



City of Richmond

Report to Committee

To: General Purposes Committee **Date:** March 29, 2019
From: Carli Williams, P.Eng. **File:** 12-8080-12-01/Vol 01
 Manager, Comm Bylaws and Licencing
Re: **Non-Farm Use Fill Application - 21800 River Road (Yee)**

Staff Recommendation

That the Non-Farm Use Fill Application proposed for the purpose of developing a vegetable farm and the corresponding staff report titled "Non-Farm Use Fill Application for the Property Located at 21800 River Road (Yee)", dated November 14, 2018 (Attachment 1), be referred to the Agricultural Land Commission (ALC) for the ALC's review and decision as all reporting requirements specified by the City have been satisfied by the proponent.

Carli Williams, P.Eng.
 Manager, Comm Bylaws and Licencing
 (604-276-4136)

Att. 2

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Engineering Finance Sustainability Law	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

This report provides information on the following referral from the General Purposes Committee meeting held on January 9, 2019:

That the non-farm use (NFU) fill application submitted by Joanna Yee for the property located at 21800 River Road for the purposes of developing a vegetable farm and the corresponding staff report titled “Non-Farm Use Fill Application for the Property Located at 21800 River Road (Yee)” dated November 14, 2018, be referred back to staff for information on (i) water drainage issues, (ii) permit fees, (iii) the standard of soils deposited, and (iv) inspection protocols.

Background

The City of Richmond (the “City”) is in receipt of a soil deposit application (the “Application”) submitted by Joanna Yee (the “Applicant”) for the property located at 21800 River Road (the “Property”). The stated intent of the Application is to place soil on the Property to improve the Property’s agricultural capability for the purpose of developing a vegetable farm.

The Property is situated within the Agricultural Land Reserve (the “ALR”) and is subject to provisions of the *Agricultural Land Commission (ALC) Act, ALR Use, Subdivision, and Procedure Regulation* (the “Regulation”), and the City’s *Soil Removal and Fill Deposit Regulation Bylaw No. 8094* (the “Bylaw”). The Application to deposit soil is considered to be a non-farm use by the ALC.

Pursuant to applicable provincial regulations, non-farm use soil deposit applications require Council authorization to be referred to the ALC for their review and approval. As such, a non-farm use soil deposit application must be submitted to the City for review and a decision from Council. Should the Application be referred to the ALC and should it subsequently be approved by the ALC, the Applicant would be required to satisfy the requirements of the Bylaw before a soil deposit permit would be issued by the City.

Analysis

The Property is located at 21800 River Road and is zoned AG1 (Agriculture). The Property is currently not in agricultural production.

The Applicant is applying to deposit 6,750 cubic metres of topsoil over approximately 0.9 hectares (ha) of the 1.79 ha Property in order to produce vegetables for local consumption. This would increase the elevation of the proposed fill area by approximately 0.6m. The Applicant estimates that the duration of the project will be six months.

Referral Item (i)

Water Drainage

The City's drainage system servicing the Property is functioning as designed. Water issues on the Property are a result of the Property's existing low elevation relative to the natural water table.

The engineer-of-record (K. Peter Jarvenpaa, P. Eng.) representing the Applicant concluded that "during the winter and spring seasons the water table can be close to (or at) the native ground elevation" (Attachment 2). In Mr. Jarvenpaa's opinion, "it is not possible to naturally drain the site to achieve this distance between growing medium and water table without raising the ground elevation."

In addition, it is the opinion of the agrologist-of-record (Dr. John Paul) that the Property has an agricultural capability limited to cranberry production due to the high water table. It is Dr. Paul's opinion that the increased elevation will improve the Property's ability to grow other crops such as vegetables as proposed by the Applicant.

A site Grading Plan was provided by the Applicant that outlines how drainage will be implemented upon final completion of the soil deposit project. City Engineering staff have reviewed the Grading Plan and associated documents and have no concerns with the conclusions provided by Mr. Jarvenpaa.

Referral Item (ii)

Permit Fees

The City's soil deposit and removal application fee is \$600. The City also collects two separate refundable security deposits that total to a maximum of \$15,000 as permitted under the Bylaw. The security deposits are collected to ensure the provisions of Bylaw and all other terms and conditions of the soil deposit permit are satisfied, which include, but are not limited to, ensuring roadways and drainage systems are kept free and clear of material.

The Committee also inquired about options to recover costs to administer the Bylaw and to ensure compliance. Within the current Bylaw, the City is limited in what it may require of the applicant to ensure a project has been completed in full compliance with an approval.

Referral Item (iii)

Standard of Soils Deposited

When the ALC considers a soil deposit and/or removal proposal, they are assessing if a proposal will enhance the agricultural capability of a subject property. The ALC is primarily concerned with the agricultural viability of the site. As such, the ALC will determine if the soil proposed to be deposited is essential/suitable to improve the agricultural capability of a property.

In order to ensure only approved soil of a specified quality is imported and deposited, the ALC typically issues approvals outlining protocols to be followed prior to deposition. Such protocols

may include, but not be limited to, inspection and reporting of source sites by the agrologist-of-record prior to importation. City staff monitor to ensure the agrologist is providing required reports and ensuring that the agrologist is retained throughout the duration of the project. In addition, City staff conduct spot inspections on a regular basis to ensure that the Applicant, agent (if one has been retained), and contractor(s) are upholding the conditions of the City permit and ALC approval.

Staff will require a closure report from the agrologist following completion of the project to ensure full compliance with the terms of the approval.

Referral Item (iv)

Inspection Protocols

In respect to inspection protocols by City staff, when a soil deposition and/or removal project is approved, the ALC will typically regulate some ancillary activities/impacts associated with the project such as setbacks to neighbouring properties and invasive species. The ALC typically does not regulate or address impacts to municipal roads, public safety, City designated Environmentally Sensitive Areas, Riparian Management Areas, or other City strategies.

While ALC staff may work with the local government to ensure that any potential impacts are mitigated, which may include but are not limited to, erosion and sediment control issues or impacts to City infrastructure, such activities/impacts are left to the local government to regulate and inspect, typically through requiring the landowner to obtain a soil deposit and/or removal permit from the local government.

Financial Impact

None.

Conclusion

Staff are recommending that the Non-Farm Use Fill Application for the property located at 21800 River Road (Yee)" dated November 14, 2018, be referred to the ALC to determine the merits of the proposal from an agricultural perspective as the proponent has satisfied all of the City's current reporting requirements.


Mike Morin
Soil Bylaw Officer
(604-204-8625)

MM

- Att. 1: Non-Farm Use Fill Application for the Property Located at 21800 River Road - Yee (14 Nov 2018)
2: Agricultural Fill Deposit Permit Application (CD 43803/ALC ID 54835) Response to AAC Comments (ref: site drainage) (30 Aug 2018)



City of Richmond

Report to Committee

To: General Purposes Committee **Date:** November 14, 2018
From: Carli Williams **File:** 12-8080-12-01/Vol 01
 Manager, Community Bylaws and Licencing
Re: **Non-Farm Use Fill Application for the Property Located at 21800 River Road (Yee)**

Staff Recommendation

That the non-farm use fill application submitted by Joanna Yee for the property located at 21800 River Road for the purposes of developing a vegetable farm and the corresponding report titled "Non-Farm Use Fill Application for the Property Located at 21800 River Road (Yee)" dated November 14, 2018, be referred to the Agricultural Land Commission (ALC) for the ALC's review and decision.

Carli Williams
 Community Bylaws and Licencing
 (604-276-4136)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Engineering	<input checked="" type="checkbox"/>	
Finance	<input checked="" type="checkbox"/>	
Sustainability	<input checked="" type="checkbox"/>	
Law	<input checked="" type="checkbox"/>	
Policy Planning	<input checked="" type="checkbox"/>	
Transportation	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

The City of Richmond (the “City”) is in receipt of a soil deposit application (the “Application”) submitted by Joanna Yee (the “Applicant”) for the property located at 21800 River Road (the “Property”). The Application to deposit soil is considered to be a non-farm use by the Agricultural Land Commission (ALC). The intent of the Application is to place soil on the Property to improve the Property’s agricultural capability for the purpose of developing a vegetable farm.

The Property is situated within the Agricultural Land Reserve (ALR) and as such is subject to provisions of the *ALC Act, ALR Use, Subdivision, and Procedure Regulation*, and the City’s *Soil Removal and Fill Deposit Regulation Bylaw No. 8094* (the “Bylaw”).

Pursuant to applicable provincial regulations, non-farm use soil deposit applications require Council authorization to be referred to the ALC for their review and approval. As such, a non-farm use soil deposit application must be submitted to the City for review and a decision from Council. Should the Application be referred to the ALC and should it subsequently be approved by the ALC, the Applicant would be required to satisfy the requirements of the Bylaw before a soil deposit permit would be issued by the City.

This report supports Council’s 2014-2018 Term Goal #8 Supportive Economic Development Environment:

8.3 The City’s agricultural and fisheries sectors are supported, remain viable and continue to be an important part of the City’s character, livability, and economic development vision.

Analysis

The Property is located at 21800 River Road and is zoned AG1 (Agriculture). The current zoning permits a wide range of farming and compatible uses consistent with the provisions of the *ALC Act, ALR Regulation* and the City’s *Official Community Plan (OCP) and Zoning Bylaw 8500*.

The Applicant is applying to deposit 6,750 cubic metres of topsoil over approximately 0.9 ha of the 1.79 ha site in order to produce vegetables for local consumption. The Applicant estimates that the duration of the project will be six months.

Uses on Adjacent Lots

- To the North: Fraser River
- To the East: ALR – Land is in agricultural production
- To the South: ALR – Land is in agricultural production
- To the West: ALR – Land is not in agricultural production

Table 1: Existing Property Information and Proposed Changes

Item	Existing	Proposed
Owner (006-177-051)	Joanna (Yui) & Anthony (Kam) Yee	No change
Applicant	Joanna (Yui) & Anthony (Kam) Yee	No change
Authorized Agent	Dennis Beckrud	No change
Lot Size	1.79 hectares (4.41 acres)	No change
Land Uses	Not in production	Vegetable production
OCP Designation	Agriculture	No change
ALR Designation	Property is within the ALR	No change
Zoning	AG1	No change
Riparian Management Area (RMA)	15.0 meters RMA	No change

Project Overview

The total project area of the Property is approximately 1.79 hectares (4.41 acres). The Property is currently not in agricultural production. An assessment of the property by the proponent's professional Agrologist (the "Agrologist"), maintains that historically "there is little evidence of agricultural activity" on the Property.

The stated reason for importing topsoil:

- To place soil on the Property to improve the Property's agricultural capability for the purpose of developing a vegetable farm.

The Property's soils have been mapped as EM-BU. EM refers to Embree soil, which is a medium textured deltaic deposit containing organic strata. BU refers to Blundell soil, which consists of 15-40 cm of organic material over medium textured deltaic sediments. The agrologist report (Attachment 1) states the agricultural capability of the soils on the Property is Class 4 which limits what type of crops may be grown on the Property. The capability assessment highlights that the low elevation of the Property leads to wet soil conditions which undermines productivity as confirmed by the Agrologist. The objective is to improve the quality of the soil to a Class 2 soil which is soil deemed to have "minor limitations that require good going management practices or slightly restrict the range of crops, or both" (Source: Land Capability Classification for Agriculture in B.C., 1983).

The proposed scope of the project involves placing 6,750 cubic metres of topsoil over approximately 0.9 ha of the Property (approximately 965 truckloads). The fill depth will be approximately 0.6m deep. The agrologist advises that the proposed placement of the topsoil will improve the Property's ability to produce crops and raise the level of the land which will improve drainage and reduce soil saturation.

The proposal includes stripping soil previously placed on the Lands without approval and re-using the soil for creating an access road. The Applicant will be required to ensure the access road is built as per requirements within the ALC's *Bylaw No. 2 – Placement of Fill in the ALR*.

The Applicant has stated that the proposed duration of the project will be six months. City staff note that the proposed duration may be longer depending on availability of the appropriate type of soil required to complete the project.

The Agrologist concludes the following:

“[T]he agricultural capability [of the Property] will increase to a Class 2, depending on the quality of the topsoil that can be placed on [the] property.”

Richmond Agricultural Advisory Committee Consultation

The Agricultural Advisory Committee (AAC) discussed the proposal on February 1, 2018 and September 13, 2018.

Following the September 2018 meeting, the AAC introduced and passed the following motion:

That the Agricultural Advisory Committee supports the soil deposit application at 21800 River Road given the improvement of farmable land subject to the following conditions:

- a) That the frequency of inspections by City Staff is every 1,500 cubic meters or every six months, whichever comes earlier; and*
- b) That a legal agreement is registered on title to ensure in the event that the land is sold, the obligation is transferred to the new owner to complete the project.*

Staff Comments

City staff have prepared a comprehensive soil deposit permit (the “Permit”) that addresses a number of key issues, including but not limited to, protection of the surrounding Riparian Management Areas (RMA), public safety, drainage, eliminating impacts to neighbouring properties and City infrastructure, security deposits, and the permitted hours/days of operation.

Staff are recommending that in addition to the regulations within the Bylaw, that the importation of soil be restricted from occurring on Saturdays, in addition to Sundays, statutory holidays, and between the hours of 6:00 p.m. and 8:00 a.m. in order to ensure appropriate monitoring of the project by City staff. Such a restriction would be included within the Permit conditions; however, the restriction would not limit the Applicant or contractor(s) from undertaking earthmoving and other associated project work on the Property outside the permitted days and hours for importing soil.

The Applicant will be required to maintain an accurate daily log of trucks depositing soil on the Property. This log will be made available for inspection by City staff when requested. At the sole discretion of the City, alternate measures may be required of the Applicant (i.e. topographic survey) in order to establish the volume of soil deposited on the Property following completion of the project.

As per the conditions of the proposed Permit, security deposits required by the City will not be returned until all conditions, as stated in the Permit and the ALC approval, should one be granted, are satisfied in their entirety, to the satisfaction of the City. City staff are to conduct a final inspection and receive confirmation in writing from the Applicant's qualified professional(s) and the ALC, that the project has been completed as approved prior to returning the security deposits.

Staff will recommend to the ALC as a condition of approval, that the Applicant be required to post a performance bond in a form and amount deemed acceptable by the ALC. The performance bond should be of a sufficient amount to ensure that the project and all required monitoring measures are completed as proposed and to ensure the rehabilitation of the Property in the event the project is not completed. The performance bond will be held by the ALC.

Staff will also recommend to the ALC that the project be monitored by a professional Agrologist and that the Agrologist provides quarterly inspection reports to the City and ALC or upon request by ALC and/or City staff. This will be a separate condition within the Permit.

Should approval be granted by the City and ALC, City staff shall maintain consistent monitoring of the Property to ensure compliance with the conditions of the Permit and ALC approval.

Drainage & Geotechnical Considerations

A site Grading Plan has been reviewed and accepted by City Engineering staff. In addition, a topographic survey has been provided.

The Applicant has also provided a geotechnical assessment of the proposal. The report recommends the necessary steps to be undertaken by the Applicant in order to mitigate any slope stability or settlement concerns on the neighbouring properties arising from the fill. Engineering staff are satisfied with the plan as outlined and the Permit conditions will identify requirements stipulated in the assessment.

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.

Environmental Considerations

The proposed soil deposition is outside of the Riparian Management Area (RMA) that runs along River Road; however, the open watercourse adjacent to the River Road right-of-way is a protected RMA.

Should a permit be granted, the Applicant shall be required to take all necessary precautions to prevent sedimentation from reaching the RMA or any stream, creek, waterway, watercourse, ditch, drain, catch basin, culvert, or manhole either on or adjacent to the Property. City staff will inspect to ensure compliance prior to the importation of any soil. There will be a separate condition within the Permit that requires that such measures be sustained throughout the duration of the project.

The Applicant is exempt from an Environmentally Sensitive Area Development Permit (ESA DP) as a Farm Plan was provided to the City consistent with the exemptions permitted in the Official Community Plan. In order to mitigate any damage to the stand of conifer trees located on the neighbouring property to the west, the Applicant shall, as a condition of the Permit, provide a minimum 3.0m setback between the toe of the proposed fill slope and the west property line.

The City has no record of Schedule 2 activities on the property as defined by the Contaminated Sites Regulation. Schedule 2 of the Contaminated Sites Regulation outlines commercial and industrial activities which have a greater potential to contaminate a site than non-scheduled activities and typically have additional provincial permitting requirements associated with development.

Agricultural Considerations

The proponent has provided a Farm Plan (Attachment 2) as required by the City. The Farm Plan outlines the cost of the project, the means of irrigation, planting plan, etc. In addition, the proponent has retained a professional agrologist and submitted an agrologist report outlining the proposal.

Bruce McTavish (MSc, MBA, PAg, RPBio) has reviewed the proposal on behalf of the City and has provided recommendations to staff that will be incorporated into the soil deposit permit issued by the City, should approval be granted.

Should the proposal be approved, the City will require that a qualified agrologist be retained to monitor the project and provide regular reporting. Regular reporting will include that the agrologist inspect the soil at the source site(s) prior to delivery to ensure that only topsoil is delivered to the site.

Should an agrologist not be retained or cease providing regular oversight and reporting, the City would reserve the right, as per the Permit conditions, to suspend and/or void the Permit until such time as a new qualified agrologist, agreeable to both the City and ALC, is retained to monitor the project and provide regular reporting.

Road & Traffic Considerations

A traffic management plan will be required to be submitted and approved by the City's Transportation Department prior to the City issuing the Permit. The City shall require that all trucks importing soil enter and exit River Road from the east end at Westminster Highway. Traffic control measures must be in accordance with the "Traffic Control Manual for Work on Roadways" as published by the Highways Engineering Branch, BC Ministry of Transportation and Highways and per Traffic Bylaw No. 5870.

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

- \$5,000 pursuant to section 8(d) of the current Boulevard and Roadway Protection Regulation Bylaw 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 section 4.2.1 of the current Soil Removal and Fill Deposit Regulation Bylaw No. 8094 to ensure the full and proper compliance with the provisions of this Bylaw and all other terms and conditions of the Permit.

Financial Impact

None.

Conclusion

Staff recommend that Council refer the non-farm use application to deposit soil on the property located at 21800 River Road to the ALC for the Commission's review and consideration.



Mike Morin
Soil Bylaw Officer, Community Bylaws
(604-204-8625)

MM

Att. 1: Agrologist Report (02 Aug 2017)
2: Farm Plan (submitted May 2017)



Agrologist's Report for 21800 River Road, Richmond, British Columbia August 2, 2017

Introduction

The purpose of this report is to provide a professional agrologist's report supporting an application to remediate a 0.9 ha section of a 1.8 ha property in the Agricultural Land Reserve in the City of Richmond that will enhance the value of agricultural land for growing vegetable crops. The area where fill was deposited will be remediated to restore it for agricultural use. The soil deposit will not have negative impacts on neighbouring properties.

The area proposed to be filled on this property has mainly drainage limitations because of its very low elevation of approximately 7 m, which floods during freshet. It has no apparent history of agricultural production and has had some fill added to the property a number of years ago.

This soil fill deposit will be on a 0.9 ha of the property and will provide some topsoil to allow crops to be grown. The existing imported aggregate fill will be removed, and some of it will be used for an access road. It is anticipated that the property can be improved from its Class 4 Capability to Class 2 with the addition of quality topsoil. It is anticipated that good quality topsoil can be obtained from either UBC development lands or other development nearby.

This application for 6,750 cubic meters of primarily good quality topsoil is for an area of approximately 9,000 sq m on the southern part of the property.



Figure 1. Aerial view of the property (Google Earth) outlining the property boundary and the fill area (shaded)

John W. Paul, Ph.D., P.Ag. 3911 Mt. Lehman Rd. Abbotsford, BC V2T 5W5 Phone (604) 302-4367
Email: transform@telus.net

This report is prepared by John Paul, Ph.D, P.Ag., who has extensive training and experience in all aspects of soil science, including soil chemistry, physics and classification, soil fertility and biochemistry. Dr. Paul has been working with soil deposit permits and other soils related work since 1998.

Property Description

According to information from the City of Richmond, the property has a civic address at 21800 River Rd, Richmond, V6V 1M4. It consists of a 1.79 ha parcel zoned AG1 in the ALR. The legal description is PID 006-177-051, LT 1 Sec 34 Blk 5N RGE 4W, New Westminster District Plan 7445.

Agricultural History of Property

This property is located in the Agricultural Land Reserve. There is little evidence of any agricultural activity on this property.



Figure 2. Aerial view of property in 2002 (Google Earth)

Land Uses on Neighbouring Properties

Land use on the property to the east is a vegetable farm. This is the farm that would like to expand to this property at 21800 River Rd. One of the limitations to growing vegetables on the property to the east is the high water table in the spring that delays spring planting until the water recedes in June.

To the west is a largely undeveloped agricultural property with some fill that was added. To the south are cranberry fields. The Fraser River is located to the north.

Soil Description

The soils on this property is classified as a EM-RU b in the area proposed to receive fill, and a LU-RC a in the southern half of the property (Luttmerding 1980).

EM refers to Embree soil, which is a medium textured deltaic deposit containing organic strata. BU refers to Blundell soil, which consists of 15-40 cm of organic material over medium textured deltaic sediments. The topography may be gently undulating.

Towards the south of the property, there is a combination of LU-RC. Lulu (LU) soil consists of 40-160 cm of partially decomposed organic material over moderately fine textured deltaic deposits. Richmond soil (RC) consists of 40-160 cm of well decomposed organic material over moderately fine deltaic deposits. The topography on the southern half of the property is level.

There has been some import of structural material on the north half of the property. Although it is of unknown origin, it does appear to be clean and devoid of debris and garbage.

The southern part of the property is designated by the City of Richmond as an environmentally sensitive area, likely



Figure 3. Soil type on and near 21800 River Rd., Richmond

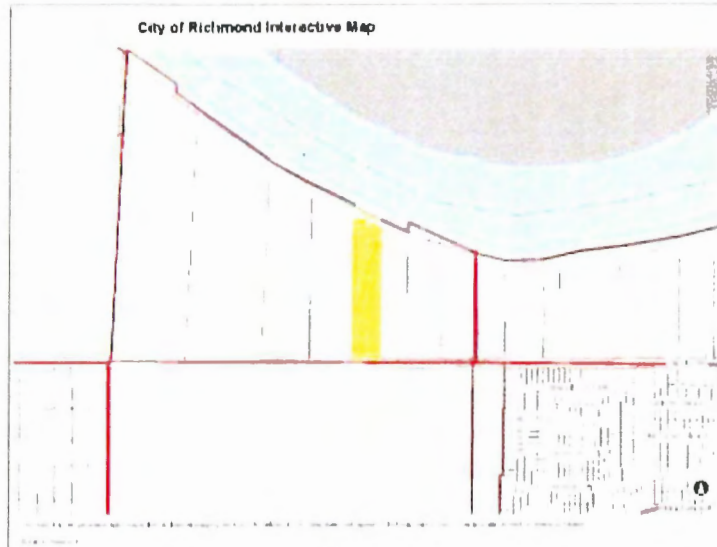


Figure 4. Map of property (shaded in yellow) showing the environmentally sensitive areas (cross hatched in green), as well as the close proximity to residential development (City of Richmond map).

due to the peat (organic soils) on this part of the property.

Soil Capability Classification for Agriculture

The agricultural capability of the soils on this property is depicted as Class 4 W, where Class 4 land is "land in this class has limitations that require special management practices or severely restrict the range of crops, or both" (BCMOE 1983).

The capability subclasses according to the Land Capability Mapping includes W (which confirms that the soil remains wet due to its very low elevation).

We expect that the agricultural capability will increase to a Class 2, depending on the quality of the topsoil that can be placed on this property.

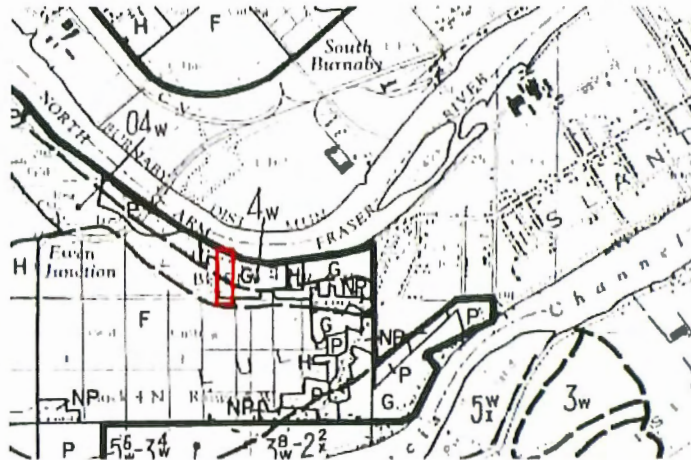


Figure 5. Agricultural capability of the property.

Site Inspection June 28, 2016

I visited the property on June 28, 2016. The photographs from this visit will be used to describe this property.

Figure 6 shows the fill that has been placed over some of the property. The depth of this fill is approximately 1 meter, based on visual observation relative to the neighbouring property. This fill will need to be removed as it was deposited over the native topsoil in order to allow the property to be farmed.

The fill that has been brought onto the property appears to be free of garbage or other foreign material. It is also evident that this material will not impede drainage in any way.



Figure 6. View of the property looking north from approximately 200 m from the roadway.

This imported fill appears to be suitable for an access road on the property.

Figure 7 shows the vegetable production on the property to the east. The existing topsoil is of excellent quality, however, as discussed with the farmer utilizing this property, the high water resulting from the spring freshet makes it difficult to grow crops before June.

The farmer growing vegetables on the property to the east is also planning to grow vegetables on the subject property and is anticipating being able to establish production earlier in the season.



Figure 7. View of the property immediately to the west of 21800 River Rd., showing successful vegetable production, even though it is established after the freshet in June.

Figure 8 shows the view of the properties to the west of 21800 River Rd.



Figure 8. View of western portion of the property from the southwest corner of the property along 272St

The Soil Remediation Plan

The goal of the soil remediation plan is to remove the existing imported fill. Most or all of it will be able to be used for an access roadway. Additional topsoil to overcome some of the drainage and flooding issues will allow agricultural production to occur on this area of the property. The result will be a gently sloping field with adequate drainage and ditching to remove excess water effectively.

The property elevations will be integrated with the ditches on the east and west boundaries of the property to ensure that the soil will not cause drainage concerns on neighbouring properties.

Sketches showing the existing elevations, the work area, and the cross sections are attached.

The estimated volume of fill required is 6,750 cubic meters.

Recommended Fill

Topsoil

A minimum of 0.6 m of good quality topsoil is required to be imported onto this property. This is important for the agricultural value of the property as well as to provide adequate organic matter for soil microorganisms and moisture retention.

The characteristics of any imported topsoil will include:

Textural range: < 70% sand, < 70 % silt, < 30% clay

Minimum organic matter content: 4%

% Coarse fragments allowed (> 2 mm diameter) < 5% - no sticks or stones larger than 5 cm

Electrical conductivity: < 2 dS/m

We recommend a soil analysis from a reputable local lab – for example Pacific Soil Analysis

Manufactured topsoil is not permitted.

Soil Deposit Plan

Only fill as approved by the professional agrologist will be accepted on this property.

The property owner/contractor is responsible for maintaining a record of the amount of soil being imported. The property owner also takes full responsibility of the quality of the soil being deposited.

The professional agrologist has the right to refuse any topsoil, or require it to be removed if it is deemed unacceptable.

Access and Internal Transportation

Access to the work area will be from the existing driveway on River Rd.

Dust and Mud Control

If the fill project is not completed during the dryer summer months, a wheel wash or a coarse gravel pad consisting of a 200 mm depth of 50-90 mm sized rock will be installed to reduce the risk of soil and mud being deposited on the road.

Drainage

The owner/contractor will ensure at all times that adequate drainage is maintained on the property. Adequate erosion control will be maintained along property boundaries and drainage ditches.

Vegetative Cover

The work area will be vegetated as soon as possible after the soil is deposited, particularly along the property boundaries and along the ditches to minimize the risk of erosion. The entire work area will be protected by silt fencing to prevent soil erosion.

Operational Conditions

The drawings and soil quantities as prepared in this professional agrologist's report will govern the work. The work will be carried out in phases within the work area, which will be confirmed in consultation with the professional agrologist.

The time period for the work will be two years, depending on the availability of soil and time of year.

The professional agrologist will preapprove all soil that will enter the property. All imported soil will be from pre-approved sites. The professional agrologist retains the right to order any imported soil to be removed from the property if it is deemed unsuitable.

The contractor/landowner will be responsible for maintaining an accurate record of the quantity of soil entering the property.

The contractor/landowner will be responsible for submitting load counts and soil volumes to the local municipality as well as any applicable fees.

Any water runoff from the work areas will be controlled to ensure that there are no negative effects on the environment or on neighbouring properties.

Professional Agrologist Reporting Requirements

A professional agrologist will be required to inspect the site monthly, and submit a progress report to the ALC bimonthly when work is actively underway.

A professional agrologist will be required to submit a final inspection report indicating that the property has been improved for agriculture as per plan.

Risk Assessment and Bonding Requirements

There are minimal risks associated with this fill plan because the site is small. Potential risks include managing the fill that had already been imported onto the property, poor quality of soil imported to the site, not enough topsoil provided, and erosion management in the ditches. The risks increase if the site is active during the winter months when more precipitation is expected.

I suggest a security of \$ 1,000 to meet the requirements of the Agricultural Land Commission.

This report has been prepared by John Paul, Ph.D, P.Ag



I certify that I have conducted the field observations and confirmed the information provided.

References

British Columbia Ministry of the Environment. 1983. Land Capability Classification for Agriculture in British Columbia. MOE Manual 1. Surveys and Resource Mapping Branch and Ministry of Agriculture and Food – Soils Branch.

Luttmerding, H.A. 1980. Soils of the Langley-Vancouver Map Area. Volume 1. British Columbia Soil Survey Report No. 15

Luttmerding, H.A. 1981. Soils of the Langley-Vancouver Map Area. Volume 3. British Columbia Soil Survey Report No. 18

Farm Plan for 21800 River Road Richmond BC

Site Description:

1.79 ha parcel at 21800 River Road Richmond BC V6V 1M4

Legal Description:

1 SEC 34 BLK5N RG4W PL 7445
Richmond Key: 344 Address: 21800 River Rd Zoning: AG1
Property Roll: 010943059 PID: 006-177-051 Plan: 7445

Owner / Operator: Joanna Yee Current Land use: Dormant

Soil Capability Classification for Agriculture:

The agricultural capability of the soils on this property is depicted as Class 4 W, where Class 4 land is “*land in this class has limitations that require special management practices or severely restrict the range of crops or both*” (BCMOE 1983).

Soil Description:

The soils on this property are classified as EM-RU b and LU-RC a. EM refers to Embree soil, which is a medium textured deltaic deposit containing organic strata. BU refers to Blundell soil, which consists of 15-40 cm of organic material over medium textured deltaic sediments. Lulu (LU) soil consists of 40-160 cm of partially decomposed organic material over moderately fine textured deltaic deposits. Richmond soil (RC) consists of 40-160 cm of well decomposed organic matter over moderately fine deltaic deposits.

Soil Management Rationale:

By grading structural fill materials and crowning with organic top soils, this property can return to full production of local produce.

Uses and Crops:

Season 1 and Season 2 will be growing pesticide-free garden vegetables. By year 3, I would like to incorporate specialty hops for local markets.

Drainage:

The property is bordered on all 4 sides with ditches and a dyke. The property structural fill will be graded the length of the property, providing a high point crown in the middle. The land will slope from the crown to the perimeter ditches at 1.5 degrees pitch. More detailed information is included in the Agrologist and Geotech's reports.

Irrigation:

The scale of operation allows for the use of the properties existing water service. The water is distributed through pvc piping with drip-feeds in the garden beds.

Planting Plan:

Due to the low-lying elevation of the property, moisture does not allow for planting until late May or early June. I will be growing tomatoes, cucumbers, zuchinni, carrots and kale in the front half of the garden this year. I will market my produce through my gardening neighbours network and utilize his labour when necessary.

Financials**Startup Expenses:**

Richmond City Permit	\$1600.
Agrologists Report	\$1050.
Topographic Survey	\$500.
Goetechnical Report	\$2100.
Manpower / Labour	\$1300.
Water distribution Supplies	\$800.
Starter Plants	\$800.
Equipment Rentals / Installation	\$8000.

	\$16,150.

Projections:

1st year	4600lbs @ .75 /lb wholesale	\$3500. gross sales
2 nd year	6000lbs @ .75 /lb wholesale	\$4500. gross sales
3 rd year	6000lbs @ .75 /lb wholesale	\$4500. gross sales
4 th year	6000lbs @ .75 /lb wholesale	\$4500. gross sales
5 th year	6000lbs @ .75 /lb wholesale	\$4500. gross sales
	hops sales	\$5000. gross sales
6 th year		\$9500. gross sales
7 th year		\$11500. gross sales
8 th year		\$11500. gross sales
9 th year		\$12500. gross sales
10 th year		\$12500. gross sales



30 August, 2018

SIP File: 18-249

City of Richmond

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

Attn: Mr. Mike Morin
Soil Bylaw Officer

Re: 21800 River Road
Agricultural Fill Deposit Permit Application (CD 43803 / ALC ID 54835)
Response to AAC Comments (ref: site drainage)

Mr. Morin,

We write to respond to the Agricultural Advisory Committee's comments and questions regarding site drainage noted at the February 1, 2018 AAC meeting when this application was last discussed.

We understand that the property owner intends to use southern part of the subject property for vegetable farming. We further understand from the Ministry of Agriculture's feedback at the last AAC meeting that the growing medium for vegetables needs to be a minimum of 0.5m above the water table.

Based on our site visits and information collected, the historical site native ground elevation of the subject property is quite low, and during the winter and spring seasons the water table can be close to (or at) the native ground elevation.

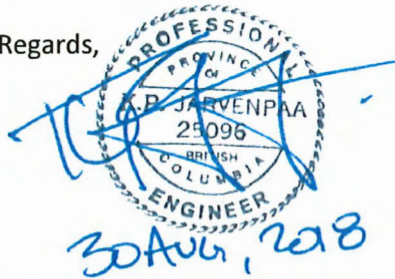
From a civil engineering perspective, it is not possible to naturally drain the site to achieve this distance between growing medium and water table without raising the ground elevation. To confirm, drains, ditches, or berms around the perimeter of the property would not achieve this due to the nature of the ground water table in the area.

This has been colloquially confirmed through discussions with Mr. Dennis Beckrud, the farmer who has been actively managing the farm next to the subject property for several years. The neighbouring farm has not had any imported fill placed and is still at "native" ground elevation. Mr. Beckrud has noted that the ground is usually too wet to plant until late spring when the ground water table is lower, and shorter growing season is a result.

We also understand from the project's Professional Agrologist that this property has had unapproved fill placed at some point in the past, and that the proposed application will include on-site management of the unapproved fill, integrating it appropriately into the final site usage; please refer to the report prepared by Transform Land & Soil Investigation for further details.

We trust the foregoing meets with your needs. Thank you for your consideration.

Regards,



K. Peter Jarvenpaa, P.Eng., Principal
Sea Island Projects
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604.760.7524

CC: J. Yee, Property Owner
J. Paul, Transform Land & Soil Investigation
D. Beckrud



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