the purposes for which it was commissioned and for use by government agencies regulating the specific activities to which it pertains. It is not reasonable for other parties to rely on the observations or conclusions contained herein.

Madrone completed the field survey and prepared the report in a manner consistent with current provincial standards and on par or better than the level of care normally exercised by Professional Agrologists currently practicing in the area under similar conditions and budgetary constraints. Madrone offers no other warranties, either expressed or implied.



APPENDIX A

Maps & Figures

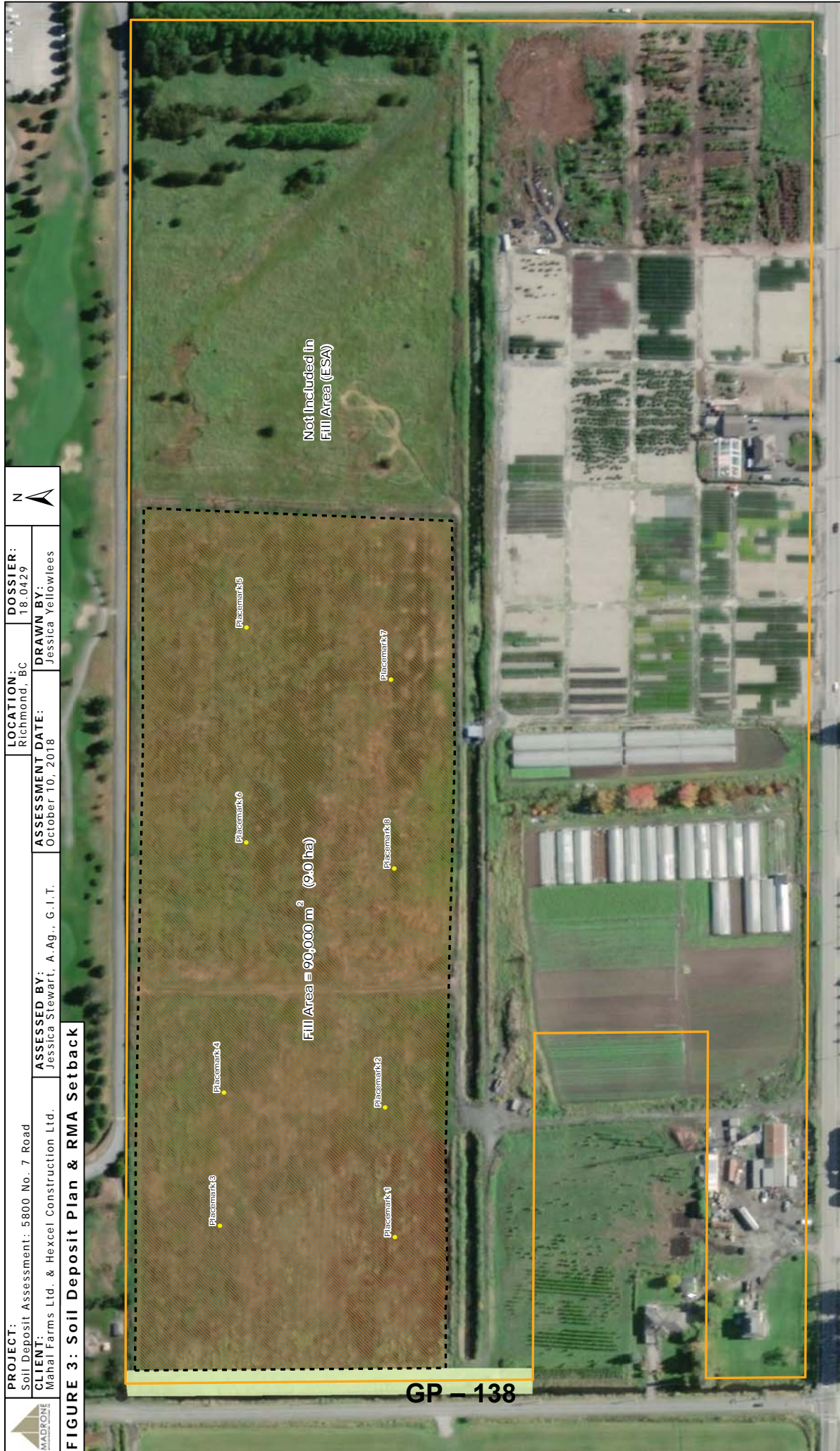


Figure 1. Overview of 5800 No. 7 Road
Mahal Farms Ltd.

FIGURE 1. OVERVIEW OF 5800 NO. 7 ROAD



FIGURE 2. SOIL PIT PLACEMENTS



	PROJECT:	LOCATION:	DOSSIER:
	Soil Deposit Assessment: 5800 No. 7 Road	Richmond, BC	18.0429
CLIENT:	ASSESSED BY:	ASSESSMENT DATE:	DRAWN BY:
Mahal Farms Ltd. & Hexcel Construction Ltd.	Jessica Stewart, A.Ag., G.I.T.	October 10, 2018	Jessica Yellowlees

FIGURE 3 : Soil Deposit Plan & RMA Setback

GP - 138

N

Project Line
 Riparian Setback- RMA (15m As Measured From No. 7 Road Ditch)
 Fill Area
 Soil Pit Location

0 100 200 300 m

1:2,000

All feature positions as shown are approximate



NOT FOR CONSTRUCTION

HEXCEL CONSTRUCTION LTD.
1111 HURONTARIO ST. TORONTO, ONT. M6H 1S4

TOPOGRAPHIC SURVEY
 7 Road & Westminster Hwy.
 RICHMOND

PROJECT No	7 RCL	PROJECT No	1 OF 1
DRAWN	Dec 6 / 2017	SHEET No	AS SHOWN
DESIGNED		CELL: 604-834-6940	

REV#	DATE	BY	DESCRIPTION
0	Dec/17	ESH	INITIAL SKETCH

CONTRACT NUMBERS

NOTES: SUPERINTENDENT
 SCOTT LYLE

NOTES
 -ALL DISTANCES AND MEASUREMENTS ARE IN METRIC UNITS
 -All elevations, dimensions and calculated areas do not reflect the legal dimensions of the property.



PROJECT: Soil Deposit Assessment: 5800 No. 7 Road
ASSESSED BY: Gordon Butt, M.Sc., P.Ag., P.Geo. & Jessica Stewart, A.Ag., G.I.T.

LOCATION: Richmond, BC

CLIENT: Mahal Farms Ltd. & Hexcel Construction Ltd.

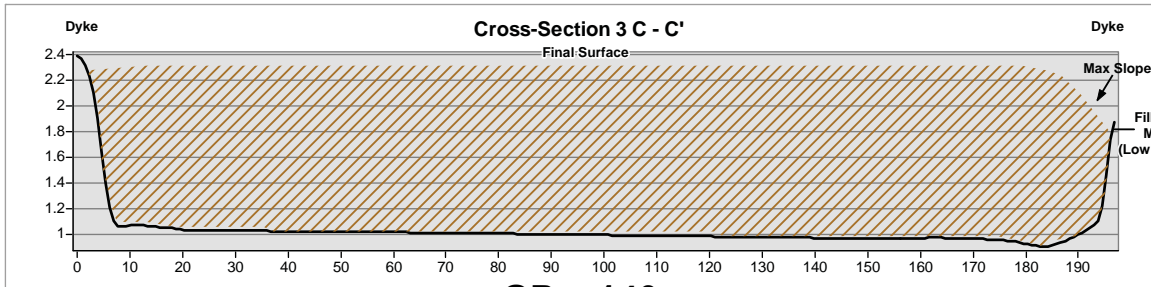
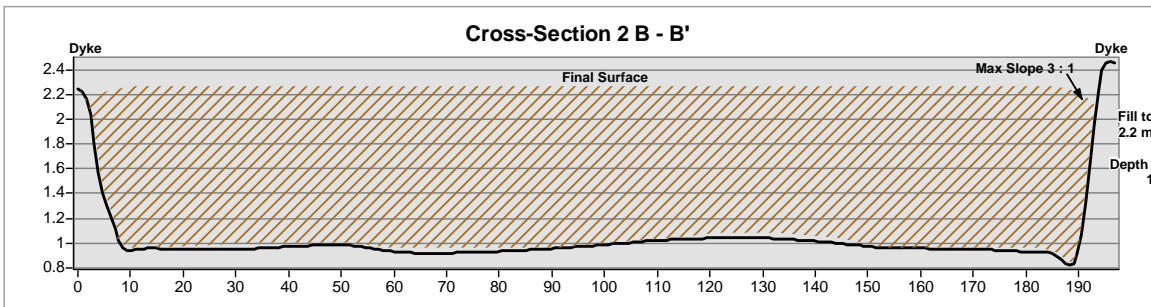
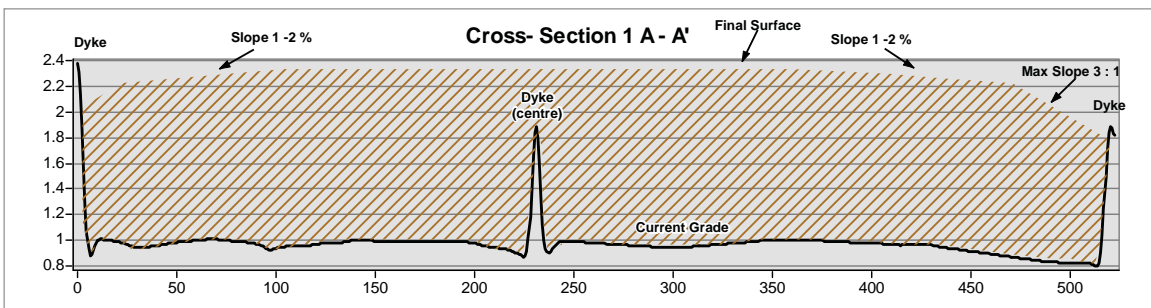
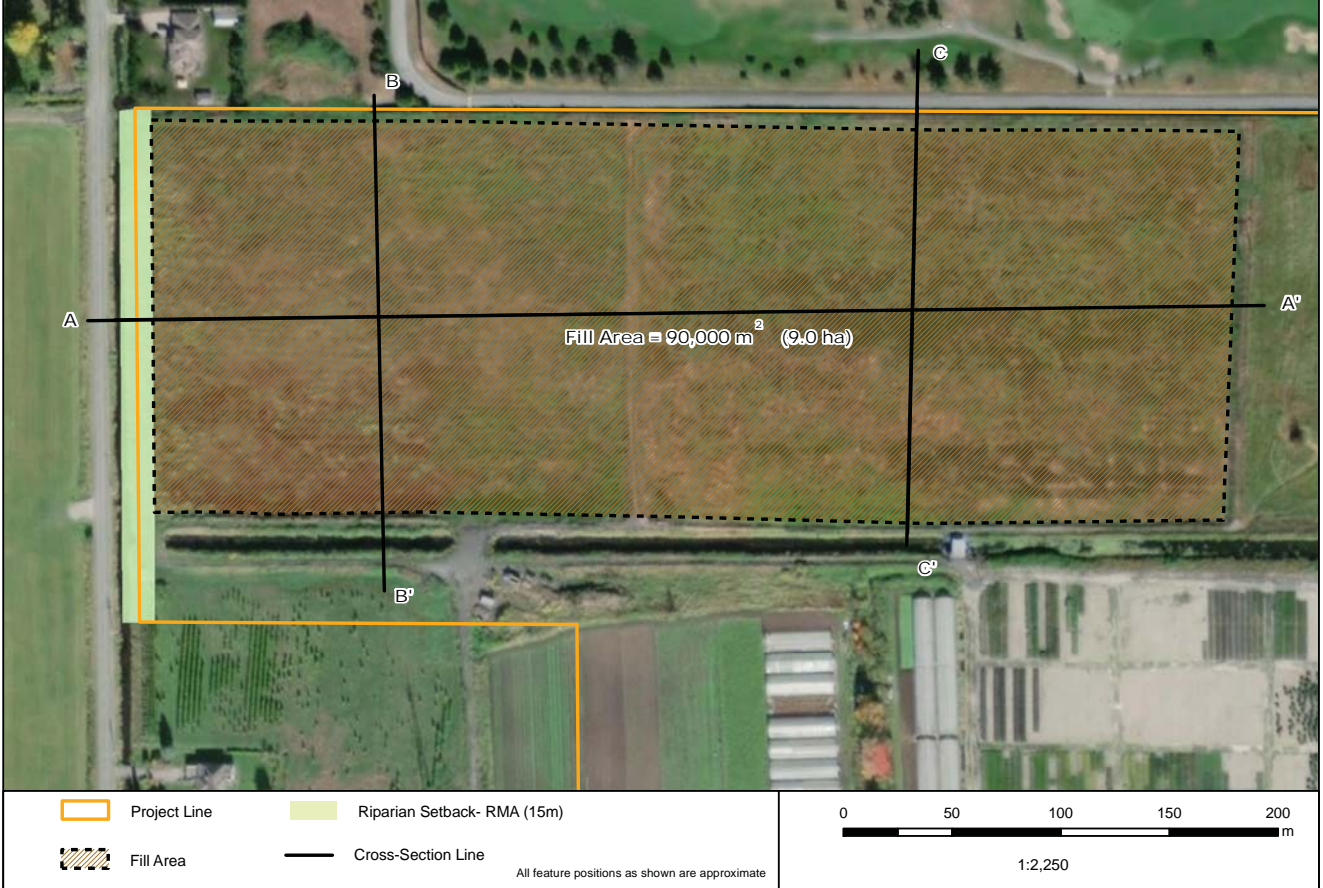
ASSESSMENT DATE: October 10, 2018

DRAWN BY: Jessica Yellowlees

DOSSIER: 18.0429



FIGURE 5: Cross-Sections



Cross-Section Legend	
	Current Soil Grade
	New Surface Following Soil Importation



APPENDIX A

Soil Pit Descriptions & Photographs

Pit 1 – Soil Profile Description (Placemark 1, Figure A2)

Property	Value
Pit Depth	1.3 m
# of soil horizons	5
Horizon	Depth (m)
Of	+12-0
Ap	0-0.2
Btg	0.2-0.6
IIBg	0.6-0.88
IICg	0.88-1.25
IIICg	1.25+
Water table depth	1.3 m
Soil type	Mineral with 12 cm of overlying peat
Overall classification	Orthic Luvisc Gleysol
Parent material origin	Deltaic overbank deposits over fluvial sands
Land Capability (unimproved)	4W, 3D



Comments: 12 cm of reddish-brown to black fibric peat overlying. Mottling starts at 20 cm below the surface (oxidized root channels). Excess free water due to high water tables; surface water during growing season due to poor surface drainage. Water table encountered at 1.3 m. Btg horizon is a Silty Clay Loam that is firm to very firm. There are very few, very fine to fine roots in the Btg horizon. There is an undesirable soil structure limitation.

Soil Textures, Pit 1:

Horizon	Soil Texture
Ap	Silt loam
Btg	Silty clay loam
Bg	Fine sandy loam
IICg	Sandy loam (-loamy sand)
IIICg	Medium sand

Pit 2 – Soil Profile Description (Placemark 2, Figure 2)

Property	Value
Pit Depth	1.3 m
# of soil horizons	4
Horizon	Depth (m)
Of	+12-0
Ap	0-0.25
Btg	0.25-0.57
BCg	0.57-1.12
IICg	1.12-1.3+
Water table depth	1.3 m
Soil type	Mineral with 12 cm of overlying peat
Overall classification	Orthic Luvisc Gleysol
Parent material origin	Deltaic overbank deposits over fluvial sands
Land Capability (unimproved)	4W, 3D



Comments: Same Btg horizon as Pit 1 – firm to very firm with oxidized root channels. Silty clay loam (light grey, faint blue mottles) grades to silt loam (medium grey, prominent orange mottles). Mottling (faint) starts at 25 cm below the surface.

Soil Textures, Pit 2:

Horizon	Soil Texture
Ap	Sandy loam (different from Pit 1)
Btg	Silty clay loam
BCg	Silt loam
IICg	Fine sandy loam, lenses of fine sand.

Pit 3 – Soil Profile Description (Placemark 3, Figure 2)

Property	Value
Pit Depth	1.4 m
# of soil horizons	4
Horizon	Depth (m)
Of	+10-0
Ap	0-0.3
Btg	0.3-0.8
BCg	0.8-1.3
Cg	1.3-1.4+
Water table depth	1.4 m
Soil type	Mineral with 10 cm of overlying peat
Overall classification	Orthic Luvisc Gleysol
Parent material origin	Deltaic overbank deposits over fluvial sands
Land Capability (unimproved)	4W, 3D



Comments: Mottling starts in Ap horizon (<30 cm); watertables are higher here during the growing season. The Btg horizon is firm to very firm (dense subsoil, root restricting layer).

Soil Textures, Pit 3:

Horizon	Soil Texture
Ap	Silt loam (-silty clay loam)
Btg	Silty clay loam
BCg	Silt loam
Cg	(Very) Fine sandy loam

Pit 4 – Soil Profile Description (Placemark 4, Figure 2)

Property	Value
Pit Depth	1.4 m
# of soil horizons	3
Horizon	Depth (m)
Of	+10-0
Apgj	0-0.4
Btg	0.4-0.8
BCg	0.8-1.4+
Water table depth	Below 1.4 m
Soil type	Mineral with 12 cm of overlying peat
Overall classification	Orthic Luvisolic Gleysol
Parent material origin	Deltaic overbank deposits over fluvial sands
Land Capability (unimproved)	4W, 3D



Comments: Buried log encountered in Ap horizon (ploughed). Oxidized root channels and faint orange mottling in the Ap horizon; perched watertables during growing season indicated. No water encountered at bottom of pit.

Soil Textures, Pit 4:

Horizon	Soil Texture
Apgj	Silt loam
Btg	Silty clay loam
BCg	Fine sandy loam

Pit 5 – Soil Profile Description (Placemark 5, Figure 2)

Property	Value
Pit Depth	1.4 m
# of soil horizons	4
Horizon	Depth (m)
Of	+10-0
Ah	0-0.15(0.3)
Btg	0.15(0.3)-0.66
BCg	0.66-0.96
Cg	0.96-1.4+
Water table depth	1.4 m
Soil type	Mineral with 12 cm of overlying peat
Overall classification	Orthic Luvisc Gleysol
Parent material origin	Deltaic overbank deposits over fluvial sands
Land Capability (unimproved)	4W, 3D



Comments: The Ah horizon depth is variable; it is between 15 and 30 cm thick and the contact with the Btg horizon is wavy. Water was encountered at 1.4 m and quickly filled the pit. There was seepage in the BCg and Cg horizons. The BCg horizon is firm and the Btg is firm to very firm, as for the previous four soil pits. Mottling starts in the Btg horizon in this pit. Sand in Ah layer not native: brought for cranberry bog.

Soil Textures, Pit 5:

Horizon	Soil Texture
Ah	Sandy loam
Btg	Silty clay loam
BCg	Silt loam
Cg	Fine sandy loam

Pit 6 – Soil Profile Description (Placemark 6, Figure 2)

Property	Value
Pit Depth	1.2 m
# of soil horizons	
Horizon	Depth (m)
Of	+10-0
Ah	0-0.2(0.25)
Btg	0.2(0.25)-0.6
Bg	0.6-0.7
Cg	0.7-1.2+
Water table depth	1.2 m
Soil type	Mineral with 12 cm of overlying peat
Overall classification	Orthic Luvisc Gleysol
Parent material origin	Deltaic overbank deposits over fluvial sands
Land Capability (unimproved)	4W, 3D



Comments: Mottling within 20 cm of the surface (oxidized root channels and faint orange mottles). As for Pit 5, sand in Ah layer not native: brought for cranberry bog. Seepage at base of pit (1.2 m). As for previous pits, the Btg horizon is firm to very firm.

Soil Textures, Pit 6:

Horizon	Soil Texture
Ah	Sandy loam.
Btg	Silty clay loam
Bg	Silty clay loam
Cg	(Very) fine sandy loam

Pit 7 – Soil Profile Description (Placemark 7, Figure 2)

Property	Value
Pit Depth	1.3 m
# of soil horizons	5
Horizon	Depth (m)
Of	+12-0
Ah	0-0.12
Btg	0.12-7
Bg	0.7-1.3
Cg	1.3+
Water table depth	1.3 m
Soil type	Mineral with 12 cm of overlying peat
Overall classification	Orthic Luvisc Gleysol
Parent material origin	Estuarine environment
Land Capability (unimproved)	4W, 3D



Comments: Thin Ah layer here. Wood shavings at surface for cranberry farm. Btg is very firm. Mottling starts within 12 cm of the surface. Estuarine environment suggested in lower C horizon; poorly-graded and well-sorted sand. There is decomposed plant matter in the Bg horizon.

Soil Textures, Pit 7:

Horizon	Soil Texture
Ap	Silt loam
Btg	Silty clay loam
Bg	Silty clay loam
Cg	Loamy sand. Fine.

Pit 8 – Soil Profile Description (Placemark 8, Figure 2)

Property	Value
Pit Depth	1.6 m
# of soil horizons	5
Horizon	Depth (m)
Of	+20-0
Ap	0-0.6
Btg	0.6-0.95
BCg	0.95-1.5
Cg	1.5-1.6+
Water table depth	1.6 m
Soil type	Mineral with 12 cm of overlying peat
Overall classification	Orthic Luvic Gleysol
Parent material origin	Deltaic overbank deposits over fluvial sands
Land Capability (unimproved)	4W, 2D



Comments: thickest Ah horizon encountered of all pits (as a result, dense subsoils are not encountered until 60 cm below the surface). Btg horizon is firm to very firm and grey with prominent orange mottles. Seepage at base of the pit.

Soil Textures, Pit 8:

Horizon	Soil Texture
Ap	Sandy loam
Btg	Silt loam (-silty clay loam)
BCg	Silty clay loam
Cg	Fine to medium, wet sand



APPENDIX C

Land Capability for Agriculture Overview

Land Capability for Agriculture (LCA) in BC is a classification system that groups agricultural land into classes that reflect potential and limitations to agriculture. The classes are differentiated based on soil properties, landscape, and climate conditions. The system considers the range of possible crops and the type and intensity of management practices required to maintain soil resources but it does not consider suitability of land for specific crops, crop productivity, specific management inputs or the feasibility of implementing improvements.

There are two land capability hierarchies, one for mineral soils and one for organic soils. Each hierarchy groups the land into seven classes that describe the range of suited crops and required management inputs. The range of suited crops decreases from Class 1 to Class 7 (Class O1 and O7 for Organic soils) and/or the management inputs increase from Class 1 to Class 7. For example, Class 1 lands can support the broadest range of crops with minimal management units.

Lands in Classes 1 to 4 are considered capable of sustained agricultural production of common crops. Class 5 lands are considered good for perennial forage or specially-adapted crops. Class 6 lands are good for grazing livestock and Class 7 lands are not considered capable of supporting agricultural production.

LCA Classes are subdivided into subclasses based on the degree and kind of limitation to agriculture. Subclasses indicate the type and intensity of management input required to maintain sustained agricultural production and specify the limitation. For example, lands rated Class 2W have an excess water limitation that can be improved by managing water on the site. Most lands are rated for unimproved and improved conditions. Unimproved ratings are calculated based on site conditions at the time of the assessments, without irrigation. Past improvements are assessed as part of the unimproved rating. Forested lands are assessed assuming they are cleared. Improved ratings are assigned assuming that existing limitations have been alleviated. Generally, improvement practices taken into account are drainage, irrigation, diking, stone removal, salinity alleviation, subsoiling, intensive fertilization and adding soil amendments.

LCA CLASSES

Table A describes the characteristics of each mineral and organic soil class. Mineral soil classes are 1–7 and organic soil classes are O1–O7.

Table A. LCA Classes

Class	Description	Characteristics
1 01	No or very slight limitations that restrict agricultural use	Level or nearly level. Deep soils are well to imperfectly drained and hold moisture well. Managed and cropped easily. Productive.
2 02	Minor limitations that require ongoing management or slightly restrict the range of crops, or both	Require minor continuous management. Have lower crop yields or support a slightly smaller range of crops that class 1 lands. Deep soils that hold moisture well. Managed and cropped easily.
3 03	Limitations that require moderately intensive management practices or moderately restrict the range of crops, or both	More severe limitations than Class 2 land. Management practices more difficult to apply and maintain. Limitations may: Restrict choice of suitable crops. Affect timing and ease of tilling, planting or harvesting. Affect methods of soil conservation.
4 04	Limitations that require special management practices or severely restrict the range of crops, or both	May be suitable for only a few crops or may have low yield or a high risk of crop failure. Soil conditions are such that special development and management conditions are required. Limitations may: Affect timing and ease of tilling, planting or harvesting. Affect methods of soil conservation.
5 05	Limitations the restrict capability to producing perennial forage crops or other specially adapted crops (e.g. Cranberries)	Can be cultivated, provided intensive management is employed or crop is adapted to particular conditions of the land. Cultivated crops may be grown where adverse climate is the main limitation, crop failure can be expected under average conditions.
6 06	Not arable, but capable of producing native and/or uncultivated perennial forage crops	Provides sustained natural grazing for domestic livestock. Not arable in present condition. Limitations include severe climate, unsuitable terrain or poor soil. Difficult to improve, although draining, dyking and/or irrigation can remove some limitations.
7 07	No capability for arable culture or sustained natural grazing	All lands not in class 1 to 6. Includes rockland, non-soil areas, small water-bodies.

LCA SUBCLASSES FOR MINERAL SOIL

LCA Classes, except Class 1 which has no limitations, can be divided into subclasses depending upon the type and degree of limitation to agricultural use. There are twelve LCA subclasses to describe mineral soils (Table B). Mineral soils contain less than 17% organic carbon; except for an organic surface layer (SCWG, 1998).

Table B. LCA Subclasses for Mineral Soil

LCA Subclass	Map Symbol	Description	Improvement
Soil moisture deficiency	A	Used where crops are adversely affected by droughtiness, either through insufficient precipitation or low water holding capacity of the soil.	Irrigation
Adverse climate	C	Used on a subregional or local basis, from climate maps, to indicate thermal limitations including freezing, insufficient heat units and/or extreme winter temperatures.	N/A
Undesirable soil structure and/or low perviousness	D	Used for soils that are difficult to till, requiring special management for seedbed preparation and soils with trafficability problems. Includes soils with insufficient aeration, slow perviousness or have a root restriction not caused by bedrock, permafrost or a high watertable.	Amelioration of soil texture, deep ploughing or blading to break up root restrictions. Cemented horizons cannot be improved.
Erosion	E	Includes soils on which past damage from erosion limits erosion (e.g. Gullies, lost productivity).	N/A
Fertility	F	Limited by lack of available nutrients, low cation exchange capacity or nutrient holding ability, high or low Ph, high amount of carbonates, presence of toxic elements or high fixation of plant nutrients.	Constant and careful use of fertilizers and/or other soil amendments.
Inundation	I	Includes soils where flooding damages crops or restricts agricultural use.	Diking
Salinity	N	Includes soils adversely affected by soluble salts that restrict crop growth or the range of crops.	Specific to site and soil conditions.
Stoniness	P	Applies to soils with sufficient coarse fragments, 2.5 cm diameter or larger, to significantly hinder tillage, planting and/or harvesting.	Remove cobbles and stones.
Depth to solid bedrock and/or rockiness	R	Used for soils in which bedrock near the surface restricts rooting depth and tillage and/or the presence of rock outcrops restricts agricultural use.	N/A
Topography	T	Applies to soils where topography limits agricultural use, by slope steepness and/or complexity.	N/A
Excess Water	W	Applies to soils for which excess free water limits agricultural use.	Ditching, tilling, draining.
Permafrost	Z	Applies to soils that have a cryic (permanently frozen) layer.	N/A

LCA SUBCLASSES FOR ORGANIC SOIL

Organic soils are composed of organic materials such as peat and are generally saturated with water (SCWG, 1998). Subclasses for organic soils (Table C) are based on the type and degree of limitation for agricultural use an organic soil exhibits. There are three subclasses specific to organic soils. Climate (C), fertility (F), inundation (I), salinity (N), excess water (W) and permafrost (Z) limitations for organic soil are the same as defined for mineral soil.

Table C. LCA Subclasses for Organic Soil.

LCA Subclass	Map Symbol	Description	Improvement
Wood in the profile	B	Applies to organic soils that have wood within the profile	Removal
Depth of organic soil over bedrock and/or rockiness	H	Includes organic soils where the presence of bedrock near the surface restricts rooting depth or drainage and/or the presence of rock outcrops restricts agricultural use	N/A
Degree of decomposition or permeability	L	Applies to organic soils that are susceptible to organic matter decomposition through drainage	N/A



APPENDIX D

Soil Analytical Results – AGAT Labs

CLIENT NAME: MADRONE ENVIRONMENTAL
202 - 2790 Gladwin Road
ABBOTSFORD, BC V2T 4S7
(604) 504-1972

ATTENTION TO: Gordon Butt

PROJECT: 18.0429

AGAT WORK ORDER: 18V404140

SOIL ANALYSIS REVIEWED BY: Dana Solari, Lab Reporter

DATE REPORTED: Nov 14, 2018

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 1: Sample receipt temperature 9°C.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 18V404140
PROJECT: 18.0429

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: MADRONE ENVIRONMENTAL
SAMPLING SITE:

ATTENTION TO: Gordon Butt
SAMPLED BY:

Nutrients Package 5

DATE RECEIVED: 2018-10-31	SAMPLE DESCRIPTION: 18.0429-01		18.0429-02	18.0429-03	18.0429-04	18.0429-05	18.0429-06	18.0429-07	18.0429-08
	Unit	G / S	RDL	Soil	Soil	Soil	Soil	Soil	Soil
Available Nitrate (NO3-N)	mg/kg	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.0	2.5
Available Phosphorus - P	mg/kg	1	42	7	12	19	15	24	24
Available Potassium	mg/kg	8	62	63	42	329	63	114	81
Available Sulfur (SO4-S)	mg/kg	3	11	3	6	33	8	7	20
pH (1:1 Extraction)	pH Units	N/A	3.95	4.24	4.12	4.31	4.11	3.75	3.82
Electrical Conductivity (1:1 Extraction)	dS/m	0.05	0.14	0.06	0.07	0.20	0.08	0.13	0.13
Organic Matter (W-B Wet Oxidation)	%	0.30	7.58	2.18	2.74	14.3	2.79	3.34	16.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
966663-966674 Analysis based on dry weight
Note: Available Nitrate-N performed by subcontracted laboratory.
Analysis performed at AGAT Calgary (unless marked by *)

GP-1157

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 18V404140
PROJECT: 18.0429

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: MADRONE ENVIRONMENTAL
SAMPLING SITE:

ATTENTION TO: Gordon Butt
SAMPLED BY:

Soil Analysis - Texture

DATE RECEIVED: 2018-10-31

DATE REPORTED: 2018-11-14

SAMPLE DESCRIPTION: 18.0429-02 18.0429-06
SAMPLE TYPE: Soil Soil
DATE SAMPLED: 2018-10-29 2018-10-29
G / S RDL 9666668 9666672

Parameter	Unit	G / S	RDL	Soil Texture
Particle Size Distribution (Sand)	%	2	3	7
Particle Size Distribution (Silt)	%	2	61	53
Particle Size Distribution (Clay)	%	2	36	40
Soil Texture			Silt Clay Loam	Silt Clay

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
Analysis performed at AGAT Calgary (unless marked by *)

GP - 158

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 18V404140
PROJECT: 18.0429

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: MADRONE ENVIRONMENTAL
SAMPLING SITE:

ATTENTION TO: Gordon Butt
SAMPLED BY:

DATE RECEIVED: 2018-10-31		DATE REPORTED: 2018-11-14																		
Parameter	Unit	SAMPLE DESCRIPTION:		18.0429-01		18.0429-02		18.0429-03		18.0429-04		18.0429-05		18.0429-06		18.0429-07		18.0429-08		
		G / S	RDL	G / S	RDL	G / S	RDL	G / S	RDL	G / S	RDL	G / S	RDL	G / S	RDL	G / S	RDL	G / S	RDL	
pH (Saturated Paste)	pH units		0.1	4.8		5.0		4.9		5.0		5.0		5.1		5.0		4.7		4.6
Electrical Conductivity (Saturated Paste)	dS/m		0.01	0.17		0.09		0.12		0.11		0.12		0.35		0.12		0.16		0.26
Saturation Percentage	%		0.5	75.4		58.9		72.4		62.5		60.7		94.8		60.7		68.9		79.0
Calcium, Soluble	mg/L		1	11		5		9		6		5		18		5		9		16
Potassium, Soluble	mg/L		2	<2		<2		<2		<2		<2		17		<2		3		5
Magnesium, Soluble	mg/L		1	4		2		4		2		2		11		2		3		7
Sodium, Soluble	mg/L		2	13		7		6		11		13		15		13		11		12
Calcium, Soluble (mg/kg)	mg/kg		1	8		3		7		4		3		17		3		6		13
Magnesium, Soluble (mg/kg)	mg/kg		1	3		1		3		1		1		10		1		2		6
Potassium, Soluble (mg/kg)	mg/kg		2	<2		<2		<2		<2		<2		16		<2		2		4
SP-150				0.85		0.67		0.42		0.99		1.24		0.69		1.24		0.81		0.63
Sodium, Soluble (mg/kg)	mg/kg		2	10		4		4		7		8		14		8		8		9

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
Analysis performed at AGAT Vancouver (unless marked by *)

D. Solau

Certified By:

Quality Assurance

CLIENT NAME: MADRONE ENVIRONMENTAL
 PROJECT: 18.0429
 SAMPLING SITE:

AGAT WORK ORDER: 18V404140
 ATTENTION TO: Gordon Butt
 SAMPLED BY:

Soil Analysis																
RPT Date: Nov 14, 2018			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
							Lower	Upper	Lower		Upper	Lower		Upper		

Soil Salinity - Basic

pH (Saturated Paste)	9672240	IH20181	6.7	6.8	1.5%	< 0.1	97%	80%	120%					
Electrical Conductivity (Saturated Paste)	9672240	IH20181	6.14	6.29	2.4%	< 0.01	97%	80%	120%					
Saturation Percentage	9672240	IH20181	37.1	36.9	0.5%	< 0.5	100%	80%	120%					
Calcium, Soluble	9672240	IH20181	647	620	4.3%	< 1	96%	80%	120%	100%	85%	115%		
Potassium, Soluble	9672240	IH20181	16	15	6.5%	< 2	84%	80%	120%	99%	85%	115%		
Magnesium, Soluble	9672240	IH20181	196	188	4.2%	< 1	110%	80%	120%	102%	85%	115%		
Sodium, Soluble	9672240	IH20181	565	526	7.1%	< 2	97%	80%	120%	100%	85%	115%		

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Nutrients Package 5

Available Phosphorus - P	9666670	9666670	12	12	2.5%	< 1	103%	80%	120%	94%	80%	120%	NA	80%	120%
Available Potassium	9666670	9666670	42	39	6.8%	< 8	92%	80%	120%	87%	80%	120%	87%	80%	120%
Available Sulfur (SO4-S)	9666671	9666671	33	32	2.1%	< 3	109%	80%	120%	101%	80%	120%	NA	80%	120%
pH (1:1 Extraction)	2157	6663	3.95	3.90	1.3%	N/A	101%	90%	110%						
Electrical Conductivity (1:1 Extraction)	2157	6663	0.14	0.14	NA	< 0.05	99%	80%	120%						
Organic Matter (W-B Wet Oxidation)	9666663	9666663	7.58	7.39	2.5%	< 0.30	91%	80%	120%	NA	80%	120%	96%	80%	120%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution. If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Soil Analysis - Texture

Particle Size Distribution (Sand)	9675844		48	48	0.0%	< 2	110%	80%	120%					
Particle Size Distribution (Silt)	9675844		29	29	0.0%	< 2	89%	80%	120%					
Particle Size Distribution (Clay)	9675844		23	23	0.0%	< 2	103%	80%	120%					

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By: _____

D. Soloumi

Method Summary

 CLIENT NAME: MADRONE ENVIRONMENTAL
 PROJECT: 18.0429
 SAMPLING SITE:

 AGAT WORK ORDER: 18V404140
 ATTENTION TO: Gordon Butt
 SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Available Nitrate (NO3-N)	SOIL 0110; SOIL 0120; SOIL 0130	SHEPPARD 2007, ALBERTA AGRICULTURE 1988	DISCRETE ANALYZER
Available Phosphorus - P	SOIL 0110; SOIL 0120; SOIL 0130	SHEPPARD 2007, ALBERTA AGRICULTURE 1988	DISCRETE ANALYZER
Available Potassium	SOIL 0110; SOIL 0120; SOIL 0131; INST 0140	SHEPPARD 2007, ALBERTA AGRICULTURE 1988	ICP/OES
Available Sulfur (SO4-S)	SOIL 0110; SOIL 0120; SOIL 0131; INST 0140	SHEPPARD 2007, KOWALENKO 1993	ICP/OES
pH (1:1 Extraction)	SOIL 0110; INOR 401 0120; SOIL 0260	SHEPPARD 2007; HENDERSHOT 2008 S	PH METER
Electrical Conductivity (1:1 Extraction)	SOIL 0110; INOR 401 0120; SOIL 0260	SHEPPARD 2007; HENDERSHOT 2008 S	CONDUCTIVITY METER
Organic Matter (W-B Wet Oxidation)	SOIL 0480; SOIL 0110; SOIL 0120	Skjemstad 2008	SPECTROPHOTOMETER
Particle Size Distribution (Sand)	SOIL 0520; SOIL 0110; SOIL 0120	JONES 2001	HYDROMETER
Particle Size Distribution (Silt)	SOIL 0520; SOIL 0110; SOIL 0120	JONES 2001	HYDROMETER
Particle Size Distribution (Clay)	SOIL 0520; SOIL 0110; SOIL 0120	JONES 2001	HYDROMETER
pH (Saturated Paste)	LAB-181-4022	BC MOE Lab Manual Section B	PH METER
Electrical Conductivity (Saturated Paste)	LAB-181-4022	BC MOE Lab Manual Section B	CONDUCTIVITY METER
Saturation Percentage	LAB-181-4022	BC MOE Lab Manual Section B	GRAVIMETRIC
Calcium, Soluble	LAB-181-4022, MET-181-6106	BC MOE Lab Manual Section B	ICP/OES
Potassium, Soluble	LAB-181-4022, MET-181-6106	BC MOE Lab Manual Section B	ICP/OES
Magnesium, Soluble	LAB-181-4022, MET-181-6106	BC MOE Lab Manual Section B	ICP/OES
Sodium, Soluble	LAB-181-4022, MET-181-6106	BC MOE Lab Manual Section B	ICP/OES



AGAT

Laboratories

120 - 8600 Glenlyon Parkway
 Burnaby, BC
 V5J 0B6
 P: 778.452.4000 - F: 778.452.4074

Chain of Custody Record

Report Information

Company: MADRONE ENVIRONMENTAL
 Contact: GORDON BUTT
 Address: 202 - 2790 GLADWIN RD. ABBOTS FORD BC
 Phone: 6045041972 Fax: 6045041912
 AGAT Quote #: _____
 Client Project #: 18.0429

Invoice To Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____
 F/O/A/E#: _____

Report Information

1. Name: GORDON BUTT
 Email: gordon.butt@madrone.ca
 2. Name: _____
 Email: _____

Requirements (Please Check)

BC CSR Soil
 AL
 IL
 PL
 CL
 RL
 BC CSR - Water
 DW
 AW
 IW
 LW

**PARTICLE SIZE: 02 + 06
 NUTRIENT S: ALL
 SALINITY: ALL**

Schedule 11 (Please Specify) _____
 CCME (Please Specify) _____
 Other (Please Specify) _____

Report Format

Single Sample per page
 Multiple Samples per page
 Excel Format Included

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days
Rush TAT Day 2 - 100%
 Day 3 - 50%
 Day 4 - 25%

Date Required: _____

PLEASE CONTACT LABORATORY IF RUSH REQUIRED SAMPLE SUBMISSION CUT OFF FOR EFFECTIVE DATE BY 3 PM

Laboratory Use Only

Arrival Temperature: 9°C
 AGAT Job Number: 18V404160

Notes: _____

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT	NUMBER OF CONTAINERS	PRESERVED (Y/N)	HAZARDOUS (Y/N)	Hold for: <input type="checkbox"/> 60 DAYS
<u>66663</u>	<u>18.0429-01</u>	<u>SOIL</u>	<u>OCT 29: 14:00</u>					
<u>668</u>	<u>-02</u>	<u>"</u>	<u>"</u>					
<u>669</u>	<u>-03</u>	<u>"</u>	<u>"</u>					
<u>670</u>	<u>-04</u>	<u>"</u>	<u>14:15</u>					
<u>671</u>	<u>-05</u>	<u>"</u>	<u>"</u>					
<u>672</u>	<u>-06</u>	<u>"</u>	<u>14:30</u>					
<u>673</u>	<u>-07</u>	<u>"</u>	<u>"</u>					
<u>674</u>	<u>-08</u>	<u>"</u>	<u>"</u>					

Samples Relinquished By (Print Name and Sign)	Date/Time	Samples Relinquished By (Print Name and Sign)	Date/Time	Samples Relinquished By (Print Name and Sign)	Date/Time
<u>[Signature]</u>					

Page _____ of _____

N^o: **027397**



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 18V404140

RECEIVING BASICS:

Received From: LOOMIS

Waybill #: _____

SAMPLE QUANTITIES:

Coolers: 1 Containers: 8

TIME SENSITIVE ISSUES:

Earliest Date Sampled: Oct 29, 2018

ALREADY EXCEEDED? Yes No

NON-CONFORMANCES:

3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's) *use jars when available

(1) 10 + 9 + 9 = 9 °C (2) ___ + ___ + ___ = ___ °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C

Was ice or ice pack present: Yes No

Integrity Issues:

Account Project Manager: _____ have they been notified of the above issues: Yes No

Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

APPENDIX E

Inclusion in Fill Importation Assessment reports

For each source site, the owner/operator of the receiving site should secure a written Soil Acceptance Agreement with the parties responsible for supplying and transporting soils. The agreement should specify that

- 1** The imported soil must not contain:
 - a** any contaminants in concentrations that exceed the standards in Schedule 7, Column III of the Contaminated Sites Regulation under BC's Environmental Management Act, or
 - b** any hazardous waste as defined in the Hazardous Waste Regulation of the Environmental Management Act,
- 2** The imported soil must not have been transported onto the donor site from another site,
- 3** The owner of the receiving site has the right to test and/or require the supplier to test for contaminants and soil texture, and to inspect the source site,
- 4** The supplier will provide *all* available site contamination reports pertaining to the imported soil and that at minimum a Preliminary Site investigation Phase 1 (or Stage 1) or Phase 2 (or Stage 2) report will be provided for any source site that is an industrial, government or large residential development,
- 5** The parties supplying/transporting soils are responsible for removing any soils and remediating any resulting contamination if the soils are found to be contaminated or if the supplier failed to supply all available site contamination reports pertaining to the imported soil, and

- 6** Any loads arriving at the site without proper documentation of the source of the soil and evidence of Soil Acceptance Agreement for the source site will be refused entry.

Entrance to the receiving site should be controlled and records should be maintained that identify the source of each load and the parties supplying/transporting the load. Consideration should be given to requiring security deposits from the suppliers/transporters.

APPENDIX F

STANDARD OPERATING PROCEDURE: STONY SOILS IN IMPORTED FILLS

Objective

The objective of the SOP is to ensure soils in the upper 50 cm of the fill meet stoniness standards for Class 2P limitations; that is:

- A. Total coarse fragment content (>2.5 cm or 1 inch): **less than 10%**;
- B. Cobbles and stones (>7.5 cm or 3 inches): **less than 1%**.

We recognize that the identification of stoniness may be difficult; therefore this SOP identifies measures at different stages in the importation of fill. Following all measures in this SOP will reduce the chance that stony soils will be incorporated in the fill.

Measures to be Implemented

Control of stoniness will be accomplished by measures implemented at

- A. the source site,
- B. upon entry to the receiving site;
- C. at the dump site on the property.

The measures are:

- 1 inspect soils before dumping and keep them in separate stockpiles for either processing (stone removal) or later removal from site;
- 2 treat soils that have more than 1% cobbles and stones using a rake;
- 3 ensure that soils that have more than 10% gravel (2.5 to 7.5 cm) are buried at least 50 cm from the final grade of the fill.

Procedures

- 1 At **source site**. Fill with excessive coarse fragments will be identified at the source site and separated from non-stony soils. **Only non-stony soils will be delivered** to the fill site.
- 2 At **receiving site entrance**. All fill that contains excessive coarse fragments (based on visual inspection) will be identified upon entry and dumped separately from the fill, for removal or processing later. If stony soils are suspected in a load, this must be communicated to the project supervisor.
- 3 At **receiving site, at dumping site**. As fill is being dumped it must be inspected for stoniness, relative to the above standards. If the soil does not meet the standards, it must be removed from the fill and stockpiled separately for removal or processing later.
- 4 All separated stockpiles of stony material must be inspected, and the decision to remove or process should be made by the site supervisor.
- 5 All cobbles and stones greater than 7.5 cm or 3 inch diameter should be removed using the specially designed rake. After processing, the cobbles and stones should occupy less than 1% of the volume of soil. (fragments less than 7.5 cm cannot be removed by the rake).
- 6 If coarse fragments between 2.5 cm and 7.5 cm (1 and 3 inches) occupy more than 10% of the soil volume, after removal of cobbles and stones, the soil should only be used as a subsoil and should not be placed within 50 cm of the final grade of the fill.

The stoniness content of all fill will be assessed during routine site inspections by Madrone after every increment of 3000 m³ fill volume (recommended volume – may be adjusted according to the project).



7119 River Road, Delta, British Columbia V4G 1A9

Tel : 946-8744 • Fax: 946-8704

City of Richmond
6911 No. 3 Rd
Richmond, BC V6Y 2C1

June 3, 2020

RE: Soil Use for the Placement of Fill Application for the Property Located at 5800 No. 7 Road (Mahal)

To whom it may concern,

In response to the FSAAC committee motion supporting the soil deposit proposal for the property and their recommendation that we provide a performance bond to ensure the proposed Farm Plan is implemented, Hexcel Construction is prepared to provide a returnable surety bond or letter of credit in the amount of \$100,000.00 specifically to ensure the implementation of the Farm Plan.

This offer is contingent upon project approval by both the City and the ALR.

If you have any questions about this matter, please contact Ron Wilson at 604-946-8744.

Sincerely,

A handwritten signature in black ink, appearing to read "Ron Wilson", is written over a horizontal line.

Ron Wilson
President
Hexcel Construction Ltd



TECHNICAL MEMORANDUM

**Soil Source Sites for the Proposed Soil
Placement at 5800 No. 7 Road,
Richmond, BC**

FOR:

**Mr. Paul Mahal, Mahal Farms Ltd.
&
Mr. Ron Wilson, Hexcel Construction Ltd.**

BY:

**Jessica Stewart, P.Ag., P.Geo.
Madrone Environmental Services Ltd.**

Revised: January 7, 2020

MADRONE ENVIRONMENTAL SERVICES LTD.
#202-2790 GLADWIN ROAD • ABBOTSFORD • BC • V2T 4S7
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TABLE OF CONTENTS

1	INTRODUCTION	1
2	PROJECT BACKGROUND	2
2.1	RATIONALE AND VOLUME	2
2.2	TYPE OF SOIL TO BE IMPORTED	2
2.3	SOIL TO BE REJECTED	4
3	PROPOSED SOURCE SITES	6
4	HEXCEL – PROPOSAL TO IMPORT ONLY RICHMOND SOILS.....	7

TECHNICAL MEMORANDUM

Soil Source Sites for the Proposed Soil Placement at 5800 No. 7 Road, Richmond, BC

1 Introduction

The City of Richmond (CoR) has requested a technical memorandum to accompany a previously-submitted soil deposit application for 5800 No. 7 Road, Richmond (referred to as 'the Property' or 'the Site'). The memorandum will be submitted to the CoR Food Security and Agricultural Advisory Committee (FSAAC) and the General Purposes Committee (GPC) for their review when considering the project, which entails the placement of 110,000 m³ of soil over 9.0 ha of land.

The client, Hexcel Construction Ltd. (Hexcel), has retained Madrone Environmental Services (Madrone) to prepare this memorandum. Madrone also prepared the Soil Placement Plan and Farm Plan for the Property, which is owned by Mahal Farms Ltd.¹ (Mahal Farms). Mahal Farms has hired Hexcel to manage the project on their property, including all soil sourcing and earthworks operations.

This technical memorandum is to describe the proposed soil source sites for the project. The Agricultural Land Commission (ALC) has made it a condition of soil deposit permits in general that only agriculturally-suitable soil is used, that is, soil that does not contain prohibited materials and does not result in introducing new agricultural limitations to the receiving site (such as stoniness limitations, for example). The ALC does not specify what types of soil the landowner (granted approval) is to bring to the site as this is at the direction of the agrologist.

¹ Mr. Paul Mahal has been the representative of Mahal Farms for the project.

2 Project Background

2.1 Rationale and Volume

Madrone (Jessica Stewart, P.Ag. and Gordon Butt, P.Ag.) prepared a Farm Plan and Soil Placement Plan for the Property on behalf of Mahal Farms and Hexcel in March of 2019. These documents were submitted to the ALC and the CoR, along with a Schedule C (Application for Soil Removal/Fill Deposit)², a Traffic Management Plan, and a Cost Estimates Table (for the project). The project has not been formally reviewed by the FSAAC or the GPC at this time.

The Soil Placement Plan included an assessment of the existing agricultural limitations of the land subject to the placement proposal, which comprises approximately 9.0 ha of land in the northwest corner of the 29.5 ha property (much of the remainder of the property is farmed as nursery and greenhouse operations). Our assessment found that the current limitations are excess wetness (predominantly 4W limitation), undesirable soil structure (3D limitation), and fertility limitations due to highly acidic soils and nutrient deficiencies (4F limitation).

This area was formerly used for cranberry farming and as such, there are currently berms constructed around the entirety of the placement area. These further act to confine water in this area. We proposed improving the existing limitations by importing approximately 110,000 m³ of soil to an average depth of 1.3 m. Hexcel has prepared drawings prepared by their land surveyor that show the proposed depths and grades of the placement.

2.2 Type of Soil to be Imported

Our plan envisions the placement of coarse-textured, preferably sandy loam or loamy sand, to promote good sub-surface drainage. Fine sandy loams and loams are also acceptable textures for placement (minor: sandy clay loam, if clay is less than 30%). **Soils should have less than 30% clay and less than 80% sand.**

The soil to be placed has been termed ‘the mineral horizon’ by Hexcel. The replaced native topsoil is termed ‘the growing medium’. Essentially, the growing medium is elevated through placement of a **mineral** soil.

² https://www.richmond.ca/_shared/assets/BL809447443.pdf City of Richmond. Soil Removal and Fill Deposit Regulation. Bylaw No. 8094.

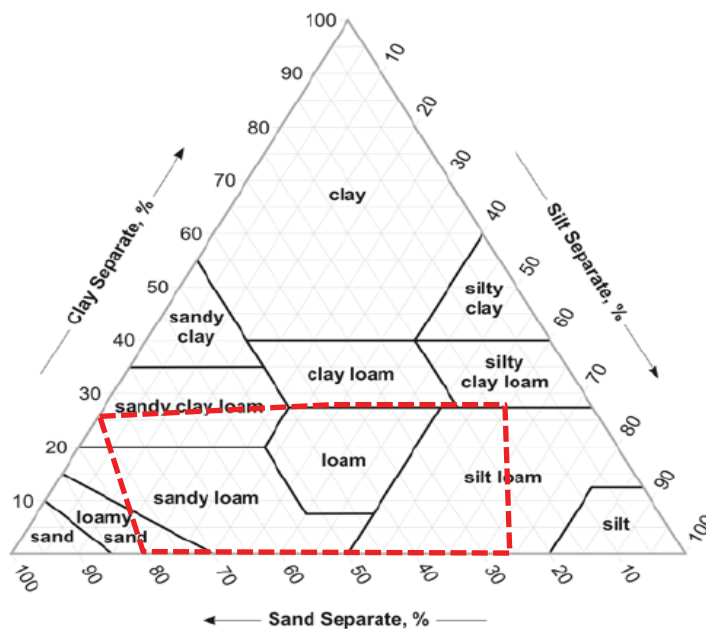


FIGURE 1. SOIL TEXTURE TRIANGLE (CANADIAN SYSTEM OF SOIL CLASSIFICATION) WITH THE IDEAL SOIL TEXTURES OUTLINED IN RED. IDEALLY, WE ARE LOOKING FOR LESS THAN 80% SAND AND LESS THAN 30% CLAY.

All topsoil on site will be salvaged and placed over the imported soil at the end of the project. If the volume of salvaged topsoil is insufficient³ to complete the project (as determined by a professional agrologist), it may be necessary to import compost, manure, or other suitable organic-rich amendment to achieve the objectives of a final soil that will be highly suitable of supporting soil-bound agriculture (the intended farm use following placement is vegetable farming, specifically, indian vegetable varieties).

Insufficient topsoil would be determined by assessing the thickness of the re-spread native topsoil (which will most likely be done in sections as the project progresses). If the thickness is consistently less than 20 cm, we will either import additional topsoil or apply organic amendments to placed soil. **If additional topsoil is imported, this will be done such that the final volume does not exceed 120,000 m³ (i.e. the salvaged**

³ From our soil assessment done in 2018, we excavated eight soil pits on site and found adequate topsoil in these however, native topsoil thickness may vary outside of these assessed areas (i.e. may be less than 20 cm thick) and some may also be lost due to to inadvertent mixing with mineral soil during the salvage process. This can be minimized by ensuring salvage is complete before importing mineral soil to the site.

topsoil volume will be assessed and if required, we will adjust the total amount of mineral soil imported to the site down such that the total volume of imported mineral soil and topsoil does not exceed the permitted amount).

We understand the FSAAC and GPC have previously requested only importing **alluvial** soils to soil deposit sites. Alluvial by definition refers to loose sediments that have been eroded, transported, and deposited within a non-marine setting by water in some form. Sediments deposited by streams or rivers associated with glaciers, ice sheets, or ice caps are known as glaciofluvial sediments. These are commonly found in the Fraser Valley. By using the term ‘alluvial’, there may be great confusion amongst the earthworks contractor and the agrologist tasked with finding such source soils. **This will also exclude appropriate soils of glaciofluvial origin, or aeolian (wind-blown silts and fine sand) origin, for example.**

As such, I have only described ideal soil textures rather than specifying exact soil parent materials for this project. Soil textures can be assessed by an agrologist for suitability prior to importing as part of the screening process that we have implemented with Hexcel for similar projects.

Aside from soil texture, we have indicated in our Soil Placement Plan that sourced soils should have an organic matter content greater than 0.5% and less than 5% (to avoid post-deposit settlement due to decomposition of organic matter). Imported topsoil (if required) will have an organic matter content greater than 2%. Source soils with organic matter >5% should be reserved for topsoil, if brought to the site. The agrologist can make a determination of organic matter content through soil testing preferably during the screening process before the soil reaches the site (to avoid importing soils that do not meet the requirements).

2.3 Soil to be Rejected

Soils containing the following will be rejected during our screening process:

- 1** High clay content (generally glaciomarine, glaciolacustrine in origin), i.e. greater than 30% clay, including silty clay loams, clay loams (clay soil has never been observed by Madrone in the field in Richmond);
- 2** High organic content (peat soils such as Humisols, Mesisols, or Fibrisols, which are found in abundance in Richmond, are at or near 100% organic matter);

- 3 Excessive (i.e. >20% by total volume) quantities of coarse fragments (sized 2.5 cm or greater) – coarse gravels should comprise less than 10% by volume if placed in the upper 0.5 m of the deposit⁴. Cobbles (7.5 – 25 cm) and stones (>25 cm) should comprise less than 1% to meet a Class 2P limitation for stoniness. If stony soils are unintentionally brought onto the site, the soils should be raked or sorted to remove the stones. A standard operating procedure (SOP) has been provided to Hexcel in a separate document and can be supplied to the FSAAC and the GPC if requested. A higher percentage of coarse fragments can be placed below 0.5 m (i.e. 20% maximum);
- 4 Materials prohibited by the Agricultural Land Commission Act - Agricultural Land Reserve Use Regulation⁵, including:
 - a. Construction or demolition waste, including masonry rubble, concrete, cement, rebar, drywall and wood waste;
 - b. asphalt;
 - c. glass;
 - d. synthetic polymers;
 - e. treated wood;
 - f. unchipped lumber.

Currently, there is a large number of potential soil source sites being brought to our attention in the screening process that are small property parcels featuring recently-demolished residences. I strongly advise avoiding these sites for future projects as frequently, there is demolition debris mixed in the soil. Screening this material is possible but due to the small size of the parcels, may not be worth the effort for a small volume of recovered soil.

⁴ The Land Capability Classification for Agriculture in B.C. MOE Manual defines stoniness as the sieved portion of coarse fragments in the upper 25 cm. We have expanded this to the upper 50 cm of the horizon, which is beyond the current criteria by 25 cm.
https://www.alc.gov.bc.ca/assets/alc/assets/library/agricultural-capability/land_capability_classification_for_agriculture_in_bc_1983.pdf

⁵ http://www.bclaws.ca/civix/document/id/complete/statreg/30_2019#section36
ALC Act – Land Use Reserve Regulation. Accessed December 16, 2019

3 Proposed Source Sites

At this time, Hexcel has numerous projects it is undertaking within the City of Richmond and in adjacent municipalities, including Delta and Burnaby. These projects include development sites at hospitals, marinas, old shopping centres, and post-secondary institutions.

We (Hexcel and Madrone) jointly propose that soil will come from development sites that contain predominantly mineral soil that is primarily sandy in texture (see Figure 1 for reference). Development sites in peat bogs (organic soils) and industrial lands should be rejected as there is a low probability that these sites will yield favourable soils for the project. Commercial sites (such as parking lots and marina's) may be suitable if at least a Phase 1 study has been conducted and shown the probability of contamination to be low, and the soil has been buried by concrete or asphalt that is stripped away prior to excavations.

Source sites should be free of invasive species, in particular, Japanese knotweed (*Fallopia japonica*) and Scotch broom (*Cytisus scoparius*).

Currently, Madrone conducts source site screening on behalf of Hexcel. These sites are assessed prior to importation for the following conditions:

- 1 Whether invasive species are present on the site, in particular, if they are situated near excavations;
- 2 Whether there are prohibited materials mixed in the soil (i.e. demolition debris); and
- 3 Whether the soil is texturally suitable as a mineral horizon, specifically, does not contain more than 30% clay, more than 80% sand, and does not comprise purely peat soils (organic matter less than 5% for mineral soil).

If the following conditions are found, we advise the landowner, the City of Richmond, and the earthworks contractor in writing and recommend rejecting the site. Furthermore, Madrone conducts a desktop environmental site assessment (which we call a Phase 1-lite) for each site if a Phase 1 study has not been conducted already (for larger sites, this generally has already been done and as such, we greatly prefer these sites for source soils. I expand on this in Section 4, below).

4 Hexcel – Proposal to Import Only Richmond Soils

Hexcel has expressed interest in importing soils only from within the City of Richmond to its various project sites (including the subject Property for the placement proposal). The rationale for this is to reduce the volume of soil leaving the city limits for projects in other municipalities, particularly in the Fraser Valley.

Obtaining soils from more distant sources comes with significant environmental and social costs, such as increased vehicle emissions due to extensive travel, and increasing congestion on Highway 1 in the Fraser Valley due to increased truck traffic. Furthermore, due to the long distances that the material is transported, we cannot verify in a timely fashion where the material actually came from (i.e. same day screening is difficult if source and receiving sites are several hours apart). There is also considerations of wear and tear on Highways and roadways between municipalities if material is trucked long distances.

Madrone supports this proposal for several reasons:

1 The number of source sites is drastically reduced due to large size of the projects that these soils originate from.

For example, the Atmosphere project at No.3 Road and Alderbridge Way will produce over 200,000 m³ of soil, according to Hexcel's calculations. These is nearly double the soil that we require for the 5800 No. 7 Road placement project. Although some soil may be rejected (due to containing, for example, contaminants or high volumes of coarse fragments which tends to be gravel placed during construction), much of the soil for the project could be sourced from these sites.

A reduction in the number of source sites will assist the agrologist greatly in their screening efforts. There will certainly be Phase 1 environmental Site Assessments (ESA) for projects of this scale, which would negate the need for soil testing. The agrologist will not be required to travel long distances to assess multiple sites, which can be time-consuming and cost-prohibitive to the clients and landowners.

2 Reduction in time to complete the project.

The ALC has recently reduced the timelines it allows for soil placement projects, from 3 years to 2 years. Therefore, it is imperative that soil is sourced quickly and efficiently. If soil can be sourced locally from large projects, the time it will take to

complete the project will be greatly reduced. There will be less travel time for trucks due to the shorter distances.

A reduction in project time will also correlate to a reduced nuisance to locals who oppose truck traffic around the project area, lower costs to the client and landowner (who are required to pay for earthworks, screening by an agrologist, safety controls on the road ect.), and reduced time between topsoil stripping and replacement (topsoil stockpiles left over multiple years will be subject to erosion and reduction in organic content due to lack of vegetative cover).

Please contact the undersigned with any questions regarding this memorandum.

**This is a digitally signed duplicate of the official manually signed and sealed document.*



Jessica Stewart, P.Ag, P.Geo.



TECHNICAL MEMORANDUM

**Drainage and Suitability of Excess
Water Management Options
for
Proposed Soil Placement at 5800 No. 7
Road, Richmond, BC**

FOR:

Mr. Paul Mahal, Mahal Farms Ltd.

&

Mr. Ron Wilson, Hexcel Construction Ltd.

BY:

Thomas R Elliot PhD P.Ag P.Geo.

Jessica Stewart, P.Ag., P.Geo.

Madrone Environmental Services Ltd.

January 27, 2020

MADRONE ENVIRONMENTAL SERVICES LTD.

#202-2790 GLADWIN ROAD • ABBOTSFORD • BC • V2T 4S7

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TABLE OF CONTENTS

1	INTRODUCTION	1
2	PROJECT BACKGROUND	2
2.1	CONTEXT OF PROPERTY DRAINAGE CONDITIONS	2
2.2	APPLICABLE REGULATIONS	3
2.3	EXCESS WATER MANAGEMENT OPTIONS	5
2.3.1	SUBSOILING & DRAINAGE DITCHING	5
2.3.2	DRAINAGE TILE	5
2.3.3	BERM & PUMPING	6
2.3.4	SOIL PLACEMENT	6
3	SUITABILITY OF EXCESS WATER MANAGEMENT OPTIONS FOR 5800 NO. 7 ROAD	7
3.1	SUBSOILING & DRAINAGE DITCHING	7
3.1.1	DRAINAGE TILE	7
3.1.2	BERM & PUMPING	7
3.1.3	SOIL PLACEMENT	8

TECHNICAL MEMORANDUM

Drainage and Suitability of Excess Water Management Options for Proposed Soil Placement at 5800 No. 7 Road, Richmond, BC

1 Introduction

The City of Richmond (CoR) has requested a technical memorandum pertaining to drainage and suitability of water management options to accompany previously-submitted soil deposit application for 5800 No. 7 Road, Richmond (referred to as 'the Property' or 'the Site'). The memorandum will be submitted to the CoR Food Security and Agricultural Advisory Committee (FSAAC) and the General Purposes Committee (GPC) for their review when considering the project, which entails the placement of 110,000 m³ of soil over 9.0 ha of land.

The client, Hexcel Construction Ltd. (Hexcel), has retained Madrone Environmental Services (Madrone) to prepare this memorandum. Madrone also prepared and previously submitted: Soil Placement Plan, Farm Plan, Traffic Management Plan, and a Soil Source Site Technical Memo for the Property, which is owned by Mahal Farms Ltd.¹ (Mahal Farms). Mahal Farms has hired Hexcel to manage the project on their property, including all soil sourcing and earthworks operations. Hexcel is experienced at managing such projects (both type and scale) within the City of Richmond.

¹ Mr. Paul Mahal has been the representative of Mahal Farms for the project. He is a third-generation farmer – his family has farmed this property continuously since 1949.

The Soil Placement Plan included an assessment of the existing agricultural limitations of the land subject to the placement proposal, which comprises approximately 9.0 ha of land in the northwest corner of the 29.5 ha property (much of the remainder of the property is farmed as nursery and greenhouse operations). Our assessment found that the current limitations are excess wetness (predominantly 4W limitation), undesirable soil structure (3D limitation), and fertility limitations due to highly acidic soils and nutrient deficiencies (4F limitation). A 4W limitation is defined as:

Frequent or continuous occurrence of excess water during the growing period causing moderate crop damage and occasional crop loss. Water level is near the soil surface during most of the winter and/or until late spring preventing seeding in some years, or the soil is very poorly drained.²

This technical memorandum is to describe the local drainage conditions and suitability of water management options for the Property. The Agricultural Land Commission (ALC) generally requires that soil deposit operations result in an improvement of the existing limitations to the prominent Land Capability for Agriculture ('Land Capability'), and does not result introduce new agricultural limitations to the receiving site (such as stoniness limitations, for example). The ALC does not specify how to accomplish an improvement to the assessed existing Land Capability, as this is at the direction of the Property owner, Farm Operator and their consulting Qualified Professional (QP) Agrologist(s).

2 Project Background

2.1 Context of Property Drainage Conditions

The property is bound to the north by Mayfair Lakes Golf and Country Club, to the west by No. 7 Road, to the south by Westminster Highway, and to the east by a dense residential area. There are drainage ditches to the south, east and west; and a significant drainage ditch to the north.

There are no nearby watercourses (natural streams, rivers, groundwater springs) which would cause inundation due to flood waters.

² Land Capability Classification for Agriculture in BC, 1983.
https://www.alc.gov.bc.ca/assets/alc/assets/library/agricultural-capability/land_capability_classification_for_agriculture_in_bc_1983.pdf

The excess water limitation to agriculture, noted in the previous Madrone Farm Plan and Soil Placement Plan, results from high local groundwater conditions and poor regional conveyance of water within drainage infrastructure due to the low-lying, and therefore low-gradient, context.

Historical aerial photo review presented in the Madrone Soil Placement Plan demonstrates a history of excess water that was previously used for cranberry farming. Since approximately 1991, farm operations appear to move away from Cranberries and a central ditch-line was established to further address the excess water condition. However, the historic drainage activities on the Property have not resolved the excess water condition, made apparent by late planting season surficial water observable in aerial imagery dating as far back as 1949.

From the review of historic aerial imagery and historic crop types (grown on the Property), it is apparent that the Property has been subject to excess water conditions for much of the historic use as a farm-plot. Furthermore, it is likely that the changing precipitation timing and volumes associated with Climate Change impact current agricultural land capability, which will only increase in the future as per predictions³ adopted by the Province of BC.

The proposed soil placement area is contained within previously-constructed soil berms⁴ (in the 1940's) intended to facilitate flooding of cranberries during the fall wet-harvest. The berms cannot be deconstructed without significant impacts to surrounding drainage infrastructure, such as the ditch on No. 7 Road. Removing the berm material (which is compacted soil) would require a soil removal permit with the CoR. Removing the berms would also not improve the high water tables evidently persisting in this area, nor would this result in improvement to the remaining assessed agricultural limitations of nutrient deficiencies and high acidity (4F) and undesirable soil structure (3D limitation).

2.2 Applicable Regulations

The Agricultural Environmental Management Code of Practice (AEMCoP) Division 4 (Section 48 – 60) governs the land application of nutrient sources to agricultural parcels

³ PCIC Climate Prediction Portal: <https://pacificclimate.org/analysis-tools/pcic-climate-explorer>

⁴ These are not dykes – dykes are for flood protection (i.e. Fraser River freshet) whereas these berms were constructed to contain water pumped into the field to harvest cranberries in the fall.

experiencing excess water conditions. Specifically, Section 49 (Prohibitions on applications to land) of the AEMCoP indicates that:

- (1) *A person must not apply nutrient sources to land*
- (a) on which there is standing water or water-saturated soil,*
 - (b) on ground in which the top 5 cm of soil is frozen so as to be impenetrable to manually-operated equipment,*
 - (c) on a field having at least 5 cm of ice or snow over at least 50% of its area, or*
 - (d) at a rate of application, under meteorological, topographical or soil conditions, or in a manner, that may cause nutrient sources or contaminated runoff, leachate or solids to enter a watercourse, cross a property boundary or go below the seasonal high water table. [emphasis is added]*

After clarification with the Ministry of Environment and Climate Change Strategy (MoECCS), it was determined that:

- Inundation due to flooding does not discount application of nutrient sources (fertilizers, compost, wood residue, etc.), which allows for continued use of floodplains as agricultural lands so long as nutrients are not applied during flood-conditions;
- Seasonal high water table at, near or above ground surface would restrict land application of nutrient sources both during times of water table being above ground surface, but also during periods of generally high water table whereby precipitation/infiltration/dispersion would result in direct transmission of nutrients to groundwater/nearby watercourse⁵.

Since the utilization of agricultural land generally requires addition of nutrient sources to ensure economic growth of crops (particularly following continuous harvest, which depletes the soil of nutrients), and the Property context discussed in Section 2.1 of this document (specifically the definition of the 4W limitation) characterizes a land parcel subject to excess water conditions, it is apparent that AEMCoP Section 49(1)(d) does prohibit nutrient application within the critical early- to mid-season vegetative growth fertilization window. This prohibition limits the potential crop types to short-season forage and grains, and further restricts the timing of nutrient application which may result in application timing that does not coincide with crop demand. It is noted that the

⁵ It is noted by Madrone that planners at the the City of Richmond define all ditches within the city as watercourses (i.e. watercourse crossing application required for all ditch crossings such as driveway crossings and culverts) due to the low-lying topography and connectivity to the Fraser River and numerous, intermediate fish-bearing tributaries.

property directly across from the Mahals (the May family farm, at 5031 No. 7 Road) is in fact, currently farmed for forage and grains. This is readily visible on aerial imagery on Google™Earth Pro and recent airphoto imagery from the City of Richmond Interactive Map (RIM)⁶.

2.3 Excess Water Management Options

2.3.1 Subsoiling & Drainage Ditching

Subsoiling is the careful disruption of massive soil structure that otherwise restricts infiltration and lateral movement of water within soil. It is typically most effective for soils that were deposited under marine or lacustrine conditions that have subsequently experienced a decrease in the regional water table. Subsoiling is a temporary improvement to infiltration and subsurface conveyance because the subject soils are typically fine-grained (e.g. silt or clay), which ‘heal’ or reconstitute as a massive unit (following saturation) which has a low level of infiltration and conveyance.

Subsoiling is best paired with incorporation of organic matter and potentially soil amendments (sand, gypsum, etc.) which will support development of a granular soil structure that facilitates infiltration and subsurface conveyance. Subsoiling is conventionally utilized where there is ditching to receive the newly mobilized water, which then conveys the water emerging to surface toward larger watercourse (such as the Fraser River) or the ocean.

2.3.2 Drainage Tile

Drainage Tile⁷ is a series of perforated pipes, often within a fabric filter ‘sock’ to prevent mobilization of fine-grain silt/clay particles, installed at depth to collect and convey subsurface water to ditching along a 1 – 2% gradient. Drainage tile functions entirely through subsurface conveyance of water to the perforated pipe, and subsequent gravity-driven drainage to ditching. The spacing of drainage tile is adjusted based on the soil texture, while the depth is varied depending on local water table elevation and intended crop type. Drainage tile does not function when the water level in the receiving drainage ditch is higher than the drainage tile.

⁶ <https://maps.richmond.ca/rim/> City of Richmond – Richmond’s Interactive Map (RIM).

⁷ The term ‘Drainage Tile’ is becoming an outdated term in agriculture but it is used frequently by the ALC.

2.3.3 Berm & Pumping

Berミング is intended to prevent floodwater (i.e. overland water) from inundating a land parcel. Berミング is ineffectual when addressing excess groundwater emerging to surface, as the source of water (i.e. the water table) continues to contribute to the land parcel – potentially at a rate which is greater than the rate of evacuation. Evacuation is typically driven by ‘trash pumps’ which are high volume discharge pumps driven by an Internal Combustion Engine (ICE).

While it is possible to artificially suppress a local groundwater table through a combination of drainage tile & ditching (i.e. collection of water), berミング (i.e. prevention of overland inundation), and evacuation via pumping – it must be noted that continuous operation of ICE pumps to achieve this is not an acceptable best practice for agriculture due to issues of reliability, local hydrologic function, and cost. Furthermore, the location receiving evacuated water must be able to accommodate the volume, and if not there is a high likelihood that the evacuated waters will impact other agricultural operators in the area or re-inundate the land parcel due to an increased hydraulic gradient/water level that would overwhelm the berm or subsurface hydraulic conveyance.

2.3.4 Soil Placement

The removal of topsoil, placement of soil with suitable quality for agricultural purposes, and replacement of salvaged topsoil (the ‘growing medium’, now elevated) generally increases the land level above the regional water table, and the resulting capillary fringe within the placed soil. The disrupted native topsoil is often recommended to receive soil amendment with organic matter and be subject to a rotational nitrogen-fixing cover-crop under no-till conditions for a period of 1 to 3 years in order to re-establish soil structure and function. After which, assessment of drainage conditions and soil structure will guide any further requirement for water management infrastructure, such as installation of drainage tile.

It is critical to recognize that placement of quality soil is a solution to excess water conditions resulting from a high local water table that permanently addresses the agricultural limitation. Further, Soil Placement – when Climate Change is accounted for by the QP Agrologist making recommendations on depth of placed soil – is a method of Climate Adaptation that does not require continual input beyond initial establishment.

3 Suitability of Excess Water Management Options for 5800 No. 7 Road

3.1 Subsoiling & Drainage Ditching

The local excess water conditions are driven by seasonal high water tables and sustained by low conveyance within the regional drainage network. As such, the water table at or near surface during the planting and initial fertilization windows prevents machine access and, according to the AEMCoP S.49, early- to mid-season nutrient application.

Subsoiling and drainage ditching within 5800 No.7 Road has a low level of suitability due to the excess waters mobilized (via subsoiling) and accumulated (via ditching) within the agricultural parcel being unable to drain from the area due to the limitation in regional conveyance.

Therefore, subsoiling and drainage ditches will result in 5800 No.7 Road – having a 4W limitation – being out-of-compliance with AEMCoP should the Farm Operator attempt to grow economic crops (such as Indian vegetables discussed in the Farm Plan prepared for CoR) that require nutrient application during the early- to mid-season.

This method of excess water management is not recommended.

3.1.1 Drainage Tile

Similar to the issue of subsoiling and drainage ditching wherein regional conveyance limits efficacy, the installation of drainage tile will result in 5800 No.7 Road – having a 4W limitation – being out-of-compliance with AEMCoP Section 49 should the Farm Operator attempt to grow economic crops that require nutrient application during the early- to mid-season.

This method of excess water management is not recommended.

3.1.2 Berm & Pumping

Due to 5800 No.7 Road being subject to excess water resulting from high seasonal water tables, the inability of regional drainage network to convey evacuated waters, and the reliability/cost – the use of berms and pumping is poorly suited to improve the excess water limitation. Furthermore, unless pumping is continued throughout the growing

season, the land parcel will be prohibited from receiving nutrient application in accordance with AEMCoP Section 49.

This method of excess water management is not recommended.

3.1.3 Soil Placement

The context of 5800 No.7 Road provides for soil placement that will have low impact to local hydrology, no displacement of water to adjacent agricultural land, and a permanent improvement to the Class 4W limitation to agricultural capability. This excess water management option is the only pathway which will allow the farm operator to pursue economic crops which require nutrient application while meeting Section 49 of the AEMCoP.

Soil placement is the recommended method of excess water management for 5800 No.7 Road.

Please contact the undersigned with any questions regarding this technical memorandum.

 <p><i>*This is a digitally signed duplicate of the official manually signed and sealed document.</i></p>	 <p><i>*This is a digitally signed duplicate of the official manually signed and sealed document.</i></p>
<p>Thomas R Elliot PhD P.Ag P.Geo.</p>	<p>Jessica Stewart, P.Ag, P.Geo</p>
<p>Hydrologist</p>	

Soil Use for the Placement of Fill Application for the Property Located at 5800 No. 7 Road (Mahal)

Cost Estimates	
Erosion Sediment Control Installation	\$35,000 ⁱ
Ongoing Project Reporting by Agrologist (per 3,000m ³)	\$12,000 (\$500 per month typical, can be up to \$1,000 per month if more visits required)
Earthworks costs (Project management, load inspector, machine/labour costs, fuel, traffic management)	\$29,120 per month OR \$720,000
Farm Plan implementation	\$160,000
ALC application fee (if proposal is forwarded to the ALC)	\$1,500
Final topographic survey	\$5,000
Final Agrologist Report	\$2,000 - \$3,000
Final Geotechnical Report (if required)	\$2,000 - \$4,000
Project Cost Estimate (does not include upfront costs)	\$940,000*
Upfront Cost to Date	\$13,500**
Potential Tipping Fee Income (\$85-\$95 per load)	\$1,335,714 – \$1,492,857 (estimate)

ⁱ Installation costs depends on the duration of project and the materials, supplier and the labour required to install and repair when required/needed

*Proponent has estimated that this project will take approximately two (2) years to complete. Costs will not be consistent every month (i.e. earthworks may be reduced in the winter during high precipitation events which correlates to reduced soil importation activity)

**Upfront costs include Farm Plan, Soil Placement Plan, Traffic Management Plan, two technical memorandums and City application fee



City of Richmond

Report to Committee

To: General Purposes Committee **Date:** June 22, 2020
From: Cecilia Achiam **File:** 12-8000-01/2020-Vol
 General Manager, Community Safety 01
Re: **Options for a Residential Backyard Chicken Program**

Staff Recommendation

That "Option 2: Allow the keeping of backyard chickens on all ALR properties and properties outside of the ALR with a parcel size of no less than 2,000 m²" as outlined in the staff report titled "Options for a Residential Backyard Chicken Program" from the General Manager, Community Safety, dated June 22, 2020, be approved.

Cecilia Achiam
 General Manager, Community Safety
 (604-276-4122)

Att. 4

REPORT CONCURRENCE	
ROUTED TO:	CONCURRENCE
Policy Planning	<input checked="" type="checkbox"/>
Building Approvals	<input checked="" type="checkbox"/>
SENIOR STAFF REPORT REVIEW	INITIALS:
APPROVED BY CAO 	

Staff Report

Origin

At the July 8, 2019 Council meeting, Council made the following referral:

“That staff study the viability of the current rules regarding chickens in backyards on properties within the Agricultural Land Reserve and properties outside the Agricultural Land Reserve.”

Following a discussion at the May 19, 2020 General Purposes Committee regarding the keeping of backyard chickens in the Agricultural Land Reserve (ALR), Council made the following two referrals:

“That the staff report titled “Proposed Bylaw Amendment To Allow Backyard Chickens On Properties Within The Agricultural Land Reserve”, dated April 22, 2020, from the General Manager, Community Safety, be referred back to staff to examine the following:

- (1) building and fencing requirements;*
- (2) the maximum number of chickens; and*
- (3) other related requirements;*

for backyard chickens in Agricultural Land Reserve lots, and report back.”;

and

“That staff investigate allowing backyard chickens in single-family residential properties, including the maximum number of chickens, lot size requirements and other related requirements, and report back.”

This report addresses the two referrals made on May 19, 2020 and provides available options for Council to allow the keeping of backyard chickens in Richmond.

This report supports Council’s Strategic Plan 2018-2022 Strategy #2 A Sustainable and Environmentally Conscious City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.

2.3 Increase emphasis on local food systems, urban agriculture and organic farming.

Analysis

Current Provisions for the Keeping of Backyard Chickens

Previously, there was a general prohibition of poultry under the Animal, Bird & Beekeeping Regulation Bylaw No. 7137, which was adopted on July 24, 2000. On October 15, 2002, Council adopted a Bylaw Amendment 7424 that allowed for the keeping of backyard chickens in the City for properties that have a parcel size greater than 2,000 square metres (m²), or 21,529 square feet (sf). The Animal, Bird & Beekeeping Regulation Bylaw No. 7137 has since been repealed and replaced with the current Animal Control Regulation Bylaw No. 7932 (Animal Control Bylaw) effective June 15, 2005. The provision for backyard chickens has been carried over and unchanged since the amendment in 2002. Currently, the keeping of backyard chickens in Richmond is permitted given that the properties (within and outside of the ALR) meet the minimum parcel size requirement.

Two existing Council policy objectives provide further context for the recent referral to examine the feasibility of an urban backyard chicken program in Richmond. One of the objectives identified in the Richmond Official Community Plan (OCP) Section 7.2 “Promote Urban Agriculture and Advance Food Security” is “to support and increase the range of urban agriculture (e.g. community gardening) and strengthen the food system beyond production.” One of the policies identified in the OCP is “to explore the keeping of small animals (e.g. poultry and bees) on a limited basis on small agricultural parcels, in consultation with the AAC [now the Food Security and Agricultural Advisory Committee (FSAAC)], ALC [Agricultural Land Commission] and Vancouver Coastal Health”¹.

Furthermore, at the July 11, 2016, Council meeting², Council endorsed the “Richmond Food Charter” which sets out the City’s commitment to support urban agriculture, strengthening the local food system, increasing access to affordable and healthy food and promoting environmentally sustainable practices related to food production, distribution and disposal.

Residential Backyard Chickens Programs in Metro Vancouver

In an effort to situate Richmond’s policy objectives within the broader Lower Mainland context, staff have completed an environmental scan of municipalities that allowed backyard chickens programs (Attachment 1). Of the 16 municipalities researched, 11 allow the keeping of backyard chickens in residential zones (outside of the ALR) and six municipalities have a designated backyard chicken program and accompanying bylaws to permit backyard chickens in residential zones.

Staff have contacted the City of Vancouver, the City of Surrey and the District of North Vancouver, which have implemented a registration/licensing regime to permit keeping of backyard chickens in their communities. The City of Vancouver and City of Surrey implemented a one-time registration requirement for the keeping of chickens, while the District of North Vancouver has implemented an annual licensing model. The City of Vancouver started their

¹ Richmond Official Community Plan 2041, Chapter 7.2.1, Policies (e), page 7-10
https://www.richmond.ca/__shared/assets/OCP_9000_agriculture34171.pdf

² https://www.richmond.ca/cityhall/council/agendas/council/2016/071116_minutes.htm

program in 2010 (operated for 10 years) and reported approximately 340 registrations; the City of Surrey started in 2016 (four years) and reported approximately 130 registrations; and the District of North Vancouver started in 2017 (three years) and reported approximately 20 licenses.

The three municipalities have advised that although there was some initial resistance from the community, the backyard chicken program has not resulted in an increase in significant public concern such as odour and noise complaints, abandonment or disease.

Risks Factors of Having Backyard Chickens in Residential Zones

There are risks associated with having chickens in residential zones. The main risks are abandonment, unhygienic housing conditions, increased noise, and attraction of pests (mice, rats) and predatory animals (raccoons, coyotes, dogs, cats).

The three municipalities (Vancouver, Surrey and District of North Vancouver) recommended that a separate backyard chicken bylaw be implemented as it would provide clarity on permitted activities, the requirements for keeping hens and available enforcement powers for compliance. A backyard chicken bylaw would also be instrumental in establishing rules to mitigate the risks of keeping chickens in residential zones.

The general consensus from the three municipalities is that owners of backyard chickens are responsible caretakers and they provide proper living conditions, adequate coop structure and humane treatment for their hens. In fact, the City of Vancouver noted a decrease in complaints regarding backyard chickens after the program and bylaws were in place. The three municipalities advised that they have not experienced any on-going issues regarding abandonment, unhygienic housing conditions, increased noise, increased pests and predatory animals affecting the backyard chicken program. A detailed risk analysis and feedback from Vancouver, Surrey and the District of North Vancouver is provided in Attachment 2.

Based on the risk analysis and the experiences of the three municipalities, the risk of negative impacts of a backyard chicken program, if complemented with a bylaw, is low.

Available Options to Allow Backyard Chickens in Richmond

There are three options available for allowing backyard chickens in Richmond:

- Option 1:** Status-quo, where the keeping of backyard chickens is permitted on properties with a parcel size of no less than 2,000 m².
- Option 2:** Allow the keeping of backyard chickens on all ALR properties and properties outside of the ALR with a parcel size of no less than 2,000 m².
- Option 3:** Allow the keeping of backyard chickens on all ALR properties and establish a Residential Backyard Chicken Program for single detached family residential zones.

Option 1: Status-quo, where the keeping of backyard chickens is permitted on properties with a parcel size of no less than 2,000 m² (Not Recommended)

As outlined in the earlier section on “Current Provision for the Keeping Backyard Chickens”, the keeping of backyard chickens is permitted, under the status-quo, as long as the property has a parcel size greater than 2,000 m², or 21,529 sf. This requirement is outlined in the Animal Control Bylaw and applies to all properties in Richmond inclusive of the ALR. However, raising poultry on the ALR, regardless of parcel size, is a permitted use and is a “farm operation” defined under the provincial *Farm Practices Protection (Right to Farm) Act*.

The current prohibition of backyard chickens on ALR properties due to parcel size is inconsistent with the *Local Government Act* and the *Farm Practices Protection (Right to Farm) Act*. Therefore, “Option 1: Status-quo, where the keeping of backyard chickens is permitted on properties with a parcel size of no less than 2,000 m²” is not a viable option.

Option 2: Allow the keeping of backyard chickens on all ALR properties and properties outside of the ALR with a parcel size of no less than 2,000 m² (Recommended)

“Option 2: Allow the keeping of backyard chickens on all ALR properties and properties outside of the ALR with a parcel size of no less than 2,000 m²” is recommended. This recommendation is consistent with the staff report titled “Proposed Bylaw Amendment to Allow Backyard Chickens on Properties within the Agricultural Land Reserve”, provided at the May 19, 2020 General Purposes Committee.

Option 2 will amend the Animal Control Bylaw to provide an exclusion for parcels located within the ALR, so it is consistent with the *Local Government Act* and the *Farm Practices Protection (Right to Farm) Act*. This amendment will allow the keeping of backyard chickens for all parcels within the ALR which will permit an additional 278 properties (zoned AG) to be able to keep backyard chickens. Bylaw provisions for having farm animals, farm structures and conducting farm operations are already part of the Richmond Zoning Bylaw No. 8500 and provided in the Provincial *Agricultural Land Reserve Regulation*.

For detached single family in residential zones outside of the ALR, Option 2 would permit backyard chickens with parcel size at or greater than 2,000 m².

This option supports the Richmond OCP Section 7.2 and the Richmond Food Charter, and brings the Animal Control Bylaw into alignment with other Provincial Legislation. Additional provisions can be introduced in the Animal Control Bylaw to limit the number of chickens outside of the ALR. From staff’s research, the number of backyard chickens permitted outside of the ALR ranges from two to 12 should Council wish to limit the number of backyard chickens in residential zones outside of the ALR.

Option 3: Allow the keeping of backyard chickens on all ALR properties and establish a Residential Backyard Chicken Program for single detached family residential zones (Not Recommended)

Option 3 would allow the keeping of backyard chickens on all properties within the ALR and establish a Residential Backyard Chicken Program (RBCP) to promote urban agriculture and

enhance food security. This option fully supports the Richmond OCP Section 7.2 and the Richmond Food Charter.

Should Council choose this option, having a stand-alone backyard chicken program and bylaw (and associated licensing requirement) is a best practice because it provides clarity on backyard chicken rules, establishes expectations to owners and provides enforcement powers for compliance. Under this option, the Animal Control Bylaw would be amended to allow backyard chickens on all parcels within the ALR and a new Residential Backyard Chicken Bylaw would be introduced to allow the keeping of backyard chickens on single detached family residential zones in the City. A prospective RBCP bylaw provisions is provided in Attachment 3.

The concept of the RBCP would permit only hens over four months and prohibit all other types of poultry such as roosters, ducks, geese, etc. Residents on detached single family lots would be limited to a minimum of two and a prospective maximum of four hens. As well, there would be no parcel size requirement and the allowable zones would exclude multi-unit properties such as duplexes, townhouses and condos. The minimum number of hens is required to ensure the humane treatment of hens, as research indicates that hens are social animals and require companionship.

The guideline for the maximum number of hens is in line with neighbouring municipalities with no parcel size restrictions (City of Vancouver), and is based on the risk analysis in Attachment 2. While other municipalities have adopted a higher maximum limit of hens for their backyard chicken program, those same municipalities have also limited the program to larger parcel size properties (i.e. lots larger than 6,000 sq. ft). As such, the four hens limit with no parcel size requirement balances the opportunity for owners to keep backyard hens and minimizes the risks of keeping chickens in urban areas.

Based on the risk analysis and the experiences gathered from the City of Vancouver, the City of Surrey and the District of North Vancouver, the risk of negative impacts to the community is low if a RBCP is supported by a comprehensive bylaw and enforcement regime. In addition, for Option 3, it would be prudent that the RBCP and the prospective bylaw provisions (Attachment 3) be forwarded for community consultation with the residents of Richmond, Food Security and Agricultural Advisory Committee, Vancouver Coastal Health, Regional Animal Protection Society, and other stakeholders interested in the issue.

Based on the positive feedback from other municipalities' backyard chicken programs and the ability to control risks with a Residential Backyard Chicken Bylaw, and with this option fully supporting the Richmond OCP Section 7.2 and the Richmond Food Charter, "Option 3: Allow the keeping of backyard chickens on all ALR properties and establish a Residential Backyard Chicken Program for single detached family residential zones" is a viable option.

Financial Impact

None.

Conclusion

Having backyard chickens in an urban residential setting can be a polarizing topic with varying viewpoints. Other municipalities that have adopted a backyard chicken program indicated that there were initial concerns and resistance from the community. This report responds to the Council's referrals made in the General Purposes Committee on May 19, 2020 and provided available options as directed by Council to allow backyard chickens in single detached family zones in Richmond. There is an opportunity to better align the existing the Animal Control Bylaw for keeping backyard chickens in the ALR with the *Local Government Act* and the *Farm Practices Protection (Right to Farm) Act*. In order to bring the Animal Control Bylaw into alignment with Provincial Legislation, "Option 2: Allow the keeping of backyard chickens on all ALR properties and properties outside of the ALR with a parcel size of no less than 2,000 m²" is recommended.



Douglas Liu
Program Manager, Business and Operational Analysis
(604-276-4004)

DL:dl

- Att. 1: Environmental Scan of Backyard Chicken Regulations
- 2: Risk Analysis of Backyard Chicken in Residential Zones
- 3: Prospective Residential Backyard Chicken Program and Bylaw Provisions
- 4: Prospective Minimum Hen Enclosure Floor Area and Setbacks

Attachment 1

Environmental Scan of Backyard Chicken Programs

Municipality	Backyard Chicken Program/Bylaw	Number of Chickens	Additional Rules	Minimum Parcel Size	Allowed Zone	Setbacks	Coop Required	Fencing Required	Fees
Richmond (current)	No	Animal Control Bylaw	Permitted with minimum parcel size	2,000 sq. m (21,529 sq. ft.)	Various	N/A	N/A	N/A	N/A
(Richmond Prospective RBCP)	Prospective RBCP	Minimum 2 to maximum 4 hens	No other fowl or livestock; no slaughtering on property; no sale of by-products; no roosters or chicks under 4 months; annual license; register with BC Premises ID	No	Single detached residential zones	Yes	Yes	Yes	\$50 annual licensing fee
Vancouver	Yes	Maximum 4 hens	No other fowl or livestock; no slaughtering on property; no sale of by-products; no roosters or chicks under 4 months.	No	Single and multi-family residential zones (RA-, RS-, RT-, RM-, FM-, FSD-)	Yes	Yes	Yes	No
North Vancouver (City)	Yes	Maximum 8 hens	No other fowl or livestock; no slaughtering on property; no sale of by-products; no roosters or chicks under 4 months.	557 sq. m (6,000 sq. ft.)	Single-family zones (OCP-R1)	No	Yes	Yes	No
North Vancouver (District)	Yes	Minimum 2 to maximum 6 hens	No other fowl or livestock; no slaughtering on property; no sale of by-products; no roosters or chicks under 4 months. Must hold a license.	No	Single-family zones	Yes	Yes	Yes	\$52 annual licensing fee
Victoria	Yes, Animal Control Bylaw	Maximum 15 hens or other poultry (Chickens, ducks, geese)	No slaughtering on property; no sale of by-products; no roosters or chicks under 4 months.	No	Residential zones	Yes	Yes	Yes	No
Delta	Zoning Bylaw	Maximum 12 chickens for properties 2,000 sq. m in size. An additional 12 chickens per 2,000 sq. m for larger properties - Max 24 chickens for 4,000 sq. m properties	For properties that abut agricultural land - maximum 4 chickens are permitted	2,000 sq. m or (21,529 sq. ft.)	Single-family zones (RS2 and RS3) or land abutting AG land.	Yes	Yes	Yes	No
Surrey	Yes	Maximum 12 heads of poultry per 1 acre (4,046 sq. m), on lots greater than 1 Acre but less than 5 Acres. Maximum 4 hens per lot, on lots greater than 7,200 sq. ft.	No other fowl or livestock; no slaughtering on property; no sale of by-products; no roosters or chicks under 4 months. Requires BC Premises ID	669 sq. m (7,200 sq. ft.)	Single-family zones	Yes	Yes	Yes	No
New Westminster	Yes	Up to 8 poultry (includes chickens, ducks, turkeys, geese, pigeons, pheasants)	Increases of 1 poultry for each 750 sq. ft. up to a site of 0.5 acre provided it does not exceed 50 on a site.	557 sq. m (6,000 sq. ft.)	Single-family zones	Yes	Yes	Yes	No

Attachment 1 (Cont.)

Municipality	Backyard Chicken Program/Bylaw	Number of Chickens	Additional Rules	Minimum Parcel Size	Allowed Zone	Setbacks	Coop Required	Fencing Required	Fees
Abbotsford	No	Not applicable			Agricultural zones	N/A	N/A	N/A	N/A
Burnaby	No	Not applicable			Agricultural zones	N/A	N/A	N/A	N/A
Coquitlam	No	Not applicable		4,000 sq. m (1 ac.)	Agricultural and RS-2 (suburban) Residential Zones	N/A	N/A	N/A	N/A
Pitt Meadows	No	Not applicable		4,000 sq. m (1 ac.)	RR (Rural Residential); RS (large lot residential); AG (agricultural zones)	N/A	N/A	N/A	N/A
Port Coquitlam	No	Not applicable	Backyard chicken allowed for household consumption only	4,000 sq. m (1 ac.)	RS3 Zones and Agriculture Zones	N/A	N/A	N/A	N/A
Port Moody	No	Not applicable				N/A	N/A	N/A	N/A
Langley (Township)	No	Not applicable			Agricultural zones	N/A	N/A	N/A	N/A
Langley (City)	No	Not applicable			Agricultural zones	N/A	N/A	N/A	N/A

Risks Analysis of Backyard Chickens in Residential Zones

Risk of Abandonment

According to the BC SPCA, hens have a life expectancy of five to eleven years, and their productive egg-laying diminishes significantly after the first year³. Hens may also stop laying eggs before they reach the end of their lives. The humane treatment of hens must be respected and bylaws need to be in place to prevent and mitigate the risks of owners abandoning them.

Municipalities with backyard chicken programs indicated that they have not experienced a problem of owners abandoning their hens. There are chickens that were turned into their respective animal shelters, but they tend to originate from chicken processing facilities or through stray capture. The overall number of chickens that were turned into the shelter was relatively low. The City of Vancouver reported an annual average of six chickens and City of Surrey reported an annual average of 10 chickens being turned-in to their animal shelter over the last three years.

Most hen owners generally view their chickens as pets even after their egg-laying diminishes. Nonetheless, owners also have the option to have the hen processed on a farm or be euthanized by a veterinarian.

The risk of abandonment can be mitigated or prevented with the following bylaw measures:

1. Limiting the number of hens, which will lessen the impact of abandonment;
2. Adopt an annual licensing fee, which will serve as a responsible ownership tool to ensure owners are committed on the responsibility of keeping hens;
3. Only permit hens older than four months, which will reduce the chance that owners mistakenly obtaining a rooster (not permitted under any surveyed municipalities) or obtaining chicks for their cuteness;
4. Prohibit the slaughtering of hen on premise, which will prevent the inhumane treatment of hens. Hens nearing end of life must be managed by a veterinarian similar to dogs and cats;
5. Provide information and resources on the City's website, which will provide prospective owners the necessary resources for decision making; and
6. Recommend to potential owners to stagger the keeping of hens, which will provide a consistent egg supply during ownership.

Risk of Unhygienic Housing Conditions

The care of backyard chickens requires daily maintenance and upkeep to ensure hygiene and odor control. To ensure good health, hens require the following: shelter, food, water, adequate space, protection from environmental conditions, adequate ventilation, and day light. Hens are social creatures and require the opportunity to socialize and room for scratching (foraging by

³ <https://spca.bc.ca/news/backyard-chickens/>

scrapping the ground with their claws), roosting (resting on a stick or branch), and dustbathing (thrashing around in the dirt to clean feathers and remove parasites)⁴.

Chicken coops must be properly maintained by the owner by regularly cleaning waste and manure to remove foul odors. Municipalities with a backyard chicken program have advised that odor has not been a concern. Generally chicken owners are responsible pet owners and living conditions were properly maintained. The chicken by-product and manure could be used as compost on the property and excess waste could be recycled at any one of the Metro Vancouver recycling facilities that accepts chicken manure.

Communicable Diseases

Diseases such as avian flu are a common concern for urban chickens. The BC Centre for Disease Control (BCCDC) indicates that poultry flocks in Canada are usually free of avian influenza viruses. However, sometimes domesticated birds can become infected with these viruses through direct and indirect contact with infected waterfowl, other infected poultry, or through contact with surfaces that have been contaminated with a virus⁵.

The three municipalities surveyed indicated they did not experienced an outbreak of avian flu related to the backyard chickens. They have also indicated that the risk of avian flu is low due to the limited of number of hens and their sparse location. The City of Vancouver published an extensive research on avian flu risks on backyard chickens and concluded that “keeping backyard chickens, with the proper regulations, should pose minimal risks to public health”⁶.

The provincial Ministry of Agriculture has a “Premises ID” registration and traceability system that allows Canada’s livestock and poultry industries, and individuals, to quickly respond in the event of an animal disease outbreak. A Premises ID also provide resources for non-disease emergencies that threaten livestock, such as floods, forest fires, or environmental contamination events. Only one municipality, City of Surrey, has implemented a requirement for a Premises ID. During the permit process, the City of Surrey requires that an owner must first register for a Premises ID as part of their backyard chicken application. Furthermore, it is a best practice to require owners to register their properties in the Premises ID as a requirement for keeping of backyard chickens so that these properties could be tracked and owners notified in the event of a disease outbreak.

The risk of unhygienic housing conditions can be mitigated or prevented with the following bylaw measures:

1. Limiting the number of hens, which will lessen the impact of hygiene concerns;
2. Establish a minimum coop size and coop requirements, which will allow each hen to have sufficient space for natural behaviours;
3. Adopt the BC Premises ID registration as a condition of licensing, which will enable contact tracing in the event of a disease outbreak;

⁴ <https://council.vancouver.ca/20100408/documents/penv3.pdf>

⁵ <http://www.bccdc.ca/health-info/diseases-conditions/avian-influenza>

⁶ Page 8-10; Appendix H: <https://council.vancouver.ca/20100408/documents/penv3.pdf>

4. Prohibit the slaughtering of chickens on premise, which will eliminate exposure to blood and other bodily fluids to prevent spread of diseases;
5. Prohibit the sale of by products including eggs, meat, manure, and feathers from backyard chickens, which will limit disease transmission; and
6. Impose fines for the failure to keep chickens in sanitary living conditions that are free from excessive manure and waste.

Risk of Increased Noise

Noise is a common concern with backyard chickens. In Richmond, there were 13 complaints over the last three years (2016 to 2019) regarding chickens on residential properties. The majority of these complaints were noise related due to the keeping of roosters. Although hens also make noise throughout the day, their clucks are very subdued compared to roosters, and generally do not cause a disturbance. Some breeds of hens may sing an “egg song”⁷ when they are in the process of laying eggs. The “egg song” would be the loudest noise that hens make in their normal behavior and normally occurs in the morning, or when they are about to lay an egg inside the coop nest, which also lessens noise impacts. The “egg song” may be a cause for concern; however, the singing is momentary (approximately 2 to 5 minutes) and stops shortly after the hen finishes laying an egg. Some hens may sing louder than others and it is also possible the singing would decrease, or even cease, as the hen matures. The noise level of an “egg song” is less than that of a dog barking. Municipalities with a backyard chicken program have indicated that noise is not a serious concern and complaints are minimal.

The existing Noise Regulation Bylaw No. 8856 (Noise Bylaw) specified the limits for residential zone to be between 55 to 65 decibels for day and 45 to 55 decibels for night. The City of Pleasanton, California, noted noise readings of a “squawking” chicken at 63 decibels at two feet away, and would not register the noise at nine feet away. For comparison, the average human conversation registers at about 60 decibels and a barking dog can be as loud as 100 decibels⁸. The keeping of backyard chickens generally falls within these decibel limits and are consistent with the Noise Bylaw. There are also other provisions in the City’s Noise Bylaw to enforce excessive noise for any animals, including backyard chickens.

The risk of increased noise can be mitigated or prevented with the following bylaw measures:

1. Prohibit roosters in residential zones, which will eliminate the rooster crow;
2. Limiting the number of hens, which will lessen the noise generated;
3. Establish requirements for an enclosed coop, which will reduce the noise when hens are laying eggs;
4. Establish coop setbacks, which will provide distancing to nearby residences;
5. Recommend that owners to insulate the coop, which will further reduce the noise and also provide proper protection during inclement weather;
6. Recommend to potential owners to stagger the keeping of hens, which will lessen the noise; and

⁷ Sounds like repeated “clucking” or “cackling”.

⁸ Page 10-11: <https://council.vancouver.ca/20100408/documents/penv3.pdf>

7. Require that hens be kept inside their coop at night, which will reduce potential noise impacts at night.

Risk of Increased Pests and Predatory Animals

Backyard chickens can attract unwanted pests such as rodents seeking chicken feed, or larger animals, such as raccoons, dogs, cats, foxes, skunks and coyotes. Municipalities with a backyard chicken program have a coop enclosure and fencing requirements that effectively prevents pests and predators. There are no reports of issues that owners are not following coop and fencing requirements. As well, it is in the owner's best interest to adequately secure their coop to ensure that their investment in time, feed, and care for the hens are rewarded (with fresh eggs to their families rather than a free meal eaten by pests and predators).

The risk of increased pests and predatory animals can be mitigated or prevented with the following bylaw measures:

1. Limiting the number of hens, which will reduce the attraction of pests and predators;
2. Establish enclosed coop and fencing requirements, which will protect the hens from pests, predators, and prevent escapes;
3. Provide guidance to owners to store chicken feed in a secured container and provide food/water for the hens inside the coop, which will eliminate a potential food source for pests and predators;
4. Require that hens be kept in their coops from sunset to sunrise, which will protect the hens from predators and reduce noise throughout the night; and
5. Recommend that owners retrieve the eggs daily, which will eliminate a potential food for pests and predators.

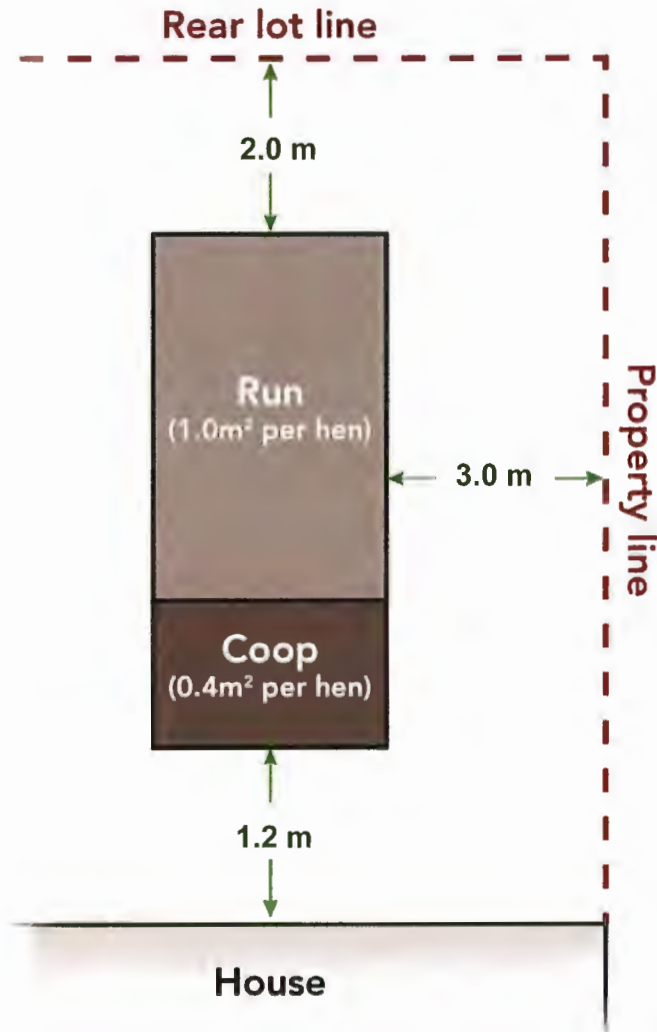
Prospective Residential Backyard Chicken Program and Bylaw Provisions

Based on the best practices from other municipalities, Table 1 outlines the prospective bylaw provisions for a RBCP in Richmond.

Table 1: Prospective Bylaw Provisions for a Residential Backyard Chicken Program	
Definition of “Backyard Chicken”	Hen (female chicken) that is four months or older. Exclusion for rooster, chicks, or any other poultry species.
Allowable zones	All standard and site-specific zones that permits single detached housing. For example: RS1/A-H, J-K, RS2/A-H, J-K. Exact zoning to be determined based on consultation and stakeholder input.
Parcel Size	No minimum parcel size.
Number of Hens	Minimum two hens and maximum of four hens per parcel.
Hen Enclosure and Run	<p>Minimum coop floor area per hen: 0.4 m² per hen (4.3 sf) Maximum coop floor area per hen: 5.0 m² per hen (53.8 sf) Maximum total coop floor area: 9.2 m² total (100 sf)</p> <p>Hen enclosure requirements:</p> <ul style="list-style-type: none"> • At least one nest box • Inclined roof built with waterproof material (no tarp) • Wooden or concrete floor of at least 0.3 metres above grade • Minimum one perch at least 0.25 metres in length • Minimum run of 1.0 m² (10.7 sf) of vegetation or bare earth per hen • Maximum height of 1.8 metres • Maximum one hen enclosure per property • Rear yard only <p>Building permit is not required if the hen enclosure is within the specified limits.</p>
Hen Enclosure Fencing and Setbacks	<p>Coop and run must be surrounded with appropriate fencing designed to prevent escape of hens and provides protection from pests and predators.</p> <p>Setbacks for hen enclosure (Illustrated in Attachment 4):</p> <ol style="list-style-type: none"> 1. Rear Lot Line: 2 metres 2. Side Property Line: 3 metres 3. House: 1.2 metres

Table 1: Prospective Bylaw Provisions for a Residential Backyard Chicken Program	
Basic Care	Hens must be provided with food, water, shelter, adequate light and ventilation, veterinary care, and opportunities to scratch, dust-bathe, and roost.
Pest and Hygiene	Hen enclosures must be kept in good repair and in sanitary condition. Construction of hen enclosure must prevent access by other animals. Food and water must be kept in coop at night. Manure and waste must be removed in a timely manner so it does not produce foul odor.
Prohibitions Prohibitions (Cont.)	<p>The following will be prohibited:</p> <ul style="list-style-type: none"> • Keeping hens in the front or side yard. • Slaughtering hens on premise. • Sales of eggs, manure, feathers or other products. • Keeping of roosters or any other poultry species other than hen (female chicken). • Keeping of chickens younger than four months. • Keep hens in a cage, other than for transport. • Dispose manure in municipal sewage, garbage or green bin. • Dispose chicken carcasses in municipal garbage. • Burying a chicken on premise.
Licensing and Fees	<p>Annual licensing (similar to dog licenses) fee of \$50 per property per year (for maximum of four hens), prescribed under the Consolidated Fees Bylaw No. 8636.</p> <p>Property owners to register BC “Premises ID” as a requirement for licensing.</p>
Inspection	Inspection for new builds. Inspection not required for renewals.
Violation	Impose fines, under the Notice of Bylaw Violation Dispute Adjudication No. 8122.

Prospective Minimum Hen Enclosure Floor Area and Setbacks



Sample prefabricated chicken coop that is available from retailers:





City of Richmond

Report to Committee

To: General Purposes Committee
From: Marie Fenwick
 Director, Arts, Culture & Heritage Services
Re: **Steveston Tram Feasibility Study**

Date: May 29, 2020
File: 11-7000-01/2019-Vol 01

Staff Recommendation

That Option 1: Maintain Current Tram Program as detailed in the report titled “Steveston Tram Feasibility Study”, dated May 29, 2020, from the Director, Arts, Culture & Heritage Services be endorsed.

CM Fenwick

Marie Fenwick
 Director, Arts, Culture & Heritage Services
 (604-276-4288)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGE
Arts, Culture & Heritage	<input checked="" type="checkbox"/>	<i>Sevener</i>
Policy Planning	<input checked="" type="checkbox"/>	
Engineering	<input checked="" type="checkbox"/>	
Parks	<input checked="" type="checkbox"/>	
Transportation	<input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS:	APPROVED BY CAO
	<i>MF</i>	<i>[Signature]</i>

Staff Report

Origin

At the City Council meeting on September 11, 2017, Council endorsed the staff report titled *Feasibility of Running the Steveston Interurban Tram* to undertake a feasibility study. The following staff recommendation was adopted on consent:

That \$50,000 be allocated from Council Contingency to undertake a feasibility study that includes a business case analysis (including cost vs. benefits) and transportation and engineering analysis of the operation of the Tram running between the existing Tram building at No.1 Road and Moncton Street and the Gulf of Georgia Cannery, as well as further work including determining the capital and operating costs required for the Tram itself.

This report supports Council's Strategic Plan 2018-2022 Strategy #3 One Community Together:

Vibrant and diverse arts and cultural activities and opportunities for community engagement and connection.

3.2 Enhance arts and cultural programs and activities.

3.4 Celebrate Richmond's unique and diverse history and heritage.

This report supports Council's Strategic Plan 2018-2022 Strategy #6 Strategic and Well-Planned Growth:

Leadership in effective and sustainable growth that supports Richmond's physical and social needs.

6.4 Recognize Richmond's history and heritage through preservation, protection and interpretation.

Analysis

Heritage Context and the Steveston Area Conservation Strategy

Tram Car 1220, the City's largest artefact, represents an important part of Richmond's history as it symbolizes the transportation connection between Steveston and Vancouver that supported the development of Richmond. Its presentation to the public plays an important role in sharing the history of Richmond.

During its operation, the Tram ran from Eburne Junction at the north end of Lulu Island to Steveston. Its last passenger stop at the southern end was located at No. 1 Rd. and Moncton Street where the Steveston Tram Building is located today. The line continued down what is now Bayview Street to the Gulf of Georgia Cannery to pick up freight. The line did not go down Moncton Street. A section of the original track remains in Steveston Park running north from the Steveston Tram Building. This track is listed on the City of Richmond's heritage register.

Figure 1: Richmond Tram Stops, 1956



The Steveston Area Conservation Strategy, created in 2009, was put in place to conserve the heritage character of Steveston Village. Bylaws, guidelines and incentives help conserve the original heritage character of the exterior of identified heritage buildings and streetscapes. The Steveston Village Conservation Strategy identifies the core themes for preserving the heritage character. This includes elements typical to a small frontier town such as, “street and lane patterns and building design which all show characteristics in common with most burgeoning small settlements in the West”. Additionally it states that “Steveston is valued for the extent of its historic character and intrinsic heritage values, seen less in individual buildings than

in the cumulative effect its physical and intangible elements have had on its heritage significance since 1880”.

Moncton Street played a central role in the history of Steveston and continues to be a hub for the village today. As described in the Steveston Village Conservation Strategy, “Moncton Street in particular is a testament to the importance of the commercial core of small-town British Columbia; it continues to evolve as the economic and social heart of the village and the primary local source for goods and services, much as it was historically”.

Current Tram Program

In order to preserve the Tram, and make it accessible to the public, the Steveston Tram Building was constructed and opened to visitors in 2013. It immediately became a popular destination for community members and tourists, with over 55,000 visits annually, including over 18,000 visits from Richmond residents. Visitors report a high level of satisfaction with their experience of Tram Car 1220, with 94% of people ranking their visit Very Good or Excellent.

A full restoration of Tram Car 1220 was completed in 2019. A restoration team made up of volunteers, conservators, curators, specialized contractors and City trades worked diligently to preserve original materials and return the car to its appearance from 1912 to 1958. Volunteers contributed over 800 hours of their time to help restore the Tram. Visitors also watched and participated in the restoration process.

The completion of restoration has created the opportunity for additional programs in the Steveston Tram Building, which offer visitors the opportunity to experience the Tram in-person and learn about its history and importance to Richmond.

There are many programs and events offered throughout the year including;

- **Living History:** Historical Interpreters and Heritage Ambassadors (volunteers) offer an immersive experience for visitors as they tell the story of Richmond’s transportation history in historic costume. Stories include, going to the races, the mechanics of the Tram, moving agricultural goods through the Interurban system and a typical workday of a Motorman.
- **Winter Tram:** Visitors listen to festive music; sit with Santa on the Tram Car while stories all about winter celebrations, trains and trams are told.
- **Tourism Passport Challenge:** The Tram Building participates in the Tourism Passport Challenge, which welcomed 13,356 tourism professionals in 2019. This program has a significant impact on promoting the site.
- **School Programs:** Students from kindergarten through grade six participate in two programs, *All Aboard Tram Car 1220* and *Rails Across Richmond*, aimed at teaching them about how the Tram brought community together.

- Canada Day: The Tram is winched out on Canada Day and visitors are encouraged to board the car and explore hands on activities and entertainment in the Tram Building. 3,400 visitors experienced the Tram as part of the 2019 Steveston Salmon Festival.
- Citywide Events: The Tram is part of Culture Days, Doors Open and Family Day. Visitors board the Tram Car and explore the car's history through an interactive discovery centre. Over 1,600 visitors attended these special events in 2019.

While public access and programming at the Tram has been temporarily suspended as a result of COVID-19, it will resume as outlined in the Council-approved restoration of services plan. Access to the Tram Car itself will likely be later in the restoration of services continuum as the cleaning that would be required to disinfect high-touch surfaces would be damaging to the Tram car, the City's largest artefact.

Tram Feasibility Study

A consulting team from Davies Transportation Consulting Inc., WavePoint Consulting Ltd., Hooper Engineering and Morch Engineering Inc. was retained to conduct a feasibility study.

The findings of the feasibility study are detailed in this report and address the following:

1. Tram Car Operations Best Practices Review;
2. Tram Car Assessment;
3. Tram Routing Options;
4. Business Case;
5. Safety Issues;
6. Regulatory and Operational Considerations; and
7. Steveston Streetscape Study Impacts.

Tram Car Operations Best Practices Review

The consulting team analyzed active heritage tram operations in nine other cities to identify characteristics of successful examples.

Their findings include:

- Many services operate from a historical urban location and are marketed primarily toward heritage tourism, family or cultural experiences rather than as practical passenger transportation.
- Services that run in urban areas are usually built on original track and operate as part of a larger transit system. This is the case in New Orleans and Dallas where heritage streetcars are part of the transit system and used to showcase the community's heritage for both residents and tourists. Several connect to major urban experiences that are a destination such as convention centres or sports stadiums.

- Other services operate in rural or industrial landscapes where there is limited interaction with pedestrians and other vehicles. These include the Fraser Valley Heritage Railway in Surrey and Riverfront Trolley in Astoria, Oregon.
- The majority of services operate on a seasonal basis, typically from May to September.
- The length of the tram line services varies from between 1.9km to 7.4km.
- In almost all cases, heritage streetcars operate over existing right-of-way, including active or abandoned freight railway tracks (Astoria) and/or active public transit routes (New Orleans).
- Heritage cars are prone to breakdown and parts and service can be difficult to procure. Some operate more than one vehicle to improve reliability.
- All services depend on some level of government funding or grants to finance operations and/or equipment and infrastructure maintenance and repair.
- Most services have a volunteer component.
- Fares tend to be low, approximately \$5 CDN on average, for round trips that while relatively short, are longer than the route options considered in this report. The Fraser Valley Heritage Railway Society costs range from \$10 to \$20 per person for a 55 minute ride.
- Some museums and heritage destinations use train, street and tram cars as part of a static interpretive experience, such as Engine 374 at Yaletown Roundhouse and Street Car 153 planned in the new North Vancouver Museum, scheduled to open in 2020. Other cars are primarily static, but do have the ability to move by winch, such as the 1223 at Burnaby Village Museum.
- Tram services cease operation for a variety of reasons. For example, The Vancouver Downtown Historic Railway operated from 1998 to 2011 between Granville Island and Olympic Village Station. It ran on weekends and holidays from May to mid October. The cars and line was owned and maintained by the City of Vancouver and operated by volunteers from the Transit Museum Society. Operations closed because it offered a limited tourism experience, the operational costs were considered high, and there were significant safety concerns.

Tram Car Assessment

Richmond's Tram Car 1220 has been restored on an aesthetic and structural level for static exhibition purposes. To operate the Tram, beyond the current ability to move it outside the building, extensive work would be required including hazardous material removal, structural and safety work, mechanical and electrical assessments, and further rebuilding and restoration of additional Tram components.

To rebuild and restore these components of the Tram would require specialists in restoration and knowledge and skill in rehabilitating the mechanical and electrical systems. The work would entail removing the framework that supports the car body and contains the wheel sets "trucks". To complete an assessment and rebuild, the trucks would then need to be disassembled and reassemble at an offsite location. The rebuild would include the replacement or repair of existing components.

The electrical systems of the car would need to be upgraded to connect to the braking system and traction motors. Any existing high voltage wiring would be removed from the undercarriage. The

brake system would also need to be inspected and potentially replaced. This would include but not be limited to the compressor, the emergency hand brake control and brake piping.

Structural components would need to be considered as well. The structure of the car would require careful assessment to ensure that all interior components are secure when in motion.

In order to complete the work to make the Tram operational, newly restored components will need to be removed and rebuilt.

The current Tram does not meet the standard universal design for accessibility. Altering the Tram to accommodate passengers with mobility challenges would result in additional costs and loss of heritage integrity. It is possible to purchase a replica streetcar of a similar but not identical design, complete with modern systems that would meet accessibility standards.

There are three options for powering the Tram. An overhead catenary, a towed generator or an onboard power cell or battery system. Each option has operational considerations that impact resources, maintenance and streetscape design. Further assessment and investigation would be required.

Once operational, regular maintenance would be required to maintain safety standards and ensure that the Tram is preserved. If any part of the Tram breaks, parts are rare and not easily attainable and skilled tradespeople to complete the work may be challenging to find. This could result in a disruption of service.

The estimated cost to make the Tram operational is \$2 to \$4 million dollars. Further analysis would be required to make recommendations on the options noted above and the estimates could be refined accordingly

An additional option for consideration is the purchase of a replica tram car. Opting for a replica car would provide opportunities to install onboard power, meet accessibility needs and provide modern conveniences such as air conditioning. The estimated cost of this option is \$2.5 million to \$3.5 million. These costs do not include a structure to house the replica for storage, maintenance and repair.

Tram Routing Options

The consulting team reviewed three routing options for Council's consideration. Each option was assessed to determine the costs, transportation and engineering considerations related to routing and road impacts and safety.

Figure 2: Tram Routing Options

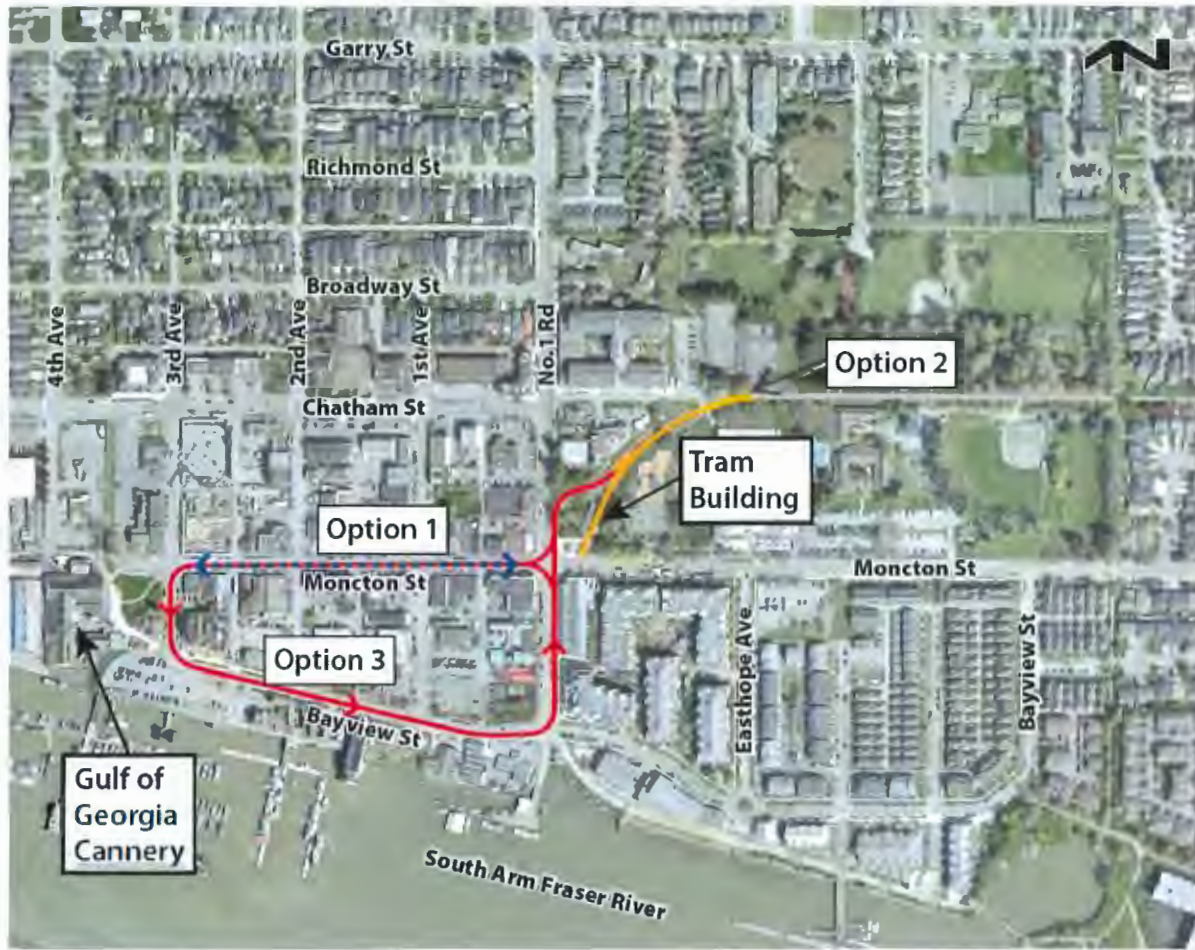


Table 1: Tram Routing Options and Estimated Order of Magnitude Capital Costs

Route Option	Tram Car Restoration Cost	Track Infrastructure Capital Cost	Total Cost
Option 1: Moncton Street	\$2M to \$4M	\$1.6M to \$6M	\$3.6M to \$10M
Option 2: Off Street: in Park	\$2M to \$4M	\$1.1M	\$3.1M to \$5.1M
Option 3: On Street: track – Moncton St., Third Ave., Bayview St., No. 1 Road	\$2M to \$4M	\$4M to \$8M	\$6M to \$12M

Exiting the Building

The consulting team confirmed that the Tram will have to exit from the north side of the Tram Building due to the physical constraints of the existing structure and the physical space available in the road right-of-way to negotiate a right turn onto Moncton Street. Therefore, all routing options include the provision for the start and end of the trip via the north side of the building.

Considerations for all options include:

- Relocation and construction of new pathway in park;
- Potential conflict with other park uses. Due to the adjacency to the playground, a fence or safety barrier would need to be installed.
- If powered by catenary wires (overhead wires) would likely conflict with trees in the park and on Moncton Street;
- Negative impact to the heritage value of the Steveston Conservation Area; and
- Potential disruption to the experience of the Nikkei Memorial.

Option 1: Moncton Street

The option of the Tram running back and forth on Moncton Street between the Tram Building and the Gulf of Georgia Cannery was reviewed to address the specific route identified in the referral.

Option 1A: Single Track

This option envisions a single track set on Moncton Street to allow the Tram car to operate in both directions back and forth from the Tram Building to the Gulf of Georgia Cannery.

The primary advantage of this option is:

- Reduced safety risks compared to the other options, as the roadway would be completely closed to vehicle traffic and parking during Tram operation.

The challenges of this option include:

- Street closed to vehicle traffic;
- Coordination and scheduling impacts with adjacent business deliveries and environmental services;
- Approximately 25 parking stalls are lost during Tram operation; and
- Depending on the location of the track, boarding would have to be accommodated on the sidewalk or in the street.

Option 1B: Double Track

A double track option on Moncton Street envisions track inlaid in each traffic lane in both directions with switches at either end to allow for Tram car turnaround.

The primary advantage of this option is:

- As the Tram would run in the same direction as traffic, traffic flow could be maintained.

The challenges of this option include:

- Significant permanent alterations to road infrastructure and operations;
- Adjacent curbside parking would be unavailable during Tram operation;
- Turn movements from the north-south streets and lanes would need to be restricted; and
- There would need to be a switch west of No. 1 Road and another at Third Avenue. The switch would allow the Tram to reposition itself into the proper lane. This would require traffic personnel at each end to manage the switch, disrupt movements of other road users, and create delay in Tram service reducing the possible number of trips per day.

Option 2: Track extension north of Tram Building

This option utilizes the existing Tram right-of-way north of the Tram Building. A short 500 metre section of track could be installed for a limited two-way operation of the Tram within the park. Rehabilitation and extension of the existing 130 metre of track along the original interurban line would create a completely off-street route thereby eliminating conflict with other road users. Although this option would not provide travel to other destinations for passengers, it would serve to provide a demonstration of an operational Tram.

The advantages of this option include:

- The grade and asphalt are able to support Tram load;
- The track can be above ground with wooden ties similar to the existing section of track;
- Reflective of the original Tram route; and
- No impact on other street users.

The challenges with this option include:

- The line will not have any destination which would limit its appeal to visitors; and
- Impact on park users.

Option 3: Moncton and Bayview Streets

This option would have a 1.1 kilometre inlaid street track with the Tram running in a counter clock-wise direction along Moncton Street, Third Avenue, Bayview Street and No. 1 Road. The Tram would run in the travel lane. This route will serve the Tram building, the Cannery and the waterfront.

The advantages of this option include:

- The route serves the Gulf of Georgia Cannery and waterfront areas;
- The existing road base is sufficient to support tracks and Tram load; and
- Tram would run in the travel lane.

The challenges with this option include:

- High cost of construction related to installation of track and additional reconstruction work due to Tram routing from the Tram Building through the No. 1 Road and Moncton street intersection;
- Extensive manual or automated traffic control required at major intersections and pedestrian crossings, including No. 1 Road and Moncton Street;
- Loss of parking on the outside lane;
- Delays to other road users during Tram operation; and
- Impact to dike alignment and potential future raising of the road. This work would result in greater elevation differences, disruption of service and could complicate raising initiative.

Safety Issues

The study identifies several safety considerations associated with operating the Tram. Safety considerations that impact all three route options include;

- Due to the proximity of the tracks to the playground, a fence or barrier would be required to protect the park users and pedestrians; and
- The movement of the Tram Car could result in cyclists and pedestrian conflicts.

Safety concerns related to any on street routing options include;

- Cyclists could fall on slippery rails during wet weather. Cyclist's tires could also become trapped in the rail. Mitigation measures that would require further consideration include dedicated bike lanes to separate cyclists from the travel lane or prohibiting cyclists on the roads and intersections used for the Tram route.
- Operational and safety challenges for motorists, cyclists and buses. Potential mitigation measures for safe Tram integration to the street system may include traffic signal modifications, the dismounting of cyclists, removal of street parking, introduction of traffic control personnel, re-arrangement of traffic flow and turning movement conditions.

Regulatory and Operational Considerations

Technical Safety BC would require that the City of Richmond secure an operating certificate based on the regulations to run a rail service. The following additional resources would be required:

- Full time staff or contractor expertise;
- Safety management plan;
- Communication plan;
- Electrical safety plan;
- Medical clearance, training and qualification of crew and maintenance personnel; and
- Insurance.

Business Case

A high-level business case based on the estimated costs and anticipated revenue for Tram routing options 1, 2 and 3 was developed. The results indicate that the capital and ongoing operating costs for all options significantly exceed the anticipated revenue of running a seasonal Tram.

A revenue estimate based on seasonal operation is detailed in Table 3 below.

Table 2: Tram Routing Options and Estimated Annual Revenue and Operational Costs

Route Option	Estimated Annual Revenue	Estimated Annual Operational Costs*	Annual Subsidy
Option 1: Moncton Street	\$57,600	\$500,000 to \$1M**	\$442,400 to \$942,400
Option 2: Off Street: in Park	\$28,000	\$500,000	\$472,000
Option 3: On Street: track – Moncton St., Third Ave., Bayview St., No. 1 Road	\$86,000	\$500,000 to \$1M**	\$414,00 to \$914,000

**Annual operational costs include Tram maintenance, track and infrastructure maintenance, insurance and some personnel. The operational costs do not include all provisions for additional staff costs related to maintenance, operations and traffic control.*

*** Operating Budget Impacts due to removal and replacement of rails and power for completing road and utility infrastructure works have not been included.*

A survey of other tram services indicates fares average \$5.00 fare for tourism-oriented use. As the assessed routes are relatively short, the average fare for Option 2 was estimated at \$1.00 and \$3.00 for Options 1 and 3.

The business case analysis includes the use of volunteers to assist with program delivery including greeting visitors, narrating tours and assisting with events. While this helps to achieve cost savings, many of the positions related to tram operation require specialized skills and would therefore require trained staff to ensure safety and reliability of service. If staff were required for these potential volunteer positions, the annual subsidy required would be greater.

Steveston Streetscape Impacts

At the November 21, 2017, Planning Committee a report from the Director, Transportation and the Manager, Policy Planning, titled “Update: Proposed Steveston Area Plan Village Conservation Changes and Long Term Streetscape Visions for Bayview, Moncton and Chatham Streets” was presented. The following referral was made regarding the streetscape options:

That the recommended long-term Bayview, Moncton and Chatham Street Streetscape visions be referred back to staff for further investigation and future reporting on issues related to details of the streetscape elements, the Steveston interurban Tram and an upgraded Steveston bus exchange.

The findings conclude that none of the options presented in the staff report preclude a future operating Tram. The Tram can be accommodated in a single travel lane on both Bayview and Moncton Street under the existing and proposed future conditions. Locations of any stops along these streets will require re-allocating the placement or the elimination of some street elements, such as enhanced boulevards, bike lanes, street furniture and on street parking.

The recommended long-term streetscape for Bayview Street comprises shifting both the north and south curbs to create a wider pedestrian realm on the south side of the street combined with removal of the on street parking on the south side for provision of a two-way protected cycling facility on the south side, or a bi-directional cycling lane.

The Tram can operate in the south travel lane on Bayview Street in the eastbound direction. The preferred streetscape option for Bayview Street would not preclude the operation of the Tram. If the Tram was to operate ahead of the streetscape upgrades, there would be costs incurred for the removal and relocation of the rails to facilitate the recommended ultimate streetscape vision for Bayview Street in the future.

The recommended streetscape option for Moncton Street with slopes asphalt curb extensions to replace the existing concrete curb extensions at the intersections, will also be compatible with the route proposed along the westbound travel lane. At the intersection of No. 1 Road and Third Avenue where the Tram will turn, there will be impact to the road geometry and the curb extensions at some of the corners of the intersection.

Staff analysis has confirmed that operating the Tram car will be compatible with the proposed changes to the streetscape upgrades for Bayview and Moncton Streets and the streetscape options do not preclude operating the Tram car in Steveston Village in the future.

Steveston Tram Options

Based on the information provided by the consultants, the following options are presented for Council's consideration.

Option 1 – Maintain the Current Tram Program (Recommended)

With over 55,000 visitors annually and a high degree of visitor satisfaction, the current program offer at the Tram contributes to the rich offer of interpretive opportunities in Steveston. Making the Tram operational comes with considerable risks and challenges including risks to Tram Car 1220, the City's largest artefact, potential conflicts with other road users, including pedestrians and cyclists, and negative impacts to other valued community assets including the Steveston Nikkei Memorial. The proposed routing options are too short to offer a significant tourist experience and would require an operating subsidy.

Option 2 – Public Consultation

All options outlined in this report are technically feasible. Should Council wish to proceed beyond this feasibility review to advance the design to a functional plan, staff recommend engaging in a stakeholder and public consultation process that will include the Richmond Heritage Commission. This would provide an opportunity to assess the community's response to both the potential to make the Tram operational and to the routing options.

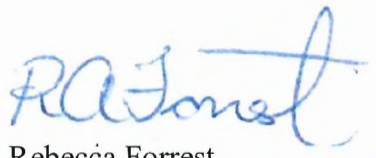
Staff would report back with these findings and recommendations. Should Council wish to advance planning after this initial public consultation process, additional funding would be required to complete a functional plan. This functional plan would provide more detailed information on regulatory and operational considerations, impacts for all road users, and provide cost estimates to a level required for a capital submission.

Financial Impact

None.

Conclusion

Staff recommend that the current program plan to interpret and preserve Tram Car 1220 is maintained. While the feasibility study shows that all options are technically feasible, there are considerable risks and safety implications when operating the Tram car in Steveston for cyclists, pedestrians, vehicles and the Tram itself.



Rebecca Forrest
Project Leader
(604-247-4674)



To: General Purposes Committee **Date:** June 3, 2020
From: Lloyd Bie, P.Eng. **File:** 12-8275-06/2020-Vol
 Director, Transportation 01
Re: **Quadricycle Business – Proposed Vehicle for Hire Bylaw Amendment to Permit Permanent Operation**

Staff Recommendation

1. That the third reading of Vehicle For Hire Bylaw No. 6900, Amendment Bylaw No. 10128, to add regulations and requirements for the operation of a quadricycle, be rescinded.
2. That Vehicle For Hire Bylaw No. 6900, Amendment Bylaw No. 10128, to add revised regulations and requirements for the operation of a quadricycle, be given third reading.

Lloyd Bie, P. Eng.
 Director, Transportation
 (604-276-4131)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Business Licences	<input checked="" type="checkbox"/>	
RCMP	<input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS:	APPROVED BY CAO



To: General Purposes Committee **Date:** June 3, 2020
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Lloyd Bie, P. Eng.
 Director, Transportation
 (604-276-4131)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Business Licences	<input checked="" type="checkbox"/>	
RCMP	<input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

At its March 23, 2020 meeting, Council approved the first, second and third readings of amendments to the following three bylaws to allow the on-going operation of a quadricycle service year-round in the Steveston Village area:

- Business Licence Bylaw No. 7360: to add a definition of a quadricycle operation;
- Vehicle For Hire Bylaw No. 6900: to add the regulations and requirements for the operation of a quadricycle; and
- Consolidated Fees Bylaw No. 8636: to add the vehicle for hire business fee for a quadricycle operation.

At the April 27, 2020 Council meeting, the amendments to the Consolidated Fees Bylaw No. 8636 and the Business Licence Bylaw No. 7360 were adopted. With respect to the proposed amendments to the Vehicle For Hire Bylaw, the following referral was carried:

That Vehicle for Hire Bylaw No. 6900, Amendment Bylaw No. 10128 be referred back to staff to include a requirement for individuals under the age of 19 to wear a helmet while on the quadricycle.

This report responds to the referral.

This report supports Council's Strategic Plan 2018-2022 Strategy #7 A Supported Economic Sector:

Facilitate diversified economic growth through innovative and sustainable policies, practices and partnerships.

7.3 Attract businesses to locate in Richmond and support employment and training opportunities in Richmond as we grow.

Analysis

Proposed Bylaw Amendment

The quadricycle requirements defined in the proposed amendment to Vehicle For Hire Bylaw No. 6900 have been revised to state that helmets are mandatory for passengers who are younger than 19 years and optional for passengers 19 years and older.

In addition, for greater clarity, the minimum number of sets of pedals on a quadricycle has been revised from two sets to six sets in order to equal the minimum required number of six pedalling passengers at any time while in operation.

Financial Impact

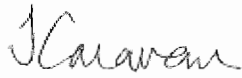
None.

June 3, 2020

- 3 -

Conclusion

The proposed bylaw amendments will allow the on-going year-round operation of a multi-person quadricycle service in the Steveston Village area that offers an interactive and environmentally friendly means of touring and learning about the history, culture and heritage of Steveston.



Joan Caravan
Transportation Planner
(604-276-4035)



Sonali Hingorani, P.Eng.
Transportation Engineer
(604-276-4049)

JC:jc



City of Richmond

Report to Committee

To: General Purposes Committee
From: Wayne Craig
Director, Development
Date: June 19, 2020
File: TU 20-890760
Re: **Application by City Vancouver Academy Inc. for a Temporary Commercial Use Permit for the Property at Units 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165 and 2170 - 8766 McKim Way**

Staff Recommendation

1. That the application by City Vancouver Academy Inc. for a Temporary Commercial Use Permit (TCUP) for the property at Units 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165 and 2170 - 8766 McKim Way to permit education use (limited to an independent school offering grades 10 to 12) be considered for one year from the date of issuance; and
2. That this application be forwarded to the September 8, 2020 Public Hearing at 7:00 p.m. in the Council Chambers of Richmond City Hall.

Wayne Craig
Director, Development
(604-247-4625)

WC:na
Att. 5

REPORT CONCURRENCE
CONCURRENCE OF GENERAL MANAGER

Staff Report

Origin

City Vancouver Academy Inc. has applied to the City of Richmond for a Temporary Commercial Use Permit (TCUP) to allow “Education” as a temporary use in nine units at 8766 McKim Way on a sited zoned “Industrial Limited Retail (ZI2) – Aberdeen Village (City Centre)”. This would permit an education facility to operate on site for a limited time until a permanent location is found (Attachment 1). City Vancouver Academy Inc. is an independent high school that offers courses for students in grades 10 to 12. This type of use falls under Richmond Zoning Bylaw 8500’s definition of “Education”.

Background

Richmond Zoning Bylaw 8500 permits “Education” use, including accredited secondary schools, in specific zones (e.g., SI, CDT1, and ASY). The “Industrial Limited Retail (ZI2) – Aberdeen Village (City Centre)” zone permits “Education, Commercial” use which is defined as “a private enterprise specializing in technical or vocational certification studies”.

A business license for a tutoring centre was issued to the Bauhinia Learning Centre at 8766 McKim Way in 2011. The City Vancouver Academy Inc. A bylaw inspection of the premises in 2019 found the Academy to be non-compliant with the Zoning.

In January, 2020, the Ministry of Education performed its annual inspection of accredited facilities to ensure the school is compliant with all Municipal and Provincial standards before renewing their licence. The Ministry’s report to the Academy required documentation from the City of Richmond that they were working towards compliance with land use regulations. The school submitted a TCUP application for the site for one year to provide time to secure a permanent location that permits the “Education” use.

If approved, the TCUP would be valid for one year from the date of issuance. An application for an extension of the Permit for up to three additional years may be made. Only one extension is permitted per application.

Findings of Fact

A Development Application Data Sheet providing details about the proposal is provided as Attachment 2.

Surrounding Development

The subject site is located in the City Centre planning area. Development immediately surrounding the subject site is as follows:

- To the North: Across McKim Way, commercial office complex on a property zoned “Industrial Limited Retail (ZI2) – Aberdeen Village (City Centre)”.
- To the South: Property zoned “Industrial Business Park and Religious Assembly (ZI5) – Aberdeen Village (City Centre)” for a place of worship and “Industrial Limited Retail (ZI2) – Aberdeen Village (City Centre)” for a light industrial, retail trade and services building.
- To the East: Office and commercial units on a property zoned “Industrial Limited Retail (ZI2) – Aberdeen Village (City Centre)”.
- To the West: Office and commercial units on a property zoned “Industrial Limited Retail (ZI2) – Aberdeen Village (City Centre)”.

Related Policies & Studies

Official Community Plan/Aberdeen Village

The Official Community Plan (OCP) land use designation for the subject site is “Mixed Employment”. The Aberdeen Village (2031) Specific Land Use Map within the City Centre Area Plan designates the subject site as “General Urban T4 (25 m),” which allows for low to medium density of light industrial, office, and retail services. The OCP allows commercial educational uses (i.e., tutoring schools) but specifically discourages schools offering Kindergarten to grade 12 (K-12) curriculums due to the fact that K-12 programs are aircraft noise sensitive uses.

The OCP allows TCUPs in areas designated “Industrial”, “Mixed Employment”, “Commercial”, “Neighbourhood Service Centre”, “Mixed Use”, “Limited Mixed Use”, and “Agricultural” (outside of the Agricultural Land Reserve), where deemed appropriate by Council and subject to conditions suitable to the proposed use and surrounding area.

The proposed temporary Commercial use is consistent with the land use designations and applicable policies in the OCP.

Aircraft Sensitive Noise Development (ASND) Policy

The subject site is located within “Area 1A – Restricted Area” of the Aircraft Noise Sensitive Development (ANSD) Policy, where new aircraft noise sensitive land uses are prohibited, including K-12 schools. This Policy exists to prevent exposure to aircraft noise throughout the range of typical activities offered in K-12 schools, such as outdoor play. While the proposed use is temporary, the school’s activities on the site will be exclusively indoors. Further information regarding how outdoor play will be accommodated is addressed in the outdoor play space and physical education section of this report.

The applicant has submitted a Building Permit application (BP 20-890506) to address Building Code, increased occupant load, and other school related requirements for the subject site and associated units. The applicant has committed to completing an acoustical report performed by a professional engineer prior to the issuance of the Temporary Permit, to indicate that the measured indoor sound levels meet the noise criteria set out in the OCP for “living, dining, and recreation rooms”. Any required upgrades outlined in the Building Permit should also be completed to obtain their Business Licence and secure their accreditation as a school.

Local Government Act

The *Local Government Act* states that TCUPs are valid until the date the Permit expires or three years after issuance, whichever is earlier, and that an application for one extension to the Permit may be made and issued. A new TCUP application is required after one extension, which would be subject to Council approval. Staff recommend the permit be issued for one year as this is a temporary accommodation while the applicant searches for an appropriately zoned site.

Public Consultation

A sign has been installed on the site to advise of the proposal. Should Council endorse the staff recommendation, the application will be forwarded to a Public Hearing on September 8, 2020, where any area resident or interested party will have an opportunity to comment. Public notification for the Public Hearing will be provided as per the *Local Government Act*.

Richmond School District No. 38 has been made aware of the Temporary Use Permit application at the subject site. No comments or concerns have been communicated back to staff.

Analysis

The subject units at 8766 McKim Way are located in the eastern building (Attachment 3). The nine units have been occupied by City Vancouver Academy Inc. since September, 2014.

City Vancouver Academy Inc. obtained a Business Licence at the current McKim Way location in 2014 for a tutoring centre. A Business Licence was issued based on the information provided for the “Education, Commercial” use, which is a permitted use in the “Industrial Limited Retail (ZI2) – Aberdeen Village (City Centre)” zone.

The education and tutoring services that the City Vancouver Academy Inc. provided at the time, complied with “Education, Commercial”. However, through expansion and growth of the program, re-classification of the business as a private secondary school was not made. Therefore, the applicant is requesting a TCUP to allow “Education” use and the existing school to continue to operate while securing a new permanent site. The applicant advises that they have been actively searching for a new location for the school and is committed to finding another facility within one year of the date of issuance. The applicant has provided a letter indicating the intent to find another location (Attachment 4). Negotiations are currently underway with a potential new location.

Outdoor Play Space and Physical Education

BC Ministry of Education does not have an outdoor play space requirement and there is no such requirement in the *Independent School Act*. However, all BC students are required to take a Physical Education course in grade 10. As the school does not have play space or a gymnasium, the applicant has indicated that arrangements are made to conduct the school’s physical education requirements at multiple off-site locations including the nearby King George Park at No. 5 Road and Cambie Road, the Olympic Oval, and the Richmond Pro Badminton Center at 5800 Minoru Boulevard. All off-site Physical Education activities organized by the school would have staff supervision.

Parking

Vehicle parking for the “Education” use for secondary schools is required at a rate of one parking space per staff member, plus one parking space for every ten students. As per Richmond Zoning Bylaw 8500, the proposed use would require 11 vehicle parking stalls for 6 staff members and 50 students. 11 vehicle parking stalls are assigned on site to the school, resulting in compliance with the vehicle parking regulation. Required parking stalls will be secured for use by the school. A letter of support from the strata has also been provided (Attachment 5).

Two Class 1 bicycle parking spaces are required (one space for every three staff members), and 15 Class 2 bicycle parking spaces are required (three spaces for every ten students). A total of 18 Class 1 bicycle parking spaces are proposed to satisfy the Class 1 and Class 2 requirements. Transportation staff support the proposed plan. The applicant has indicated that all bicycle parking spaces will be provided at 8766 McKim Way in a secured room dedicated to the school at the south end of the east building on the subject site.

Financial Impact

None.

Conclusion

City Vancouver Academy Inc. has applied to the City of Richmond for a Temporary Commercial Use Permit to allow “Education” use in units 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165 and 2170 – 8766 McKim Way, zoned “Industrial Limited Retail (ZI2) – Aberdeen Village (City Centre)”, to permit an education facility (limited to an independent school offering grades 10 to 12) on-site for one year from the date of issuance.

The proposed use at the subject property is acceptable to staff on the basis that it is temporary in nature and does not negatively impact current business operations at 8766 McKim Way. Staff recommend that the attached Temporary Commercial Use Permit be issued to the applicant to allow "Education" use at 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165 and 2170 – 8766 McKim Way for one year from the date of issuance.



Nathan Andrews
Planning Technician
(604-247-4911)

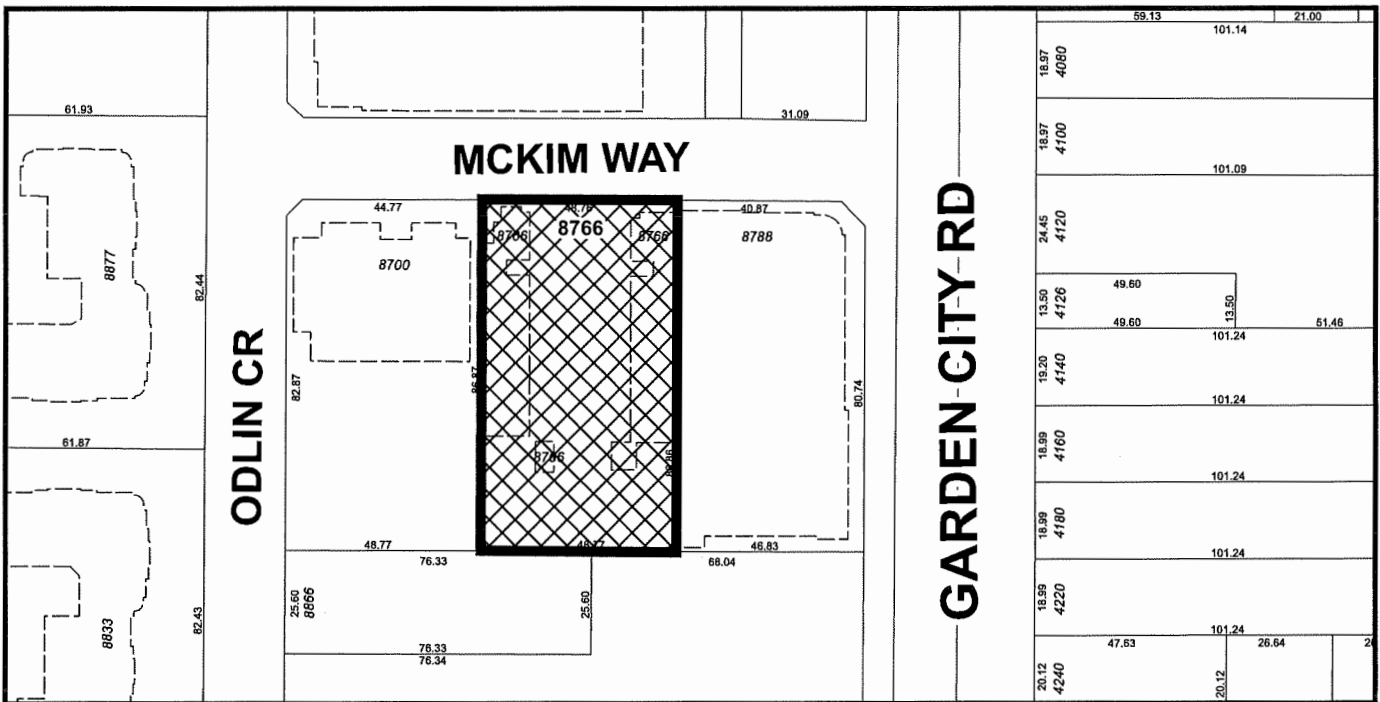
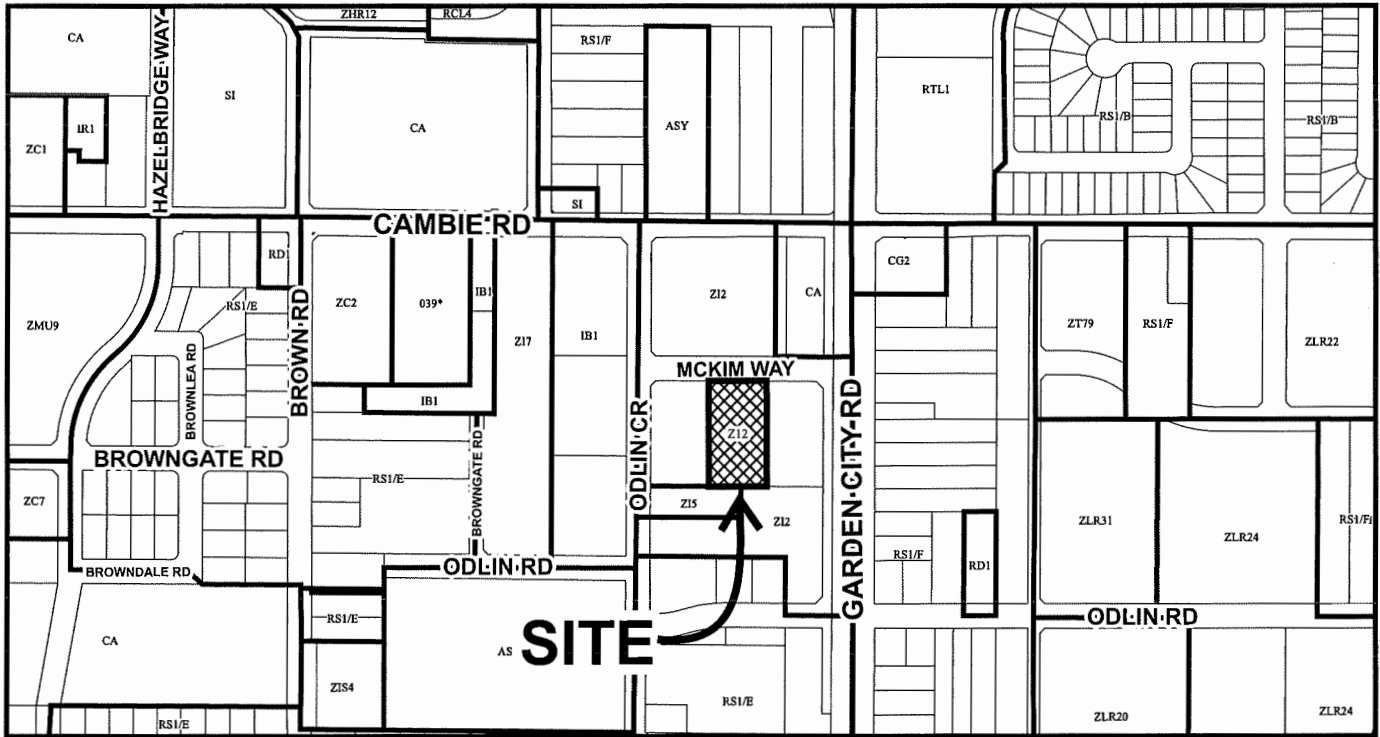
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Attachments:

- Attachment 1: Location Map and Aerial Photo
- Attachment 2: Development Application Data Sheet
- Attachment 3: Site Plan and Parking Plan
- Attachment 4: Letter from the Applicant
- Attachment 5: Letter from Strata Management Company



City of Richmond



	<h2>TU 20-890760</h2> <p>(Unit 2165) main office GP - 230</p>	<p>Original Date: 01/17/20</p> <p>Revision Date:</p> <p>Note: Dimensions are in METRES</p>
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City of Richmond



TU 20-890760

(Unit 2165) main office
GP - 231

Original Date: 01/17/20

Revision Date:

Note: Dimensions are in METRES

Units 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165, 2170 - 8766 McKim Way



TU 20-890760

Attachment 2

Address: Units 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165, and 2170 – 8766 McKim Way

Applicant: City Vancouver Academy Inc.

Planning Area(s): City Centre – Aberdeen Village

	Existing	Proposed
Owner:	Bauhinia Learning Centre Ltd.	No change
Combined Unit Size (m²):	348.5 m ²	No change
Land Uses:	Education, Commercial	Education
OCP Designation:	Mixed Employment	No change
CCAP Designation:	General Urban T4 (25m)	No change
Zoning:	Industrial Limited Retail (Z12) – Aberdeen Village (City Centre)	No change

On Development Site	Bylaw Requirement	Proposed	Variance
On-site Vehicle Parking:	11	11	None
On-site Bicycle Parking:	Class 1: 2 Class 2: 15	Class 1: 18 Class 2: 0	None

PROJECT DATA and PLANS
 UPDATE and OCCUPANT LOAD

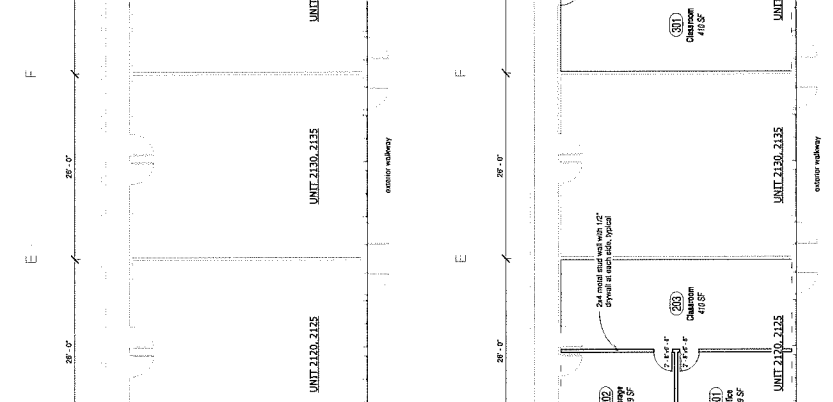
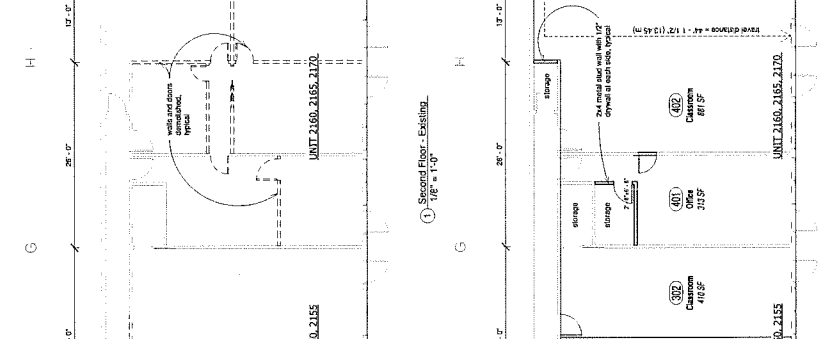
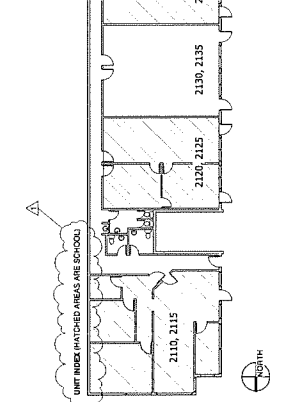
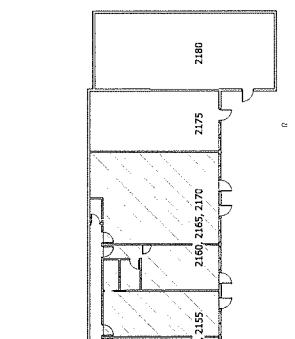
CLIENT: BAUNHAUS LEARNING CENTRE
 ADDRESS: 2165-8766 HIGHWAY, SUSSEX, B.C.

ARCHITECT: ARCHITECT 57 INC.
 2165-1071 HORSBOW WAY, SUITE 304, VAN. CO.
 DATE: 20.08.19
 SCALE: 1/8" = 1'-0"
 CREDIT: BAUNHAUS LEARNING CENTRE
 PROJECT: 5743191

CONTRACTOR: [Blank]
 AGE: 8 DESCRIPTION: [Blank]
 20.08.19
 20.05.19, 20.06.19

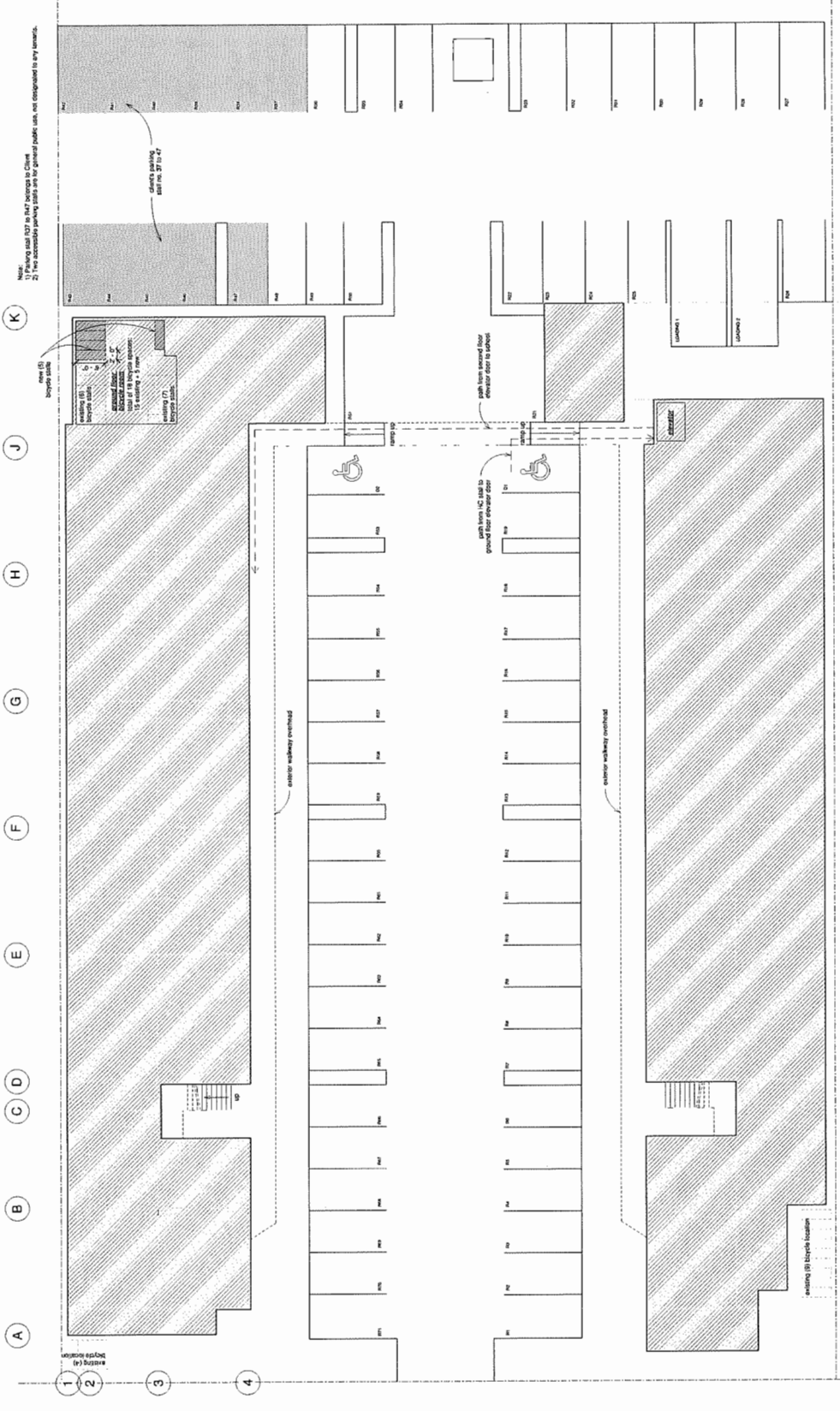
DESIGNED BY: [Blank]
 DRAWN BY: [Blank]
 CHECKED BY: [Blank]
 APPROVED BY: [Blank]

REVISIONS: architect 57 inc.
 1. Occupant load and parking info
 20.08.19
 20.05.19, 20.06.19



UNIT NO.	FLOOR AREA (SQ. FT.)	OCCUPANT LOAD (PERSONS)	USE CLASSIFICATION	REMARKS
2110	2465 SF	3	OFFICE	
2111	2465 SF	3	OFFICE	
2112	2465 SF	3	OFFICE	
2113	2465 SF	3	OFFICE	
2114	2465 SF	3	OFFICE	
2115	2465 SF	3	OFFICE	
2120	2465 SF	3	OFFICE	
2121	2465 SF	3	OFFICE	
2122	2465 SF	3	OFFICE	
2123	2465 SF	3	OFFICE	
2124	2465 SF	3	OFFICE	
2125	2465 SF	3	OFFICE	
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2163	2465 SF	3	OFFICE	
2164	2465 SF	3	OFFICE	
2165	2465 SF	3	OFFICE	
2170	2465 SF	3	OFFICE	
2171	2465 SF	3	OFFICE	
2172	2465 SF	3	OFFICE	
2173	2465 SF	3	OFFICE	
2174	2465 SF	3	OFFICE	
2175	2465 SF	3	OFFICE	
2180	2465 SF	3	OFFICE	

GENERAL NOTE: THESE DRAWINGS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AUTHORITY.



project no. 5743191
 sheet no. 101
 A102 1

drawing title: PARKING AND BICYCLE LAYOUT
 ADDRESS: 2165-8766 NORTH McKIM ROAD, RICHMOND, VA

project title: ARCHITECT 57 INC. 2165-8766 McKIM FLOOR PLAN
 UPDATE and OCCUPANT LOAD
 CLIENT: SHAWNEE LEARNING CENTER

architect: ARCHITECT 57 INC.
 2165-8766 NORTH McKIM ROAD, RICHMOND, VA 23234
 PHONE: (804) 781-1234
 WEBSITE: ARCHITECT57.COM

consultant: log & description

date: 20.11.19

issued for: 1. building permit
 date: 20.11.19

revisions: 1. Occupant load and parking
 date: 20.11.19

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2020.06.15 11:51:19 AM



January 10th, 2020

Dear City of Richmond,

City Vancouver Academy, Inc. seeks to apply for a **Temporary Use Permit (TPU)** for 2165 – 8766 McKim Way, Richmond.

City Vancouver Academy is an BC Ministry of Education-certified independent high school that was established in September of 2014. We have been running grade 10 to 12 classes since that time.

On October 31, 2019, now-Property Use Inspector *Amen Sharma* informed us that our current premises did not meet municipal compliance. According to Richmond bylaw, secondary schools can only operate in specific zones (such as SI, CDT1, and ASY), which has **education** listed as one of the permitted uses. Our current zone (Z12) allows for **education, commercial**. Due to various management team changes early in our inception, our current team was not aware of such issues until informed by Mr. Sharma. We have worked tirelessly for the past three months to meet compliance.

Our primary plan is to relocate but because of unforeseen hurdles, we believe that relocation will take an additional number of months. Although the City and the Ministry have generously given us time to transition, we wish to be proactive in rectifying these issues. As such, we recognize that our pursuit for a Temporary Use Permit (TPU) is meant to be a short-term solution that will allow us to be fully compliant during this period as we finalize our lease and our move to an appropriately zoned location.

The owners of City Vancouver Academy, Inc. also own all the units in which City Vancouver Academy operates. We currently utilize 9 units on the second floor of Excel Centre. 7 of the units are currently used as classroom space, while the remaining 2 are office space for administrative staff.

To meet compliance, we propose that the **Education** is added as one of the permitted use for this zone.

Thank you for your consideration.

City Vancouver Academy Inc.
2165-8766 McKim Way,
Richmond, B.C. V6X4G4



STRATA APPROVAL LETTER (LMS4572)

June 19th, 2020

Dear Sirs / Madam,

RE: TU 20-890760, A Temporary Use Permit application from tenant City Vancouver Academy Inc.

We acknowledge that current tenant of Unit 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165 and 2170 - 8766 Mckim Way, Richmond, BC V6X 4G4 is applying for a temporary commercial use permit to allow "Education" as a permitted use on a ZI2 zoned site. A signage has been set up by the tenant.

The owner of above units is Bauhinia Learning Centre Ltd. The tenant's main contact person regarding this matter is Mr. Leo Wang, leo.wang@cityvanacademy.ca, 604-278-6811.

The Strata reviewed a Blue Print #5743191 made by ARCHITECT 57 INC., on behalf of the owner and the tenant., regarding use of property (B.C. high school), proposed occupant load (Upon approval), use of parking lot (reserved parking space #37 – 47), use of bicycle storage (secured storage room owned by the owner) and use of public washrooms.

The Strata has NO particular concern or comment on this proposed Blue Print and this Temporary Use Permit application.

Please feel free to contact me if you have any questions or concern.

Yours truly,

A handwritten signature in black ink, appearing to read "Eric Chung", is written over a horizontal dashed line.

Eric Chung
Property Manager

CITYBASE MANAGEMENT LTD

#400 - 1200 W 73rd Avenue, Vancouver, BC V6P 6G5

Tel: 604-708-8998 Fax: 604-708-9982

Website: www.citybase.ca Email: ericchung@citybase.ca



City of Richmond

Temporary Commercial Use Permit

No. TU 20-890760

To the Holder: CITY VANCOUVER ACADEMY INC.

Property Address: UNITS 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165 AND
2170 – 8766 MCKIM WAY

Address: C/O LEO WANG
CITY VANCOUVER ACADEMY INC.
2115 – 8766 MCKIM WAY
RICHMOND, BC V6X 4G4

1. This Temporary Commercial Use Permit is issued subject to compliance with all of the Bylaws of the City applicable thereto, except as specifically varied or supplemented by this Permit.
2. This Temporary Commercial Use Permit applies to and only to those lands shown cross-hatched on the attached Schedule "A" and to the portion of the building shown cross-hatched on the attached Schedule "B".
3. The subject property may be used for the following temporary Commercial uses:
Education (limited to an independent school offering grades 10 to 12)
4. As a condition of the issuance of this Permit, the City must receive an acoustical report performed by an acoustical engineering stating that the interior of the subject units will achieve the 40 dB level.
5. This Permit is valid for one year from the date of issuance.

AUTHORIZING RESOLUTION NO. _____
DAY OF _____, _____.

ISSUED BY THE COUNCIL THE

DELIVERED THIS _____ DAY OF _____, _____.

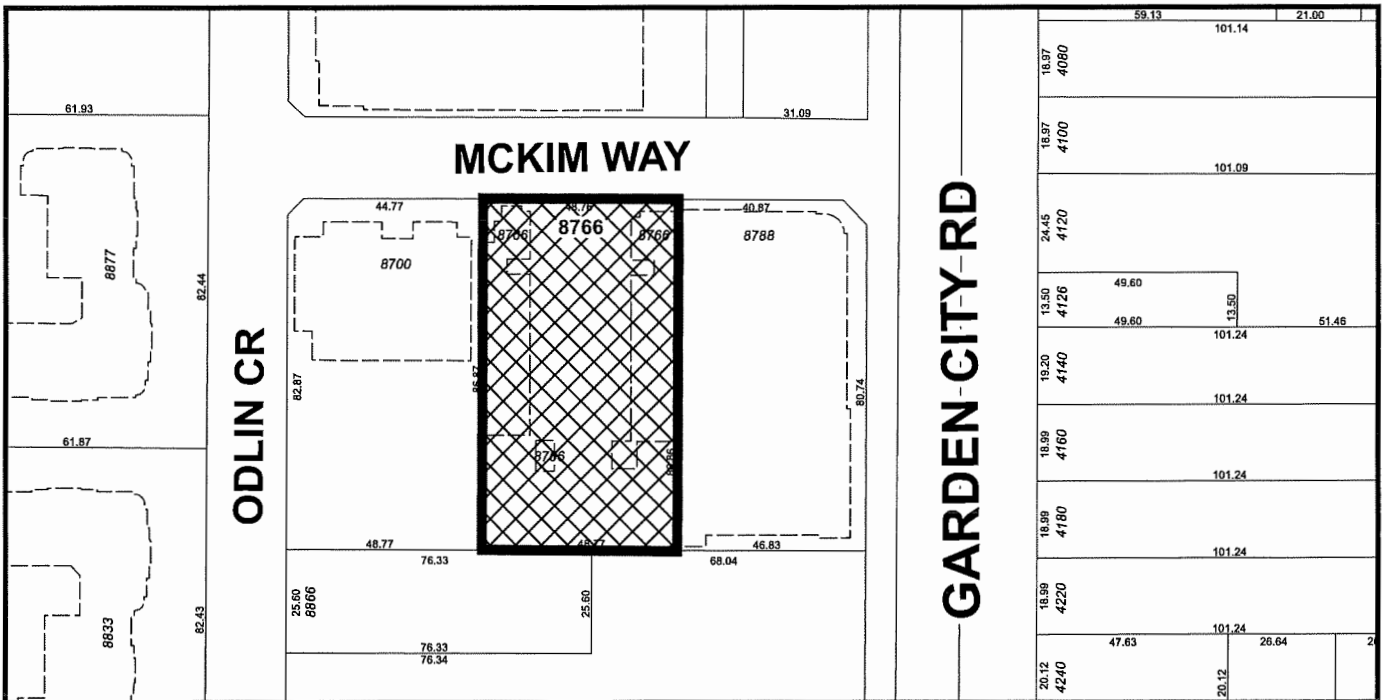
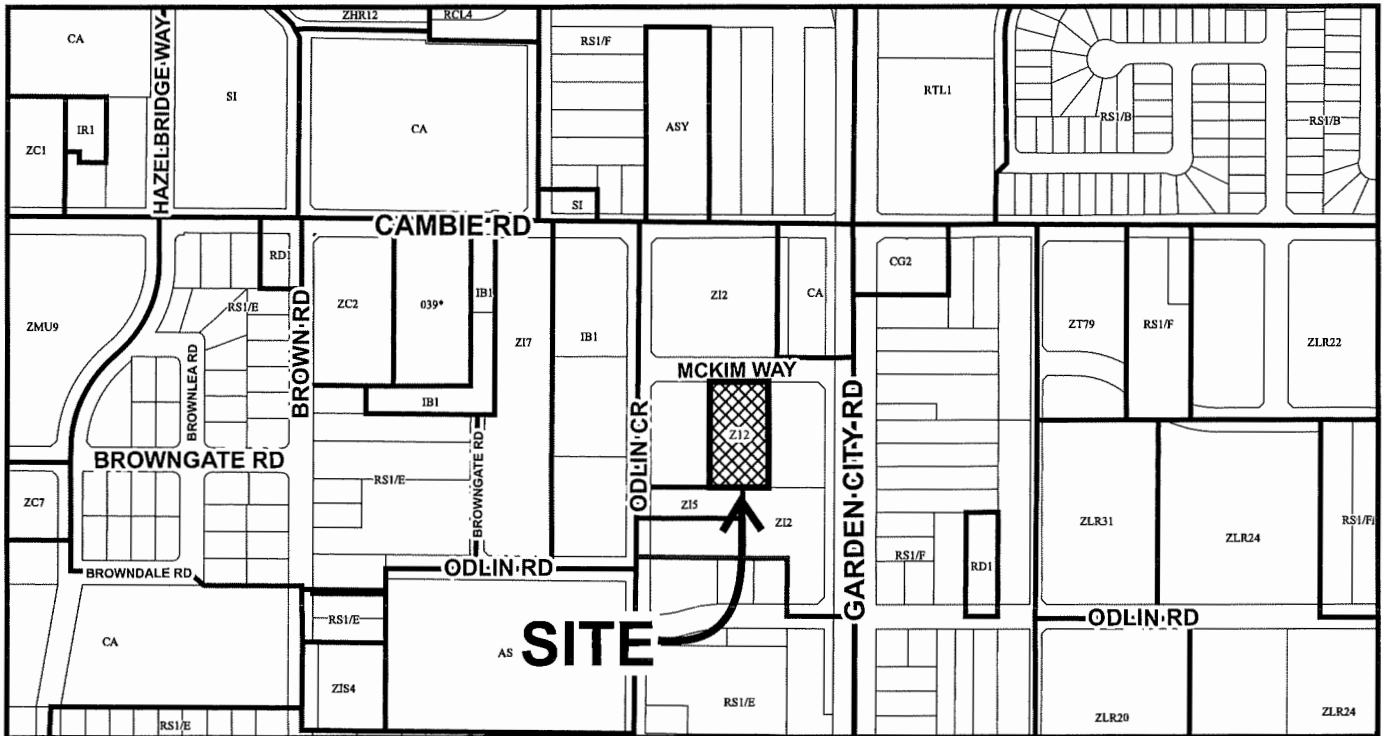
MAYOR


CORPORATE OFFICER



City of
Richmond

SCHEDULE "A"



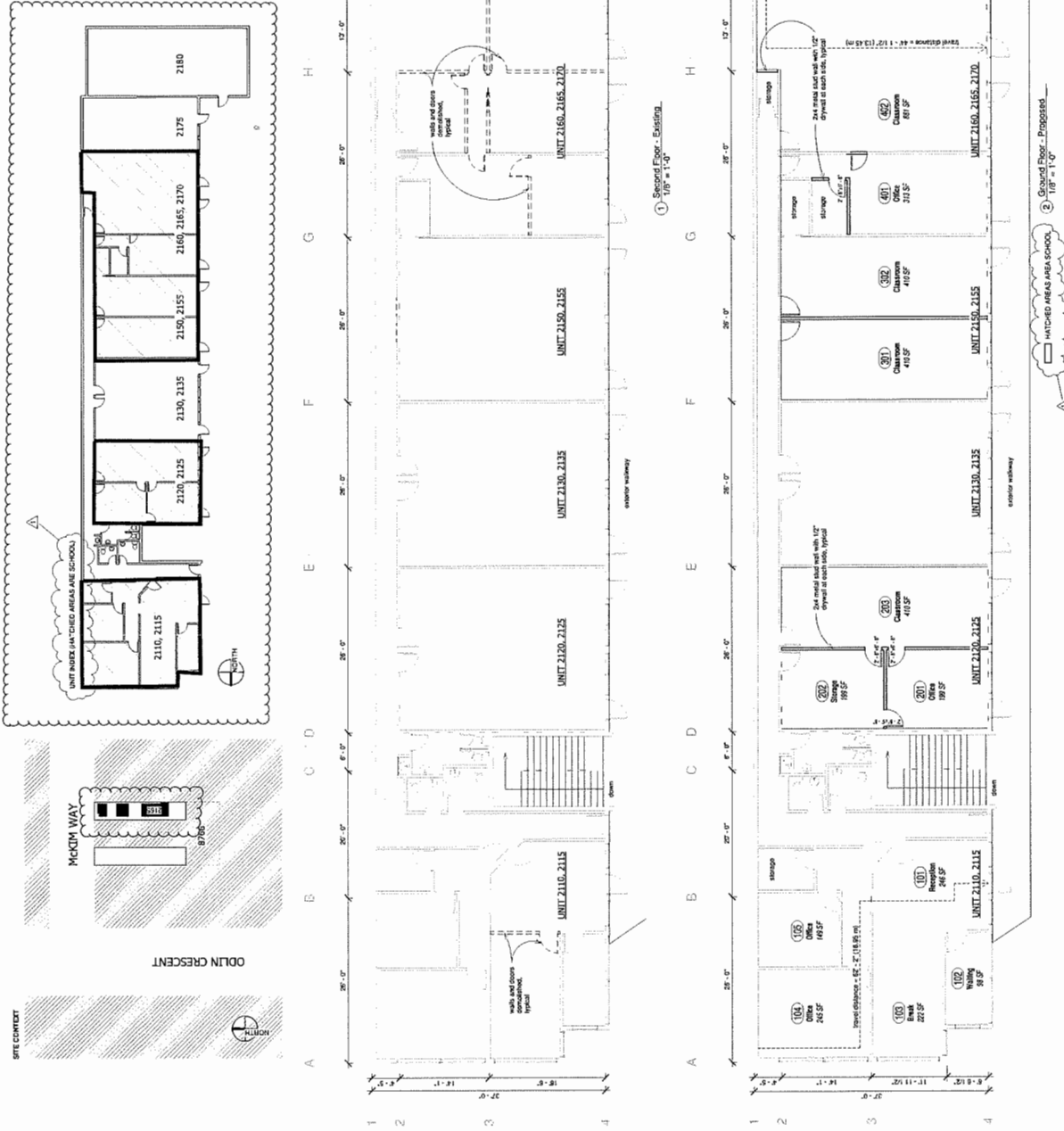
	<p style="text-align: center;">TU 20-890760 (Unit 2165) main office GP - 238</p>	<p>Original Date: 01/17/20 Revision Date: Note: Dimensions are in METRES</p>
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Units 2110, 2115, 2120, 2125, 2150, 2155, 2160, 2165, 2170 - 8766 McKim Way

SCHEDULE "B"

PROJECT NO. 5743191
 SHEET NO. A101
 DATE: 05/11/19

PROJECT TITLE: PROJECT DATA and PLANS
 drawing title: UPDATE and OCCUPANT LOAD
 CLIENT: BHARNA LEARNING CENTRE
 ADDRESS: 2165-8766 MCKIM WAY, EDMOND, B.C.



ARCHITECT: ARCHITECT 57 INC. 2165-8766 MCKIM WAY, EDMOND, B.C.
 ARCHITECT: ARCHITECT 57 INC. 2165-8766 MCKIM WAY, EDMOND, B.C.
 ARCHITECT: ARCHITECT 57 INC. 2165-8766 MCKIM WAY, EDMOND, B.C.

GENERAL NOTES
 ALL WORK TO BE DONE IN ACCORDANCE WITH THE 2018 EDITION OF THE B.C. BUILDING CODE AND ALL APPLICABLE MUNICIPAL COMPENSATION BOARD OF BRITISH COLUMBIA.
 GENERAL CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS AND ELEVATION DATUMS PRIOR TO STARTING WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO ARCHITECT BY P.L. FOR CLARIFICATION.
 ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED. DIMENSIONS FROM SHALL BE APPLIED BY THE GENERAL CONTRACTOR TO THE EXECUTION OF THE WORK. EXECUTION OF CHANGED WORK WITHOUT THE APPLICABLE APPROVAL FROM ARCHITECT IS PROHIBITED.
 GENERAL CONTRACTOR TO MAINTAIN A SET OF APPROVED BUILDING PERMIT DRAWINGS AS WELL AS ISSUED FOR CONSTRUCTION DRAWINGS AND REVISIONS THROUGHOUT THE CONSTRUCTION PERIOD. ALL WORK SHALL BE IN ACCORDANCE WITH THE BUILDING PERMIT. APPROVED PERMITS AND INSPECTIONS SHALL BE OBTAINED FROM THE APPROPRIATE AGENCIES.
 ALL INTERIOR PARTITIONS ARE DIMENSIONED TO THE CENTERLINE OF THE PARTITION UNLESS DETAIL OTHERWISE ON THE DRAWINGS.
 DO NOT SCALE DRAWINGS. LARGER SCALE DRAWINGS PRECEDE OVER SMALLER SCALE DRAWINGS.
 ALL MATERIALS AND FABRICATIONS COMPONENTS SHALL BE INSTALLED OR USED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 BUILDING PERMIT SHALL BE RESPONSIBLE FOR ALL SUBTRADE PERMITS AND FEES, INSPECTIONS. TENANT SHALL APPLY FOR BUILDING PERMIT.
 GENERAL CONTRACTOR SHALL COORDINATE WITH TENANT WORK TIMES AND ACCESS.
 ALL MECHANICAL/LUMINAIR - ELECTRICAL WORK BY GENERAL CONTRACTORS DESIGN BUILT SUBMITTALS.
 GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL SURFACE PERMITS AND FEES, INSPECTIONS. TENANT SHALL APPLY FOR BUILDING PERMIT.
 ALL OCCUPANT WALLS TO BE TAPE, FILL AND SANDER SMOOTH PRIOR TO APPLICATION OF FINISHES.
 ALL UNPAINTED SURFACES ARE TO BE PRIMED AND PAINTED WITH 3 COMPLETE COATS OF PAINT.
BUSINESS CODE ANALYSIS
 GENERAL CONTRACTOR SHALL COORDINATE WITH LOCAL OFFICIALS TO OBTAIN ALL NECESSARY PERMITS AND FEES.
 BUILDING AND UNIT STATISTICS
 UNIT 2110: 2110 SF (6123.26 SQM)
 UNIT 2115: 2115 SF (6135.34 SQM)
 UNIT 2130: 2130 SF (6178.45 SQM)
 UNIT 2135: 2135 SF (6190.53 SQM)
 UNIT 2150: 2150 SF (6233.64 SQM)
 UNIT 2155: 2155 SF (6245.72 SQM)
 UNIT 2160: 2160 SF (6257.80 SQM)
 UNIT 2165: 2165 SF (6269.88 SQM)
 UNIT 2170: 2170 SF (6281.96 SQM)
 UNIT 2180: 2180 SF (6325.07 SQM)

Table 3.1.17.1.1.1. - OCCUPANT LOAD FOR TWO FLOORS

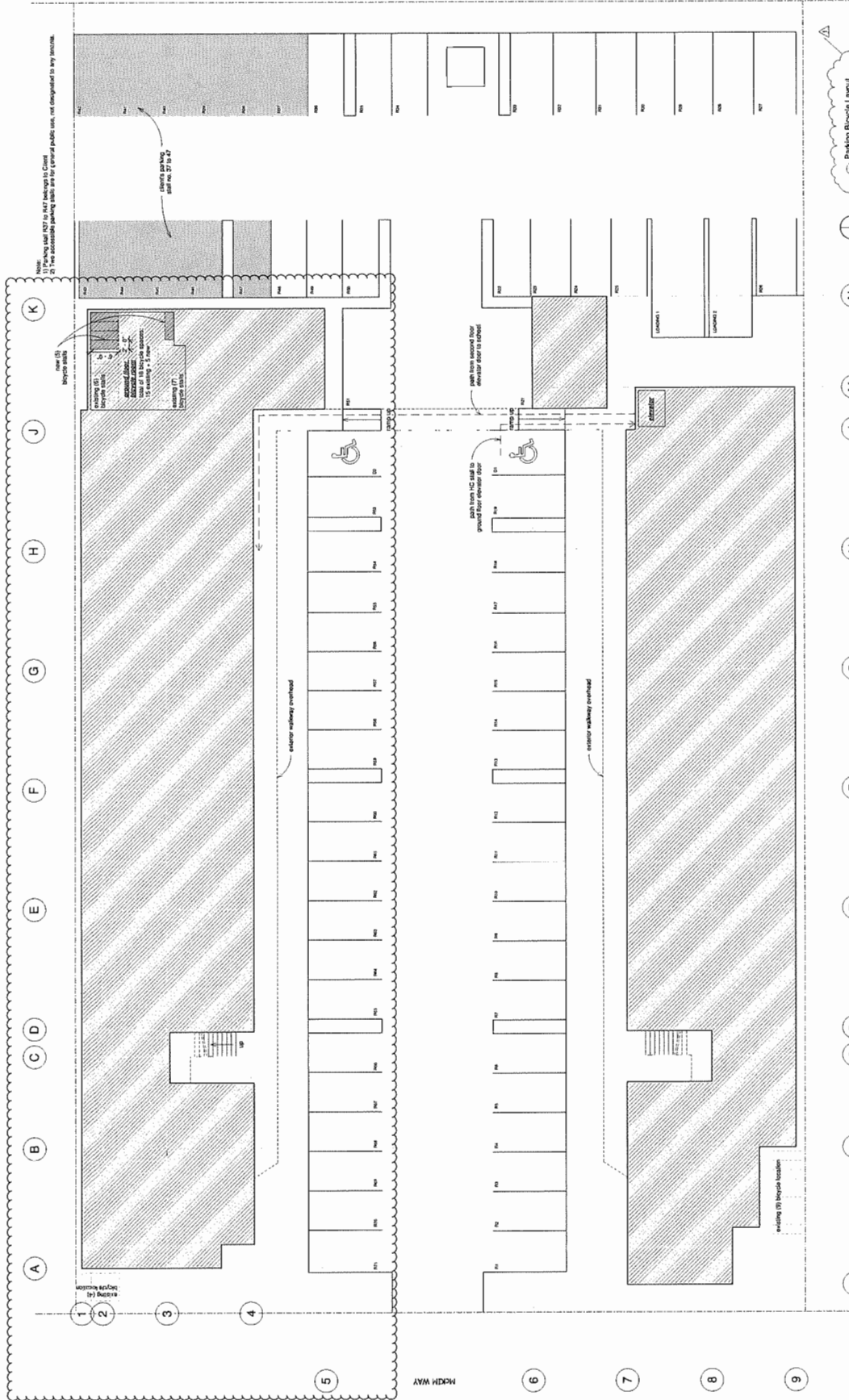
OCCUPANT LOAD IS CALCULATED BASED ON FLOOR AREAS AS DEFINED IN TABLE 3.1.17.1.1.1. PER PERSON (M²)/FLOOR

1	OFFICE	2	100.00 SF (9.29 SQM) / PERSON
2	OFFICE	3	100.00 SF (9.29 SQM) / PERSON
3	OFFICE	4	100.00 SF (9.29 SQM) / PERSON
4	OFFICE	5	100.00 SF (9.29 SQM) / PERSON
5	OFFICE	6	100.00 SF (9.29 SQM) / PERSON
6	OFFICE	7	100.00 SF (9.29 SQM) / PERSON
7	OFFICE	8	100.00 SF (9.29 SQM) / PERSON
8	OFFICE	9	100.00 SF (9.29 SQM) / PERSON
9	OFFICE	10	100.00 SF (9.29 SQM) / PERSON
10	OFFICE	11	100.00 SF (9.29 SQM) / PERSON
11	OFFICE	12	100.00 SF (9.29 SQM) / PERSON
12	OFFICE	13	100.00 SF (9.29 SQM) / PERSON
13	OFFICE	14	100.00 SF (9.29 SQM) / PERSON
14	OFFICE	15	100.00 SF (9.29 SQM) / PERSON
15	OFFICE	16	100.00 SF (9.29 SQM) / PERSON
16	OFFICE	17	100.00 SF (9.29 SQM) / PERSON
17	OFFICE	18	100.00 SF (9.29 SQM) / PERSON
18	OFFICE	19	100.00 SF (9.29 SQM) / PERSON
19	OFFICE	20	100.00 SF (9.29 SQM) / PERSON
20	OFFICE	21	100.00 SF (9.29 SQM) / PERSON
21	OFFICE	22	100.00 SF (9.29 SQM) / PERSON
22	OFFICE	23	100.00 SF (9.29 SQM) / PERSON
23	OFFICE	24	100.00 SF (9.29 SQM) / PERSON
24	OFFICE	25	100.00 SF (9.29 SQM) / PERSON
25	OFFICE	26	100.00 SF (9.29 SQM) / PERSON
26	OFFICE	27	100.00 SF (9.29 SQM) / PERSON
27	OFFICE	28	100.00 SF (9.29 SQM) / PERSON
28	OFFICE	29	100.00 SF (9.29 SQM) / PERSON
29	OFFICE	30	100.00 SF (9.29 SQM) / PERSON
30	OFFICE	31	100.00 SF (9.29 SQM) / PERSON
31	OFFICE	32	100.00 SF (9.29 SQM) / PERSON
32	OFFICE	33	100.00 SF (9.29 SQM) / PERSON
33	OFFICE	34	100.00 SF (9.29 SQM) / PERSON
34	OFFICE	35	100.00 SF (9.29 SQM) / PERSON
35	OFFICE	36	100.00 SF (9.29 SQM) / PERSON
36	OFFICE	37	100.00 SF (9.29 SQM) / PERSON
37	OFFICE	38	100.00 SF (9.29 SQM) / PERSON
38	OFFICE	39	100.00 SF (9.29 SQM) / PERSON
39	OFFICE	40	100.00 SF (9.29 SQM) / PERSON
40	OFFICE	41	100.00 SF (9.29 SQM) / PERSON
41	OFFICE	42	100.00 SF (9.29 SQM) / PERSON
42	OFFICE	43	100.00 SF (9.29 SQM) / PERSON
43	OFFICE	44	100.00 SF (9.29 SQM) / PERSON
44	OFFICE	45	100.00 SF (9.29 SQM) / PERSON
45	OFFICE	46	100.00 SF (9.29 SQM) / PERSON
46	OFFICE	47	100.00 SF (9.29 SQM) / PERSON
47	OFFICE	48	100.00 SF (9.29 SQM) / PERSON
48	OFFICE	49	100.00 SF (9.29 SQM) / PERSON
49	OFFICE	50	100.00 SF (9.29 SQM) / PERSON
50	OFFICE	51	100.00 SF (9.29 SQM) / PERSON
51	OFFICE	52	100.00 SF (9.29 SQM) / PERSON
52	OFFICE	53	100.00 SF (9.29 SQM) / PERSON
53	OFFICE	54	100.00 SF (9.29 SQM) / PERSON
54	OFFICE	55	100.00 SF (9.29 SQM) / PERSON
55	OFFICE	56	100.00 SF (9.29 SQM) / PERSON
56	OFFICE	57	100.00 SF (9.29 SQM) / PERSON
57	OFFICE	58	100.00 SF (9.29 SQM) / PERSON
58	OFFICE	59	100.00 SF (9.29 SQM) / PERSON
59	OFFICE	60	100.00 SF (9.29 SQM) / PERSON
60	OFFICE	61	100.00 SF (9.29 SQM) / PERSON
61	OFFICE	62	100.00 SF (9.29 SQM) / PERSON
62	OFFICE	63	100.00 SF (9.29 SQM) / PERSON
63	OFFICE	64	100.00 SF (9.29 SQM) / PERSON
64	OFFICE	65	100.00 SF (9.29 SQM) / PERSON
65	OFFICE	66	100.00 SF (9.29 SQM) / PERSON
66	OFFICE	67	100.00 SF (9.29 SQM) / PERSON
67	OFFICE	68	100.00 SF (9.29 SQM) / PERSON
68	OFFICE	69	100.00 SF (9.29 SQM) / PERSON
69	OFFICE	70	100.00 SF (9.29 SQM) / PERSON
70	OFFICE	71	100.00 SF (9.29 SQM) / PERSON
71	OFFICE	72	100.00 SF (9.29 SQM) / PERSON
72	OFFICE	73	100.00 SF (9.29 SQM) / PERSON
73	OFFICE	74	100.00 SF (9.29 SQM) / PERSON
74	OFFICE	75	100.00 SF (9.29 SQM) / PERSON
75	OFFICE	76	100.00 SF (9.29 SQM) / PERSON
76	OFFICE	77	100.00 SF (9.29 SQM) / PERSON
77	OFFICE	78	100.00 SF (9.29 SQM) / PERSON
78	OFFICE	79	100.00 SF (9.29 SQM) / PERSON
79	OFFICE	80	100.00 SF (9.29 SQM) / PERSON
80	OFFICE	81	100.00 SF (9.29 SQM) / PERSON
81	OFFICE	82	100.00 SF (9.29 SQM) / PERSON
82	OFFICE	83	100.00 SF (9.29 SQM) / PERSON
83	OFFICE	84	100.00 SF (9.29 SQM) / PERSON
84	OFFICE	85	100.00 SF (9.29 SQM) / PERSON
85	OFFICE	86	100.00 SF (9.29 SQM) / PERSON
86	OFFICE	87	100.00 SF (9.29 SQM) / PERSON
87	OFFICE	88	100.00 SF (9.29 SQM) / PERSON
88	OFFICE	89	100.00 SF (9.29 SQM) / PERSON
89	OFFICE	90	100.00 SF (9.29 SQM) / PERSON
90	OFFICE	91	100.00 SF (9.29 SQM) / PERSON
91	OFFICE	92	100.00 SF (9.29 SQM) / PERSON
92	OFFICE	93	100.00 SF (9.29 SQM) / PERSON
93	OFFICE	94	100.00 SF (9.29 SQM) / PERSON
94	OFFICE	95	100.00 SF (9.29 SQM) / PERSON
95	OFFICE	96	100.00 SF (9.29 SQM) / PERSON
96	OFFICE	97	100.00 SF (9.29 SQM) / PERSON
97	OFFICE	98	100.00 SF (9.29 SQM) / PERSON
98	OFFICE	99	100.00 SF (9.29 SQM) / PERSON
99	OFFICE	100	100.00 SF (9.29 SQM) / PERSON

Table 3.1.2.4. - PLUMBING FACILITIES
 PLUMBING FACILITIES ARE DETERMINED BASED ON I.C.C. 3.2.2.2.10 AND TABLE 3.2.2.4.
 OCCUPANCY: OFFICE (21.75 PERSONS PER 100 SQM)
 MINIMUM REQUIRED: 100.00
 PROVIDED: 100.00
Table 3.1.2.4. - EMERGENCY LIGHTING AND POWER SYSTEMS
 EMERGENCY LIGHTING AND POWER SYSTEMS ARE DETERMINED BASED ON I.C.C. 3.2.2.2.10 AND TABLE 3.2.2.4.
 EMERGENCY LIGHTING: 100.00
 PROVIDED: 100.00
Table 3.1.2.4. - TRAVEL DISTANCE
 TRAVEL DISTANCE IS CALCULATED BASED ON I.C.C. 3.2.2.2.10 AND TABLE 3.2.2.4.
 OCCUPANCY: OFFICE (21.75 PERSONS PER 100 SQM)
 MINIMUM REQUIRED: 100.00
 PROVIDED: 100.00
Table 3.1.2.4. - PARKING FACILITIES
 PARKING FACILITIES ARE DETERMINED BASED ON ZONING BYLAW TABLE 7.2.2.2.
 MINIMUM REQUIRED: 100.00
 PROVIDED: 100.00
Table 3.1.2.4. - CIRCULATION
 CIRCULATION AREAS ARE DETERMINED BASED ON I.C.C. 3.2.2.2.10 AND TABLE 3.2.2.4.
 MINIMUM REQUIRED: 100.00
 PROVIDED: 100.00
Table 3.1.2.4. - STAIRCASES
 STAIRCASES ARE DETERMINED BASED ON I.C.C. 3.2.2.2.10 AND TABLE 3.2.2.4.
 MINIMUM REQUIRED: 100.00
 PROVIDED: 100.00
Table 3.1.2.4. - ELEVATOR
 ELEVATOR AREAS ARE DETERMINED BASED ON I.C.C. 3.2.2.2.10 AND TABLE 3.2.2.4.
 MINIMUM REQUIRED: 100.00
 PROVIDED: 100.00
Table 3.1.2.4. - BIKE RACKS
 BIKE RACKS ARE DETERMINED BASED ON I.C.C. 3.2.2.2.10 AND TABLE 3.2.2.4.
 MINIMUM REQUIRED: 100.00
 PROVIDED: 100.00
Table 3.1.2.4. - TOTAL
 TOTAL OF BIKE RACKS TO BE 18. BIKE RACKS
 PROVIDED: 18

ISSUED FOR: 1. building permits
 DATE: 2019.01.19
 DRAWING NO: 5743191
 SHEET NO: A101
 PROJECT NO: 5743191
 ARCHITECT: ARCHITECT 57 INC. 2165-8766 MCKIM WAY, EDMOND, B.C.
 CLIENT: BHARNA LEARNING CENTRE
 ADDRESS: 2165-8766 MCKIM WAY, EDMOND, B.C.

SCHEDULE "B"



GP - 240

project no. 5743191
 sheet no. 002
 A102 1

drawing title: PARKING AND BICYCLE LAYOUT
 ADDRESS: 2165-8766 MCKIM WAY, RICHMOND, B.C.

project site: ARCHITECT 57 INC. 2165-8766 MCKIM FLOOR PLAN
 CLIENT: BARBARA LEARNING CENTRE

architect: ARCHITECT 57 INC.
 OFFICE: 2165-8766 MCKIM WAY, RICHMOND, B.C.
 WEBSITE: ARCHITECT57.COM

consultant: logo & typography

date: 2015.12.10

issued for: 1. building permit

date: 2015.01.20
 description: 1. building permit

date: 2015.01.20
 description: 1. building permit

revisions: 1. revision: 1.00
 description: 1. revision: 1.00

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To: General Purposes Committee

Date: June 22, 2020

From: Wayne Craig
Director, Development

File: RZ 18-807640

Re: **Application by IBI Group Architects to Amend Schedule 2.10 of Official Community Plan Bylaw 7100 (City Centre Area Plan) and Rezone 5740, 5760, and 5800 Minoru Boulevard from “Industrial Retail (IR1)” to “School and Institution Use (SI)” and “High Density Mixed Use and Affordable Rental Housing (ZMU46) – Lansdowne Village (City Centre)”**

Staff Recommendation

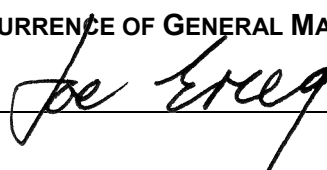
1. That Official Community Plan Bylaw 7100, Amendment Bylaw 10136, to amend Schedule 2.10 of Official Community Plan Bylaw 7100 (City Centre Area Plan), to amend:
 - a) Section 2.2 “Jobs and Business” and the “Specific Land Use Map: Lansdowne Village”, to encourage office development along the east side of Minoru Boulevard (between Ackroyd Road and Alderbridge Way) and pedestrian-oriented retail uses at grade along Lansdowne Road (between No. 3 Road and Minoru Boulevard); and
 - b) Section 4.0 “Implementation & Phasing Strategies”, to clarify City Centre Area Plan density bonusing requirements with respect to the Richmond Affordable Housing Strategy and Official Community Plan Market Rental Housing Policy, and permit bonus density to be increased, on a site-specific basis, for rezoning applications that provide additional affordable housing to address community need,be introduced and given first reading.
2. That Official Community Plan Bylaw 7100, Amendment Bylaw 10137, for amending Schedule 2.10 of Official Community Plan Bylaw 7100 (City Centre Area Plan), to facilitate the construction of a high-rise, high density, mixed use development, including the designation of a 7 m (23 ft.) wide strip of land along the north side of 5740 Minoru Boulevard as City “Park” and the remainder of 5740, 5760, and 5800 Minoru Boulevard as “Village Centre Bonus” area (to permit an additional 1.0 floor area ratio for office use only), be introduced and given first reading.
3. That Bylaw 10136 and Bylaw 10137, having been considered in conjunction with:
 - a) the City’s Financial Plan and Capital Program; and
 - b) the Greater Vancouver Regional District Solid Waste and Liquid Waste Management Plans;are hereby found to be consistent with said program and plans, in accordance with Section 477(3)(a) of the *Local Government Act*.

- 4. That Bylaw 10136 and Bylaw 10137, having been considered in accordance with OCP Bylaw Preparation Consultation Policy 5043, are hereby found not to require further consultation.
- 5. That Richmond Zoning Bylaw 8500, Amendment Bylaw 10138, to create the “High Density Mixed Use and Affordable Rental Housing (ZMU46) - Lansdowne Village (City Centre)” zone, and to rezone 5740, 5760, and 5800 Minoru Boulevard from “Industrial Retail (IR1)” to “School and Institution Use (SI)” and “High Density Mixed Use and Affordable Rental Housing (ZMU46) - Lansdowne Village (City Centre)”, be introduced and given first reading.



Wayne Craig
 Director, Development
 (604-247-4625)

WC:sch
 Att. 10

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Affordable Housing	<input checked="" type="checkbox"/>	
Community Social Development	<input checked="" type="checkbox"/>	
Engineering	<input checked="" type="checkbox"/>	
Parks Services	<input checked="" type="checkbox"/>	
Policy Planning	<input checked="" type="checkbox"/>	
Sustainability	<input checked="" type="checkbox"/>	
Transportation	<input checked="" type="checkbox"/>	

Staff Report

Origin

IBI Group Architects has applied to the City of Richmond for permission to amend Schedule 2.10 of Official Community Plan Bylaw 7100 (City Centre Area Plan) and rezone 5740, 5760, and 5800 Minoru Boulevard (Attachments 1, 2, and 3) from “Industrial Retail (IR1)” to “School and Institution Use (SI)” and a new site-specific zone, “High Density Mixed Use and Affordable Rental Housing (ZMU46) – Lansdowne Village (City Centre)”, to permit the construction of a high-rise, high density, mixed use development.

On December 17, 2019, the subject application was considered by Planning Committee and referred back to staff under the following resolution:

That the Application by IBI Group Architects to Amend Schedule 2.10 of Official Community Plan Bylaw 7100 (City Centre Area Plan), Amend the “Residential/Limited Commercial (RCL3)” Zone, and Rezone 5740, 5760, and 5800 Minoru Boulevard from “Industrial Retail (IR1)” to “Residential/Limited Commercial (RCL3)” be referred back to staff to:

- a) speak with the developer about integration of affordable housing units within the development;***
- b) determine the non-profit housing operator;***
- c) investigate the treatment of the tenants; and***
- d) explore options to increase the affordable housing requirement to above 10%.***

The purpose of this report is to respond to this referral motion. Details are included in the report’s Analysis section. Key changes to the applicant’s proposal include the following:

1. S.U.C.C.E.S.S., a non-profit housing operator and social services organization, has entered into a Memorandum of Understanding with the applicant for the purpose of managing the development’s proposed stand-alone affordable rental housing building;
2. The developer has provided relocation assistance to the site’s commercial and non-profit social services tenants (all of which have now relocated off-site), and the developer is not aware of any tenant requiring further assistance; and
3. The project’s affordable low-end-of-market-rental (LEMR) housing contribution (constructed to a turnkey level of finish, at the developer’s sole cost, and secured in perpetuity with a Housing Agreement registered on title to the site) has been increased with respect to:
 - a) Number of units, from 47 to 88 units (i.e. 41 additional LEMR units); and
 - b) Habitable LEMR unit area, from 10% to 19% of the total residential floor area on the site, which represents an additional 2,997 m² (32,262 ft²) of habitable space.

Overall, the revised development proposal provides for the following:

1. 3.2 floor area ratio (FAR) and a total floor area of 48,110 m² (517,849 ft²), including:
 - a) 1.0 FAR (15,034 m²/161,828 ft²) of office in a single tower, which shall be limited (with a legal agreement registered on title) to subdivision by air space parcel or strata-title on a floor-by-floor basis (subject to a proposed City Centre Area Plan amendment to designate the site as “Village Centre Bonus” for office);

- b) 0.15 FAR (2,328 m²/25,054 ft²) of ground floor retail along the site's Lansdowne Road and east frontages;
 - c) 0.43 FAR (6,431 m²/69,217 ft²) in the form of a stand-alone affordable rental housing building containing 88 affordable LEMR units, including 47 family-friendly two-bedroom and three-bedroom units (53%), secured with residential rental tenure zoning and a Housing Agreement registered on title to the site; and
 - d) 1.62 FAR (24,317 m² / 261,751 ft²) in the form of three market residential towers containing 341 units, including 186 (55%) family-friendly two- and three-bedroom units (which exceeds the OCP target of 40% family-friendly units).
2. Affordable replacement non-profit social service agency space, including at least 426 m² (4,582 ft²) of gross leasable area in the form of two tenant units (constructed to a shell level of finish), together with common circulation, parking, and other ancillary spaces (constructed to a turnkey level of finish), all at the developer's sole cost. Prior to rezoning adoption, legal agreements will be registered on title to secure the replacement space, in perpetuity, for non-profit social service use, restrict the rental rate to 50% of market rent (based on the rents of comparable spaces nearby), and give the site's two original non-profit tenants first right of refusal, as determined to the City's satisfaction.
 3. A 7 m (23 ft.) wide linear park, with a total area of 859 m² (0.21 ac.), along the site's Lansdowne Road frontage, which shall be transferred to the City as fee simple and constructed to the City's satisfaction, at the developer's sole cost.
 4. Off-site works, including utility upgrades, street widening and frontages improvements along three sides of the subject site (including the conversion of an existing lane to a local street along the site's east side), and park construction, will be the subject of the City's standard Servicing Agreement processes, secured with Letters of Credit. Development Cost Charge credits may apply to road and utility works only (i.e. not to park works).

To facilitate the subject development, amendments are proposed to Schedule 2.10 of Official Community Plan (OCP) Bylaw 7100, City Centre Area Plan (CCAP), including:

1. OCP Amendment Bylaw 10136, to encourage office uses along the east side of Minoru Boulevard (between Ackroyd Road and Alderbridge Way) and pedestrian-oriented retail uses at grade along Lansdowne Road (between No. 3 Road and Minoru Boulevard); and
2. OCP Amendment Bylaw 10137, to designate a 7 m (23 ft.) wide strip of land along the north side of the site as "Park" and the remainder of the site as "Village Centre Bonus" (1.0 FAR) for office use only.

Additional bylaw amendments are proposed to facilitate the applicant's revised affordable housing contribution, including:

1. OCP Amendment Bylaw 10136, to amend the City Centre Area Plan (CCAP) to clarify the Plan's density bonusing requirements with respect to the Richmond Affordable Housing Strategy and Official Community Plan Market Rental Housing Policy, and permit the allowable bonus density to be increased to address community need, on a site-specific basis, for rezoning applications that provide additional affordable housing; and

2. Zoning Amendment Bylaw 10138, to rezone the subject site to a new site-specific zone, "High Density Mixed Use and Affordable Rental Housing (ZMU46) - Lansdowne Village (City Centre)", that permits a maximum density of 3.2 FAR, including a density bonus for additional affordable housing (0.2 FAR), and secures the developer's proposed 88 affordable housing units as residential rental tenure.

Findings of Fact

Attachment 4 includes a Development Application Data Sheet with the details of the development.

Related Policies & Studies

Development of the subject site is affected by the OCP, CCAP, and other policies (e.g., affordable housing) and studies. Relevant information is provided below and in the report's Analysis section.

1. OCP Aircraft Noise Sensitive Development (ANSD) Policy: The subject site is located within ANSD "Area 3", which permits all aircraft noise sensitive uses if the building design includes required noise mitigation measures and purchasers are made aware of potential noise conditions. Prior to rezoning adoption, a covenant will be registered on title requiring that the developer satisfies all City requirements.
2. Airport Zoning Regulations (AZR): Transport Canada regulates maximum permitted building heights in City Centre locations that may affect airport operations. The developer has submitted a letter, prepared by a registered surveyor, confirming that the proposed maximum building height of 47 m (154 ft.) GSC complies with AZR requirements.
3. Floodplain Management Implementation Strategy: City Centre buildings are required to comply with Richmond Flood Plain Protection Bylaw 8204. Prior to rezoning adoption, a flood indemnity covenant will be registered on title.

Public Consultation

Rezoning information signs are installed on the subject property. At the time of writing this report, correspondence regarding the subject application had been received from the following parties:

1. Richmond Society for Community Living (RSCL), one of the site's two original non-profit tenants, submitted a letter dated October 31, 2019 (Attachment 5);
2. Community Mental Wellness Association of Canada (CMWAC), the site's other original non-profit tenant, submitted a letter dated November 5, 2019 (Attachment 6); and
3. Robert Grosz has submitted correspondence indicating that he opposes the rezoning application until the issue of the equitable ownership of the property(ies) can be determined by the Court(s) when it resumes public operations and his Mareva Injunction motion to determine, among other things, the equitable ownership issue can be heard by the Court(s). Attached is correspondence from July 15, 2019, and June 8, 2020, regarding the rezoning application (Attachments 7 and 8). Additional correspondence regarding Mr. Grosz's legal issues is on file.

Should the Committee endorse this application and Council grant first reading to the OCP amendment bylaws and rezoning bylaw, the bylaws will be forwarded to a Public Hearing, where any area resident or interested party will have an opportunity to comment.

Staff have reviewed the proposed OCP and zoning amendments, with respect to the *Local Government Act* and the City's OCP Consultation Policy No. 5043 requirements, and recommend that this report does not require referral to external stakeholders. The table below clarifies this recommendation as it relates to the proposed OCP amendment.

OCP Consultation Summary

Stakeholder	Referral Comment (No Referral necessary)
BC Land Reserve Co.	No referral necessary because the Land Reserve is not affected.
Richmond School Board	No referral necessary because the proposed amendment will not increase the permitted amount of residential floor area nor increase the projected number of school-age children. (See below)
The Board of Metro Vancouver	No referral necessary because the Regional District is not affected.
The Councils of adjacent Municipalities	No referral necessary because adjacent municipalities are not affected.
First Nations (e.g., Sto:lo, Tsawwassen, Musqueam)	No referral necessary because First Nations are not affected.
TransLink	No referral necessary because the proposed amendment will not result in road network changes.
Port Authorities (Vancouver Port Authority and Steveston Harbour Authority)	No referral necessary because the Port is not affected.
Vancouver International Airport Authority (VIAA) (Federal Government Agency)	No referral necessary because the proposed amendment does not affect Transport Canada's maximum permitted building height or the OCP Aircraft Noise Sensitive Development (ANSD) Policy.
Richmond Coastal Health Authority	No referral necessary because the Health Authority is not affected.
Community Groups and Neighbours	No referral necessary, but the public will have an opportunity to comment on the proposed amendment at the Public Hearing.
All relevant Federal and Provincial Government Agencies	No referral necessary because Federal and Provincial Government Agencies are not affected.

Richmond Official Community Plan Bylaw 7100, Amendment Bylaw 10136 and Bylaw 10137, having been considered in accordance with OCP Bylaw Preparation Consultation Policy 5043, are hereby found to not require further consultation.

The public will have an opportunity to comment further on all of the proposed amendments at the Public Hearing. Public notification for the Public Hearing will be provided as per the Local Government Act.

School District

Official Community Plan (OCP) Bylaw Preparation Consultation Policy 5043 was adopted by Council and agreed to by School District No. 38 (Richmond). The Policy directs that OCP amendments expected to generate less than 50 additional school aged children (i.e. at least 295 dwelling units) over and above existing OCP population projections do not need to be referred to the School District. The subject OCP amendment provides for a site-specific affordable housing density bonus that, if approved, would result in 41 additional LEMR units on the subject site. As the proposed number of additional dwellings is less than the threshold set out in the Policy, the City is not required to refer the subject application to the School District. Nevertheless, as a

courtesy, staff will refer the proposed OCP amendment to the School District for information purposes.

Analysis

Response to Referral Items

1. Affordable Rental Housing Building and Non-Profit Operator (Referral items a & b)

On December 17, 2019, the Planning Committee requested confirmation of the project's non-profit affordable housing operator and questioned whether the development's affordable housing units should be dispersed (instead of clustered in a stand-alone building).

The Affordable Housing Strategy encourages the participation of non-profit organizations in the delivery and operation of buildings that feature clustered LEMR units because their mandates and capacity to support tenants (i.e. through expertise in tenant selection, housing management, and complementary services) are recognized to contribute towards successful housing outcomes. The subject developer has engaged S.U.C.C.E.S.S. as its non-profit housing operator and the two parties have entered into a preliminary Memorandum of Understanding.

S.U.C.C.E.S.S. has been operating affordable housing projects across Metro Vancouver since 2008, including 81 units in the "Remy" at 9388 Cambie Road and 53 units in "Storeys" at 8080 Anderson Road in Richmond. Originally conceived as an immigrant settlement service, the mandate of S.U.C.C.E.S.S. has expanded to make it a multi-service, multi-cultural agency serving the needs of families with children, seniors, and others. The organization's experience as a non-profit housing operator makes it well qualified to manage the proposed affordable housing rental building; and, its mandate to support the needs of a range of household types, including residents with diverse cultural/ethnic backgrounds, is expected to contribute towards inclusive tenant selection processes that align with the objectives of Richmond's Affordable Housing Strategy. In addition, the Housing Agreement securing the affordable housing units will require the owner/operator to report annually to the City through the Statutory Declaration process to ensure the units are managed according to the terms outlined in the Housing Agreement, including adherence to maximum rents and income thresholds for tenants.

As with S.U.C.C.E.S.S.'s other Richmond projects, the subject affordable housing proposal involves a stand-alone rental building. S.U.C.C.E.S.S. has indicated to staff that the clustering of units in a stand-alone building is preferred because it increases operational efficiencies and provides greater control over costs. It is the view of S.U.C.C.E.S.S. that dispersing affordable units within a strata-titled development may increase conflicts with strata owners because a non-profit operator, who is making a long-term commitment, must prioritize timely repairs and maintenance (to minimize potentially costly building deterioration), whereas strata owners may prioritize minimizing strata fees. This information is consistent with findings of the Affordable Housing Strategy update process completed in 2018, and contributed towards amendments to the Strategy to permit the clustering of affordable units if they are to be managed by non-profit housing operators.

2. Non-Residential Tenant Relocation (Referral item c)

When Planning Committee considered the subject application on December 17, 2019, thirteen non-residential tenants, including two non-profit social services agencies, Richmond Society for Community Living (RSCL) and Community Mental Wellness Association of Canada (CMWAC), and eleven commercial businesses, occupied the site's existing buildings. On November 30, 2019, the developer gave all tenants six months advance notice to vacate, as required under the tenants' lease agreements with respect to building demolition.

As set out in the December 2, 2019 staff report, as a consideration of the subject rezoning application, the developer proposes to provide the two non-profit social services agencies with 426 m² (4,582 ft²) of gross leasable area in the new development (i.e. 1:1 replacement space) at 50% of net market rent, first right of refusal, and relocation assistance, all at the developer's sole cost (secured with legal agreements registered on title prior to rezoning adoption). However, at the time of the Planning Committee meeting, the non-profit tenants had not received relocation assistance.

Since December 2019, all thirteen tenants have vacated the property. To assist with their relocation and mitigate business impacts, the developer provided:

- a) The services of a commercial realtor (at the developer's sole cost) to all tenants; and
- b) Rent reductions, including:
 - For all tenants, a 15% reduction for February through April 2020 (three months) and waiving of rents for May 2020 (the final month of tenancy); and
 - For CMWAC, an additional 25% reduction for January through April 2020 and use of an additional unit at no charge.

The developer has reported that RSCL has relocated to the Ironwood area and CMWAC has found new premises within 2 km of the subject site. As previously described, legal agreements to be registered on title prior to rezoning will ensure that both non-profit organizations have first right of refusal with respect to the affordable replacement space constructed, at the developer's sole cost, in the new development.

With regard to the commercial tenants, the realtor working on behalf of the developer has submitted information indicating that they were able to help a number of tenants find alternative accommodation, but some did not make use of their services. At the time of writing this report, the developer and realtor are not aware that any tenant continues to require relocation assistance or has an outstanding complaint about a lack of adequate assistance.

3. Increased Affordable Housing Voluntary Developer Contribution (Referral item d)

The Affordable Housing Strategy requires that the subject development provides at least 10% of its total residential floor area in the form of low-end-of-market-rental (LEMUR) housing units secured in perpetuity with a Housing Agreement. The development proposal presented in December 2019 satisfied this requirement; however, having considered the comments of Planning Committee, the applicant has revised the original proposal to provide for additional LEMUR units. More specifically, the developer proposes to increase the project's density from 3.0 FAR to 3.2 FAR to provide an additional 3,007 m² (32,366 ft²) (i.e. 0.2 FAR) of affordable housing, including 2,997 m² (32,262 ft²) of habitable LEMUR unit area and 10 m²

(104 ft²) of ancillary space (i.e. corridor within the affordable housing rental building). Under this approach, the developer proposes to increase the:

- a) Number of LEMR units from 47 to 88 (i.e. 41 additional units); and
- b) Habitable LEMR unit area, from 10% to 19% of the total residential floor area on the site.

In addition, the applicant is working with BC Housing to secure financing to enable the developer and non-profit housing operator to reduce the rent and household income rates for some units to less than LEMR rates (e.g., Shelter rates).

Unit Types	Minimum Unit Area	Max LEMR Unit Rent*	Max Household Income**	Project Unit Targets Unit Mix**		BUH ***
Studio	37 m ² (400 ft ²)	\$811/mon	\$34,650 or less	17% (15 units)	47% (41 units)	100%
1-BR	50 m ² (535 ft ²)	\$975/mon	\$38,250 or less	30% (26 units)		100%
2-BR	69 m ² (741 ft ²)	\$1,218/mon	\$46,800 or less	47% (41 units)	53% (47 units)	100%
3-BR	91 m ² (980 ft ²)	\$1,480/mon	\$58,050 or less	6% (6 units)		100%
TOTAL	Varies	Varies	Varies	100% (min. 88 units)		100%

* Rates shall be adjusted periodically as provided for under adopted City Policy.
 ** The unit mix will be confirmed to the satisfaction of the City through the Development Permit* process. The recommended unit mix is shown in the table; however, based on approved design (which may take into account non-profit housing operator input) the unit mix may be varied provided that at least 50% of the total number of affordable housing units are some combination of 2- and 3-bedroom units.
 *** BUH units mean those units that comply with the Zoning Bylaw's Basic Universal Housing standards.

As indicated in the table, all proposed 88 LEMR dwellings will comply with Zoning Bylaw standards for Basic Universal Housing (BUH) and include 53% family-friendly, two-bedroom and three-bedroom units (i.e. 47 units) and 47% studio and one-bedroom units (i.e. 41 units). The proposed proportion of family-friendly units is generally consistent with the requirements of the Affordable Housing Strategy, which calls for a minimum of 20% two- and three-bedroom units and aims to achieve 60% where possible. Moreover, the project's non-profit housing operator, S.U.C.C.E.S.S., is supportive of the proposed unit mix because it provides for a good balance between family units and seniors/singles units. From their experience, the operator believes that having multigenerational tenants living in the same building contributes towards a feeling of community, and interactions between seniors and children have a positive effect on both groups. In addition, from a financial perspective, S.U.C.C.E.S.S. notes that a mix of households is advantageous because it helps to average out the cost of maintenance and repairs across the building (i.e. the lower wear typical of senior-occupied units helps to offset the potential cost of maintaining higher-wear family units).

The subject development clusters the proposed 88 LEMR units in a stand-alone building located along the site's east frontage. Key features of the proposal include the following:

- a) **Built Form:** To accommodate the additional 41 LEMR units, the height of the affordable rental housing building has been increased by three storeys, from six to nine storeys (i.e., from four to seven residential floors, over two retail/social service floors). No other changes are proposed to the development's massing or the heights of its towers (Attachment 9). Shadowing caused by the additional height of the rental building will be minimal and have negligible impacts on the development's outdoor podium-level amenity space (i.e. morning only). The project's varied low-, mid-, and high-rise forms and articulated streetwalls are consistent with CCAP Development Permit Guidelines for

high-density mixed use buildings. Prior to adoption of the rezoning bylaw, a Development Permit application shall be processed to a level satisfactory to the Director of Development.

- b) Residential Amenity Space: Indoor and outdoor amenity space provided for the residents of the development will meet or exceed OCP and CCAP minimum space requirements.
- The occupants of the affordable rental building and the market strata units will share the project's outdoor amenity space (i.e. at least 2,574 m² / 27,706 ft² located at the podium rooftop), including children's play space, garden plots, and active and passive recreation areas. This is consistent with City policy and the objectives of the non-profit operator and developer who intend that the project's outdoor space acts like a community park that brings all the residents together.
 - The project's indoor amenity space, which originally included only separate areas for the use of market strata and rental building occupants, has been revised to include a third indoor amenity space for the shared use of all residents as follows:
 - i. Shared indoor amenity: 465 m² (5,000 ft²), including active recreation uses (e.g., fitness) and spaces to gather and socialize;
 - ii. Rental building indoor amenity (exclusive use): 92 m² (990 ft²) of multi-purpose space; and
 - iii. Market strata indoor amenity (exclusive use): 466 m² (5,019 ft²), including a mix of multi-purpose space and recreation features.

All three indoor amenity spaces will be located at the podium rooftop level and have direct access to the shared outdoor amenity area. The total amount of indoor amenity space available to the occupants of the affordable rental building will exceed the minimum OCP/CCAP requirement (i.e., 557 m² / 5,990 ft² versus 176 m² / 1,894 ft²). In addition, the development provides 19 m² (205 ft²) of indoor space (over and above OCP and CCAP requirements) for program administration and related uses by the non-profit housing operator. S.U.C.C.E.S.S. is supportive of the developer's indoor amenity space proposal because it will reduce operating costs (as compared to having access to all indoor amenities), while giving it exclusive use of a space where it can provide programs for the rental building's tenants (at no cost to the tenants).

- c) Transportation Measures: To reduce the amount of parking required to accommodate the additional 41 LEMR units, the developer proposes to provide additional transportation demand management (TDM) measures (i.e., over and above the developer's original proposal) to increase the TDM parking reduction rate from 10% to 25%. As a result, the effective parking rate for the LEMR units will be reduced from 0.81 to 0.675 spaces per unit. The proposed rate is supported by the non-profit housing operator, S.U.C.C.E.S.S., and consistent with TDM reductions recently applied by the City to affordable housing elsewhere in the downtown core. Based on this approach, the development will be required to provide for the following transportation measures, to the satisfaction of the City:
- 60 resident parking spaces, secured for the exclusive use of the LEMR occupants;
 - Two visitor parking spaces for the exclusive use of the rental building and shared use (with the general public and other visitors to the site) of the development's 127 short-term (hourly) parking spaces;
 - 150 "Class 1" secured bike storage spaces, based on a rate of 1.7 bikes per unit (which exceeds the Zoning Bylaw rate of 1.25 bikes per unit), including 10% over-size lockers for family bike storage, bike trailers, electric assist vehicles, and similar items;

- A bike repair/maintenance facility including a foot-activated pump, repair stand with integrated tools, and bike wash;
- Electric vehicle (EV) charging for 100% of resident parking spaces and for shared use for bicycle charging at one duplex outlet for each 10 bikes (as per standard Zoning Bylaw requirements); and
- A transit pass program for the tenants of the affordable rental housing building (secured by a legal agreement registered on title), which shall provide for monthly, two-zone transit passes for two years for 100% of the LEMR units.

In addition, over and above previously agreed TDM measures, the developer will also provide “Class 1” secured bike storage for the market strata units at the rate proposed for the LEMR units (i.e., 1.7 instead of 1.25 bikes per unit), including 10% over-size bike lockers for family bike storage, bike trailers, electric assist vehicles, and similar items.

- d) Occupancy Requirements: Prior to adoption of the rezoning bylaw, legal agreements will be registered on title to ensure that the proposed 88-unit affordable rental housing building is complete to a turnkey level of finish (at the developer’s sole cost), before occupancy of any market strata units on the site, as determined to the satisfaction of the City.

Proposed Official Community Plan Amendments

When Planning Committee considered the subject application on December 17, 2019, the proposal involved two amendments to the City Centre Area Plan (CCAP), including:

1. (OCP Amendment Bylaw 10136) changes to Section 2.2 “Jobs and Business” and the “Specific Land Use Map: Lansdowne Village”, to encourage office development along the east side of Minoru Boulevard (between Ackroyd Road and Alderbridge Way) and pedestrian-oriented retail uses at grade along Lansdowne Road (between No. 3 Road and Minoru Boulevard); and
2. (OCP Amendment Bylaw 10137) designation of a 7 m (23 ft.) wide strip of land along the north side of 5740 Minoru Boulevard as City “Park” and the remainder of 5740, 5760, and 5800 Minoru Boulevard as “Village Centre Bonus” area (to permit an additional 1.0 FAR for office use only).

As originally set out in the report from the Director of Development, dated December 2, 2017, staff are supportive of these proposed CCAP amendments on the basis that:

- a) Lands along the east side of Minoru Boulevard (between Ackroyd Road and Alderbridge Way) are within a five-minute walk (i.e., 400 m / 1,312 ft. radius) of the Lansdowne Canada Line station, which makes them a desirable location for office employment uses;
- b) The development of pedestrian-oriented retail uses along Lansdowne Road will complement increased office employment, enhance pedestrian and cycling access to/from the Lansdowne Canada Line station, and contribute towards residential livability;
- c) The proposed linear park along the south side of Lansdowne Road will be designed, constructed, and transferred to the City (as fee simple), all to the City’s satisfaction, at the developer’s sole cost (i.e. not eligible for Development Cost Charge credits), and will

enhance Lansdowne's role as a recreational amenity, pedestrian/cycling route, and landscape corridor contributing towards the downtown's urban forest canopy; and

- d) The proposed site-specific Village Centre Bonus (VCB) designation is consistent with CCAP objectives for increased office employment near the Canada Line and, prior to rezoning adoption, legal agreements will be registered on title to limit subdivision by air space parcel or strata-title on a floor-by-floor basis (to ensure the development provides for flexible, large floorplate office spaces).

Furthermore, the CCAP requires rezoning applications that make use of the VCB bonus density to provide voluntary developer contributions towards City-owned community amenity space. In compliance with the CCAP, prior to rezoning adoption, the developer proposes to make a voluntary cash contribution of \$5,663,980 to Richmond's Leisure Facilities Fund – City Centre Facility Development Sub-Fund in lieu of constructing community amenity space on-site. The proposed voluntary contribution shall be based on a construction-value amenity transfer rate of \$700/ft² and the amount of amenity space transferred off-site (i.e. 5% of the site's VCB bonus floor area), as specified in the site-specific ZMU46 zone and Rezoning Considerations (Attachment 10). In the event the developer's contribution is not provided within one year of the rezoning bylaw receiving third reading, the construction-value contribution rate shall be increased annually based on Statistics Canada "Non-Residential Building Construction Price Index".

In addition to the two CCAP amendments presented for consideration by Council in December 2019, a third amendment is proposed to the CCAP to facilitate the applicant's revised affordable housing proposal:

3. (OCP Amendment Bylaw 10136) to clarify City Centre Area Plan density bonusing requirements with respect to the Richmond Affordable Housing Strategy and Official Community Plan Market Rental Housing Policy, and permit bonus density to be increased, on a site-specific basis, for rezoning applications that provide additional affordable housing to address community need.

City Centre rezoning applications must make use of the CCAP Affordable Housing Bonus to achieve the maximum residential density permitted under the Plan. The Affordable Housing Bonus provides bonus density for developments that satisfy the requirements of the Affordable Housing Strategy (e.g., 10% of total residential floor area), but it does not give Council the flexibility to permit additional bonus density (without amending the CCAP) for rezoning applications that exceed the requirements of the Strategy. In contrast, the OCP Market Rental Housing Density Bonus Policy provides for bonus density for rezoning applications that comply with the density bonus provisions of the Policy, together with the flexibility for Council to grant additional bonus density to rezoning applications that provide additional market rental housing to address community need.

Staff are supportive of the proposed CCAP amendment because it will clarify how affordable housing and market rental housing density provisions apply in the City Centre and, as for market rental housing, permit Council to grant increased bonus density, on a site-specific basis, for rezoning applications (including the subject application) that exceed City requirements (e.g., exceed the Affordable Housing Strategy).

Proposed Site-Specific Zone

When Planning Committee considered the subject application on December 17, 2019, the proposal involved rezoning the site to a standard zone, “Residential/Limited Commercial (RCL3)”. In light of the developer’s revised affordable housing proposal, staff recommend rezoning the property to a new site-specific zone, "High Density Mixed Use and Affordable Rental Housing (ZMU46) – Lansdowne Village (City Centre)” (Zoning Amendment Bylaw 10138).

The new ZMU46 zone is the same as the RCL3 zone with the exception of the following development-specific features:

1. Residential rental tenure zoning secures a minimum of 88 affordable housing units located within a designated area on the east side of the site;
2. An additional 0.2 FAR density bonus is permitted for the provision of affordable housing that exceeds Affordable Housing Strategy requirements (i.e. over 10% of residential floor area);
3. The maximum transportation demand management (TDM) parking reduction is increased from 10% to 25% for affordable housing resident parking, resulting in an effective rate of 0.675 spaces per affordable housing unit (i.e. market strata units will be subject to the City’s standard parking rates);
4. The minimum rate for “Class 1” bicycle storage for affordable housing and market strata units is increased to from 1.25 to 1.7 spaces per dwelling, including 10% over-size bike lockers; and
5. Site-specific requirements are clarified regarding site size, parking requirements for office and community amenity use, and Village Centre Bonus contributions.

Furthermore, when the subject application was considered in December 2019, the staff report indicated that rezoning the site to “Residential/Limited Commercial (RCL3)” would result in the need for a height variance because three of the development’s four towers exceed 35 m (115 ft.). This includes the office tower at 45 m (148 ft.) and two residential towers at 39 m and 42 m (127 ft. and 136 ft.). Staff continue to support the development’s increased height on the basis that it complies with Transport Canada Airport Zoning Regulations (AZR), results in negligible shading of public spaces, contributes to a varied skyline and visual interest, and enables the site to accommodate increased employment (office) and park use without comprising livability. In light of this, the new "High Density Mixed Use and Affordable Rental Housing (ZMU46) - Lansdowne Village (City Centre) zone sets 35 m (115 ft.) as the maximum permitted height, but allows for increased height if the developer demonstrates, to the satisfaction of the City through the Development Permit process, that a proper interface is provided with neighbouring residential and non-residential buildings, park, and public spaces.

Additional Development Considerations

1. Transportation

The CCAP requires road, pedestrian, and cycling network improvements on and around the subject site. The Zoning Bylaw permits parking reductions for City Centre developments that incorporate transportation demand management (TDM) measures to the City’s satisfaction. The developer’s proposed transportation improvements and measures (to be provided at the developer’s sole cost) satisfy all City requirements and will be secured

through a combination of legal agreements registered on title and the City's standard Servicing Agreement processes (secured with letters of credit). (Credits will be applicable to works identified on the City's Development Cost Charge Program.) In brief, the development proposal will provide for the following:

- a) Road widening and related improvements along all three site frontages, including an off-street bike path along Minoru Boulevard and conversion of a lane to a local street on the site's east side;
- b) Parking as required by the Zoning Bylaw and site-specific ZMU46 zone, including, among other things, 23 spaces for the exclusive use of the non-profit social service agencies, 127 spaces secured for short-term (hourly) public use, eight spaces (i.e. two per building) secured for residential visitors, and, as previously described, 25% TDM rate (versus the standard 10% rate) for the affordable housing units, effectively reducing the required parking from 0.81 to 0.675 spaces per LEMR unit;
- c) Cycling measures as required by the Zoning Bylaw and ZMU46 zone, including, among other things, end-of-trip cycling facilities (e.g., showers, change rooms, and related features) co-located with Class 1 (secure) bicycle storage spaces for the use of commercial and non-profit social services tenants, bike maintenance/wash facilities for residential tenants, and, as previously described, increased Class 1 bike storage rate (1.7 bikes/unit instead of 1.25/unit) for all market and affordable units, including 10% over-sized bike lockers for multi-bike and electric assist vehicle storage;
- d) Transit pass programs, including \$40,000 for a commercial tenant program and, as previously described, monthly, two-zone transit passes for two years for 100% of the LEMR units; and
- e) Two on-site parking spaces dedicated for car-share use and equipped with electric vehicle charging infrastructure (located at the parkade entrance for 24/7 public access), together with two car-share vehicles and a 3-year contract with a car-share operator.

2. Parks

The proposed City-owned linear park along the north side of the subject site will be 7 m (23 ft.) wide and approximately 859 m² (9,248.4 ft²) in size. In addition, prior to rezoning adoption, a statutory right-of-way will be registered on the subject site (along the south side of the park) to secure on-site publicly-accessible open space for expanded plaza, walkway, and landscape purposes. A conceptual design has been prepared for the linear park and related publicly-accessible areas and is attached to the Rezoning Considerations (Attachment 10). Prior to rezoning adoption, the developer shall enter into a Servicing Agreement for the design and construction of the park and related improvements, at the developer's sole cost, to the satisfaction of the Director, Parks Services and Director of Development. (Development Cost Charge (DCC) credits shall not apply.)

3. Public Art

The CCAP encourages voluntary developer contributions towards public art and identifies the Lansdowne Road corridor as an "art walk". Prior to rezoning adoption, the developer proposes to make a voluntary cash-in-lieu contribution towards public art, based on the Council-approved developer contribution rates and the site's maximum buildable floor area

(excluding affordable housing and non-profit social services space). The developer's proposal to voluntarily contribute \$319,771 complies with City Policy and may be applied, at Council's direction, to Public Art and/or related features along the Lansdowne "art walk" or elsewhere in the City Centre.

4. Site Servicing and Frontage Improvements

City policy requires that the developer is responsible for the design and construction of road, water, storm sewer, and sanitary sewer upgrades, together with related public and private utility improvements, arising as a result of the proposed development, as determined to the satisfaction of the City. Prior to rezoning adoption, the developer will enter into standard City Servicing Agreements, secured with a letters of credit, for the design and construction of all required off-site rezoning works, as set out in the attached Rezoning Considerations (Attachment 10). Development Cost Charge (DCC) credits will be applicable to works identified on the City's DCC Program.

5. Tree Retention

No bylaw-size trees are currently located on the subject site.

The conversion of the existing lane along the site's east side to a new local road requires the construction, to City standards, of a new intersection and left-turn lanes on Lansdowne Road. This will require the removal of an existing landscaped median, including the relocation of one small City tree (through a City Servicing Agreement) and the removal of seven others. Prior to rezoning adoption, the developer will contribute \$9,100 to the City's Tree Compensation Fund (i.e. \$1,300 per tree) for Richmond to plant trees elsewhere in the city.

6. Sustainability

The CCAP encourages the coordination of private and City development objectives with the aim of implementing environmentally responsible buildings, services, and related features. Staff support the developer's proposal, which is consistent with City policy and includes:

- a) District Energy Utility (DEU): A City Centre DEU service area bylaw for the subject site will be presented for consideration by Council under a separate report. Prior to rezoning adoption, a standard DEU covenant will be registered on title requiring the developer to design and construct a low carbon energy plant, at the developer's sole cost, and transfer it to the City, together with compatible building and mechanical systems, to facilitate the development's connection to a City DEU.
- b) BC Energy Step Code: As per City policy, as a high-rise building containing a low carbon energy plant, the subject development will comply with "Step 2". Prior to rezoning adoption, the developer will be required to conduct energy modelling and provide a statement to the City confirming that the proposed design can meet all applicable Step Code requirements.
- c) Electric Vehicle (EV) Measures: As required by the Zoning Bylaw, EV charging facilities will be installed to serve 100% of residential parking spaces (240V) and 10% of "Class 1" bike storage spaces (120V). In addition, two dedicated car-share parking spaces will be equipped with EV charging (240V) infrastructure.

7. Community Planning

The CCAP requires that rezoning applications contribute towards future City community planning studies, based on the Council-approved developer contribution rate and the site's maximum buildable floor area (excluding affordable housing and non-profit social services use). The developer's proposal to voluntarily contribute \$127,574 complies with City policy.

8. Phasing

Prior to rezoning adoption, a legal agreement will be registered on title to require that the:

- a) Non-profit social service replacement space and related features (e.g., parking) are granted occupancy prior to occupancy of any other use on the site: and
- b) Affordable rental housing building, including all 88 LEMR units and related features (e.g., amenity space and parking), is granted occupancy prior to occupancy of any of the development's market strata units.

9. Built Form

Prior to rezoning adoption, a legal agreement shall be registered on title requiring that the project is designed and constructed in a manner that mitigates potential development impacts including, among other things, view obstruction, noise or nuisance associated with retail and restaurant activities, shading, reduced privacy, and related issues that may arise as a result of development on the lands and/or future development on surrounding properties.

Development Permit (DP) approval, to the satisfaction of the Director of Development, will be required prior to rezoning adoption. At DP stage, additional design development is encouraged with respect to, among other things, tower design, office streetscape, park interface, affordable rental housing building, non-profit social services space, residential amenity space, accessibility, sustainability measures, emergency services requirements, crime prevention measures, loading, and waste management.

Existing Legal Encumbrances

Development of the subject site is not encumbered by existing legal agreements on title.

Financial Impact or Economic Impact

The proposed changes to the subject development will have no financial impact on the City. As described in the December 2, 2019 report from the Director of Development, through the proposed development, the City will take ownership of developer-contributed assets (e.g., road works, waterworks, storm sewers, sanitary sewers, streetlights, street trees, and traffic signals). The anticipated operating budget impact for the ongoing maintenance of these assets is \$11,000. This will be considered as part of the 2021 Operating Budget.

Conclusion

IBI Group Architects has applied to the City of Richmond for permission to rezone lands at 5740, 5760, and 5800 Minoru Boulevard from “Industrial Retail (IR1)” to “School and Institution Use (SI)” and “High Density Mixed Use and Affordable Rental Housing (ZMU46) - Lansdowne Village (City Centre)”, to permit the construction of a high-rise, high density, mixed use development. In response to the referral from Planning Committee on December 17, 2019, the development proposal has been revised to include a non-profit housing operator (S.U.C.C.E.S.S.), relocation assistance to the site’s non-residential tenants, and 41 additional low-end-of-market-rental (LEMR) units comprising 2,997 m² (32,262 ft²) of additional habitable unit area. To facilitate the additional affordable housing, it is proposed that: (i) the City Centre Area Plan is amended to permit additional density for rezoning applications that exceed Affordable Housing Strategy requirements; and (ii) the site is rezoned to a new site-specific zone (ZMU46) that includes an additional 0.2 FAR affordable housing bonus and secures the 88 proposed LEMR units with residential rental tenure zoning. Prior to adoption of the rezoning bylaw, legal agreements will be registered on title to ensure that that 88-unit affordable rental housing building is complete, to the City’s satisfaction, before occupancy of any market strata units on the site.

It is recommended that Official Community Plan Bylaw 7100, Amendment Bylaw 10136 and Bylaw 10137 and Richmond Zoning Bylaw 8500, Amendment Bylaw 10138 be introduced and given first reading.



Suzanne Carter-Huffman
Senior Planner/Urban Design
(604-276-4228)

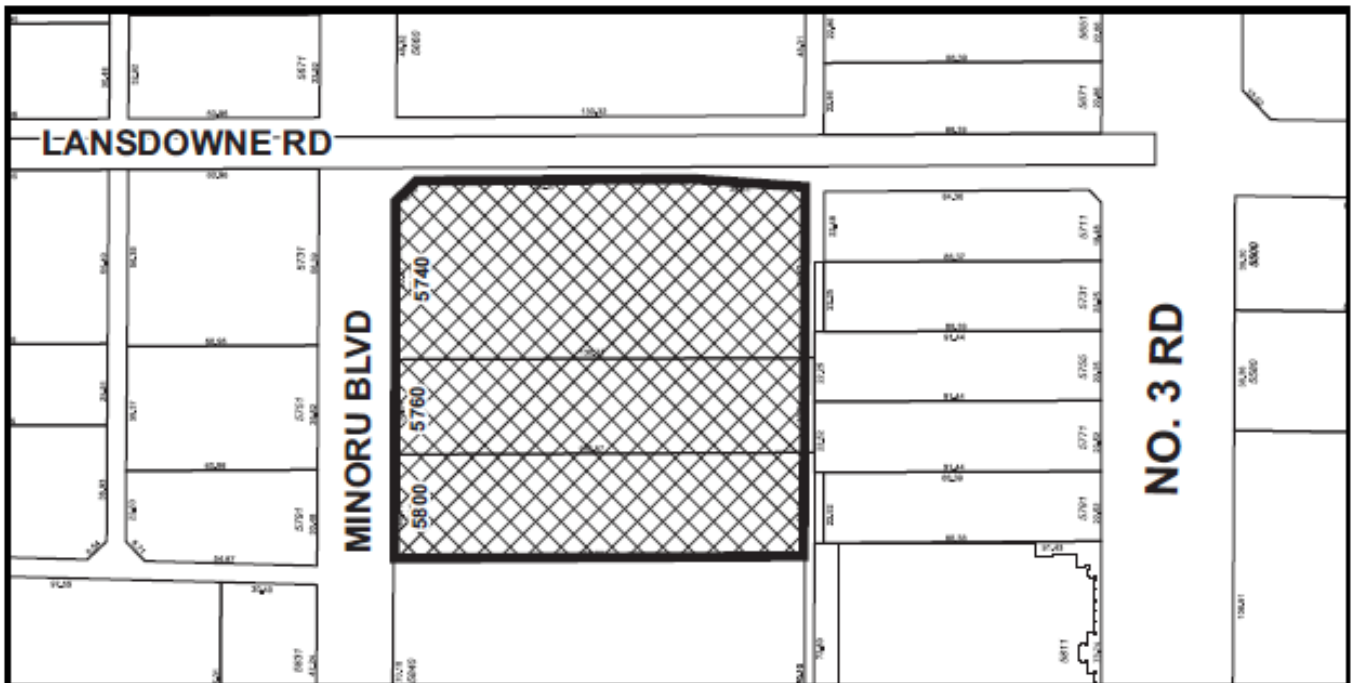
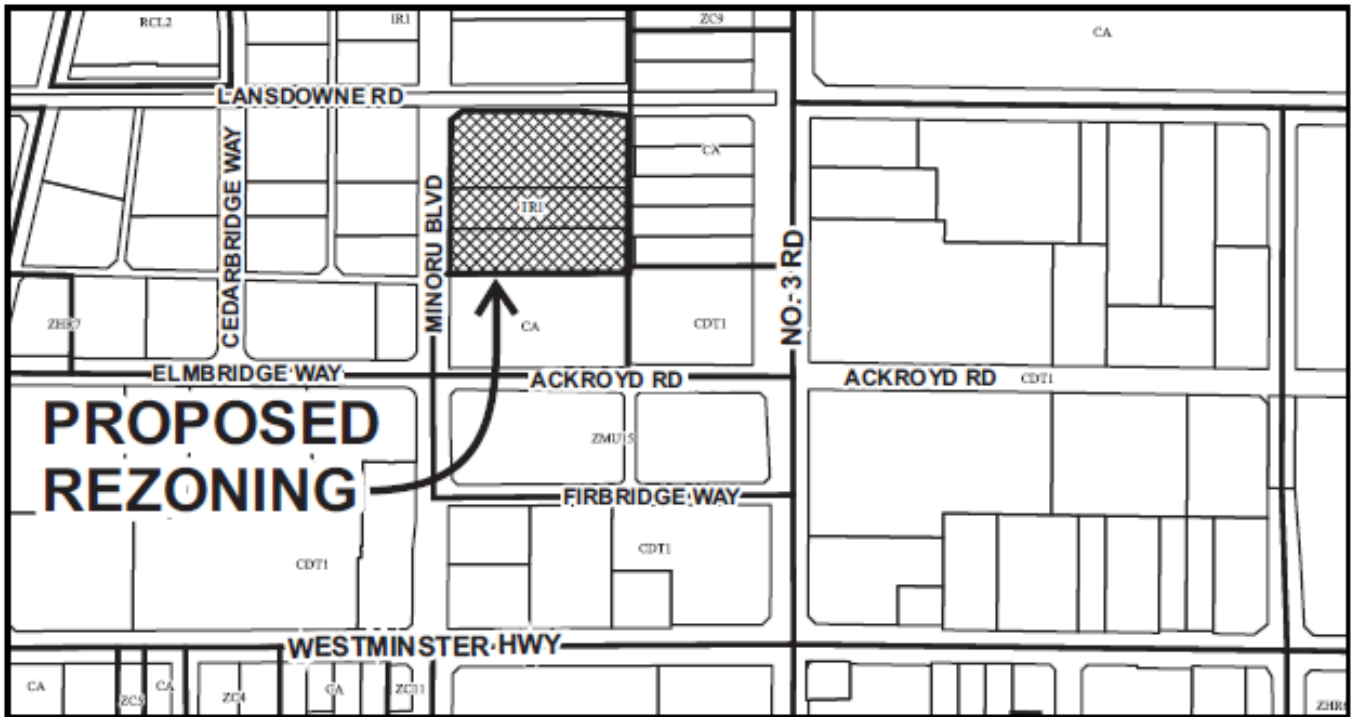
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Attachments:

1. Location Map
2. Aerial Photograph
3. Existing City Centre Area Plan – Specific Land Use Map: Lansdowne Village
4. Development Application Data Sheet
5. Letter – RSCL, October 31, 2019
6. Letter – CMWAC, November 5, 2019
7. Letter – Robert Grosz, July 15, 2019
8. Email – Robert Grosz, June 8, 2020
9. Conceptual Development Plans
10. Rezoning Considerations



City of Richmond




	<h2>RZ 18-807640</h2>	Original Date: 02/28/18
		Revision Date:
		Note: Dimensions are in METRES

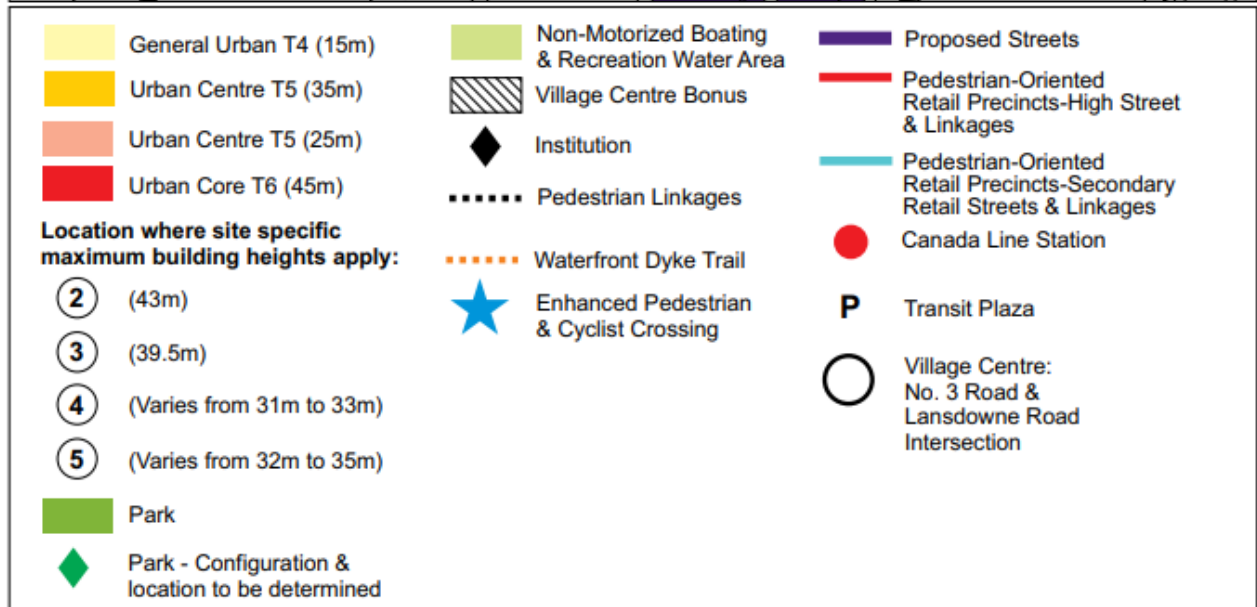
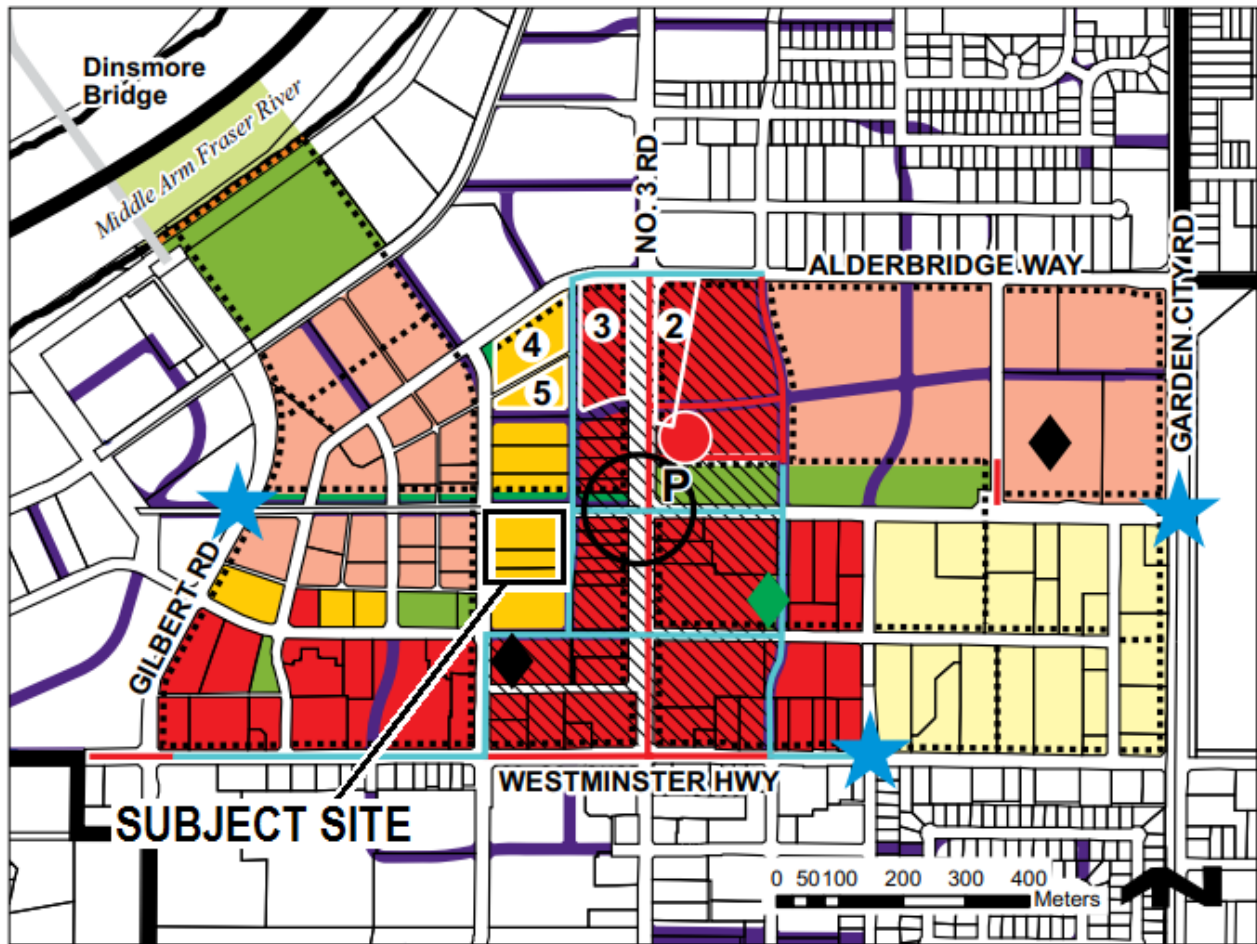


City of Richmond



	<h2>RZ 18-807640</h2>	<p>Original Date: 02/28/18 Revision Date: Note: Dimensions are in METRES</p>
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Specific Land Use Map: Lansdowne Village (2031)



Maximum building height may be subject to established Airport Zoning Regulations in certain areas.



RZ 18-807640

Address: 5740, 5760, and 5800 Minoru Boulevard

Applicant: IBI Group Architects

Planning Area(s): City Centre (Lansdowne Village)

	Existing	Proposed		
Owner	<ul style="list-style-type: none"> Minoru View Homes Ltd. 	<ul style="list-style-type: none"> No change 		
Site Size	<ul style="list-style-type: none"> 15,604.2 m² (167,962.2 ft²) 	<ul style="list-style-type: none"> Road & Park Contributions: <ul style="list-style-type: none"> Density-Eligible Park: 859.2 m² (9,248.4 ft²) Density-Eligible Road: 1,210.3 m² (13,027.6 ft²) Other Road: 569.9 m² (6,134.4 ft²) Net Site: 12,964.8 m² (139,551.9 ft²) 		
Site for Density Calculations	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> 15,034.3 m² (161,827.9 ft²) 		
Land Uses	<ul style="list-style-type: none"> Commercial, recreation & light industry 	<ul style="list-style-type: none"> Office, pedestrian-oriented commercial & multi-family residential 		
OCP Designation	<ul style="list-style-type: none"> Mixed Use 	<ul style="list-style-type: none"> Mixed Use 		
City Centre Area Plan (CCAP) Designation	<ul style="list-style-type: none"> Urban Centre T5 (35 m) (2 FAR) Pedestrian-Oriented Retail Precinct Proposed Streets 	<ul style="list-style-type: none"> As per the existing CCAP, PLUS: <ul style="list-style-type: none"> Village Centre Bonus (office only) (1.0 FAR) Park Pedestrian-Oriented Retail Precinct – High Street & Linkages 		
Aircraft Noise Sensitive Development	<ul style="list-style-type: none"> Moderate Aircraft Noise (Area 3) – All aircraft noise sensitive development (ANSD) uses may be considered 	<ul style="list-style-type: none"> As per OCP Policy: Registration of the City's standard restrictive ANSD covenant; preparation of an acoustic report; noise mitigation measures; & air conditioning capability (e.g., pre-ducted) 		
Zoning	<ul style="list-style-type: none"> Industrial Retail (IR1) 	<ul style="list-style-type: none"> Development: High Density Mixed Use & Affordable Rental Housing (ZMU46), incl. Residential Rental Tenure securing 88 affordable units Park: School & Institution Use (SI) 		
Number of Units & Unit Mix (Target)	<ul style="list-style-type: none"> N/A 	Housing Types	Studio + 1-BR	2-BR + 3-BR
		<ul style="list-style-type: none"> Market Units (341) 	5 + 150 = 155 (45%)	167 + 19 = 186 (55%)
		<ul style="list-style-type: none"> Affordable H. (88) 	15 + 26 = 41 (47%)	41 + 6 = 47 (53%)
		Total (429 Units)	20 + 176 = 196 (46%)	208 + 25 = 233 (54%)
Basic Universal Housing (BUH)	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> 27% of total units (115 units), including: <ul style="list-style-type: none"> 8% Market Strata Units (27 units) 100% Affordable Housing Units (88 units) 		

	ZMU46 Bylaw Requirement	Proposed	Variance
Floor Area Ratio (FAR)	<ul style="list-style-type: none"> Max. 3.2 FAR, including: <ul style="list-style-type: none"> Base (including AH): 2.0 FAR Village Centre Bonus: 1.0 FAR (office only) Affordable Rental Bonus: 0.2 FAR Community amenity space: 0.1 FAR max. 	<ul style="list-style-type: none"> Max. 3.2 FAR, including: <ul style="list-style-type: none"> Base (including AH): 2.0 FAR Village Centre Bonus: 1.0 FAR (office only) Affordable Rental Bonus: 0.2 FAR Community amenity space: 0.1 FAR max. 	None permitted

	ZMU46 Bylaw Requirement	Proposed	Variance
Buildable Floor Area*	<ul style="list-style-type: none"> Max. 48,109.8 m² (517,849.2 ft²), including: <ul style="list-style-type: none"> Base (incl. AH): 30,068.6 m² (323,655.7 ft²) Village Centre Bonus: 15,034.3 m² (161,827.9 ft²) (office only) Affordable Rental Bonus: 3,006.9 m² (32,365.6 ft²) Community amenity space: 1,503.4 m² (16,182.8 ft²) max. (i.e. for non-profit social service space secured via a legal agreement) 	<ul style="list-style-type: none"> Max. 48,109.8 m² (517,849.2 ft²), including: <ul style="list-style-type: none"> Base: 30,068.6 m² (323,655.7 ft²), including 2,774.1 m² (29,860.3 ft²) habitable affordable housing units (i.e. 10% of total residential floor area, as per Richmond's Affordable Housing Strategy) Village Centre Bonus: 15,034.3 m² (161,827.9 ft²) (office only) Affordable Rental Bonus: 3,006.9 m² (32,365.6 ft²) Non-Profit Social Services (Replacement) Space: 425.7 m² (4,582.0 ft²) GLA plus common/circulation space as required 	None permitted
Buildable Floor Area – Total Non-Residential	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> 17,361.9 m² (186,881.9 ft²), including: <ul style="list-style-type: none"> Office: 15,034.3 m² (161,827.9 ft²) Retail: 2,327.6 m² (25,054.0 ft²) Non-Profit Social Services (Replacement) Space: 425.7 m² (4,582.0 ft²) GLA plus common/circulation space as required 	None
Buildable Floor Area – Total Residential	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> 30,747.9 m² (330,967.6 ft²), including: <ul style="list-style-type: none"> Affordable Rental Housing Building: 6,430.5 m² (69,217.0 ft²) Market Strata: 24,317.4 m² (261,750.6 ft²) 	None
Buildable Floor Area – Affordable Rental Housing Building (Non-Profit Operator)	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Stand-alone building comprising at least 6,430.5 m² (69,217.0 ft²)* including (estimate): <ul style="list-style-type: none"> Habitable Units: 5,771.3 m² (62,122.0 ft²) Ancillary/circulation*: 659.2 m² (7,095.0 ft²) <p>* Excludes indoor amenity space & typical FAR Zoning Bylaw exemptions</p>	None
Lot Coverage	<ul style="list-style-type: none"> For buildings & landscaped roofs over parking: Max. 90% 	<ul style="list-style-type: none"> 90% 	None
Lot Size	<ul style="list-style-type: none"> Area: 4,000.0 m² (43,055.6 ft²) Width: 45.0 m (147.6 ft.) Depth: 40.0 m (131.2 ft.) 	<ul style="list-style-type: none"> Area: 12,964.8 m² (139,551.9 ft²) Width: 126.3 m (414.4 ft.) Depth: 118.5 m (388.8 ft.) 	None
Setbacks (Min.)	<ul style="list-style-type: none"> Front & Exterior Side Yards: 6.0 m (19.7 ft.), but may be reduced to 3.0 m (9.8 ft.) with a proper interface, as specified in an approved Development Permit Interior Side Yards: Nil 	<ul style="list-style-type: none"> Front & Exterior Side Yards: 3.0 m (9.8 ft.) Interior Side Yards: Nil 	None
Height	<ul style="list-style-type: none"> 35 m (114.8 ft.) to finished grade, but may be increased to 47 m GSC if a proper interface is provided with adjacent buildings and park, as specified in an approved Development Permit 	<ul style="list-style-type: none"> Office tower: 47 m GSC Residential (measured to finished grade): <ul style="list-style-type: none"> Tower A: 35.0 m (114.8 ft.) Tower B: 38.6 m (126.6 ft.) Tower C: 41.5 m (136.2 ft.) 	None
Parking – TOTAL	<ul style="list-style-type: none"> Total: 632 spaces, including - <ul style="list-style-type: none"> Non-residential: 255 Residents: 375 Car-Share: 2 	<ul style="list-style-type: none"> Total: 632 spaces, including - <ul style="list-style-type: none"> Non-residential: 255 Residents: 375 Car-Share: 2 	None
Parking – Non-Residential (Office & retail estimates based on 95% GLA)	<ul style="list-style-type: none"> Total: 255 spaces (estimate), including - <ul style="list-style-type: none"> Non-profit social service use @ 3.75/100 m² GLA – 10% = 15 Office @ 1.275/100 m² GLA – 10% = 165 Retail @ 3.75/100 m² GLA – 10% = 75 	<ul style="list-style-type: none"> Total: 255 spaces (estimate), including - <ul style="list-style-type: none"> 50% Public Parking: 127 secured by legal agreement for general public use 50% Assignable Parking: 128, including 23 spaces secured by legal agreement for the exclusive use of the Non-Profit Social Service tenants & their guests 	None

	ZMU46 Bylaw Requirement	Proposed	Variance
Parking – Residential	<ul style="list-style-type: none"> Total: 375 spaces, including - - Market Strata @ 1/unit – 10% = 307 - Affordable units @ 0.9/unit – 25% = 60 - Visitors: 8 	<ul style="list-style-type: none"> Total: 375 spaces, including - - Market Strata: 307 - Affordable Rental Housing Building: 60 - Visitors: 8 (2 spaces for the exclusive use of each residential building) 	None
Parking – Car-Share	<ul style="list-style-type: none"> 2 spaces secured by legal agreement for exclusive car-share use 	<ul style="list-style-type: none"> 2 spaces secured by legal agreement for exclusive car-share use 	None
Class 1 Bike Storage <i>(Office & retail estimates based on 95% GLA)</i>	<ul style="list-style-type: none"> Total: 776 spaces (estimate), including - - Non-Residential @ 0.27/100 m² GLA: 46 - Residents @ 1.7/unit: 730 including 10% over-size lockers 	<ul style="list-style-type: none"> Total: 776 spaces (estimate), including - - Non-Residential: 46 - Residents: 730 incl. 10% over-size lockers 	None
Class 2 Bike Storage <i>(Office & retail estimates based on 95% GLA)</i>	<ul style="list-style-type: none"> Total: 155 (estimate), including: - Non-Residential @ 0.4/100 m² GLA: 69 - Residents @ 0.2/unit = 86 	<ul style="list-style-type: none"> Total: 155 (estimate), located outdoors around the perimeter of the site for general public use 	None
Residential Amenity Space – Indoor	<ul style="list-style-type: none"> Total: Min. 877.0 m² (9,439.9 ft²), including: - Market Strata @ 2 m²/unit = 682.0 m² (7,341.0 ft²) - Affordable units @ 2 m²/unit: 176 m² (1,894.4 ft²) - Rental Building NP Operator: 19.0 m² (204.5 ft²) for administration/programs 	<ul style="list-style-type: none"> Total: 1,041.7 m² (11,213.0 ft²), including:: - Exclusive use: <ul style="list-style-type: none"> i) Market Strata: 466.3 m² (5,019.0 ft²) ii) Rental Building: 110.9 m² (1,194.0 ft²) - Shared use: 464.5 m² (5,000 ft²) 	None
Amenity Space – Outdoor	<ul style="list-style-type: none"> Total: Min. 3,870.5 m² (41,661.7 ft²), including: - Residential amenity space @ 6.0 m²/unit incl. 50% children’s play (to 600 m²): 2,574.0 m² (27,706.3 ft²) - Additional CCAP landscape space @ 10% of net site area: 1,296.5 m² (13,955.4 ft²) 	<ul style="list-style-type: none"> Total: 4,032.9 m² (43,410.0 ft²) 	None

Other: Tree replacement compensation is required for the removal of City trees within Lansdowne Road. (There are no existing bylaw-size trees on the subject site.)

* Preliminary estimate (exclusive of parking garage). The exact building size shall be determined through Zoning Bylaw compliance review at Building Permit stage.



*Seeing beyond disability...
... to ability*

October 31, 2019

City of Richmond
Attention: Lesley Sherlock, Social Planner
6911 No. 3 Road
Richmond BC V6Y 2C1

Re: Thind Properties Development 5740, 5760, 5800 Minoru Blvd. Richmond

Dear Lesley:

I am writing to you to communicate the Richmond Society for Community Living's (RSCL) opinion regarding the proposal to build a replacement program space for one of our Community Inclusion Programs (i.e. Quantum) in the Thind Properties Development at the corner of Minoru Boulevard and Lansdowne. As you are aware, RSCL had three separate programs located in the buildings on this property. These three programs serve over 70 people with an intellectual disability five days a week. The Thind Properties Development proposal will accommodate one of our three programs. As a result of the development application for this property, we have already relocated the other two programs. These programs were moved in September 2019 to Ironwood (outside City Centre) due to the cost and availability of space in City Centre. The cost of renovating and moving the two programs to the new location was substantial and will impact service.

With respect to the proposal to build a program space for one of our programs in the new development, we are pleased that an option has been developed that recognizes the impact and displacement of our program in City Centre. In the absence of a clear City policy to address this growing problem, we are pleased that the developer has agreed to accommodate us in the new development. Moreover, the agreement to lease the space for 50% of current market rates (not including operating costs) will allow us to have a presence in City Centre in the future.

Although the proposal is a positive development, it will not address all our challenges. Specifically;

- We have already incurred the costs of relocating two other programs from this location to Ironwood;
- We will have to find and relocate the third program to a temporary location for at least three years and incur the cost of this relocation;
- The proposed space does not include Tenant Improvement (TI) costs and therefore, we will have to incur the costs of all the leasehold improvements to the space once it is built;
- The disruption and impact on the people in receipt of service and their families will be significant.

In summary, we applaud the efforts of City staff and the developer to try and accommodate us in the new development. However, the proposal will not address all our concerns related to the development of this property. Furthermore, we believe a comprehensive strategy and City policy is required to address the displacement of social agencies and services in the City Centre as a result of development.

Sincerely,

Janice Barr
Executive Director

CC: Melanie Amis, Chair, RSCL Board of Director

#170 - 7000 Minoru Blvd, Richmond, B.C. V6Y 3Z5
Office: 604-279-7040 | Fax: 604-279-7048 | Email: info@rscl.org | www.rscl.org



Community Mental Wellness Association of Canada

加拿大社區情緒健康協會

#250-5726 Minoru Blvd., Richmond, BC, V6X 2A9

Tel: (604) 273-1791 Fax: (604) 273-1751

E-mail: info@cmwac.ca www.cmwac.ca

November 5th, 2019

Suzanne Carter-Huffman
Senior Planner/Urban Design
Planning & Development
City of Richmond
6911 NO. 3 Road
Richmond, BC
V6Y 2C1

Dear Suzanne,

Thank you for your recent plans for non-profit space in the new building and for your inclusion of CMWAC in your plan.

After meetings with you we are very appreciative that our needs and concerns have been mostly addressed in your plan, which you have tried to tailor to our requirements as follows:

1. Administration office
2. Consultation room
3. Conference room / multi-purpose room where we can hold health conferences, workshops, meetings and other activities
5. Space: At least 1,500 sq. ft.

The maximum rent we can currently afford for the space is \$1500.00.

To ensure a smooth transition we need an affordable temporary accommodation for the Association before the building is demolished.

Lastly, we would like to thank you again for considering our needs in your development plan. and it is hoped that the above could be included.

Sincerely yours,

Ahlay Chin, Executive Director/Founder
Community Mental Wellness Association of Canada
Cc: Lesley Sherlock
CMWAC Board

ROBERT W.G. GROSZ, J.D.

1012-13325 102A Avenue
Surrey, BC Canada V3T 0J5

rob grosz@yahoo.com | robgrosz@gmail.com | robertgrosz@hotmail.com
604-500-0794

Monday, July 15, 2019

Ms. Suzanne Carter-Huffman
Senior Planner
City of Richmond
6911 No. 3 Road
Richmond, BC V6Y 2C1

scarter@richmond.ca

Dear Ms. Carter-Huffmann,

RE: 5740, 5760 & 5800 Minoru Blvd. Richmond. Rezoning Application 18-807640

Regarding the above-noted rezoning application and further to our conversation this morning in which I asked to be added to the roster for notice of the forthcoming Public Hearing and Planning Committee Hearing, I hereby put the City of Richmond on notice of my intention to make a submission not regarding the merits of the application which I believe admirably speaks for itself based on the documents in the public file that I have reviewed, but rather on my request that the financial interests of all persons with rights to the three parcels at issue be adequately protected.

I am the former designated paralegal of Ms. Hong Chen *aka* Hong Guo, the widely reported Richmond lawyer who was intimately involved in the assembly of the three parcels beginning in 2010 or thereabouts and through their purported sale to Minoru View Homes Ltd., which is now on title as owner. However the rezoning applicant was Vancouver Soho Holding Ltd. which purportedly sold the parcels. Ms. Guo (Chen)'s Guo Law Corporation suffered the theft of over \$7.5 million from its clients' trust account in early 2016 before I began working for it. The theft caused it to become insolvent, so it is under bankruptcy protection (SCBC Vancouver B170021). I am a creditor of it long with others whose existing or anticipated claims are about \$7.5 million. Without providing particulars, suffice it to say I think the theft proximately related to the parcels. Accordingly, all the creditors presumably have an equitable if not legal interest in the parcels, despite the fact that there has not yet been legal notice of those rights filed on the respective titles.

However there were Certificates of Pending Litigation filed on all three parcels on June 22, 2016 which were briefly lifted by court order on October 3, 2017, refiled on November 17, 2017, and released on April 3, 2018. Copies of the Certificates, Order, and Charge Release are attached. These Certificates were issued pursuant to claims of shareholder oppression and fraud in the civil matter of *Kai Ming Yu et al v. Zhong Ping Xu et al* (SCBC Vancouver S165682/S187297). Moreover, on March 14, 2019 a court order was made authorizing distribution of \$10 million from the trust account of Mr. Marvin Lithwick, lawyer, purportedly holding the proceeds of the sale of the parcels (from Vancouver Soho to Minoru View Homes) to the petitioners/plaintiffs and respondents/defendants in the amount of \$5 million to each side. A copy of the order is attached. Also attached is a copy of the Form B regarding a mortgage of up to \$42.7 million on the parcels.

ROBERT W.G. GROSZ, J.D.

Ms. Suzanne Carter-Huffman
City of Richmond

RE: 5740, 5760 & 5800 Minoru Blvd. Richmond, Rezoning Application 18-807640

Monday, July 15, 2019

On July 5, 2019 I requested from the lawyer for Minoru View Homes, Mr. Aneez N. Devji, proof that the full consideration of \$59.8 million was paid as reflected by the attached Title Searches. However Mr. Devji declined to reply to my letter. Therefore on July 12, 2019 I briefly met with Mr. Jeffrey Lowe, QC, Managing Partner of Richards Buell Sutton LLP, and Mr. Devji, at which time Mr. Lowe advised me, *inter alia*, that his firm was acting in accordance with instructions from its clients and would not respond to any more communications from me, but that his firm has not participated in, aided, or abetted any fraudulent activities or transactions in its 144 year history and it is not going to do so in the future. The latter was comforting to hear. However the issue of proof that the full consideration was paid is still very alive. The lawyer who released the Certificates, Mr. Jeffrey Wittmann, of Wiebe Wittmann El-Khatib LLP acting on behalf of the petitioners/plaintiffs, was replaced by Mr. Glen Forrester of Forrester & Company. Furthermore, its clients have engaged a forensic accountant who is taking instructions from Mr. Forrester, and the issue of whether the full consideration was paid is being investigated. But I think it was not.

I think that the purported sale was actually a non arms-length transfer whereby Vancouver Soho and Minoru View Homes obtained mortgage financing (probably from China) that is managed by Trez Capital Limited Partnership, and from this the previous mortgages were retired, overdue city taxes and legal fees paid, \$10 million was distributed under authority of the court as noted above, and the remainder is being used to fund the rezoning application costs of the IBI Group. If this is correct, but I hasten to note that I have no proof that it is, and the full consideration was not paid, then transfer of title to the parcels may have violated the Fraudulent Conveyance Act.

I intend to promptly apply for leave to bring a derivative action against the Guo Law Corporation and be appointed as its Receiver, dismiss the Trustee appointed by the bankruptcy court, and take such steps as the court approves to defend claims against it, pursue claims by it, liquidate real properties hypothecated for it, and take such steps as necessary to make whole all of its creditors.

In conclusion, I support the rezoning application and wish to see it gain prompt approval, but I first request the City of Richmond take such steps as necessary to obtain proof from the lawyers both for Vancouver Soho and Minoru View Homes that the full \$59.8 million consideration was paid and that the remainder of the \$58.8 million in sale proceeds is held in trust by Mr. Lithwick. I further request that the findings of the City of Richmond in this regard be publicly disclosed.

Yours truly,



Robert W.G. Grosz, J.D.

Attachments: as stated above.

-----Original Message-----

From: Robert Grosz <robgrosz@yahoo.com>

Sent: Monday, 8 June 2020 11:47 AM

To: CityClerk <CityClerk@richmond.ca>

Cc: MayorandCouncillors <MayorandCouncillors@richmond.ca>; Craig, Wayne <WCraig@richmond.ca>;

Erceg, Joe <JErceg@richmond.ca>; Carter-Huffman, Suzanne <SCarter@richmond.ca>; Capuccinello

Iraci, Tony <ACapuccinelloiraci@richmond.ca>

Subject: Rezoning Application RE: 5740-5800 Minoru Boulevard

Ms. Claudia Jesson

Director

City Clerk's Office

City of Richmond

Dear Ms. Jesson,

I was advised this morning by Ms. Suzanne Carter-Huffman, Senior Planner, that the Rezoning Application regarding 5740-5800 Minoru Boulevard may be referred to the General Purposes Committee of the City Council for a hearing in July 2020.

As you know I am opposed to the Rezoning Application until the issue of the equitable ownership of the property(ies) can be determined by the Federal Court of Canada at Vancouver when it resumes public operations and my Mareva Injunction motion to determine, inter alia, the equitable ownership issue can be heard by the court.

Therefore please advise me: (1) when will the Rezoning Application be heard by the General Purposes Committee; (2) how can I submit materials in opposition to the Rezoning Application; and (3) how can I attend the General Purposes Committee meeting by video or telephonically as I am at increased risk to COVID-19 (e.g. advanced age and immunocompromised) and am self-separating based on my physician's medical advice.

I look forward to your prompt reply. Many thanks.

Rob

Robert W.G. Grosz, J.D.

1012-13325 102A Avenue

Surrey, BC Canada V3T 0J5

Cel: 604-500-0794



Thind
PROPERTIES



IBI GROUP
ARCHITECTS (BARBARA) INC.
1000-1330 Lansdowne Street
Vancouver BC V6E 4B1 Canada
Tel: 604 681 4707 Fax: 604 681 4800
www.ibigroup.com

5740, 5760, 5800 Minoru Blvd., Richmond

Richmond, B.C., Canada | Project Number: 172000 | Issue Date: JUNE 12, 2020

3D VISUALIZATION 15
- MINORU / LANSDOWNE CORNER



Thind
PROPERTIES



IBI GROUP
ARCHITECTS (BARBARA) INC.
1000-1330 Lansdowne Street
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Tel: 604 681 4707 Fax: 604 681 4800
www.ibigroup.com

5740, 5760, 5800 Minoru Blvd., Richmond

Richmond, B.C., Canada | Project Number: 172000 | Issue Date: JUNE 12, 2020

3D VISUALIZATION 16
- AERIAL NORTH WEST



IBI GROUP
ARCHITECTS (CANADA) INC.
1000 1320 134th Avenue, Suite 100
Vancouver, BC V6E 0E1 Canada
Tel: 604 983 6787 Fax: 604 983 6482
www.ibigroup.com

5740, 5760, 5800 Minoru Blvd., Richmond
Richmond, B.C. Canada Project Number: 173008 Issue Date: APRIL 12, 2020

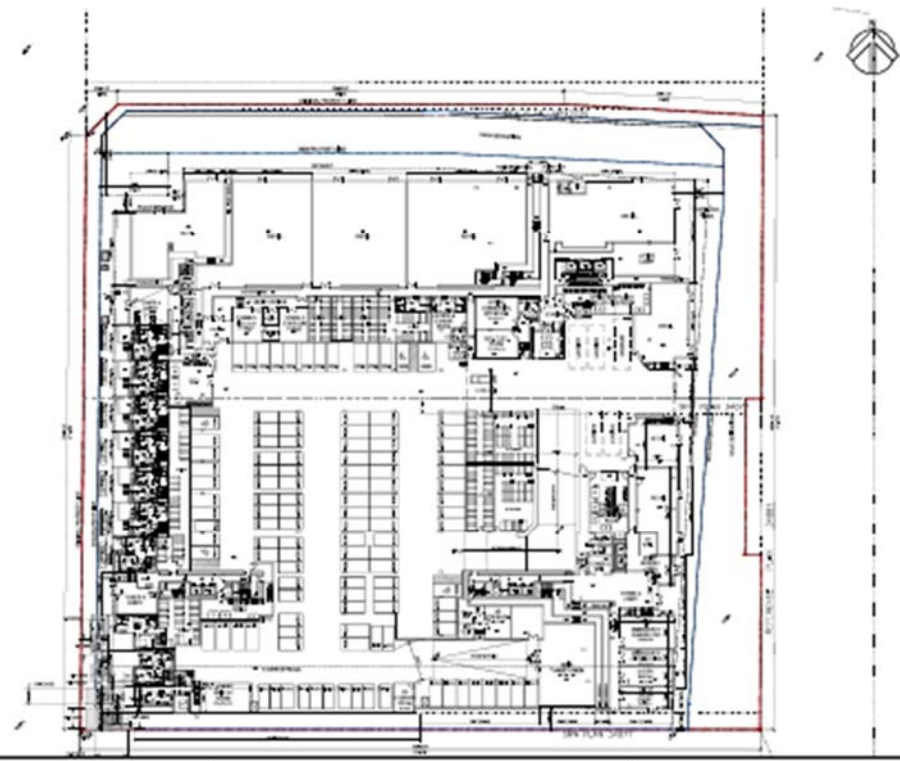
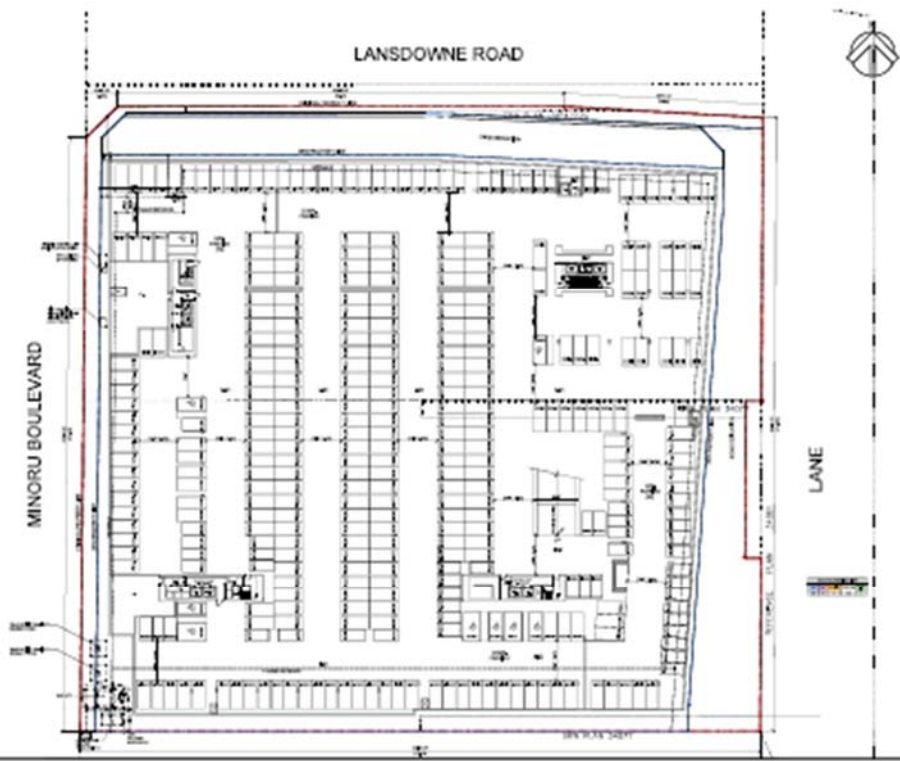
3D VISUALIZATION 17
- AERIAL SOUTH WEST

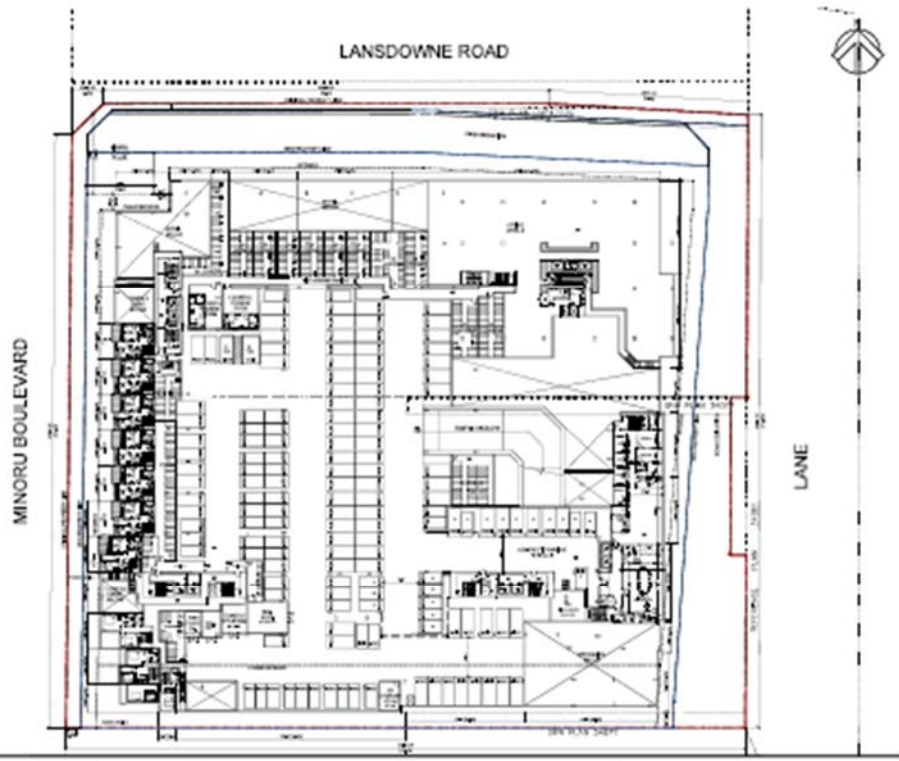


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5740, 5760, 5800 Minoru Blvd., Richmond
Richmond, B.C. Canada Project Number: 173008 Issue Date: APRIL 12, 2020

3D VISUALIZATION 25
- EAST LANE VIEW





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LEVEL 2 FLOOR PLAN 23

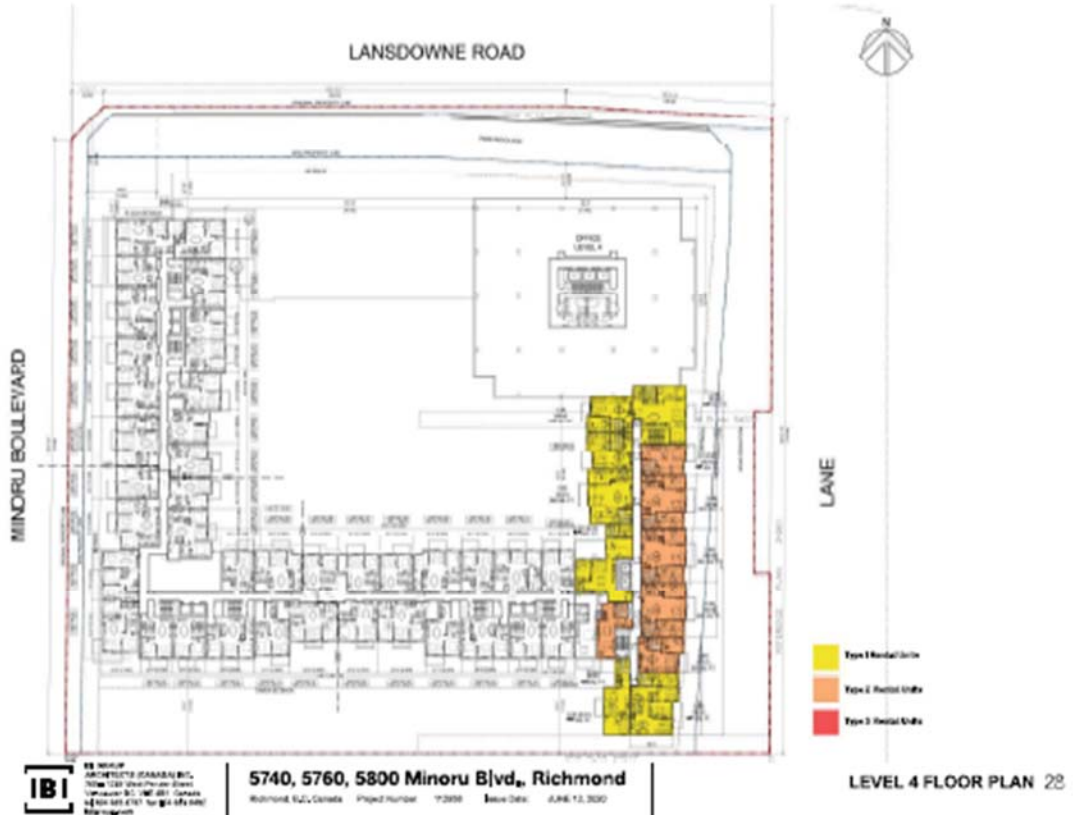


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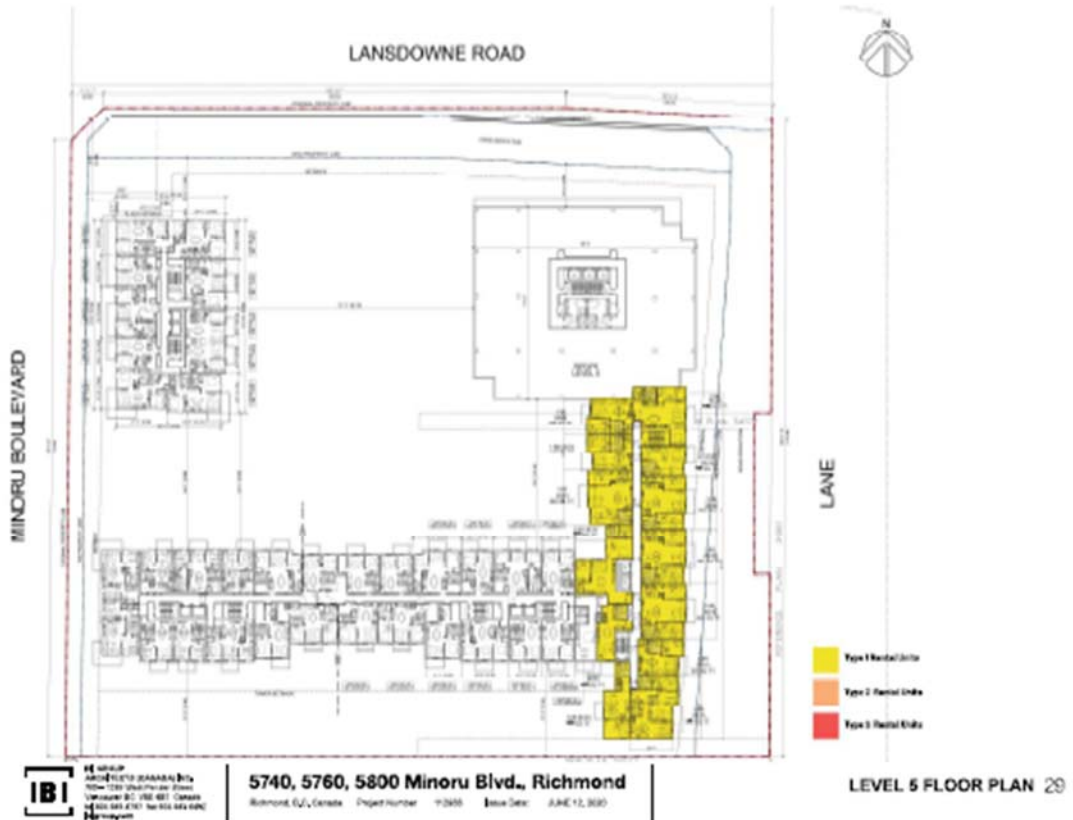
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- Type 1 Rental Units
- Type 2 Rental Units
- Type 3 Rental Units

LEVEL 3 FLOOR PLAN 27



LEVEL 4 FLOOR PLAN 28



LEVEL 5 FLOOR PLAN 29



LANE

- Type 1 Thermal Envelope
- Type 2 Thermal Envelope
- Type 3 Thermal Envelope



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Richmond, B.C., Canada Project Number: 17-2055 Issue Date: JUNE 12, 2020

LEVEL 6 FLOOR PLAN 30



LANE

- Type 1 Thermal Envelope
- Type 2 Thermal Envelope
- Type 3 Thermal Envelope

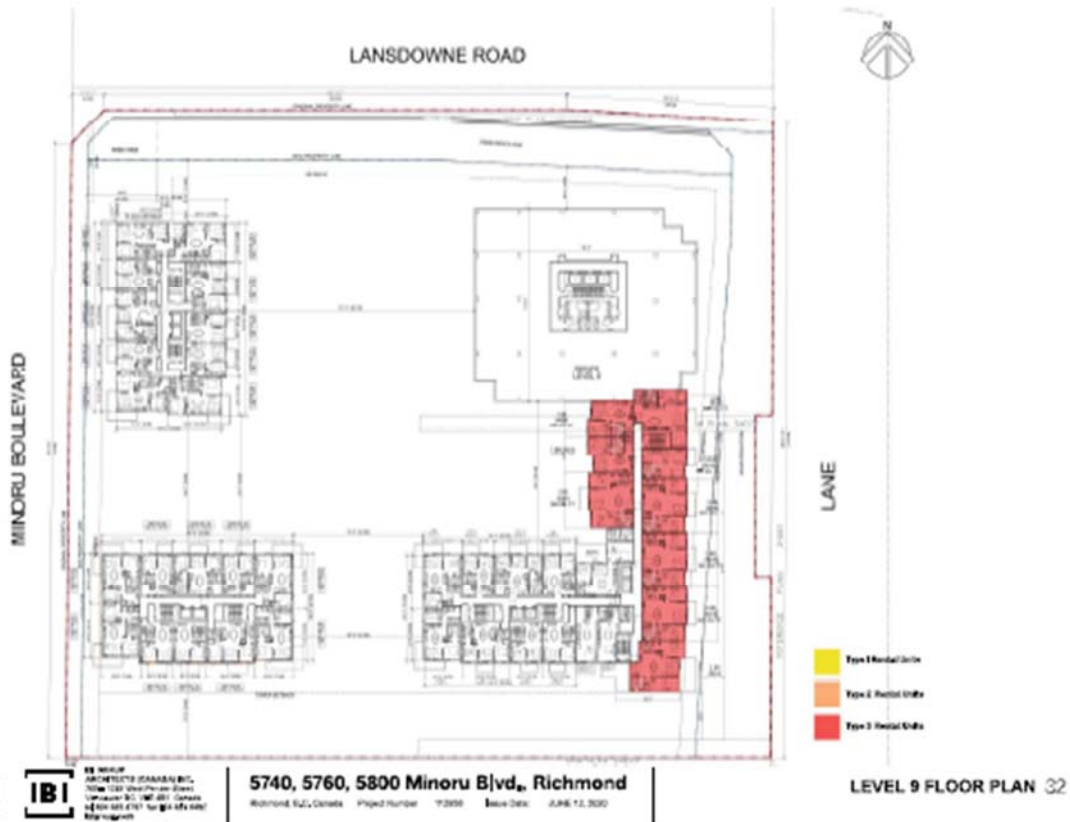


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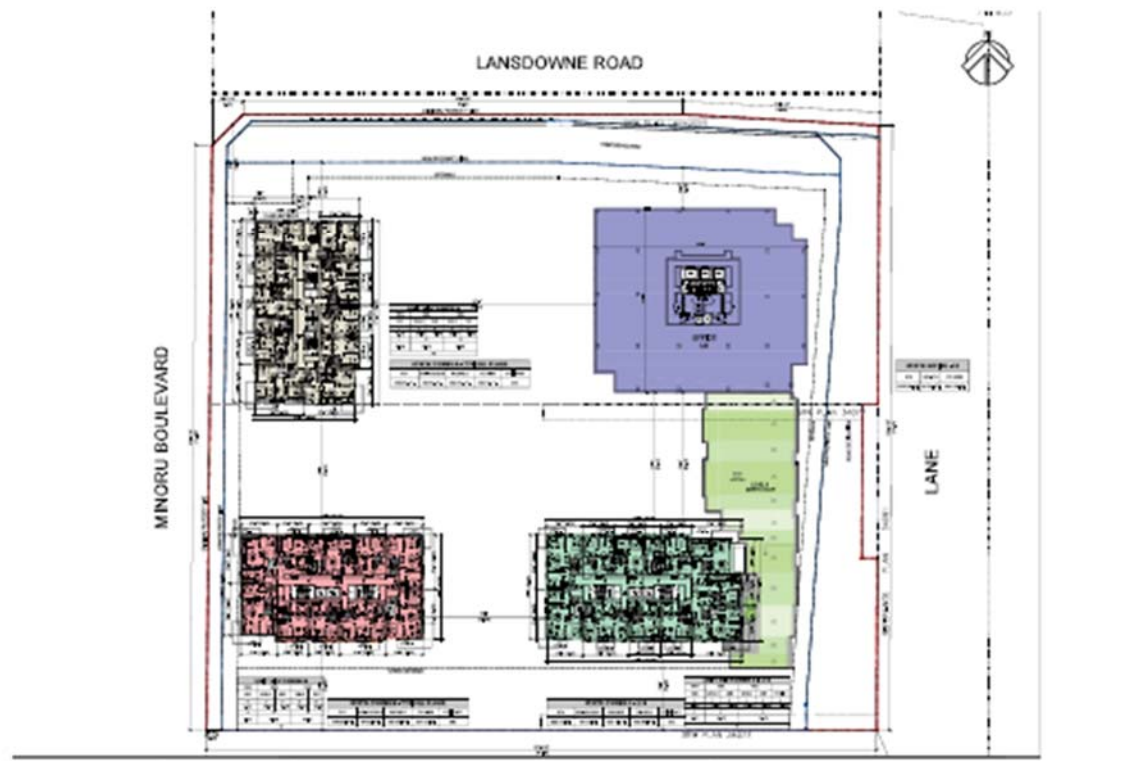
LEVEL 7-8 FLOOR PLAN 31



Thind
 PROPERTIES

5740, 5760, 5800 Minoru Blvd., Richmond
Richmond, B.C., Canada Project Number: 172858 Issue Date: JUNE 12, 2020

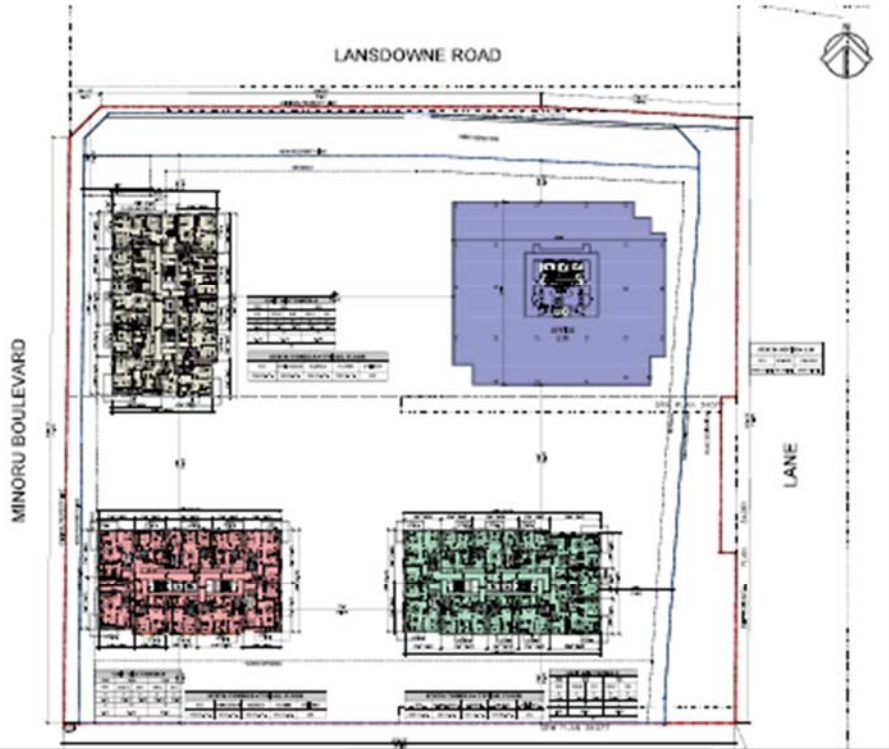
LEVEL 9 FLOOR PLAN 32



Thind
 PROPERTIES

5740, 5760, 5800 Minoru Blvd., Richmond
Richmond, B.C., Canada Project Number: 172858 Issue Date: JUNE 12, 2020

LEVEL 10 FLOOR PLAN 33

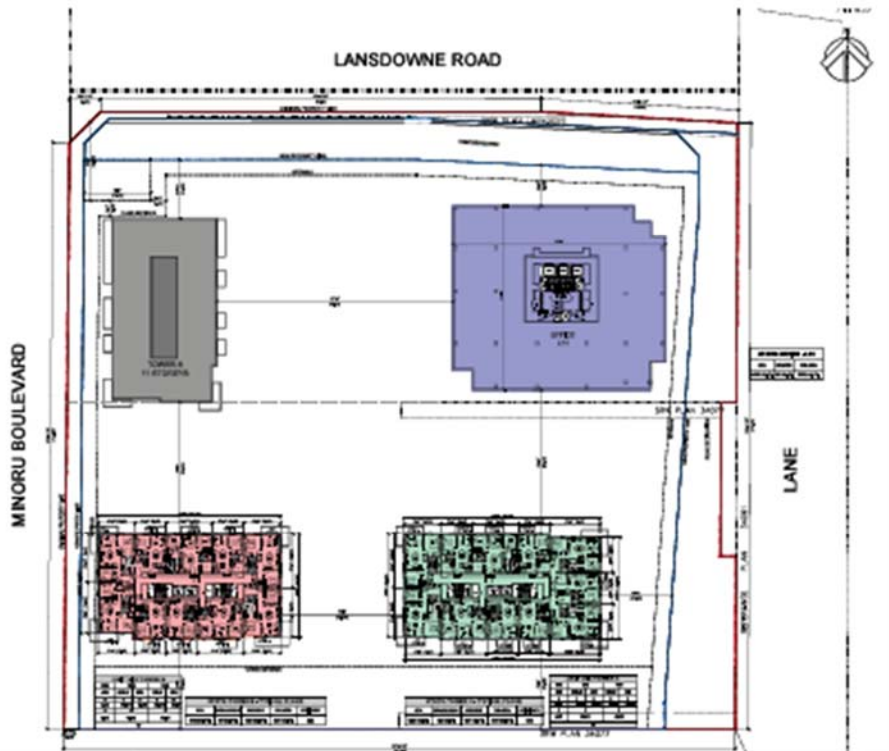


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Richmond, B.C., Canada Paper Number: 112000 Issue Date: June 13, 2020

LEVEL 11 FLOOR PLAN 34

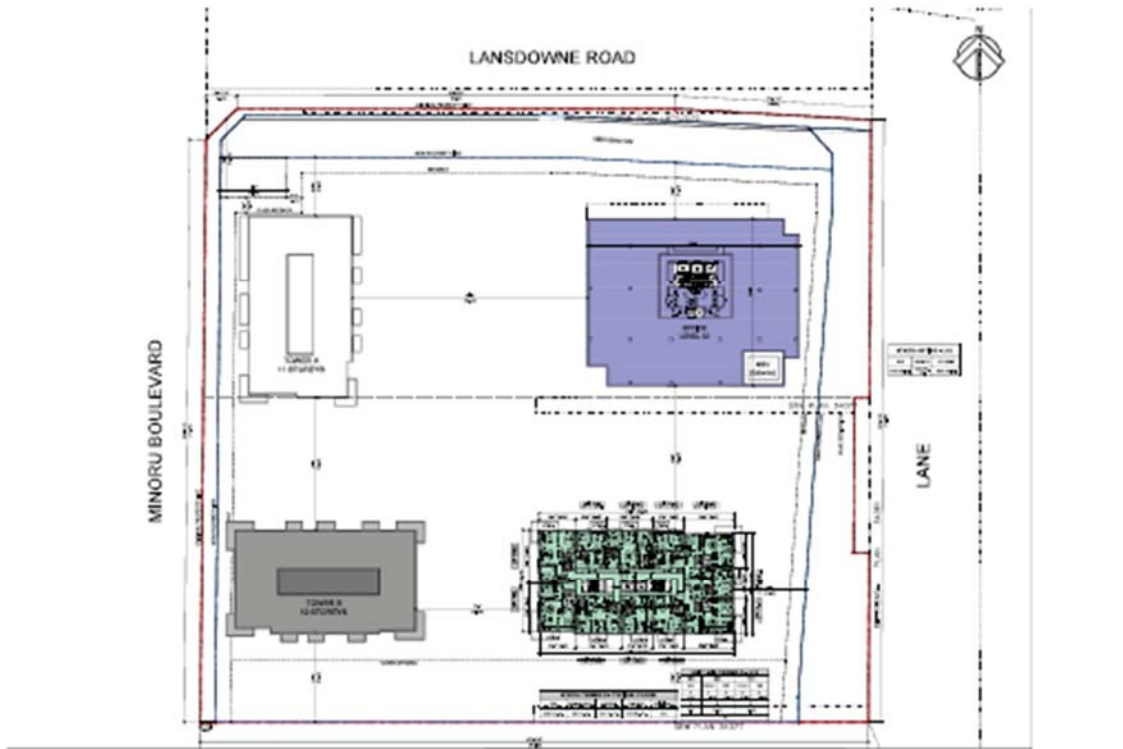


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Richmond, B.C., Canada Paper Number: 112000 Issue Date: June 13, 2020

LEVEL 12 FLOOR PLAN 35



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Richmond, B.C., Canada Project Number: 17289 Issue Date: JUNE 12, 2020

LEVEL 13 FLOOR PLAN 33

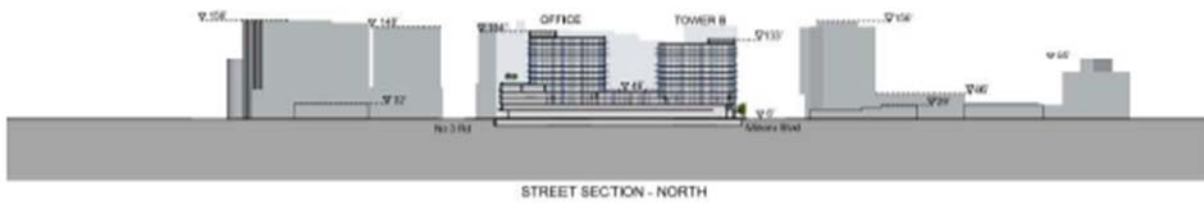
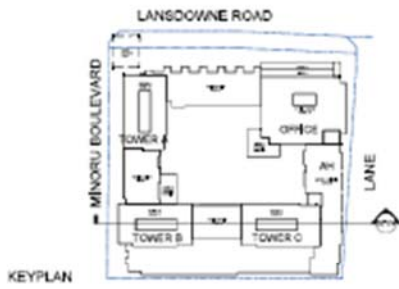
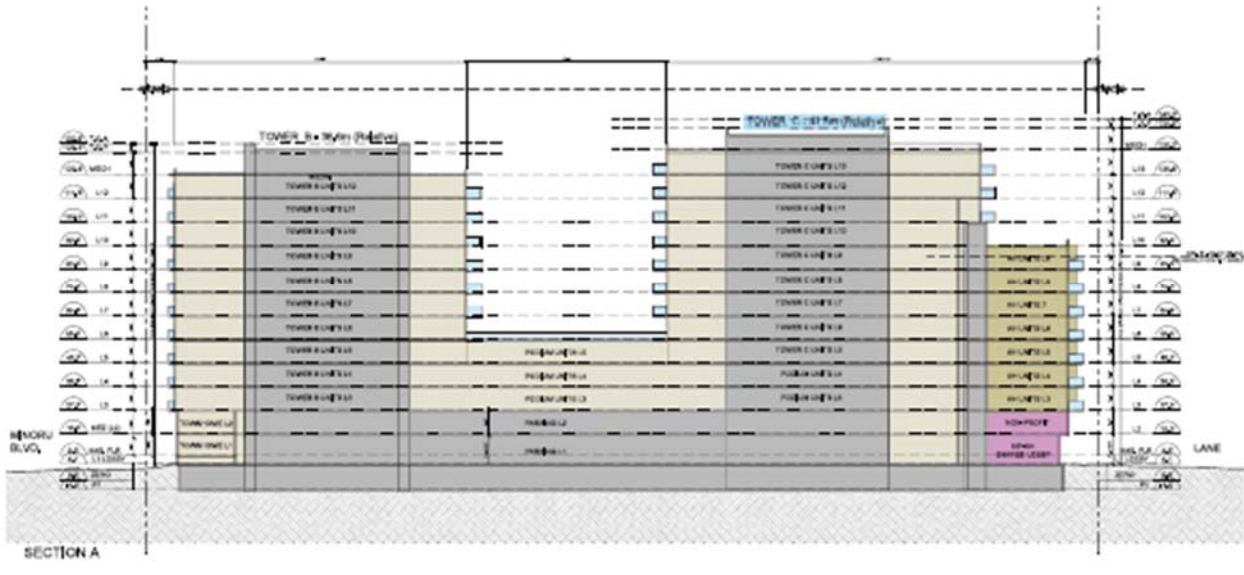


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Richmond, B.C., Canada Project Number: 17289 Issue Date: JUNE 12, 2020

ROOF PLAN 37





ELEVATION MATERIAL	
NO.	MATERIAL DESCRIPTION
001	WINDOW WALL SYSTEM - CLEAR GLASS WITH BRONZE COLOUR MULLION
002	WINDOW WALL SYSTEM - SPANDREL PANEL WITH BRONZE COLOUR MULLION
003	WINDOW WALL SYSTEM - CRISTALLIC WINDOW
004	WINDOW WALL SYSTEM - SOLID CLANK
005	CLAYTON WALL SYSTEM - CLEAR GLASS WITH BRONZE COLOUR MULLION
006	CLAYTON WALL SYSTEM - SPANDREL PANEL WITH BRONZE COLOUR MULLION
007	CLAYTON WALL SYSTEM - CRISTALLIC WINDOW
008	CLAYTON WALL SYSTEM - SOLID CLANK
009	MEZANINE - CRISTALLIC WINDOW
010	META. EQUI. PANELS
011	PRECAST CONCRETE CLANK
012	CLAYTON WALL SYSTEM - CRISTALLIC WINDOW

WEST ELEVATION 41



SOUTH ELEVATION 38



Address: 5740, 5760, and 5800 Minoru Boulevard

File No.: RZ 18-807640

Prior to final adoption of Richmond OCP Amendment Bylaw No. 10102 and Zoning Amendment Bylaw No. 10051, the developer/owner is required to complete the following:

1. NAV Canada Building Height: Submit a letter of confirmation from a registered surveyor assuring that the proposed building heights are in compliance with Transport Canada regulations.

(Note: This consideration has been satisfied. REDMS #6158501)
2. Site Contamination (Dedicated and/or Transferred Land): Prior to rezoning bylaw adoption, submission to the City of sufficient information and/or other assurances satisfactory to the City in its sole discretion to support the City's acceptance of the proposed dedicated or transferred land. Such assurances could include one or more of the following:
 - 2.1. A contaminated sites legal instrument (e.g. Certificate of Compliance (COC) or Final Site Determination (FSD) showing no contamination in the dedication lands);
 - 2.2. Evidence satisfactory to the City, in its sole discretion, that the lands to be dedicated to the City are in a satisfactory state from an environmental perspective; and
 - 2.3. The registration of a legal agreement on the title to the Lands which provides that:
 - 2.3.1. No occupancy of any building on the Lands shall be granted until such time that the Owner/Developer has satisfied the City in its sole discretion that the lands to be dedicated to the City are in a satisfactory state from an environmental perspective and a contaminated sites legal instrument has been obtained for the proposed dedication lands; and
 - 2.3.2. The Owner/Developer shall release and indemnify the City from and against any and all claims or actions that may arise in connection with those portions of the lands being dedicated to the City being contaminated in whole or in part.
3. Subdivision: Registration of a subdivision plan to the satisfaction of the City.

Prior to the registration of the Subdivision Plan, the following conditions shall be satisfied:

- 3.1. City Road: Dedication of at least 1,780.2 m² (19,162.0 ft²) for road and related purposes, as per the Preliminary Subdivision Plan (Schedule A), including at least:
 - 3.1.1. 569.9 m² (6,134.4 ft²) for road widening along the south side of Lansdowne Road and the east side of Minoru Boulevard (for which Development Cost Charge/DCC credits shall apply); and
 - 3.1.2. 1,210.3 m² (13,027.6 ft²) for sidewalk widening along the south side of Lansdowne Road and lane widening for the purpose of establishing a new minor street along the subject site's east side (for which Development Cost Charge/DCC credits shall not apply).
- 3.2. City-Owned Park: Transfer of at least 859.2 m² (9,248.4 ft²) to the City as fee simple for park and related purposes, as indicated on the Preliminary Subdivision Plan (**Schedule A**). The primary business terms of the required land transfers shall be to the satisfaction of the Manager, Real Estate Services, the City Solicitor, and the Director of Development. All costs associated with the land transfer shall be borne by the developer/owner. (Note: Development Cost Charge/DCC credits shall not apply.)
- 3.3. Lot Consolidation: The creation of one (1) lot for development purposes with an area of approximately 12,964.8 m² (139,551.9 ft²), as per the Preliminary Subdivision Plan (**Schedule A**).
- 3.4. Statutory Right-of-Way (SRW) – City-Owned Park Enhancement Area: Registration on title of a restrictive covenant and SRW agreement for public access, open space, and related purposes with respect to an irregular

strip of land along the entire north edge of the subject site, comprised of a rectangular “plaza expansion” area adjacent to Minoru Boulevard, measuring approximately 8.0 m (26.3 ft.) deep and 13.0 m (42.7 ft.) wide, and a “linear park expansion” area, measuring at least 3.0 m (9.8 ft.) deep at its west end and tapering towards the east, as generally indicated in the Preliminary Statutory Right-of-Way Plan (**Schedule B**). The SRW area shall be designed, constructed, and maintained at the sole cost of the developer/owner for the purpose of providing for the seamless expansion of the proposed City-Owned Park (e.g., public plaza, landscape features, and related furnishings and infrastructure), as determined to the satisfaction of the City. Prior to adoption of the OCP and Zoning Amendment Bylaws, the agreement shall be registered as a blanket SRW (accompanied by a sketch plan) and shall include provisions for a replacement agreement at Development Permit*, Building Permit*, and/or occupancy, as determined to the satisfaction of the City, at the developer/owner’s cost, for the purpose of accurately reflecting the City-approved permits and replacing the sketch plan with a survey plan (which may be volumetric). The specific location, configuration, design, and related terms of the agreement shall be confirmed through the development’s Development Permit*, Servicing Agreement*, and/or other City approval processes, to the satisfaction of the City, taking into account the following items.

3.4.1. The right-of-way shall provide for:

- a) 24 hour-a-day, year-round, universally accessible, public access in the form of paved walkway(s) and related landscape features, which may include, but may not be limited to, lighting, furnishings, street trees and planting, decorative paving, and storm water management measures, to the satisfaction of the City;
- b) Public art;
- c) Public access to/from fronting uses/spaces including, among other things, fronting on-site commercial units;
- d) Emergency and service vehicle access, City bylaw enforcement, and related or similar City-authorized activities; and
- e) City utilities including, but not limited to, streetlights, traffic control infrastructure (e.g., signals, detector loops, and equipment kiosks), and related or similar features.

2.3.1. Encroachments shall only be permitted within the “plaza expansion” portion of the SRW area (i.e. not within the “linear park expansion” portion) and shall satisfy the following requirements, as determined to the City’s satisfaction:

- a) Encroachments shall not conflict with the design, construction, operation, or intended quality or public amenity of the SRW area (e.g., tree planting, accessible grades, underground utilities);
- b) Permanent encroachments shall be approved by the City through the Development Permit*, Servicing Agreement*, and/or other City approval processes, as applicable, and shall be limited to:
 - A parking structure concealed below the finished grade of the SRW area;
 - Weather protection, architectural appurtenances, and building projections, located at least 2.5 m (8.2 ft.) clear above the finished grade of the SRW area; and
 - Commercial signage, provided that it is integrated into the permitted permanent encroachments described above and is located at least 2.5 m (8.2 ft.) clear above the finished grade of the SRW area; and
- c) Temporary encroachments shall be limited to:
 - Movable furnishings, planters, displays, and similar features (but excluding sandwich boards and other commercial signage);
 - Commercial business operations limited to temporary food service vendors (fresh and/or prepared foods) in the form of food carts and/or knock-down units (operating independently or in coordination with fronting on-site commercial uses/units), provided that they occupy a maximum combined total area of 20.0 m² (215.3 ft²); and
 - Outdoor dining and related furnishings associated with temporary food service vendors (described above) and/or fronting on-site commercial uses/units, provided that

such outdoor dining is not fenced, roofed, or otherwise arranged to restrict casual or free public access through and around the area occupied by the outdoor dining.

Note: Outdoor dining area designated for the exclusive use of a specific on-site commercial use/unit or temporary food service vendor shall not be considered a “temporary encroachment” and will not be permitted within the SRW area.

- 3.4.2. Design and construction of the SRW area shall be the subject of a Servicing Agreement* and Development Permit*, which shall be undertaken at the sole cost and responsibility of the developer/owner, as determined to the satisfaction of the City. Among other things, works essential for public access within the required SRW area are to be included in the Servicing Agreement* and the design of the SRW area must be prepared in accordance with good engineering practice with the objective of optimizing public safety. After completion of the SRW works, the owner is required to provide a certificate of inspection for the works or equivalent, prepared and sealed by the owner’s engineer, architect, and/or landscape architect, as determined to the City’s satisfaction, in a form and content acceptable to the City, certifying that the works have been constructed and completed in accordance with the accepted design.
 - 3.4.3. Maintenance of and liability with respect to the SRW area shall be at the sole cost and responsibility of the owner, except for City utilities, City park improvements, and/or other features that are identified, to the City’s satisfaction, through the Servicing Agreement* for maintenance by the City following the expiry of the Servicing Agreement* maintenance period.
 - 3.4.4. The owner shall be permitted to close public access to the “plaza expansion” portion of the SRW area (i.e. not the “linear park expansion” portion), in whole or in part, to facilitate maintenance, repairs, or construction of the SRW area or the fronting uses, provided that adequate public access is maintained and the duration of the closure is limited, as either determined to the City’s satisfaction through the Development Permit* and specified in the SRW agreement(s) or approved by the City in writing in advance of any such closure.
 - 3.4.5. “No development” shall be permitted on the subject site, restricting Development Permit* issuance for any building on the subject site, in whole or in part, unless the permit includes the design of the SRW area, to the City’s satisfaction.
 - 3.4.6. No Building Permit* shall be issued for a building on the subject site, in whole or in part (excluding parking located below the finished grade of the SRW area indicated in the approved Servicing Agreement*), unless the permit includes the design of the SRW area, to the City’s satisfaction.
 - 3.4.7. “No occupancy” of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.
4. Other Rights-of-Ways, Indemnifications, Releases & Agreements: As determined to the sole satisfaction of the City via the Servicing Agreement*, Development Permit*, development approval, and/or Building Permit* processes.
 5. Aircraft Noise: Registration on title of a standard City of Richmond (mixed use) aircraft noise sensitive use covenant.
 6. Flood Construction: Registration on title of a standard City of Richmond (“Area A”) flood indemnity covenant.
 7. View and Other Development Impacts: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, requiring that the proposed development must be designed and constructed in a manner that mitigates potential development impacts including without limitation view obstruction, increased shading, increased overlook, reduced privacy, increased ambient noise, increased ambient night-time light, and increased public use of fronting streets, sidewalks, and open spaces caused by or experienced as a result of, in whole or in part, development on the lands and future development on or the use of surrounding properties. In particular, as the proposed development is mixed use, the covenant shall notify residential tenants of potential noise and/or nuisance that may arise due to proximity to retail, restaurant, and other commercial uses and activities. The owner shall provide written notification of potential view and development impacts to all initial purchasers through the disclosure statement, and erect signage in the initial sales centre advising purchasers of the potential for such impacts. The legal

agreement shall include a Report prepared by an appropriate registered professional, which demonstrates that adequate development impact mitigation measures will be incorporated into the building’s design and construction and, prior to Development Permit* and Building Permit* issuance, the owner shall submit letters of assurance prepared by an appropriate registered professional confirming that the building has been designed in conformance with the Report.

8. **Tree Removal:** The City’s acceptance of the developer’s voluntary contribution to the City’s Tree Compensation Fund (Account # 2336-10-000-00000-0000) for the planting of replacement trees within the City, as indicated in the table below.

TABLE 1

Use	No. of City Trees Proposed for Removal	Min. Developer Contribution Rate	Min. Developer Contribution
TOTAL	7 (Lansdowne Road median removal)	\$1,300/tree	\$9,100 (1)

- (1) In the event that the developer contribution is not provided within one year of the rezoning application receiving third reading of Council (Public Hearing), the Minimum Developer Contribution Rate shall be revised to comply with the City contribution rate in effect at the time of rezoning bylaw adoption, where the change is positive.

Note: In addition to the above, through the required Servicing Agreement*, the developer shall be required, at the developer’s sole cost, to remove a small existing City tree from the Lansdowne Road median (*Chamaecyparis obtuse*) and relocate it elsewhere in Richmond, as determined to the satisfaction of the Director, Parks Services.

9. **Public Art:** The City’s acceptance of the developer’s voluntary cash-in-lieu contribution towards public art (i.e. 15% to Public Art Provision Account # 7500-10-000-90337-0000 and 85% to Account # 7600-80-000-90173-0000), as indicated in the table below.

TABLE 2

Use	Max. Permitted Floor Area Under ZMU46 Zone	Estimated Affordable Housing Exemption (1)	Min. Developer Contribution Rate (2)	Min. Developer Contribution
Residential	30,747.9 m ² (330,967.6 ft ²)	5,781.0 m ² (62,225.9 ft ²)	\$0.87/ft ²	\$233,805.28
Retail	2,327.6 m ² (25,054.0 ft ²)	Nil	\$0.46/ft ²	\$11,524.84
Office (VCB)	15,034.3 m ² (161,827.9 ft ²)	Nil	\$0.46/ft ²	\$74,440.83
TOTAL	48,109.8 m² (517,849.2 ft²)	5,781.0 m² (62,225.9 ft²)	Varies	\$319,770.95 (3)

- (1) Floor area excludes Affordable Housing (habitable floor area) and the Affordable Rental Housing (0.2 FAR) Bonus.
 (2) The Council-approved contribution rates in effect at the time of writing these Rezoning Considerations.
 (3) The actual value of the developer contribution shall be confirmed and updated, as necessary, based on the floor areas approved through the Development Permit. In addition, in the event that the developer contribution is not provided within one year of the rezoning application receiving third reading of Council (Public Hearing), the Minimum Developer Contribution Rate shall be revised to comply with the Council-approved contribution rates in effect at the time of rezoning bylaw adoption, where the change is positive.

10. **Community Planning:** The City’s acceptance of the developer’s voluntary contribution towards future City community planning initiatives (CC-Community Planning and Engineering Account # 3132-10-520-00000-0000), as set out in the City Centre Area Plan, as indicated in the table below.

TABLE 3

Use	Max. Permitted Floor Area Under ZMU46 Zone	Estimated Affordable Housing Exemption (1)	Min. Developer Contribution Rate (2)	Min. Developer Contribution
TOTAL	48,109.8 m² (517,849.2 ft²)	5,781.0 m² (62,225.9 ft²)	\$0.28/ft²	\$127,574.52 (3)

- (1) Floor area excludes Affordable Housing (habitable floor area) and the Affordable Rental Housing (0.2 FAR) Bonus.
 (2) The Council-approved contribution rates in effect at the time of writing these Rezoning Considerations.
 (3) In the event that the developer contribution is not provided within one year of the rezoning application receiving third reading of Council (Public Hearing), the Minimum Developer Contribution Rate shall be revised to comply with the Council-approved contribution rate in effect at the time of rezoning bylaw adoption, where the change is positive.

11. Village Centre (Office-Only) Bonus (VCB): The City’s acceptance of the developer’s voluntary contribution and legal agreement(s) registered on title to the lot, to the satisfaction of the City, for the purpose of satisfying OCP, Zoning Bylaw, and related City requirements with the respect to the developer’s proposed bonus office density, including:

11.1. Amenity Contribution: Submission of a voluntary developer cash contribution, in the amount of \$5,663,980, to Richmond’s Leisure Facilities Reserve Fund – City Centre Facility Development Sub-Fund, in lieu of constructing community amenity space on-site, as determined based on a construction-value amenity transfer rate of \$700/ft² and an amount of amenity transferred off-site based on 5% of the maximum VCB buildable floor area permitted on the subject site under the proposed High Density Mixed Use and Rental Housing (ZMU46) zone, as indicated in the table below.

TABLE 4

Use	Maximum Permitted VCB Bonus Floor Area Under the ZMU46 Zone	VCB Community Amenity Space Area (5% of Bonus Area)	Construction-Value Amenity Transfer Contribution Rate	Minimum Voluntary Developer Cash Contribution
TOTAL	15,034.3 m² (161,827.9 ft²)	751.7 m² (8,091.4 ft²)	\$700.00/ft²	\$5,663,980.00 (1)

(1) In the event that the developer contribution is not provided within one year of the rezoning application receiving third reading of Council (Public Hearing), the Construction-Value Amenity Transfer Contribution shall be increased annually thereafter based on the Statistics Canada “Non-Residential Building Construction Price Index” yearly quarter-to-quarter change for Vancouver, where the change is positive..

11.2. Office Subdivision Restriction: Registration on title of a restrictive covenant or alternative legal agreement, to the satisfaction of the City, to require that the subdivision of any Village Centre Bonus floor area within the building that is used for office shall not exceed one strata lot or air space parcel per storey of the building.

11.3. Non-Residential Parking: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, for the purpose of restricting the use of parking provided on-site in respect to non-residential uses and providing for the shared use of that parking with visitors to the subject development’s market residential uses and Affordable Rental Housing Building. More specifically, Non-Residential Parking requirements for the subject development shall include the following.

11.3.1. Non-Residential Parking shall mean any parking spaces needed to satisfy Zoning Bylaw or other transportation requirements with respect to commercial or community amenity uses, as determined to the satisfaction of the City through the rezoning and/or an approved Development Permit*, including spaces required for the use of:

- a) The general public;
- b) Businesses and tenants on the lot, together with their employees, visitors, customers, and guests (including parking secured by legal agreement registered on title to the lot for the exclusive use of the tenants and visitors to the Non-Profit Social Services Agency Replacement Space); and
- c) Residential visitors.

11.3.2. Non-Residential Parking shall include:

- a) No less than 50% Public Parking spaces, which spaces shall be designated by the owner/operator exclusively for short-term parking (e.g., drop-off/pick-up or hourly) by the general public; and
- b) No more than 50% Assignable Parking spaces, which spaces:
 - may be designated, sold, leased, reserved, signed, or otherwise assigned by the owner/operator for the exclusive use of employees or specific persons or businesses; and
 - shall include 23 spaces secured by legal agreement registered on title to the lot for the exclusive use of the tenants and guests of the Affordable Non-Profit Social Service Agency Replacement Space (which spaces shall be located adjacent to the Replacement Space’s public lobby entrance at the second level of the parking structure).

- 11.3.3. Public Parking spaces shall:
- a) Include at least 85% of the non-residential parking spaces located at the entry level of the lot's parking structure or as otherwise determined to the satisfaction of the Director of Transportation; and
 - b) Be available for use 365 days per year for a daily duration equal to or greater than the operating hours of transit services within 400 m (5-minute walk) of the lot, businesses located on the lot, or as otherwise determined by the City.
- 11.3.4. Visitors to the subject development's market housing tenants, Affordable Rental Housing Building tenants, and Non-Profit Social Service uses shall have shared use of the Public Parking on the same terms as members of the general public.
- 11.3.5. Non-Residential Parking shall not include tandem parking.
- 11.3.6. Non-Residential Parking (both Public Parking and Assignable Parking) must include a proportional number of handicapped parking spaces and small car parking spaces in compliance with the Zoning Bylaw or as otherwise determined to the satisfaction of the Director of Transportation.
- 11.3.7. "No development" shall be permitted on the lot, restricting Development Permit* issuance for a building on the lot, in whole or in part, unless the permit provides for the required Non-Residential (Public and Assignable) Parking and related features to the satisfaction of the City.
- 11.3.8. No Building Permit* shall be issued for a building on the lot, in whole or in part (excluding parking intended as an ancillary use to non-parking uses), unless the permit provides for the required Non-Residential (Public and Assignable) Parking and a letter of confirmation is submitted by the architect assuring that the facilities satisfy the City's objectives.
- 11.3.9. "No occupancy" of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.
- 11.4. Non-Residential Tenant Cycling Facilities: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, for the purpose of requiring that the developer/owner provides, installs, and maintains cycling facilities for the exclusive use of the development's non-residential tenants (including Non-Profit Social Service Replacement Space tenants), to the satisfaction of the City as determined via the Development Permit* review and approval processes. More specifically:
- 11.4.1. The developer/owner shall, at its sole cost, design, install, and maintain cycling facilities on the lot for the shared use of the development's non-residential tenants (including Non-Profit Social Service use tenants), including:
- a) End-of-trip cycling facilities in the form of a handicapped-accessible suite of rooms designed to accommodate use by four or more people (of the same or different genders) at one time, as determined to the City's satisfaction through the Development Permit* review and approval process, including at least two (2) shower/change cubicles with doors, two (2) change cubicles with doors, two (2) toilet cubicles with doors, two (2) wash basins, and a common change room with a bench(s), grooming station (i.e. mirror, counter, and electrical outlets), and lockers;
 - b) A maintenance facility in the form of a bike repair and maintenance station comprising a foot-activated pump, repair stand with integrated tools, and a bike wash; and
 - c) EV-equipped storage facilities in the form of "Class 1" bike storage spaces for the non-residential tenants of the building, as per the Zoning Bylaw, which storage must include 120V energized (duplex) outlets for the shared use of cyclists at a rate of 1 energized (duplex) outlet for each 10 bike storage spaces or portion thereof in each bike storage room (which energized outlets shall be located to facilitate shared use by bikes in the storage room);
- 11.4.2. For ease of use and security, the required cycling facilities shall be clustered together on the building's ground floor and provide for convenient and safe access to/from the office tower's elevator/stair core, unless an alternative location is approved, at the sole discretion of the Director of Transportation, through the Development Permit* review and approval processes;

- 11.4.3. “No development” shall be permitted on the lot, restricting Development Permit* issuance for any building on the lot, in whole or in part, unless the permit provides for the required cycling facilities to the satisfaction of the City;
- 11.4.4. No Building Permit* shall be issued for a building on the lot, in whole or in part (excluding parking intended as an ancillary use to non-parking uses), unless the permit provides for the required cycling facilities to the satisfaction of the City and a letter of confirmation is submitted by the architect assuring that the design of the facilities satisfies all applicable City’s requirements; and
- 11.4.5. “No occupancy” of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.
- 11.5. Commercial Tenant Transit Pass Program: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, for the purpose of securing the developer/owner’s commitment towards implementing, at the developer/owner’s sole cost, a coordinated strategy providing transit passes for commercial (e.g., office and retail) tenants (valued at \$40,000). “No occupancy” of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.
- 11.6. Car-Share Measures: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, for the purpose of securing the developer/owner’s commitment towards implementing, at the developer/owner’s sole cost, a car-share strategy comprised of designated car-share parking spaces, car-share vehicles, and contractual arrangements with a car-share operator, all to the satisfaction of the City.
- 11.6.1. The car-share parking facility shall provide for the following:
- a) Two (2) car-share parking spaces located together on the ground floor of the building where they will be secure, universally-accessible, and provide for safe and convenient 24/7 public pedestrian and vehicle access, as determined to the City’s satisfaction;
 - b) Operating electric vehicle (EV) quick-charge (240 V) charging stations for the exclusive use of and simultaneous charging of the car-share vehicles parked in the required car-share spaces; and
 - c) Pedestrian and vehicle access, signage, lighting, and other features necessary to the operation of the car-share facility and vehicles as determined to the satisfaction of the City.
- 11.6.2. The required car-share spaces shall be provided by the developer/owner in addition to that parking provided to satisfy Zoning Bylaw parking requirements with respect to residential, commercial (e.g., retail and office), and Non-Profit Social Service Replacement Space on the lot.
- 11.6.3. Users of the car-share spaces shall not be subject to parking fees or EV charging fees, except as otherwise determined at the sole discretion of the City.
- 11.6.4. The developer/owner shall, to the City’s satisfaction, enter into a contract with a car-share operator for the operation of the car-share parking facility for a minimum term of three (3) years, which contract shall require, among other things, that:
- a) The developer/owner provides two (2) car-share cars at no cost to the operator;
 - b) The car-share cars shall be electric vehicles, unless otherwise determined to the satisfaction of the car-share operator and the City; and
 - c) The required car-share parking facility and vehicles will be 100% available for use upon the required occupancy of the car-share parking facility as set out in a City-approved Occupancy Staging Plan.

- 11.6.5. “No development” shall be permitted on the subject site, restricting Development Permit* issuance for a building on the subject site, in whole or in part, unless the developer, to the City’s satisfaction:
- a) Designs the subject site to provide for the required car-share parking facility to the City’s satisfaction;
 - b) Secures the car-share parking facility via a statutory right-of-way(s) and easement(s) registered on title and/or other legal agreements, as determined to the City’s satisfaction;
 - c) Provides a Letter of Credit (LOC) to the City to secure the developer’s commitment to the provision of two (2) car-share vehicles, the value of which shall be the estimated retail value of the two (2) car-share cars at the time of purchase or as otherwise determined to the satisfaction of the Director of Transportation and Director of Development; and
 - d) Registers legal agreement(s) on title requiring that, unless otherwise agreed to in advance by the City, in the event that the car-share parking facility is not operated for car-share purposes as intended via the subject rezoning application (e.g., the operator’s contract is terminated or expires), control of the car-share facility shall be transferred to the City, at no cost to the City, and the City at its sole discretion, without penalty or cost, shall determine how the facility shall be used going forward.
- 11.6.6. No Building Permit* shall be issued for a building on the subject site, in whole or in part (excluding parking intended as an ancillary use to non-parking uses), until the developer provides for the required car-share parking facility to the City’s satisfaction and a letter of confirmation is submitted by the architect assuring that the design of the facility satisfies all applicable City’s requirements.
- 11.6.7. “No occupancy” of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.

12. Residential Requirements:

- 12.1. Affordable Rental Housing Building: The City’s acceptance of the developer/owner’s offer to voluntarily contribute affordable low-end-of-market-rental (LEMR) housing units, constructed to a turnkey level of finish on the subject site at the sole cost of the developer, the terms of which voluntary contribution shall include, but will not be limited to, the registration of the City’s standard Housing Agreement and Covenant on title to secure the dwelling units. The form of the Housing Agreement and Covenant shall be agreed to by the developer and the City prior to final adoption of the subject rezoning application; after which time, only the Housing Covenant may be amended or replaced and any such changes will only be permitted for the purpose of accurately reflecting the specifics of the Development Permit* for the subject site and other non-materials changes resulting thereof and made necessary by the Development Permit* approval requirements, as determined to the satisfaction of the Director of Development and Director of Community Social Development. The terms of the Housing Agreement and Covenant shall indicate that they apply in perpetuity and provide for, but will not be limited to, the requirements set out in the Affordable Rental Housing Building Terms of Reference (**Schedule C**). “No occupancy” of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.
- 12.2. Market Resident Cycling Facilities: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, for the purpose of requiring that the developer/owner provides, installs, and maintains bike maintenance facilities and “Class 1” bike storage on-site for the use of the occupants of the subject development’s market residential units (i.e. separate from that provided for Affordable Rental Housing Building occupants), which measures shall generally be clustered together adjacent to each of the market residential housing’s 3 elevator/stair cores, as determined to the satisfaction of the City through the Development Permit* review and approval processes. More specifically:

- 12.2.1. The developer/owner shall, at its sole cost, design, install, and maintain cycling facilities on the lot for the shared use of the development's market residential tenants (i.e. not shared with the Affordable Rental Housing Building occupants), including:
 - a) Bike repair and maintenance facilities, at a rate of 1 per elevator/stair core (i.e. 3 in total), each of which shall comprise a foot-activated pump, repair stand with integrated tools, and a bike wash; and
 - b) EV-equipped storage facilities in the form of "Class 1" bike storage spaces for the market residential tenants of the building (at a rate of 1.7 bike spaces/unit, including 10% over-size lockers for family bike storage, bike trailers, electric assist vehicles, and similar items), which bike storage must include 120V energized (duplex) outlets for the shared use of cyclists at a rate of 1 energized (duplex) outlet for each 10 bike storage spaces or portion thereof in each bike storage room (which outlets shall be located to facilitate shared use by bikes in the room).
- 12.2.2. "No development" shall be permitted on the lot, restricting Development Permit* issuance for any building on the lot, in whole or in part, unless the permit provides for the required cycling facilities to the satisfaction of the City;
- 12.2.3. No Building Permit* shall be issued for a building on the lot, in whole or in part (excluding parking intended as an ancillary use to non-parking uses), unless the permit provides for the required cycling facilities to the satisfaction of the City and a letter of confirmation is submitted by the architect assuring that the design of the facilities satisfies all applicable City's requirements; and
- 12.2.4. "No occupancy" of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.

12.3. Residential Visitor Parking: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, for the purpose of requiring that the developer/owner provides, installs (including appropriate signage), and maintains eight (8) designated parking spaces for the use of visitors to the units/tenants of the development's market housing and Affordable Rental Housing Building on the basis of:

- 12.3.1. 2 spaces for the exclusive use of each market residential tower (i.e. 6 in total); and
- 12.3.2. 2 spaces for the exclusive use of the Affordable Rental Housing Building.

In addition, as indicated with respect to the required "Commercial Parking" covenant, visitors to the subject development's market housing and Affordable Rental Housing Building units/tenants shall have shared use of the Public Parking on the same terms as members of the general public.

Note: Compliance with this section and the "Non-Residential Parking" covenant shall be understood to fully satisfy the subject development's residential visitor parking requirements with respect to the Zoning Bylaw.

13. Non-Profit Social Service Agency Accommodation Measures: The City's acceptance of the developer's offer to voluntarily contribute affordable community amenity space for operation by non-profit social service agencies, together with tenant relocation assistance, as determined to the satisfaction of the City. The terms of the developer's contribution shall include, but shall not be limited to, the developer's design and construction (to a shell level of finish, at the developer's sole cost) of at least 425.7 m² (4,582.0 ft²) of gross leasable space on the east side of subject site (co-located with the Affordable Rental Housing Building), together with related uses/spaces (e.g., lobby, circulation, parking), to the satisfaction of the City. The form of the legal agreements securing the developer's commitment shall be agreed to by the developer and the City prior to final adoption of the subject rezoning application; after which time, the agreement(s) may only be amended or replaced for the purpose of accurately reflecting the specifics of the Development Permit* for the subject site and other non-materials changes resulting thereof and made necessary by the Development Permit* approval requirements, as determined to the satisfaction of the Director of Development and Director of Community Social Development. The terms of the legal agreements shall indicate that they apply in perpetuity and provide for, but will not be limited to, the requirements set out in the Non-Profit Social Service Agency Accommodation Measures Terms of Reference. "No occupancy" of the

development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.

Note: For the purposes of calculating maximum permitted floor area under the Zoning Bylaw, the non-profit social service agency tenant units, circulation intended for the exclusive use of the non-profit social service agency tenants and their visitors, and any lobby and/or vertical circulation shared by the non-profit social service agency tenants and the occupants of the Affordable Rental Housing Building shall be treated as “community amenity space” to a maximum of 0.1 FAR, as permitted under the High Density Mixed Use and Affordable Rental Housing (ZMU46) zone.

14. Driveway Crossings: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, to ensure that all vehicle access to the subject site shall be from the new City Road along the east side of the subject site (i.e. not from Minoru Boulevard).
15. Tandem Parking: Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, to ensure that:
 - 15.1. Resident Parking: Where two parking spaces are provided in a tandem arrangement for the use of resident parking (excluding Affordable Rental Housing Building parking), as per the Zoning Bylaw, both parking spaces must be assigned to the same dwelling unit; and
 - 15.2. Elsewhere: Tandem parking shall be prohibited for all other purposes including, but not limited to, parking for the Affordable Rental Housing Building occupants and Non-Residential (Public and Assignable) Parking.
16. District Energy Utility (DEU): Registration of a restrictive covenant and/or alternative legal agreement(s), to the satisfaction of the City, securing the owner's commitment to connect to District Energy Utility (DEU), which covenant and/or legal agreement(s) will include, at minimum, the following terms and conditions:
 - 16.1. No Building Permit* will be issued for a building on the subject site unless the building is designed with the capability to connect to and be serviced by a DEU and the owner has provided an energy modelling report satisfactory to the Director of Engineering;
 - 16.2. If a low carbon energy plant district energy utility (LCDEU) service area bylaw which applies to the site has been adopted by Council prior to the issuance of the development permit for the subject site, no Building Permit* will be issued for a building on the subject site unless:
 - 16.2.1. The owner designs, to the satisfaction of the City and the City’s DEU service provider, Lulu Island Energy Company Ltd. (LIEC), a low carbon energy plant to be constructed and installed on the site, with the capability to connect to and be serviced by a DEU; and
 - 16.2.2. The owner enters into an asset transfer agreement with the City and/or the City’s DEU service provider on terms and conditions satisfactory to the City to transfer ownership of the low carbon energy plant to the City or as directed by the City, including to the City’s DEU service provider, at no cost to the City or City’s DEU service provider, LIEC, on a date prior to final building inspection permitting occupancy of the first building on the site. Such restrictive covenant and/or asset transfer agreement shall include a warranty from the owner with respect to the on-site DEU works (including the low carbon energy plant) and the provision by the owner of both warranty and deficiency security, all on terms and conditions satisfactory to the City;
 - 16.3. The owner agrees that the building(s) will connect to a DEU when a DEU is in operation, unless otherwise directed by the City and the City’s DEU service provider, LIEC.
 - 16.4. If a DEU is available for connection and the City has directed the owner to connect, no final building inspection permitting occupancy of a building will be granted unless, and until:
 - 16.4.1. The building is connected to the DEU;
 - 16.4.2. The owner enters into a Service Provider Agreement for that building with the City and/or the City’s DEU service provider, LIEC, executed prior to depositing any Strata Plan with LTO and on terms and conditions satisfactory to the City; and

- 16.4.3. Prior to subdivision (including Air Space parcel subdivision and Strata Plan filing), the owner grants or acquires, and registers, all Statutory Right-of-Way(s) and/or easements necessary for supplying the DEU services to the building.
- 16.5. If a DEU is not available for connection, but a LCDEU service area bylaw which applies to the site has been adopted by Council prior to the issuance of the development permit for the subject site, no final building inspection permitting occupancy of a building will be granted unless and until:
 - 16.5.1. The City receives a professional engineer's certificate stating that the building has the capability to connect to and be serviced by a DEU;
 - 16.5.2. The building is connected to a low carbon energy plant supplied and installed by the owner, at the owner's sole cost, to provide heating, cooling and domestic hot water heating to the building(s), which energy plant will be designed, constructed and installed on the subject site to the satisfaction of the City and the City's service provider, LIEC;
 - 16.5.3. The owner transfers ownership of the low carbon energy plant on the subject site, to the City or as directed by the City, including to the City's DEU service provider, LIEC, at no cost to the City or City's DEU service provider, on terms and conditions satisfactory to the City;
 - 16.5.4. Prior to depositing a Strata Plan, the owner enters into a Service Provider Agreement for the building with the City and/or the City's DEU service provider, LIEC, on terms and conditions satisfactory to the City; and
 - 16.5.5. Prior to subdivision (including Air Space parcel subdivision and Strata Plan filing), the owner grants or acquires, and registers, all additional Covenants, Statutory Right-of-Way(s) and/or easements necessary for supplying the services to the building and the operation of the low carbon energy plant by the City and/or the City's DEU service provider, LIEC.
- 16.6. If a DEU is not available for connection, and a LCDEU service area bylaw which applies to the site has not been adopted by Council prior to the issuance of the development permit for the subject site, no final building inspection permitting occupancy of a building will be granted until:
 - 16.6.1. The City receives a professional engineer's certificate stating that the building has the capability to connect to and be serviced by a DEU; and
 - 16.6.2. The owner grants or acquires any additional Statutory Right-of-Way(s) and/or easements necessary for supplying DEU services to the building, registered prior to subdivision (including Air Space parcel subdivision and strata plan filing).
17. **Occupancy Staging Agreement:** Registration on title of a restrictive covenant and/or alternative legal agreement, to the satisfaction of the City, securing that should the developer/owner request that occupancy of the building proceeds in stages (e.g., tower-by-tower), that "no occupancy" shall be permitted of any portion of the building, in whole or in part (excluding parking intended as an ancillary use to non-parking uses), unless the developer/owner satisfies the following:
 - 17.1. Prior to first occupancy of the building on the subject site, in whole or in part (exclusive of any provisional occupancy permitted exclusively for construction and/or tenant improvement purposes), the developer/owner shall:
 - 17.1.1. Complete the prior-to-first-occupancy requirements to the satisfaction of the Director of Development, Director of Transportation, Director, Parks Services, and Director of Engineering including:
 - a) All District Energy Utility requirements;
 - b) All Affordable Non-Profit Social Service Agency Replacement Space ("Replacement Space") requirements including, but not limited to tenant improvements and parking (i.e. 23 Assignable Parking spaces secured by legal agreement for the exclusive use of the tenants/guests of the Affordable Non-Profit Social Service Agency Replacement Space); and

- c) All engineering, transportation, and parks works subject to a Servicing Agreement* including, but not limited to, the Minoru Corner Plaza Expansion (SRW). (Note: For off-site works and improvements within SRW areas, completion to the City's satisfaction shall mean, among other things, that the works have received a Certificate of Completion, final Building Permit* inspection granting occupancy, or alternate City approval(s), as determined to be applicable at the sole discretion of the City.)
- 17.1.2. Submit a letter prepared by the architect confirming that all prior-to-first-occupancy requirements are complete.
- 17.2. Prior to occupancy of any commercial uses on the subject site, in whole or in part (exclusive of any provisional occupancy permitted exclusively for construction and/or tenant improvement purposes), the developer/owner shall complete the following to the satisfaction of the Director of Development and Director of Transportation and receive, as applicable, a Certificate of Completion and/or final Building Permit* inspection granting occupancy for those features:
 - 17.2.1. 100% of the prior-to-first-occupancy requirements;
 - 17.2.2. 100% of the Public Parking portion of the development's required Non-Residential Parking spaces;
 - 17.2.3. 100% of the Non-Residential Tenant Cycling Facilities;
 - 17.2.4. 100% of the Car-Share Measures, including the developer/owner's required contract with a car-share operator;
 - 17.2.5. A proportional share of the Assignable Parking portion of the development's required Non-Residential Parking spaces;
 - 17.2.6. A proportional share of EV charging infrastructure for vehicles and bikes, loading and waste management facilities, and other features as required to satisfy the Zoning Bylaw and Development Permit*;
 - 17.2.7. Implementation, to the City's satisfaction, of the required Commercial Tenant Transit Pass Program (as secured by legal agreement registered on title to the lot); and
 - 17.2.8. Submission of a letter prepared by the architect confirming that all applicable prior-to-commercial occupancy-requirements are complete.
- 17.3. Prior to occupancy of any residential uses on the subject site, in whole or in part (exclusive of any provisional occupancy permitted exclusively for construction activities and/or tenant improvement purposes), the developer/owner shall complete the following to the satisfaction of the Director of Development, Director of Transportation, and Manager of Community Social Development and receive as applicable, a Certificate of Completion and/or final Building Permit* inspection granting occupancy for those features:
 - 17.3.1. 100% of the prior-to-first-occupancy requirements;
 - 17.3.2. 100% of the Affordable Rental Housing Building and all related features/requirements (e.g., Basic Universal Housing units, parking, cycling facilities, and related EV charging infrastructure, indoor and outdoor amenity spaces, and waste management facilities), together with implementation, to the City's satisfaction, of the required Affordable Rental Housing Building Transit Pass Program (as secured by legal agreement registered on title to the lot);
 - 17.3.3. 100% of the Public Parking portion of the development's required Non-Residential Parking spaces;
 - 17.3.4. A proportional share of residential parking, residential cycling facilities, and related EV charging infrastructure, indoor and outdoor amenity spaces, loading and waste management facilities, and other features as required to satisfy the Zoning Bylaw and Development Permit*;
 - 17.3.5. Submission of a letter prepared by the architect confirming that all applicable prior-to- residential occupancy-requirements are complete.

17.4. Related Permits Holds:

Note: For clarity, the following restrictions are NOT intended to apply to tenant improvements undertaken with respect to the existing building or construction activity required with respect to tenant improvements to commercial units in the subject development, as determined at the City's discretion.

17.4.1. "No development" shall be permitted on the subject site, restricting Development Permit* issuance for any building on the subject site, unless the permit includes the entirety of the subject development.

17.4.2. No Building Permit* shall be issued for a building on the subject site unless the permit, which may be issued in parts (e.g., partial permit issuance for foundation works), includes the entirety of the subject development and a letter of confirmation is submitted by the architect assuring that the design of the building and related features satisfies all applicable City's requirements.

17.4.3. "No occupancy" shall be permitted of a building on the lot, in whole or in part (exclusive of any provisional occupancy permitted exclusively for construction activities and/or tenant improvement purposes), unless the building and related features are completed in accordance with the City-approved Occupancy Staging Plan (which may be amended subject to an approved Development Permit) to the satisfaction of the City and a letter of confirmation is submitted by the architect assuring that the building and related features satisfy all applicable City's requirements.

18. Development Permit*: The submission and processing of a Development Permit* for the entirety of the subject development to a level deemed acceptable by the Director of Development.

19. Servicing Agreement*: Enter into a Servicing Agreement* for the design and construction, at the developer's sole cost, of full upgrades across the subject site's frontages, together with various engineering, transportation, and parks works, to the satisfaction of the City. Prior to rezoning adoption, all Servicing Agreement* works must be secured via a Letter(s) of Credit, as determined by the City. All works shall be completed prior to first occupancy of the building on the lot, in whole or in part (excluding parking intended as an ancillary use to non-parking uses on the site), unless otherwise permitted by a City-approved Occupancy Staging Plan.

Servicing Agreement* works shall include, but may not be limited to, the following:

19.1. Engineering Servicing Agreement* Requirements: The developer shall be responsible for the design and construction of water, storm sewer, sanitary sewer, frontage improvements, and general engineering works to the satisfaction of the Director of Engineering, which works shall include, but may not be limited to, those set out in **Schedule E**. (Development Cost Charge (DCC) credits may apply.)

19.2. Transportation Servicing Agreement* Requirements: The developer shall be responsible for the design and construction of road and related improvements, to the satisfaction of the Director of Transportation, which works shall include, but may not be limited to, those set out in **Schedule F**, **Schedule G**, and **Schedule H**. (Development Cost Charge (DCC) credits may apply.)

19.3. Parks Servicing Agreement* Requirements: The developer shall be responsible for the design and construction of park and related improvements, to the satisfaction of the Director, Parks (Services) and Director of Development, which works shall include, but may not be limited to, those set out in **Schedule I**. (Development Cost Charge (DCC) credits shall not apply.)

Prior to a Development Permit* being forwarded to the Development Permit Panel for consideration, among other things the developer/owner must complete the following requirements:

1. Submission of a letter prepared by a BCLS registered surveyor confirming that information submitted prior to Council consideration of the rezoning application remains up to date with respect to building height compliance with Transport Canada regulations.
2. Submission of an acoustical and mechanical report and recommendations prepared by an appropriate registered professional, which demonstrates that the interior noise levels and noise mitigation standards comply with the City's Official Community Plan and Noise Bylaw requirements. The standard required for air conditioning systems and

their alternatives (e.g. ground source heat pumps, heat exchangers and acoustic ducting) is the ASHRAE 55-2004 “Thermal Environmental Conditions for Human Occupancy” standard and subsequent updates as they may occur. Maximum interior noise levels (decibels) within the dwelling units must achieve CMHC standards follows:

Portions of Dwelling Units	Noise Levels (decibels)
Bedrooms	35 decibels
Living, dining, recreation rooms	40 decibels
Kitchen, bathrooms, hallways, and utility rooms	45 decibels

3. Richmond Fire Department (RFD) review, which may include, but may not be limited to:
 - Addressing (e.g., visible from the street, contrasting colours);
 - Fire hydrant measurements (e.g., principle entrance, RFD connection);
 - Fire panel (e.g., operation sequence, stages, elevator operation);
 - RFD connection (e.g., inter-connected, connections at amenities, podium roof, other accessible rooftops and open spaces);
 - Fire ratings (e.g., podium);
 - RFD access route measurements (e.g., widths, lengths, dead ends);
 - Smoke control measures (e.g., vestibules, stairwells, kitchens);
 - Tank permits (e.g., emergency generator);
 - Emergency generator (e.g., power) and the spaces serviced (e.g., firefighter elevator, annunciator panel, emergency lights);
 - Designated firefighter elevator;
 - Firefighter voice communication;
 - Fire extinguisher installation areas (e.g., measurements); and
 - Alarm-activated front door release.

Prior to Building Permit issuance, among other things the developer/owner must complete the following requirements:

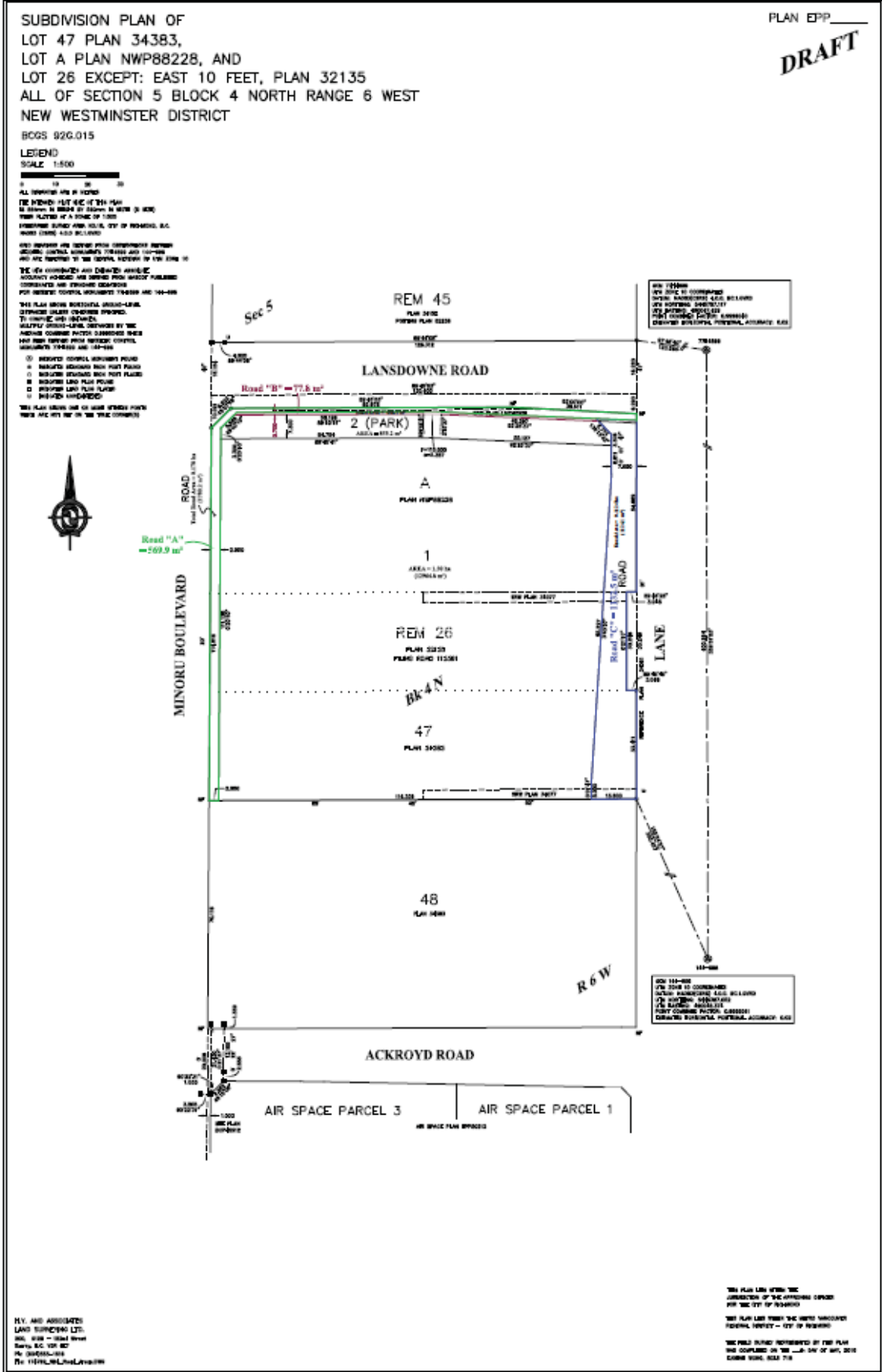
1. Submission of a Construction Parking and Traffic Management Plan to the Transportation Department. Management Plan shall include location for parking for services, deliveries, workers, loading, application for any lane closures, and proper construction traffic controls as per Traffic Control Manual for works on Roadways (by Ministry of Transportation) and MMCD Traffic Regulation Section 01570.
2. Incorporation of accessibility measures in Building Permit* plans in compliance with the approved rezoning and/or Development Permit*.
3. Receipt of a Building Permit* for any construction hoarding. If construction hoarding is required to temporarily occupy a public street, the air space above a public street, or any part thereof, additional City approvals and associated fees may be required as part of the Building Permit*. For additional information, contact the Building Approvals Department at 604-276-4285.

Note:

- The asterisk (*) indicates that a separate application is required.
- Where the Director of Development deems appropriate, the preceding agreements are to be drawn not only as personal covenants of the property owner but also as covenants pursuant to Section 219 of the Land Title Act.
All agreements to be registered in the Land Title Office shall have priority over all such liens, charges and encumbrances as is considered advisable by the Director of Development. All agreements to be registered in the Land Title Office shall, unless the Director of Development determines otherwise, be fully registered in the Land Title Office prior to enactment of the appropriate bylaw.
The preceding agreements shall provide security to the City including indemnities, warranties, equitable/rent charges, letters of credit and withholding permits, as deemed necessary or advisable by the Director of Development. All agreements shall be in a form and content satisfactory to the Director of Development.
- Additional legal agreements, as determined via the subject development's Servicing Agreement(s) and/or Development Permit(s), and/or Building Permit(s) to the satisfaction of the Director of Engineering may be required including, but not limited to, site investigation, testing, monitoring, site preparation, de-watering, drilling, underpinning, anchoring, shoring, piling, pre-loading, ground densification or other activities that may result in settlement, displacement, subsidence, damage or nuisance to City and private utility infrastructure.

- Applicants for all City Permits are required to comply at all times with the conditions of the Provincial *Wildlife Act* and Federal *Migratory Birds Convention Act*, which contain prohibitions on the removal or disturbance of both birds and their nests. Issuance of Municipal permits does not give an individual authority to contravene these legislations. The City of Richmond recommends that where significant trees or vegetation exists on site, the services of a Qualified Environmental Professional (QEP) be secured to perform a survey and ensure that development activities are in compliance with all relevant legislation.

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SCHEDULE B
Preliminary Statutory Right-of-Way Plan (City-Owned Park Enhancement Area)



RZ 18-807640
Affordable Rental Housing Building
Terms of Reference

Prior to final adoption of Richmond OCP Amendment Bylaw No. 10136 and Bylaw No. 10137 and Zoning Amendment Bylaw No. 10138, the developer/owner is required to complete the following:

Affordable Rental Housing Building: The City’s acceptance of the developer/owner’s offer to voluntarily contribute affordable low-end-of-market-rental (LEMR) housing units, constructed to a turnkey level of finish on the subject site at the sole cost of the developer, the terms of which voluntary contribution shall include, but will not be limited to, the registration of the City’s standard Housing Agreement and Covenant on title to secure the dwelling units. The form of the Housing Agreement and Covenant shall be agreed to by the developer and the City prior to final adoption of the subject rezoning application; after which time, only the Housing Covenant may be amended or replaced and any such changes will only be permitted for the purpose of accurately reflecting the specifics of the Development Permit for the subject site and other non-materials changes resulting thereof and made necessary by the Development Permit* approval requirements, as determined to the satisfaction of the Director of Development and Director of Community Social Development. The terms of the Housing Agreement and Covenant shall indicate that they apply in perpetuity and provide for, but will not be limited to, the requirements set out in the Affordable Rental Housing Building Terms of Reference (Schedule C). “No occupancy” of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.*

1. **Stand-Alone Building & Not-for-Profit Operator:** The developer/owner has submitted a preliminary Memorandum of Understanding (MOU) with an experienced non-profit housing operator to demonstrate the developer/owner’s intent to engage the non-profit organization as the operator of the proposed Affordable Rental Housing Building. In light of this arrangement, the City is willing to accept clustering of the required LEMR units and the Affordable Rental Housing (0.2 FAR) Bonus units in the form of a stand-alone building, together with the clustering of other building features intended for the exclusive use of the Affordable Rental Housing Building occupants (e.g., parking), provided that the Affordable Rental Housing Building shall:
 - a) Front the new City Road along the east frontage of the subject site;
 - b) Be integrated with the development’s underground parking structure, roof deck, and related features, but function as an independent building that does not share common circulation (e.g., lobbies, hallways, elevators, and stairs) or emergency exit routes with the market residential or commercial uses on the subject site; and
 - c) Be located within an Air Space Parcel approved by the City. Legal agreements shall be registered on title, to the satisfaction of the City, to ensure that the occupants of the Affordable Rental Housing Building, non-profit operator, guests, and designates have adequate access to and enjoyment of facilities intended for their:
 - i. exclusive use (e.g., parking, “Class 1” bike storage, designated indoor amenity space, and waste management facilities);
 - ii. shared use with the market residential occupants (e.g., outdoor amenity space and designated indoor amenity space); and
 - iii. shared use with both market residential and commercial occupants (e.g., driveways and loading), as determined to the City’s satisfaction through the Development Permit*. Use of any such exclusive or shared facilities shall result in no additional charge to the occupants of the affordable housing units (i.e. no monthly rents or other user fees shall apply for casual, shared, or other use). In the event that any exclusive or shared facilities are not part of the Air Space Parcel (e.g., parking) and the non-profit operator is subject to additional charges for the use of such facilities, any such charges may not exceed the rates charges to other users on the lot for access to/use of similar uses and spaces, as determined to the City’s satisfaction.

2. **Minimum Required Floor Area:** The required minimum floor area of the Affordable Rental Housing Building, exclusive of parking, bike storage, indoor amenity space, and uses not intended for the exclusive use of the occupants of the Affordable Rental Housing Building, shall be ~~at least 69,217.0 m² (69,217.0 ft²)~~ **GP-298** 30.5 m² (69,217.0 ft²) (exclusive of standard Zoning

Bylaw floor area exemptions) or as otherwise determined to the satisfaction of the Director of Development and Director of Community Social Development and set out in an approved Development Permit*, including:

- a) At least 2,774.1 m² (29,860.3 ft²) or 10% of the maximum residential floor area permitted on the subject site (exclusive of market rental density bonus floor area permitted under the ZMU46 zone), whichever is greater, in the form of habitable affordable housing dwelling unit floor area;
- b) At least 3,006.9 m² (32,365.6 ft²) in the form of habitable affordable housing dwelling unit floor area and ancillary spaces (as per the Affordable Rental Housing (0.2 FAR) Bonus provision under the ZMU46 zone);
- c) Approximately 649.5 m² (6,991.1 ft²) of additional floor area, including:
 - i. Circulation (e.g., lobbies, hallways, elevators, and stairs) intended for the exclusive use of the affordable housing occupants; and
 - ii. All walls, mechanical, electrical, and similar spaces required to facilitate the developer/owner’s provision of the proposed Affordable Rental Housing Building on the lot.

3. **Residential Amenity Space:** In addition to the minimum floor area of the Affordable Rental Housing Building described above, the developer/owner shall construct residential amenity space for the unrestricted use and enjoyment of the occupants of the Affordable Rental Housing Building, including:

- a) At least 110.9 m² (1,194.0 ft²) of indoor amenity space within the Affordable Rental Housing Building for the exclusive use of the building’s occupants, including at least 18.6 m² (200.0 ft²) as administrative space for the use of the non-profit housing operator;
- b) At least 464.5 m² (5,000.0 ft²) of indoor amenity space at the podium rooftop level of the development for the shared use of the occupants of the Affordable Rental Housing Building and market residential units; and
- c) Outdoor amenity space for the shared use of the occupants of the Affordable Rental Housing Building and market residential units, the size and design of which shall comply with the Official Community Plan, as determined to the satisfaction of the Director of Development and Director of Community Social Development and set out in an approved Development Permit*.

4. **Housing Requirements:** As required under the ZMU46 zone, the Affordable Rental Housing Building shall contain a minimum of 88 Residential Rental Tenure dwelling units, all of which shall be affordable low-end-of-market-rental (LEMR) housing units, as determined to the satisfaction of the City through an approved Development Permit*.

- a) The developer shall, as generally indicated in the table below:
 - i. Ensure that the types, sizes, rental rates, and occupant income restrictions for the affordable housing units are in accordance with the City’s Affordable Housing Strategy and guidelines for low-end-of-market-rental (LEMR) housing, unless otherwise determined to the satisfaction of the Director, Community Social Development through an approved Development Permit*; and
 - ii. Achieve the Project Targets for units mix and Basic Universal Housing (BUH) standard compliance or as otherwise determined to the satisfaction of the Director, Community Social Development through an approved Development Permit*.

	Minimum Unit Area	Max. Monthly LEMR Unit Rent***	Total Maximum Household Income**	Project Unit Targets		
				Unit Mix**		BUH Units*
Studio	37 m ² (400 ft ²)	\$811	\$34,650 or less	17% (15 units)	47% (41 units)	100%
1-Bedroom	50 m ² (535 ft ²)	\$975	\$38,250 or less	30% (26 units)		100%
2-Bedroom	69 m ² (741 ft ²)	\$1,218	\$46,800 or less	47% (41 units)	53% (47 units)	100%
3-Bedroom	91 m ² (980 ft ²)	\$1,480	\$58,050 or less	6% (6 units)		100%
TOTAL	Varies	Varies	Varies	100% (min. 88 units)		100%

* BUH units mean those units that comply with the Zoning Bylaw’s Basic Universal Housing standards.

** The unit mix will be confirmed to the satisfaction of the City through the Development Permit* process. The recommended unit mix is indicated in the table; however, based on approved design, which may take into account non-profit housing operator input, the unit mix may be varied provided that at least 50% of total affordable housing units are some combination of 2- and 3-bedroom units.

*** Rate shall be adjusted periodically as provided for under adopted City policy.

- b) The developer/owner shall provide for full and unlimited use of the following features by the Affordable Rental Housing Building occupants at no charge to those occupants (i.e. no monthly rents or other fees shall apply for the casual, shared, or exclusive use of the features), which features may be secured with legal agreement(s) registered on title prior to Development Permit* issuance or as otherwise determined to the satisfaction of the City:
- i. All designated indoor and outdoor amenity spaces, intended for shared use by market residential and Affordable Rental Housing Building occupants or for exclusive use by the Affordable Rental Housing Building occupants, as determined to the City's satisfaction through an approved Development Permit*; and
 - ii. On-site parking, "Class 1" bike storage, and related electric vehicle (EV) charging stations provided for the use of the Affordable Rental Housing Building occupants in compliance with an approved Development Permit*. (For clarity, those occupants of the affordable units who utilize the vehicle EV charging stations may be required to pay for the cost of their utility usage, but not for their use of the EV charging equipment or associated parking.)
5. **Transportation Requirements:** On-site parking, "Class 1" bike storage, and related electric vehicle (EV) charging stations shall be provided for the use of Affordable Rental Housing Building occupants as per the OCP, Zoning Bylaw, and an approved Development Permit*. At least two parking spaces shall be provided for the exclusive use of visitors to the Affordable Rental Housing Building (as per the rate set out in the ZMU46 zone). In addition, the developer/owner shall implement Transportation Demand Management (TDM) measures, as determined to the satisfaction of the City. (As provided for under the ZMU46 zone, implementation of the required TDM measures shall provide for the parking rates applicable to the Affordable Rental Housing Building to be reduced by up to 25%.) The required TDM measures shall include:
- a) **Cycling Facilities:** The developer/owner's provision of bike-related measures for the exclusive use of the occupants of the Affordable Rental Housing Building, which measures shall be clustered together adjacent to the Affordable Rental Housing Building's elevator/stair core, as determined to the satisfaction of the City through the Development Permit* review and approval processes, including:
 - i. EV-equipped "Class 1" bike storage spaces at a rate of 1.7 bikes/dwelling unit, as required under the ZMU46 zone (i.e. increased from the standard Zoning Bylaw rate of 1.25 bikes/unit), which bike storage must include 120V energized (duplex) outlets for the shared use of cyclists at a rate of 1 energized (duplex) outlet for each 10 bike storage spaces or portion thereof in each bike storage room (which energized outlets shall be located to facilitate shared use by bikes in the storage room);
 - ii. 10% of the required "Class 1" bike storage in the form of over-size lockers for family bike storage (e.g., bike trailers), electric-assist vehicles (e.g., mopeds), and similar equipment/uses, as required under the ZMU46 zone; and
 - iii. A bike repair and maintenance facility comprised of a foot-activated pump, repair stand with integrated tools, and a bike wash.
 - b) **Transit Pass Program:** Registration of a legal agreement on title requiring the developer/owner's implementation, at the developer/owner's sole cost, of a coordinated strategy providing for monthly transit (2-zone) passes for 2 years for 100% of the Affordable Rental Housing Building units, to the satisfaction of the Director of Transportation. It shall be the responsibility of the developer/owner to ensure that the transit pass program and how to access it is clearly conveyed to the Affordable Rental Housing Building occupants (e.g., through tenancy agreements). Prior to adoption of the rezoning bylaw, the developer/owner shall submit a letter of credit to the City, based on 100% of the estimated value of the transit pass program. If the transit pass program is not fully subscribed within two years (such that the value secured by the letter of credit has not been fully utilized by the building occupants), the program shall be extended by one year. If the transit pass program is not fully subscribed at the end of the 1-year extension period, the remaining value of the program shall be transferred to the City of Richmond as a voluntary cash-in-lieu contribution towards alternative transportation demand management measures, as determined at the City's sole discretion.

6. **Level of Finish:**

- a) The Affordable Rental Housing Building, related uses (e.g., parking, garbage/recycling, indoor and outdoor amenities), and associated spaces shall be completed, to a turnkey level of finish, at the sole cost of the developer, to the satisfaction of the Director of Development and Director, Community Social Development.
- b) The Affordable Rental Housing Building (including all dwelling units, common areas, and related uses and spaces) and areas intended for the shared use of the occupants of the Affordable Rental Housing Building and market residential units (e.g., indoor and outdoor amenity spaces) shall be accessible to people with disabilities, in compliance with the BC Building Code or as otherwise determined to the satisfaction of the Director of Community Social Development and Manager of Building Approvals.
- c) The Affordable Rental Housing Building, including its common areas and dwelling units, shall be equipped with an audio/visual alarm system.

7. **Prior-to Requirements:**

- a) “No development” shall be permitted on the subject site, restricting Development Permit* issuance for a building on the site, in whole or in part, until the developer, to the City’s satisfaction:
 - i. Submits, for consideration by the City, a current memorandum of understanding with a non-profit operator demonstrating, among other things, support for the developer’s proposed Affordable Rental Housing Building design and related features;
 - ii. Designs the lot to provide for the Affordable Rental Housing Building and required ancillary spaces and uses (e.g., Basic Universal Housing units, parking, cycling facilities, and related EV charging infrastructure, indoor and outdoor amenity spaces, and waste management facilities);
 - iii. Amends or replaces the Housing Covenant to accurately reflect the specifics of the Affordable Rental Housing Building and ancillary spaces and uses as per the approved Development Permit*; and
 - iv. As required, registers additional legal agreements on title to the site to facilitate the detailed design, construction, operation, and/or management of the Affordable Rental Housing Building and/or ancillary spaces and uses (e.g., parking) as determined by the City via the Development Permit* review and approval processes.
- b) No Building Permit* shall be issued for a building on the subject site, in whole or in part (excluding parking intended as an ancillary use to non-parking uses), unless:
 - i. The developer provides for the required Affordable Rental Housing Building and ancillary spaces and uses (e.g., Basic Universal Housing units, parking, cycling facilities, and related EV charging infrastructure, indoor and outdoor amenity spaces, and waste management facilities) in the permit;
 - ii. The detailed design shall of the Affordable Rental Housing Building and all related spaces and features are satisfactory to the Director of Development and Director, Community and Social Development in their sole discretion; and
 - iii. A letter of confirmation is submitted by the architect assuring that the design of the facilities satisfies all applicable City requirements.
- c) As set out in the Occupancy Staging Plan requirements, prior to occupancy of any residential use on the subject site, in whole or in part (exclusive of any provisional occupancy permitted exclusively for construction and/or tenant improvement purposes), the developer/owner shall:
 - i. Complete the required Affordable Rental Housing Building and ancillary spaces and uses (e.g., Basic Universal Housing units, parking, cycling facilities, and related EV charging infrastructure, indoor and outdoor amenity spaces, and waste management facilities) to the satisfaction of the City; and
 - ii. Implement the required Affordable Rental Housing Building Transit Pass Program to the satisfaction of the City (as secured by legal agreement registered on title to the lot).

RZ 18-807640

Non-Profit Social Service Agency Accommodation Measures
Terms of Reference

Prior to final adoption of Richmond OCP Amendment Bylaw No. 10050 and Bylaw No. 10102 and Zoning Amendment Bylaw No. 10051, the developer/owner is required to complete the following:

Non-Profit Social Service Agency Accommodation Measures: The City’s acceptance of the developer’s offer to voluntarily contribute affordable community amenity space for operation by non-profit social service agencies, together with tenant relocation assistance, as determined to the satisfaction of the City. The terms of the developer’s contribution shall include, but shall not be limited to, the developer’s design and construction (to a shell level of finish typical of commercial/office lease industry standards, at the developer’s sole cost) of at least 425.7 m² (4,582.0 ft²) of gross leasable space on the east side of subject site (co-located with the Affordable Rental Housing Building), together with related uses/spaces (e.g., lobby, circulation, parking), to the satisfaction of the City. The form of the legal agreements securing the developer’s commitment shall be agreed to by the developer and the City prior to final adoption of the subject rezoning application; after which time, the agreement(s) may only be amended or replaced for the purpose of accurately reflecting the specifics of the Development Permit for the subject site and other non-materials changes resulting thereof and made necessary by the Development Permit* approval requirements, as determined to the satisfaction of the Director of Development and Director of Community Social Development. The terms of the legal agreements shall indicate that they apply in perpetuity and provide for, but will not be limited to, the requirements set out in the Non-Profit Social Service Agency Accommodation Measures Terms of Reference. “No occupancy” of the development shall be permitted, in whole or in part, unless the development is completed in accordance with a City-approved Occupancy Staging Plan.*

Note: For the purposes of calculating maximum permitted floor area under the Zoning Bylaw, the non-profit social service agency tenant units, circulation intended for the exclusive use of the non-profit social service agency tenants and their visitors, and any lobby and/or vertical circulation shared by the non-profit social service agency tenants and the occupants of the Affordable Rental Housing Building shall be treated as “community amenity space” to a maximum of 0.1 FAR, as permitted under the High Density Mixed Use and Affordable Rental Housing (ZMU46) zone.

A. **Intent:** To mitigate the impact of the subject development on two non-profit social service agencies currently located on the subject site through the developer/owner’s provision, at the developer/owner’s sole cost, of:

1. Affordable Non-Profit Social Service Agency Replacement Space (“Replacement Space”) on the subject site; and
2. Tenant Relocation Assistance (as described in Section C).

Prior to adoption of the Rezoning Bylaw, legal agreements must be registered on title, to the City’s satisfaction, to provide for the following Non-Profit Social Service Agency Accommodation Measures.

B. **Affordable Non-Profit Social Service Agency Replacement Space (“Replacement Space”):**

3. **Minimum Required Floor Area:** As determined to the satisfaction of the City through an approved Development Permit* application, the minimum floor area of the Affordable Non-Profit Social Service Agency Replacement Space (“Replacement Space”) shall include:
 - a) At least 425.7 m² (4,582.0 ft²) of gross leasable space in the form of non-profit social service agency tenant units capable of accommodating program spaces, administration, and ancillary spaces/uses (e.g., private washrooms);
 - b) Spaces/uses intended for shared use by the non-profit social service agency tenants and their visitors (e.g., circulation and common washrooms);
 - c) Any lobby and/or vertical circulation shared by the non-profit social service agency tenants and the occupants of the Affordable Rental Housing Building; and
 - d) Ancillary uses/spaces (e.g., parking, loading, secure bicycle storage, and waste management) required to satisfy the Official Community Plan (OCP), Zoning Bylaw, and/or other City policies, objectives, or guidelines.

4. Location: The Replacement Space shall be co-located with the Affordable Rental Housing Building on the east side of subject site, which co-located arrangement may include, but may not be limited to the following, as determined to the satisfaction of the City through an approved Development Permit* application:
- a) Above the second storey, spaces/uses secured for the exclusive use of the occupants of Affordable Rental Housing Building;
 - b) At the second storey, non-profit social service agency tenant units, together with an elevator lobby and related circulation, spaces, and uses for the exclusive use of the non-profit social service agency tenants and their visitors, the design of which shall, among other things, provide for convenient, universally-accessible, and safe public access to/from the parking structure and take into account the needs of people with mobility issues and wheelchairs with attendants;
 - c) At the ground floor, a universally accessible lobby (the design of which must take into account the needs of people with mobility issues and wheelchairs with attendants) for shared use by the occupants of the Affordable Rental Housing Building, non-profit social service agency tenants, and visitors, which lobby shall provide direct access to the fronting street and a shared elevator/stair providing for:
 - i. Above the second storey, 24/7 access for the exclusive use of the Affordable Rental Housing Building occupants and their visitors; and
 - ii. At the ground and second storeys, unrestricted public access during regular business hours and secure access for non-profit social service agency tenants and Affordable Rental Housing Building occupants outside of regular business hours; and
 - d) Within the development's parkade structure, parking, loading, waste management facilities, bike storage and end-of-trip cycling facilities, and related uses/spaces for the use of the non-profit social service agency tenants (on a shared and/or exclusive basis, as determined to the City's satisfaction through an approved Development Permit* application).
5. Parking, Loading & Waste Management Requirements: As determined to the satisfaction of the City through an approved Development Permit* application, the subject development shall include, but may not be limited to:
- a) At least 23 parking spaces for the exclusive use of the non-profit social service agency tenants (including applicable signage), which parking shall:
 - i. Comprise 23 of the development's required Assignable Parking Spaces (as per the development's Non-Residential Parking agreement);
 - ii. Be clustered together on the first parking level above the ground floor and located to provide for convenient/direct and safe public access to/from the Replacement Space's second floor lobby (the design of which must take into account people with mobility issues and wheelchairs with attendants);
 - iii. Include at least 1 Accessible Space and 1 Van-Accessible Space;
 - iv. Not include more than 12 small car spaces;
 - v. For at least 12 of the 23 spaces (including some combination of accessible, standard, and small car spaces), energized electric vehicle (EV) charging equipment (i.e. including all the wiring, electrical equipment, and related infrastructure necessary to provide Level 2 charging or higher to an electric vehicle, as per the Zoning Bylaw);
 - b) Bike storage provided in accordance with Zoning Bylaw requirements for retail/office uses, including:
 - i. Class 1 (secured) bike storage equipped with energized EV charging equipment (i.e. operational 120V duplex outlets and all the wiring and related infrastructure necessary to provide their operation) for the exclusive use of the non-profit social service tenants, which bike storage should be co-located with the Non-Residential Tenant Cycling Facilities "End-of-Trip Facilities"; and
 - ii. Class 2 (unsecured/public) for public use;

- c) Shared use (secured by legal agreement) of the development's:
 - i. Non-Residential Tenant Cycling Facilities “End-of-Trip Facilities”;
 - ii. Retail/office loading facilities; and
 - iii. Retail/office waste management facilities; and
 - d) Designated (i.e. marked with signage) short-term curbside parking along the fronting street for exclusive use as a public passenger drop-off/pick-up zone for taxis, Handi Dart, and private vehicles (i.e. NOT for the exclusive use of the non-profit social service agency tenants).
6. Tenant Eligibility: As determined to the satisfaction of the City, all eligible tenants of the Replacement Space must be verifiable non-profit social services agencies that provide Richmond-serving programs. As determined at the City's discretion, preference may be given to agencies that, among other things:
- a) Are exclusively Richmond-based;
 - b) Provide services aimed at addressing one or more City priorities (e.g., recognized local needs);
 - c) Support City objectives for inclusiveness, community building, and livability of Richmond and its downtown; and/or
 - d) Demonstrate opportunities for synergy with the operator and/or tenants of the Affordable Rental Housing Building.
7. Rental Terms: Rental rates and terms shall be approved by the City with the aim of ensuring that the Replacement Space shall:
- a) Be secured in perpetuity for exclusive use as “affordable” space for non-profit social service programs, operations, and related activities/uses conducted by eligible tenants that have been pre-qualified by the developer/owner and approved by the Director of Community Social Development or their alternate.
 - b) Be subject to maximum rental rates such that:
 - i. The net rent applicable to the gross leasable area of the non-profit social service tenant units shall not exceed 50% of net market rent (i.e. based on comparable commercial spaces in Richmond's City Centre);
 - ii. An applicable base rent, together with a mechanism for periodic rent increases (i.e. every 5 years), shall be determined to the satisfaction of the City, together with an obligation to deliver to the City annual statutory declarations as to the tenant(s) and current net rent;
 - iii. The tenants of the non-profit social service tenant units shall not be subject to additional rents or other fees with respect to their casual, shared, or exclusive use of:
 - common spaces shared among the non-profit social service tenants, with the Affordable Rental Housing Building occupants, and/or with other tenants of the development (e.g., loading and waste management facilities);
 - parking provided for the exclusive use of the non-profit social service tenants and their guests (secured by legal agreement), except for electrical costs with respect to the tenants' use of the EV charging equipment; or
 - Class 1 (secured) bike storage provided for the exclusive use of the non-profit social service tenants, except for electrical costs for the tenants' use of the EV charging equipment.
8. Developer/Owner Responsibility: The developer/owner will be responsible (at the sole cost of the developer/owner) for the following:
- a) Design and construction of the Replacement Space, at the developer's cost, as determined to the satisfaction of the City through an approved Development Permit* and Building Permit*, including:
 - i. At least 425.7 m² (4,582.0 ft²) of gross leasable space in the form of non-profit social service agency tenant units, which spaces shall be constructed to a shell level of finish typical of commercial/office lease industry standards (which, for clarity, shall include, among other things, plumbing rough-ins for two accessible washrooms and a kitchen/kitchenette in each of the two tenant units); and

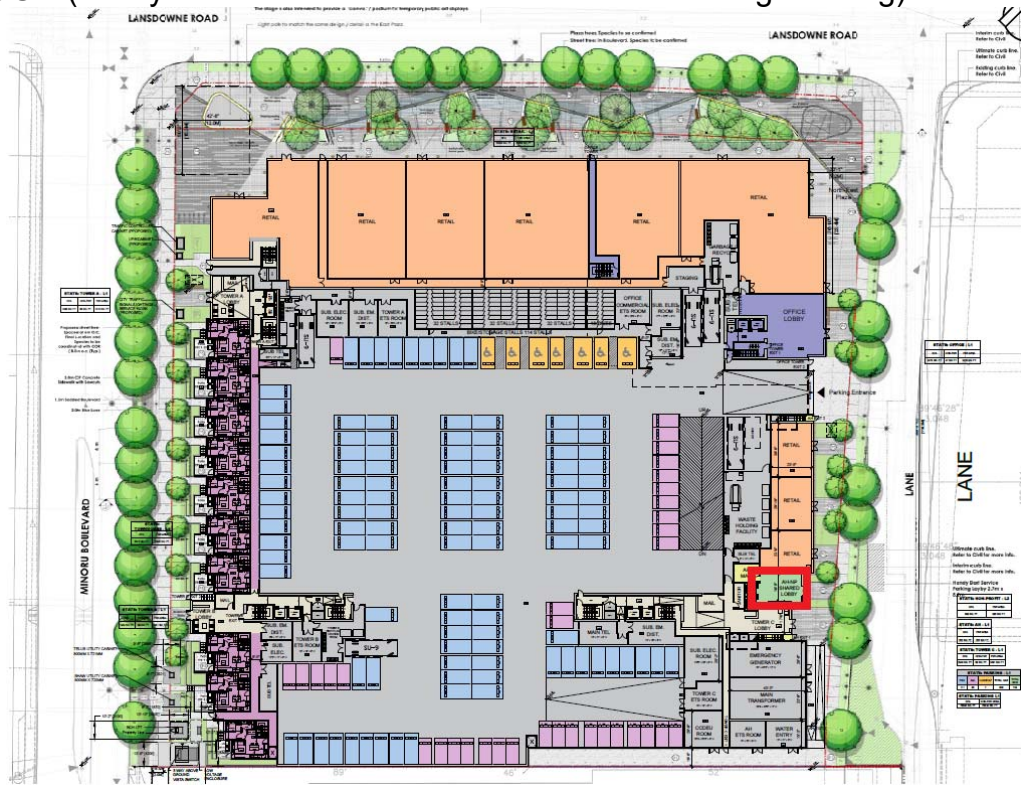
- ii. Spaces/uses intended for shared use by the non-profit social service agency tenants and their visitors (e.g., circulation and common washrooms), any lobby and/or vertical circulation shared by the non-profit social service agency tenants and the occupants of the Affordable Rental Housing Building, and ancillary uses/spaces (e.g., parking, loading, secure bicycle storage, and waste management) required to satisfy the Official Community Plan (OCP), Zoning Bylaw, and/or other City policies, objectives, or guidelines, which spaces shall be constructed to a turnkey level of finish;
 - b) Pre-qualifying of potential tenants for review and selection by the City;
 - c) Renting of the Replacement Space to eligible, City-approved tenants; and
 - d) Maintenance of the Replacement Space and related uses/spaces in good repair (exclusive of tenant improvements).
9. **City Responsibility:** The Director of Community Social Development or their alternate will be responsible for:
- a) Defining the Replacement Space tenant eligibility criteria and, as determined to be necessary by the City in its sole discretion, updating the criteria on a periodic basis;
 - b) Setting the Council-approved rental rates for the Replacement Space and reviewing and updating the rates on a periodic basis (e.g., once every five years) as required to the City’s satisfaction; and
 - c) Approving tenants from a list of applicants that are pre-qualified by the developer/owner based on City-approved Replacement Space eligibility criteria. (Selection will be done via a selection panel or as otherwise determined to the sole satisfaction of the City.)
10. **Tenure:**
- a) **Ownership:** Developer-owned; however, the Replacement Space may be sold to an alternate owner, provided that the Replacement Space is sold as a single unit and all rights (e.g., parking, waste facilities, access, rental terms) are transferred with the Replacement Space, to the satisfaction of the City.
 - b) **Legal:** Prior to adoption of the Rezoning Bylaw, legal agreements must be registered on title, to the City’s satisfaction, to:
 - i. Secure the Replacement Space in perpetuity (including uses/spaces shared with the Affordable Rental Housing Building) for exclusive use as “affordable” space for non-profit social service programs, operations, and related activities/uses conducted by eligible tenants (pre-qualified by the developer/owner and approved by the Director of Community Social Development or their alternate);
 - ii. Secure easement(s) and/or alternate agreements as required with respect to parking, shared use of loading and access, rental terms, maintenance, and other considerations; and
 - iii. Provide for “no development”, “no build”, and “no occupancy” covenants, an option for the City to purchase (at a nominal charge), and other measures as the City determines to be necessary.
 - c) **Subdivision:** Air Space Parcel (ASP)
- C. **Tenant Relocation Assistance:** The developer/owner shall, at the developer’s sole cost and to the City’s satisfaction, provide relocation assistance to the two non-profit social service agencies located on the subject site including:
- 1. Three months advance notice of the date when the agencies’ current premises must be vacated;
 - 2. Assistance of a commercial real estate broker to find new spaces for the two agencies, which spaces may be temporary or permanent (as determined at the discretion of the individual agency operators); and
 - 3. First right of refusal with respect to relocating to the tenant units within the on-site Replacement Space.

D. *Prior-to Requirements:*

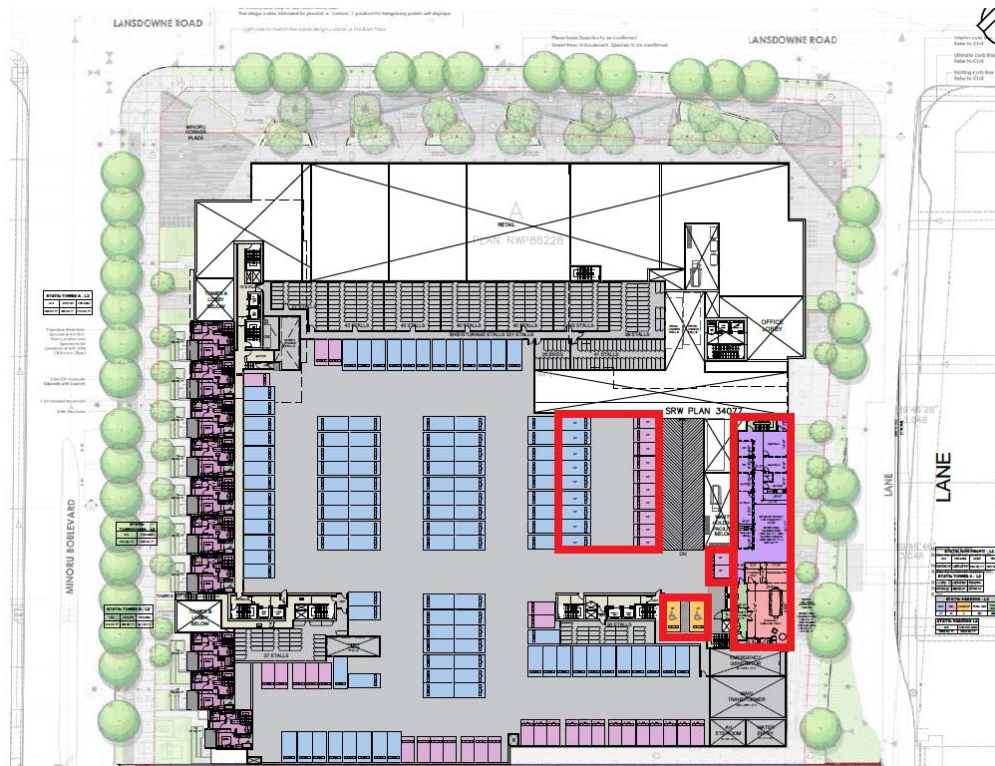
1. “No development” shall be permitted on the subject site, restricting Development Permit* issuance for any building on the subject site, in whole or in part, unless the developer designs the on-site Affordable Non-Profit Social Service Agency Replacement Space to the satisfaction of the City.
2. No Building Permit* shall be issued for a building on the subject site, in whole or in part (excluding parking intended as an ancillary use to non-parking uses), unless:
 - a) The required on-site Affordable Non-Profit Social Service Agency Replacement Space is incorporated in the Building Permit* drawings/specifications to the satisfaction of the Director of Development, Director of Transportation, and Director of Community Social Development; and
 - b) The developer/owner has provided for the required Tenant Relocation Assistance to the satisfaction of the Director of Community Social Development.
3. As set out in the Occupancy Staging Plan requirements, prior to first occupancy of the building on the subject site, in whole or in part (exclusive of any provisional occupancy permitted exclusively for construction and/or tenant improvement purposes), the developer/owner shall complete the required on-site Replacement Space to the satisfaction of the Director of Development, Director of Transportation, and Director of Community Social Development.

Affordable Non-Profit Social Service Agency Replacement Space: Conceptual Layout

GROUND FLOOR (Lobby shared with the Affordable Rental Housing Building)



SECOND FLOOR (Affordable Non-Profit Social Service units, 2nd floor lobby & designated parking spaces)



RZ 18-807640

Engineering Servicing Agreement Requirements:

A servicing agreement is required to design and construct the following works.

1. Water Works:

- a. Using the OCP Model, there is 435.0 L/s of water available at a 20 psi residual at the Minoru Boulevard frontage, 320.0 L/s of water available at a 20 psi residual at the new north-south road frontage, 359.0 L/s of water available at a 20 psi residual at the Lansdowne Road frontage. Based on your proposed development, your site requires a minimum fire flow of 220 L/s.
- b. At Developer's cost, the Developer is required to:
 - i. Submit Fire Underwriter Survey (FUS) or International Organization for Standardization (ISO) fire flow calculations to confirm development has adequate fire flow for onsite fire protection. Calculations must be signed and sealed by a Professional Engineer and be based on Building Permit Stage Building designs.
 - ii. Install approximately 125 m of new 300 mm water main in the new north-south road, complete with hydrants and a blow-off at the south end per City specifications.
 - iii. Install approximately 125 m of new 300 mm water main along Minoru Boulevard from Lansdowne Road to the south property line of the development site. At both Lansdowne Road and the south property line, the water main is to tie-in the existing water mains on both the east and west side of Minoru Boulevard.
 - iv. Remove the existing water main on the east side of Minoru Boulevard along the development frontage.
 - v. Fill and abandon the existing water main on the west side of Minoru Boulevard along the development frontage.
 - vi. Review hydrant spacing on all existing and new road frontages and provide fire hydrants as required to meet City spacing requirements for commercial land use. Fire department approval is required for all fire hydrant installations and relocations.
 - vii. Provide a right-of-way for the water meter and meter chamber, at no cost to the City. Exact right-of-way dimensions to be finalized during the servicing agreement process.
- c. At Developer's cost, the City is to:
 - i. Cut, cap, and remove all existing water service connections and meters to the development site.
 - ii. Reconnect all existing water service connections and hydrant leads to the new water main.
 - iii. Install one new water service connection, meter to be located onsite in a right of way.
 - iv. Complete all tie-ins for the proposed works to existing City infrastructure.

2. Storm Sewer Works:

- a. At Developer's cost, the Developer is required to:
 - i. Perform a capacity analysis to size the proposed storm sewers and drainage conveyances in Minoru Boulevard and the new north-south road. The analysis shall consider both the existing condition and the 2041 OCP condition, and include runoff from the future roads proposed in the OCP. Storm sewers shall be interconnected where possible. Minimum pipe size shall be 600 mm.
 - ii. Install approximately 130 m of new storm sewer in Minoru Boulevard, sized via the required capacity analysis. The new storm sewer shall tie in to the existing storm sewer in the lane south of 5791 Minoru Boulevard, and to the box culvert in Lansdowne Road to the north.
 - iii. Remove the existing storm sewer on the east side of Minoru Boulevard along the development frontage.
 - iv. Fill and abandon the existing storm sewer on the west of Minoru Boulevard along the development frontage.
 - v. Install approximately 130 m of new storm sewer in the new north-south street, sized via the required capacity analysis. The new storm sewer shall tie in to the existing lane drainage to the south of the development site, and to the box culvert in Lansdowne Road to the north.
 - vi. Confirm that the existing temporary storm service in the lane (new north-south road) has been removed. If not, remove.
 - vii. Install one new storm service connection, complete with inspection chamber. Inspection chamber to be located in a right-of-way onsite.
 - viii. Provide an erosion and sediment control plan for all on-site and off-site works, to be reviewed as part of the servicing agreement.

- b. At Developer's cost, the City is to:
 - i. Cut and cap all existing storm service connections to the development site and remove inspection chambers.
 - ii. Reconnect all existing storm connections, catch basins, and lawn basins to the proposed storm sewers.
 - iii. Complete all tie-ins for the proposed works to existing City infrastructure.

3. Sanitary Sewer Works

- a. At Developer's cost, the Developer is required to:
 - i. Ensure that 5840 Minoru Boulevard has uninterrupted sanitary service during and after site preparation and building construction.
 - ii. Discharge the sanitary sewer right-of-way at the common property line of 5760 & 5740 Minoru Boulevard (plan number 34077) after removal of the existing sanitary connection.
- b. At Developer's cost, the City is to:
 - i. Install one new sanitary service connection, complete with inspection chamber. Inspection chamber to be located in a right-of-way onsite.
 - ii. Cut and cap all existing service connections serving the development site, and remove inspection chambers. Note: the existing sanitary connection at the common property line of 5760 & 5740 Minoru Boulevard must be removed and capped at the main prior to start of the site preparation works.

4. Frontage Improvements:

- a. The Developer is required to:
 - i. Provide street lighting along all road frontages according to the following street light types:
 - a) City Streets
 - a. Lansdowne Road (South side of street)
 - i. **IMPORTANT:** The following streetlight type shall apply to all 4 corners @ the Lansdowne/Minoru intersection & all 4 corners @ the Lansdowne/New North-South intersection
 - ii. Pole colour: Grey
 - iii. Roadway lighting @ back of curb: Type 7 (LED) INCLUDING 1 street luminaire, banner arms, and 1 duplex receptacle, but EXCLUDING any pedestrian luminaires, flower basket holders, or irrigation.
 - iv. Pedestrian lighting @ buffer strip between sidewalk and off-street bike path: Type 8 (LED) INCLUDING 2 pedestrian luminaires and 1 duplex receptacle, but EXCLUDING any banner arms, flower basket holders, or irrigation. (NOTE: "Pedestrian luminaires" are intended to light the sidewalk and off-street bike path. Luminaire arms must be set perpendicular to the direction of travel.)
 - b. New North-South Street @ City-owned lane widening along site's east side (West side of street)
 - i. **IMPORTANT:** The streetlight type shall transition north of the Ackroyd/ New North-South Street intersection. For clarity, all 4 corners @ the Ackroyd/ New North-South Street intersection shall be (blue) City Centre Type; HOWEVER, north of the intersection shall be (grey) Type 7.
 - ii. Pole colour: Grey
 - iii. Roadway lighting @ back of curb: Type 7 (LED) INCLUDING 1 street luminaire, banner arms, and 1 duplex receptacle, but EXCLUDING any pedestrian luminaires, flower basket holders, or irrigation.
 - c. Minoru Boulevard (East side of street)
 - i. **IMPORTANT:** The streetlight type shall transition north of the Ackroyd/ Minoru intersection. For clarity, all 4 corners @ the Ackroyd/ Minoru intersection shall be (blue) City Centre Type; HOWEVER, north of the intersection shall be (grey) Type 7 & Type 8.
 - ii. Pole colour: Grey
 - iii. Roadway lighting @ back of curb: Type 7 (LED) INCLUDING 1 street luminaire, banner arms, and 1 duplex receptacle, but EXCLUDING any pedestrian luminaires, flower basket holders, or irrigation.
 - iv. Pedestrian lighting @ buffer strip between sidewalk and off-street bike path: Type 8 (LED) INCLUDING 2 pedestrian luminaires and 1 duplex receptacle, but EXCLUDING any banner arms, flower basket holders, or irrigation. (NOTE: "Pedestrian luminaires" are intended to

- light the sidewalk and off-street bike path. Luminaire arms must be set perpendicular to the direction of travel.)
- v. ***NOTE: Staff must confirm if the Minoru cross-section will include an off-street bike path. Streetlight requirements may change if an on-street bike lane is required.***
- b) Off-Street Publicly-Accessible Walkways & Opens Spaces
- a. Lansdowne Road (South side of the park) (City owned & City maintained)
- i. Pole colour: Grey
 - ii. Pedestrian lighting within the park: Type 8 (LED) INCLUDING 1 pedestrian luminaire and 1 duplex receptacle, but EXCLUDING any banner arms, flower basket holders, or irrigation.
- ii. Coordinate with BC Hydro, Telus and other private communication service providers:
- a) To underground the overhead lines and poles along the new north-south road. All above-ground boxes required to facilitate undergrounding shall be located onsite (as in, not within the public realm).
 - b) To pre-duct for future hydro, telephone and cable utilities along all road frontages.
 - c) To locate/relocate all proposed/existing underground structures (e.g. junction boxes, pull boxes, service boxes, etc.) outside of bike paths and sidewalks.
 - d) Before relocating/modifying any of the existing power poles and/or guy wires within the property frontages.
 - e) To locate/relocate all above ground utility cabinets and kiosks required to service the proposed development and undergrounding works, and all existing above ground utility cabinets and kiosks located along the development's frontages, within the developments site (see list below for examples). A functional plan showing conceptual locations for such infrastructure shall be included in the development process design review. Please coordinate with the respective private utility companies and the project's lighting and traffic signal consultants to confirm the requirements (e.g., statutory right-of-way dimensions) and the locations for the aboveground structures. If a private utility company does not require an aboveground structure, that company shall confirm this via a letter to be submitted to the City. The following are examples of statutory right-of-ways that shall be shown on the functional plan and registered prior to SA design approval:
 - BC Hydro PMT – 4.0 x 5.0 m
 - BC Hydro LPT – 3.5 x 3.5 m
 - Street light kiosk – 1.5 x 1.5 m
 - Traffic signal kiosk – 1.0 x 1.0 m
 - Traffic signal UPS – 2.0 x 1.5 m
 - Shaw cable kiosk – 1.0 x 1.0 m
 - Telus FDH cabinet – 1.1 x 1.0 m

5. General Items:

- a. The Developer is required to:
- i. Provide, prior to start of site preparation works or within the first servicing agreement submission, whichever comes first, a geotechnical assessment of preload and soil preparation impacts on the existing utilities fronting the development site and provide mitigation recommendations. Particularly, the developer is required to confirm that there will be no impact to the existing asbestos cement (AC) storm sewer and water mains fronting the development site; if there is the potential for impact, then the developer may be required to replace these utilities prior to commencing site preparation activities. Note: the developer is required to upgrade these utilities regardless of whether or not there is impact – it is only the timing of the replacement that will depend on whether there is impact due to the site preparation works.
 - ii. Provide a video inspection report of the existing storm and sanitary sewers along the development's frontages prior to start of site preparation works or within the first servicing agreement submission, whichever comes first. A follow-up video inspection report after site preparation works are complete (i.e. pre-load removal, completion of dewatering, etc.) is required to assess the condition of the existing utilities and provide recommendations. Any utilities damaged by the pre-load, de-watering, or other development-related activity shall be replaced at the Developer's cost.
 - iii. Monitor the settlement at the adjacent utilities and structures during pre-loading, dewatering, and soil preparation works per a geotechnical engineer's recommendations, and report the settlement amounts to the City for approval.
 - iv. Conduct pre- and post-preload elevation surveys of all surrounding roads, utilities, and structures. Any damage, nuisance, or other impact to be repaired at the developer's cost. The post-preload elevation survey shall be incorporated within the servicing agreement design.

- v. Submit a proposed strategy at the building permit stage for managing excavation de-watering. Note that the City's preference is to manage construction water onsite or by removing and disposing at an appropriate facility. If this is not feasible due to volume of de-watering, the Developer will be required to apply to Metro Vancouver for a permit to discharge into the sanitary sewer system. If the sanitary sewer does not have adequate capacity to receive the volume of construction water, the Developer will be required to enter into a de-watering agreement with the City to discharge treated construction water to the storm sewer system.
- vi. Not encroach into City rights-of-ways with any proposed trees, retaining walls, or other non-removable structures.
- vii. Coordinate the servicing agreement design for this development with the servicing agreement(s) for the adjacent development(s), both existing and in-stream. The developer's civil engineer shall submit a signed and sealed letter with each servicing agreement submission confirming that they have coordinated with civil engineer(s) of the adjacent project(s) and that the servicing agreement designs are consistent. The City will not accept the 1st submission if it is not coordinated with the adjacent developments. The coordination letter should cover, but not be limited to, the following:
 - (a) Corridors for City utilities (existing and proposed water, storm sewer, sanitary and DEU) and private utilities.
 - (b) Pipe sizes, material and slopes.
 - (c) Location of manholes and fire hydrants.
 - (d) Road grades, high points and low points.
 - (e) Alignment of ultimate and interim curbs.
 - (f) Proposed street lights design.
- viii. Enter into, if required, additional legal agreements, as determined via the subject development's Servicing Agreement(s) and/or Development Permit(s), and/or Building Permit(s) to the satisfaction of the Director of Engineering, including, but not limited to, site investigation, testing, monitoring, site preparation, de-watering, drilling, underpinning, anchoring, shoring, piling, pre-loading, ground densification or other activities that may result in settlement, displacement, subsidence, damage or nuisance to City and private utility infrastructure.

RZ 18-807640

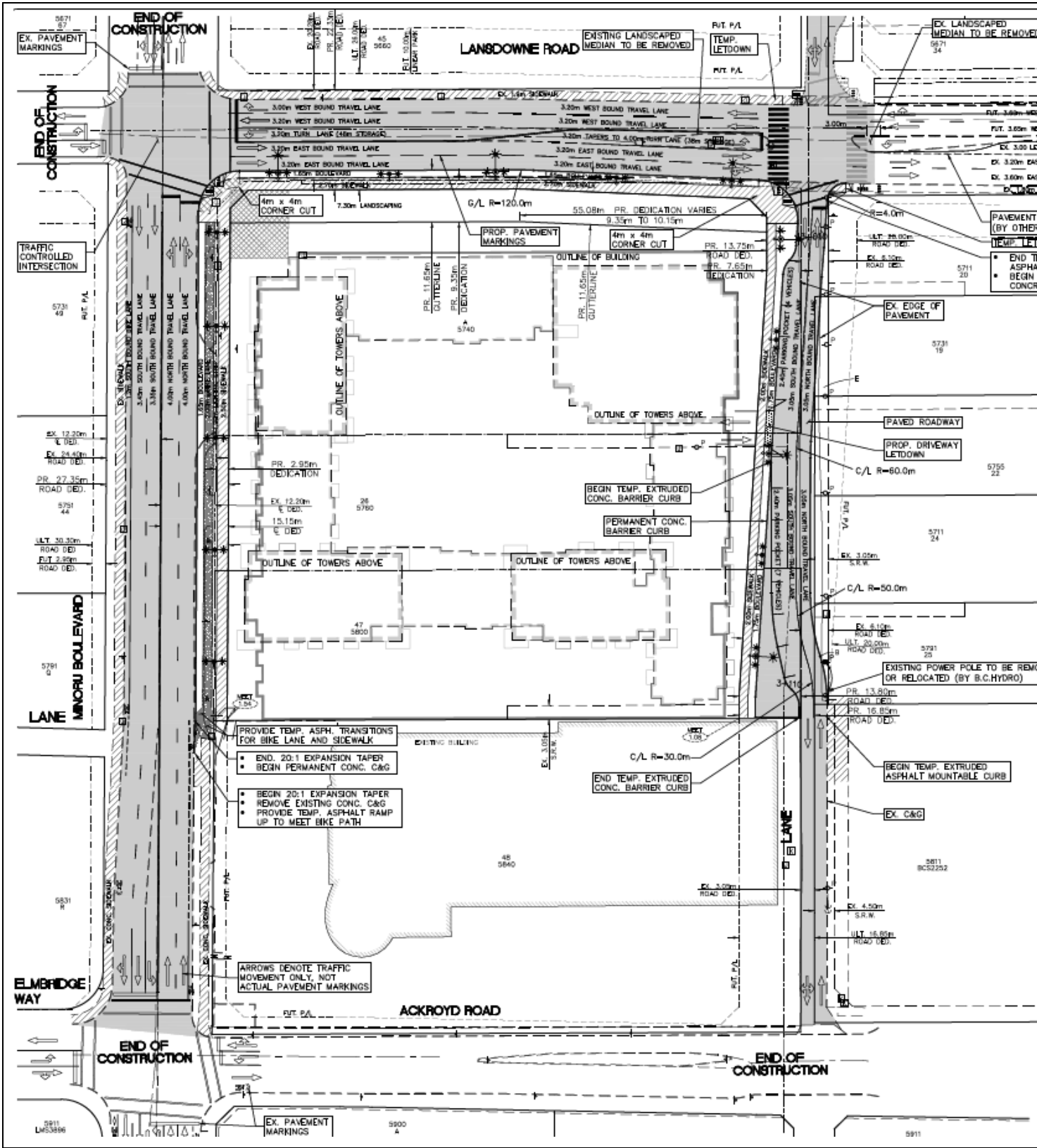
Transportation Servicing Agreement* Requirements

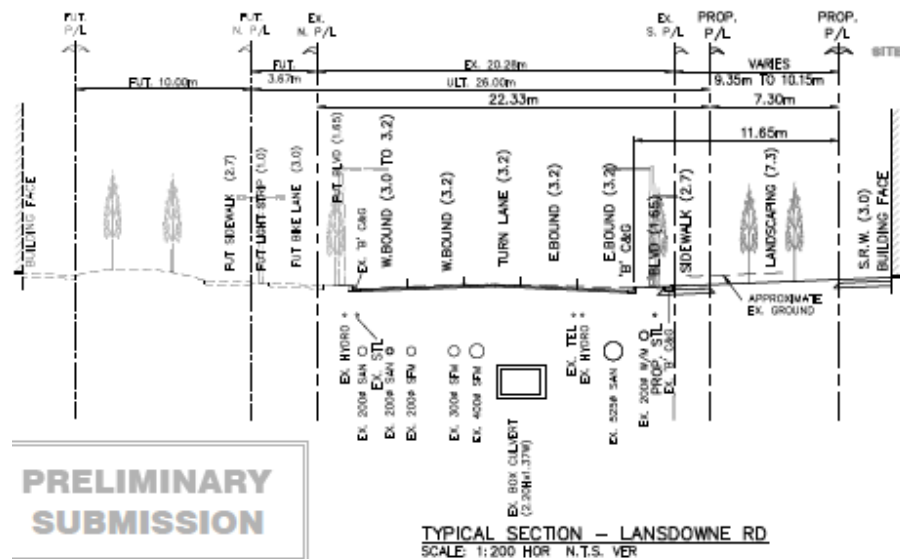
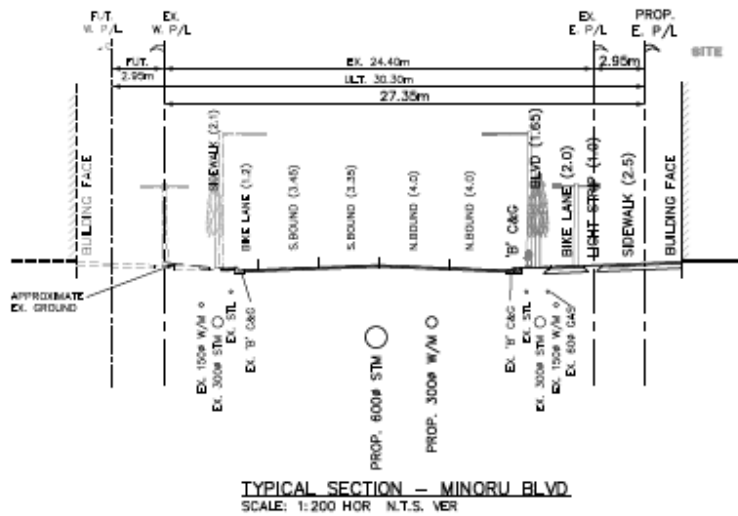
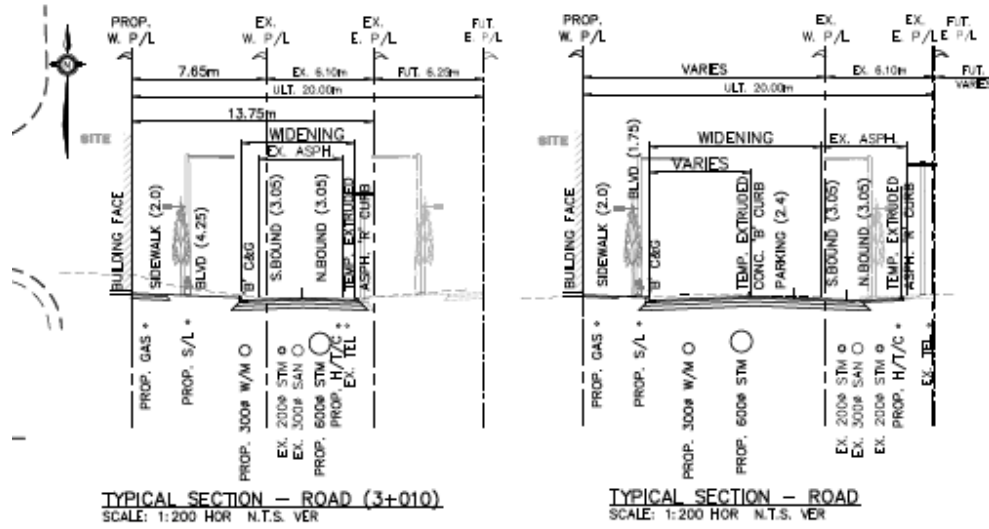
The developer shall be responsible for the design and construction of road and related improvements, to the satisfaction of the Director of Transportation, which works shall include, but may not be limited to, those set out in **Schedule G**.

1. **Road Works:** At a minimum, the developer will be responsible for the design and construction of the following frontage works to the satisfaction of the Director of Transportation, as generally illustrated in the Functional Road Plan – Interim (**Schedule G**). Note that, among other things, the design and construction of the required road improvements shall take into account the Functional Road Plan – Ultimate (**Schedule H**).
 - 1.1. Along the Minoru Road frontage: Road widening to include (from the new property line to west): 2.5m wide sidewalk, 1.0m wide lighting strip/buffer, 2.0m wide off-street bike path, 1.5m wide boulevard, 0.15m wide curb and gutter, and pavement widening to tie to existing
 - 1.2. Along the eastern site frontage: Road widening to include (from the new property line to east): 2.0m wide sidewalk, 1.6m wide boulevard, 0.15m wide curb and gutter, pavement widening (existing curb / road edge along the east side of the lane remains where it is)
 - 1.3. Along the Lansdowne Road frontage: Road widening to include (from the new property line to north): 2.7m wide sidewalk, 1.5m wide boulevard, 0.15m wide curb and gutter, and pavement widening. (Existing landscaped raised median, between Minoru Boulevard and No 3 Road, be removed and converted to accommodate left-turn lane.)
 - 1.4. Intersection upgrades:
 - a) Upgrade of the existing traffic signal at the Minoru Boulevard/Lansdowne Road intersection (to accommodate the required road widening noted above), which shall include, but may not be limited to the following: Upgrade and/or replace signal pole, controller, base and hardware, pole base, detection, conduits (electrical & communications), signal indications, communications cable, electrical wiring, service conductors, traffic cameras, APS (Accessible Pedestrian Signals) and illuminated street name sign(s); and
 - b) Pre-ducting for a future special crosswalk on Minoru Boulevard, approximately mid-point between Lansdowne Road and Elmbridge Way.
2. **City Tree Removal & Relocation:** Through the required Servicing Agreement* (road works), the developer shall be required, at the developer's sole cost, to remove a small existing City tree from the Lansdowne Road median (*Chamaecyparis obtuse*) and relocate it elsewhere in Richmond, as determined to the satisfaction of the Director, Parks Services.

(**Note:** Required compensation for the developer's removal of 7 additional trees from the Lansdowne Road median is addressed elsewhere in these Rezoning Considerations.)

SCHEDULE G Functional Road Plan – Interim (Excerpt)

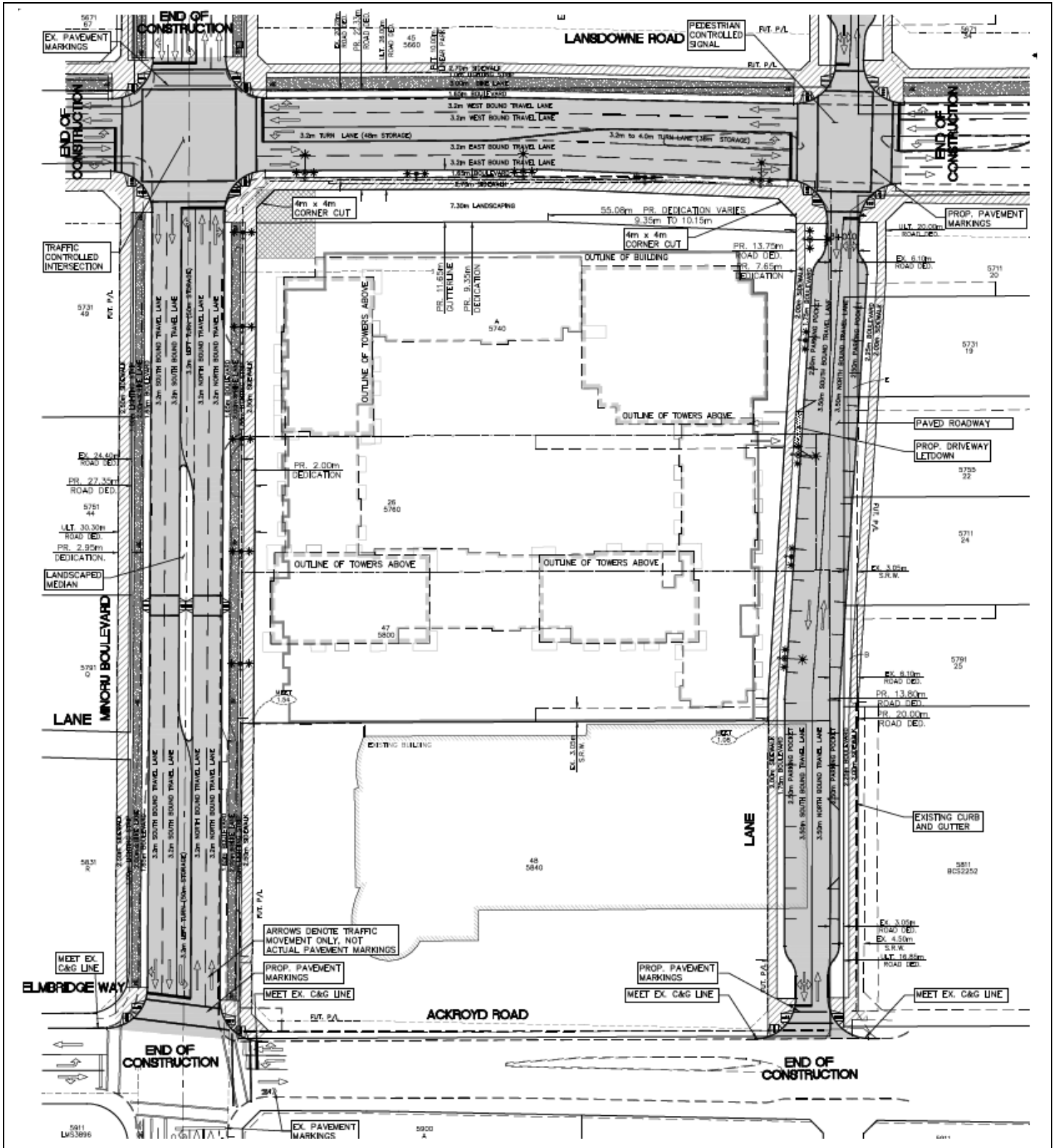


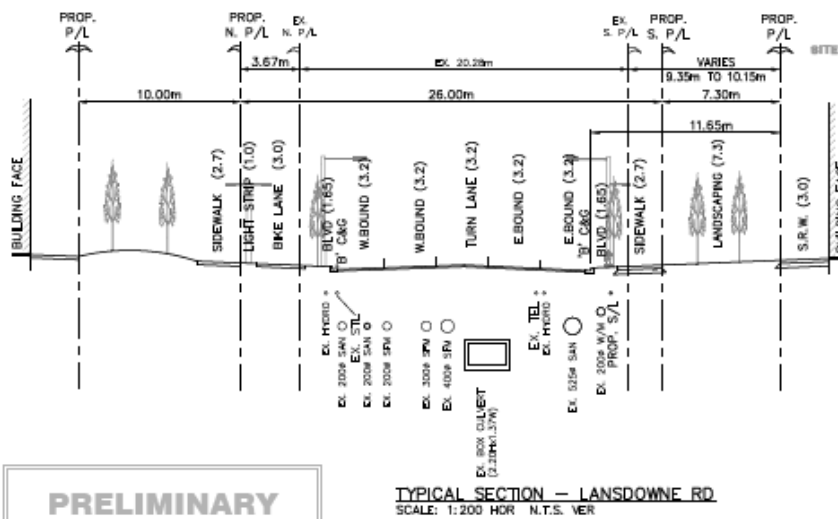
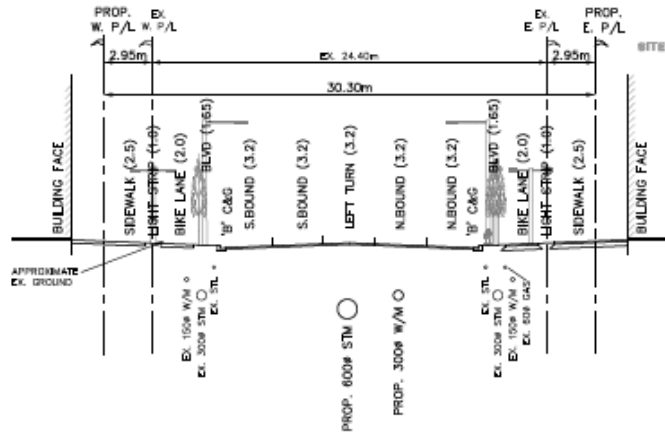
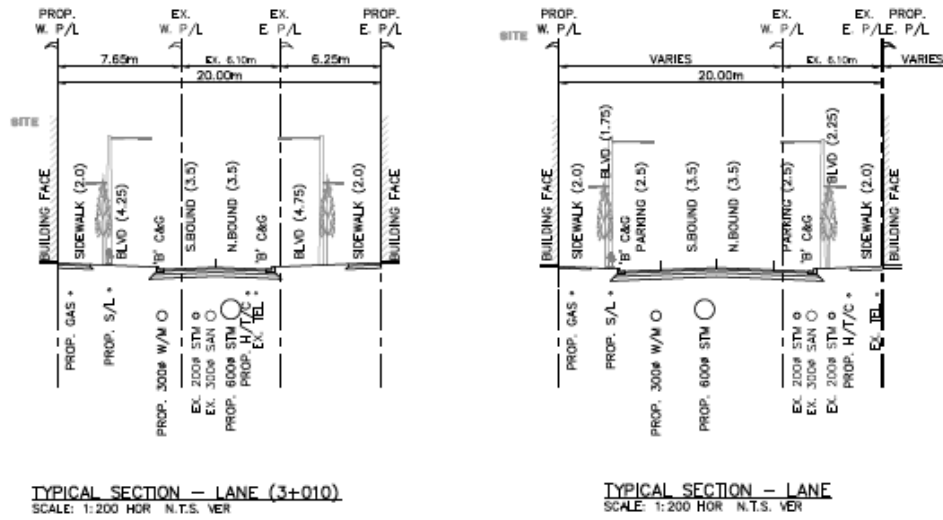


**PRELIMINARY
SUBMISSION**

SCHEDULE H
 Functional Road Plan – Ultimate (Excerpt)

- 1 -





**PRELIMINARY
SUBMISSION**

City of Richmond

RZ 18-807640

Parks Servicing Agreement* Requirements



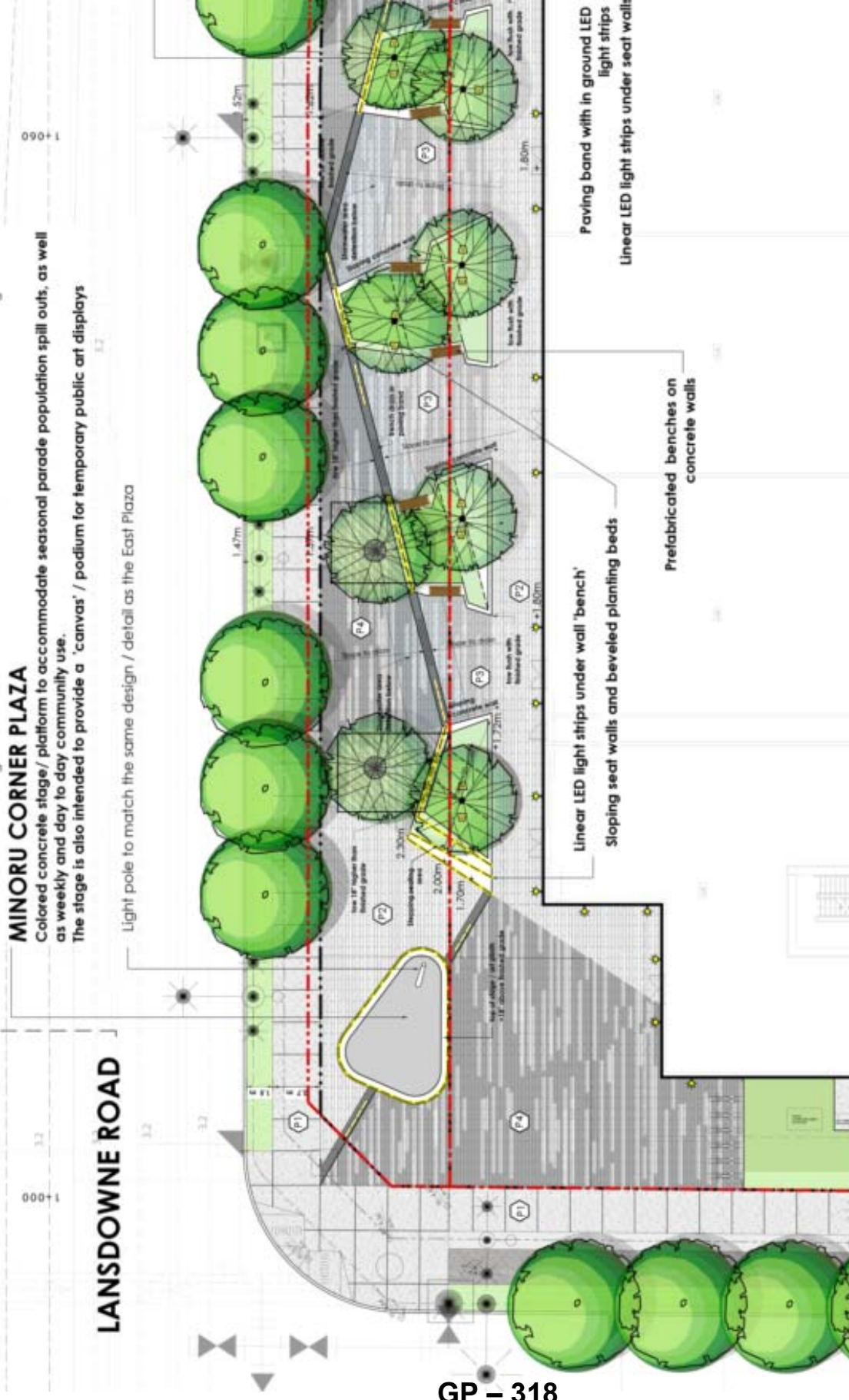
LANSDOWNE LINEAR PARK - OVERALL PLAN

5740, 5760, 5800 Minoru Blvd., Richmond
Richmond, B.C. Canada Project Number 112938 Issue Date OCT. 22, 2019

IBI GROUP
ARCHITECTS (CANADA) INC.
700 - 1255 West Pender Street
Vancouver BC V6E 4B1 Canada
tel 604 683 8797 fax 604 683 0432
ibigroup.com



GP - 317



MINORU CORNER PLAZA
 Colored concrete stage/ platform to accommodate seasonal parade population spill outs, as well as weekly and day to day community use. The stage is also intended to provide a 'canvas' / podium for temporary public art displays

Light pole to match the same design / detail as the East Plaza

Paving band with in ground LED light strips

Linear LED light strips under wall 'bench'
 Sloping seat walls and beveled planting beds

Prefabricated benches on concrete walls

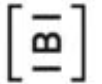
LANSDOWNE ROAD

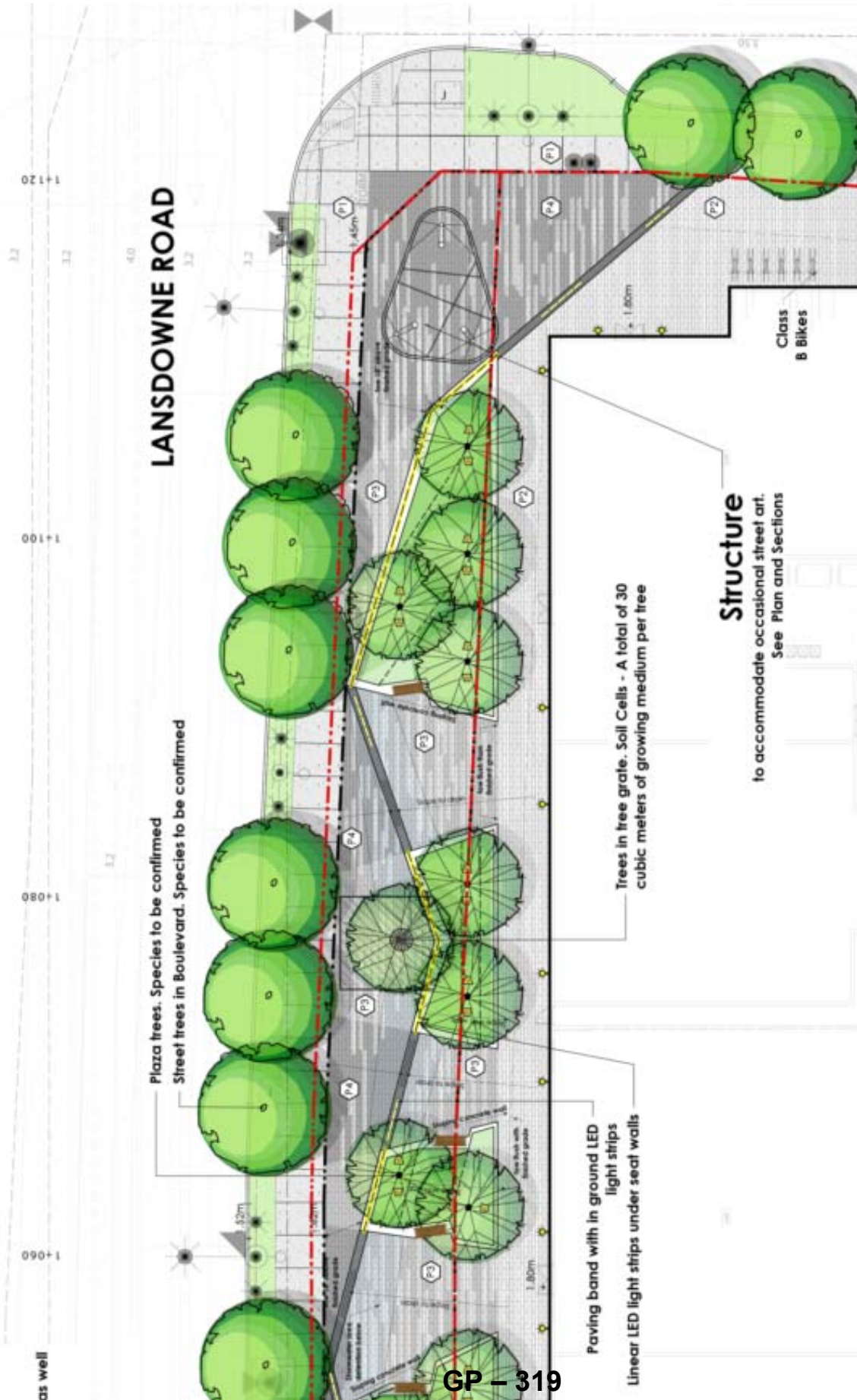
GP - 318

LANSDOWNE LINEAR PARK - WEST

5740, 5760, 5800 Minoru Blvd., Richmond
 Richmond, B.C. Canada
 Project Number: 112938
 Issue Date: OCT. 22, 2019

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 ARCHITECTS (CANADA) INC.
 700 - 1285 West Pender Street
 Vancouver BC V6E 4B1 Canada
 tel 604 683 8787 fax 604 683 0492
 ibigroup.com





LANSDOWNE ROAD

Plaza trees. Species to be confirmed
Street trees in Boulevard. Species to be confirmed

Paving band with in ground LED light strips

Trees in tree grate. Soil Cells - A total of 30 cubic meters of growing medium per tree

Structure
to accommodate occasional street art.
See Plan and Sections

Class B Bikes

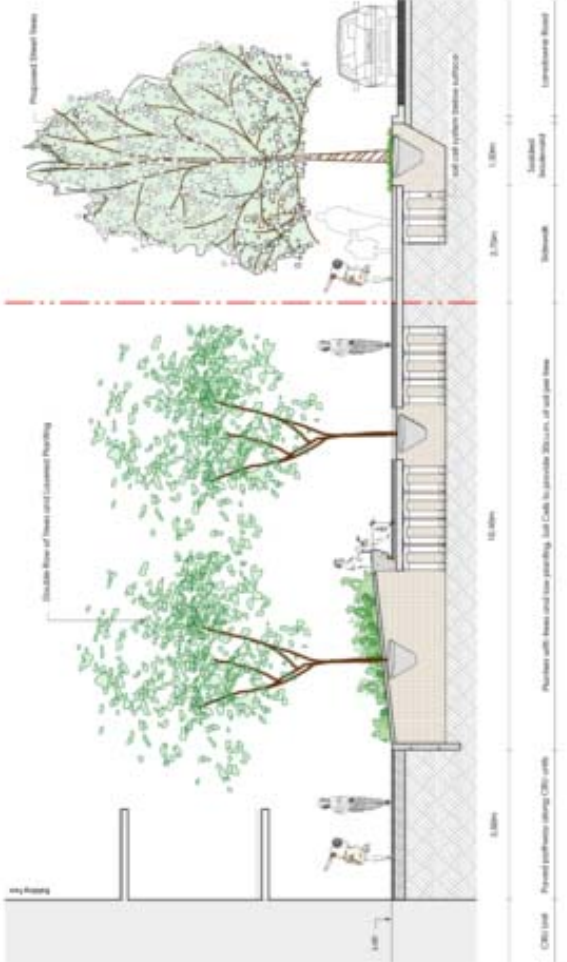
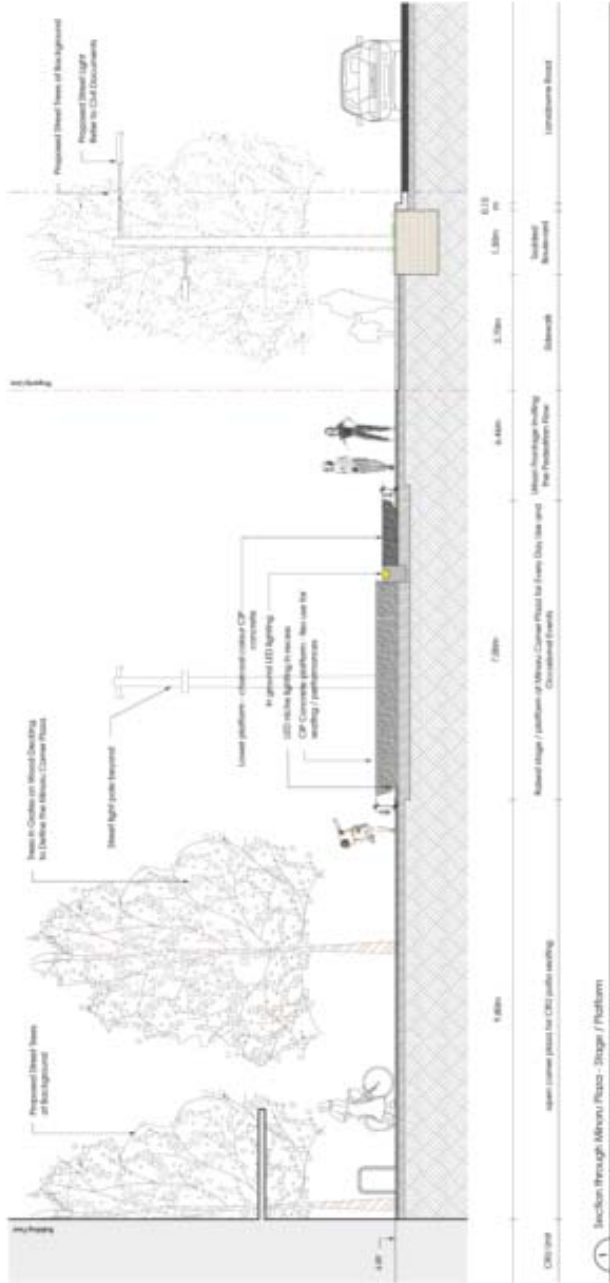
GP - 319

IBI

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5740, 5760, 5800 Minoru Blvd., Richmond
Richmond, B.C. Canada Project Number 112936 Issue Date: OCT. 22, 2019

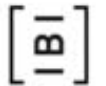
LANSDOWNE LINEAR PARK - EAST

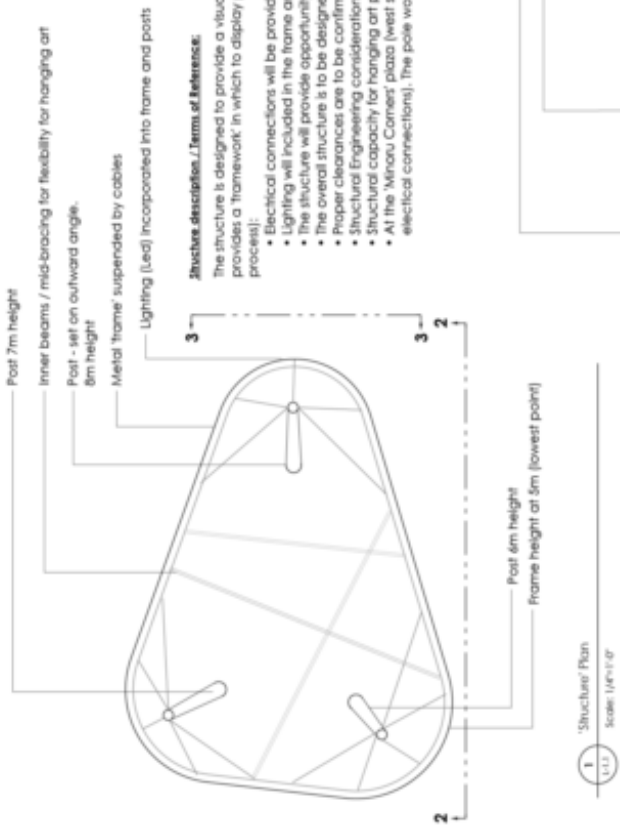


LANSLOWNE LINEAR PARK - SECTIONS

5740, 5760, 5800 Minoru Blvd., Richmond
 Project Number 112038 Issue Date: OCT 22, 2019

IBI GROUP
 ARCHITECTS (CANADA) INC.
 700 - 1285 West Pender Street
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 Tel 604 683 8797 Fax 604 683 0492
 ibigroup.com



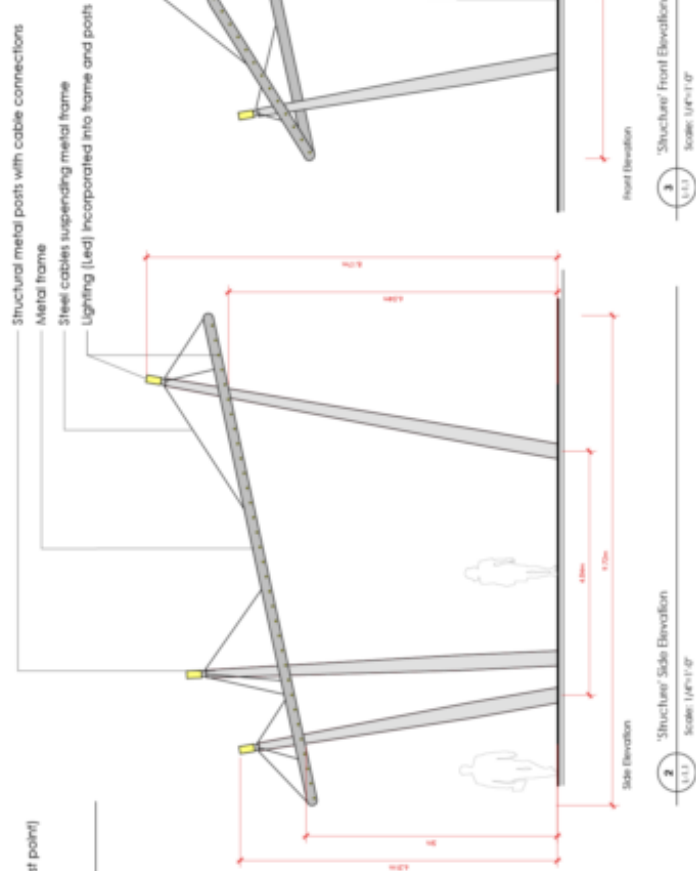


Structure description / Terms of Reference:

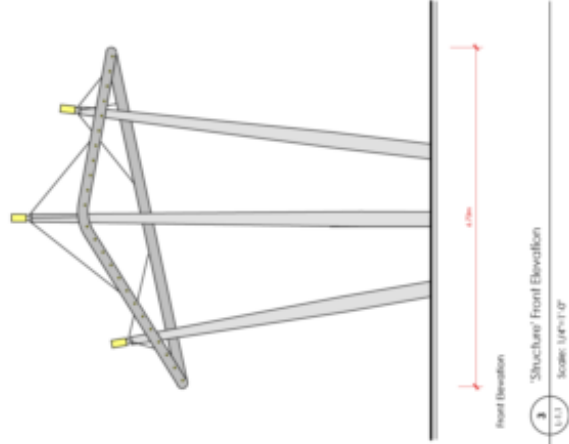
The structure is designed to provide a visually 'light' and interesting element in the plaza that contributes to the daily pedestrian experience and provides a 'framework' in which to display public art. The concept design establishes some required components (to be refined during the design development process):

- Electrical connections will be provided in the structure - Connected to City power system;
- Lighting will be included in the frame and posts - details and specifications to be developed;
- The overall structure is to be designed such that there is flexibility in connection points to accommodate a variety of art pieces;
- Proper clearances are to be confirmed with City staff;
- Structural Engineering considerations may affect some aspects of the design;
- Structural capacity for hanging art pieces is to be confirmed and reviewed by a structural engineer;
- At the 'Minoru Carrers plaza' (west side), a pole is to be incorporated into the design. The pole is to incorporate lighting (including opportunity for electrical connections). The pole would resemble the same design vernacular as the east side 'art structure'

Note: This is conceptual design and all material sizes and detailing is to be reviewed by a structural engineer, including footing details



Note: This is conceptual design and all material sizes and detailing is to be reviewed by a structural engineer, including footing details



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5740, 5760, 5800 Minoru Blvd., Richmond
Richmond, B.C. Canada Project Number 112938 Issue Date: OCT. 22, 2019

LANSDOWNE LINEAR PARK - SECTIONS



**Richmond Official Community Plan Bylaw 7100
Amendment Bylaw 10136 (RZ 18-807640)
5740, 5760 and 5800 Minoru Boulevard**

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

1. Richmond Official Community Plan Bylaw 7100, Schedule 2.10 (City Centre Area Plan), as amended, is further amended by:

1.1. In section 2.2 Jobs & Business:

- a) designating the properties located along the east side of Minoru Boulevard, between Ackroyd Road and Alderbridge Way, as:
 - i. “Key Mixed-Uses Areas & Commercial Reserve” on the “Jobs & Business Concept Map” on page 2-13;
 - ii. “Mixed-Use Core” on the “Key Commercial Areas Map” on page 2-17; and
 - iii. “Mixed Use” on the “Key Office-Friendly Areas Map” on page 2-18 and revise the last line of the table below the map as follows:

Designation	Maximum Permitted Density	Typical Maximum Building Height	Maximum Floorplate Above 25 m (82 ft.)
Mixed Use	2 – 3 FAR, plus Village Centre Bonus where applicable	35 – 45 m (115 – 148 ft.)	650 m ² (6,997 ft ²), but larger floorplates may be permitted for office buildings

and

- b) designating Lansdowne Road between No. 3 Road and the west side of Minoru Boulevard as “Retail High Streets & Linkages” on the “Pedestrian-Oriented Retail Precincts Map” on page 2-20.

1.2. On the Specific Land Use Map: Lansdowne Village, designating Lansdowne Road between No. 3 Road and the west side of Minoru Boulevard as “Pedestrian-Oriented Retail Precincts – High Streets & Linkages”.

1.3. In section 4.0 Implementation & Phasing Strategies, replacing policy 4.1(n) with the following:

- “n) Density Bonusing – Affordable Housing & Market Rental Housing
The density bonus approach will be used for rezoning applications in the City Centre that satisfy the requirements of the:
 - Richmond Affordable Housing Strategy (i.e. permitting use of the CCAP Affordable Housing Bonus applicable to the development site); or

- OCP market rental housing density bonus provisions (i.e. permitting use of additional density, as specified in the OCP, over and above that permitted by the development site’s CCAP Land Use Map Designation).

Furthermore, as determined to the satisfaction of the City, the applicable density bonus may be increased on a site-specific basis for rezoning applications that provide additional affordable housing and/or market rental housing to address community need.”

- 1.4. Making minor text, section numbering, and graphic revisions as necessary to accommodate the identified bylaw amendments and ensure consistency throughout the Plan.
2. This Bylaw may be cited as “**Richmond Official Community Plan Bylaw 7100, Amendment Bylaw 10136**”.

FIRST READING

PUBLIC HEARING

SECOND READING

THIRD READING

ADOPTED

MAYOR

CORPORATE OFFICER





Richmond Official Community Plan Bylaw 7100
Amendment Bylaw 10137 (RZ 18-807640)
5740, 5760 and 5800 Minoru Boulevard

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

- 1. Richmond Official Community Plan Bylaw 7100, Schedule 2.10 (City Centre Area Plan), as amended, is further amended by:
1.1. On the "Generalized Land Use Map (2031)" and "Overlay Boundary - Village Centre Bonus Map (2031)", designating the following area as "Village Centre Bonus":
That area indicated as "B" on "Schedule A attached to and forming part of Bylaw No. 10137";
1.2. On the "Specific Land Use Map: Lansdowne Village":
a) designating the following area as "Park":
That area indicated as "A" on "Schedule A attached to and forming part of Bylaw No. 10137"; and
b) designating the following area as "Village Centre Bonus":
That area indicated as "B" on "Schedule A attached to and forming part of Bylaw No. 10137"; and
1.3. In the "Specific Land Use Map: Lansdowne Village - Detailed Transect Descriptions", with respect to "Urban Centre (T5)", inserting a new bullet below "Additional density, where applicable" as follows:
"Village Centre Bonus: 1.0 for the provision of office only".
2. This Bylaw may be cited as "Richmond Official Community Plan Bylaw 7100, Amendment Bylaw 10137".

FIRST READING

PUBLIC HEARING

SECOND READING

THIRD READING

OTHER CONDITIONS SATISFIED

ADOPTED

Horizontal lines for signatures and dates corresponding to the reading stages.

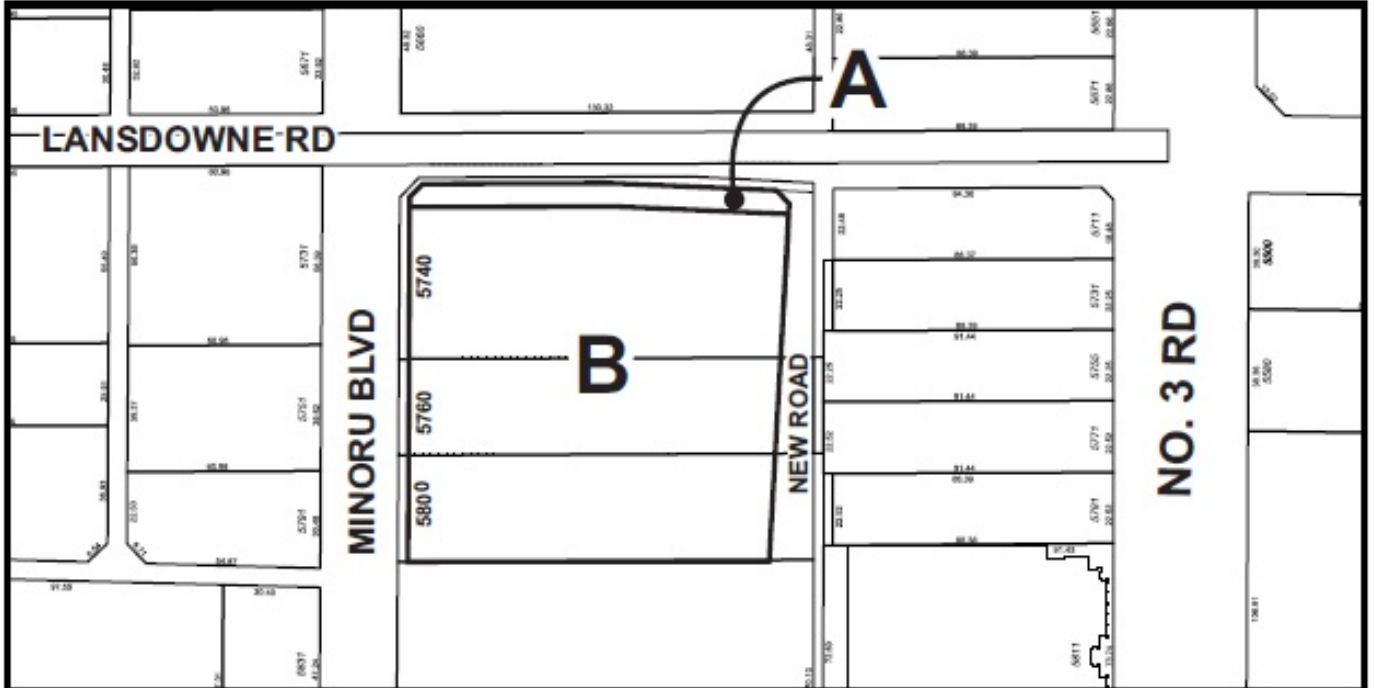
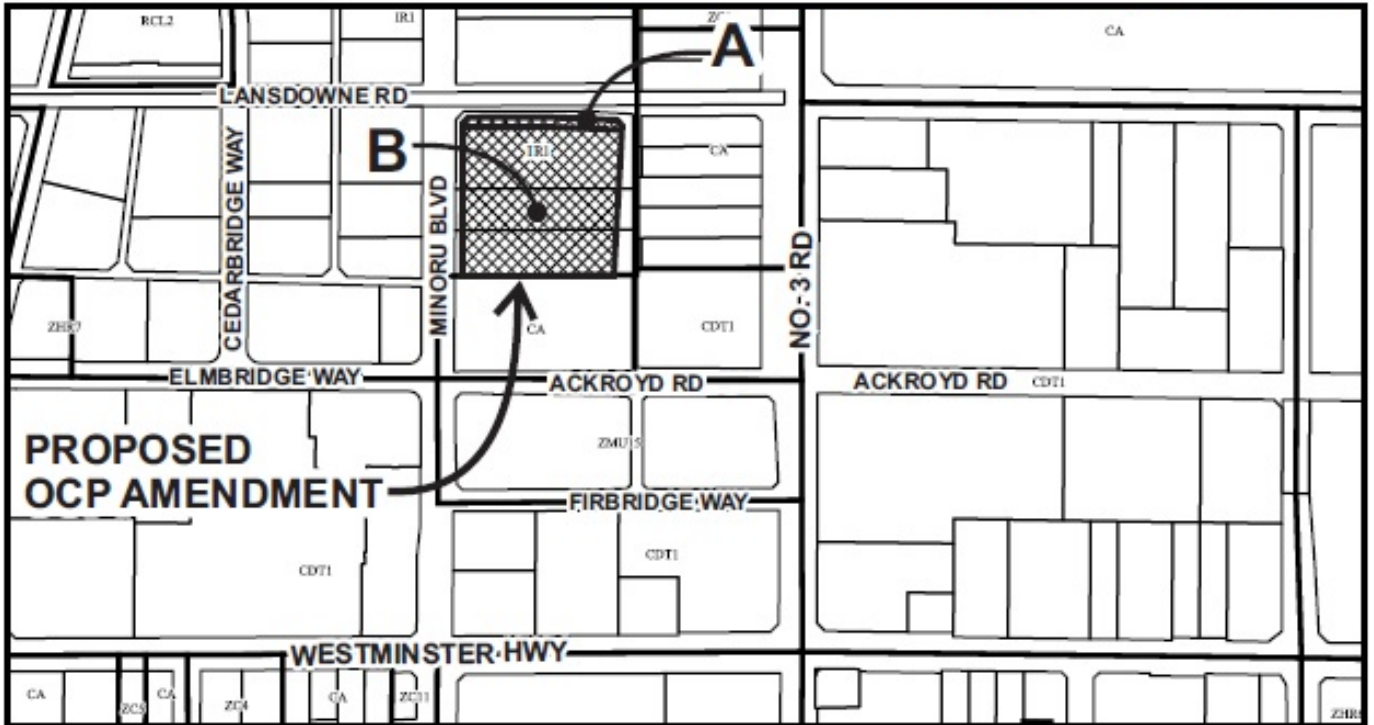


MAYOR

CORPORATE OFFICER



City of Richmond



	<p>OCP Amendment Bylaw 10137 RZ 18-807640</p>	<p>Original Date: 08/09/19 Revision Date: Note: Dimensions are in METRES</p>
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**Richmond Zoning Bylaw 8500
Amendment Bylaw 10138 (RZ 18-807640)
5740, 5760 and 5800 Minoru Boulevard**

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

1. Richmond Zoning Bylaw 8500 is amended by inserting the following into Section 20 (Site Specific Mixed Use Zones), in numerical order:

**“20.46 High Density Mixed Use and Affordable Rental Housing (ZMU46) –
Lansdowne Village (City Centre)**

20.46.1 Purpose

The **zone** provides for **commercial, office**, multi-family residential, and compatible **uses** typical of the **City Centre**. Additional **density** is provided to achieve, among other things, **City** objectives related to **community amenity space, affordable housing units**, and **office** within the Village Centre Bonus Area designated by the **City Centre** Area Plan.

20.46.2 Permitted Uses

- amenity space, community
- animal day care
- animal grooming
- broadcasting studio
- child care
- community care facility, minor
- education
- education, commercial
- education, university
- emergency service
- entertainment, spectator
- government service
- health service, minor
- housing, apartment
- housing, town
- library and exhibit
- liquor primary establishment
- manufacturing, custom indoor
- microbrewery, winery and distillery
- neighbourhood public house
- office
- park
- private club
- recreation, indoor
- religious assembly
- restaurant
- retail, convenience
- retail, general
- retail, second hand
- service, business support
- service, financial
- service, household repair
- service, personal
- studio
- veterinary service

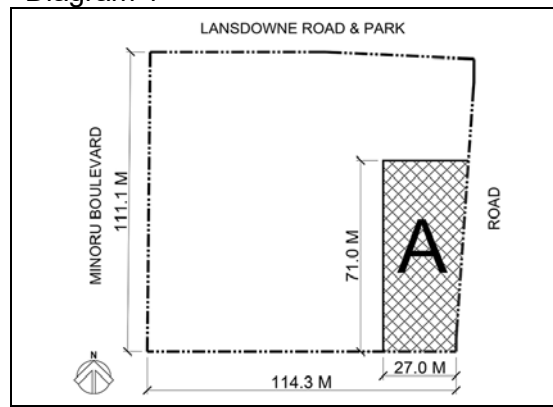
20.46.3 Secondary Uses

- boarding and lodging
- home business
- home-based business

20.46.4 Residential Rental Tenure

1. Not less than 88 **dwelling units**, for use as **affordable housing units** only, located within that portion of the **development site** shown crosshatched and indicated as “A” in Section 20.46.4.1, Diagram 1, shall be **used** only for **residential rental tenure**.

Diagram 1



2. For the purposes of this **zone**, **residential rental tenure** means, in relation to a **dwelling unit** in a multi-family residential **building**, occupancy of a **dwelling unit** governed by a tenancy agreement that is subject to the *Residential Tenancy Act* (BC), as may be amended or replaced from time to time.

20.46.5 Permitted Density

1. The maximum **floor area ratio** is “1.2” together with an additional:
 - a. “0.1” **floor area ratio** for indoor **amenity space** only; and
 - b. “0.1” **floor area ratio** for **community amenity space** only.
2. If the **owner** has provided at least 425.7 m² of **gross leasable floor area** as **community amenity space** under Section 20.46.5.1(b), notwithstanding Section 20.46.5.1, the reference to “1.2” is increased to a higher **floor area ratio** of “2.0” if, prior to first occupancy of the **building**, the **owner**:
 - a. provides not less than 47 **affordable housing units** and the combined **habitable space** of the total number of **affordable housing units** would comprise at least 10% of the residential portion of the 2.0 **floor area ratio**; and
 - b. enters into a **housing agreement** with respect to the **affordable housing units**, and registers the **housing agreement** against title to the **lot** and files a notice in the Land Title Office.

3. If the **owner** has provided **affordable housing units** under Section 20.46.5.2, an additional 0.2 **density bonus floor area ratio** shall be permitted if, prior to first occupancy of the **building**, the **owner**:
 - a. uses the additional 0.2 **density bonus floor area ratio** only for **affordable housing units** and **ancillary uses**, as specified in a Development Permit approved by the **City**; and
 - b. enters into a **housing agreement** with respect to the **affordable housing units**, and registers the **housing agreement** against title to the **lot** and files a notice in the Land Title Office.
4. If the **owner** has provided **affordable housing units** under Section 20.46.5.2 and Section 20.46.5.3, an additional 1.0 **density bonus floor area ratio** shall be permitted, provided that:
 - a. the **lot** is located in the Village Centre Bonus Area designated by the **City Centre Area Plan**;
 - b. the **owner** uses the additional 1.0 **density bonus floor area ratio** only for **office**; and
 - c. the **owner** pays a sum to the **City** (*City Centre Facility Development Fund*) based on 5% of the additional 1.0 **density bonus floor area ratio** multiplied by (i) the “equivalent to construction value” rate of \$7,535 per square metre of **density bonus floor area**, if the payment is made within one year of third reading of the zoning amendment bylaw, or (ii) thereafter, the “equivalent to construction value” rate of \$7,535 per square metre of **density bonus floor area** adjusted by the cumulative applicable annual changes to the Statistics Canada “Non-Residential Building Construction Price Index” for Vancouver, where such change is positive.
5. For the purposes of this **zone**, if the **owner** dedicates not less than 1,210.3 m² of the gross **site** as **road** and transfers not less than 859.2 m² of the gross **site** to the **City** as fee simple for **park** purposes, the calculation of **floor area ratio** shall be based on a net **development site** area of 15,034.3 m².

20.46.6 Permitted Lot Coverage

1. The maximum **lot coverage** is 90% for **buildings**.

20.46.7 Yards & Setbacks

1. Minimum **setbacks** shall be:
 - a. for **road** and **park setbacks**, measured to a **lot line** or the boundary of an area granted to the **City**, via a statutory **right-of-way**, fee simple, or other means, for **road** or **park** purposes: 6.0 m, but may be reduced to 3.0 m if a proper interface is provided as specified in a Development Permit approved by the **City**;
 - b. for interior side yard setbacks: 0.0 m; and
 - c. for parking situated below finished **grade**: 0.0 m.

20.46.8 Permitted Heights

1. The maximum **building height** for **principal buildings** is 35.0 m, but may be increased to 47.0 m geodetic if a proper interface is provided with adjacent **buildings** and areas secured by the **City**, via statutory **right-of-way**, fee simple, or other means, for **park** purposes, as specified in a Development Permit approved by the **City**.
2. The maximum **building height** for **accessory buildings** is 5.0 m.
3. The maximum **height** for **accessory structures** is 12.0 m.

20.46.9 Subdivision Provisions/Minimum Lot Size

1. The minimum **lot area** is 12,500 m².

20.46.10 Landscaping & Screening

1. **Landscaping** and **screening** shall be provided according to the provisions of Section 6.0.

20.46.11 On-Site Parking and Loading

1. On-site **vehicle** and bicycle parking and loading shall be provided according to the standards set out in Section 7.0.
2. Notwithstanding Section 20.46.11.1, for the purposes of this **zone**:
 - a. the minimum number of **vehicle parking spaces** shall be:
 - i) for **community amenity space**: 3.75 spaces per 100.0 m² of **gross leasable floor area**;
 - ii) for **office**: 1.275 spaces per 100.0 m² of **gross leasable floor area**; and
 - iii) for visitors to residential **uses**: 8 spaces;
 - b. the minimum number of **vehicle parking spaces** required for **affordable housing units** may be reduced by up to 25%, if:
 - i) the **owner** has provided **affordable housing units** under Section 20.46.5.2 and Section 20.46.5.3; and
 - ii) the **City** implements transportation demand management measures and the minimum on-site parking requirements are substantiated by a parking study that is prepared by a registered professional engineer and is subject to review and approval of the **City**; and
 - c. for on-site bicycle parking for the residents of the **building**, the minimum number of Class 1 bicycle parking spaces shall be 1.7 spaces per **dwelling unit**, including 10% over-size lockers as specified in a Development Permit approved by the **City**.

20.46.12 Other Regulations

1. Signage must comply with the City of Richmond's *Sign Bylaw 5560*, as it applies to **development** in the Downtown Commercial (CDT1) **zone**.
2. **Telecommunication antenna** must be located a minimum 20.0 m above the ground (i.e., on a roof of a **building**).

- 3. In addition to the regulations listed above, the General Development Regulations in Section 4.0 and the Specific Use Regulations in Section 5.0 apply.”
- 2. The Zoning Map of the City of Richmond, which accompanies and forms part of Richmond Zoning Bylaw 8500, is amended by repealing the existing zoning designation of the following area and by designating it:
 - 2.1. **“SCHOOL & INSTITUTION USE (SI)”**
That area shown cross-hatched and indicated as “A” on “Schedule A attached to and forming part of Bylaw 10138”
 - 2.2. **“HIGH DENSITY MIXED USE AND AFFORDABLE RENTAL HOUSING (ZMU46) – LANSDOWNE VILLAGE (CITY CENTRE)”**
That area shown cross-hatched and indicated as “B” on “Schedule A attached to and forming part of Bylaw 10138”
- 3. This Bylaw may be cited as **“Richmond Zoning Bylaw 8500, Amendment Bylaw 10138”**.

FIRST READING

PUBLIC HEARING

SECOND READING

THIRD READING

OTHER CONDITIONS SATISFIED

ADOPTED

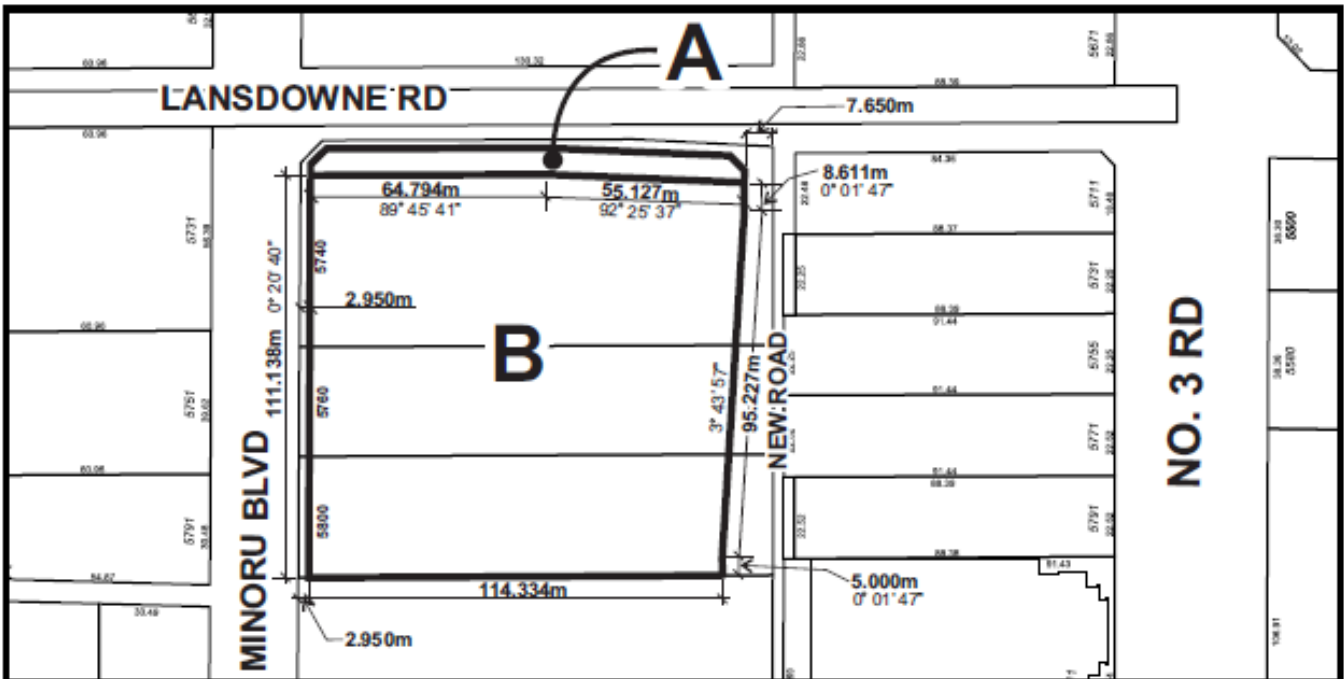
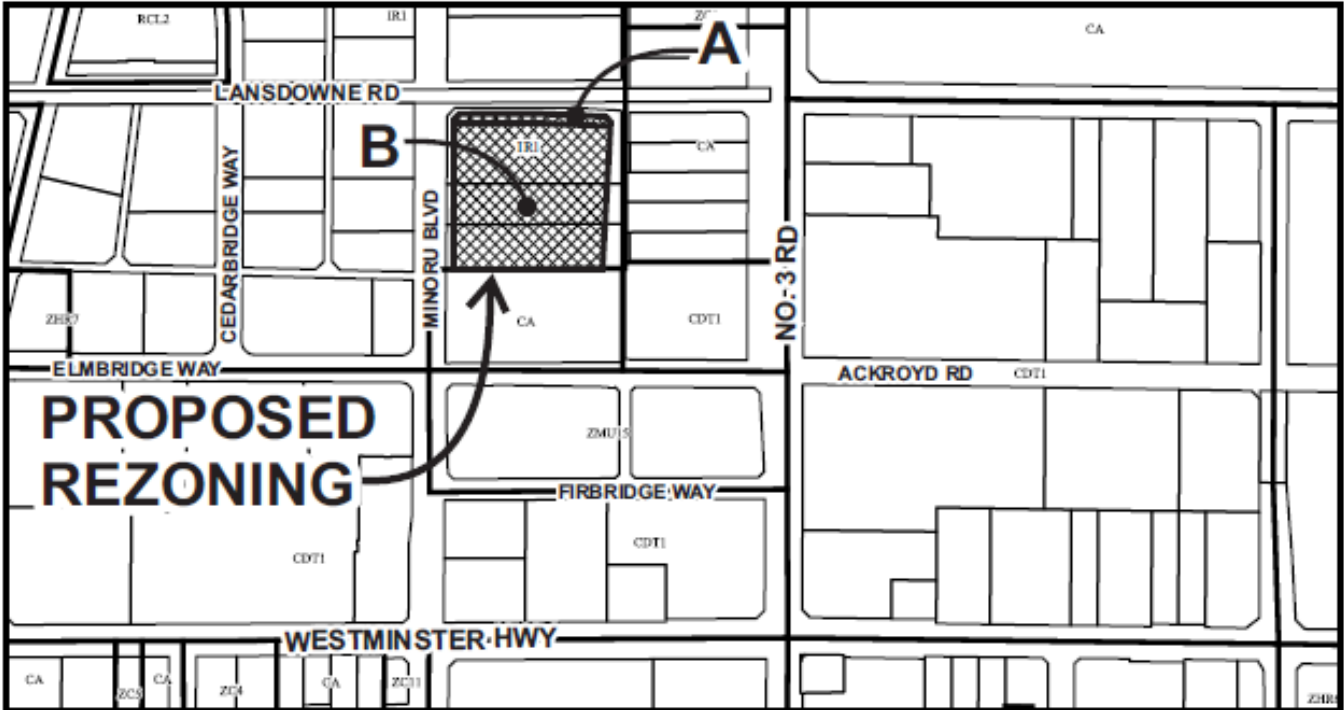
MAYOR

CORPORATE OFFICER





City of
Richmond



Zoning Amendment Bylaw 10138
RZ 18-807640

Original Date: 05/28/19

Revision Date: 11/15/19

Note: Dimensions are in METRES