City of Richmond

Agenda

General Purposes Committee

Anderson Room, City Hall
6911 No. 3 Road

Monday, April 20, 2020
4:00 p.m.

Pg. # ITEM

MINUTES

GP-3 ***Motion to adopt the minutes of the meeting of the General Purposes Committee held on April 6, 2020.***

ENGINEERING AND PUBLIC WORKS DIVISION

1. **REPORT 2019: CONTINUOUS IMPROVEMENT FOR SUSTAINABLE WASTE MANAGEMENT**
(File Ref. No. 10-6370-01) (REDMS No. 6433406 v. 3)

GP-9 See Page **GP-9** for full report

Designated Speaker: Suzanne Bycraft

STAFF RECOMMENDATION

That the annual report titled, "Report 2019: Continuous Improvement for Sustainable Waste Management" be endorsed and be made available to the community on the City's website and through various communication tools including social media channels and as part of community outreach initiatives.

2. **2019 WINTER RAINFALL AND 2020 FLOOD PROTECTION UPDATE**
(File Ref. No. 10-6060-01) (REDMS No. 6389311 v. 7)

GP-79 See Page **GP-79** for full report

Designated Speaker: Jason Ho

STAFF RECOMMENDATION

That the staff report titled, "2019 Winter Rainfall and 2020 Flood Protection Update", dated April 9, 2020 from the Director, Engineering, be received for information.

COMMUNITY SERVICES DIVISION

3. **AGRICULTURAL LAND COMMISSION NON-FARM USE APPLICATION BY THE CITY OF RICHMOND FOR THE GARDEN CITY LANDS COMMUNITY FARM AND CONSERVATION BOG AREA AT 5560 GARDEN CITY ROAD**
(File Ref. No. 06-2345-20-GCIT1) (REDMS No. 6414306 v. 11)

GP-85 See Page **GP-85** for full report

Designated Speaker: Alex Kurnicki

STAFF RECOMMENDATION

That the Agricultural Land Commission Non-Farm Use Application by the City of Richmond for the Garden City Lands Community Farm and Conservation Bog Area at 5560 Garden City Road, be endorsed and forwarded to the Agricultural Land Commission for approval.

ADJOURNMENT

City of Richmond

Minutes

General Purposes Committee

Date: Monday, April 6, 2020

Place: Anderson Room
Richmond City Hall

Present: Mayor Malcolm D. Brodie, Chair (attending via teleconference)
Councillor Chak Au
Councillor Carol Day
Councillor Kelly Greene (attending via teleconference)
Councillor Alexa Loo (attending via teleconference)
Councillor Bill McNulty
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 meetings of the General Purposes Committee held on March 16, 2020 and March 23, 2020 be adopted as circulated.

CARRIED

FINANCE AND CORPORATE SERVICES DIVISION

1. **CREDIT CARD PAYMENT SERVICE FEE BYLAW NO. 9536, AMENDMENT BYLAW NO. 10166**
(File Ref. No. 03-0900-01/2020) (REDMS No. 6433095 v.2)

Discussion ensued with regard to (i) reallocating credit card fee revenues, (ii) encouraging non-credit card fee payments to reduce debt load for individuals, and (iii) advocating the Province to adjust the property tax deadline.

In reply to queries from Committee, staff noted that the City has communicated with financial services providers on the potential reduction of the City's transaction fees during the COVID-19 pandemic period.

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

It was moved and seconded
That the staff report titled "Credit Card Payment Service Fee Bylaw No. 9536, Amendment Bylaw No. 10166" dated March 16, 2020 from the Director, Finance be received for information.

CARRIED

COMMUNITY SERVICES DIVISION

2. **AGRICULTURAL LAND RESERVE NON-FARM USE APPLICATION BY THE CITY OF RICHMOND TO HOST THE FARM FEST AT THE GARDEN CITY LANDS ON AUGUST 8, 2020, LOCATED AT 5560 GARDEN CITY ROAD**
(File Ref. No. 11-7400-20-FFES1/2020) (REDMS No. 6397966 v. 9)

It was moved and seconded
That should Council wish to proceed with the Farm Fest as part of the existing 2020 major events program, that the Agricultural Land Reserve non-farm use application by the City of Richmond to host the Farm Fest at the Garden City Lands on Saturday, August 8, 2020, located at 5560 Garden City Road, be endorsed and forwarded to the Agricultural Land Commission for approval.

The question on the motion was not called as discussion ensued with regard to (i) examining the feasibility of proceeding with the City's 2020 major events during the COVID-19 pandemic period, (ii) modifying Farm Fest to focus on a food market event, and (iii) reviewing budgets of the planned 2020 events.

In reply to queries from Committee, staff noted that given the potentially long application processing time, the City has the option to send the non-farm use application to the Agricultural Land Commission and can then review the event's feasibility during that time period. Staff added that the budget for Farm Fest was approved as part of the 2020 Major Events Program. Furthermore, staff noted that the staff report on the Garden City Lands Community Garden Farm is forthcoming.

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

It was moved and seconded
That the staff report titled "Agricultural Land Reserve Non-Farm Use Application by the City of Richmond to Host the Farm Fest at The Garden City Lands on August 8, 2020, Located at 5560 Garden City Road", dated March 11, 2020, from the Director, Parks Services, be referred back to staff to examine agricultural activities on the Garden City Lands, such as farmer's markets and community gardens.

DEFEATED
Opposed: Mayor Brodie
Cllrs. Greene
Loo
McPhail
Steves
Wolfe

Discussion then ensued with regard to reviewing the 2020 Farm Fest event, and as a result, the following **referral motion** was introduced:

It was moved and seconded
That the staff report titled "Agricultural Land Reserve Non-Farm Use Application by the City of Richmond to Host the Farm Fest at The Garden City Lands on August 8, 2020, Located at 5560 Garden City Road", dated March 11, 2020, from the Director, Parks Services, be referred back to staff.

DEFEATED
Opposed: Mayor Brodie
Cllrs. Greene
Loo
McPhail
Steves
Wolfe

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

3. **PROVIDENCE FLAGSHIP PROPOSAL**
(File Ref. No. 11-7000-01) (REDMS No. 6407444 v. 5)

In accordance with Section 100 of the *Community Charter*, Cllr. McPhail declared to be in a conflict of interest as her husband has ownership interest in the *Providence*, and Cllr. McPhail left the meeting – 4:35 p.m.

It was moved and seconded

(1) That the Chief Administrative Officer and the General Manager, Community Services be authorized to enter into a three year agreement on behalf of the City for a total value of $50,000 with the Providence 1903 Charters; and

(2) That funding of $33,000 from the Council Community Initiatives Account be approved to fund the annual cost of $16,500 in the second and third year of the agreement as outlined in the staff report "Providence Flagship Proposal" dated February 10, 2020, from the Director, Arts, Culture and Heritage Services and the Consolidated 5 Year Financial Plan (2020-2024) be amended accordingly.

The question on the motion was not called as discussion ensued with regard to the feasibility of hosting the 2020 Richmond Maritime Festival, and staff noted that the event programming is flexible and that alternative activities for the ship can be discussed with the ship's operators.

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

Cllr. McPhail returned to the meeting – 4:38 p.m.

ENGINEERING AND PUBLIC WORKS DIVISION

4. **DISTRICT ENERGY UTILITY BYLAWS – BILLING DUE DATE AMENDMENT**
(File Ref. No. 01-0060-20-LIEC1) (REDMS No. 6441621)

It was moved and seconded

That the following bylaws be introduced and given first, second, and third readings:

(1) Alexandra District Energy Utility Bylaw No. 8641, Amendment Bylaw No. 10175;

(2) Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 10176; and

(3) City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10177.

The question on the motion was not called as staff noted that options to stagger bill payment schedules following amendments to the billing due dates can be considered.

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

It was moved and seconded
That each of the following bylaws be adopted:

(1) Alexandra District Energy Utility Bylaw No. 8641, Amendment Bylaw No. 10175;

(2) Oval Village District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 10176; and

(3) City Centre District Energy Utility Bylaw No. 9895, Amendment Bylaw No. 10177.

CARRIED

LEGAL AND LEGISLATIVE SERVICES DEPARTMENT

5. **AMENDMENTS TO THE COUNCIL PROCEDURE BYLAW – SPECIAL COUNCIL MEETINGS**
(File Ref. No. 12-8060-20-010179) (REDMS No. 6443799)

It was moved and seconded

(1) That Council Procedure Bylaw No. 7560, Amendment Bylaw No. 10179, which introduces amendments relating to excluding or limiting the physical attendance of members of the public in emergency circumstances from Special Council Meetings, be introduced and given first, second and third readings; and

(2) That Council Procedure Bylaw No. 7560, Amendment Bylaw No. 10179 be adopted.

The question on the motion was not called as discussion ensued with regard to options for public participation in Committee and Council meetings.

In reply to queries from Committee, staff noted that (i) the public and members of the media are not excluded from meetings and are encouraged to provide written submissions in place of attending, (ii) meeting rooms are configured for social distancing and that the proposed bylaw would provide Council the ability to restrict public attendance in emergency circumstances, (iii) written submissions are regularly monitored and are immediately forwarded to members of Council, and (iv) signage around City Hall advises the public of the current closures and members of the public wishing to attend the meeting can be escorted to the meeting room by security staff.

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

Discussion then ensued with regard to public participation options for individuals who are unable to attend the Council and Committee meetings, and as a result, the following **referral motion** was introduced:

It was moved and seconded
That staff look at options for members of the public who are unable to submit written comments and are unable to attend Council and Committee meetings in person, and report back.

DEFEATED
Opposed: Mayor Brodie
Cllrs. Loo
McNulty
McPhail
Steves

Staff were then directed to provide a summary of the initiatives taken to continue public participation in Council and Committee meetings during the City Hall closure.

ADJOURNMENT

It was moved and seconded
That the meeting adjourn (4:49 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, April 6, 2020.

Mayor Malcolm D. Brodie
Chair

Evangel Biason
Legislative Services Coordinator

City of Richmond

Report to Committee

To:	General Purposes Committee	**Date:**	April 9, 2020
From:	Tom Stewart, AScT. Director, Public Works Operations	**File:**	10-6370-01/2019-Vol 01
Re:	**Report 2019: Continuous Improvement for Sustainable Waste Management**		

Staff Recommendation

That the annual report titled, "Report 2019: Continuous Improvement for Sustainable Waste Management" be endorsed and be made available to the community on the City's website and through various communication tools including social media channels and as part of community outreach initiatives.

Tom Stewart, AScT.
Director, Public Works Operations
(604-233-3301)

Att. 1

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER DocuSigned by: 9352CB09CEDB448...	
SENIOR STAFF REPORT REVIEW	INITIALS:
APPROVED BY CAO	

Staff Report

Origin

This report presents the City's annual progress toward waste diversion goals as outlined in the attached "Report 2019: Continuous Improvement for Sustainable Waste Management."

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.*
>
> *2.2 Policies and practices support Richmond's sustainability goals.*

This report supports Council's Strategic Plan 2018-2022 Strategy #8 An Engaged and Informed Community:

> *Ensure that the citizenry of Richmond is well-informed and engaged about City business and decision-making.*
>
> *8.1 Increased opportunities for public engagement.*

Analysis

Background

The City has a waste diversion goal of 80% by 2020 which aligns with that established by Metro Vancouver in the regional Integrated Solid Waste and Resource Management Plan (ISWRMP). To support this target, the City provides a range of reduction, recycling and waste management services to Richmond residents. To promote involvement and utilization of these services, the City has an extensive range of communication and outreach initiatives to raise awareness and engage citizens.

"Report 2019: Continuous Improvement for Sustainable Waste Management" (the Report) presents the City's annual progress update (Attachment 1). The Report summarizes Richmond's comprehensive programs and services, provides insights into upcoming initiatives and includes tips and resources to support reduction, recycling, and sustainable waste management.

2019 Highlights

The Report highlights Richmond's role as a leader in the region in reducing waste and embracing circular economy principles. These key milestones have helped inspire single-family homes to divert 79% of waste from landfills.

The City not only expanded its programs and added services, but also took bold steps toward waste reduction through the introduction of Single-Use Plastic and Other Items Bylaw No. 10000. The City's bylaw received first three readings on July 22, 2019 and was forwarded to the Province for Ministerial approval. The bylaw, as written, will become effective six months after formal adoption, and enforceable twelve months after adoption, however staff are monitoring impacts from the COVID-19 pandemic and will bring forward recommendations on implementation and timing as necessary. This bylaw is intended to ban plastic straws, plastic checkout bags and foam food service ware. It is estimated that over 35 million of these items are disposed of in Richmond each year.

Report 2019 Overview

The 2019 Report contains four sections – the first three sections provide an overview of the past year, including details and statistics on the City's waste management programs and services, and key planned initiatives for 2020. The Report's final section provides a comprehensive tips and resources guide which provides more information on where to recycle, dispose or donate various household items.

The following is a summary overview of each section:

Section 1: Annual Outlook provides an overview of the challenges and achievements in 2019, including:

- Single-Use Plastic and Other Items Bylaw No. 10000: As part of introducing the new bylaw, the City initiated a comprehensive communication and engagement campaign to reach out to local businesses and the general public. In total, 456 Richmond residents participated in the online Let's Talk Richmond survey and 179 businesses attended targeted Business Workshops hosted by the City. Additionally, the City continues to advocate to provincial and federal governments for guidance and consistent regulations around single-use items and biodegradable and compostable plastics.

- Richmond Recycling Depot: Operating hours were expanded to six days per week and new items are also now being accepted for recycling including electronics, propane tanks, butane cylinders, tires, smoke and carbon monoxide alarms and upholstered furniture.

- Large Item Pick Up Program: This program was enhanced to increase the service from four to six items per year per household and tires were added as an acceptable item.

- Pilot Program with Richmond Schools: Designed, implemented and completed the Flexible Plastic Packaging Recycling Campaign in Richmond Schools in association with School District 38.

- Repair Fair: Introduced the Richmond Repair Fair at the CEEP Ideas Fair (Community Energy and Emissions Plan) to determine Richmond residents' interest in free repair events.

- Green Ambassadors: Supported the Green Ambassadors program who contributed 4,167 volunteer hours to promote recycling and responsible waste management at 20 special events and 11 symposiums for training and engagement. In addition, a new dedicated web page was created to promote awareness and recruitment for the program.

- Tours and Workshops: Held 12 Richmond Recycling Depot tours, 32 recycling workshops, 11 outreach displays and 20 sessions at multi-family complexes with approximately 3,950 attendees.

- Special Event Recycling: Provided 82 special events in public spaces with more than 280 recycling stations for 263,000 attendees.

- Collective Efforts to Reduce Food Waste: Joined the Love Food Hate Waste campaign to help support the national and provincial efforts to reduce food waste and maintain consistent messaging that serves to familiarize residents with the program and overall brand.

All of these initiatives were supported by an extensive communication and outreach program to broadly engage the community in waste reduction and increased recycling participation.

The *Annual Outlook* section also highlights new initiatives and service targets for the upcoming year.

Section 2: Tracking Our Progress provides statistics and data on the broad range of programs and services the City offers residents to responsibly reduce, recycle or dispose of their household items. Highlights for each program show their contribution to residents in single-family homes achieving 79% waste diversion.

Through the Green Cart programs, residents diverted 20,673.06 tonnes of food scraps and yard trimmings from the landfill. The residential Blue Box and Blue Cart programs diverted 8,464.86 tonnes of recyclable material, while the Richmond Recycling Depot captured an extra 4,592.18 tonnes of materials. The Large Item Pick Up program completed 10,082 service requests, equating to 787 tonnes of materials collected – 547 tonnes of which were recycled. Through outreach and customer service, staff assisted residents with 15,635 customer service calls, attended 11 special events and hosted 64 community workshops and tours in 2019.

Section 3: Programs and Services describes the City's comprehensive recycling and waste reduction initiatives, highlighting how each program or service contributes to the City's overall diversion and sustainability goals. This section also includes information on litter collection, public spaces recycling, event recycling, and community and school engagement programs.

Section 4: Tips and Resources provides an at-a-glance resource on how and where to recycle, what to do with hazardous waste, and where to find additional information. This includes contact information and locations for Richmond services and community partners involved in extended producer responsibility programs.

Moving Forward

Through partnerships and community engagement, the City will continue to implement new initiatives to make it easier and more convenient for residents to recycle their household waste. Key focus areas in 2020 will include:

- Work with businesses and the community to implement the Single-Use Plastic and Other Items Bylaw No. 10000.
- Complete capital upgrades at the Recycling Depot to enhance site safety for users and staff, and expand operating days to seven days per week. New materials to be accepted include fire extinguishers, motor oil, antifreeze and car batteries.
- Develop and implement a communication plan designed to achieve the 80% waste diversion and increased awareness about how to support a circular economy.
- Host expanded Richmond Repair Fair events throughout the year and assess the program.
- Consider a pilot program for the collection of grease to assess the effect of grease build-up on the sanitary sewer system.
- Complete a detailed review and scope assessment related to enhanced recycling options for the commercial sector.

Proposed Communication

Subject to Council's direction, the annual "Report 2019: Continuous Improvement for Sustainable Waste Management" will be made available on the City's website and through various communication tools including social media channels as part of community outreach initiatives.

Financial Impact

None.

Conclusion

Through the "Report 2019: Continuous Improvement for Sustainable Waste Management," the City is providing its residents with an annual progress report on the many recycling and waste management programs and services delivered in the community. By tracking progress and waste diversion, the City is demonstrating Richmond's commitment to responsive services, responsible government and accessible information and communication.

It is through Richmond residents' participation and commitment to recycling that those living in single-family homes have achieved 79% waste diversion in 2019.

Suzanne Bycraft
Manager, Fleet and Environmental Programs
(604-233-3338)

SJB:kn

Att. 1: Report 2019: Continuous Improvement for Sustainable Waste Management

City of Richmond Recycling and Solid Waste Management

REPORT 2019

CONTINUOUS IMPROVEMENT FOR SUSTAINABLE WASTE MANAGEMENT

Thank You Richmond

In 2019, multiple City initiatives were guided by the input and actions of City residents and businesses.

The City continues to focus on both the quality and quantity of recycling, as we need materials sorted properly so they can be turned into new products and remain part of the circular economy by being reused and repurposed multiple times. We appreciate the leadership our residents demonstrate through their recycling efforts. Thanks to their commitment to recycle, we are now diverting close to 80% of household waste from the landfill. This recycling is used for new materials and products – many through processing facilities in Canada. As an example, Recycle BC reports that glass is shipped to Abbotsford to be processed into new bottles and to Quesnel to be made into sandblast materials. Metal containers are sold to end-markets in B.C., Ontario and the United States and can be recycled into new packaging, like aluminum cans and sheet metal for automotive manufacturing. Plastics are processed in the Lower Mainland, made into pellets and used in new products such as plastic bags or cosmetic containers.

We also recognize that recycling is only part of the picture. We also need to reduce waste – especially single-use items that create unnecessary waste and cause pollution. With the introduction of *Single-Use Plastic and Other Items Bylaw No. 10000*, we have taken an important step towards reducing reliance on single-use items. It is clear that provincial and federal actions are also coming, and we want to ensure our businesses have the information they need to get ahead of these changes while choosing more sustainable products. Thanks to the many business representatives who participated in the workshops hosted in the fall, we have a better sense of how these changes will affect business, and how the City can support them in the transition. We also gained insight into how residents can support re-usable options.

Together, we can make significant changes in our community that will support a circular economy and provide a more sustainable approach to waste management.

Contents

Environmental Programs is responsible for residential garbage and recycling services, including collection, drop-off services at the Richmond Recycling Depot, public spaces recycling, litter collection services, and sustainable waste management for the City.

We strive to help create a more resilient environment through our programs and services. We believe that it is our responsibility to preserve our community and our planet for future generations.

Through outreach and engagement, working with our residents and local businesses, and partnering with local agencies, we strive to meet and exceed all regional waste diversion goals by continuously expanding our program and service offerings.


CONTINUOUS
IMPROVEMENT
FOR
SUSTAINABLE
WASTE
MANAGEMENT

6433406

1.0 Annual Outlook

Waste management has become much more than simply a service. A lot of waste is now a product that is sold to recycling processors or material that must be handled safely and responsibly.

The way waste is managed is integral to supporting sustainability and the circular economy – where used items are recycled into new products or reused so that they stay in circulation, reducing the need to harvest raw materials. Sustainable waste management also involves reducing waste through individual actions and product choices. At the same time, Richmond is affected by standards set by Metro Vancouver, contract requirements with Recycle BC and composting facilities, and new standards in China or with other processors that have resulted in the need for high quality recycling.

To meet these requirements and create sustainable waste management solutions, the City of Richmond focuses on continuous improvement. This includes expanding its programs and services and working with residents to provide information and assistance related to how they can increase the amount they recycle and improve the quality of their recycling. The City also strives to improve the efficiency of its services, and to work in partnership with others who share a commitment to sustainable waste management.

Service enhancements in 2019 included extending operating hours at the Richmond Recycling Depot to remain open six days a week, and to accept new items including propane tanks, butane cylinders, upholstered furniture, tires and electronics. The City also expanded the Large Item Pick Up program, increasing the number of items accepted each year from four to six, adding tires (passenger and light duty truck only) as accepted items, and upholstered furniture is now recycled.

TOWARDS A CIRCULAR ECONOMY

It's time to shift to a circular economy, where the materials we use stay in circulation to be used, re-used and recycled multiple times into new products.

The City also developed a pilot program in partnership with the Richmond School District to promote flexible plastic packaging recycling, which is now accepted at the Richmond Recycling Depot. Through this program, participating schools encouraged students to recycle flexible plastic packaging like chip bags, candy/granola bar wrappers, rice cracker and seaweed packages, cookie wrappers and fruit cup plastic seals. The City provided bins and promotional materials like posters, signage and parent notices. The primary focus of the program was to increase awareness and encourage students to recycle materials that in the past were considered garbage. Twenty schools participated in the one-month pilot program, each receiving $250.

All of these actions support Richmond's goal to be a Recycling Smart City, and together, these measures contribute to supporting residents in diverting close to 80% of their household waste from landfills.

It's also essential to have good quality recycling as processing facilities have increasingly high requirements for these materials. The quality of recycling is reduced when non-recyclable items are found in recycling bins, or when recyclables are not sorted into the correct bin, such as when glass is put in the Blue Box instead of the grey Glass Recycling Bin. Recycling processors will pay less for contaminated recycling, or worse, will not accept it. As well, when more than 3% of collected recycling is contaminated, the City can be charged fines and other penalties as part of its contract with Recycle BC, and these costs are ultimately paid by residents. As a consequence, if contamination is consistently found in recycling bins, the recycling will be left behind until the contamination issue is addressed.

To help residents improve the quality of recycling, the City continued its "Let's Recycle Correctly!" campaign, which involved communication and education materials, as well as recycling audit teams who completed random scans of curbside collection bins.

In 2019, the campaign was expanded to include audits of residential Blue Box and Green Cart recycling, as well as Garbage Carts. The focus is on providing residents with feedback on how well they are sorting their household waste, as well as tips on how they can keep recyclable materials out of the garbage and improve the quality of their recycling by sorting it correctly.

While the City will continue to focus on how to increase and improve recycling, there is also growing awareness of the need to reduce waste overall. In some cases, items like single-use plastic are causing serious pollution in oceans and other waterways, and in others, food is being wasted when it could go to families in need. The City took a number of steps in 2019 to address these concerns.

To address unnecessary waste from single-use items, Richmond City Council completed the first key step towards introducing the proposed Single-Use Plastic and Other Items Bylaw 10000 by approving the first three readings of the bylaw. This bylaw bans plastic straws, plastic checkout bags and foam food service ware, like plates, cups, bowls and take-out containers. Because Bylaw 10000 relates to environmental matters, the City sent the proposed bylaw to the BC Ministry of Environment and Climate Change Strategy for approval. At the same time, the City initiated a comprehensive community engagement process that involved connecting with businesses affected by the bylaw and business organizations. Through a series of 10 workshops, including sessions in English, Cantonese and Mandarin, the City provided information about the items that would be banned and the approved alternatives. The City also collected feedback on the proposed bylaw and how it can support businesses in the transition.

The community engagement also included an online survey, inviting residents to share comments and questions about the proposed bylaw as well as information about how reusable alternatives are currently being used in the community.

In addition to the City's bylaw, both provincial and federal governments have indicated that they are reviewing their own measures to ban these types of single-use items. As a result, the City will continue to work with affected businesses to keep them informed and help them prepare for transitioning to better alternatives.

In a new step to reduce unnecessary food waste, the City is partnering with FoodMesh, a local organization with a proven history of preventing food waste by using it to match supply with demand. The unique program is designed to prevent 225,000 kg of food from going to waste throughout 2020 and using it to create approximately 300,000 meals for Richmond residents experiencing food insecurity.

The web and app-based exchange platform creates an online network where Richmond-based food businesses and farmers with surplus food can either donate or sell it to charities, farmers or businesses that can use it to support those in need.

All of these initiatives are further supported by an extensive communication and outreach program to provide information and educate residents about how to increase recycling and reduce contamination. In addition to communication that incorporates a mix of advertising, printed materials and online tactics, the City also reached out to residents in person through 32 workshops and 12 tours at the Richmond Recycling Depot, as well as displays at community events and in shopping malls.

Increasing the amount being recycled, ensuring it is the quality needed to be accepted by processors and reducing unnecessary waste all contribute to sustainable waste management. This in turn supports a circular economy, where the materials we use stay in circulation to be used, re-used and recycled multiple times into new products.

HOW RESIDENTS CAN HELP US REACH OUR TARGET

1. STOP

Rethink what you're putting in the garbage. Can it be recycled, donated or reused?

2. REDUCE

Reduce waste by choosing reusable options and avoiding single-use items such as bottles, film wrap, plastic bags and Styrofoam containers.

4. RECYCLE

Keep food scraps and food-soiled paper out of the garbage, and recycle other materials through City collection services, the Recycling Depot and take-back programs (See page 53).

3. REUSE

Donate used items in good condition so that they can be reused. Check out www.richmondshares.bc.ca

1.1
2019 Top Accomplishments

With a continued emphasis on supporting sustainable waste management, the City is focused on promoting recycling and waste reduction. This report showcases some of the key achievements in 2019, as well as looking back on the City's top accomplishments over the last decade.

RECYCLING MILESTONES

Looking back to the 1990s and the past decade, there have been many accomplishments that have helped Richmond reach its goals.

1990
Blue Box program launched

1991
Parking lot recycling depot opened at 5599 Lynas Lane

1992
Backyard compost bin distribution program launched

1993
Blue Cart pilot program for multi-family complexes launched

Richmond Recycling Depot opens at 5555 Lynas Lane

1995
Blue Cart program launched

1996
Weekly curbside yard trimmings collection launched

1 RICHMOND RECYCLING DEPOT

Extended operating hours to six days per week and added new accepted items.

2 EXPANDED LARGE ITEM PICK UP

Increased Large Item Pick Up Program to six items per year per household, and added tires as an accepted item.

3 SINGLE-USE PLASTIC AND OTHER ITEMS BYLAW

Introduced Bylaw 10000 and completed communication and engagement campaign with Richmond businesses and residents.

4 LET'S RECYCLE CORRECTLY! CAMPAIGN

Launched communication campaign and implemented audits of Blue Box, Garbage Cart and Green Cart with focus on education and awareness.

5 FLEXIBLE PLASTIC PACKAGING RECYCLING

Designed, implemented and completed a pilot recycling program with the Richmond School District.

6 RICHMOND REPAIR FAIR

Introduced the Richmond Repair Fair at City events to provide free repairs on small household items.

7 GARBAGE COLLECTION EFFICIENCY

Installed additional in-ground litter collection containers to address capacity concerns and reduce service frequency.

8 PUBLIC SPACES RECYCLING

Installed 27 new public space recycling containers that are of newer design and implemented standard signage guidelines.

9 GREEN AMBASSADORS PROGRAM

Supported 20 special events and 11 symposiums for training and engagement with 4,167 volunteer hours, and created a new dedicated web page to promote awareness and recruitment.

10 COMMUNITY OUTREACH

Held 12 Richmond Recycling Depot tours, 32 recycling workshops, 11 outreach displays and 20 sessions at multi-family complexes with approximately 3,950 attendees.

11 SPECIAL EVENT RECYCLING

Provided 82 special events (263,000 attendees) with more than 280 recycling stations.

12 LOVE FOOD HATE WASTE

Joined the national Love Food Hate Waste campaign to help reduce food waste.

2010
Green Can program launched

2011
Food Scraps pilot program for townhomes launched

2013
Green Cart program for single-family and townhomes launched

Large Item Pick Up program launched

2014
Multi-family Green Cart pilot program completed

2015
Green Cart program for multi-family complexes launched

2016
Biweekly Garbage Cart program launched

2019
Single-Use Plastic and Other Items Bylaw introduced

Large Item Pick Up program expanded

Hours and items at Richmond Recycling Depot expanded

1.2 Setting Goals

Richmond's long-term goal is to be a Recycling Smart City, and the annual goals listed here are designed to help achieve this target. Each goal is designed to make it easy and convenient to recycle and reduce waste in Richmond, as well as creating and promoting opportunities for innovation, partnership and continuous improvement.

1 ENHANCE SERVICE AT RICHMOND RECYCLING DEPOT

Expand operational days to seven days per week, complete upgrades and expand accepted items to include fire extinguishers, motor oil, antifreeze and car batteries.

2 EXPAND COMMUNICATION AND ENGAGEMENT

Develop and implement a communication plan to achieve 80% waste diversion, and increased awareness about how to support a circular economy.

3 EXPAND RICHMOND REPAIR FAIR

Host expanded Richmond Repair Fair events throughout the year and assess program.

4 BYLAW 10000 BUSINESS ENGAGEMENT

Work with businesses to implement the Single-Use Plastic and Other Items Bylaw 10000.

5 RAISE AWARENESS ON THE ISSUES OF MARINE PLASTICS

Research and stay current on policies and actions around the world and increase awareness of how to reduce plastic litter in Richmond.

6 GREASE COLLECTION PILOT

Consider a pilot program for the collection of grease to assess the effect of grease build-up on the sanitary sewer system.

7 COMMERCIAL RECYCLING SERVICE REVIEW

Complete a detailed review and scope assessment related to enhanced recycling options for the commercial sector.

8 DEVELOP STRATEGY TO ADDRESS ILLEGAL DUMPING

Continue development of the Illegal Dumping Overview and Strategy.

In the Community

One of the best ways to increase awareness about how to recycle consistently and correctly is to meet with residents in person.

City outreach teams can answer questions directly and demonstrate how recycling works in Richmond. In addition to outreach at community events and other public displays, the outreach teams deliver workshops, and host tours and activities at the Richmond Recycling Depot.

Programs through schools are popular as young people learn about recycling and bring the information home to their families. One example is a workshop held at W.D. Ferris Elementary involving 55 students to help raise awareness about how to recycle flexible plastic packaging.

"Having the City present to the students strengthens the connection between the classroom and the greater community about environmental sustainability," says Kevin Lyseng, the teacher and school Environmental Steward who requested the City's workshop. "It reinforces that the important steps students take at school to reduce waste have a profound effect on the environment, and that their actions are aligned with what the City does with the wider population."

Richmond also provides information and assistance to new immigrants and refugees in the community. In 2019, Richmond hosted three workshops involving approximately 70 participants through Settlement Workers in the Schools (SWIS), a program offered through the Richmond School District No 38. Participants toured the Richmond Recycling Depot and participated in activities focused on how to recycle correctly.

"These workshops are important as many people don't know where to get the information and where to go if they want to recycle something, especially if they are new immigrants in Richmond," says Clara Avendano, who has requested the City's workshops as part of her role with SWIS. "As SWIS workers, we think it's important to work with the City. Richmond has many great programs and events, and working together, we can help to connect new families with the resources available in the community."

Richmond also reaches new residents through its partnership with S.U.C.C.E.S.S., a non-partisan and not-for-profit charitable organization, which was founded to promote the well-being of Canadians and newcomers.

S.U.C.C.E.S.S class touring the Richmond Recycling Depot.

By providing both general recycling information and presentations on new programs as they are introduced, the City and S.U.C.C.E.S.S. are able to connect with new residents through both translated materials and sessions designed to provide participants with opportunities to practice their English skills.

"All the newcomers I have taught in the LINC (Language Instructions for Newcomers to Canada) sincerely want to integrate and help protect Canada's beautiful environment; however, as English is their second or even third language, many would hesitate to call City Hall or approach English-speaking neighbours to get more information about recycling," says April Toh, an instructor with S.U.C.C.E.S.S.

"Some newcomers may also feel nervous about meeting people from local government, possibly because of cultural norms or perceptions based on past experiences in their respective home countries. But the staff for the workshops always showed so much patience and empathy in helping the newcomers, and there was also quite a lot of fun and laughter during their workshops. Sentiments and phrases along the lines of 'Oh, I didn't realize...,' "Gosh, I never knew...,' and 'Wow, that's really good to know' were always heard after each workshop, so there are definitely a lot of 'a-ha!' moments," adds Toh.

Given the many positive outcomes from in-person workshops and activities, it's clear that community outreach will continue to add value to residents and help Richmond achieve its goal to be a Recycling Smart City.


2
REPORTING
ON OUR
SUCCESSES

2.0 Tracking Our Progress

As part of tracking progress towards its goal to divert 80% of waste from landfills by 2020, the City of Richmond collects data across a broad spectrum of programs, services and activities. This data provides annual tracking, showing how residents have improved their recycling over the years.

The mix of data reported reflects the amount of recycling handled through residential collection programs, the usage and types of materials dropped off at the Richmond Recycling Depot and a breakdown of the different types of recyclable materials that are being diverted from the landfill through multiple recycling programs. As well, the City has a number of outreach initiatives that are aimed at increasing awareness and understanding of how to recycle correctly and consistently. This community engagement includes workshops, games and activities, student programs and the use of technology through the Richmond Collection Schedule app.

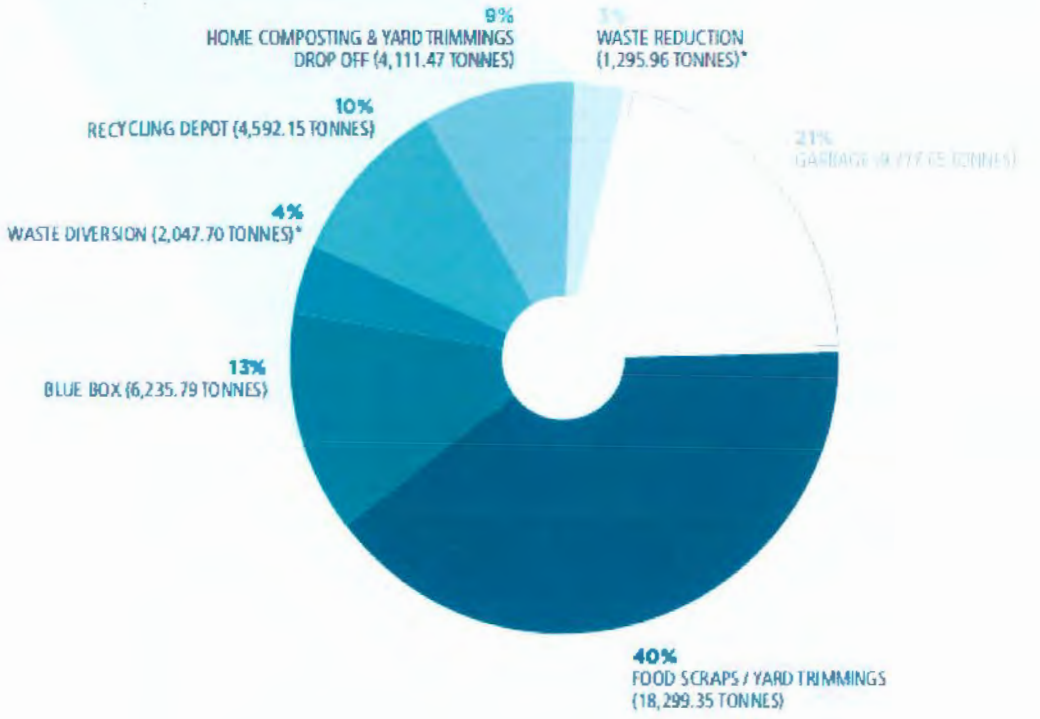
The City's reporting also highlights how partnerships help to increase the quality and quantity of recycling at events hosted in Richmond, and projects to promote a beautiful, litter-free community.

2.1
Diversion Statistics

Richmond residents in single-family homes diverted 78.9% of their waste from the landfill in 2019, coming close to the City's 80% waste diversion target.

SINGLE-FAMILY RECYCLING IN 2019

Residents took advantage of a variety of programs to divert 78.9% of their waste from the landfill in 2019.

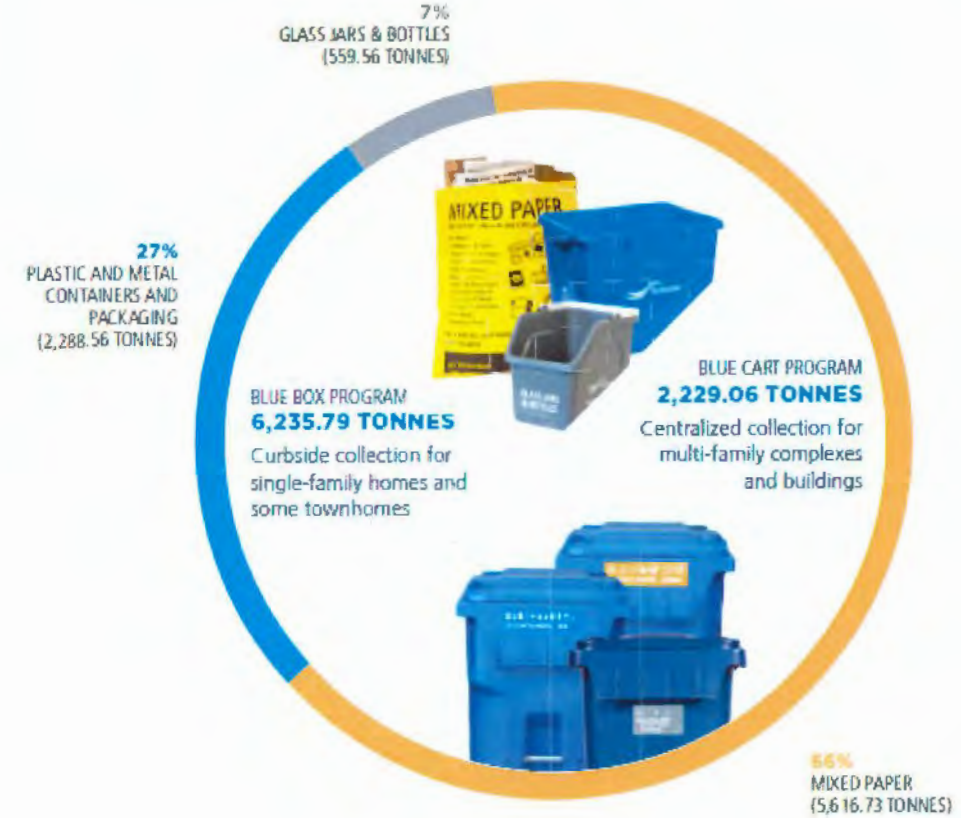


Residents were able to achieve this through a number of recycling and waste reduction opportunities, including curbside and Richmond Recycling Depot collection, as well as composting programs.

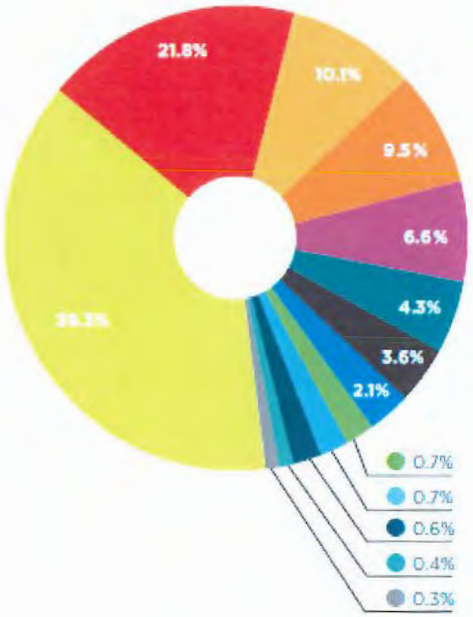
* ESTIMATED

BLUE BOX AND BLUE CART PROGRAMS RECYCLING MIX IN 2019

Through the Blue Box and Blue Cart programs, residents recycled a total of **8,464.85 tonnes** of recyclable materials.



MATERIALS COLLECTED AT THE RICHMOND RECYCLING DEPOT



In 2019, **4,592.15 tonnes** of recyclable materials were collected at the Recycling Depot.

- YARD TRIMMINGS (1,803.13 TONNES)
- SCRAP METAL (1,009.46 TONNES)
- MIXED PAPER/NEWSPRINT (464.58 TONNES)
- PRODUCT STEWARDSHIP (436.76 TONNES)*
- CARDBOARD (300.81 TONNES)
- UPHOLSTERED FURNITURE (196.07 TONNES)
- PLASTIC CONTAINERS (166.32 TONNES)
- MATTRESSES (94.46 TONNES)**
- FLEXIBLE PLASTIC PACKAGING (30.25 TONNES)
- STYROFOAM (30.03 TONNES)
- PLASTIC BAGS (26.64 TONNES)
- GLASS (19.98 TONNES)
- PROPANE/BUTANE (13.66 TONNES)

* Includes tires, electronics, paints, solvents, pesticides, lights, small appliances, batteries, cell phones, smoke and carbon monoxide alarms, and cooking oil.

** Collected via Large Item Pick Up Program, not at Depot.

8,464.85 tonnes
BLUE BOX AND BLUE CART

+

4,592.15 tonnes
RECYCLING DEPOT

= **13,057** tonnes recycled in 2019

TAKE-BACK PROGRAMS AT THE RICHMOND RECYCLING DEPOT

PAINT
202,176 EQUIVALENT LITRES

AEROSOLS
3,320 EQUIVALENT LITRES

SOLVENTS & PESTICIDES
9,728 EQUIVALENT LITRES

CFLS

4' TUBES
503 BOXES

8' TUBES
46 BOXES

ELECTRONICS

SMALL APPLIANCES

TIRES
25.82 TONNES

COOKING OIL
12.79 TONNES

BATTERIES & CELL PHONES
12.27 TONNES

SMOKE & CO ALARMS
0.03 TONNES

RESIDENTIAL GREEN CART RECYCLING IN 2019

Residents diverted 20,672.06 tonnes of food scraps and yard trimmings from landfill in 2019 to be composted into new resources.

Richmond's Green Cart program is for residents in single-family homes, townhomes, apartments and condominiums.

In 2019, 4,914.60 tonnes of yard trimmings were collected at the Richmond Recycling Depot and the Ecowaste residential and commercial drop-off service.

CITY OF RICHMOND

LARGE ITEM PICK-UP IN 2019

10,082 REQUESTS FOR SERVICE

3,558 MATTRESSES & BOXSPRINGS

394 WASHERS & DRYERS

304 TELEVISIONS

787 TONNES WERE COLLECTED

OF THIS, **547** TONNES WERE RECYCLED

589 FRIDGES & FREEZERS

413 BARBECUES

182 DISHWASHERS

2,376 COUCHES & LOVESEATS

1,070 CHAIRS & RECLINERS

227 STOVES & MICROWAVES

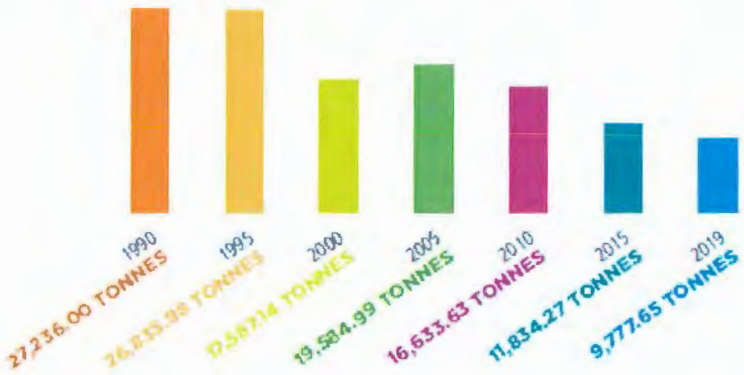
17,258 ITEMS COLLECTED

6,505 NON-RECYCLABLE HOUSEHOLD ITEMS COLLECTED FOR SAFE HANDLING AND DISPOSAL

1,640 OTHER RECYCLABLE ITEMS

FROM GARBAGE DISPOSAL TO DIVERSION

SINGLE-FAMILY HOMES GARBAGE IN TONNES



SINGLE-FAMILY HOMES DIVERSION OVER TIME

2.2
Outreach and Customer Service

Statistics in this section are related to our successful outreach and customer service programs, which are designed to turn education and information into action.

CUSTOMER SERVICE

15,635 CUSTOMER SERVICE CALLS SUPPORTED

11 OUTREACH DISPLAYS AT SPECIAL EVENTS

20 INFORMATION SESSIONS AT MULTI-FAMILY COMPLEXES

Richmond's Environmental Programs staff share information, tips and resources by phone, as well as through outreach events and on the website.

COMPOST BINS, GARBAGE TAGS AND VOUCHERS

10,039 GARBAGE TAGS SOLD

1,914 GARBAGE DISPOSAL VOUCHERS SOLD

79 COMPOST BINS SOLD

LITTER COLLECTION

BINS INSPECTED **10,488** TIMES PER MONTH

AND SERVICED **16,966** TIMES PER MONTH

FOR A COMBINED TOTAL OF **329,442** BIN VISITS PER YEAR

CREWS TRAVEL **3,077** KILOMETRES PER WEEK TO INSPECT AND SERVICE BINS

ONLINE SEARCH AND TIPS TOOLS

RICHMOND COLLECTION APP – ALL-TIME STATS

7,696
APPS INSTALLED TO DATE

2,302
RECYCLING GAMES PLAYED

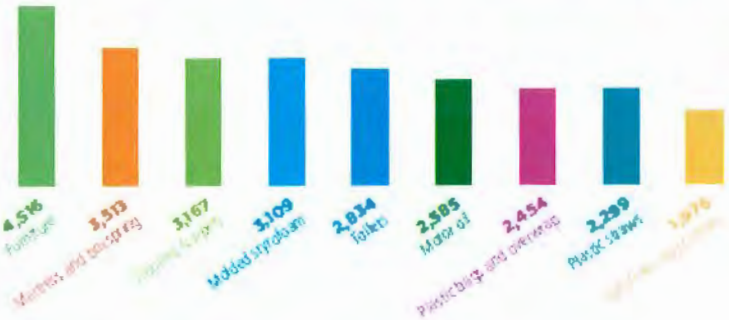
12,912
ACTIVE REMINDERS

4,416
PDF CALENDAR DOWNLOADS

59,588
TOTAL ALL-TIME APP USAGE

77,300
RECYCLING WIZARD SEARCHES

TOP MATERIALS SEARCHED ON THE RECYCLING WIZARD – ALL TIME



SCHOOL AND YOUTH ENGAGEMENT

GREEN AMBASSADOR PROGRAM

4,167
HOURS OF YOUTH VOLUNTEERING & TRAINING

In 2019, **250 youth** volunteered in Richmond's Green Ambassador program.

338 ATTENDEES & **50** VOLUNTEERS

The annual **REaDY Summit** engaged 338 elementary students from 10 schools, along with teachers, parents and 50 student leader volunteers.

3,619 HOURS

20 special events were supported by Green Ambassadors, with 3,619 hours.

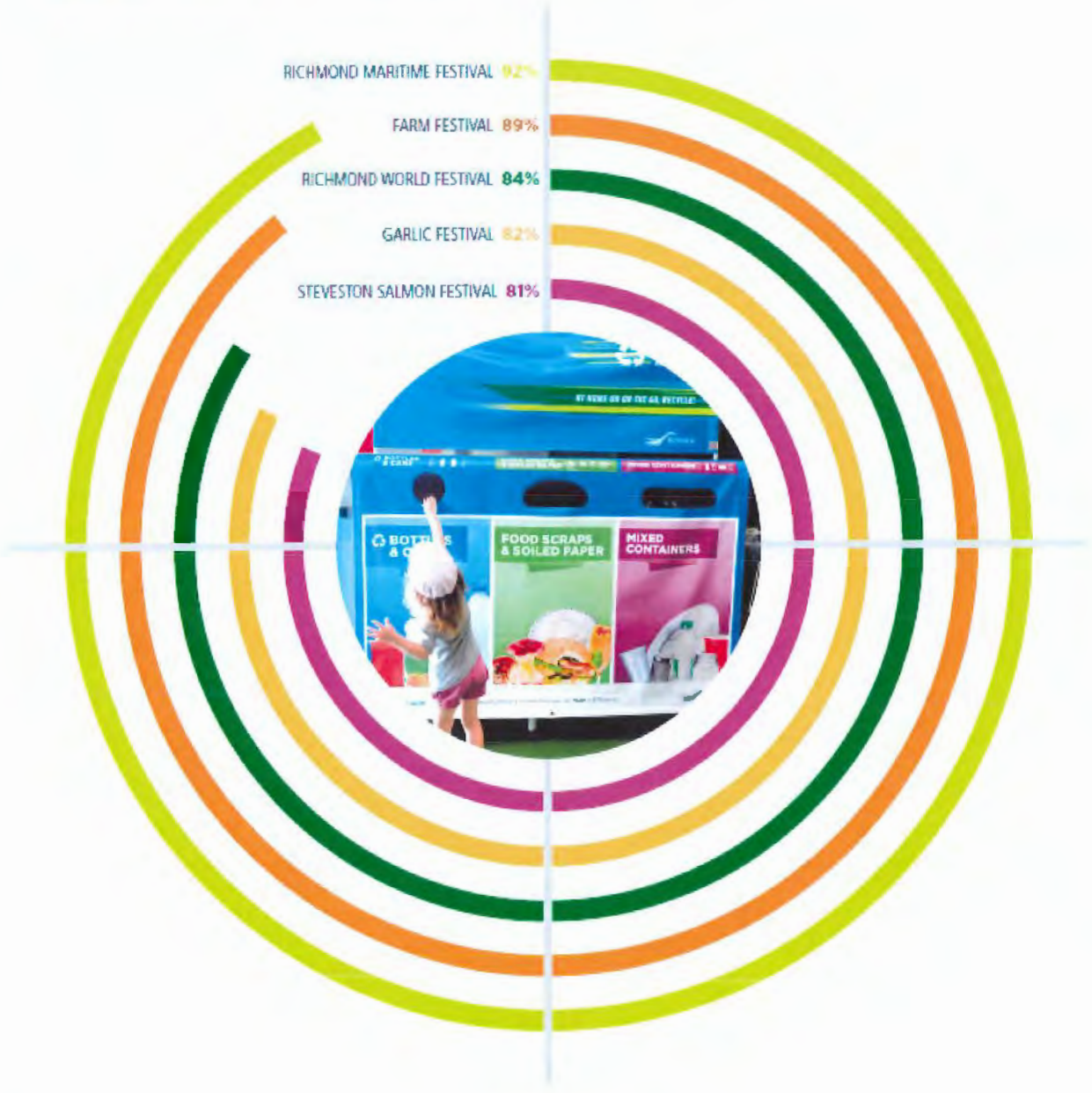
11 symposiums for training and networking with fellow Green Ambassadors for a total of 548 training hours.

548 HOURS

EVENT RECYCLING

In 2019, the City hosted recycling stations at **82 events** and Green Ambassadors supported **20 events** to help keep recyclable materials out of the garbage at events.

Typically very high diversion rates are achieved at civic events, thanks to the Green Ambassador volunteers. Examples are below.



COMMUNITY ENGAGEMENT

COMMUNITY WORKSHOPS AND TOURS

75
COMMUNITY WORKSHOPS AND TOURS OFFERED IN 2019

3,948
PARTICIPANTS

TYPE	NUMBER	PARTICIPANTS
Community Outeach & Information Sessions	31	1,692
Recycling Workshops	32	1,980
Richmond Recycling Depot Tours	12	276
Total	**75**	**3,948**

COMMUNITY CLEAN-UP EVENTS

Environmental Programs partnered with Parks in 2019 to support community clean-up events along Richmond's waterfront and in other public spaces throughout Richmond, with an estimated 300 volunteers participating.

26
COMMUNITY CLEAN-UP EVENTS

6433406

3.0 Programs and Services

Richmond residents in single-family homes divert 79% of their waste, and recycling is increasing in townhomes and other multi-family complexes.

To support residents and their commitment to recycling, Richmond continues to expand services to help residents reduce their garbage and create incentives to promote increased recycling. Green Cart and Blue Box/Blue Cart recycling remain core services to help residents recycle. Residents can also drop off a growing list of recyclable items at the Richmond Recycling Depot and other drop-off facilities.

Richmond works with residents, industry partners, product stewardship groups and businesses to achieve its goal to be a Recycling Smart City and implement sustainable waste management. Through partnerships and community engagement, Richmond's commitment to continuous improvement results in enhanced services to benefit residents.

Through its contract with Recycle BC, the City generates revenue to offset recycling costs for residents; however, the City must also adhere to requirements related to the quality of recycling. If banned items are found in the garbage or contamination is found in recycling, the City can be charged fines and other penalties. These requirements are based on the City's Solid Waste and Recycling Regulation Bylaw 6803, contract requirements with Recycle BC and organics processing facilities, and Metro Vancouver disposal bans for items that must be recycled as they are not permitted in the garbage.

3.1 Program and Service Overview

Richmond delivers a wide range of recycling and waste management services for residents to ensure that all waste is managed effectively and efficiently. The following are the key recycling and waste management services offered through the City of Richmond.

BLUE BOX

Weekly curbside collection for paper, newsprint, glass bottles and glass jars, plastic containers, empty aerosol cans, milk cartons, plastic/paper drink cups, spiral wound containers, and tin and aluminium containers. This program is provided to over 40,860 residential units in single-family homes and townhomes. For details, see page 30.

BLUE CART

Weekly recycling collection for paper, newsprint, glass bottles and glass jars, plastic containers, aerosol cans, milk cartons, plastic/paper drink cups, spiral wound containers and tin and aluminium containers. This program is provided to more than 37,980 multi-family units. For details, see page 30.

GREEN CART

Weekly collection for foods scraps and yard trimmings. This program is provided to residents in single-family homes, townhomes and multi-family complexes. For details, see page 36.

RICHMOND RECYCLING DEPOT

Drop-off service for products ranging from yard trimmings and household items, to hazardous materials and take-back program products. This service is available to all residents and in limited quantities for commercial operators. The Recycling Depot also sells backyard compost bins, rain barrels, Garbage Tags and Garbage Disposal Vouchers for use at the Vancouver Landfill. For details, see page 42.

GARBAGE CART

Biweekly curbside collection of garbage, not including banned items such as hazardous waste and materials that can be recycled, is available to residents in single-family homes and some townhomes. Garbage Tags and Garbage Disposal Vouchers for the Vancouver Landfill provide options for residents for disposal of additional garbage. For details, see page 40.

LARGE ITEM PICK UP

Residents with the City Blue Box and/or City Garbage Cart program can arrange for collection of large household items. For details, see page 46.

BACKYARD COMPOSTING

Support for residential composting includes the sale of backyard compost bins and a composting demonstration garden. These services are available to all residents. For details, see page 39.

LITTER COLLECTION

Litter Attendants are on the road seven days a week to inspect or service garbage and recycling bins more than 6,300 times each week throughout the city, collecting additional litter along the way. For details, see page 49.

PUBLIC SPACES AND EVENT RECYCLING

Recycling bins in the community make it easy to recycle on the go, such as in parks, at community centres, in the Steveston business district and at the Canada Line stations and Richmond central bus stops. Richmond supports community events by loaning garbage and recycling bins for local events at no charge. For details see Public Spaces Programs on page 48 and Outreach and Customer Service on page 50.

COMMUNITY AND SCHOOL ENGAGEMENT

Through partnerships with students, teachers and the School District, Richmond delivers educational workshops, awareness programs and volunteer opportunities to increase understanding of recycling and the benefits of reducing waste. For details see Outreach and Customer Service on page 50.

3.2 Blue Box and Blue Cart Programs

Richmond's Blue Box and Blue Cart recycling programs provide convenient collection of a wide variety of materials including mixed paper, plastic containers, milk cartons, paper and plastic drink cups, empty aerosol cans and spiral wound cans like frozen juice concentrate containers as well as glass bottles and glass jars. Approximately 78,800 residential units are serviced with weekly collection under these programs.

Richmond's Blue Box program for door-to-door curbside collection includes a Blue Box for containers, yellow Mixed Paper Recycling Bag for paper and small, flattened cardboard items and a grey Glass Recycling Bin for glass bottles and glass jars. The Blue Cart program for centralized collection has separately labeled carts for containers, mixed paper and glass.

It is important to ensure materials are sorted correctly into the proper recycling receptacles. For example, recyclables must be placed individually in bins – not stacked, nestled or in plastic bags. Glass bottles and jars must be placed in the Glass Recycling Bin/Cart – not the Blue Box or Containers Recycling Cart.

Also, some items are not accepted in the Blue Cart/Blue Box program, such as non-packaging plastics like toys, hangers and laundry baskets, as well as metal items like scissors and pans. These items are accepted at the Richmond Recycling Depot.

CONTAINER RECYCLING: BLUE BOX/CONTAINERS RECYCLING CART

✓ ACCEPTED

- ✓ Empty aerosol cans & caps (food items, air fresheners, shaving cream, deodorant, hairspray)
- ✓ Microwavable bowls, cups & lids
- ✓ Paper food containers & cartons (ice cream, milk, liquid whipping cream)
- ✓ Paper & plastic drink cups with lids
- ✓ Plastic containers, trays & caps (bakery containers & deli trays)
- ✓ Plastic & paper garden pots & trays
- ✓ Spiral wound paper cans & lids (frozen juice, potato chips, cookie dough, coffee, nuts, baby formula)
- ✓ Aluminium cans & lids
- ✓ Aluminium foil & foil containers (foil wrap, pie plates, food trays)
- ✓ Plastic bottles & caps (food items, condiments such as ketchup, mustard & relish, dish soap, mouthwash, shampoos, conditioners)
- ✓ Plastic jars & lids
- ✓ Plastic tubs & lids (margarine, spreads, dairy products such as yogurt, cottage cheese, sour cream, ice cream)
- ✓ Tin cans & lids

× NOT ACCEPTED

- x Aerosol cans with hazardous materials (spray paint)*
- x Butane cylinders*
- x Ceramic plant pots
- x Compostable/biodegradable plastic bags & containers
- x Containers for motor oil, vehicle lubricant or wax products*
- x Foil-lined cardboard lids from take-out containers
- x Garden hoses
- x Plastic bags & overwrap*
- x Plastic string or rope
- x Propane tanks*
- x Styrofoam materials*

* Take to the Richmond Recycling Depot

- Place materials separately in the bins – don't put recyclables into plastic bags. Bagged items will go in the garbage.
- Avoid stacking or nestling items together, instead place them separately in the bins. For example, don't nestle an aluminium can inside a plastic container.
- Empty, rinse and flatten containers. Food or other materials in the containers contaminate the recycling. Remove lids and recycle separately.
- Separate glass jars and glass bottles and recycle in the grey Glass Recycling Bin or Glass Recycling Cart.

PAPER PRODUCTS: MIXED PAPER RECYCLING BAG/CART

✓ ACCEPTED

- ✓ Newspapers, inserts & flyers
- ✓ Flattened cardboard boxes
- ✓ Catalogues & magazines
- ✓ Cereal boxes
- ✓ Clean pizza boxes
- ✓ Corrugated cardboard (small pieces)
- ✓ Envelopes
- ✓ Junk mail
- ✓ Paper bags
- ✓ Paper egg cartons
- ✓ Paper gift wrap & greeting cards
- ✓ Telephone books
- ✓ Shredded paper (place inside a paper bag to avoid scattering)
- ✓ Writing paper (notepads, loose leaf paper, white or coloured paper, printed paper)

× NOT ACCEPTED

- × Cardboard boxes with wax coating
- × Plastic bags used to cover newspapers/flyers
- × Metallic wrapping paper
- × Ribbons or bows
- × Musical greeting cards with batteries
- × Padded envelopes
- × Plastic or foil candy wrappers

- Remove plastic liners/covers and/or any food residue.
- Put shredded paper in a paper bag before placing in the Mixed Paper Recycling Bag/Cart to avoid scattering.
- Cut cardboard into small pieces and flatten boxes to take up less space in the Mixed Paper Recycling Bag/Cart and in the collection truck.
- Oversized/excessive amounts of cardboard can be dropped off at the Richmond Recycling Depot.

GLASS JARS & GLASS BOTTLES: GLASS RECYCLING BIN/CART

✓ ACCEPTED

✓ Clear or coloured glass bottles and glass jars (pickle jars, jam jars, spaghetti sauce jars, soy sauce bottles)

× NOT ACCEPTED

× Glasses, dishes, cookware, window glass and mirrors
× Ceramic products
× Lids and caps (remove from the glass bottle/jar and place in Blue Box/Containers Recycling Cart)

Remove plastic and metal lids and recycle separately in the Blue Box/Containers Recycling Cart.

Empty and rinse jars and bottles. Make sure no food is left inside because it contaminates the recycling.

Set Out Time

Before 7:30 a.m. every week on collection day.

Note: For centralized Blue Cart service, the collection details are arranged between the City and the Strata Council or Property Manager. Residents do not have to set the Blue Carts out for collection.

Report a Missed Collection

Call 604-276-4010 or email garbageandrecycling@richmond.ca.

How to Get More Free Recycling Supplies

Supplies include:
- Blue Boxes
- Glass Recycling Bins
- Indoor Collection Bags
- Mixed Paper Recycling Bags

Three ways to order supplies:
1. Pick up at Richmond Recycling Depot
2. Call 604-276-4010
3. Order online at www.richmond.ca/recyclesearch

Richmond Recycling Depot
5555 Lynas Lane
Tuesday to Sunday (Closed on Mondays and Statutory Holidays)
9:00 a.m. to 6:15 p.m.

It's important to think of recycling as a commodity to sell – not waste.

LET'S RECYCLE CORRECTLY!

Richmond's awareness and audit campaign – Let's Recycle Correctly! – is designed to inform residents about how to keep recyclables out of the garbage and improve the quality of their recycling.

It continues to be critical to generate quality recycling as China, the world's largest purchaser of recycled materials, is setting high standards for recycling quality under its National Sword campaign and will not purchase contaminated recycling. As well, the City is subject to fines and other penalties when contamination is found in recycling, which increases taxpayer costs.

The City's Let's Recycle Correctly! campaign began in 2017 and continued in 2019 with a goal to help increase awareness about how to sort recycling correctly and reduce contamination. The campaign includes information kits for residents, as well as advertising, social media, promotion of the City's Recycling Wizard and other outreach. In 2019, City recycling teams conducted audits of Blue Box and Green Cart recycling, as well as Garbage Carts, throughout the community and worked with residents to help them keep recyclable materials out of the garbage and improve the quality of their recycling.

AVOIDING CONTAMINATION: WHAT TO WATCH FOR

TYPES OF CONTAMINATION	HOW TO RECYCLE CORRECTLY
Glass bottles and glass jars are placed incorrectly in the Blue Box or Containers Recycling Cart	Recycle in grey Glass Recycling Bin or Glass Recycling Cart.
Recyclable items that are not accepted in Blue Box / Blue Cart (Styrofoam, plastic bags, paints and solvents, batteries and cell phones, a non-packaging plastics like toys and coat hangers)	Drop off at Richmond Recycling Depot – 5555 Lynas Lane.
Non-recyclable plastic (Straws and plastic cutlery)	These are not recyclable. Please put in the garbage.
Containers with food residue	Remove food and rinse before placing in Blue Box or Containers Recycling Cart.
Propane tanks and butane cylinders	Drop off at Richmond Recycling Depot – 5555 Lynas Lane.
Electronics	Drop off at Richmond Recycling Depot – 5555 Lynas Lane.

Do you know where it goes?

Non-packaging plastics like toys and coat hangers are **not accepted** in your Blue Box or Blue Cart, but can be taken to Richmond Recycling Depot.

3.3 Green Cart Program

Food scraps are banned from the garbage, which means they must be recycled or composted, and the City can be charged fines and other penalties when organics are found in the garbage. With the Green Cart program, all Richmond residents have access to food scraps recycling and when recycling with a Green Cart, residents are helping turn food scraps and yard trimmings into compost for nutrient-rich soil.

It is important to ensure that only food scraps, food soiled paper, and yard and garden trimmings go in the Green Cart. When items like plastic bags, Styrofoam or biodegradable/compostable bags are found in the Green Cart, the load is considered contaminated as these materials are not accepted at processing facilities because they compromise the quality of the compost.

Residents can also create their own compost at home to keep these organic materials out of landfills. Residents can purchase a backyard compost bin at the Richmond Recycling Depot.

GREEN CART FOR FOOD SCRAPS & YARD TRIMMINGS

✓ ACCEPTED

FOOD SCRAPS & FOOD SOILED PAPER

- ✓ Breads, pasta, rice & noodles
- ✓ Coffee grounds & filters
- ✓ Dairy products
- ✓ Fruit
- ✓ Eggshells
- ✓ Meat, poultry, fish, shellfish & bones
- ✓ Paper towels, napkins & plates
- ✓ Pizza delivery boxes
- ✓ Small amounts of grease/oil absorbed into paper towel
- ✓ Solid grease
- ✓ Table scraps & food scrapings
- ✓ Tea bags
- ✓ Vegetables

YARD TRIMMINGS

- ✓ Flowers
- ✓ Leaves
- ✓ Grass clippings
- ✓ Other organic yard materials
- ✓ Plants (living or dead/dried)
- ✓ Plant trimmings
- ✓ Tree & hedge prunings

× NOT ACCEPTED

- x Coffee cups
- x Compostable and biodegradable plastic bags
- x Styrofoam cups, meat trays or takeout containers
- x Garden hoses or flower pots
- x Liquid grease
- x Lumber
- x Pet feces or kitty litter
- x Plastic bags and plastic overwrap
- x Plastic wraps
- x Prunings over 4 inches (10 cm) in diameter
- x Rocks, dirt or sod

- Collect food scraps in your kitchen container. Wrap food scraps in small amounts of newspaper or used paper towel before adding to kitchen container.
- Sprinkle kitchen container with baking soda to reduce odours and consider freezing food scraps until you're ready to empty them into the Green Cart.
- Keep kitchen container clean by lining it with a few sheets of newspaper, a paper bag liner or used paper towel.
- Empty materials from your kitchen container into your Green Cart.
- Place yard trimmings into Green Cart along with your food scraps. Extra yard trimmings can go in large paper bags or additional labelled Green Cans.

MULTIPLE GREEN CART SIZES AVAILABLE

Richmond provides Green Carts in multiple sizes to meet resident's recycling needs. Residents can exchange their Green Cart for a different size by contacting the Environmental Programs Information Line at 604-276-4010 or email garbageandrecycling@richmond.ca. There is a $25 fee for cart exchanges.

SINGLE-FAMILY HOMES CART SIZE SELECTION

STANDARD

Extra Large	Large	Medium	Small
360 litres	240 litres	120 litres	80 litres
D 34.5 x W 25 x H 44.5 inches	D 27.5 x W 24.5 x H 43 inches	D 21 x W 19 x H 37.5 inches	D 21.5 x W 16 x H 34.5 inches

TOWNHOMES CART SIZE SELECTION

STANDARD

Small	Compact
80 litres	46.5 litres
D 21.5 x W 16 x H 34.5 inches	D 12 x W 11 x H 27 inches

YARD TRIMMINGS DROP-OFF

Richmond residents and commercial landscapers can drop off yard trimmings at the following locations.

Ecowaste Industries
15111 Triangle Road

Commercial operators can be pre-approved for dropping off materials at no charge when they are servicing residential properties with Richmond Green Cart service.

Visit www.ecowaste.com or call 604-277-1410 for detailed information.

City Recycling Depot
5555 Lynas Lane
Tuesday to Sunday (Closed on Mondays and Statutory Holidays)
9:00 a.m. to 6:15 p.m.

There is no charge for dropping off amounts less than one cubic yard (a car, station wagon or minivan load). Large loads are charged a fee of $20 per cubic yard. Commercial operators will be charged a fee of $20 per cubic yard at the Richmond Recycling Depot.

BACKYARD COMPOSTING PROGRAMS

Backyard Compost Bins: Backyard compost bins are available for sale at the Richmond Recycling Depot for $25 plus tax.

Demonstration Garden: To help residents learn about composting, the City hosts a Compost Demonstration area in the Terra Noval Rural Park located at 2631 Westminster Highway just west of No. 1 Road. It is open from dawn to dusk year-round.

Compost Hotline: For tips call 604-736-2250 or email composthotline@telus.net.

Set Out Time

Before 7:30 a.m. every week on collection day.

Note: For centralized Green Cart service, the collection details are arranged between the City and the Strata Council or Property Manager. Residents do not have to set the carts out for pick up.

Report a Missed Collection or Damaged Green Cart

Call 604-276-4010 or email garbageandrecycling@richmond.ca.

How to Exchange your Green Cart

Various cart sizes are on display at the Richmond Recycling Depot. Please note there is a $25 charge to exchange your cart. To change to an alternative size please contact:

Environmental Programs
604-276-4010

New/Replacement Kitchen Containers

Three ways to get a kitchen container:

1. Pick up at Richmond Recycling Depot
2. Call 604-276-4010
3. Order online at www.richmond.ca/recyclesearch

3.4 Garbage Cart Program

Richmond's curbside Garbage Cart program provides residents with convenient options for waste disposal. Household garbage is collected biweekly. The Garbage Cart program includes City-provided carts with wheels and lids and is designed to lower costs for residents who are reducing their garbage by recycling their household waste.

Most household items are recyclable. Residents are encouraged to think twice before putting items in the garbage to help keep recyclables out of the landfill.

It's important to secure or wrap loose garbage to prevent materials from being scattered by wind or animals. Garbage must be securely packed in plastic bags. This includes ashes, kitty litter, disposable diapers, vacuum cleaner sweepings and other loose household garbage.

All garbage must be placed at curbside before 7:30 a.m. on collection day but no earlier than 8:00 p.m. the day before. Do not place receptacles or other items on the road.

Residents are responsible for cleaning up any loose materials that have been scattered over the ground by animals, wind or vandalism.

EXTRA ITEM DISPOSAL OPTIONS

$2 Garbage Tags
Garbage Tags for curbside collection are available for purchase at all City facilities. One Garbage Tag is good for an additional garbage bag or can.

Garbage Disposal Vouchers
Richmond residents may purchase a Garbage Disposal Voucher for $5 at all City facilities. These vouchers are good for up to $25 at the Vancouver Landfill, and are valid anytime. They are limited to one per household.

Visit www.richmond.ca/garbage for a list of City facilities selling Garbage Tags and Garbage Disposal Vouchers.

GARBAGE CART SIZE OPTIONS

Residents who select smaller cart sizes are generating less garbage and as a result, pay less for their annual garbage collection.

Residents can exchange their cart for a different size, and their garbage collection fees are adjusted according to the size selected. Residents can exchange their Garbage Cart for a different size for $25 by calling 604-276-4010.

EXTRA LARGE
360 litres
D 34.5 x W 25 x H 44.5 in

LARGE
240 litres
D 27.5 x W 24.5 x H 43 in
Standard size for single-family homes

MEDIUM
120 litres
D 21.5 x W 19 x H 37.5 in
Standard size for townhomes

SMALL
80 litres
D 20 x W 16 x H 34.5 in

3.5 Richmond Recycling Depot

The Richmond Recycling Depot is located at 5555 Lynas Lane and is open from 9:00 a.m. – 6:15 p.m., Tuesday to Sunday for drop off of a broad range of materials.

The Recycling Depot is owned and operated by the City of Richmond, with two full-time staff and additional staff support in the summer months to manage increased recycling volumes. Staff on site are available to answer questions and provide assistance with unloading awkward or heavy items.

The City continues to increase the number of items accepted at the Recycling Depot to make it a convenient, one-stop drop-off location for multiple items. Richmond residents can drop off a wide range of recyclable materials at no charge.

RECYCLING DEPOT SERVICES

Residents are encouraged to use the curbside recyclables collection for glass bottles and glass jars, rigid plastic containers, newsprint and mixed paper. Businesses are encouraged to subscribe to onsite collection services if a large quantity of recyclables is produced. However, residents and small business operators can drop off one cubic yard of recyclables and three large appliances at the Depot per day.

This facility accepts a wide range of materials including cardboard, yard and garden trimmings, mixed paper and newspapers, as well as Styrofoam, used books, cell phones, household batteries and plastic bags. The facility also accepts large appliances (e.g. fridges, stoves, washing machines) and metal items (e.g. bike frames, barbecues, lawn mowers). The facility is also a product stewardship (take back) collection site for small appliances, paints, solvents, flammable liquids, pesticides, lights and lighting fixtures, tires, electronics, and smoke and carbon monoxide alarms.

Richmond Recycling Depot
5555 Lynas Lane
Tuesday to Sunday, 9:00 a.m. to 6:15 p.m.

For Sale at the Recycling Depot

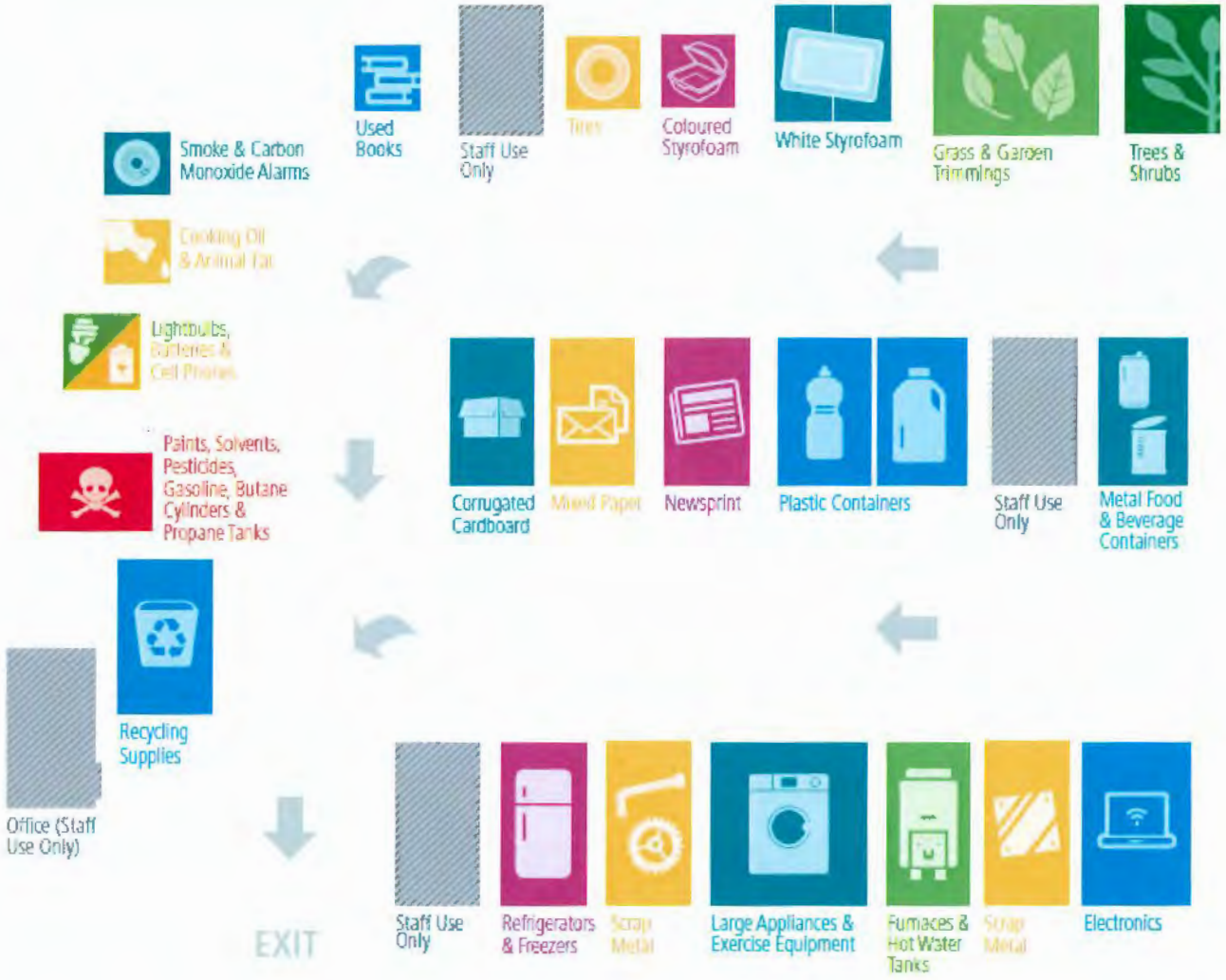
- Compost bins - $25 each + GST
- Rain barrels - $30 each + GST
- Extra Garbage Tags - $2 each
- Garbage Disposal Vouchers - $5 for Richmond residents and value is up to $25 at the Vancouver Landfill

Free Recycling Supplies Available at the Recycling Depot

- Kitchen Containers
- Grey Glass Recycling Bins
- Blue Boxes
- Yellow Mixed Paper Recycling Bags
- Indoor Collection Bags

Welcome to the Richmond Recycling Depot!

Please see attendants for assistance with recycling supplies such as Blue Boxes, and for recycling hazardous materials such as paints, solvents, pesticides, gasoline, motor oil and antifreeze.



MATERIALS ACCEPTED

- ✓ Aerosol and spiral wound cans
- ✓ Aluminium materials
- ✓ Appliances
- ✓ Batteries (small household batteries less than 5 kg)
- ✓ Books
- NEW! ✓ Butane cylinders
- ✓ Cell phones (including batteries)
- ✓ Cooking oil and animal fat
- ✓ Corrugated cardboard (flattened, clean corrugated boxes)
- NEW! ✓ Electronics
- ✓ Exercise and hobby machines
- ✓ Flammable aerosols
- ✓ Flammable liquids
- ✓ Flexible plastic packaging
- ✓ Flower pots (paper & plastic pots/trays)
- ✓ Gasoline (in approved ULC containers)
- ✓ Glass bottles/jars (clear & coloured)
- ✓ Lights
- ✓ Lighting fixtures
- ✓ Magazines
- ✓ Metal items
- ✓ Mixed paper
- NEW! ✓ Motor oil and antifreeze
- ✓ Newspaper
- ✓ Paints (household paints)
- ✓ Paint aerosols
- ✓ Pesticides (domestic pesticides)
- ✓ Plastic containers
- ✓ Plastic grocery bags & plastic overwrap
- ✓ Power tools
- NEW! ✓ Propane tanks
- ✓ Sewing, knitting and textile machines
- NEW! ✓ Smoke and carbon monoxide alarms
- ✓ Styrofoam packaging
- ✓ Tin and aluminium cans
- NEW! ✓ Tires (passenger & light-duty trucks only)
- NEW! ✓ Upholstered furniture
- ✓ Yard and garden trimmings

All materials must be sorted into different containers at the Recycling Depot. Please visit www.richmond.ca/depot for details.

3.6 Large Item Pick Up Program

Richmond's Large Item Pick Up program provides a convenient curbside collection service for up to six large household items per year, including mattresses, furniture and appliances. This program is designed to make it more convenient for residents to dispose of large household items and to help reduce illegal dumping. As well, through this program, large household items that can be recycled will be diverted from the landfill, which will help Richmond achieve its goal for 80% waste diversion.

The Large Item Pick Up program is provided to residents in single-family homes, as well as townhomes and multi-family complexes with the City's Garbage Cart and/or Blue Box program.

This service makes it easier for residents who do not have access to a vehicle to dispose of large items.

HOW THE PROGRAM WORKS

1. To schedule collection of up to six items per year, residents can contact the City's service provider, Sierra Waste Services at 604-270-4722 or schedule online at www.richmond.ca/largeitem.
2. Sierra Waste Services will contact you to provide a pick up date and confirmation number.
3. On your scheduled pick up date only, place items at the curb or for multi-family complexes, in the area designated by the strata or property manager, before 7:30 a.m. or no earlier than 8:00 p.m. the night before.

LARGE ITEM PICK UP PROGRAM

✓ ACCEPTED

- ✓ Appliances
- ✓ Barbecues (remove propane tank and/or lava rock briquettes)
- ✓ Bed frame
- ✓ Electric lawnmowers
- ✓ Furniture
- ✓ Headboard
- ✓ Outdoor furniture
- ✓ Small household goods, which must be in boxes or bundled and are a reasonable size (one box or bundle is equal to one of the resident's six allotted items)
- ✓ Weight training and exercise equipment
- ✓ Mattresses or boxsprings – please cover your mattress with a plastic bag
- ✓ Tires (car and light-duty truck)

× NOT ACCEPTED

- × Car bodies or parts
- × Carpets
- × Construction materials
- × Drywall
- × Gas lawnmowers
- × Hazardous waste
- × Lumber, demolition or home renovation materials
- × Pianos
- × Propane tanks*
- × Tree stumps

Note: Items that contain any hazardous liquids such as gas, oil, etc. will not be accepted. See page 56-61 for disposal locations or call the RCBC Recycling Hotline at 604-732-9253.

* Take to Richmond Recycling Depot, 5555 Lynas Lane

SAFETY CONSIDERATIONS

- ✓ Wrap mattresses and upholstered furniture in plastic or reusable tarp and secure them to prevent these items from getting wet or waterlogged. Wet mattresses and furniture pose safety hazards for lifting and are not accepted at the processing facility. Tarps will be left behind for re-use.
- ✓ Remove latch/door from freezers, refrigerators or any other container equipped with a door, latch or locking device.

Note: The item(s) must be able to be safely handled from the curbside in order to qualify for collection.

3.7 Public Spaces Programs

Maintaining a litter-free community and encouraging recycling in parks and other public spaces is an essential part of responsible and sustainable waste management. Not only does this help to keep the City a beautiful place to live and visit, it also helps to reduce the amount of plastic and other garbage going into oceans and other waterways.

The City has three primary services to support recycling and a litter-free community: Public Spaces services, Litter Collection services and Special Event Recycling.

Because building community pride and increasing responsible behaviours involves working together with the community, the City also works with volunteers through the Partners for Beautification program and community clean up events.

PUBLIC SPACES SERVICES

The City of Richmond has recycling and garbage bins located throughout the community in public spaces that include parks and business districts. Recycling and garbage bins are serviced or inspected over 6,300 times each week.

The City's bins include instructional bin labels to help inform people about how to sort items correctly. Many of the recycling bins feature images that complement the surrounding scenery, and others feature custom artwork by local artists. To further improve capacity and operational efficiency, the City also has large in-ground garbage collection bins in high traffic areas.

LITTER COLLECTION SERVICES

Maintaining a litter-free city is a key focus area to ensure residents can enjoy clean parks and public spaces. The City of Richmond has made efforts to ensure that there are garbage bins, and in many cases recycling options, in public spaces throughout the city.

In addition, City crews work seven days a week to collect litter from parks, school grounds, roadsides, sidewalks and boulevards.

They inspect or service garbage and recycling from litter and recycling receptacles in the community 27,454 times every month. Crews also assist with removing graffiti from City garbage bins, and they collect illegally-dumped materials found on City property and provide safe disposal and recycling of these items. Together, these measures help to support a safe and appealing community.

SPECIAL EVENT RECYCLING

Recycling stations are recommended for special event bookings taking place in Richmond. For some events, the City hosts recycling stations with assistance from the Green Ambassador volunteers. This involves setting up recycling stations and having recycling assistants at the event to advise people on how to recycle.

The City also supports events by providing organizers with recycling bins and garbage carts at no charge, as well as complimentary collection services. This makes it easy for event organizers to keep the venue clean and recyclables out of the landfill.

In addition, the City participates in community clean up events each year.

3.8 Outreach and Customer Service

Richmond's successful outreach and customer service programs are designed to help turn information and education into action. By working with children and youth through school programs and the Green Ambassadors, Richmond creates a learning environment where students gain a better understanding about recycling and sustainable waste management, and then apply their skills as volunteers and through school activities. Providing outreach, customer support services and information materials also assists residents by increasing their understanding of how to recycle correctly along with new tools and services to promote recycling at home and on the go.

The Environmental Programs Information Line staff assist customers on the phone, via email and at community events to answer questions, assist with requests relating to garbage and recycling, and provide guidance on where to go for additional information and resources. Richmond also assists customers directly at the Recycling Depot, and through its outreach programs in the community.

At the Recycling Depot, staff provide assistance with where and how to recycle using its drop-off options, answer questions about City programs and services and sell products such as compost bins and rain barrels as well as Garbage Tags and Garbage Disposal Vouchers. Through outreach, Richmond goes into the community to connect with residents to share information and respond to questions.

SEARCH & TIPS TOOLS

Richmond offers the Recycling Wizard to help residents search for where to recycle household items. The Recycling Wizard is available online at www.richmond.ca/recyclesearch and in the Richmond Collection Schedule app, free from the Apple and Android app stores.

STUDENT OUTREACH

Richmond sponsors programs, contests and other activities for local students to raise awareness about the importance of reducing waste and how to recycle correctly. These activities inspire them to feel that taking care of the planet is fun.

RICHMOND GREEN AMBASSADORS

Richmond's Green Ambassadors are dedicated high school students who participate in monthly symposiums to learn about environmental sustainability and apply what they have learned as volunteers at City events and activities. These energetic and environmentally conscious individuals also manage green initiatives in their schools, including an annual REaDY Summit (Richmond Earth Day Youth Summit).

COMMUNITY WORKSHOPS

Richmond's free community workshops provide education and tips that support recycling and waste reduction techniques. A summary of workshops that focus on helping residents towards the City's goal for 80% waste diversion is provided below.

For information on the workshops, call the Environmental Programs Information Line at 604-276-4010, email garbageandrecycling@richmond.ca, or visit the Community Outreach section at www.richmond.ca/recycle.

TYPE OF WORKSHOP	DESCRIPTION
Recycling Workshops	Learn how to reduce reliance on single-use items and sort household recyclables properly to reduce contamination. Understand the recycling process and the importance recycling has on the environment, including the impact of marine plastic and other hot topics in solid waste management.
Richmond Recycling Depot Tours	Interactive tour of the Richmond Recycling Depot designed to teach residents about the drop-off options available and materials accepted for recycling.


4
PARTNERING TO INCREASE RECYCLING OPTIONS

4.0 Tips and Resources

In Richmond, we care about our community, and we are working together to trim our waste. The City works with residents and community partners to make it easy and convenient to recycle at home and on the go. It's all about making recycling a way of life.

This at-a-glance resource on the various types of recycling programs and services available through the City of Richmond is a valuable guide to support being recycling smart in Richmond.

The Tips and Resources include highlights such as how and where to recycle, what to do with hazardous waste and where to find additional information.

Resources also include contact information and locations for Richmond services and community partners involved in take-back collection through product stewardship programs. Together these Tips and Resources help to support maximum recycling with minimum contamination in the waste going to the landfill.

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4.1
Community Resources and Partnerships

ECOWASTE INDUSTRIES

The City offers residents the option to drop off unlimited quantities of yard and garden trimmings for free at Ecowaste Industries. Proof of Richmond residency is required.

Ecowaste Industries:
15111 Triangle Road
Hours of operation and instructions:
604-277-1410
www.ecowaste.com

COMPOST HOTLINE

The Compost Hotline is a community program operated by City Farmer that provides support and tips for best practices in home composting.

Compost Hotline:
604-736-2250
composthotline@telus.net

RICHMOND SHARES

Richmond Shares is a non-profit organization that facilitates the exchange of gently used items.

Richmond Shares: www.richmondshares.bc.ca

METRO VANCOUVER RECYCLES

Metro Vancouver Recycles helps you find options for recycling products and get helpful links to online services.

Metro Vancouver Recycling Directory:
www.metrovancouverrecycles.org

RECYCLING COUNCIL OF BRITISH COLUMBIA (RCBC)

RCBC provides information and resources to support recycling in the community.

Recycling Hotline
Monday to Friday, 9 a.m. to 4 p.m.
604-RECYCLE (604-732-9253)
hotline@rcbc.bc.ca

Download the free Richmond Collection Schedule App or use the Recycling Wizard at www.richmond.ca/recyclesearch

You can find drop-off locations and how to recycle a variety of household items using the Recycling Wizard on the free Richmond Collection Schedule App available at the Apple and Android app stores. Plus, the app sends you weekly collection day reminders!

The Recycling Wizard is also available online at www.richmond.ca/recyclesearch.

4.2 Banned and Hazardous Materials

Careless handling of hazardous products can cause serious injury as well as damage to the environment. Hazardous products that are dumped in sewers or green spaces can injure livestock, wildlife and plant life. Careful and often specialized disposal is essential for these materials.

There are certain materials that Metro Vancouver disposal facilities do not accept, either because there are already disposal programs set up for these items, or because they are hazardous to waste collection workers, the public and the environment.

At disposal sites, garbage loads are inspected for banned and prohibited materials. Loads that arrive at the disposal sites containing prohibited materials are assessed a $65 minimum surcharge, plus the cost of removal, clean-up or remediation. Loads containing banned materials are assessed a 50% tipping fee surcharge.

For a list of drop-off locations, use the City's Recycling Wizard available on the Richmond Collection Schedule app and at www.richmond.ca/recyclesearch, or call the RCBC Recycling Hotline at 604-732-9253.

BANNED HAZARDOUS AND OPERATIONAL IMPACT MATERIALS

- x Agricultural waste
- x Asbestos
- x Automobile parts and bodies
- x Barrels, drums, pails or large (205 litre or greater) liquid containers, full or empty
- x Biomedical waste
- x Dead animals
- x Gypsum
- x Hazardous waste
- x Inert fill material including soil, sod, gravel, concrete and asphalt exceeding 0.5 cubic metres per load
- x Liquids or sludge
- x Refuse that is on fire, smouldering, flammable or explosive
- x Wire and cable exceeding 1% of load

BANNED MATERIALS THAT ARE RECYCLABLE WITH CITY SERVICES

- x Beverage containers
- x Containers made of glass, metal or banned recycled plastic
- x Corrugated cardboard
- x Electronics
- x Expanded polystyrene packaging
- x Food waste
- x Green waste
- x Mattresses
- x Motor oil & antifreeze
- x Propane tanks
- x Recyclable paper
- x Tires (passenger & light-duty truck only)

For a complete list of banned materials, please visit www.metrovancouver.org/services/solid-waste/recycling-programs/disposal-ban

4.3 Recycling and Disposal Directory

Many common hazardous household and automotive products must be recycled or disposed through special depots. Disposal sites and take-back collection options for hazardous, banned and other materials are listed on the following pages.

Please note that this information is provided as a reference for your convenience; however, it is not guaranteed. Please call first to confirm that the site is still open to accept these take-back products and to check hours of operation.

Watch for the BLUE listings for items recyclable through the City of Richmond

- **Disposal Ban** – Banned from the landfill and recyclable through retailers, stewardship or take-back programs
- **Disposal Ban** – Banned from the landfill and recyclable through the City and other services
- **Not Banned** – Recyclable through the City and other services
- **Not Banned** – Recycling options are available
- **$** A fee is charged

See Programs and Services starting on page 27 to find out what is accepted through the City's collection and drop-off services.

ANTIFREEZE AND EMPTY CONTAINERS

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Jiffy Lube 10991 No. 4 Road	604-448-0142

List of accepted items: bcusedoil.com or 604-732-9253.

APPLIANCES – SMALL

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Best Buy 700-5300 No. 3 Road	604-273-7335
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot 145-5751 Cedarbridge Way	604-244-0008
Regional Recycling 13300 Vulcan Way	1-855-701-7171
Richmond Return-It Depot 135 - 8171 Westminster Hwy	604-232-5555

List of accepted items: electrorecycle.ca or 604-732-9253.

BABY CAR SEATS

DROP-OFF LOCATION	PHONE
$ City of Vancouver Landfill 5400 72nd Street, Delta	604-873-7000
Pacific Mobile Depots (third Saturday of every month) Britannia Community Centre, 1661 Napier Street, Vancouver	604-718-5800
$ Queensborough Landing Return-It Depot Unit A - 409 Boyne Road, New Westminster	604-540-4467

BATTERIES – AUTOMOTIVE

DROP-OFF LOCATION	PHONE
Canadian Tire 3500 No. 3 Road 11388 Steveston Highway	604-273-2939 604-271-6651
Kal Tire 2633 No. 5 Road	604-278-9181
RME Energy Ltd. 115-6260 Graybar Road	604-241-4470
Regional Recycling 13300 Vulcan Way	1-855-701-7171

Note: All retailers accept a used battery for each one purchased. Collection sites: www.recyclemybattery.ca

BATTERIES – HOUSEHOLD AND MOBILE PHONES

Batteries weighing 5kg or less

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Best Buy 700-5300 No. 3 Road	604-273-7335
Dr. Battery 102-4460 Jacombs Road	604-273-8248
Home Depot (batteries only) 2700 Sweden Way	604-303-9882
London Drugs 5971 No. 3 Road 3080 - 11666 Steveston Highway	604-448-4811 604-448-4852
Pharmasave 116 - 10151 No. 3 Road	604-241-2898
Regional Recycling 13300 Vulcan Way	1-855-701-7171
Rona 7111 Elmbridge Way	604-273-4606
Staples 8171 Ackroyd Road 110 - 2780 Sweden Way	604-270-9599 604-303-7850

Batteries accepted: call2recycle.ca or 1-888-224-9764

Mobile phone drop-off sites: call2recycle.ca/locator.

All cellular/mobile phone stores accept used cellular/mobile phones for refurbishing or recycling.

To erase data from your device, use the free Cell Phone Data Erasers at recyclemycell.ca/recycling-your-device.

BUTANE CYLINDERS

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010

CARBON MONOXIDE (CO), SMOKE AND COMBINATION SMOKE & CO ALARMS

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
London Drugs (smoke detectors only) 5971 No. 3 Road 3200 - 11666 Steveston Highway	604-448-4811 604-448-4852
Regional Recycling 13300 Vulcan Way	1-855-701-7171

Complete list of alarms accepted: regeneration.ca or 604-732-9253.

ELECTRONICS: Audio visual equipment, computers, monitors, televisions, printers, fax machines, scanners, video games and accessories

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Best Buy 700 - 5300 No. 3 Road	604-273-7335
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot 145 - 5751 Cedarbridge Way	604-244-0008
Regional Recycling 13300 Vulcan Way	1-855-701-7171
Staples 8171 Ackroyd Road 110 - 2780 Sweden Way	604-270-9599 604-303-7850

Complete list of materials accepted: return-it.ca/electronics or 604-473-2400.

EXERCISE AND HOBBY MACHINES

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Regional Recycling 13300 Vulcan Way	1-855-701-7171

Complete list of materials accepted: return-it.ca/electronics or 604-473-2400.

EYEGLASSES

DROP-OFF LOCATION

Drop off at any local optometrist or eye care professional.

FIRE EXTINGUISHERS

DROP-OFF LOCATION	PHONE
Vancouver Fire 22131 Fraserwood Way	604-232-3473

FLAMMABLE LIQUIDS, PESTICIDES, SOLVENTS AND GASOLINE

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Regional Recycling 13300 Vulcan Way	1-855-701-7171

Complete list of accepted items: regeneration.ca or 604-732-9253.

GENERAL HAZARDOUS MATERIALS

DROP-OFF LOCATION	PHONE
Tervita 160 - 13511 Vulcan Way	604-214-7000
Terrapure Environmental 9 - 7483 Progress Way, Delta	604-952-1220

GYPSUM DRYWALL

No other materials attached to or on drywall

DROP-OFF LOCATION	PHONE
City of Vancouver Landfill 5400 72nd Street, Delta	604-873-7000
Ecowaste Industries 15111 Triangle Road	604-277-1410
New West Gypsum Recycling 11871 Horseshoe Way	604-534-9925
Vancouver Transfer Station (maximum 1/2 sheet with a paid load of garbage) 377 W. Kent Avenue N., Vancouver	604-873-7000

HYPODERMIC NEEDLES

DROP-OFF LOCATION

Purchase a "Sharps Container" from a pharmacy and return the container to same pharmacy when full. Complete list of drop-off locations: healthsteward.ca/returning-medical-sharps.

LIGHTS AND LIGHTING FIXTURES

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Canadian Tire 11288 Steveston Highway	604-271-6651
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
London Drugs (lightbulbs only) 5971 No. 3 Road 3200 - 11666 Steveston Highway	604-448-4811 604-448-4852
OK Bottle Depot 145 - 5751 Cedarbridge Way	604-244-0008
Regional Recycling 13300 Vulcan Way	1-855-701-7171
Rona 7111 Elmbridge Way	604-273-4606
Urban Impact 15360 Knox Way	604-834-8748

Accepted items: regeneration.ca or 604-732-9253.

LUBRICATING OIL (USED), OIL FILTERS AND PLASTIC OIL CONTAINERS

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Jiffy Lube 10991 No. 4 Road	604-448-0142

Accepted items: bcusedoil.com or 604-732-9253.

MATTRESSES AND BOXSPRINGS

DROP-OFF LOCATION	PHONE
Canadian Mattress Recycling 1210 Cliveden Avenue, Delta	604-777-0324
City of Vancouver Landfill 5400 72nd Street, Delta	604-873-7000
Vancouver Transfer Station 377 W. Kent Ave. N., Vancouver	604-873-7000

Richmond's Large Item Pick Up Program: Contact Sierra Waste at 604-270-4722. Some restrictions apply. Program details: richmond.ca/largeitem.

MEDICAL DEVICES AND EQUIPMENT

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot 145 - 5751 Cedarbridge Way	604-244-0008
Regional Recycling 13300 Vulcan Way	1-855-701-7171

Disposal Ban – Banned from the landfill and recyclable through retailers, stewardship or take-back programs

Disposal Ban – Banned from the landfill and recyclable through the City and other services

Not Banned – Recyclable through the City and other services

Not Banned – Recycling options are available

A fee is charged

MUSICAL INSTRUMENTS (ELECTRONIC)

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Blundell Return-It Depot 130 - 8180 No. 2 Road	604-274-1999
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot 145 - 5751 Cedarbridge Way	604-244-0008
Regional Recycling 13300 Vulcan Way	1-855-701-7171

PAINT AND PAINT AEROSOL CONTAINERS

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
Regional Recycling 13300 Vulcan Way	1-855-701-7171
Rona 7111 Elmbridge Way	604-273-4606

Complete list items accepted: regeneration.ca or 604-732-9253.

PHARMACEUTICAL

DROP-OFF LOCATION

All pharmacies accept leftover or outdated prescription drugs, non-prescription medications, herbal products, mineral supplements, vitamin supplements and throat lozenges for safe disposal.

For a list of pharmacies and/or drugs, medications, herbal products and mineral supplements accepted, visit healthsteward.ca/returns/british-columbia or call 604-732-9253.

Note: Please do not wash these items down the drain or throw them in the garbage.

PROPANE TANKS: Refillable

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
City of Vancouver Landfill 5400 72nd Street, Delta	604-873-7000

PROPANE TANKS: Small / disposable

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
City of Vancouver Landfill 5400 72nd Street, Delta	604-873-7000

OUTDOOR POWER EQUIPMENT

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Regional Recycling 13300 Vulcan Way	1-855-701-7171

SEWING, KNITTING & TEXTILE MACHINES

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot 145 - 5751 Cedarbridge Way	604-244-0008
Regional Recycling 13300 Vulcan Way	1-855-701-7171
Richmond Return-It Depot 135 - 8171 Westminster Hwy	604-232-5555

STYROFOAM - MOLDED PACKAGING & FOOD CONTAINERS

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
London Drugs 5971 No. 3 Road 3080 - 11666 Steveston Highway	604-448-4811 604-448-4852
Queensborough Landing Return-It Depot Unit A - 409 Boyne Road, New Westminster	604-540-4467

STYROFOAM CHIPS (PEANUTS)

DROP-OFF LOCATION	PHONE
Packaging Depot 6360 Kingsway, Burnaby 5524 Cambie Street, Vancouver	604-451-1206 604-325-9966

TELUS EQUIPMENT (RENTAL OR RETAIL)

DROP-OFF LOCATION

All TELUS rental or retail equipment such as cordless/corded phones, Voice Over IP (VOIP) phones, Global Positioning System (GPS) equipment and video/telephone conference equipment can be returned via Canada Post. Call 604-310-2255 for more information.

THERMOSTATS

DROP-OFF LOCATION	PHONE
Andrew Sheret Ltd. 4500 Vanguard Road	604-278-3766
Vancouver Zero Waste Centre (maximum 2) 8588 Yukon Street, Vancouver	604-873-7000

Drop-off locations: hrai.ca/public-drop-off-locations or 1-800-267-2231 ext 224.

TIRES – VEHICLES

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
$ Island City Automotive 180 - 5400 Minoru Blvd	604-273-4023
Canadian Tire 3500 No. 3 Road 11388 Steveston Highway	604-273-2939 604-271-6651
$ Express Lube & Tune Centre 2840 No. 3 Road	604-278-1018
Kal Tire 2633 No. 5 Road	604-278-9181
Metro Tires Ltd. 16160 River Road	604-321-9004
OK Tire Store 5831 Minoru Boulevard	604-278-5171
Redline Automotive Ltd. 1 - 11711 No. 5 Road	604-277-4269
Vancouver Landfill (Passenger/light truck, with/without rims, limit of 10) 5400 72nd Street, Delta	604-873-7000

Richmond's Large Item Pick Up Program: Contact Sierra Waste at 604-270-4722. Some restrictions apply. Program details: richmond.ca/largeitem.

Complete list of locations: tsbc.ca or 1-866-759-0488.

All retail locations accept a used tire for a new one purchased.

TIRES AND TUBES – BICYCLES

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Cap's/Krusty's Bicycles 135-8460 Alexandra Road	604-270-2020
Village Bikes (small amounts) 3891 Moncton Street	604-274-3865

List of locations: tsbc.ca/bike.php or 1-866-759-0488.

TOOLS - POWER (ELECTRONIC & ELECTRICAL)

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot 145 - 5751 Cedarbridge Way	604-244-0008
Regional Recycling 13300 Vulcan Way	1-855-701-7171
Richmond Return-It Depot 135 - 8171 Westminster Hwy	604-232-5555

TOYS (ELECTRONIC & ELECTRICAL) INCLUDING VIDEO GAMING SYSTEMS & ACCESSORIES

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
Best Buy 700 - 5300 No. 3 Road	604-273-7335
Ironwood Bottle & Return-It Depot 110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot 145 - 5751 Cedarbridge Way	604-244-0008
Regional Recycling 13300 Vulcan Way	1-855-701-7171

UPHOLSTERED FURNITURE (COUCHES, ARMCHAIRS, ETC)

DROP-OFF LOCATION	PHONE
Richmond Recycling Depot 5555 Lynas Lane	604-276-4010
$ Canadian Mattress Recycling 140 - 715 Eaton Way, Delta	604-777-0314
City of Vancouver Landfill 5400 72nd Street, Delta	604-873-7000

Richmond's Large Item Pick Up Program: Contact Sierra Waste at 604-270-4722. Some restrictions apply. Program details: richmond.ca/largeitem

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Disposal Ban – Banned from the landfill and recyclable through the City and other services

Not Banned – Recyclable through the City and other services

Not Banned – Recycling options are available

$ A fee is charged

CITY OF RICHMOND

Environmental Programs Information Line:
604-276-4010

www.richmond.ca/recycle

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City of Richmond

Report to Committee

To:	General Purposes Committee	**Date:**	April 9, 2020
From:	Milton Chan, P.Eng. Director, Engineering	**File:**	10-6060-01/2020-Vol 01
Re:	**2019 Winter Rainfall and 2020 Flood Protection Update**		

Staff Recommendation

That the staff report titled, "2019 Winter Rainfall and 2020 Flood Protection Update", dated April 9, 2020 from the Director, Engineering, be received for information.

DocuSigned by:
EE473F8C3481433...

Milton Chan, P.Eng.
Director, Engineering
(604-276-4377)

Att. 1

REPORT CONCURRENCE		
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**
Sewerage and Drainage	☑	DocuSigned by: 9352CB09CEDB448...
Roads and Construction	☑	
SENIOR STAFF REPORT REVIEW	**INITIALS:**	**APPROVED BY CAO**

Staff Report

Origin

As detailed in the Flood Protection Management Strategy 2019, the City of Richmond is situated approximately 1.0 m above sea level and flood protection is integral to protecting the health, safety, and economic viability of the City. Richmond is protected from flooding by infrastructure that includes 49 km of dikes, 585 km of drainage pipes, 61 km of culverts, 165 km of watercourses and 39 drainage pump stations.

Demands on the City's flood protection infrastructure are most significant during storm season in the winter and freshet season in the spring. This report provides Council with an update on 2019/2020 winter rainfall and ongoing works regarding the City's flood protection program.

This report supports Council's Strategic Plan 2018-2022 Strategy #1 A Safe and Resilient City:

Enhance and protect the safety and well-being of Richmond.

1.2 Future-proof and maintain city infrastructure to keep the community safe.

Analysis

2019 Winter Rainfall and Flood Protection System

Significant Rainfall Events

The City's drainage system is designed to accommodate a 10-year return period rainfall event. Rainfall amounts and water levels in the City's drainage system and the Fraser River are monitored using 5 rain gauges, 12 drainage level sensors and 9 river level sensors. Attachment 1 shows the total annual rainfall over the past 10 years and identifies lower than average total rainfall in 2019.

Between October 2019 and December 2019, there were four 2-year return period rainfall events. The drainage system performed well during these events.

In January 2020 and February 2020, there were two 2-year return period rainfall events and one 100-year return period rainfall event. January's rainfall was Richmond's fourth highest on record (since 1937) and staff saw a significant increase in drainage-related service requests over the 10-year average of 53. Staff responded to a total of 150 drainage-related service requests, 106 of which were a result of significant rainfall events. The main issues were caused by construction activity in the Hamilton Gilley area, which impeded the flow in the local drainage system, and have since been corrected.

In recent years, there has been an increase in the occurrences and intensities of significant storms, with the potential of multiple storms exceeding a 10-year return period intensity in a given year. This is consistent with predicted climate change impacts on local weather patterns and reinforces the need for the City's continued flood protection upgrade program.

Storm Surge

Seasonal high tides and king tides have not been significant this winter rainfall season.

Flood Protection Planning

Flood Protection Management Strategy Update

The City's flood protection efforts are guided by the recently updated Flood Protection Management Strategy. The strategy update was funded through the National Disaster Mitigation Program grant and provides a framework that outlines short- and long-term strategies for policy planning, infrastructure upgrades, and other areas related to flood risk mitigation.

Key elements of the Flood Protection Management Strategy include raising dikes, updating policies with current flood protection science, updating the City's dike operations and maintenance manual and establishing a world-class flood protection standard. These key elements will be advanced to improve the City's overall resilience to flooding. Staff will continue to engage key stakeholders and the public on climate change, flood protection, and area-specific considerations through the use of social media, open houses, presentations and other platforms.

At the January 27, 2020 Regular Council Meeting, Council introduced a referral for staff to review the City's Flood Protection Management Strategy 2019, as referenced in the staff memorandum titled "Non-Farm Use Soil Deposit Proposal for the Property Located at 21700 River Road" dated January 13, 2020, and provide comments with regard to the raising of land, specifically as it relates to agricultural land and agricultural viability. Staff will review and provide comments for Council's consideration in a separate report later this year.

Dike Master Plans

Current climate change science estimates that sea level will rise approximately 1.0 m by the year 2100 and 0.2 m of land subsidence is forecasted over the same time period. The City's Flood Protection Management Strategy is the guiding framework for continual upgrades and improvement to the City's flood protection system. A key action identified in the City's Flood Protection Management Strategy involves continuing to upgrade the City's perimeter dike to 4.7 m in the next 25 to 75 years to stay ahead of climate change induced sea level rise. The City's Dike Master Plans address this need by recommending dike upgrade options for each dike reach throughout the City.

Dike Master Plan Phases 1, 2, 3 and 5 have been adopted by Council. Dike Master Plan Phase 4, which includes the north dike of Lulu Island between No. 6 Road and Boundary Road, will be presented for Council consideration in a separate report this year.

Staff are continuing to implement the work plan endorsed by Council as part of Dike Master Plan Phase 1 for the Steveston Island dike concept. Per the Council endorsed work plan, staff are completing further assessments to negotiate land use and rights-of-way on Steveston Island, continue design work for concept preparation, work with key stakeholders to establish strategic partnerships that can be leveraged to reduce construction costs, and seek funding from senior government.

Infrastructure Improvements

Funded by the Drainage and Diking Utility and grants, the City's flood protection infrastructure is continuously upgraded and improved to address infrastructure age, growth and climate change.

Dike Upgrades

Construction is complete for the upgrade of the South Dike between Gilbert Road and No. 3 Road. Upgrades included raising and widening approximately 650 m of dikes, and constructing an improved multi-use path to enhance the safety and accessibility of pedestrians and cyclists.

Design is complete for dike upgrades along the South Dike between No. 3 Road and Finn Slough. A public information session was held in late spring 2019. Construction was scheduled to begin in 2020; however this may be delayed due to the impacts of the COVID-19 situation.

Design of the South Dike upgrades between No. 9 Road and west of McMillan Way is complete. Construction is expected to begin spring 2021.

In addition to dike upgrades completed as part of the capital program, 1.6 km of dikes were re-armoured with 11,400 tonnes of rip-rap as part of the City's Dike Maintenance Program in 2019.

Pump Station Upgrades

Significant progress has been made in upgrading the City's drainage pump stations to accommodate growth and climate change. Over the last 19 years, since the City introduced the Drainage and Diking Utility, the City has rebuilt 11 of its 39 drainage pump stations and has performed significant upgrades on four. Re-construction of the Horseshoe Slough Pump Station is nearing completion. Re-construction of the Shell Road North Pump Station and No. 7 Road South Pump Station is underway. Design is complete for the No. 2 Road South Pump Station. Design for the Steveston Highway and No. 3 Road Pump Station and the Steveston Highway and Gilbert Road Pump Station are underway.

During extreme events, a number of the older pump stations operate near full capacity. These stations have been identified to require upgrades through capacity analysis. Projects to upgrade or replace these stations are either included in current capital programs or will be brought forward for Council consideration as part of future capital programs.

Flood Protection Improvement Financing

Improvements to the City's flood protection system to address the needs of ageing infrastructure and climate change are funded through three basic funding sources.

Drainage and Diking Utility

The Drainage and Diking Utility was established by Council in 2000 and currently generates $13.4 million annually to maintain and upgrade Richmond's flood protection infrastructure. Staff are continuously monitoring regional and global climate change science to inform the City's Flood Protection Program. In response to a referral from the November 12, 2019 Regular Council

Meeting, staff will present an accelerated flood protection implementation program for Council's consideration in a separate report this year.

Senior Government Grant Funding

The City's Flood Protection Management Strategy aims to acquire senior government funding for a wide range of flood prevention and protection research, monitoring, studies, planning and improvements. As a result of proactive flood protection planning efforts, the City has been successful in securing over $30 million in senior government grants that will go towards implementing over $60 million of dike and pump station improvements.

Development

The City has successfully partnered with developers to secure dike upgrades through development. In particular, the City is actively pursuing opportunities to construct superdikes, where land supporting development behind the dike is filled to the same elevation as the dike crest. This eliminates visual impacts of a raised dike structure on waterfront views while providing an enhanced flood protection structure for the City. Superdikes constructed through development include sections near the Richmond Olympic Oval and at the Imperial Landing and Kawaki developments in Steveston. Superdike construction at Parc Riviera and River Green developments was completed in 2018. Superdike construction at the Vancouver Airport Fuel Facility Corporation (VAFFC) Jet Fuel location and Western-Citimark development is expected to begin construction this year. Staff estimate that up to 20% of dike upgrades along Lulu Island's perimeter dikes will be completed through development.

Financial Impact

None.

Conclusion

The City received below average rainfall in 2019 and experienced one significant rainfall event that exceeded a 10-year return period in the 2019/2020 winter rainfall season. Through the capital improvements and investment in preventative maintenance programs, the City has developed the ability to proactively prepare and respond to flood related concerns. Significant progress continues to be made in advancing the City's dike planning efforts and implementing infrastructure improvements to the City's flood protection system.

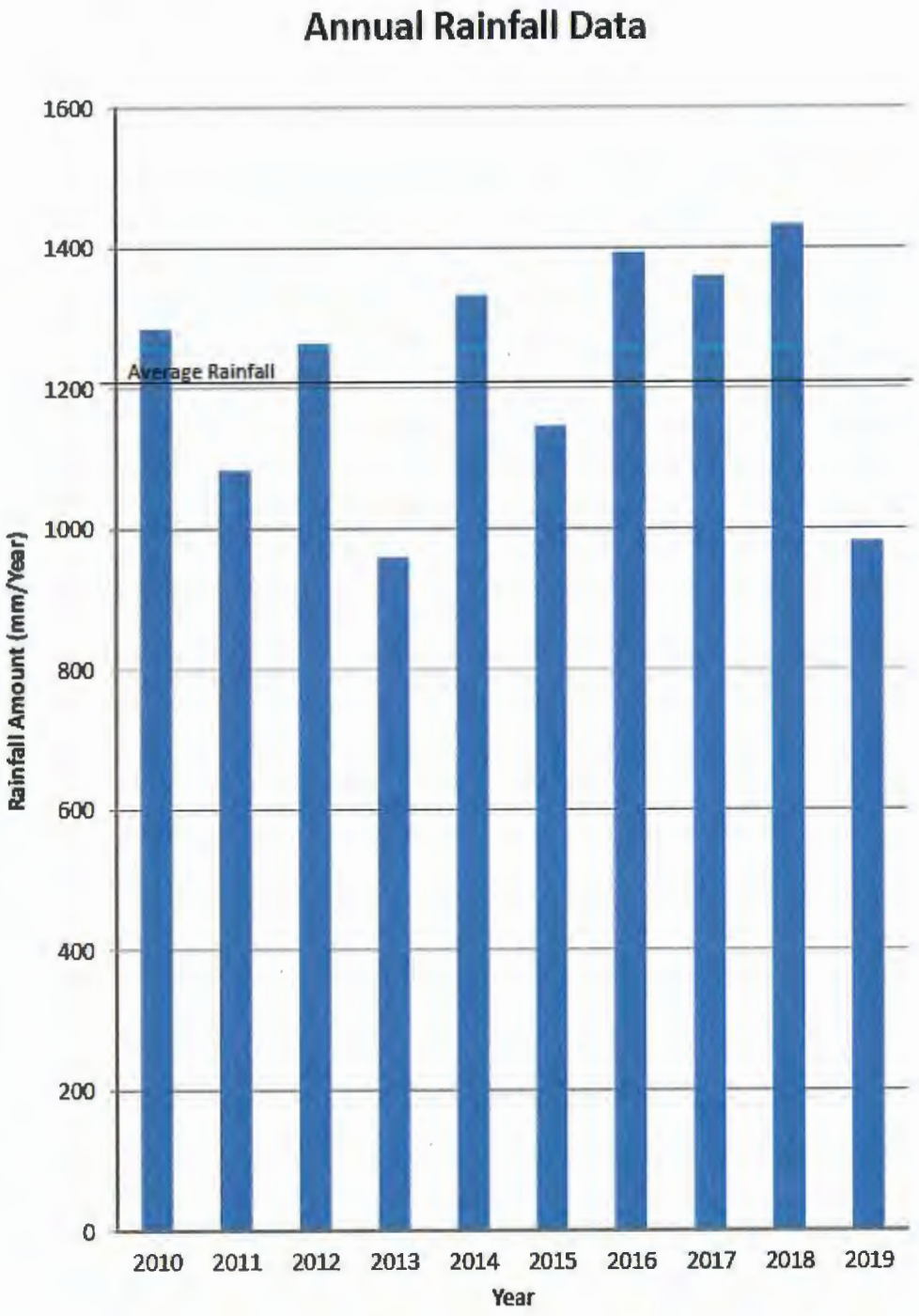
Jason Ho, P.Eng.
Manager, Engineering Planning
(604-244-1281)

Corrine Haer, P.Eng.
Project Manager, Engineering Planning
(604-276-4026)

JH:ch

Att. 1: Annual Rainfall Data (2010-2019)

Attachment 1 – Annual Rainfall Data (2010-2019)



City of Richmond

Report to Committee

To:	General Purposes Committee	**Date:**	March 27, 2020
From:	Todd Gross Director, Park Services	**File:**	06-2345-20- GCIT1/Vol 01
Re:	**Agricultural Land Commission Non-Farm Use Application by the City of Richmond for the Garden City Lands Community Farm and Conservation Bog Area at 5560 Garden City Road**		

Staff Recommendation

That the Agricultural Land Commission Non-Farm Use Application by the City of Richmond for the Garden City Lands Community Farm and Conservation Bog Area at 5560 Garden City Road, be endorsed and forwarded to the Agricultural Land Commission for approval.

Todd Gross
Director, Parks Services
(604-247-4942)

Att. 10

REPORT CONCURRENCE		
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**
Engineering	☑	
Community Bylaws	☑	
Policy Planning	☑	
Development Planning	☑	
SENIOR STAFF REPORT REVIEW	**INITIALS:**	**APPROVED BY CAO**

Staff Report

Origin

The purpose of this report is to describe the scope of work for the continued improvement of the Garden City Lands proposed to be submitted for approval by the Agricultural Land Commission (ALC) and to receive a Council Resolution in support of the City's Application. If endorsed by Council, this ALC Non-Farm Use Application (Attachment 1) will be forwarded to the ALC for their consideration. If City Council does not endorse the Application, the Application will not proceed to the ALC for consideration.

This report was not brought forward for Council's consideration at the same time as the report titled "Agricultural Land Reserve Non-Farm Use Application by the City of Richmond to Host the Farm Fest at the Garden City Lands on August 8, 2020, located at 5560 Garden City Road," dated March 11, 2020, to the General Purposes Committee meeting on April 6, 2020, because the timeline to have the Farm Fest Application reviewed by the ALC is much more time sensitive than the Comprehensive Application for the entire site.

Findings of Fact

The City-owned Garden City Lands (the "Lands") are approximately 55.2 hectares (136.5 acres), located on the eastern edge of Richmond City Centre (Attachment 2). It is a unique site resulting from centuries of natural processes and human impacts. The Lands are designated a city-wide park because they are located in a high-density neighbourhood and are envisioned as an agriculturally productive space and bog conservation area. Several existing and planned greenway and pedestrian connections will also make the Lands a destination for many visitors.

The site is located within the Agricultural Land Reserve (ALR) and all activities on ALR land are overseen by the ALC. Therefore, all activities on the site are subject to the policies and regulations of the ALC. It is designated for "Agriculture" in the 2041 Official Community Plan (OCP), which permits primarily farming, food production and supporting activities. The City of Richmond is required to submit a "Non-Farm Use" Application to the ALC for a decision authorizing the City to implement the remaining portions of the plan to permit full public access to the site and construction of the park.

To date, the City of Richmond has submitted the following Applications to the ALC:

- 2016: ALC #55588 – Transportation, Utility, or Recreational Trail Uses within the ALR (for permission to build the perimeter trails);
- 2016: ALC #56243 – Dike Structure (to hydrologically separate the bog from the western agricultural portion of the site);
- 2017: ALC #56199 – Application to Place Soil (to create the farm leased to Kwantlen Polytechnic University (KPU));
- 2017: ALC #56243 – Non-Farm Use Application (Harvest Festival); and
- 2018 and 2019: ALC #57671 and #58812 – Non-Farm Use Application (Farm Fest).

The City of Richmond has received approvals for all these Applications.

City staff were advised by the ALC that it would be preferable to make a single Application under the "Non-Farm Use" category for the remaining improvements identified in the Garden City Lands Park Development Plan (Attachment 3). City staff have been in regular contact with the ALC regarding this recommended approach for a comprehensive Non-Farm Use Application.

Subject to Council's endorsement, this Application will be forwarded to the ALC for review/approval. City staff expect to host a site visit by the South Coast Panel to the Lands as part of its application evaluation process.

Analysis

The City's Application includes all the items identified in the Garden City Lands Legacy Landscape Plan and Garden City Lands Park Development Plan, that is, both Farm and Non-Farm Use related activities. In order to fully understand the entire vision for the Lands, all aspects of the project will be explained in the City's Application to the ALC.

Non-Farm Use Related Activities (ALC approval required)

The Application will be divided into the following five main categories:

1. Site Access Features;
2. Site Infrastructure;
3. Agricultural and Food Production Related Elements;
4. Agriculture and Ecological Centre; and
5. Soil Use for the Placement of Fill Application

The Non-Farm Use related activities proposed for the Lands are summarized in Attachments 4 and 5.

1. Site Access Features

Internal Circulation System

Internal circulation will be primarily for pedestrian access. The two proposed types of paths are Paths and Farm Service Roads and Wooden Boardwalks.

All paths will be universally accessible. The paths will also direct visitors to minimize impacts on cultivated growing areas, landscape buffers and ecologically sensitive environments while permitting an opportunity to explore this large space.

Paths and Farm Service Roads

There will be two path and road types on the site and these will be located in the agricultural portion of the site, west of the dike as well as on the dike itself. The path types are public and Farm-Use and Farm-Use Only.

The Public and Farm-Use paths will provide site access throughout the site to both the public and City staff. Vehicular access will be restricted to farm and service vehicles only. These paths will be wider, multi-use in nature and carrying all forms of traffic. This is the predominant pathway type. These paths will be constructed with permeable materials, such as crushed stone material of several gradations as base material. A finishing layer of fine, crushed stone dust will be rolled and compacted to provide a smooth and accessible surface. Farm-Use Only paths will be located within and immediately around the farm fields. Public access will be restricted as the farm fields are areas of cultivation and open, therefore public access is not a compatible activity for safety and practical purposes. Surface treatment will likely be turf and/or woodchips.

Wooden Raised Boardwalks

Due to the ecologically sensitive nature of bog environments and the typically saturated water conditions (surface water will be present for most of the year), the best management practice for providing limited public access to bog sites is to build boardwalks. The boardwalk will be universally assessable and the only manner to walk through the bog, with non-slip surfacing and a low timber barrier curb along the edge.

Site Entry Nodes

At each of the four corners of the site, an entry node will be constructed to serve as formal access points to the Lands. Each entry will include wayfinding, interpretive and site identification signage , lighting, seating and native planting. The surface treatment will be a mix of materials including concrete pavers, natural stone and wood.

Pedestrian Level Lighting

A network of pedestrian level light poles is proposed along the perimeter recreational trail. Lighting will be installed in the narrow landscape buffer between the paths. The design will consider site usage patterns and any potential adverse environmental impacts. Any lighting system includes installing significant sub-grade infrastructure and connection points.

Seating and Trash Receptacles

Seating and trash receptacles are necessary to support the visitors' use and enjoyment of the Lands. They will be conveniently located for site users and maintenance, primarily along high traffic paths and junction points.

Interpretive and Wayfinding Signage

Interpretive signage will be installed throughout the site to assist park users to better understand the agricultural and ecological framework, the purpose of the Garden City Lands and explain the current aim of the Lands as a centre for conservation, ecology and active sustainable agriculture production.

Wayfinding signage will be located at key points throughout the site and will display site maps and directional signage pillars.

The Rise: Picnic Areas, The Meadows and Play Structure

Located in the northwest corner of the site, the Rise is a landform which provides a view over the entire site as it is the highest point of land on the site.

This area will also host a picnic area and children's play structure.

Public Art

Working with the Public Art Program, a series of agriculturally themed public art, inspired by the site and Richmond's rich agricultural history, is proposed for the site. The public art will enrich the park users' understanding and experience of the site by highlighting the hidden processes and beauty of the site similar to the art situated in Terra Nova Agricultural Park.

Lookout Tower

The Landscape Legacy Plan envisioned a tall structure at a central location to offer site visitors a broad, 360 degree view over the entire site. The potential location could be off of the central dike in the centre of the Lands on the farm side of the dike.

2. Site Infrastructure

Many site infrastructure elements have been already described above, but additional utilities are required to support the proposed program and structures.

Parking Lots

The Lands are expected to attract visitors from the immediate community and throughout Richmond and Metro Vancouver. While public transit and alternative forms of transportation are encouraged, a limited number of parking facilities are still required. All parking facilities on ALR land are required to have permeable surfacing although it is proposed any universal access stalls will be paved. Parking will be provided at the three following locations:

1. The Garden City Road parking lot will be constructed as part of the proposed Agriculture and Ecology Centre (the "Centre"). This parking lot is the largest of the three proposed and would likely host public events such as a weekly farmer's market. See applicable section below for more information.

2. The Alderbridge Way parking lot near May Drive. The proposed site is a previously compacted, disturbed site. It is located at the convergence of the Dike and the Perimeter Trails.

3. Parallel Layby parking stalls along No. 4 Road will be located between the existing curb and the perimeter trail. These series of stalls will provide parking spots in proximity to the bog.

Municipal Services/Utility Connections

Municipal services will be required to service the site. Currently, two water connections provide KPU's Farm School fields with water for irrigation. Based on the proposed site improvements, all typical municipal services and utility connections will be required. Sanitary service options are being explored.

Washrooms

Two locations for public washrooms are being contemplated: one is proposed to be a stand-alone structure located near the proposed May Drive parking lot, and the other is integrated within the proposed Agriculture and Ecology Centre. The design will emphasize durability, cost effectiveness, ease of maintenance and integration with the overall site design language.

EV Charging Stations

Charging stations for electric vehicles will be considered for installation at the parking lot attached to the proposed Agriculture and Ecology Centre.

Bridge Structure

One vehicle-rated bridge structure is being contemplated for the site. This farm service road will be crossing a proposed linear canal connected to the existing pond.

3. Agricultural and Food Production Related Elements

The area east of the dike is focused on bog conservation and ecosystem education. The area west of the dike is planned for intensive agricultural production, public education programs and passive recreational activities. Infrastructure such as drainage systems, water supply and a network of service roads and pathways will be installed to support proposed agricultural production.

Large Scale Public Events

Since 2017, the City has hosted an annual event on the Lands to celebrate Richmond's farming heritage and culture. ALC approval is required for each individual event. As part of this Non-Farm Use Application, the City will request approval to host an event on an on-going annual basis.

Farmers Market

Establishing a regularly scheduled weekly or bi-weekly farmers market will provide local and on-site producers opportunities to market their crops and engage with the community. KPU is expected to be a primary participant. Hosting farmers markets supports local farmers and positions the Lands as a hub for local farm production.

4. Agriculture and Ecology Centre

The Garden City Lands Landscape Legacy Plan proposes a Garden City Lands Agriculture and Ecology Centre (Attachment 6) as the programmatic and infrastructural hub of the entire project area. The building is envisioned to be sustainably-designed. Though envisioned to support the interpretation activities on the site, the Centre's primary function will be to support agricultural activities. Similar to a barn on a typical farm, the Centre is envisioned to be a landmark on the site. The all-weather, permanent structures will support the dual focused mission of the Lands as follows:

1. The current and proposed agricultural activities; and
2. The ecological interpretation and education of the site, namely sustainable agriculture and the bog.

Agricultural Support

As stated, the Lands have been established to cultivate and harvest food. Any intensive agricultural activity of the scale and diversity as is proposed will require a barn to support these activities. The barn will house farm vehicles (tractors), farm implements (seeders and plows) and supplies (seeds and tools). Additionally, the barn will have a tool and repair workshop, work areas, secured and unsecured/open storage areas, offices, walk-in refrigeration unit and a field crop washing and processing area. It will support both KPU's and other farmers' activities on the site.

Site Ecology and Interpretation

The Centre is envisioned to host an interpretative program to educate visitors about the site and the complex biological activities occurring on the bog. This would include signage and graphics inside and outside of the building, classrooms, offices and other education facilities to host visitor programs and educational events. Bog conservation groups and other non-profit societies could possibly operate out of this facility.

Size and Phasing

Preliminary plans call for the Centre to be built in two phases:

Phase 1: A barn structure and parking lot for approximately 64 parking stalls, outdoor circulation space, storage space, multi-use (flex) space and landscaping. The program would focus on a storage barn, crop processing areas, farmers market and public washrooms.

Phase 2: A building with offices, meeting rooms, classrooms and community kitchen. This phase would provide the City the capacity to facilitate the community outreach, public ecological and agricultural education, and site interpretive programs planned for the Lands.

Timing

The Centre will be built as funding sources are identified and secured. The type of building and anticipated uses envisioned may require a future rezoning application.

Base and Preload Material

Fill will be required for the construction of the Centre to raise the grade to meet minimum required flood construction level (FCL) flood elevations. This would include the amount required for preloading the site as well as the volume and quality of fill to support the building's foundation. Through the detailed design process, the required volume will be confirmed and dictated by the British Columbia Building Code and City building standards.

5. Soil Use for the Placement of Fill Application

Project Overview

The City will request the ALC's approval to deposit 9,570 cubic metres of soil at a number of locations on the site to build a parking area, preload and base material for a washroom, preload and base material for a Community Hub Centre and for pathways and trails.

Each specific project will utilize different types of soil including sand (preload), granular material, and sub-soil. Attachment 7 provides a soil deposit summary table identifying the location, type, volume and purpose of the soil proposed to be deposited on the property.

The estimated duration of the soil deposit undertaking for the Garden City Lands project is variable for each aspect of the project. The timing of preload deposition and length of time in which preloading for the structures and parking lot remains on the property will be dependent on a number of variables including a geotechnical engineer's assessment and direction, obtaining necessary building permits, and purchasing the sand from an appropriate vendor. The duration of time to complete the raised beds for the community gardens is heavily dependent on finding a suitable source(s). Despite the aforesaid, the duration of time required to complete the soil deposition aspect of the project is not expected to exceed two (2) years.

Agricultural Considerations

The City retained Bruce McTavish (MSc, MBA, PAg, RPBio) who has provided a soil sourcing protocol to be implemented when sourcing soil to be deposited on the property (Attachment 8). Mr. McTavish will be required to inspect and approve all source sites prior to soil being imported from said sites. When appropriate, the City will engage other Qualified Environmental Professional's (QEP) (for example, geotechnical and/or civil engineers) to manage the placement of other soils such as preloading or base material.

Should the proposal receive approval, Mr. McTavish will be retained to monitor the project and provide assistance regarding soil integrity, including confirmation that course fragment content meets acceptable standards. He will review soil documentation and any source sites to ensure that only approved soil is imported onto the property. This will include a review for invasive species.

Soil for the community gardens (i.e., planters) shall only be accepted from source sites that meet agricultural land standards and as per the protocol outlined in Attachment 8. Soil will be

primarily sourced from sites located in Richmond. Staff are working with the development industry to utilize currently farmed soil for placement on the Lands.

Preload (i.e., sand) and granular material will be sourced and purchased from a reputable licenced supplier(s).

The City will oversee this project subject to the same requirements as any other applicant.

Drainage & Geotechnical Considerations

Based on previous and recent geotechnical assessments (Attachment 9) for the proposed fill volume, no impact to the City's utilities or any neighbouring properties is expected.

Based on recent drainage modelling for the proposed fill volume, no impact to the City's drainage system is expected.

Environmental Considerations

There are no Environmentally Sensitive Areas or Riparian Management Areas designated within the property. In addition, there will be no impacts to trees.

Erosion and sediment control measures are to be installed and inspected by a qualified professional prior to soil deposit operations commencing. City staff will also inspect to ensure compliance prior to the importation of any soil.

A soil deposit permit triggers the *Environmental Management Act's* site profile system. Prior to soil permit issuance, the applicant will be providing a completed Ministry of Environment and Climate Change Strategy Site Profile (the "Profile") for forwarding to the province. The Profile outlines previous uses for the Property and the potential for contamination due to previous use. Staff are currently working to complete the Profile. No permit will be issued until such time as the applicant has met the aforesaid requirement.

Road and Traffic Considerations

Transportation staff have reviewed the proposal. A Traffic Management Plan will be required to be submitted and reviewed by City staff prior to a permit being issued to ensure site traffic is properly managed and public safety is addressed.

Security Bonds

The following security bonds are typically collected prior to permit issuance:

- $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; and

- $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.

As this is a City project, the bonds may not be collected; however, internal agreements will be in place in order to ensure any costs incurred such as road cleaning, damage to infrastructure, etc. will be covered by the Parks Services.

As a condition of any approval, a performance bond may be required by the ALC in a form and amount deemed acceptable by the ALC. The ALC performance bond is collected to ensure that all ALC approval requirements are satisfied and to ensure the rehabilitation of the property in the event the project is not completed. The performance bond would be held by the ALC.

Financial Costs and Considerations for the Applicant

The City will purchase materials from reputable suppliers under the guidance of the qualified professional. Should material be identified which could be deposited onto the Lands as a source of revenue, fees charged would be per the City's Consolidated Fees Bylaw No. 8636 and the Garden City Lands Soils Deposits Fees Bylaw No. 9900.

Staff Comments

Similar to any other development requiring soil on ALR land, City staff will prepare a comprehensive permit that addresses a number of key issues, including but not limited to, source site inspection and on-site monitoring and reporting requirements to be undertaken by the QEP, public safety, drainage, eliminating impacts to neighbouring properties and City infrastructure.

No soil will be permitted to be imported and deposited until such time as all City and ALC requirements have been satisfied and a permit has been issued by the City's Community Bylaws department.

The permit holder will be required to 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, etc) in order to determine the volume of soil deposited on the properties.

As a condition of the permit, staff will require that the project be monitored by a QEP and that they provide the City inspection reports every 3,000 cubic metres unless determined otherwise by the ALC or upon request by City staff. Regular reporting will include that the QEP inspect the soil at the source site(s) and provide a written assessment report prior to delivery to ensure that only the appropriate soil is delivered to the site.

Permit conditions will provide staff the latitude to request a geotechnical report at any time should the Manager of Community Bylaws or designate consider it necessary. Staff will require a closure report from the geotechnical engineer following completion of the project.

In addition to the expected City and ALC reporting requirements of the QEP, City staff will maintain proactive inspection 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;
- maintain communications with the QEP and the project coordinator on a regular basis during soil importation;
- review the QEP's reports to ensure conditions of the permit are being satisfied; and
- advise the ALC of any concerns relative to the project and request that ALC staff undertake inspections to ensure compliance with the ALC approval conditions.

Farm Related Activities (No ALC Approval Required)

A description of existing and proposed agriculture activities are provided for information only. These activities do not require ALC approval to proceed and are included in the City's Non-Farm Use Application to provide the ALC the overall vision for the Garden City Lands.

Soil Management

Existing and imported soils will be amended with amendments such as composts, manures and the incorporation of cover crops.

KPU Sustainable Agriculture Farm School Fields

The KPU Sustainable Agriculture and Food Systems Program are currently cultivating approximately six acres of the 20 acre (8 ha) total area they have committed to farming. Under the terms of the License to Use Agreement KPU signed with the City, the City is responsible to provide the fill and infrastructure to facilitate farming on the site, including water connections and drainage infrastructure. In return, KPU will farm the site following sustainable farming best management practices for a 20-year term, supporting the City in public outreach and education efforts and providing a Farm Management Plan for all agriculture activities on the site (area west of the Dike).

Farm Management Plan

The KPU Sustainable Agriculture and Food Systems Program has provided the City a Farm Management Plan outlining the overall management of the site according to sustainable and organic farming practices. Principles of agro-ecology, conservation focused soil management techniques as well as sustainable farming practices will be occurring on this site.

Ponds and Ditches

The Garden City Lands Park Development Plan identifies two larger ponds and a linear canal to be excavated on the Lands for the purposes of providing potential source of irrigation water for field crops. The limited capacity and recharge during the summer has been considered by staff;

options for increase storage capacity will be explored. Additionally, a network of ditches and sub-grade drainage systems will be installed to manage on-site surface water as is widely practiced throughout Richmond due to the area's high water table and soil properties.

Community Farm Fields

The area of the western half of the Lands surrounding the Centre and extending south to Westminster Highway are envisioned to host a number of agriculturally productive uses including community gardens and farms. These farm fields will be subject to the KPU produced Farm Management Plan and overseen by the City. It is envisioned farmers working on these sites will be signing leases with the City while cultivating their designated plots. Prior to any agricultural activities are allowed to proceed, this area will be extensively studied to delineate and characterize the areas of contamination. If the placement of soil is required to support active farming, this will be the subject of a separate Application to the ALC.

Community and Allotment Gardens

Current plans call for approximately 100 standard community garden plots. Establishment of these plots can be achieved in a relatively short time once the appropriate volume and quality of fill is provided. Minimal infrastructure is required and water services are already in place. The Gardens will be overseen by the Richmond Food Security Society.

Larger plots or allotment gardens maybe considered on the Lands. Currently there are no larger plot community gardens in the City but the site could support plots which could provide a significant source of food for individuals and families.

Incubator Farms

Graduates from the KPU Sustainable Agriculture and Food Systems Program currently have an opportunity to access plots of land for a two-year term at another location in the City. The 'incubator farm' plots provide recent graduates opportunities to develop the skills acquired thru their formal education. Sites on the Lands would provide novice farmers on-going mentorship from the KPU Sustainable Agriculture and Food Systems Program and have access to shared resources such as tools, farm equipment, implements and professional advice. These sites are proposed for the southwest portion of the site.

Intensive Market Gardens

Staff are contemplating the possibility of activating quarter to one-acre farm plots for intensive farm production by local farmers. These plots would be leased from the City for a possible five to 10-year period after a vetting and evaluation process. Utilizing small plot intensive (SPIN) farming practices, these plots would be farmed organically and grow high-market value crops for local consumption and sale.

Additional Agriculture Uses

Apiaries or designated areas hosting domestic bee hives are under consideration. As the site's development evolves, staff will look at future possibilities to host appropriate small livestock as

a demonstration of urban farming best management practices. Livestock which could be considered for the Lands include limited and manageable numbers of pigs, goats and chickens.

Perennial fruit tree and berry production will occur at several locations throughout the Lands including the KPU Farm, the Rise and south of the Centre. These fruit tree orchards and berry patches would be managed by professional farmers or horticulturalists according to organic farming practices. They would be programed as opportunities for public outreach and education; for example, annual pruning workshops for home and community gardeners could be held on site.

Consultation

The Food Security and Agricultural Advisory Committee (FSAAC) reviewed the proposal on February 20, 2020, and passed the following motion (Attachment 10):

> *That the Food Security and Agricultural Advisory Committee support the Garden City Lands Non-Farm Use Application (AG 18-837641) as presented.*

Financial Impact

None.

Conclusion

Throughout the planning and design process, Council and the public have expressed their support for this unique site in the City Centre area. As a result of the comprehensive planning and design that has occurred in the last five years, there is broad public interest and support to use the Garden City Lands for both agriculture and recreation.

Without ALC approval, the Garden City Lands project cannot be fully implemented as envisioned by the Garden City Lands Legacy Landscape Plan including public access throughout the entire site.

With Council's endorsement, staff will be authorized to submit an Application to the ALC for approval of the remaining scope of work. A successful Application will bring to reality the City's vision as set out in the Garden City Lands Park Development Plan.

Alex Kurnicki
Research Planner II
(604-276-4099)

Att. 1: Provincial Agricultural Land Commission Applicant Submission #58154
2: AG 18-837641 Garden City Lands Non-Farm Use Application Subject Property
3: Garden City Lands Park Development Plan

4: Garden City Lands ALC Non-Farm Use Application #58154 Approvals Matrix
5: Approvals Matrix Support Maps
6: Garden City Lands Community Hub and Farm Centre Feasibility Study
7: Garden City Lands Proposed Fill Volumes
8: McTavish Source Soil Management Protocol
9: Garden City Lands Hydrotechnical Modelling & Geotechnical Assessment Application
10: Food Security and Agricultural Advisory Committee Meeting Minutes Excerpt (February 20, 2020)

Provincial Agricultural Land Commission - Applicant Submission

Application ID: 58154
Application Status: N/A
Applicant: The City of Richmond
Local Government: City of Richmond
Local Government Date of Receipt: This application has not been submitted to local government yet.
ALC Date of Receipt: This application has not been submitted to ALC yet.
Proposal Type: Non-Farm Use
Proposal: The purpose of this proposal is to gain approval from the ALC to permit public access onto the site, facilitate farming, protect the existing bog ecosystem, host support programs and events that showcase agriculture and bog conservation and implement the Citys plans for the Garden City Lands as described in this Application.

The Garden City Lands is a 55 ha (136.5 acre) site in Richmonds City Centre area. It is zoned AG1-Agriculture. The Citys vision is to create a publicly accessible Community Farm and Bog Conservation Area. The Lands would be hosting a mix of farm and non-farm use related activities throughout the site.

This Application summarizes all the activities proposed for the Garden City Lands. The proposal requests approval to:
permit public access along designated trails throughout the site;
build a Community Hub and Farm Centre (to host public education programs for bog conservation and sustainable farming practices);
construct two community gardens (minimum 50 plots each);
to place up to approximately 8,000 cubic meters of material (see attached table) ;
build public washrooms;
install wayfinding and interpretive signage;
build parking lots;
install public art;
install site furniture;
build boardwalks and trails;
build service and access roads;
build a playground; and,
host regular Farmers Markets and one annual large scale public event celebrating the site (with more than 150 visitors per event).

The specific requests are quantified and summarized in the attached Approvals Matrix, Fill Material Summary Table and accompanying maps.

The Lands are roughly divided in half, along the curved north/south dike structure running down the middle of site. The purpose of this dike is to hydrologically isolate the sensitive bog area from the farmed portion of the site. Restricted public access to the eastern half will be along a limited number of boardwalks due to the bogs sensitive ecology. This portion of the site will focus on bog conservation and public education. The bog conservation area is approximately 30 ha.

The primary focus of the site west of the dike structure is sustainably managed agriculture. Any programming for public access will be oriented around and will not impede agricultural activities. This portion of the site will include:
orchards;

community gardens;
a barn;
field production areas;
publicly accessible trails;
a bog and farm education centre;
a parking lot; and,
farm services roads and other recreational site features.

Farming activities will be conducted according to the attached Agricultural Management Plan. As per that Plan, public access will be restricted to paths outside of the farm plots and to service roads. In short, the public will not be permitted to walk in the fields under cultivation. The area outlined in the above program is approximately 20 ha.

The remaining 5 ha of the site are comprised of the perimeter path and associated agricultural buffer, the raised portion of the site at the northwest corner of the site along Alderbridge Way and other site areas such as the pond along Garden City Road between Lansdowne and Alderbridge Way. Proposed site improvements include:
pedestrian level pathway lighting;
entry nodes with seating and permeable paving;
a parking lot along Alderbridge; and,
an agriculturally-inspired playground on The Rise.

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Canada
Primary Phone: (604) 276-4099
Mobile Phone: (778) 554-7839
Email: akurnicki@richmond.ca

Parcel Information

Parcel(s) Under Application

1. **Ownership Type:** Fee Simple
   Parcel Identifier: 024-741-418
   Legal Description: SECTION 3 BLOCK 4 NORTH RANGE 6 WEST NEW WESTMINSTER DISTRICT EXCEPT: FIRSTLY: PLAN WITH FEE 5758F, SECONDLY: PLAN WITH FEE 5759F THIRDLY: PART SUBDIVIDED BY PLAN 24067 FOURTHLY: PARCEL D (BYLAW PLAN 50488) FIFTHLY: PART DEDICATED ROAD ON PLAN LMP43167 SIXTHLY: 1.84 ACRES FILING 16918 SEVENTHLY: PARCEL F (BYLAW PLAN LMP24326) EIGHTHLY: PARCEL C (BYLAW PLAN 73626)
   Parcel Area: 55.2 ha
   Civic Address: 5555 No. 4 Rd, Richmond BC
   Date of Purchase: 04/13/2010
   Farm Classification: No
   Owners
   1. **Name:** The City of Richmond
      Address:
      6911 No.3 Road
      Richmond, BC
      V6Y 2C1
      Canada

Phone: (604) 276-4099
Email: akurnicki@richmond.ca

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2. **Ownership Type:** Fee Simple
Parcel Identifier: 009-299-564
Legal Description: L 1 SEC 3 BK 4 NORTH R 6 W NEW WESTMINSTER DISTRICT PL 24067
Parcel Area: 3.2 ha
Civic Address: 5040 Garden City Road, Richmond BC
Date of Purchase: 12/23/1987
Farm Classification: No
Owners
    1. **Name:** The City of Richmond
    Address:
    6911 No.3 Road
    Richmond, BC
    V6Y 2C1
    Canada
    Phone: (604) 276-4099
    Email: akurnicki@richmond.ca

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3. **Ownership Type:** Fee Simple
Parcel Identifier: 003-682-285
Legal Description: PCL D (BYLAW PL 50488) SEC 3 BK 4 N R 6 W
Parcel Area: 0.9 ha
Civic Address: 9111 Westminster Hwy, Richmond BC
Date of Purchase: 01/19/1979
Farm Classification: No
Owners
    1. **Name:** The City of Richmond
    Address:
    6911 No.3 Road
    Richmond, AB
    V6Y 2C1
    Canada
    Phone: (604) 276-4099
    Email: akurnicki@richmond.ca

Current Use of Parcels Under Application

1. Quantify and describe in detail all agriculture that currently takes place on the parcel(s).
The City of Richmond established a 2.6ha farm area in 2017 which is currently under intensive cultivation by the Kwantlen Polytechnic University (KPU) Sustainable Agriculture Farm Program. KPU has signed a 20 year lease with the City to farm a total of 8ha of the Garden City Lands. Following sustainable agricultural principles and practices, KPU is pursuing organic certification for this 2.6ha teaching farm for the students enrolled in the four year applied science degree. Crops currently under production include a wide range of vegetables typically found in local farmers market stalls throughout the growing season in the Lower Mainland. A substantial portion of the fields are currently under cover crop.

2. Quantify and describe in detail all agricultural improvements made to the parcel(s).
The City of Richmond deposited soil under Non-Farm Use Application 56199 to establish the first phase

of the farm area currently leased to KPU (see above). Prior to KPU commencing agricultural production, field drainage was installed. Additionally, the soil was extensively amended with organic matter, manures and cover crops. Service connections to the Citys water system were made and an irrigation system installed. The fields are being actively cultivated by KPUs program. KPU has built a geodesic dome greenhouse structure and rolling high tunnels.

3. Quantify and describe all non-agricultural uses that currently take place on the parcel(s).
As per Non-Farm Use Application 55588, the perimeter recreational trails have been established and are currently open to the public for active use. While the City has not studied usage rates, we are aware that local residents regularly walk, run and ride bikes along the perimeter path. Signage has been installed to inform site users of restricted access beyond the perimeter trail, that is, to points within the site.

The City has submitted two Non-Farm Use Applications to host one-time public events on the site. As per Application 56243, the Richmond Harvest Fest occurred on the site in October, 2017. This event hosted nearly 5,000 visitors, nine market vendors and 12 community partners including BC Dairy, Poultry in Motion, Richmond Farm Watch, Richmond Food Security Society and the Young Agrarians.

The Farm Fest at Garden City Lands has been held over the last two years. For each event, there were over 5,000 visitors attending the events with over 30 Farmers Market and Food Vendors (including Cherry Lane Farms and Easterbrook Farms) and community partners (in addition to the aforementioned) BC Association of Farmers Markets, Steveston Farmers Market Association, Richmond Beekeepers Association and the BC Farm Museum Association. Easterbrook Farms brought live chickens and KPU hosted plowing and other farm equipment demonstrations and a chicken coop display.

For many attendees, it was their first time visiting the Garden City Lands and also their first time being exposed to farming operations and farming equipment. The event improved the level of public awareness and appreciation for the Garden City Lands as a new community farm and bog conservation area in the City Centre. Though these two events were temporary in nature, strong public interest in both demonstrates the value of the community and the sites current programing and future capacity to host more regular farm related and non-farm use activities.

Adjacent Land Uses

North

Land Use Type: Residential
Specify Activity: Multi-Family Residential

East

Land Use Type: Other
Specify Activity: Federal Government (DND)

South

Land Use Type: Residential
Specify Activity: Multi-Family Residential

West

Land Use Type: Residential
Specify Activity: Multi-Family Residential

Proposal

1. How many hectares are proposed for non-farm use?
47 ha

2. What is the purpose of the proposal?
The purpose of this proposal is to gain approval from the ALC to permit public access onto the site, facilitate farming, protect the existing bog ecosystem, host support programs and events that showcase agriculture and bog conservation and implement the Citys plans for the Garden City Lands as described in this Application.

The Garden City Lands is a 55 ha (136.5 acre) site in Richmonds City Centre area. It is zoned AG1- Agriculture. The Citys vision is to create a publicly accessible Community Farm and Bog Conservation Area. The Lands would be hosting a mix of farm and non-farm use related activities throughout the site.

This Application summarizes all the activities proposed for the Garden City Lands. The proposal requests approval to:
permit public access along designated trails throughout the site;
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to place up to approximately 8,000 cubic meters of material (see attached table) ;
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install public art;
install site furniture;
build boardwalks and trails;
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build a playground; and,
host regular Farmers Markets and one annual large scale public event celebrating the site (with more than 150 visitors per event).

The specific requests are quantified and summarized in the attached Approvals Matrix, Fill Material Summary Table and accompanying maps.

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The primary focus of the site west of the dike structure is sustainably managed agriculture. Any programming for public access will be oriented around and will not impede agricultural activities. This portion of the site will include:
orchards;
community gardens;
a barn;
field production areas;
publicly accessible trails;
a bog and farm education centre;
a parking lot; and,
farm services roads and other recreational site features.

Farming activities will be conducted according to the attached Agricultural Management Plan. As per that Plan, public access will be restricted to paths outside of the farm plots and to service roads. In short, the public will not be permitted to walk in the fields under cultivation. The area outlined in the above program is approximately 20 ha.

The remaining 5 ha of the site are comprised of the perimeter path and associated agricultural buffer, the raised portion of the site at the northwest corner of the site along Alderbridge Way and other site areas such as the pond along Garden City Road between Lansdowne and Alderbridge Way. Proposed site improvements include:
pedestrian level pathway lighting;
entry nodes with seating and permeable paving;
a parking lot along Alderbridge; and,
an agriculturally-inspired playground on The Rise.

3. Could this proposal be accommodated on lands outside of the ALR? Please justify why the proposal cannot be carried out on lands outside the ALR.
The Garden City Lands is fundamentally unique. It is a large area of publicly owned agricultural land within the ALR located in Richmonds City Centre. It is also a remnant of the Greater Lulu Island Bog. That combination of characteristics and context exists nowhere else in the City. This means that the combination of uses suitable for the land, and the synergies between them, are also unique.

The plan for the Garden City Lands is based on the Garden City Lands Legacy Landscape Plans four land-use framework with associated outcomes that incorporate the essential characteristics of the Lands and its context.

1. Urban Agriculture. Since the Lands are in the ALR, the intent is to demonstrate that agriculture can be successfully integrated into the urban and ecological fabric of the City. The Plan proposes cultivation of up to 20 acres of lands with a focus on smaller, intensively farmed plots along with demonstration plots and community gardens. The intended outcome would be a showcase for innovative and sustainable agricultural practices with community benefits within a public site.

2. Natural Environment. The Lands includes the edge of the former Greater Lulu Island Bog. Along with the quarter sections to the east, the DND lands and the Richmond Nature Park, it is a significant part of Richmonds ecological network and has been designated in the Official Community Plan (OCP) for conservation. It has been and is being managed differently than those other properties and as a result, the bog ecosystem is different. The outcome of this ecological management approach to the bog portion of the Lands is a highly valued, biologically diverse and resilient natural environment. The bog is vital to the Citys overall Ecological Network and community health.

3. Community Wellness and Active Living. The Lands are located in Richmonds City Centre with a population of over 33,000 residents in the adjacent quarter sections. With the City Centre population projected to double over the next 20 years, the value of this unique site to the community will increase. By providing public access to the Lands, an accessible, safe and appealing public open space will be provided to the Citys residents. Access will promote healthy lifestyles and community cohesiveness through social, environmental, agricultural and recreation amenities and programs.

4. Cultural Landscape and Place Making. The site is already a landmark in the City due to its size and proximity to the City Centre. Adding a layer of understanding to the site through the addition of educational signage, public art, site-inspired design of furniture and opportunities to explore historical and ecological features will enrich the visitors experience of the Lands. The intended outcome is the creation of a rich and vibrant place with a distinct identity that reflects and highlights the unique characteristics of the site. By creating a rich cultural experience, fond memories, community pride and a deep appreciation of the agricultural and ecological values of the Lands will be generated.

While each of these land uses exist elsewhere in the Citys parks and open space system, there is nowhere else where they intersect, creating a space for building awareness of agriculture and ecology and the relationship between them and offering direct experiences to people living in dense, urban neighbourhoods.

4. Does the proposal support agriculture in the short or long term? Please explain.
Many of the elements proposed in this application will support agriculture in both the short and long term.

In the short term (the next five to ten years) improvements to the 11ha in the southwest quadrant of the site (eg. potential future soil placement, amendment, drainage and irrigation) and the development of the Community Hub, especially the barn, will enable agricultural production and agricultural related community outreach programs so that the Garden City Lands can become a showcase for urban agriculture. The Farm Management Plan, attached to this application, describes how the site will be managed with the expectation there will be multiple farmers who share farm-related and support facilities and equipment (eg. farm implements, tractors, food processing and agricultural equipment). This model will be especially suitable for incubator farms which support new or novice farmers. The Farm Management Plan also provides a framework for oversight of activities and participants actively farming on the site. Standards for organic farming practices, certification, use of chemicals, governance structure and guidelines for planting of hedgerows and crops are provided in the Plan.

The City has corresponded with potential partners who would like to farm on the Lands. The Richmond Food Security Society and the Young Agrarians have approached the City to request access to areas designated for agricultural production on the site.

The City of Richmond has committed to the long term protection of a large parcel (the Garden City Lands) of land located in the ALR. The property has been designated as a Conservation Area in the Citys Official Community Plan in recognition of the ALR legislation. The designation defines the types of allowable uses as recreational, park, agricultural and food production purposes. The Council endorsed Legacy Landscape Plan has established a vision for the Lands that is consistent with the Official Community Plan with agriculture and food production as a key land-use and programming focus. Kwantlen Polytechnic University (KPU) is a key stakeholder on the site with a 20 year, renewable lease on the 8 ha farm on the site. The City of Richmond sees the relationship KPU has with the local farming community as a key success factor in making the Garden City Lands a relevant outreach opportunity and resource for the local farming community.

To date, the City of Richmond has been working closely with ALC staff on the planning and implementation of this project. City staff have met with ALC staff several times to review the scope of this comprehensive application. City staff are also in regular contact with ALC staff having set up a standing monthly conference call to provide project updates, consider upcoming issues and respond to any questions or concerns as they arise. The City of Richmond is confident that this effective cooperation and communication will ensure the ultimate success of this project and will ensure the Citys vision for the Lands adheres to the ALCs primary mandate of protecting agricultural land.

The City of Richmond strongly believes the Garden City Lands project, if approved for implementation by the ALC, will support the Commissions purpose and mandate to protect farm land in British Columbia.

5. Do you need to import any fill to construct or conduct the proposed Non-farm use?
Yes

Proposal dimensions

Total fill placement area (to one decimal place) *2.4 ha*
Maximum depth of material to be placed as fill *1 m*
Volume of material to be placed as fill *9570 m^3*
Estimated duration of the project. *5 Years*

Describe the type and amount of fill proposed to be placed.
The attached fill summary table provides an overview of the location, type, quantity and purpose of the proposed fill. For preloading material the quantity, extent and duration will be determined by a qualified geotechnical professional prior to placement. All preload material will be removed from the site prior to

construction although this material may be re-used on site per the proposed uses outlined below.

Community Gardens: The Garden City Lands is a remnant bog with the underlying material comprised of predominantly peat based soils. Past practices on the site have resulted in contaminated existing soils. As per the recommendations of the Human Health and Ecological Risk Assessment (May, 2019) prepared for the City by Hemmera, approximately 1m of clean soil is recommended to be placed a capping material in order to facilitate agricultural activity on the site. The City will also be exploring an alternative approach whereby self-contained raised beds will be provided. All soils will be suitable for agricultural activities and meeting applicable BC Contaminated Sites Regulation (BC CSR) standards (see below for more information).

Alderbridge Parking Lot: This area was previously disturbed with granular material already in place resulting from historical activities. Existing grades closely match the road grades on Alderbridge. Permeable, granular material will need to be imported to create a level gravel parking lot. After construction, the area will be landscaped with native trees, shrubs and groundcovers.
Corner Entry Points: The site is a square quarter section of land. Corner entry points are proposed to connect the existing perimeter pedestrian trails to the adjacent roadway and sidewalks. Each entry node will include seating, signage, planting, a combination of permeable surface treatments (concrete pavers, gravel and wood boardwalk) connecting to the perimeter paths. The volume of fill varies depending on each location. Fill is required to provide a level grade transition into the site which meets universally accessible design standards.

Trails: The ALC has previously approved the construction of perimeter trails and the dike structure bisecting the site (see attached Park Development Plan). The trails will be constructed in a similar manner. The material is constructed with a 350mm (minimum) deep base course of 200mm minus crushed rock placed over geotextile and geogrid on top of the peat base material. The next course is 150mm deep, 19mm minus granular road base followed by a 100mm deep top course of 9mm minus crushed screenings. All material to be compacted prior to placement of the next layer of material.

Washroom: Compacted granular material to provide a stable base for this permanent washroom structure. Walking surfaces around the building will be constructed per trail standards (see above). Prior to construction, the temporary placement of preload material will be required. The washroom is likely to be connected to an on-site septic system.

Community Hub and Farm Centre: Compacted granular material to provide a stable base for these permanent structures as well as permeable surfaces for connecting pathways, gathering spaces and the parking lot. The material required for the parking lot area will match the grades of adjacent roadways. The existing grades need to be raised to meet City standards for flood elevation grades. Prior to construction, the temporary placement of preload material will be required.

All soil placement activities will be conducted in accordance with the City of Richmonds Soil Removal and Fill Deposit Regulation Bylaw #8094 and will be overseen by qualified professionals (eg. Professional Agrologists, McTavish Resource Management Consultants).

Briefly describe the origin and quality of fill.
Wherever possible, the soil material will be sourced from sites located in the City of Richmond. Specific origin sites have not yet been determined at this time.
The pre-load material is typically sand similar to the type utilized as pre-load material on development projects sites.
Granular material will be similar to that which was placed for the perimeter recreational trails per ALC Application #55588.
The soil to be placed on the Lands will meet good to fair criteria. It will be free of stone, void of concrete, asphalt or other contaminants and be of course to medium texture with particle sizes less than 25mm minus. Sub-soil is defined as fill material to raise the grade of the community garden and will have a high mineral content. This material will originate from a source site meeting BC Contaminated Sites Regulation (BC CSR) standards for agricultural land as well as the soil specification for the project. This

soil will be sourced from a site where the sub-soil horizon is moved to the Garden City Lands for placement.

The top soil will be amended as necessary to improve fertility and organic matter content with the addition of organic matter in the form of decomposed peat, compost and/or manure. Cover cropping will be encouraged to take place by the community gardeners. It is expected that these soil improvements will upgrade the agricultural capability of the soil to a consistently good soil class.

Applicant Attachments

- Other correspondence or file information - Approval Matrix Support Maps
- Other correspondence or file information - Proposed Fill Summary Table
- Other correspondence or file information - Approval Matrix
- Other correspondence or file information - GCL Fill Summary Table
- Other correspondence or file information - Community Hub and Farm Centre Building Study
- Other correspondence or file information - Farm Management Plan
- Other correspondence or file information - Soil Specification and Management
- Other correspondence or file information - McTavish Source Soil Management Protocol
- Proposal Sketch - 58154
- Certificate of Title - 024-741-418
- Certificate of Title - 009-299-564
- Certificate of Title - 003-682-285

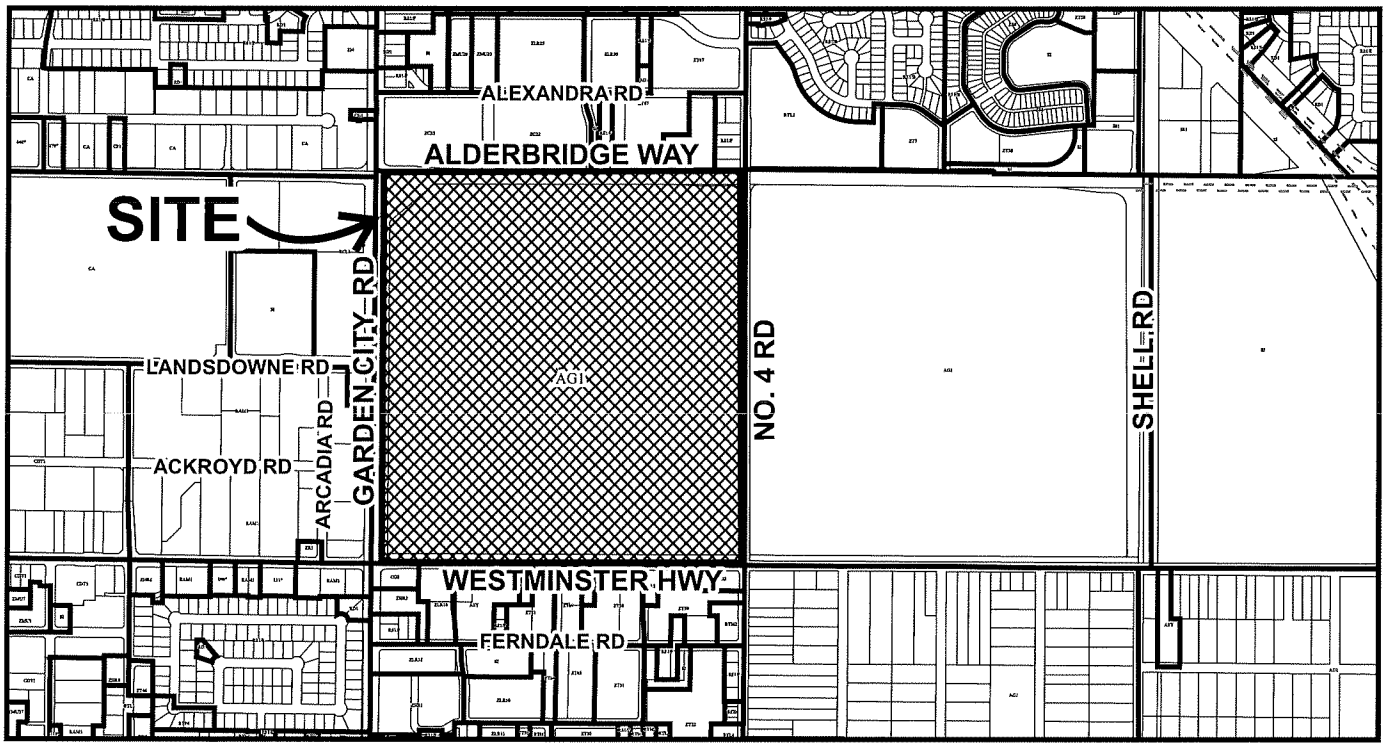
ALC Attachments

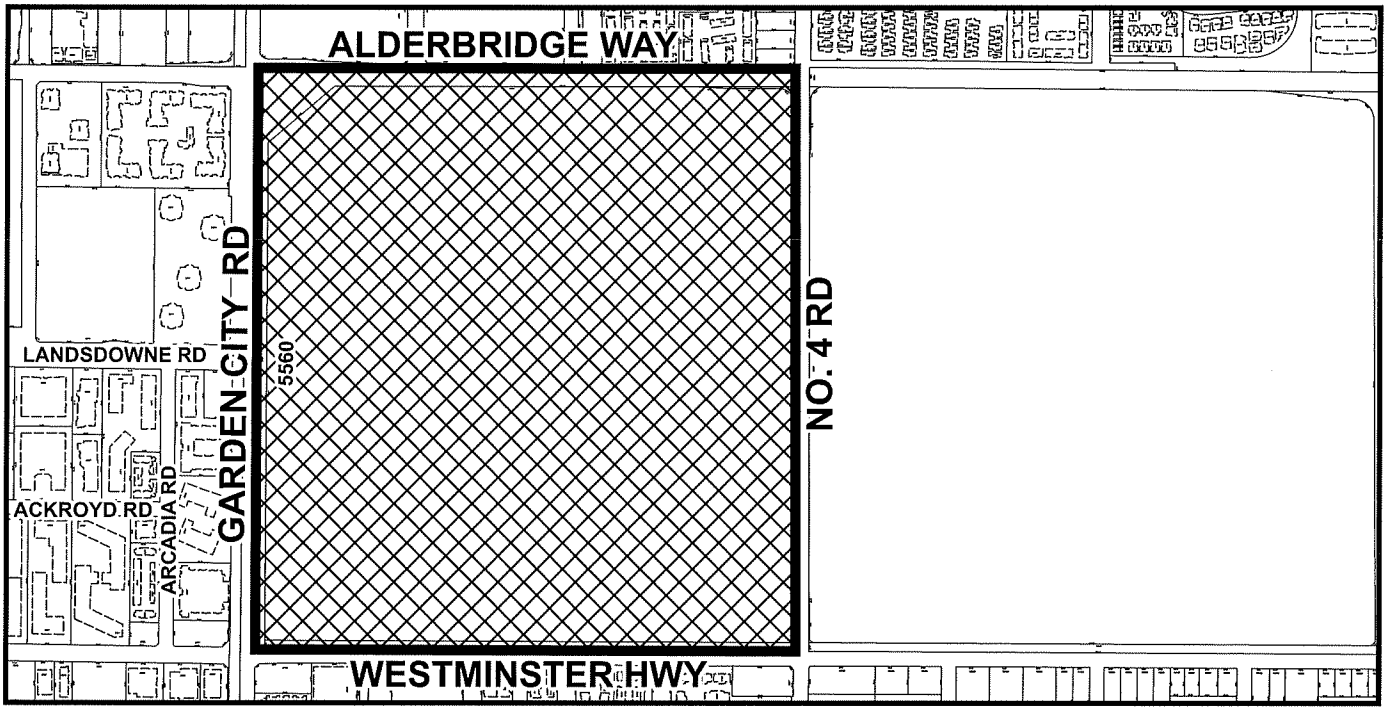
None.

Decisions

None.

City of Richmond





AG 18-837641
Garden City Lands
Non-Farm Use Application

Original Date: 09/17/18

Revision Date: 03/24/20

Note: Dimensions are in METRES

City of
Richmond

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LEGEND

THE AGRICULTURAL LANDS
1 Multi-Functional Building and Parking
2 Rainwater Storage for Agricultural Irrigation
3 Farm Drainage Ditch
4 Agricultural Fields
5 Orchard
6 Demonstration Orchard
7 Community Gardens
8 Hedgerows & Beetle Banks
9 Sliding High Tunnels
10 Farm Fields
11 Soil Amendment Trials

THE BOG
12 Bog Conservation Area
13 The Fen
14 Boardwalk with Rest Points

THE RISE
15 Meadow / Informal Recreation
16 Children's Play

THE NODES
17 Garden City Lands Main Entrance
18 Entry Node
19 Entry Allée
20 Viewing Platform
21 Crosswalk
22 Parking Lot with Accessible Stalls
23 Parallel Parking with Accessible Stalls

THE DYKE
24 Multi-use Path with Farm Access

THE PERIMETER TRAILS
25 Native Forest Plantings
26 Street Trees
27 Perimeter Trails - Separated Paths
28 Rain Garden

Scale 1:1000

Garden City Lands ALC Non-Farm Use Application #58154 Approval Matrix

	Item	Non-Farm Use (ALC Approval Required)	Farm Use (Notification Only)	Quantity	Notes (For graphic representation of these proposed land uses, please see Maps attached to this Application)
A	**Site Access Features (see Map A)**				
1	Public Access Trails & Service Roads			Approx. 3,500 LM	Includes pedestrian and farm/service vehicle rated roads constructed of gravels and finished with crushed stone for a permeable and accessible surface. Min. 3m wide.
2	Raised Boardwalks			1,600 LM	Boardwalks constructed of timber and on piles to raise boardwalk above bog surface. Approximately 1,600LM x 2.5m wide= 4,000sq.m + 1,200sq.m in seating nodes
3	Dike: Service Access Road & Trail Use			900 LM	Similar to A1, the road along the Dike is multi-functional built to accommodate service vehicles and pedestrians; 900LM x 3.8M wide=3,500 sq.m
4	Site Entry Nodes			4 nodes, 1,000 SqM	Materials: timber, concrete pavers, gravel, all permeable and accessible surface materials. Located at each corner of the site (4 in total). Total area covered: 4x 500sq.m
5	Perimeter Trail Pedestrian Level Lighting			111 units	Includes conduit for cables, lamp bases and light poles. Located along the 2.9km perimeter path. Estimated up to 111 lights (both single- and double-sided fixtures)
6	Seating Nodes & View Points			10	Materials: timber, concrete pavers, gravel. Along circulation paths, overlook points and timber boardwalks (E end of Canal and one at Fen), along circulation paths. Total number: 10
7	Interpretive & Wayfinding Signage			See notes	The nature and extent TBD. The aim is to get signage throughout the site for wayfinding and education/interpretation
8	Public Amenities on The Rise			Approx. 2.5 HA	Focused on passive recreation, views of the site and agriculture use of the Garden City Lands. Picnic Areas, Meadows and a 1,200 sq.m Children's Play Structure area
B	**Site Infrastructure (see Map B)**				
9	Parking Lot off Alderbridge Way			Approx.3,200 SqM	Approx. 3,200 sq.m with min. 15 standard and 4 universal stalls. 1 EV Charging Station. One way in and out. Minimal fill anticipated.
10	Public Washroom at Alderbridge Way P-Lot			1	Universal access, two stalls, with storage, septic system, water and electrical services, approx.max size: 50 sq.m.
11	No.4 Rd Lay-By Parking Pockets			7 nodes; 2,100 SqM	7 Nodes for parallel parking. 63 standard and 7 accessible parking spots; each node= 235 sq.m; total= 2,115 sqm
12	BC Hydro Connection: Perimeter Trail Lighting			3	Three connections on the perimter of the site to provide power to perimeter lighting system (in addition to power supply for Farm Related activities)
13	Site Furniture			See Notes	Minimum 10 Trash & Recylcing Receptacles; 20 Single and double sided benches; Bike Racks at entry points (total # TBD)
14	Bridge and Culverts over Drainage Features			1 over Canal	Currently contemplating one bridge structure over Canal near Hub; crossings over minor ditches for vehicles and foot traffic via concrete culverts
15	Bog Conservation Area			30 HA	Program and site management includes public education, conservation management, removal of invasives, replanting native species
C	**Agricultural & Food Production Related Elements**				
C1	**General (see Map C1):**				
16	Farmers Market			Approx. 3,000 SqM	Seasonal weekly farmers market for produce grown on site and local farmers. Support infrastructure required. Approximate size: 3,000sq.m
17	Public Event Space			1 HA	Annual event similar in size and program to the past events held in 2017 and 2018, consistent with previously approved applications. Would occupy 1 HA in the vicinity of the proposed Barn and Interpretive Centre.
18	Plantings and Landscaping			See Notes	Hedgerows/agricultural buffers, trees, orchards, meadow hydroseeding. Will require addition of compost and amendments to prepare site
19	[illegible]hards and Berry Production			See Notes	Blueberries, cranberry production demonstration projects, community orchards for public demonstration and food production
20	[illegible]nage Infrastructure			See Notes	Rainwater storage structures for supplemental irrigation; 2 ponds and the canal separating the Community Hub and the KPU license area. Swale along the base of The Rise (southern toe of slope), field perimeter ditches, field sub-grade drainage pipes
C2	**KPU Farm (see Map C2):**				
21	[illegible]arm Education and Research			8 HA	KPU program; teaching, 4 year applied science degree program, academic research on farm fields and community outreach throughout the site
22	[illegible]chards & Berries			approx. 1 HA	Orchard, blueberries and alternative cranberry production methods as demonstration project to local industry
23	[illegible]d Crop Production			7 HA	Raised beds and cover crops, geodesic dome, rolling high tunnel greenhouse
24	[illegible]er Connection			2	For crop irrigation and primary processing of produce grown on site
C3	**Community Farm Fields (see Map C3):**				
25	Field Crop Production (Futura)			8 HA	Field rotations, cover cropping, manure application, sustainable soil management; potential tenure agreements for Incubator Farms and leased plots. Will require water supply and electrical connections. Shared storage spaces for farm and ag. related equipment. Area includes internal path. Area subject of additional site investigation.
26	Community Gardens			100 plots; 3,000 SqM	Two community gardens, likely 100 plots minimum total; Anticipated size with specifics TBD based on demand and current recommended best practices. Will require water supply connection, storage, gathering spaces, compost areas. Placement of soil to facilitate soil based food production at grade. Granular material for pathways.
27	Potential Livestock Production			See Notes	Further to additional research and Council Approval. Contemplated uses include apiaries, chickens and other livestock suitable for agriculture in an urban setting
D	**Community Hub & Farm Centre (see Map D)**				
28	Barn			Approx.700 SqM	700sq.m foot print. Agriculture primary use: primary food processing, equipment storage, honey and seed rooms, washrooms. Will require preload and structural fill. Approx. 1.2m of fill =3,200 cubic meters of fill; preload volume TBD.
29	Municipal services (to Barn)			See notes	Electricity, communications/digital connections, sewer and water supply for agriculture related activities
30	Outdoor work spaces			2,000 SqM	Covered and open air work spaces, pedestrian and vehicular circulation & public gathering spaces (area in and around Barn)
31	Interpretive Centre			Approx. 1,000 SqM	Bog and farm/ag interpretive centre, offices, classrooms, public washroom, community kitchen and meeting room. Outdoor circulation space up to 1,500 SM. Preload, structural fill, permeable and impermeable surfaces; first floor flood elevation: 2.9m as per CoR Flood Plain Bylaw. 1,000 sqm foot print of building and circulation space x 1.1 m fill= 1,200 cubic meters of fill.
32	Municipal services (to Interpretive Centre)			See notes	Storm drainage, sewer, water supply, electricity and communications/digital connections
33	Interpretive Centre Parking Lot			Approx. 5,200 SqM	Adjacent to proposed Barn and Interpretive Centre; 2 EV charging stations; 60 standard stalls, 4 universally accessible, 1 loading bay. Fill for preload and to raise grade to meet street elevation. Estimated .5m of fill required= 2,700 cubic meters
	Abbreviations: LM= Lineal Meter SqM= Square Meter CM= Cubic Meter HA= Hectare				

ALC DECISION #55588:
Perimeter Recreation Trail and Agriculture Buffer (2016)

ALC DECISION #56199:
Soil Deposition to Establish the Farm (KPU Lease) (2017)

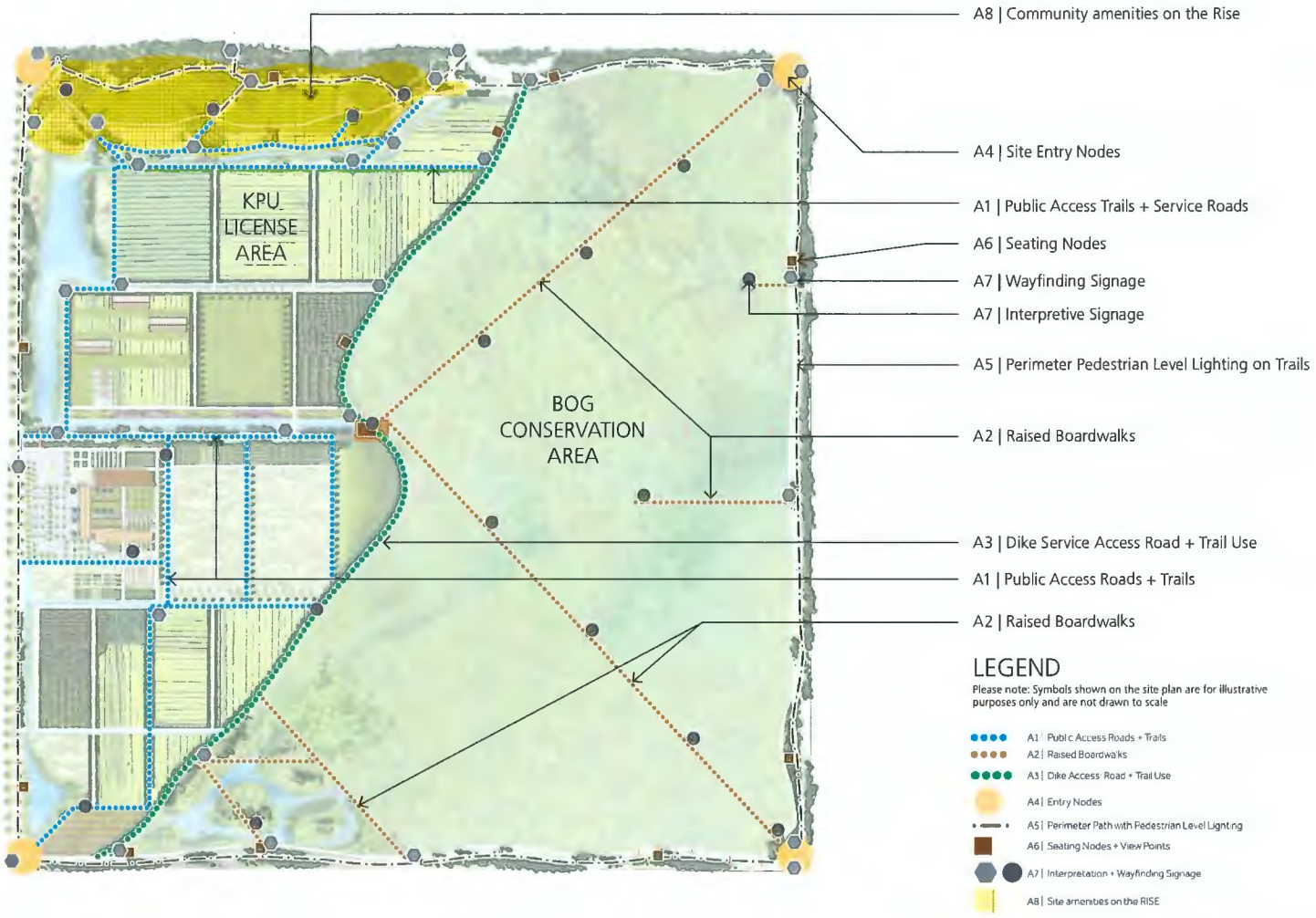
ALC DECISION #55600:
Dike Structure (2016)

ALC DECISION #56243:
Harvest Fest (2017)

ALC DECISION #57671 and #58812:
Farm Fest at the Garden City Lands (2018 and 2019)

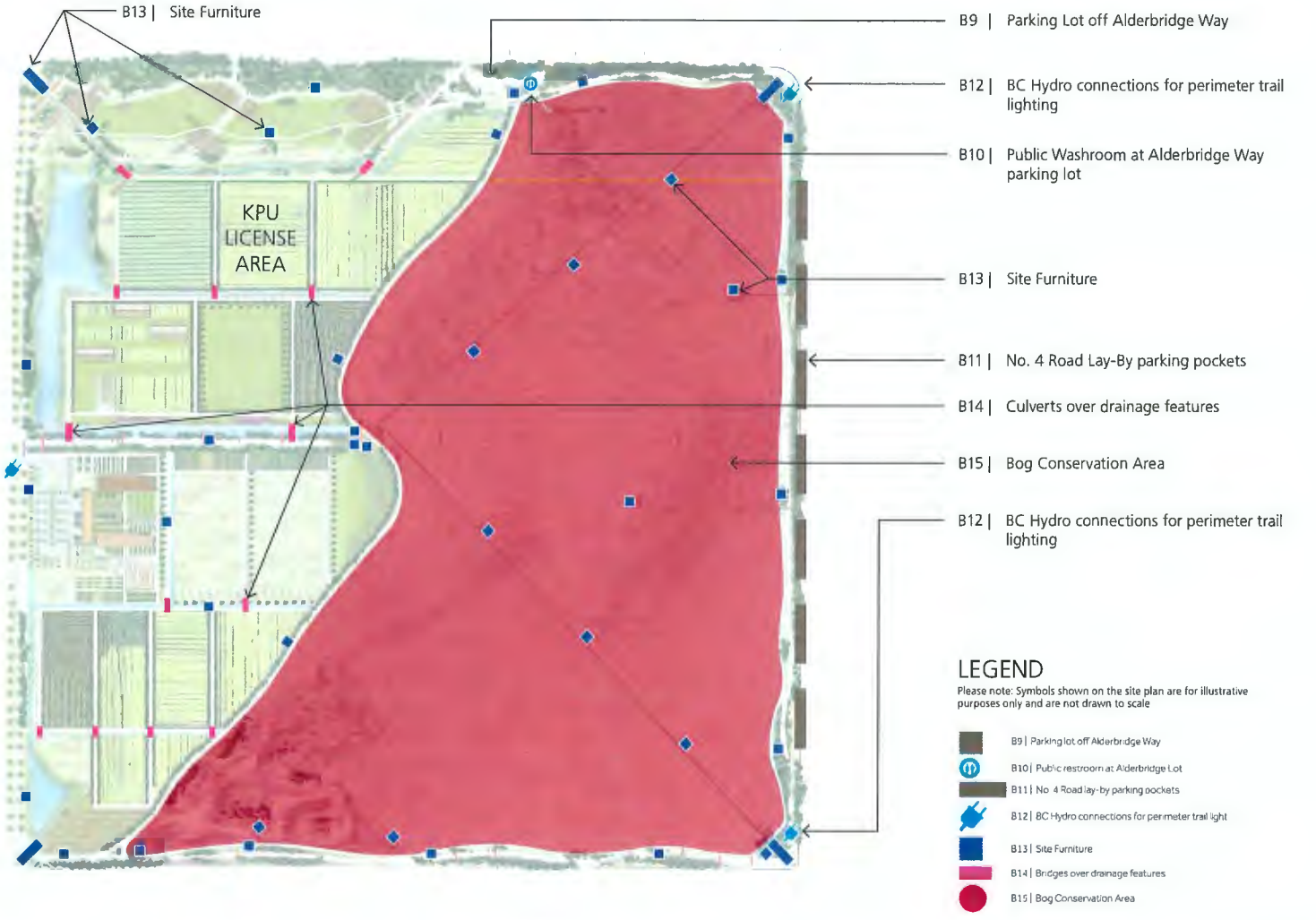
GARDEN CITY LANDS ALC NON-FARM USE APPLICATION
Previously Approved Non-Farm Use Applications 2016-2018

For additional information about this site map, please refer to the Approval Matrix



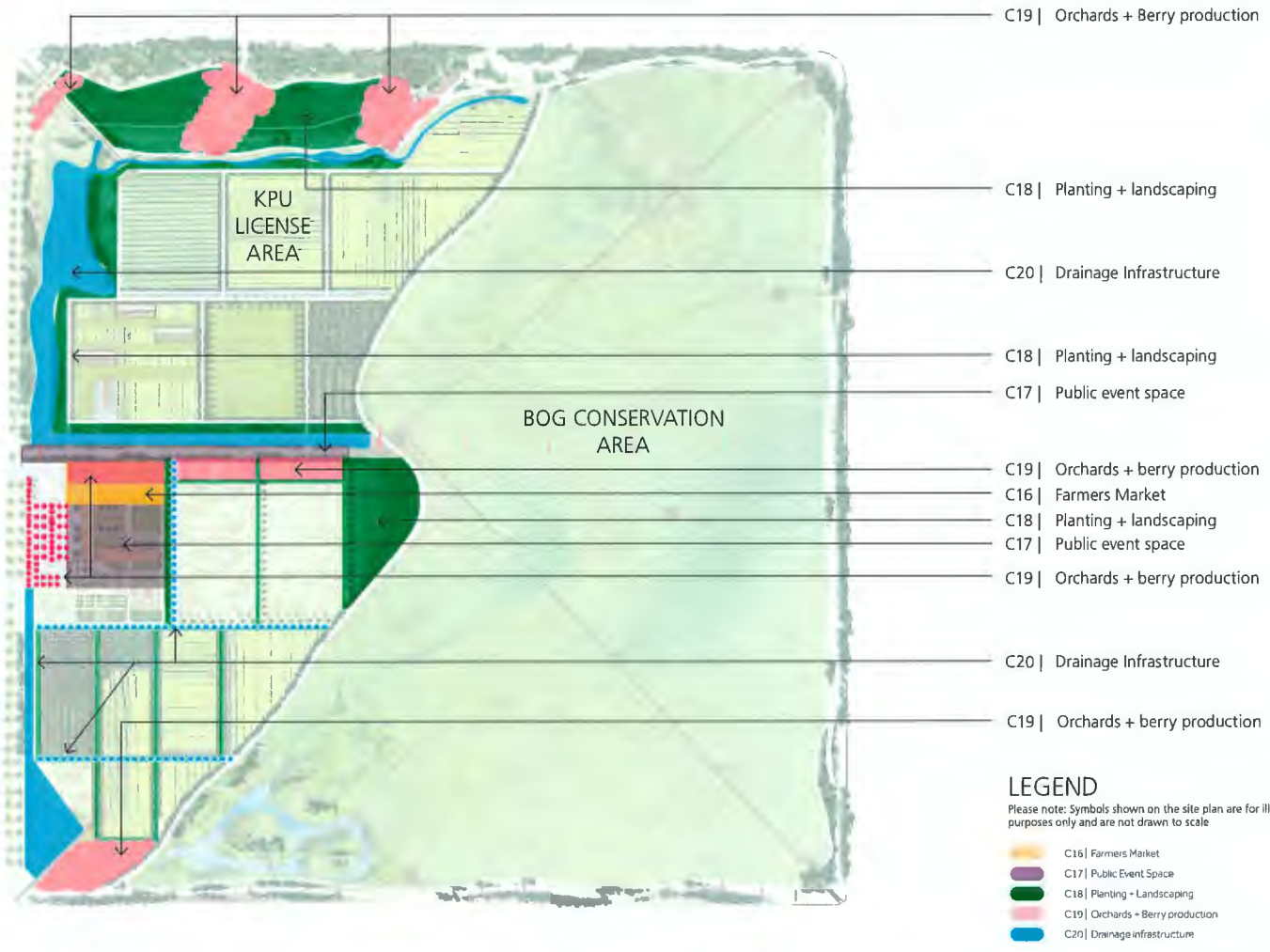
GARDEN CITY LANDS ALC NON-FARM USE APPLICATION
Map A: Site Access Features

For additional information about this site map, please refer to the Approval Matrix



GARDEN CITY LANDS ALC NON-FARM USE APPLICATION
Map B: Site Infrastructure

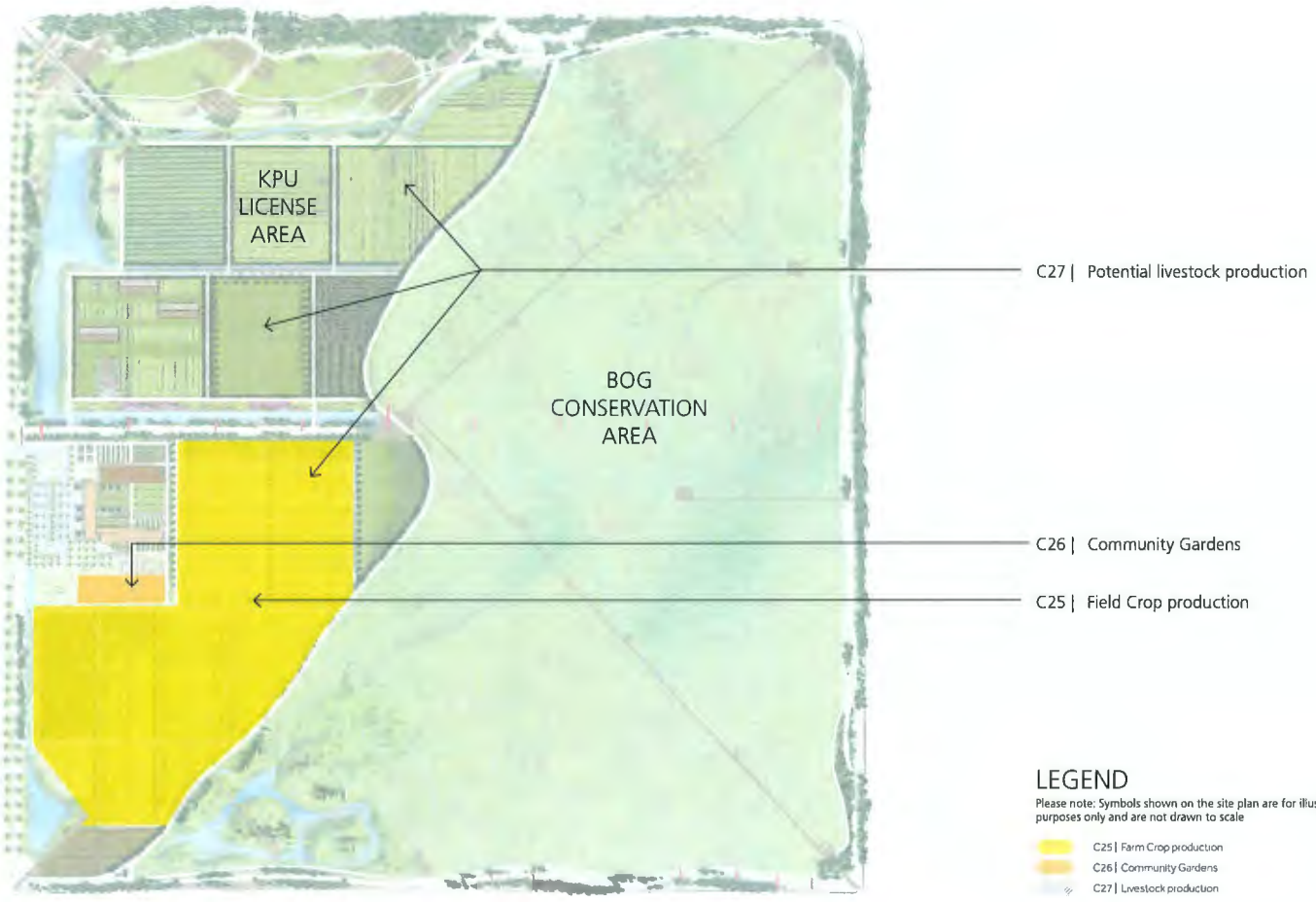
For additional information about this site map, please refer to the Approval Matrix



GARDEN CITY LANDS ALC NON-FARM USE APPLICATION
Map C1: Agricultural and Food Production Related Elements - General

For additional information about this site map, please refer to the Approval Matrix

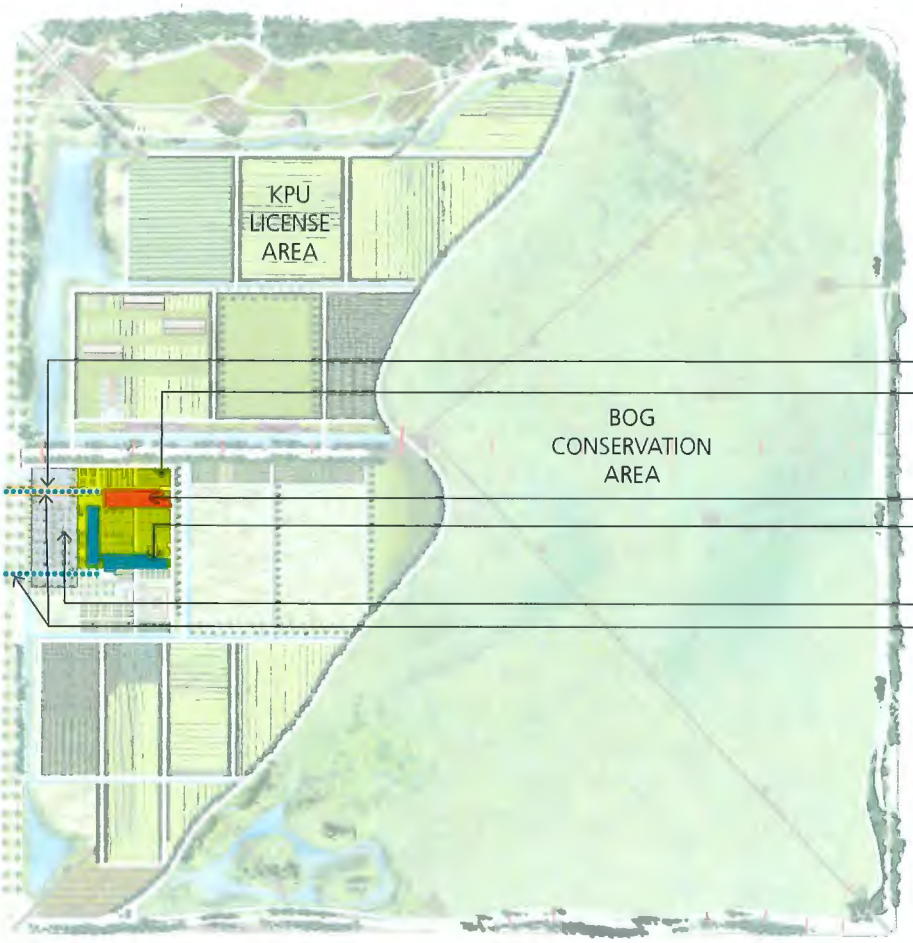
GARDEN CITY LANDS ALC NON-FARM USE APPLICATION
Map C2: Agricultural and Food Production Related Elements - KPU Farm



GARDEN CITY LANDS ALC NON-FARM USE APPLICATION

Map C3: Agricultural and Food Production Related Elements - Community Farm Fields

For additional information about this site map, please refer to the Approval Matrix



D29 | Municipal Services (to Barn)
D30 | Outdoor work spaces
D28 | Barn
D31 | Interpretive Centre
D33 | Parking lot
D32 | Municipal Services (to Interpretive Centre)

LEGEND

Please note: Symbols shown on the site plan are for illustrative purposes only and are not drawn to scale

- D28 | Barn
- D29 | Municipal Services (to Barn)
- D30 | Outdoor Workspaces
- D31 | Interpretive Centre
- D32 | Municipal Services (to Interpretive Centre)
- D33 | Interpretive Centre parking lot

GARDEN CITY LANDS ALC NON-FARM USE APPLICATION
Map D: Community Hub and Farm Centre

For additional information about this site map, please refer to the Approval Matrix

DRAFT
2018-JAN-19

CITY OF RICHMOND
GARDEN CITY LANDS
COMMUNITY HUB AND FARM CENTRE FEASIBILITY CENTRE

JANUARY 2018

THE ANDREWS ARCHITECTS INC.
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OVERVIEW

A local architectural firm, The Andrews Architects Inc, was engaged by The City of Richmond in August 2017 for architectural programming services to develop both a program and site orientation for a proposed community farm hub, to be located on the Garden City Lands. This resulting "Feasibility Study" assembles information gathered during many stakeholder meetings throughout the fall of 2017, and includes a base of information and analysis for the future schematic design of the complex. It includes a program of key components complete with gross floor area requirements and relationships, siting, and proposed phasing. City provided "order of magnitude" budgeting completes the base information for future planning.

PROJECT BACKGROUND & SCOPE

The Garden City Lands (GCL), acquired by the City from the Federal government in 2010, comprise a remarkable 55.2 hectare site within the heart of Richmond. This open space, part of the Agriculture Land Reserve (ALR), is bounded by Westminster Highway, Alderbridge Way, Garden City Way and No. 4 Road. Guiding principles, as outlined in the 2014 "Garden City Lands Legacy Landscape Plan", propose that future development should:

- Encourage Community Partnerships and Collaboration
- Respect Agriculture Land Reserve
- Strive for Environmental Sustainability
- Promote Community Wellness and Active Living
- Maximize Connectivity and Integration
- Allow for Dynamic and Flexible Spaces
- Develop Science-based Resource Management Plans"

Need of a Community Hub and Farm Centre was also identified. The facility is envisioned as a multi-purpose, secure and fully serviced public facility with both temporary and permanent programs with three primary functions: farm support, educational programs and public gathering. Operation will be a partnership between the City of Richmond and External Stakeholders, particularly the Farm Program at Kwantlen Polytechnic University (KPU) and non-profit societies such as the Richmond Food Security Society (RFSS).

The hub is to include outdoor and indoor support spaces, and will be a prominent feature on the land. It is to be innovative, but with minimal impact on the land. It is to be sustainable and should derive design inspiration from the location, farm related uses and the guiding principles as developed for the GCL.

FARM HUB RESEARCH

Local and international precedents were reviewed in order to draw ideas and strategies for the development. No one project or image provided a definitive direction, however, the accummulation of programming and design ideas have evolved into a customized approach for this unique setting and program.

PROJECT SITING

The "Garden City Lands Legacy Landscape Plan" identified the general site for the Community Hub and Farm Centre as midway along the western edge of the property, along Garden City Road at the eastern terminus of Lansdowne Road. The Feasibility Study team agreed that this is an ideal location for public visibility, accessibility (to, from and within the site) and proximity to the KPU and community garden fields, and to future wetland access points and nature trails. The site is a key ecological node, linking the proposed civic ceremoniel route from the river at the Richmond Olympic Oval, eastward along Lansdowne Road to the Garden City Lands. This lying together of land and water, has been and will continue to be economically, culturally and symbolically important to the evolution of Richmondas a unique "Garden City".

The Community Hub and Farm Centre becomes a signicant entry point for the overall site. Situated just across the road from a built-up urban edge, it transitions to a lower, more rural scale, linking the vital working farm components of the site with views and controlled access opportunities to the ecological areas to the east beyond.

PROGRAM DEVELOPMENT & PROJECT PHASING

The Feasibility Study Team worked closely to develop a workable spatial program for the farming and support services components of the site for the City, non-profit groups and for KPU. In addition to establishing these requirements, the team needed to determine which resources could be shared in order to minimize duplication and to establish essential relationships between spaces and the site. With the long list of both indoor and outdoor spaces established, the team filtered it into essential components for the viability of the site. While looking at siting options, these components were were conceptually grouped on the site for possible phasing (Phase 1, Phase 2 and Future).

BUDGET

The City of Richmond (Capital Buildings & Project Development) has looked at preliminary budgeting based on the program developed in this Feasibility Study. Please refer to separate documentation for this information.

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2018-JAN-19

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Community Gardeners

Farmers Market Vendors

General Public

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2018-JAN-19

Working with City of Richmond Staff, it was determined that feedback from three stakeholder groups was required for programming of the GCL Hub, particularly: City of Richmond staff with potential understanding of the site and future activities, Kwantlen Polytechnic University staff involved in the planning of their future Garden City Lands agriculture program, and the Richmond Food Security Society as potential administrator of the City of Richmond portion of the Hub. During sessions with each of the groups, they were asked for a vision of the site and to identify program components for the Farm Hub buildings. Following, is a summary of the feedback and recommendations.

INTERNAL STAKEHOLDER INPUT: City of Richmond

- Four aspects to the Garden City Lands are Bog/Ecology, Kwantlen Polytechnical University farm program, community gardens, and the GCL Hub
- Given that the proposed GCL Hub project is part of the Agricultural Land Reserve (ALR), approval from the Agriculture Land Commission (ALC) is required
- Programming for the GCL Hub requires input from the CoR Stakeholders, including Project Development, Parks, Public Works, Transportation, IT and Sustainability/Environmental
- Require a building or buildings to support activities of the Garden City Lands, a hub and farm centre with community activities, community gardens, education and farming interpretation - or as further developed in the programming process
- Program requirements to include a main barn, basic storage of equipment, tools (garden tools located locally to gardens), and tractor, classrooms and places for gathering, offices for park progammer, facilitators and staff, refrigeration unit for storage of harvest produce, kitchen (for education and community building events), all modern utilities including power, water, sanitary, telephone, gas, security, wifi, bike storage (secure, covered) and vehicular parking

COMMUNITY SERVICES

Parks

- GCL Hub is the eastern terminus of the future enhancement of Lansdowne as Richmond's ceremonial route
- Opportunities for both city-run programs and for non-profit society (such as Richmond Food Security Society) programs, to include community garden classes/workshops, educational centre, seed sorting and storage
- To facilitate regularly scheduled or seasonal events such as a Farmers Market, Richmond Harvest Festival, Big City/Little Farm

ENGINEERING & PUBLIC WORKS

Transportation

- Site access needs to be designed to accommodate general needs of public, including parking
- Need to encourage alternate modes of transportation for arriving at site, such as promoting connection to Oval and river to the west as a major cycling route
- Increasing vehicular, pedestrian and cycling access by adding extra lanes to Lansdowne
- Encouraging "Green" initiatives with permeable paving, charging stations, bicycle parking

Public Works

- Sewer is a challenge, septic is tough, given the high water table
- Need to consider approach options given the ALR jurisdiction
- Store and collect ground water for irrigation - although may be minimal
- Ground water is too high in iron for agricultural use

Information Technology

- Services to be connected from the street - need to move junction boxes
- New services to include utility closets for lighting, audio, visual, security and communication, LMT kiosk, lighting and communication conduit for outdoor use
- Wifi is a growing need for interior spaces and possibly outdoors for public and/or visitors, also for security monitoring of fields

Sustainability & Environment

- Limit the impact of people and buildings on the land & consider "Green" initiatives including "LEED" or passive design
- Promote ducational programming for understanding the impact of agriculture to the environment

EXTERNAL STAKEHOLDER INPUT: Kwantlen Polytechnic University (KPU)

KPU's Ideas for the Garden City Lands

- The farming portion of the site would likely contain 4 components:
  1. a KPU restricted area for university related farm use (listed here for information only - not part of this study); complete a Storage Facility, a 30'x10' external Cooler, Field Offices (2), solar panels, lunch room and small Washroom
  2. City of Richmond restricted area, for maintenance and utility components
  3. Semi-public area for GCL Hub Stakeholder use (Richmond Food Security Society (RFSS) or others): facilities shared with KPU as listed below
  4. Public Areas: parking lot and areas to be determined through the program exercise
- The GCL Hub would likely be managed by an oversight committee with a clear farm management plan

KPU's Program Requirements for the GCL Hub
There will be both KPU restricted areas (as noted) and some sharable facilities:

- A Main Barn
- Storage areas including:
  - a covered tractor area (preferrably part of barn space)
  - Cooler (insulated room) - this can be part of Barn or on KPU site
  - Seed storage with good ventilation and insulation
  - Restricted KPU Workshop for services equipment, tool storage, building products
  - GCL Hub Workshop for services equipment, tool storage, building products
  - Walk-in Cooler for GCL Hub (and possibly KPU)
  - Fertilizer / Pesticide Storage Room
  - Shelving Areas
- Work areas, including:
  - Honey room for processing and hive storage (with heat)
  - Seed processing and dryer room (separate - it can get messy)
  - Workshop (restricted to KPU) for mechanics and farming tools
  - Mud room with washing station for participants with showers, washrooms
- Processing Area (possibly Canada/Global GAP certified), including:
  - Primary produce processing stations (stainless steel) with large sinks and counters for washing and packing
  - Intermediate processing facility (loading area)
  - Kitchen for secondary processing by others (option)
- Dividable multi-purpose spaces for workshops, classes (30 student maximum), and meetings
- Staff room / lunch room
- Exterior covered area for flexible use including a winter market
- Need easy access for delivery trucks to load and unload

Other Ideas and Resources

- Richmond Food Security Society as facilitator of City-run area
- Offered the model of the Kentucky State University agriculture facility
- Providing processing areas with glass for the general public to see
- Encouraging "Incubator Farmers"
- Providing entrepreneurs with value-added options by having a GAP certified kitchen
- Stressed the importance of strong core values, a strong visinn and accountability for the site and Hub
- Additional information provided by KPU:
  - equipment list for barn (required items and sizes)
  - description of spaces required in barn (list of areas and sizes)
  - description of a farm facility at Kentucky State University, with some similar features

EXTERNAL STAKEHOLDER INPUT: Richmond Food Security Society (RFSS)

Background on RFSS

- Established in 2009 as an independent society, helped to set up the Richmond Food Charter (endorsed by Richmond City Council in 2016) and to establish the Metro Vancouver Regional Food Action Plan (MVRSAP)
- Currently located in the basement of the caretaker's suite at the Paulik Neighbourhood Park in Richmond
- Goals of society: "grow a food literate community" "nurture urban agriculture", "enrich organizational foundation"
- Activities include youth leadership programs("Get Rooted", "Stir It Up"), school programs, field trips, seed saving and exchanging, surplus fruit recovery program, community garden allotment management, and various food security dialogue and advocacy initiatives
- Special events include: "Seedy Saturday", "Richmond Harvest Festival"
- Development of the "Local Eating Guide" brochure, locating local organic farms and resources

Current Location (Paulik Neighbourhood Park)

- Currently have 2 rooms with a bathroom, including 6 desk spaces for 2 permanent + 1 part-time staff, and volunteers
- Missing the workshop space they had while located at the facility at Terra Nova
- 10 board members, but no room for their monthly meetings
- Currently manage 9 community garden sites

Richmond Food Security's Program List for the GCL Hub Buildings

- Office space / stations: 10-15
- Meeting Room: to fit 15-20 people, particularly for monthly board meetings
- Gathering spaces for training workshops for 20-30 people
- Storage Areas: room for ladders and equipment, fruit storage (including bins, supplies, refrigeration), tool sheds (adjoining each of the community garden locations)
- Community Kitchen (for learn to cook program)
- Staff lunchroom
- Washrooms
- Vehicular parking
- Covered outdoor space for festivals and workshops

Other Ideas for the GCL Hub

- More community gardens, larger plot options
- New agriculture models such as the "Food Forest"
- Need to look at produce theft management options
- Space for growth
- Potential museum opportunities
- Revenue generation options including catering from a GAP certified kitchen (in-house operation or rented out to entrepreneurs), cidery distillery, cafe, farmers' market, community centre.

The following projects are a few local examples with some similar features to the proposed GCL Hub as indicated. The team has visited and reviewed these facilities and sites, encorporatinng relavent concepts.

COLONY FARM REGIONAL FARM: Coquitlam, BC

CLOCKWISE FROM TOP LEFT: old Caretaker's House and new Washroom Building, trails through Wetlands and Bridges over Waterways, Community Gardens

* **Features:** 643 acres of open fields wetlands and hedgerows home to 200 bird species and small animals, and also including: wildlife habitat areas, Wilson Farm habitat rehabilitation, trails (including portion of the PoCo Trail), community gardens, heritage buildings (only the caretaker house and hall remain from the original Wilson farm)
* **Ownership / Management / Partners:** Metro Vancouver, Colony Farm Park Association, Colony Farm Community Gardens, Pacific Parklands Foundation
* **Events:** "Discover Schools" programs, group field trips

KIRKLAND HOUSE AND BARN: Delta (Ladner), BC

LEFT TO RIGHT: Renovated House and Barn (Photos Courtesy of Kirkland House Foundation)

* **Features:** Heritage house, renovated 112-year-old Harris Barn (used for rentals) and implement shed (as a museum of historical farming equipment) on 4.5 acres of land (including a 2.5 acre garden), accessible washrooms, gazebo
* **Ownership / Management / Partners:** Corporation of Delta, Kirkland House Foundation
* **Events:** Canada Day celebrations, house tours, barn rentals

THE SHARING FARM AND MARY'S BARN: Richmond, BC

CLOCKWISE FROM TOP LEFT: Trellised gathering place with fields beyond, Tractor Shed at Mary's Barn, front of Mary's Barn at the annual Garlic Festival

* **Features:** part of the Terra Nova Rural Park, the area includes community gardens, a woodlot, agricultural fields, a hazelnut orchard, School Yard Project, several community buildings including Mary's Barn
* **Ownership / Management / Partners:** City of Richmond, The Sharing Farm Society
* **Events:** Schools and Seniors' programs, Garlic Festival

RICHMOND NATURE PARK: Richmond, BC

* **Features:** A bog-forest nature park (eastern neighbour to the Garden City Lands) within the city of Richmond with 200 acres of raised peat bog, trails, bog ecology protection zone, 2 community buildings (1 for events, 1 as a interpretive centre), outdoor picnic area, washrooms, playground, parking
* **Ownership / Management / Partners:** City of Richmond, Richmond Nature Park Society
* **Events:** Many events throughout the year relating to the location, including, 'Wild Mushroom Show", "Nature Indoors" school program, "Cranberry Sale"

LONDON HERITAGE FARM: Richmond (Steveston), BC

CLOCKWISE FROM TOP LEFT: Community gardens, View from the renovated farmhouse kitchen, House and Garden in winter

* **Features:** 4.06 acre heritage site with the 1880's London family farm overlooking the south arm of the Fraser River, community gardens, bees, chickens, flower garden, gift shop
* **Ownership / Management / Partners:** City of Richmond, London Heritage Farm Society
* **Events:** Afternoon tea, house tours, "Doors Open" venue, "London Family Farm Day", private weddings

BURNS BOG ECOLOGICAL CONSERVANCY AREA: Delta, BC

THE BOG (Photo Courtesy of David Meredith)

* **Features:** 5045 acres (of the total 8000 acres of raised bog - the largest raised bog on the coast of the Americas) in the Fraser River Delta between the south arm of the Fraser River and Boundary Bay, trails (including 2 km boardwalk)
* **Ownership / Management / Partners:** Corporation of Delta, Burns Bog Conservation Society
* **Events:** Jog for the Bog', Burns Bog Classroom Program, Earth Day Pilgrimage

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Many of the international examples that we explored were more for a look at creative approaches to context and sustainable design rather than an understanding of similar programs. The closest program may be the Kentucky State University example which is largely a university agricultural program with some opportunities for public events. It also ancorporates a "barn style" vocabulary for the buildinsgs, indoor/outdoor and covered spaces - as we are porposing for the GCL Hub.

KENTUCKY STATE UNIVERSITY RESEARCH AND DEMONSTRATION FARM: Frankfort, KY, USA

KYSU Research & Demonstration Farm Buildings (Photo Courtesy of KYSU Website)

- **Features:** University program with organic and experimental farming (including yearly public outreach.) with farm, research buildings and experimental fields within a university campus setting
- **Ownership / Management / Partners:** State, University
- **Events:** With private and public funding, "Farm City Field Day", which includes educational tours, livestock shows, vegetable processing display, environmental education research display, thoroughbred nutritional kitchen tour

BEACON FOOD FOREST: Seattle, WA, USA

Beacon Food Forest Schematic Site Plan (Photo: Harrison Design Landscape Architecture)

- **Features:** Started as a school permaculture project on a 5+ acre plot of City-owned (Seattle Public Utilities) land in the Beacon Hill neighbourhood of Seattle. It evolved into a community-led endeavor to create an "edible Arboretum"
- **Ownership / Management / Partners:** City, Beacon Food Forest Committee
- **Events:** Education, work parties, community stewardship outreach, technical networking

FRUCHTLAND | NATURE CULTURE AGRICULTURE: Bern, Germany

Fruchtland Gallery Building (Photo Courtesy of [illegible])

- **Features:** Site sensitive gallery building set in an agricultural setting (particularly the fields of an Agricultural University Program), including: Children's Creative Centre, Paul Klee Museum, Music/Literature/Theatre Centre
- **Ownership / Management / Partners:** Municipal, State (public funding)
- **Events:** Most of the public events revolve around the art exhibits

URBAN FARM UNIT (designbloom.com): currently in Zurich, Berlin, Brussels

UFU Shipping Container Agriculture (Photo: designbloom.com)

- **Features:** Damien Chivialle set out to address issues of limited space and toxicity in farming and aquaculture by transforning used shipping containers into aquaponic units for easy incorporation into any environment.

STUDIO 6

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Program Summary for **Garden City Lands Farm Hub Area** from Stakeholder Input

Abbreviations: KPU: Kwantlen Polytechnic University; OS: Outside Stakeholder (Richmond Food Security Society or Other); CoR: City of Richmond; TBC: To Be Confirmed

	SPACE / ITEM	SHARED SPACE		PROXIMITIES / LOCATION	QTY	DIMENSIONS OF SPACE	AREA OF SPACE	AREA OF SPACE	NOTES
		YES	NO			WxLxH	sq ft	sq m	
	PHASE 1: FARM HUB ESSENTIAL COMPONENTS - Market Area, Barn, Storage, Primary Processing and Associated Washrooms								
	KPU REQUESTS (Farm Hub Area only)								
1	**Farm Tool Storage**		N	In Barn near Garden Plots	1	10' x 5'	50	5	50 sf with restricted access to KPU section - part of shared space
2	**Walk-in Cooler**		N	Initial: Near Fields Future: In Barn		300 sq ft - *Not included in Proposal*			Initial solution: temporary shipping container cooler near plots - could later use secured portion of new cooler in "barn" with size as indicated
3	**Covered Tractor, Vehicle & Equipment Storage**		N	In/near Main Barn	1	45' x 90' including (15' x 90' drive aisle)	4,050	376	Prefer for the tractor area to be part of the barn - KPU tractor and equipment would be secure & restricted
4	**Covered Outdoor Storage Area**		N	Initial: Near Fields					KPU Restricted area for equipment storage - **Hub area req't not defined at this time**
5	**Workshop**		N	Inside Barn		10' x 20' - **Part of the 45' x 90'**			200 sf - KPU Restricted area for services equipment, tool storage, building products
6	**Fertilizer Pesticide Storage Room**		N	In/near Main Barn		**Part of the 45' x 90' TBC**			Shared room with restricted access to KPU section
7	**Shelving Area**		N	Inside Barn		30' x 3' - **Part of the 45' x 90'**			30 sf
8	**Primary Processing Area**	Y		Inside Barn					Shared space with CoR - see below
	SUBTOTAL (KPU Req'ts)						**4100**	**381**	
	CoR REQUESTS (Including OS)								
9	**Farm Tool Storage**		N	In Barn near Garden Plots	2	10' x 10'	200	19	This is main storage in Barn - may also be multiple "sheds" near plots
10	**Walk-in Cooler**	Y		Inside Barn	1	10' x 20'	200	19	Requirements for City and OS
11	**Covered Tractor, Vehicle & Equipment Storage**		N	In/near Main Barn	1	14' x 24'	336	31	Requirements for City and OS
	Covered Outdoor Storage Area								See Exterior Requests below
12	**Workshop**	Y		Inside Barn	1	10' x 20'	200	19	Requirements for City and OS
13	**Fertilizer Pesticide Storage Area**	Y		In/near Main Barn	1	5' x 5'	25	2	Requirements for City and OS - Restricted to Approved Users
14	**Additional Shelving Area**	Y		Temp / Hum. Controlled	1	10' x 10'	100	9	Requirements for City and OS

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Program Summary for **Garden City Lands Farm Hub Area** from Stakeholder Input

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	SPACE / ITEM	SHARED SPACE YES	SHARED SPACE NO	PROXIMITIES / LOCATION	QTY	DIMENSIONS OF SPACE WxLxH	AREA OF SPACE sq ft	AREA OF SPACE sq m	NOTES
15	Primary Processing Area	Y		Inside Barn	1	20' x 30'	600	56	Requirements for KPU, City and OS
	SUBTOTAL (CoR / OS Req'ts)						1661	155	
	OTHER INTERIOR SHARED REQUESTS								
16	Secured Storage		N	Inside / Near Barn	1	60' x 10'	600	56	
17	Utility: Mech / Elect / Communication Rooms		N	In/near Barn & Future Interpretive Centre	4	10' x 10'	400	37	
18	Bicycle Covered Parking (Inside Building)								None
19	Washrooms with Direct Exterior Access	Y		Near Barn & Gardens	3 M/F	each 6' x 7.5'	135	13	
	SUBTOTAL PHASE I (Interior Shared Req'ts)						1035	96	
	TOTAL INTERIOR AREAS						6796	632	
	GROSS UP					25%	8495	790	Higher gross - up factor in order to allow for additional washroom requirements
	OTHER EXTERIOR SHARED REQUESTS								
20	Farm-use Wash-off Area	Y		Near Barn & Gardens	2	@ 5' x 5'	50	5	
21	Covered Multi-use Area	Y		Near Barn, Gardens, Parking	1	30' x 50'	1500	139	
22	Covered Walkway	Y		Near Barn, Gardens, Parking	1	250' x 10'	2500	232	
23	Seasonal Market Stalls	Y		Near Barn, Gardens, Parking	27	12' x 12'	3888	361	Modular, collapsable units
24	IT Closet		N	Near Hub	1	4' x 6'	24	2	Handled by CoR - Site Servicing
25	I.MT Kiosk		N	Near Garden City Road	1	4' x 6'	24	2	Handled by CoR - Site Servicing
26	Vehicular Parking & Drive Aisles	Y		Farm Hub Access	1	116' x 267.25'	31,001	2880	Handled by CoR - Site Servicing - need to limit paving to entry driveway, loading and accessible parking - other areas to be permeable
27	Accessible Parking Stalls	Y		Farm Hub Access	4	@ 12' x 18'	864	80	
28	Loading	Y		Farm & Farm Hub Access	1	12' x 60'	720	67	

Program Summary for **Garden City Lands Farm Hub Area** from Stakeholder Input

Abbreviations: KPU: Kwantlen Polytechnic University; OS: Outside Stakeholder (Richmond Food Security Society or Other); CoR: City of Richmond; TBC: To Be Confirmed

	SPACE / ITEM	SHARED SPACE		PROXIMITIES / LOCATION	QTY	DIMENSIONS OF SPACE	AREA OF SPACE	AREA OF SPACE	NOTES
		YES	NO			WxLxH	sq ft	sq m	
29	**Exterior Bicycle Parking (Covered)**	Y		Near Farm Hub					Accessible to all - need to look at options for security and weather protection
30	**Exterior Landscaping**	Y							
31	**Exterior Pathways**	Y							
32	**Gardens - Plot Prep**	Y							
	SUBTOTAL PHASE 1 (Exterior Shared Req'ts)						40571	3768	
	PHASE 2: FARM HUB FOR EXPANDED PUBLIC INTERFACE - Additional Farm Facilities, Offices, Classrooms, Interpretative Centre, Certified Kitchen and Associated Washrooms								
	KPU REQUESTS (Farm Hub Area only)								
33	**Seed Dryer & Temperature-controlled Storage Room**	Y		Inside Barn	1	10' x 10'	100	9	Including 2 Dryers @ 4'Wx6'H, Counters, Shelving - **Shared room with secured areas**
	CoR REQUESTS (Including OS)								
34	**Honey Room (Processing & Hive Storage)**	Y		Inside Barn	1	10' x 20'	200	19	Needs to be well insulated - shared facility
	OTHER INTERIOR SHARED REQUESTS								
35	**Office / Work Stations**	Y		Interpretive Centre, Near Barn	3 Offices + Open Office Area	3@ 80 sf + 300 sf	540	50	Requirements for City and OS
36	**Dividable Classrooms**	Y		Interpretive Centre, Near Barn	1	26' x 50'	1,300	120	Shared by all User Groups: 1 Classroom for 20 to 30 people dividable into smaller spaces
37	**Meeting Room**	Y		Interpretive Centre, Near Barn	1	12' x 15'	180	17	Shared by all User Groups: Min 1 for 15-20 People with table
38	**Additional Interpretive Area**	Y		Interpretive Centre, Near Barn	1	26' x 50'	1,300	120	Requirements for City and OS
39	**Staff / Utility Room**	Y		Interpretive Centre, Near Barn	1	10' x 10'	100	9	Requirements for City and OS - **TBC**

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Program Summary for **Garden City Lands Farm Hub Area** from Stakeholder Input

Abbreviations: KPU: Kwantlen Polytechnic University; OS: Outside Stakeholder (Richmond Food Security Society or Other); CoR: City of Richmond; TBC: To Be Confirmed

SPACE / ITEM	SHARED SPACE		PROXIMITIES / LOCATION	QTY	DIMENSIONS OF SPACE	AREA OF SPACE	AREA OF SPACE	NOTES
	YES	NO			WxLxH	sq ft	sq m	
SUBTOTAL PHASE 2 (Interior Shared Req'ts)						3720	344	
GROSS UP					25%	4650	430	Higher gross - up factor in order to allow for washroom requirement
OTHER EXTERIOR SHARED REQUESTS								
Add'l Exterior Landscaping								
Add'l Exterior Pathways								
Add'l Gardens								
SUBTOTAL PHASE 2 (Exterior Shared Req'ts)						0	0	
TOTAL PHASE 1 + 2 (Interior Shared Req'ts)						10516	976	
GROSS UP					25%	13145	1220	

PROGRAM DIAGRAM
SPACES & PROXIMITIES

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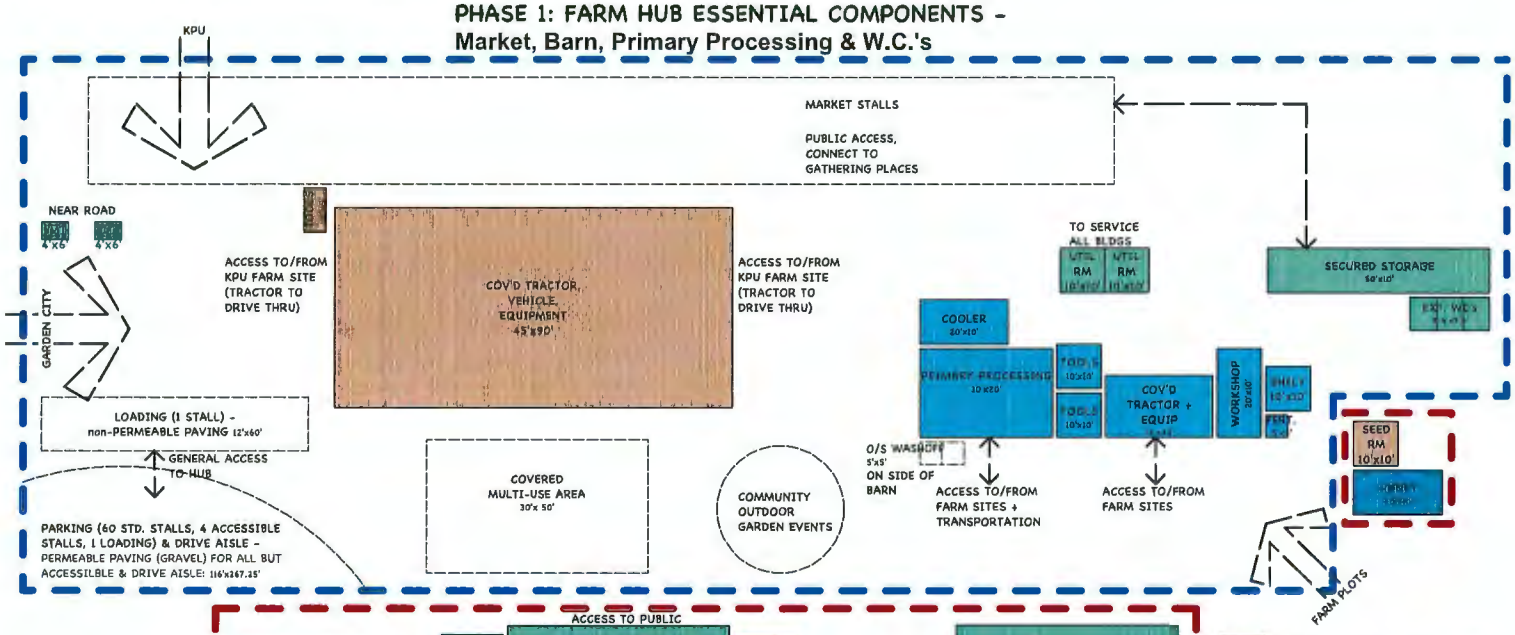
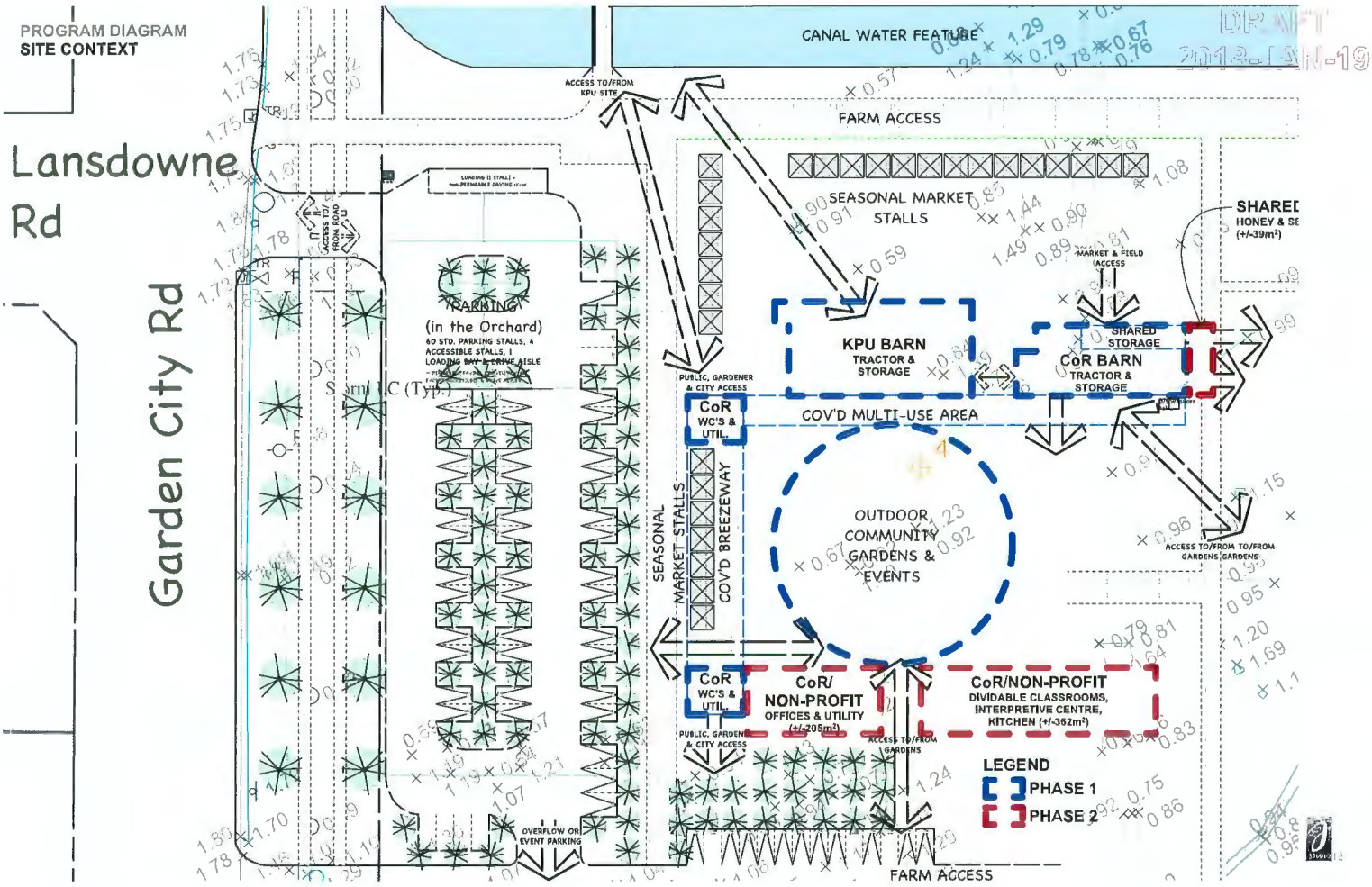
Program development for the GCL Hub evolved out of the input from the Internal and External Stakeholders and into the components as summarized in the preceding pages. Key to understanding these components was determining the space sizes, their proximity to one another, and understanding sharability. Graphic representations of the spaces were developed in order to explore the variables.

PHASE 1: FARM HUB ESSENTIAL COMPONENTS – Market, Barn, Primary Processing & W.C.'s



PHASE 2: FARM HUB FOR EXPANDED PUBLIC INTERFACE – Additional Farm Facilities, Offices, Classrooms, Interpretive Centre, Com'ty Kitchen & WC's


PROGRAM DIAGRAM
SITE CONTEXT
Lansdowne Rd
Garden City Rd
CANAL WATER FEATURE
ACCESS TO/FROM KPU SITE
FARM ACCESS
SEASONAL MARKET STALLS
PARKING
(in the Orchard)
60 STD. PARKING STALLS, 4 ACCESSIBLE STALLS, 1 LOADING BAY & DRIVE AISLE
Storm MC (Typ.)
KPU BARN
TRACTOR & STORAGE
CoR BARN
TRACTOR & STORAGE
SHARED STORAGE
MARKET & FIELD ACCESS
PUBLIC, GARDENER & CITY ACCESS
CoR WC'S & UTIL.
COV'D MULTI-USE AREA
COV'D BREEZEWAY
SEASONAL MARKET STALLS
OUTDOOR COMMUNITY GARDENS & EVENTS
ACCESS TO/FROM GARDENS
CoR WC'S & UTIL.
CoR/ NON-PROFIT
OFFICES & UTILITY (+/-205m²)
CoR/NON-PROFIT
DIVIDABLE CLASSROOMS, INTERPRETIVE CENTRE, KITCHEN (+/-362m²)
PUBLIC, GARDENER & CITY ACCESS
ACCESS TO/FROM GARDENS
OVERFLOW OR EVENT PARKING
FARM ACCESS
LEGEND
PHASE 1
PHASE 2
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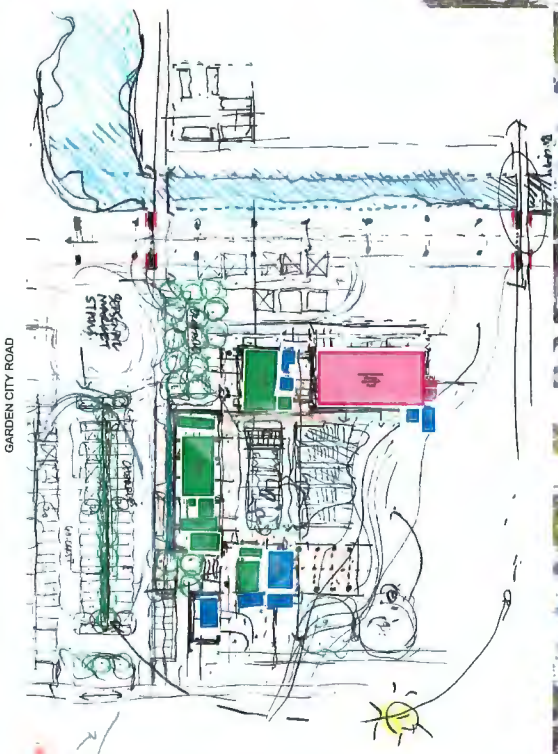
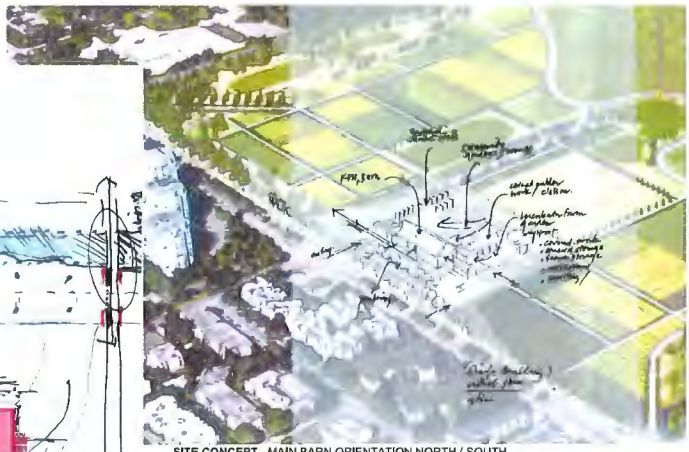
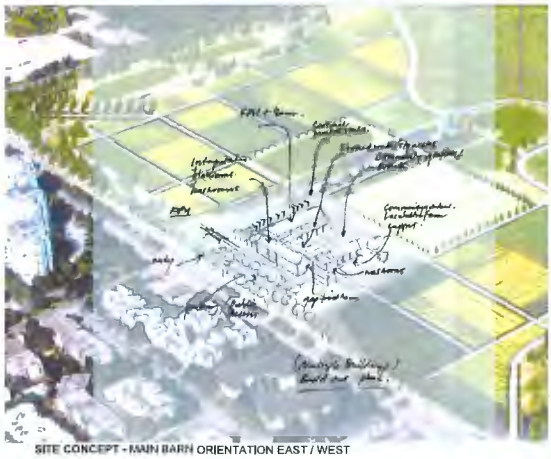


PROGRAMMING EXERCISE - CREATING A CENTRAL GATHERING PLACE

TEAM FEEDBACK:
- Liked the views, links, relationships, opportunities for flexible community spaces
- Opportunities for a low-impact sustainable response and creative "of the earth" forms
- Need to phase the project
- More compact, simple forms may be more economical



SITE CONCEPT - MAIN BARN ORIENTATION NORTH / SOUTH



SITE CONCEPT - MAIN BARN ORIENTATION EAST / WEST

CONCEPT DIAGRAMS
EARLY EXPLORATIONS

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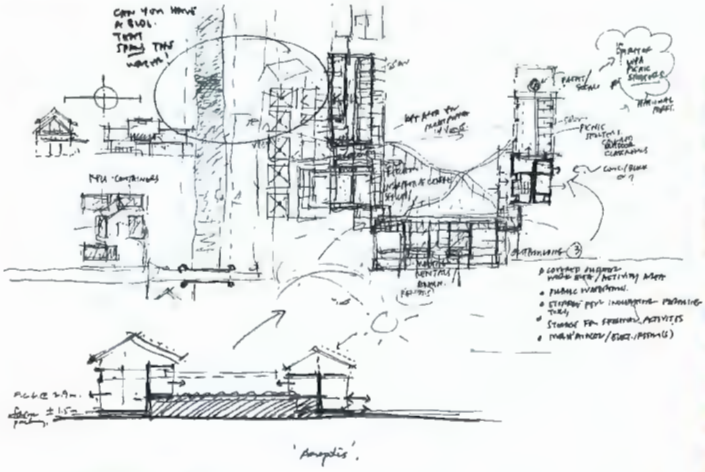

'Acropolis'.

SITING CONCEPT - ACROPOLIS

RAISED AREA FOR LOOKOUT OR ACTIVITY CONNECTIONS
Responding to flood plain concerns and indoor / outdoor relationships

PRECEDENT IMAGES FOR BUILDING OPENINGS & PROVIDING SHELTER

PRECEDENT COVERED AREAS

PRECEDENT IMAGES FOR "THE LOOKOUT"

CONCEPT DRAWINGS

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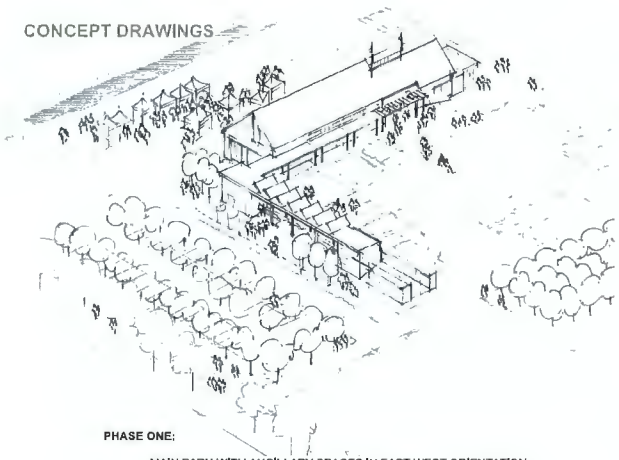

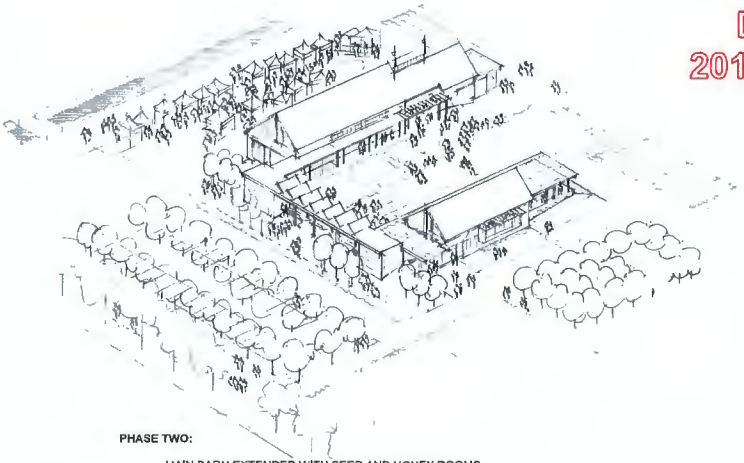

PHASE ONE:

- MAIN BARN WITH ANCILLARY SPACES IN EAST WEST ORIENTATION FOR EASY ACCESS FOR KPU SITE AND CITY GARDENS
- SERVICE SPACES (UTILITY, W.C.'S) WITH CONNECTING BREEZEWAY TO CREATE AN "L-SHAPED BUILDING FORM FOR THE PROJECT, PROVIDING ACCESS AND VIEWS THROUGH TO AN "INTERIOR" GARDEN
- GREEN ROOFS ON "FLAT" ROOFED BUILDINGS BUILDINGS, SOLAR PANELS ON BREEZEWAY ROOF (AND POTENTIALLY ON SOUTH-SLOPING BARN ROOF)
- AREAS FOR FARMERS MARKETS OR SPECIAL EVENTS
- PARKING "IN THE ORCHARD" ON PERMEABLE PAVING OR GRAVEL
- FOCUS ON AGRICULTURE AND THE GARDEN CITY LANDS

PHASE TWO:

- MAIN BARN EXTENDED WITH SEED AND HONEY ROOMS
- ADDITIONAL BUILDING SPACES TIED INTO THE BUILDING TO CREAT A U-SHAPED BUILDING AROUND THE "INTERIOR" GARDEN
- GREEN ROOFS CONTINUED ON "FLAT" ROOFED BUILDINGS BUILDINGS
- ADDITIONAL AREA ALLOCATED FOR FARMERS MARKETS OR SPECIAL EVENTS
- ADDITIONAL PARKING, STILL WITH "IN THE ORCHARD" DESIGN FEATURES
- ALWAYS A FOCUS ON AGRICULTURE AND THE GARDEN CITY LANDS

PRECEDENT IMAGES FOR THE BREEZEWAY & IDEAS OF "LOOKING THROUGH" THE BUILDING

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GARDEN CITY LANDS HUB: A "BUILDING OF & IN THE FIELD"

Buildings and gathering places in the field and connections between the elements are the main themes that evolved from this preliminary Feasibility Study. Going forward a number of items will need to honed in on, including:

- Firming up the activity and spatial programs
- Confirming shared spaces and arrangements
- Establishing a preliminary budget
- Identifying a vocabulary for the buildings
- Engaging the community and decision-makers
- Engaging Design Consultants for further study of the ideas

TRADITIONAL BARN "IN THE FIELD"

CONCEPT DRAWING IN GCL CONTEXT

PRECEDENT IMAGES OF AGRICULTURAL BUILDINGS" IN THE FIELD"

PRECEDENT IMAGE OF AGRICULTURAL BUILDING "IN THE FIELD"

GCL Proposed Fill Volumes[5]

		Area (m^2)	Pre-Load[1]	Granular Material[2]	Sub-Soil[3]	Top Soil/Growing Medium[4]
1	**Community Gardens** (Farm-Use) Approval Matrix Reference: Line C26	3,000	n/a	n/a	1,500	1,500
2	**Alderbridge Parking Lot** (Non-Farm Use-NFU) Approval Matrix Reference: Line B9	3,200	n/a	1,000	n/a	n/a
3	**Corner Entry Points** (NFU) Approval Matrix Reference: Line A4	1,000	n/a	500	n/a	200
4	**Trails** (NFU) Approval Matrix Reference: Line A1	10,500	n/a	2,000	n/a	n/a
5	**Washroom** (Alderbridge P lot) (NFU) Approval Matrix Reference: Line B10	50	70	500	n/a	n/a
6	**Community Hub & Farm Centre** (NFU) Approval Matrix Reference: Line D31 & D33	6,200	1,100	1,200	n/a	n/a
	Sub-Total:	23,950 (2.4 ha)	1,170	5,200	1,500	1,700

Notes:

1. The volume and duration of pre-load material (to be placed prior to the construction of permanent site improvements) are gross estimates to be confirmed prior to construction. **The pre-load material is temporary and will be removed from site.**

2. Granular Material is defined as sand or native crushed stone material for the purposes of constructing a compacted, permeable, stable and, if required, removable surface suitable for driving vehicles (cars, municipal services vehicles and farm equipment), parking said vehicles, pedestrians (rolling and foot traffic) and cyclists.

3. Sub-soil material to provide a stable base for site improvements. Material to be well drained.

4. Top soil imported from either commercial soil providers and/or imported from other source sites. Material to meet the soil specification for the Garden City Lands (previously provided to the ALC).

5. Volumes provided are the estimated maximum required. All material measured in cubic meters (m^3). The type of fill and, where applicable, the duration of placement to be determined by a qualified engineering professional.

McTAVISH
RESOURCE & MANAGEMENT
CONSULTANTS LTD.

#300 – 15300 Croydon Drive
Surrey BC
V3S 0Z5

Date: December 19, 2017

Attn: Alex Kurnicki

From: Bruce McTavish

Re: Source Soil Management

This memo outlines the steps to takeplace when soil is sourced for transport and deposit at the Garden City project.

The soil for the Garden City must adhere to the ALC guidelines for soil and the BC Contaminated Site Regulations (BCCSR) – Schedule 4 for Agricultural Lands.

The owner or contractor of the source soil will need to provide a Phase 1 Environmental Assessment.

When a source of soil has been identified, the following steps will be taken:

1) On behalf of the City of Richmond, an Agrologist with expertise in soil science and soil handling will review available documentation including a Phase I Site Investigation (environmental assessment) report for the site from which the soil originates.

2) The Agrologist must visit the source site and evaluate the soil for suitability as fill on the Garden City lands, and report on whether and how conditions of the ALC for soil will be met. This evaluation starts with on site visual observations of the site and the soil. Based on the observations and review the Agrologist can:
    a. Reject the soil
    b. Approve the soil and then
    c. Proceed with a soil investigation program, including sampling and sample analysis.
    d. Ensure that soil meets the KPU specification attached to ALC decision 56119

3) The Agrologist must prepare a protocol for the soil handling before transportation of the soil to the Garden City Lands. The protocol will be site specific and include:
    a. Supervision of soil handling
    b. Separation and set aside of topsoil
    c. Separate transport of topsoil and other soil to the Garden City property
    d. Placement of soil and topsoil to mimic the original profile, and
    e. Monitoring of stoniness
    f. Monitoring of non-soil inclusions such as asphalt and concrete and procedures for removal of such items.

#300 – 15300 Croydon Drive
Surrey BC
V3S 0Z5

The Agrologist may recommend that screening of the soil to remove inclusions takes place before transport of the soil to the Garden City property.

Bruce McTavish MSc MBA PAg RPBio
Senior Agrologist

TETRA TECH

TECHNICAL MEMO

ISSUED FOR REVIEW

To:	Mr. Alex Kurnicki	**Date:**	March 20, 2020
cc:	Josh Weidner, E.I.T.	**Memo No.:**	1
From:	David Moschini, P.Eng.	**File:**	704-ENG.WTRI03021-01
Subject:	GCL Hydrotechnical Modelling & Geotechnical Assessment Re: Application #6357384		

This 'Issued for Review' document is provided solely for the purpose of client review and presents our interim findings and recommendations to date. Our usable findings and recommendations are provided only through an 'Issued for Use' document, which will be issued subsequent to this review. Final design should not be undertaken based on the interim recommendations made herein. Once our report is issued for use, the 'Issued for Review' document should be either returned to Tetra Tech Canada Inc. (Tetra Tech) or destroyed.

1.0 INTRODUCTION

The City of Richmond Parks department has retained Tetra Tech Canada Ltd. (Tetra Tech) to provide guidance in the submission of an application to the Agricultural Land Commission (ALC) which will permit additional public access to the Garden City Lands Site. The parks department is proposing a series of site improvements which require the placement of fill within the agricultural boundaries of the park. Improvements include the construction of parking lots, small entry plazas, walking trails, washrooms, a Community Hub, and a Farm Centre (a barn and buildings for educational programs). The total amount of fill proposed is approximately 8,000m^3.

Tetra Tech has prepared this technical memo commenting on the hydraulic and hydrogeological impacts the proposed fill may have on the site and providing geotechnical guidance for preload requirements and foundation conditions of the proposed facilities.

To evaluate the hydrotechnical impacts, Tetra Tech has built upon its previously developed hydrologic/hydraulic PCSWMM model of the GCL system. Tetra Tech staff conducted a field visit on March 9th, 2020 to confirm present day conditions.

Our geotechnical recommendations are based on a preliminary field investigation conducted on the in-situ soil conditions on March 4th, 2020.

2.0 HYDROTECHNICAL ASSESSMENT

A PCSWMM model was developed to simulate the hydrologic and hydraulic processes defining the drainage system within GCL. The 2018 model contained two parts. A two-dimensional model to replicate the ground and surface water flow within the GCL site and a one-dimensional model to simulate the inlets and pipe connections to the City's storm network. These two models are linked within the PCSWMM software to reproduce the GCL's overall flow patterns.

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Suite 1000 – 10th Floor, 885 Dunsmuir Street
Vancouver, BC V6C 1N5 CANADA
Tel 604.685.0275 Fax 604.684.6241

For this assignment Tetra Tech built upon this previously developed model to improve its accuracy and precision. Some of the improvements made are as follows.

- The 2-Dimensional mesh resolution was enhanced from 20 m to 5 m.
- Manning's roughness coefficients for the 2-Dimensional conduits were revised to be area specific depending on current and future land use.
- Modified Green Ampt Infiltration Parameters were further regionally focused and refined. Hydrogeological monitoring data was reviewed to ensure chosen parameters were in keeping with field observations as in Figure 2-1 below.
- The central dike was retraced and inserted to better reflect the features footprint.
- Perimeter connections on the north, south and east boundaries were updated to better reflect potential runoff onto the Richmond street network.
- Invert elevation, size and material information was reviewed from the City's online GIS database and updated as applicable.

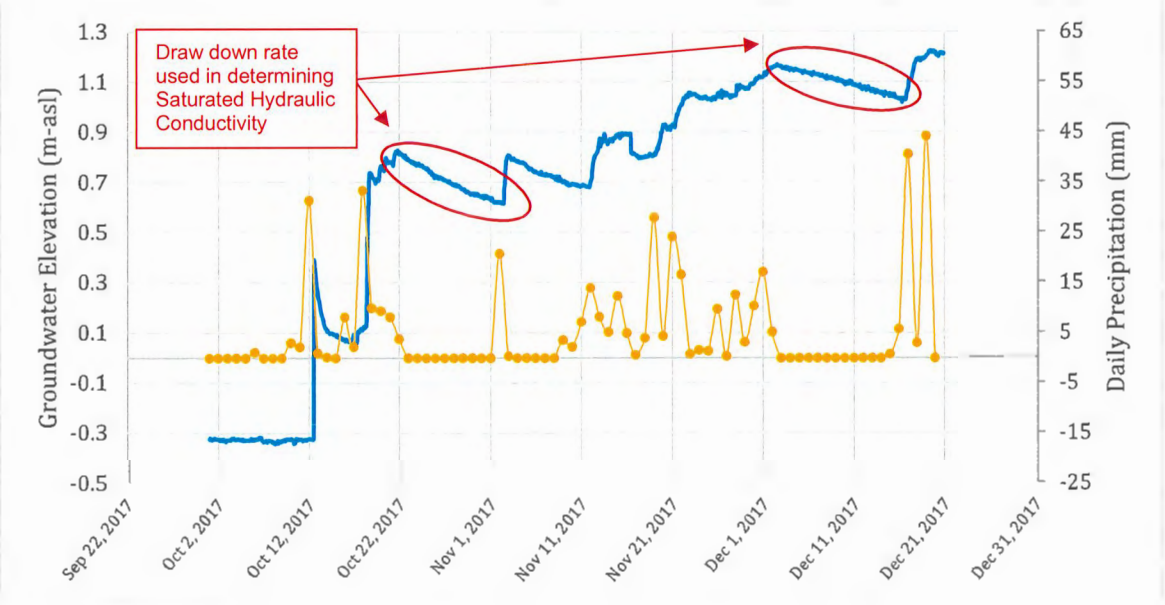

Figure 2-1: Shallow Groundwater Well 15-8S Water Level and Daily Precipitation

As with previous work, the rainfall intensity-duration-frequency (IDF) curve developed by the City of Richmond in the Engineering Design Specifications Storm Drainage document for the 10 Year – 24 Hour storm event was used as the design event in the 2-D model. To better replicate the antecedent conditions, the Richmond design storm is preceded with 24hrs of moderate precipitation - 1.5 mm/hr. Watershed parameters applied to the PCSWMM model included the watershed topography, surface roughness, and modified Green-Ampt infiltration parameters (used to characterise the soils hydrologic properties).

Three models were developed to represent each phase of development.

- Phase 1 - The "Pre-Park Development" scenario replicated physical parameters at the site prior to construction of the cross dike, KPU farmland and northwest pond. To better represent the parks improved retention capabilities – outlets along Garden City Road and Westminster Hwy remain in place as in other scenarios.
- Phase 2 - The "Present Day" scenario replicates physical conditions as they stand currently. The cross dike is in place; Kwantlen Polytechnic farmland has been raised to accommodate farming activities; and the north west pond has been constructed. City of Richmond storm outlets are in place north and south of Lansdowne along Garden City Road as they presently exist to attenuate the release of water into the City's storm system.
- Phase 3 - The "Application #6357384 Implementation" scenario replicates future conditions after the infill proposed under this application is placed. Figure 2-2 below highlights the location of said infills, while Table 2-1 specifies the depth and composition of infill placements used in replicating this scenario. Garden City Road outlets, as presently existing, remain in place north and south of Lansdowne to attenuate the release of water into the City's storm system.

Figure 2-2: Infill / Proposed Development Locations as Modelled.

Table 2-1: Infill Locations, Volumes and Depths

Proposed Development	Area (m^2)	Granular Material (m^3)	Sub-Soil (m^3)	Top Soil/Growing Medium (m^3)	Average Depth of infill to be added (m)
Community Gardens (Farm-Use)	3,000		1,500	1,500	1.0
Alderbridge Parking Lot (Non-Farm Use-NFU)	3,200	1,000			0.31
Corner Entry Points (NFU)	1,000	500		200	0.5
Trails (NFU)	10,500	2,000			0.19
Washroom (Alderbridge P lot) (NFU)	50	500			1.0
Community Hub & Farm Centre and Parking Lot(NFU)	6,200	1,200			0.20
Total:	**23,950 (2.4 ha)**	**5,200**	**1,500**	**1,700**	

Each of the three identified scenarios was modelled for the 10 Year – 24 Hour event. A site map with labelled locations can be found in Figure 8. Modelled schematics of max water depths throughout the GCL can be found in Appendix A.

3.0 MODELLING RESULTS

For each of the outlined scenarios, Tetra Tech reviewed the following hydrologic/hydraulic responses (Refer to Appendix A for locations):

1. South Farm – Water Depths
2. KPU Farm - Water Depths
3. City Storm System Outlet - Flow
4. South Ditch - Flow
5. Bog – Water Depths
6. Northwest Pond – Water Depths

South Farm – Water Depths

The south farm area was assumed to be the region south of the new interpretive centre. It was observed that water depths will increase slightly from existing. This in turn leads to an insignificant amount of additional flow being diverted to the City's storm system as discussed below. The increased ponding can be attributed to the increased runoff predominantly from the compacted granular fill placed to accommodate the proposed Garden City Road Parking Lot and Interpretive Centre. The new Community Garden was shown to have a minor dampening effect due to the inherent nature of top soil to retain and infiltrate water within its structure.

When comparing to the Pre-park Development scenario, ponding has been reduced at this end of the site. Based on the prior modelling assignment it was observed that a major contributor to this change was the construction of the cross dike and it's clay core retaining water within the bog area.

In line with previous remarks, Tetra Tech is continuing to recommend the completion of slated but not yet build outlet structures along Garden City Road along with raising their rim elevations to allow for control of storm water release. Figure 2 shows the existing drainage pipes at the South Farm area as modelled in Phases 1-3. The location of an outlet control point with the headwall not yet installed south of Lansdowne Rd. is shown in Figure 3-1.

Figure 3-1: Present day not yet completed outlet the south of Lansdowne Rd. along Garden City Rd. as of March 9th 2020.

KPU Farm - Water Depths

As modelled, the KPU Farm area experiences no significant change in maximum water depths after the development of the interpretive centre and parking lot area. As noted during previous modelling, a drop is observed following the construction of the cross dike, placement of fill over the KPU farm area and the construction of the Northwest Pond as associated with the Present Day scenario.

Figure 3-2: Water flowing to outlet control structure north of Lansdowne Rd as of March 9th 2020.

Figure 3-3: Present day headwall control structure installed north of Lansdowne Rd.

City Storm System Outlet – Flow

Our modelling confirms that effects on discharge rates into the City's storm system are minor. A slight increase is observed due to additional impervious area associated with the compacted gravel parking lots. Overall flow during the 10 Yr – 24 Hr event is expected to increase by 0.01 m^3/s. This increase can be offset with changing the outlet conditions in the vicinity of the parking lot along with grading the Garden City Road parking lot towards the Northwest Pond – as discussed further below.

The transition from the Pre-development conditions to present day was shown to provide the greatest reduction in outflows to the City's storm system. This can be attributed to the additional storage created by the northwest pond and the installation of the central dike to promote the retention of water within the bog. Overall these changes show peak flow being reduced by approximately 0.12 m^3/s compared to pre-development flows.

Flows at the GCL outlet point to Richmond's storm system across all phases is shown in Figure 3-4. The blue line represents current conditions and the green line shows flows once the applications proposed features are fully in place. As detailed, the increase in peak flows to the city's system are minor to insignificant.

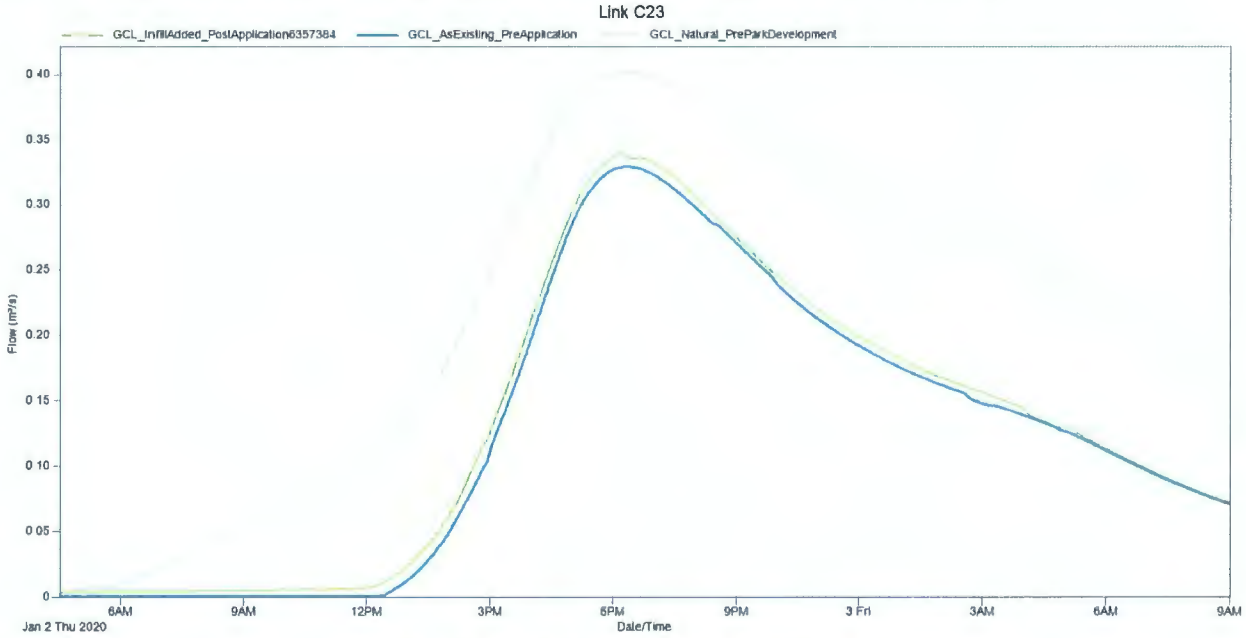

Figure 3-4: Flows at outlet point to Richmond stormwater system

South Ditch (Draining Bog) - Flows

Water discharging over the stop-log structure is conveyed by a roadside ditch flowing west along Westminster Highway referred to as the south ditch. The south ditch ties the bog overflows into the City's piped storm system which then runs north along Garden City Road. South ditch flows were reviewed to confirm the stop-log structure impact/benefits in protecting the City's storm system. These flows were reviewed under previous modelling work. With the new and updated model, Tetra Tech was able to reaffirm previous conclusions.

The installed headwall complete with the stop-logs is effectively controlling the discharge of water into the South Ditch (See Figures 3-6 and3-7 below). Maximum flows that could be expected during a 10 Yr – 24 Hr event are on

the order of 0.25 m^3/s assuming that water retention has reached the maximum stop log level when the event occurs.

Figure 3-5: South Ditch looking upstream from outlet headwall.

Bog – Water Depths

As with the previous model - depths at the bog outlet point show significant ponding during the 10 Year – 24 Hour event. Maximum depths observed are approximately 0.6 m, which demonstrates the high storage potential of the bog. A view of the stop-logs structure used to backup water into the bog is shown in Figures 3-6 and 3-7 below.

Figure 3-6: Stop log structure from front during dry season as modelled in Phases 2-4

Figure 3-7: Stop log structure creating a weir outlet condition at the southern end of the bog site

The development pieces proposed for the bog side under Application #6357384 consist of the Alderbridge Parking lot and washroom. No impacts were observed to the depth of water within the bog due to the implementation of these features. Appendix A highlights the modelling results and the extent of the ponding within the Bog.

These results are reinforced by the findings highlighted by the hydrogeological monitoring program's most recent Technical Memorandum, issued in November 2019. The development of the Bog and therefore the formalising of a large storage cell allows for retention of upwards of 10,000m3 of water. In turn, the retention of the runoff reduces the overall impact GCLs may have had on the City's Storm System. More importantly, the retention of water is helping the development of a healthier environment where the Bog can thrive.

Figure 3-8: Ponding at the southern extent of the bog backing up from the stop log structure

Northwest Pond – Water Depths

Modelled depths within the Northwest pond modestly decreased with the proposed developments. This is contrary to expectations. Typically, as floodplains are infilled, the loss of storage capacity translates into higher water levels within the surrounding lands. This can be explained given the assumptions that were made about the parking lots construction. It was assumed that additional runoff create by the parking lots compacted gravel would be shed equally in all directions thus preventing a portion of runoff from reaching the pond. Under present day conditions, the natural flow pattern in the area conveys almost all runoff towards the pond.

The pond was designed to accommodate the increase in runoff and as such protect the City's storm system from the impacts associated with the placement of fill in the GCL's floodplain. If the City chooses to grade the new parking lot towards the pond this minor loss of retention could be avoided. Figure 3-9 shows existing pond conditions during the 2019 Summer. Figure 3-10 shows a graph of the modelled depths in the pond area through all phases.

Figure 3-9: Northwest pond looking north from western side of park

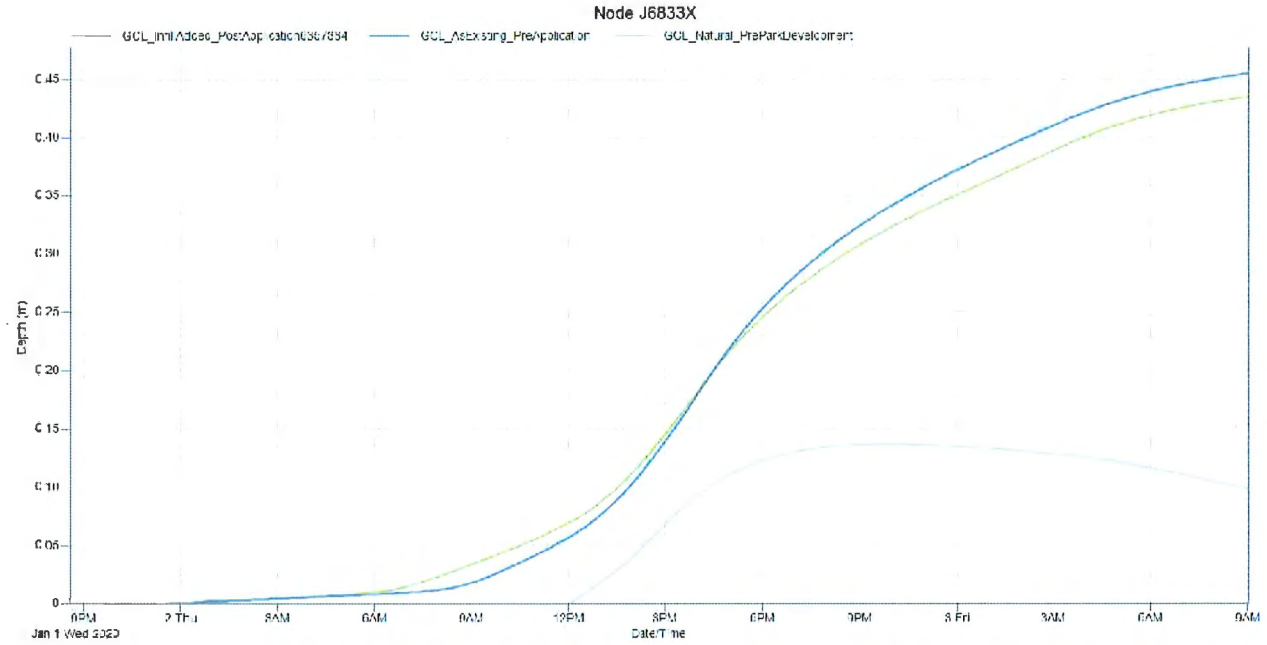

Figure 3-10: Pond Depths through Phases 1-4 of Development. Note Pond not installed for Post Dike and Pre-

4.0 GEOTECHNICAL ASSESSMENT

The following sections details the results of a preliminary subsurface exploration, and includes preliminary foundation and construction recommendations. Anticipated structural loads of the proposed structures were not available to Tetra Tech at the time of writing; therefore, the following geotechnical assessment should be considered preliminary and subject to change following structural design and associated detailed foundation conditions assessment.

4.1 Preliminary Subsurface Investigation

On March 4, 2020, Tetra Tech personnel Casey Watamaniuk E.I.T., G.I.T. conducted a preliminary subsurface exploration of the subject site. The subsurface exploration included geotechnical soil logging and sampling of three hand auger test holes. The locations of the test holes focused on the footprints of proposed structures located near the intersection of Garden City Road and Lansdowne Road (Photograph 1) and at the northern extent of the site, along Alderbridge Way (Photograph 2). Test hole locations are provided in Figure 4-1.

This exploration supplements geotechnical information obtained for the site during a topsoil placement study conducted in October 2018 and geotechnical services provided for dyke construction throughout 2017.

Prior to commencing the subsurface exploration, Tetra Tech placed a BC One Call for the area and reviewed all responses to confirm there would be no utility conflicts with the proposed hand auger holes.

Test hole depths ranged from 1.7 m (HA20-03) to 2.2 m (HA20-01). Test holes were terminated when it became too difficult to extract the hand auger due to suction or when significant sloughing of the hole was observed. During the advancement of the test holes, Tetra Tech completed on-site logging of the material encountered and retained select soil samples for further geotechnical assessment. No geotechnical laboratory testing has been completed for this preliminary assessment.

Table 4-1 summarizes the test hole completion details and all geotechnical logs are provided in Appendix B Selected photographs from the exploration work are provided in Appendix C.

Table 4-1: Geotechnical Site Exploration Summary

Testhole	Location (UTM Zone 10)[1]			Depth (mbgs[3])	Comments
	Collar Elevation (masl[2])	Northing (m)	Easting (m)		
HA20-01	3	5446741	491026	2.2	Located at the south-east corner of the proposed Farm Hub footprint near the intersection of Garden City Road and Lansdowne Road. Location shown in Photograph 3.
HA20-02	3	5446811	490993	1.9	Located at the north-west corner of the proposed Farm Hub footprint near the intersection of Garden City Road and Lansdowne Road. Location shown in Photograph 4.
HA20-03	2	5447139	491385	1.7	Located at the proposed washroom location along Alderbridge Way. Location shown in Photograph 5.

1. Testhole locations and collar elevations were obtained on site using a handheld GPS and should be considered approximate.
2. masl – metres above sea level
3. mbgs – metres below ground surface

4.1.1 Observed Soil Stratigraphy

The results of the geotechnical site exploration are generally consistent with subsurface conditions observed in previous work on the subject site. The interpreted soil stratigraphy is described in Table 4-2.

Table 4-2: Interpreted Stratigraphy Summary

Unit	Unit Name	Start Depth (mbgs)	Thickness (m)	Unit Description
A	TOPSOIL	Surface	0 – 0.4	Root mat, including living and decomposing vegetation. HA20-02 did not encounter this unit.
B	PEAT	Surface – 0.4	0.1 – 0.8 m	Amorphous with some identifiable root and wood remnants, black-brown, moderately decomposed, wet, strong briny odour. The thickness of this unit appears to be highly variable across the site, from 0.1 m in HA20-01 to 0.8 m in HA20-03. This unit was observed at surface in HA20-02.
C	ORGANIC SILT (CLAYEY TO SOME CLAY)	0.5 – 1.1	1.0 – terminus depth	Very soft, organic silt with some clay and fine sand. Intermixed with peat, wood debris, and other organic detritus. Strong briny odour and mottled brown-grey colouring
D	CLAYEY SILT	1.5	To terminus depth	Homogenous, soft clayey silt with trace fine sand. Dark grey and odourless. Becomes firm at depth. This unit was only encountered in HA20-01.

4.1.2 Groundwater Conditions

Groundwater was observed at surface across the subject site. The area of the proposed Farm Hub buildings near the intersection of Garden City and Lansdowne Roads is generally characterized by a bog with standing water up to approximately 0.5 m deep. At the northern extent of the site (HA20-03), groundwater was encountered at 0.3 mbgs. Surface and groundwater observed during the site exploration had a strong briny odour, which indicates saline groundwater conditions.

4.2 Discussion and Preliminary Recommendations

The results of the subsurface investigation indicate that it is likely feasible to construct the proposed structures on the subject site. However, this is dependant on final footprint dimensions, structural loading conditions, and settlement tolerances. Further site exploration would be required to provide specific foundation recommendations and design parameters once structural loads have been determined. All discussion and recommendations in the following sections are high level and should be considered preliminary.

4.2.1 Conceptual Construction Recommendations

Construction of buildings on the site would require preloading and dewatering of the peat, organic silt, and clayey silt units (Units B, C, D). This may be achieved by stripping the topsoil (Unit A) from the proposed footprints and constructing gravel pad foundations. Gravel pads should be underlain by geotextile to prevent fines migration and constructed with clean, well graded 25 mm aggregate. To prevent puncture of the geotextile, the first lift of gravel may need to be a minimum of 0.5 m thick and left uncompacted. Subsequent lifts of gravel should be a maximum of 0.3 m thick and suitably compacted. The total thickness of the gravel pad would depend on the expected high water elevation.

The gravel pad could be extended to 1 m above final grade and left to settle for up to 4 months, with settlement monitoring, then removed to the under side of slab elevation.

Alternatively, the buildings could be constructed on monolithic raft slabs with flexible utility connections to accommodate settlement. The first option with 1 m of preload is considered more effective at minimizing future settlement.

Any survey should be conducted using equipment of suitable accuracy and a fixed datum (such as a sidewalk or a fire-hydrant).

Table 4-3 below provides the approximate preload volumes anticipated assuming 1 m of preload extending 1 m outside of all building areas. This carries with it the assumption that the buildings will be relatively light and generally single storey. More substantial building structures will change these requirements. If unexpected soil conditions, such as deep peat are encountered during the detailed investigation that will also change this requirement.

Table 4-3: Anticipated Preload Volume Summary

Proposed Development	Area (m^2)	Approximate Preload Required (m^3)
Alderbridge Parking Lot Washroom	50	70[1]
Community Hub & Farm Centre	1000	1,100[1]
Total:	**23,950 (2.4 ha)**	**1,170**

1. Note that this is only the preload volume and does not include the subsurface foundational fill that will remain in place.

4.2.2 Detailed Site Exploration

Once structural designs are provided, Tetra Tech recommends a subsequent site exploration to inform detailed foundation design recommendations. Recommendations for the scope of this investigation will be provided when the building design is further advanced.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis conducted by Tetra Tech we can make the following conclusions and recommendations:

- The proposed development under Application #6357384 will have negligible increase in load on the City's stormwater system. If completed in conjunction with the raised headwall outlets south of Lansdowne Road impact on the City's storm water infrastructure could be eliminated.
- To ensure the Northwest pond continues sees the same inflows it is recommended that the new Garden City Road parking lot be predominantly graded to the north.
- Further modelling has reaffirmed the overall conclusions made in the November 2019 Hydrogeology Monitoring Memo, and November 2018 Hydrotechnical Modelling Memo regarding the hydrogeological processes within the Garden City Lands including the effects of the cross dike and the Northwest pond.

6.0 LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of City of Richmond and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than City of Richmond, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in Tetra Tech Canada Inc.'s Services Agreement. Tetra Tech's Limitations on the Use of this Document are attached to this memo (Appendix D).

7.0 CLOSURE

We trust this technical memo meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

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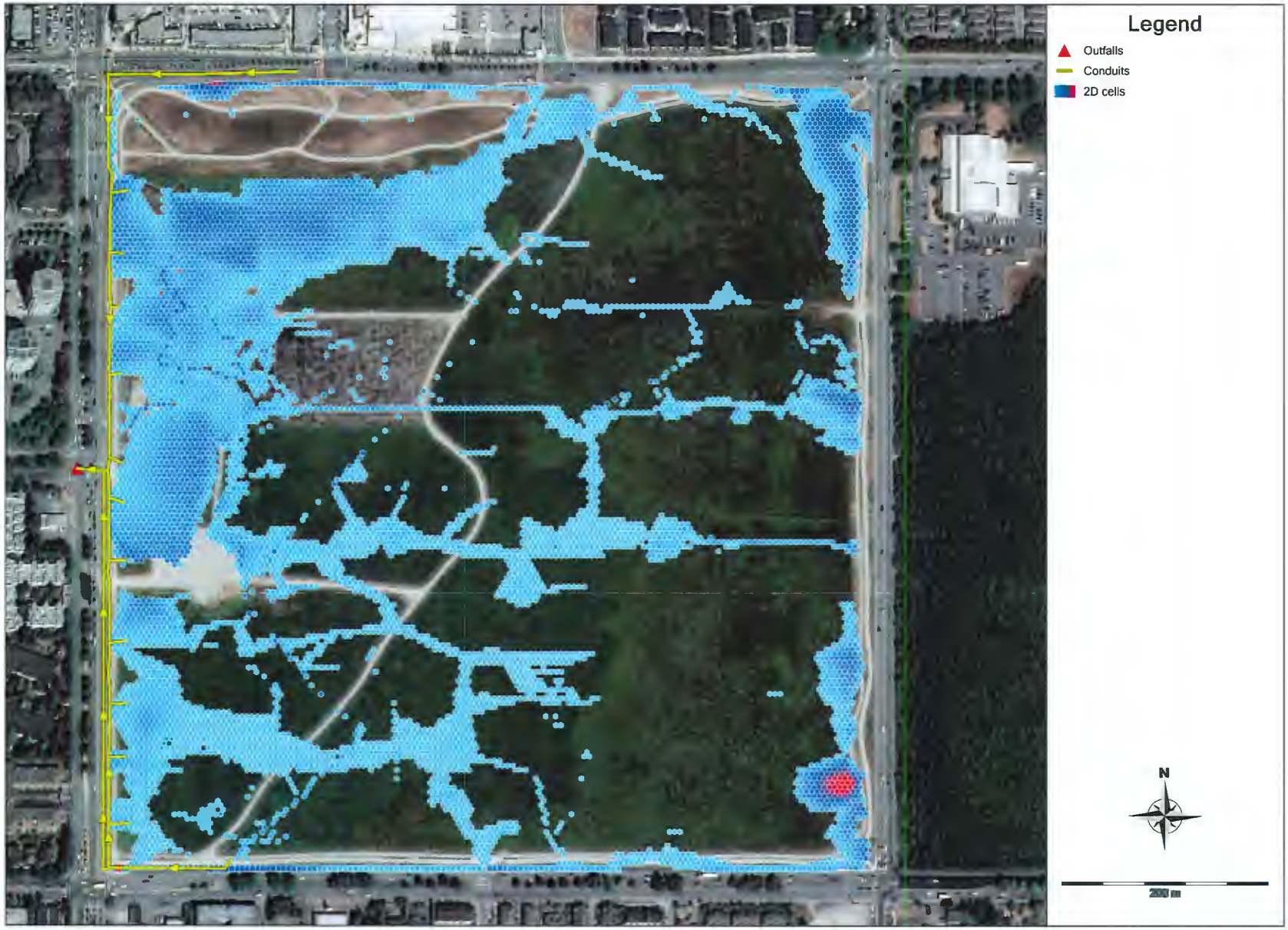
APPENDIX A

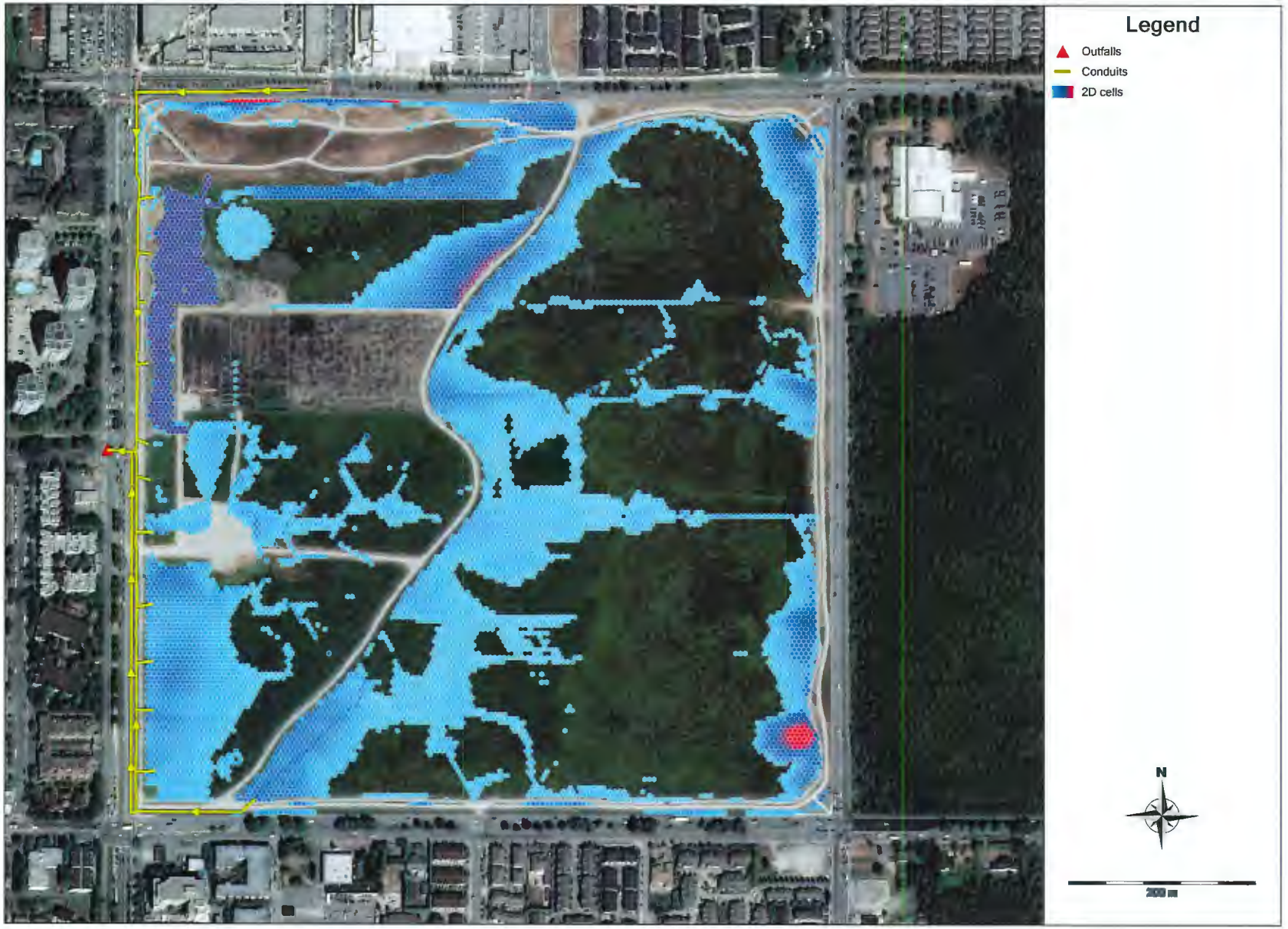
HYDROTECHNICAL FIGURES


LEGEND
Bog Area
KPU Farm
South Farm
Pond
Crossing Dike
Outlet Point
OUTLET POINTS
POND
KPU FARM
CROSSING DIKE
BOG AREA
SOUTH FARM
BOG OUTLET POINT
LANSDOWNE ROAD
Richmond
TETRA TECH
FIGURE 8 - LOCATIONS MAP

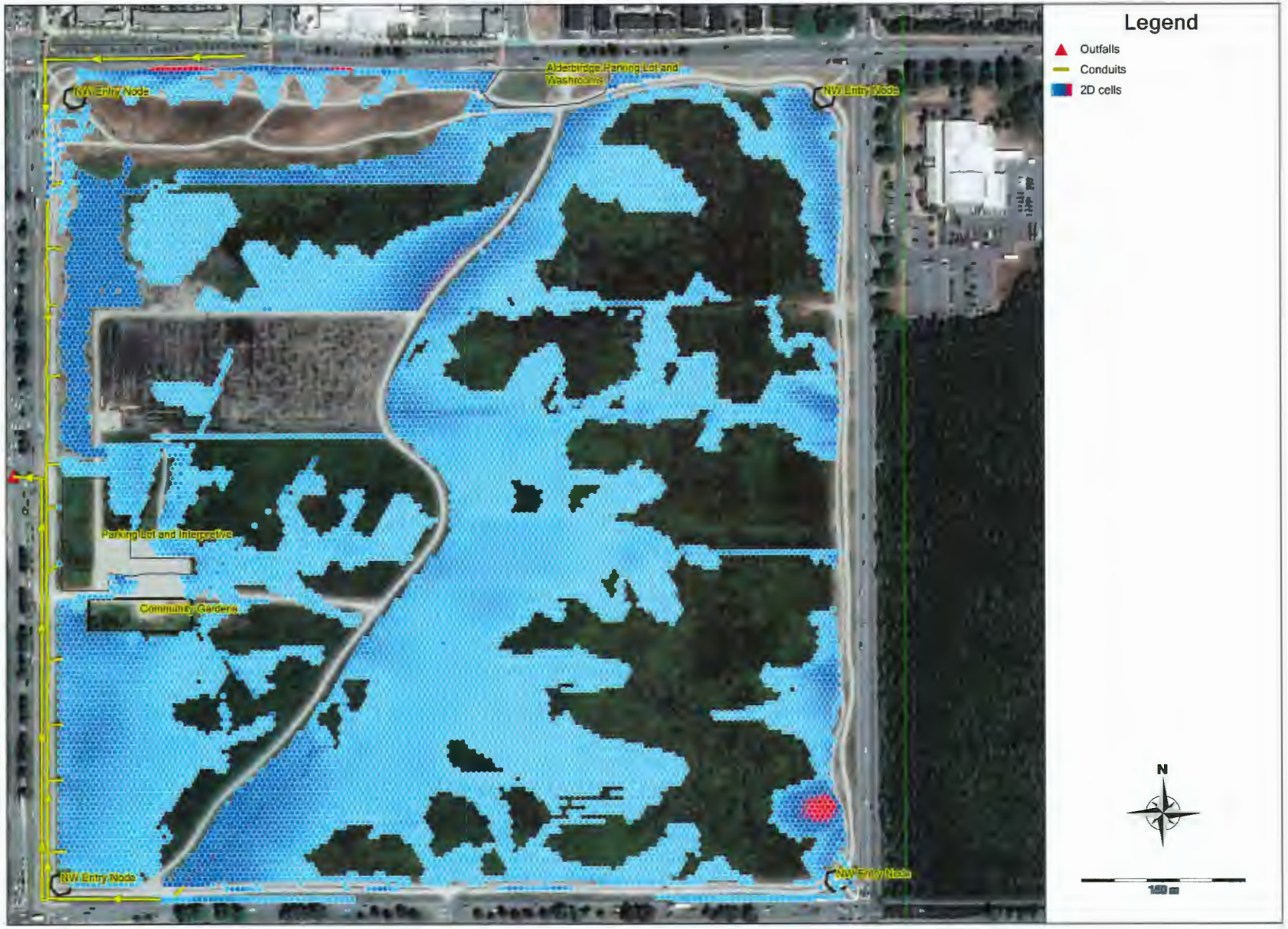
Pre-Park Development Scenario - Max Depths Map



Present Day Scenario - Max Depths Map



Post Applications #6357384 Implementation Scenario - Max Depths Map



APPENDIX B

TEST HOLE LOGS

Testhole No: HA20-01

Project: GCL Geotechnical Assessment	Project No: 704-WTR.WTRM03023-02
Location: Garden City Lands	Ground Elev: 3 m
Richmond, BC	UTM: 491026 E; 5446741 N; Z 10

Depth (m)	Method	Soil Description	Graphical Representation	Sample Type	Sample Number	Moisture Content (%)	Plastic Limit / Moisture Content / Liquid Limit (20 40 60 80)	Elevation (m)
0		ROOT MAT (TOPSOIL), decomposing and living plant material.			S1			3
		Organic SILT and SAND (TOPSOIL), trace clay, heterogeneous, wet, very soft, non-plastic, mottled grey/brown, strong briney odour, significant rootlets and organic debris; sand is fine.						
		PEAT, black-brown, strongly decomposed (H7), very wet (B4), mainly amorphous with recognizable root and woody remnants (F1, R2, V1), strong briney odour (A3), minimal tensile strength (T1). Plastic limit test not possible (P0). Plant types not identified.						
		Organic SILT, some clay, some sand, some amorphous peat, heterogeneous, wet, very soft to soft, non-plastic to low plasticity, dark brown/grey mottling, strong briney odour, some rootlets and wood fibre; sand is fine. Ponding water at surface and significant free water observed in-situ.						
1	Hand Auger				S2			2
		- below 1.3 m, less peat observed and only slight briney odour			S3			
		SILT, clayey to some clay, trace sand, homogeneous, wet, very soft to soft, low-plasticity, rapid dilatency, dark grey, odourless; sand is fine.						
2		- below 2.1 m, becomes firm			S4			1
		Testhole terminated at 2.2 m (due to difficulty extracting hand auger). - Upon completion, the testhole was backfilled with excavated soil. - Soil descriptions and estimates of soil consistency were interpreted from drilling effort and visual classification of recovered samples. These estimates are based on engineering judgement. - Testhole locations and elevations were estimated based on field measurements with a hand-held GPS and are approximate.						
2.5								

Contractor: Tetra Tech Canada Inc.	Completion Depth: 2.2 m
Drilling Rig Type: Hand Auger	Start Date: March 4, 2020
Logged By: CW	Completion Date: March 4, 2020
Reviewed By: KJ	Page 1 of 1

Testhole No: HA20-02

Project: GCL Geotechnical Assessment	Project No: 704-WTR.WTRM03023-02
Location: Garden City Lands	Ground Elev: 3 m
Richmond, BC	UTM: 490993 E; 5446811 N; Z 10

Depth (m)	Method	Soil Description	Graphical Representation	Sample Type	Sample Number	Moisture Content (%)	Plastic Limit / Moisture Content / Liquid Limit (20 40 60 80)	Elevation (m)
0	Hand Auger	PEAT, black-brown, trace organic clay, moderate to strongly decomposed (H6), very wet (B4), mainly amorphous with moderate to high degree of root and woody remnants (F2, R2, V2), strong briney odour (A3), minimal tensile strength (T1). Plastic limit test not possible (P0). Plant types not identified.			S1			3
1		Organic SILT, clayey, trace sand, homogeneous, wet, soft, low plasticity, slow dilatancy, mottled brown-grey, slight briney odour, some peat, wood debris and rootlet inclusions; sand is fine.			S2			2
		- below 1.3 m becomes sticky and difficult to advance auger						
2		Testhole terminated at 1.9 m (due to difficulty extracting hand auger). - Upon completion, the testhole was backfilled with excavated soil. - Soil descriptions and estimates of soil consistency were interpreted from drilling effort and visual classification of recovered samples. These estimates are based on engineering judgement. - Testhole locations and elevations were estimated based on field measurements with a hand-held GPS and are approximate.						1
2.5								

Contractor: Tetra Tech Canada Inc.	Completion Depth: 1.9 m
Drilling Rig Type: Hand Auger	Start Date: March 4, 2020
Logged By: CW	Completion Date: March 4, 2020
Reviewed By: KJ	Page 1 of 1

Testhole No: **HA20-03**

Project: GCL Geotechnical Assessment	Project No: 704-WTR.WTRM03023-02
Location: Garden City Lands	Ground Elev: 2 m
Richmond, BC	UTM: 491385 E; 5447139 N; Z 10

Depth (m)	Method	Soil Description	Graphical Representation	Sample Type	Sample Number	Moisture Content (%)	Plastic Limit / Moisture Content / Liquid Limit (20 40 60 80)	Elevation (m)
0		ROOT MAT (TOPSOIL), decomposing and living plant material.						2
		Organic SILT and SAND (TOPSOIL), trace clay, heterogeneous, moist to wet, soft, non-plastic, mottled grey/brown, slight briney odour, peat, rootlets, and organic debris inclusions; sand is fine.						
▼		PEAT, black-brown, strongly decomposed (H7), very wet (B4), mainly amorphous with recognizable root and woody remnants (F2, R2, V1), strong briney odour (A3), no tensile strength (T0). Plastic limit test not possible (P0). Plant types not identified.						▼
	Hand Auger				S1			
1		Organic SILT, some clay, some sand, homogeneous, wet, very soft to soft, non-plastic to low-plasticity, rapid dilatancy, mottled grey-brown, slight briney odour, some peat, rootlet and wood debris inclusions; sand is fine.						1
					S2			
		Testhole terminated at 1.7 m (due to difficulty extracting hand auger). - Upon completion, the testhole was backfilled with excavated soil. - Soil descriptions and estimates of soil consistency were interpreted from drilling effort and visual classification of recovered samples. These estimates are based on engineering judgement. - Testhole locations and elevations were estimated based on field measurements with a hand-held GPS and are approximate.						
2								0
2.5								

TETRA TECH

Contractor: Tetra Tech Canada Inc.	Completion Depth: 1.7 m
Drilling Rig Type: Hand Auger	Start Date: March 4, 2020
Logged By: CW	Completion Date: March 4, 2020
Reviewed By: KJ	Page 1 of 1

APPENDIX C

GEOTECHNICAL PHOTOGRAPHS

Photograph 1

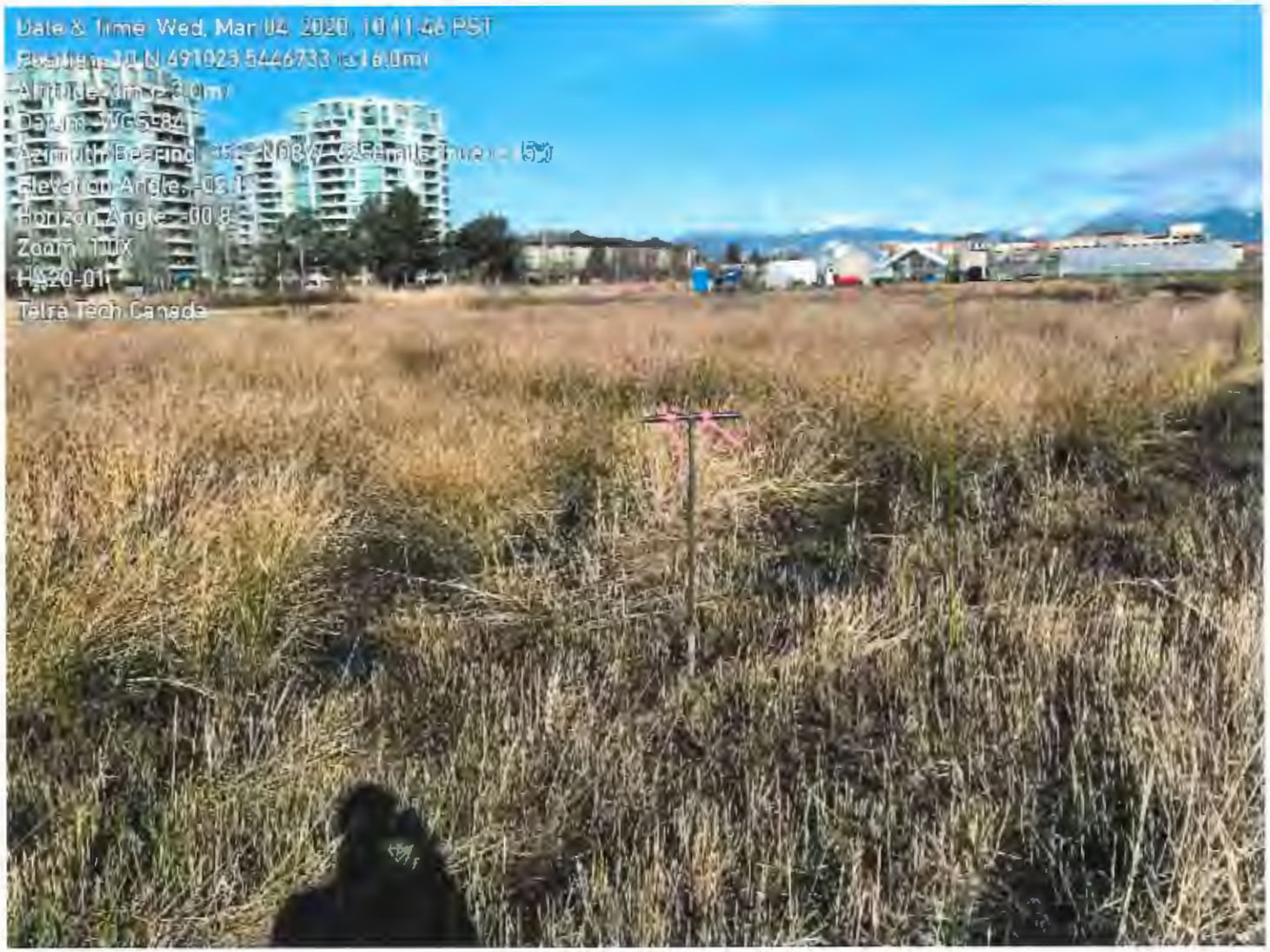
Photo Date: March 4, 2020
Description: Proposed Farm Hub building footprint at intersection of Garden City and Lansdowne Roads.

GP – 162

Photograph 2

Photo Date: March 4, 2020
Description: Proposed washroom building footprint at northern extent of site.

GP – 163



Photograph 3

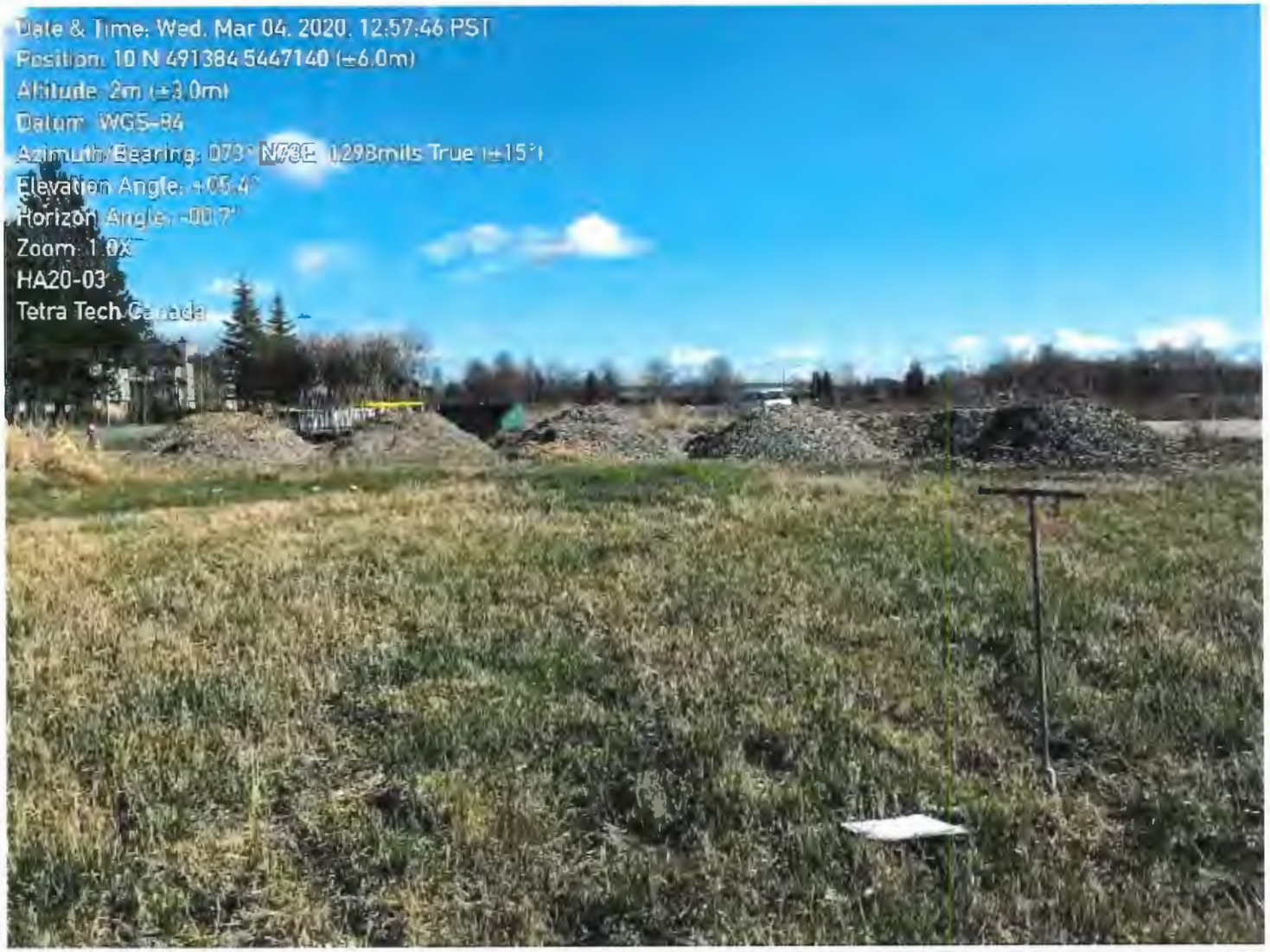
Photo Date: March 4, 2020
Description: HA20-01, located in the south-east corner of the proposed Farm Hub footprint.

GP – 164

Photograph 4

Photo Date: March 4, 2020
Description: HA20-02, located in the north-west corner of the proposed Farm Hub footprint.

GP – 165



Photograph 5

Photo Date: March 4, 2020
Description: HA20-03, located at the proposed washroom location in the northern extent of the site, along Alderbridge Way.

GP – 166

APPENDIX D

TETRA TECH'S LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

HYDROTECHNICAL

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The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by third parties other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

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This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary exploration, investigation, and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL AND REGULATORY ISSUES

Unless expressly agreed to in the Services Agreement, TETRA TECH was not retained to investigate, address or consider, and has not investigated, addressed or considered any environmental or regulatory issues associated with the project.

1.8 LEVEL OF RISK

It is incumbent upon the Client and any Authorized Party, to be knowledgeable of the level of risk that has been incorporated into the project design, in consideration of the level of the hydrotechnical information that was reasonably acquired to facilitate completion of the design.

LIMITATIONS ON USE OF THIS DOCUMENT

GEOTECHNICAL

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The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this document, at or on the development proposed as of the date of the Professional Document requires a supplementary exploration, investigation, and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, TETRA TECH has not been retained to explore, address or consider and has not explored, addressed or considered any environmental or regulatory issues associated with development on the subject site.

1.8 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems, methods and standards employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. TETRA TECH does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

1.9 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

1.10 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historical environment. TETRA TECH does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional exploration and review may be necessary.

1.11 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

1.12 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

1.13 INFLUENCE OF CONSTRUCTION ACTIVITY

Construction activity can impact structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques, and construction sequence are known.

1.14 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, and the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

1.15 DRAINAGE SYSTEMS

Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function. Where temporary or permanent drainage systems are installed within or around a structure, these systems must protect the structure from loss of ground due to mechanisms such as internal erosion and must be designed so as to assure continued satisfactory performance of the drains. Specific design details regarding the geotechnical aspects of such systems (e.g. bedding material, surrounding soil, soil cover, geotextile type) should be reviewed by the geotechnical engineer to confirm the performance of the system is consistent with the conditions used in the geotechnical design.

1.16 DESIGN PARAMETERS

Bearing capacities for Limit States or Allowable Stress Design, strength/stiffness properties and similar geotechnical design parameters quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition used in this report. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions considered in this report in fact exist at the site.

1.17 SAMPLES

TETRA TECH will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.

1.18 APPLICABLE CODES, STANDARDS, GUIDELINES & BEST PRACTICE

This document has been prepared based on the applicable codes, standards, guidelines or best practice as identified in the report. Some mandated codes, standards and guidelines (such as ASTM, AASHTO Bridge Design/Construction Codes, Canadian Highway Bridge Design Code, National/Provincial Building Codes) are routinely updated and corrections made. TETRA TECH cannot predict nor be held liable for any such future changes, amendments, errors or omissions in these documents that may have a bearing on the assessment, design or analyses included in this report.

Excerpt from the Meeting Minutes of the

Food Security and Agricultural Advisory Committee (FSAAC)

Held Thursday, February 20, 2020 (7:00 pm)
M.2.002
Richmond City Hall

In Attendance:

Members: Steve Easterbrook (Chair); Sarah Drewery; Laura Gillanders; Lynn Kemper; Ian Lai; Kent Mullinix; Allen Rose; Miles Smart

Non-Members: Councillor Harold Steves (Council Liaison); Barry Konkin (Policy Planning); Steven De Sousa (Policy Planning); Todd Gross (Parks); Paul Brar (Parks); Alex Kurnicki (Parks); Magnus Sinclair (Parks); Carli Williams (Community Bylaws); Mike Morin (Community Bylaws); Nadia Mori (Ministry of Agriculture); Shannon Lambie (Agricultural Land Commission)

Regrets:

None.

Garden City Lands Non-Farm Use Application at 5560 Garden City Road

Alex Kurnicki, Research Planner 2, introduced the Garden City Lands Non-Farm Use Application, provided a summary of the site history and previous approvals, and provided the following comments:

- As per advice from the Agricultural Land Commission (ALC), one comprehensive application is submitted for the entire project;
- The non-farm use application includes site access features (e.g. entry nodes and view points, wayfinding signage, boardwalks, trails, access roads), site infrastructure (e.g. bog conservation area, parking lot, public washrooms, site furniture, culverts and bridges, and lighting) and agricultural and food production components (e.g. planting and landscaping, public event space, farmers markets);
- Other agricultural and food production components are included for information purposes and do not require approval from the ALC (e.g. farm infrastructure, field crop and livestock production);
- Community hub and farm centre are also included in the proposal; and
- The primary purpose of the application is to facilitate public access beyond the perimeter trail, construct the infrastructure to support the safe use of the site, and

activate the space with public education programs, urban agriculture, site interpretation, and bog conservation.

Discussion ensued regarding septic systems, livestock production, and potential opportunities for revenue sources by leasing land to farmers.

Councillor Steves noted that collection of rainwater from adjacent buildings and pumping from the water table should be reviewed as potential water sources.

Carli Williams, Manager of Business Licence and Bylaws, indicated there is a soil deposit component to the project, including material for structures and paths, and topsoil for the community gardens.

In response to questions from the Committee, Parks staff noted that options to manage soil contamination are currently being investigated, including additional testing, and staff are working with the Garden City Conservation Society to manage and plant trees on-site.

The Committee passed the following motion:

That the Food Security and Agricultural Advisory Committee support the Garden City Lands Non-Farm Use Application (AG 18-837641) as presented.

Carried Unanimously