



To: Planning Committee

Date: January 22, 2020

From: Wayne Craig
Director, Development

File: AG 19-863866

Re: **Application by Ecowaste Industries Ltd. for an Agricultural Land Reserve Non-Farm Use for the lands bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances**

Staff Recommendation

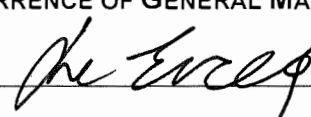
That the Agricultural Land Reserve (ALR) Non-Farm Use Application (AG 19-863866) by Ecowaste Industries Ltd. to revise the previously approved ALR Non-Farm Use Application (AG 14-654361) in order to:

- a) replace the operator of one of the previously approved materials recovery facilities and increase the size from 1.3 ha to 3.3 ha and processing capability of the facility;
- b) add two new materials recovery facilities to the four facilities previously approved; and
- c) add 20 years to the previously approved term to allow landfill activities to continue until 2055;

on the lots bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances be endorsed and forwarded to the Agricultural Land Commission.


 Wayne Craig
 Director, Development

WC:sds
Att. 9

REPORT CONCURRENCE
CONCURRENCE OF GENERAL MANAGER


Staff Report

Origin

Ecowaste Industries Ltd. has submitted an Agricultural Land Reserve (ALR) Non-Farm Use Application on the following properties (subject site):

- Lot 1 Section 15 Block 4 North Range 5 West Plan LMP40687 – 132.5 acres (53.6 ha); and
- Lot 2 Section 15 Block 4 North Range 5 West Plan LMP40687 – 17.5 acres (7 ha).

The subject site is located in the Agricultural Land Reserve (ALR) bounded by the road allowances of Granville Avenue, No. 7 Road, Blundell Road and Savage Road and zoned “Agriculture (AG1)”. A location map and aerial photograph are provided in Attachment 1.

The subject site is currently occupied by an active landfill operated by Ecowaste Industries Ltd., operating under previous approvals from Council and the Agricultural Land Commission (ALC) for the landfill operation. Most recently, the following was endorsed by Council and approved by the ALC in 2015 (AG 14-654361):

- Continued operation of the existing landfill activities for a period of 20 years (ending in 2035) in order to comply with the Design, Operations and Closure Plan (DOCP) approved by the Ministry of Environment (with a final elevation of 18 m geodetic); and
- Four soil processing operations (materials recovery facilities) related to the landfill for a period of 20 years on the subject site (ending in 2035).

The purpose of the subject ALR Non-Farm Use Application is to revise the previous approval in order to:

- a) replace the operator of one of the previously approved materials recovery facilities and increase the size from 1.3 ha to 3.3 ha and processing capability of the facility;
- b) add two new materials recovery facilities to the four facilities previously approved; and
- c) add 20 years to the previously approved term to allow landfill activities to continue until 2055.

The purpose of the materials recovery facilities (MRF) is to accept and process demolition, land clearing and construction (DLC) waste. The products are used for internal landfill activities (incl. filling and closure) or recycled and sold commercially. The primary function of the three MRFs previously approved is soil processing, used for landfill closure activities or sold commercially. The purpose of the new MRFs would be to recover and repurpose more DLC waste material (i.e. lumber, plastics, carpet, roofing and aggregates), currently going into the landfill.

No change to the finished site elevation of the landfill or waste stream is proposed. The proposal is consistent with Ministry of Environment approvals.

A site plan illustrating the previous approval and changes proposed through the subject application is provided in Attachment 2. If the subject application is endorsed by Council, the application will be forwarded to the Agricultural Land Commission (ALC) for consideration. Should the ALR Non-Farm Use Application be endorsed by Council and approved by the ALC, a subsequent Zoning Text Amendment application, subject to Council approval, would be required in order to allow the proposed materials recovery facilities.

Findings of Fact

A Development Application Data Sheet providing details about the development proposal is attached (Attachment 3).

Surrounding Development

- To the North: Across the Granville Avenue unopened road allowance, properties zoned “Agriculture (AG1)”, designated “Agriculture (AGR)” in the Official Community Plan (OCP) and located in the Agricultural Land Reserve (ALR), and a drainage canal designated RMA.
- To the South: Across Blundell Road, property zoned “Industrial (I)” and designated “Industrial (IND)” in the OCP, owned by Ecowaste Industries Ltd. A Development Permit (DP 11-566011) was issued in 2017 to permit a 65 ha (161 acres) Industrial Logistics Park (currently under construction). A Development Variance Permit application (DV 19-869780) is currently under staff review to increase the permitted building height.
- To the East: Across the No. 7 Road unopened road allowance, land zoned “Agriculture (AG1)” and designated “Industrial (IND)” in the OCP, and a drainage canal designated RMA. This area is under federal jurisdiction (Port Metro Vancouver).
- To the West: Across the Savage Road unopened road allowance, properties zoned “Golf Course (GC)” and “Agriculture (AG1)”, designated “Agriculture (AGR)” in the OCP and located in the ALR.

Related Policies & Studies

Official Community Plan

The Official Community Plan (OCP) land use designation for the subject site is “Agriculture (AGR)”, which comprises of those areas of the City where the principal use is agriculture and food production, but may include other uses as permitted under the *Agricultural Land Commission Act* (ALCA), including non-farm uses approved by Council and the ALC. The proposed materials recovery facilities are temporary land uses and will be removed when the limits of the Ministry of Environment landfill operational certificate are reached and no later than the term associated with the non-farm use approval. The long term objective for the site is to be remediated in order to support agricultural uses. No amendments are required to the OCP.

Environmentally Sensitive Area Designation

An area is designated Environmentally Sensitive Area (ESA) located within the Savage Road unopened road allowance along the west property line of the subject site. The proposed materials recovery facilities are not located within the designated ESA and will not be impacted by the proposal. No ESA Development Permit is required.

Riparian Management Area Designation

A 15 m wide Riparian Management Area (RMA) exists along the subject site's north and east edges associated with a drainage canal along the Granville Avenue and No. 7 Road unopened road allowances. Environmental Sustainability staff have reviewed the proposal and confirm there is no encroachment into the RMA proposed and no additional approvals are required.

Food Security and Agricultural Advisory Committee

The proposal was reviewed by the Food Security and Agricultural Advisory Committee (FSAAC) at the meeting on November 28, 2019. The Committee generally supported the proposal, but expressed concerns regarding the proposed extended timeframe to return to agriculture and ensuring the site will be actively farmed after the site is remediated. The Committee passed the following motion:

That the Food Security and Agricultural Advisory Committee support the Non-Farm Use Application (AG 19-863866) to move forward to Council subject to the following considerations:

- 1. Financial commitment towards the investment in farming infrastructure to benefit agriculture during the life of the proposal (e.g., funding for farm access, irrigation and drainage to no access parcels); and*
- 2. Ensuring the agricultural land is available and actively used for farming after the land is remediated for agriculture (e.g., legal agreement).*

An excerpt from the November 28, 2019 FSAAC meeting minutes is provided in Attachment 4. Staff note that should Council endorse the application to move forward to the ALC and the ALC approve the proposed non-farm use, the considerations recommended by the FSAAC will be reviewed through future development applications required for the proposal to proceed. More information regarding required future development applications is provided in the "Analysis" section of this report.

Background

From 1971 to 1986, the company (then called Richmond Landfill Ltd.) operated a municipal solid waste landfill on the property to the east of the subject site. As this property was being filled, Ecowaste Industries Ltd. purchased the subject site and received approvals from Council, the ALC, the Ministry of Environment, and Metro Vancouver to operate a landfill for demolition, land clearing and construction (DLC) waste. Over the past 30 years Ecowaste has added recycling operations to its landfill operations, including conversion of yard waste into

compost, clean wood into biofuels, and concrete into aggregate. Landfill activities on-site that provide a benefit to agriculture include:

- harvesting plant biomass irrigated with treated leachate (as part of the leachate treatment process), used as soil and sediment control;
- composting operations to produce soil blends and site cover; and
- noxious weed management (i.e. Japanese knotweed).

Previous Approvals

In 1993, the ALC approved a non-farm use application for the landfill and a City of Richmond soil permit was issued for five years (Permit S-271). In 1998, Ecowaste applied to the City of Richmond and the ALC to extend the permit for a period of 10 years, which was approved. Ecowaste then started preparing for a comprehensive non-farm use application in consideration of the long-term industrial development on the property south of the subject site. In 2015, a Non-Farm Use Application (AG 14-654364) was endorsed by Council and approved by the ALC, which included allowing the continued operation of the landfill until 2035, filling the site consistent with the Design, Operations and Closure Plan (DOCP) approved by the Ministry of Environment (with a final elevation of 18 m geodetic), and four materials recovery facilities. A timeline related to the Ecowaste landfill approvals is provided in Attachment 5.

Project Description

Project Description – Landfill

Ecowaste Industries Ltd. currently operates an active landfill on the subject site. The site accepts demolition, land clearing and construction (DLC) waste. Based on the approved Ministry of Environment's DOCP and 2015 approval, the landfill will be filled to an ultimate finished elevation of 18 m geodetic at the highest elevation. The previous non-farm use approval also included permitting four materials recovery facilities (MRF) to assist in the processing of soils and associated landfill activities.

No changes are proposed to the ultimate elevation of the landfill through the subject application. Currently, the landfill on the subject site is approximately 70% filled based on the approved DOCP. This amount has remained unchanged from the previous approval in 2015, due to the continuing filling of Ecowaste's industrial site, south of the subject site. Once filling and closure of the landfill site for the industrial lands is completed, fill activities will resume on the subject site as per the previous approval.

Project Description – Materials Recovery Facilities

The primary function of the three MRFs previously approved is soil processing to either support landfill activities (incl. filling and closure) or to sell remediated products commercially. These MRFs consist of temporary structures and outdoor storage to support these activities. The purpose of the proposed new MRFs would be to recover and repurpose more DLC waste material (i.e. lumber, plastics, carpet, roofing and aggregates), currently going into the landfill, resulting in a diversion of DLC waste from the landfill. These types of facilities support the

City's Demolition Waste and Recyclable Materials Bylaw No. 9516, which aims to divert waste from disposal and promotes recycling of materials. The increased recycling capacity of the facility is expected to extend the life of the landfill until 2055. No change to the waste stream (DLC waste—no organics or green waste is accepted), source (primarily Lower Mainland), or final site elevation of the landfill is proposed.

One of the MRFs (previously approved to be operated by "Urban Wood Recyclers") is proposed to be replaced with a different operator (Ecowaste Industries Ltd.), with an increased footprint of 1.3 ha to 3.3 ha, and be able to process a broader range of waste than had been anticipated in 2015. This MRF would also consist of a large steel structure, unlike the other MRFs, but be designed to be disassembled when the facility is closed.

The proposed MRFs are temporary land uses and will be removed when the landfill is closed, as per the Ministry of Environment approval, and no later than the term associated with the non-farm use approval. The long term objective for the subject site is to be remediated in order to support agricultural uses after the landfill closure.

Project Description – Return to Agriculture

The conditions associated with the ALC approval (Resolutions #384/2015 and #385/2015) for non-farm use required that the MRFs be removed when the landfill closed and that the site be returned to agriculture. The final improved agricultural rating, with irrigation, is to be Class 2A. The 2015 approval included a Soil Survey Rehabilitation Assessment produced by a Professional Agrologist, which is provided in Attachment 6 for reference. A letter from the Project Agrologist was provided confirming the subject application would have no impact on the approved 2015 plan to return the site to agriculture (Attachment 7).

Provincial Permits and Licenses

All of Ecowaste's landfill activities are permitted and regulated through an operational certificate issued by the BC Ministry of Environment (Operational Certificate 4922). The current operational certificate regulates the current design, operations and closure plan (DOCP) approved by the Ministry. The revised DOCP submitted by Ecowaste in 2019 to the Ministry is consistent with the original operational certificate approved. A letter from the Ministry confirming this is provided in Attachment 8. The operational certificate does not specify an expiry date, however, it does require compliance with a specific closure plan for the landfill, including an ultimate elevation of 18 m. Ecowaste is permitted to accept up to 320,000 tonnes of demolition, land clearing and construction (DLC) waste per year at the landfill. No changes to the Ministry of Environment approvals are required. The landfill also holds licenses and permits from Metro Vancouver in relation to the landfill operation and composting activities (soils).

Analysis

Agriculture (AG1) Zoning

The subject site is zoned "Agriculture (AG1)". The proposed materials recovery facilities (MRFs) will contribute to providing a portion of the necessary soils and fill materials required to remediate the closed landfill in order to support agricultural uses. The landfill and supporting

MRFs are temporary uses, and once closed and removed, will result in the site being capable of supporting land uses and activities that are consistent with the existing AG1 zoning.

Considering the longer time frame for landfill activities and the buildings required to support the proposed additional MRFs, a Zoning Text Amendment would be required to allow the construction of the proposed MRFs in the interim on the subject site only. Should Council endorse the application to move forward to the ALC and the ALC approve the non-farm use, a subsequent Zoning Text Amendment would be required in order for Building Permits to be issued for the proposed MRFs.

The landfill site operated by Ecowaste Ltd. and the proposed MRFs are all individual commercial businesses. As a result, each will be required to apply for and obtain the necessary business license(s) from the City if the application is supported by Council and approved by the ALC.

Transportation and Site Access

The subject site is bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances. Ecowaste Industries Ltd. owns the properties south of the subject site, extending south to Williams Road. The extension of Blundell Road, generally between No. 7 Road and Savage Road, recently completed construction as part of Ecowaste's industrial development to the south. Previously, access to the landfill was through Williams Road. Prior to closure of the south landfill, the main access route will be moved to Blundell Road. A wheel washing system will be installed to minimize debris on public roads.

A Traffic Impact Study (TIS) was submitted and reviewed by the City and Port Metro Vancouver through the industrial development to the south. The applicant has provided an updated TIS to address the changes proposed through the subject application, which indicated a minimal impact to the road network from the 2015 approval. Transportation staff reviewed the TIS and have no concerns.

Adjacency Impacts

The applicant has provided a list of controls and mitigation measures already in place to deal with adjacency concerns, including:

- Dust and mud control: the on-site roads are frequently watered during dry weather to limit dust from roads and working surfaces. Additionally a wheel-wash will also be installed to prevent any remaining dirt or mud from being transferred to public roads.
- Litter control: trucks are required to remain tarped until the vehicle is at its designated de-tarping area. There are also regular litter patrols and cleanup conducted on-site.
- Noise control: where the proposed MRFs are located is a significant distance from any adjacent neighbours. The MRFs will also be enclosed further reducing noise. Hours of operation will comply with both the City's Noise Bylaw and Metro Vancouver permit. No MRF will operate later than 8 pm.

- Odour control: there are no organics proposed for processing. DLC waste is inert, which does not generate odour.

Sustainability

Should the application be endorsed by Council and approved by the ALC, it will enable the landfill operation to recycle 45 to 50% more DLC waste each year, recycle/recover more types of waste, and extend the life of the landfill to 2055 with no change to the ultimate elevation. The applicant has provided a letter regarding the Sustainability impacts provided in Attachment 9.

Financial Impact

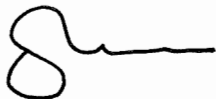
None.

Conclusion

Ecowaste Industries Ltd. has submitted an Agricultural Land Reserve (ALR) Non-Farm Use Application to revise the previously approved ALR Non-Farm Use Application (AG 14-654361) in order to:

- a) replace the operator of one of the previously approved materials recovery facilities and increase the size from 1.3 ha to 3.3 ha and processing capability of the facility;
- b) add two new materials recovery facilities to the four facilities previously approved; and
- c) add 20 years to the previously approved term to allow landfill activities to continue until 2055.

It is recommended that the ALR Non-Farm Use Application be forwarded to the Agricultural Land Commission (ALC).



Steven De Sousa
Planner 1

SDS:cas

Attachment 1: Location Map & Aerial Photo

Attachment 2: Site Plan

Attachment 3: Development Application Data Sheet

Attachment 4: Excerpt from the November 28, 2019 FSAAC Meeting Minutes

Attachment 5: Timeline of Approvals

Attachment 6: 2015 Soil Survey Rehabilitation Assessment

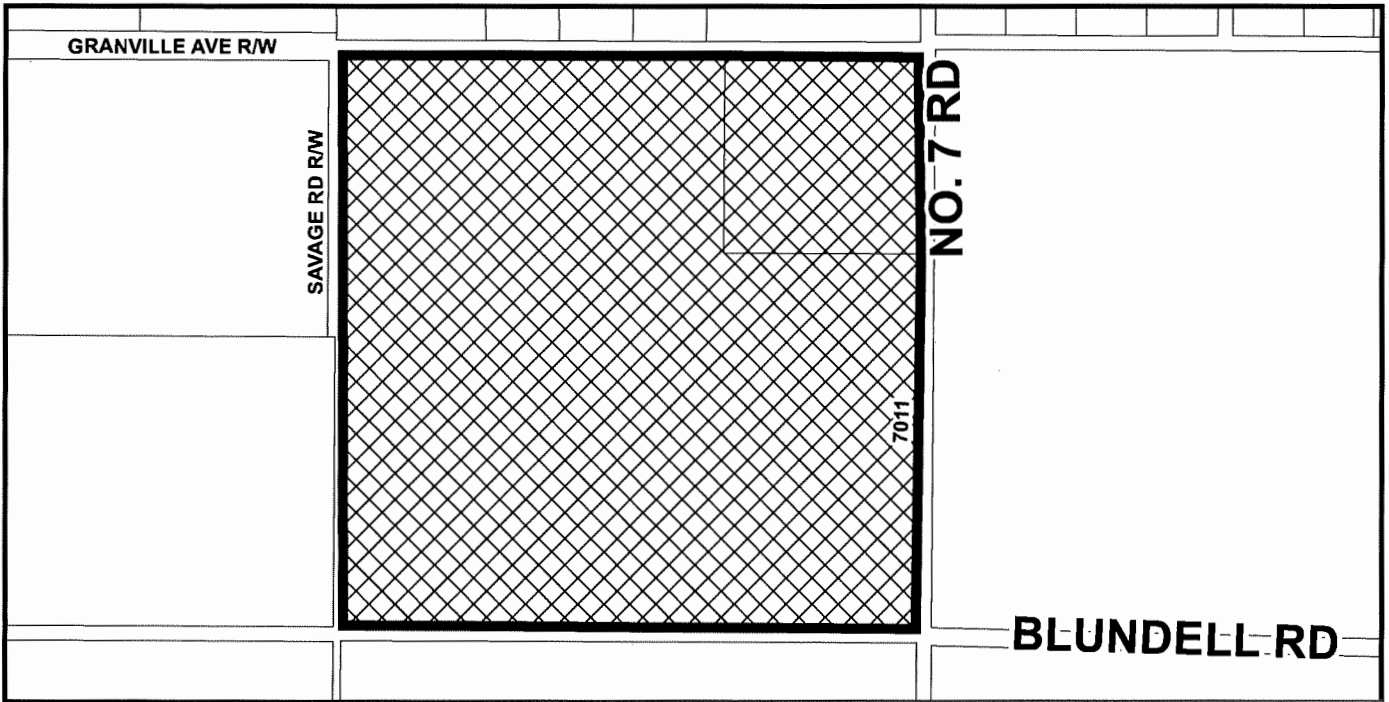
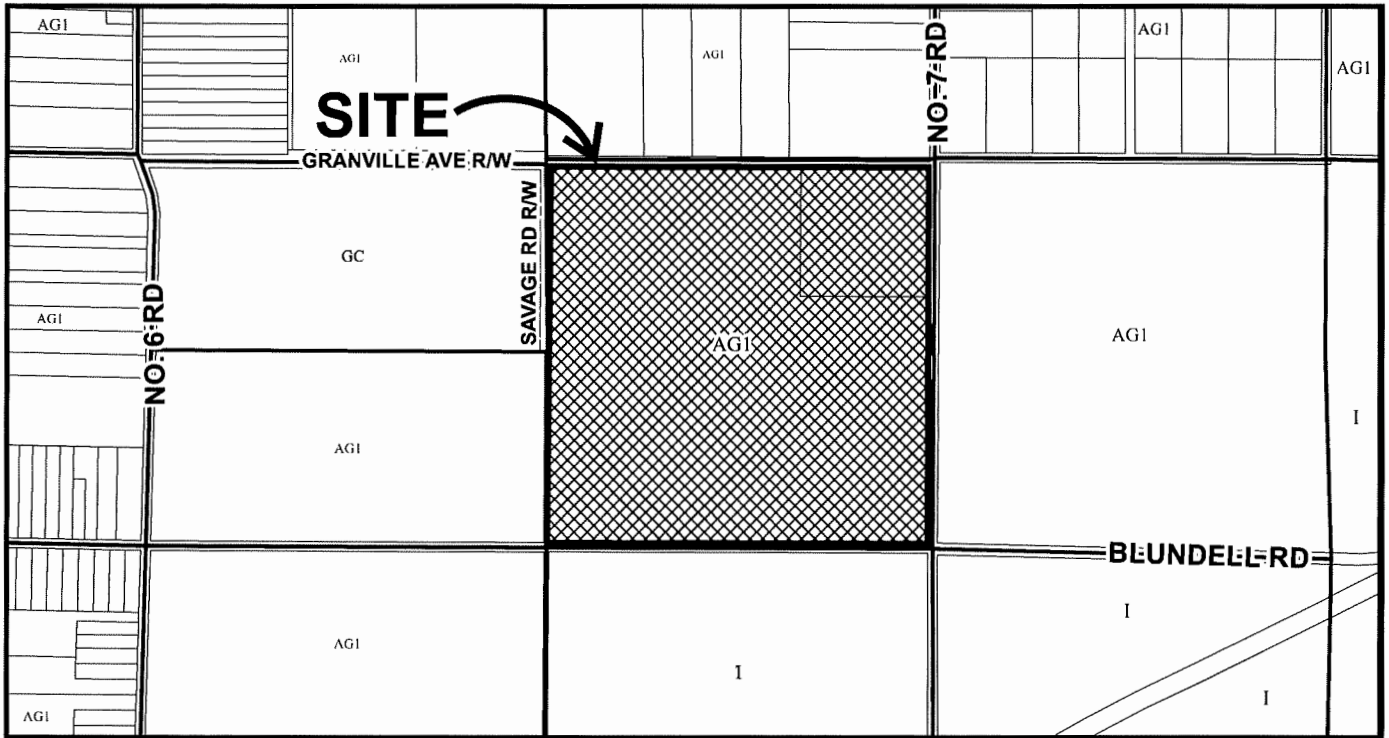
Attachment 7: Letter from the Professional Agrologist

Attachment 8: Letter from the Ministry of Environment & Climate Change Strategy

Attachment 9: Applicant's Sustainability Response



City of Richmond



AG 19-863866

CNCL - 410

Original Date: 06/20/19

Revision Date: 01/08/20

Note: Dimensions are in METRES



City of
Richmond



AG 19-863866

CNCL 411

Original Date: 06/21/19

Revision Date: 01/08/20

Note: Dimensions are in METRES



Previous application:

- MRF #1-4 approved by Council and ALC in 2015
- Continued operation of the landfill for 20 years (ending in 2035)

Subject application:

- Replace operator and increase size of MRF #4
- Add two additional MRFs (#5 & 6)
- Add 20 years to the previously approved term (ending in 2055)

MRF #4 original area
CNCL - 412

GNH Consulting Ltd
 Landfill Management
 11413 88a Ave
 Delta, B.C. V4C3E3
 604-307-5159
 604-250-4817

ECOWASTE INDUSTRIES LTD
 100 - 3031 Viking Way
 Richmond BC, V6V 1W1

Ecowaste Industries
 Application to
 Agricultural Land Reserve
 Updated to June 3, 2019



AG 19-863866

Attachment 3

Address: Land Reserve Non-Farm Use for the lands bounded by the Granville Avenue, No. 7 Road, Blundell Road and Savage Road allowances

Applicant: Ecowaste Industries Ltd.

Planning Area(s): East Richmond

	Existing	Proposed
Owner:	Ecowaste Industries Ltd.	No change
Site Size:	- Lot 1 Section 15 Block 4 North Range 5 West Plan LMP40687: 132.5 acres (53.6 ha) - Lot 2 Section 15 Block 4 North Range 5 West Plan LMP40687: 17.5 acres (7 ha) - Total: 150 acres (60.6 ha)	No change
Land Uses:	Landfill activities and related uses with approvals until 2035 (including four materials recovery facilities).	<ul style="list-style-type: none"> replace the operator of one of the previously approved materials recovery facilities and increase the size from 1.3 to 3.3 ha and processing capability of the facility; add two new materials recovery facilities to the four facilities previously approved; and add 20 years to the previously approved term to allow landfill activities to continue until 2055.
OCP Designation:	Agriculture (AGR)	No change
Zoning:	Agriculture (AG1)	Should the ALR Non-Farm Use application be approved a Zoning Text Amendment would be required.
Agricultural Land Reserve:	The site is contained in the ALR	No change
Other Designations:	<ul style="list-style-type: none"> ESA outside of and along the west edge of the site. 15 m RMA along the north and east edges of the site. 	Existing ESA and RMA designations will not be impacted.

**Excerpt from the Meeting Minutes of the
Food Security and Agricultural Advisory Committee (FSAAC)**

**Thursday, November 28, 2019 – 7:00 p.m.
Rm. M.2.002
Richmond City Hall**

Agricultural Land Reserve Non-Farm Use Application – Ecowaste

Steven De Sousa, Planner 1, introduced the proposed non-farm use application and provided the following comments:

- The site is an existing landfill operation, which originally operated on the property south of the subject site, but was moved north as the property to the south was filled for industrial development;
- Landfill activities on the subject site were approved by Council and the ALC in the early 1990s;
- In 2015, a non-farm use application was approved by Council and the ALC for the following:
 - To allow the continued operation of the existing landfill activities for a period of 20 years (up to an ultimate elevation);
 - To locate four soil processing operations (material recovery facilities) related to the landfill for a period of 20 years.
- The purpose of the subject non-farm use application is for the following:
 - To replace the operator of one of the previously approved material recovery facilities and increase the size and processing capability of the facility;
 - To add two new material recovery facilities to the four facilities previously approved; and
 - To add 20 years to the previously approved term to allow the landfill activities to continue until 2055.
- The purpose of the material recovery facilities is to increase the recycling capacity of the facility to address the increasing amounts of demolition land clear (DLC) waste arriving each year; and
- Ultimately, the material recovery facilities will be removed and the site will be remediated to support agricultural uses.

Tom Land, President & CEO of Ecowaste, provided the following additional comments regarding the proposal:

- Ecowaste is investing over \$500 million in redevelopment of the former landfill south of Blundell into a distribution warehouse hub and \$50 million in construction and

demolition waste management capacity to extend the life of the existing landfill on the subject site;

- There are a number of current agricultural activities on-site including soil bioremediation, harvesting of crops (forage) from leachate treatment for biofuels and sediment control, compost from yard waste and mulch from wood processing;
- The Vancouver Landfill in Delta is proposed to be closed in 2028, Ecowaste will be the only landfill in the region;
- In order to address the increasing amount of DLC waste being generated by the region every year, the proposed material recovery facilities will increase the recycling capability of the facility and prolong the life of the landfill until 2055;
- There are no proposed changes to waste stream, source of waste, or final site elevation; and
- Benefits to agriculture include generating more topsoil and ground wood for farmers, providing a landfill for DCL waste, and rehabilitating the site for agriculture after closure.

Discussion ensued regarding traffic impacts, the industrial development to the south of the subject site, and origins of the landfill.

In response to questions from the Committee, the Applicant noted that when the landfill closes and the site is remediated for agriculture, the intention is to enter into land leases with farmers to farm the land.

The Committee expressed concerns regarding the proposed extended timeframe for the subject site to return to agriculture and ensuring the site will be actively farmed after the site is remediated.

As a result of the discussion, the Committee passed the following motion:

That the Food Security and Agricultural Advisory Committee support the Non-Farm Use Application (AG 19-863866) to move forward to Council subject to the following considerations:

- 1. Financial commitment towards the investment in farming infrastructure to benefit agriculture during the life of the proposal (e.g. funding for farm access, irrigation and drainage to no access parcels); and*
- 2. Ensuring the agricultural land is available and actively used for farming after the land is remediated for agriculture (e.g. legal agreement).*

*Carried
Abstained: Doug Wright*

Timeline – Ecowaste Landfill Activities in the ALR

- 1993: Approval to allow the applicant to operate a landfill in the ALR under the Soil Conservation Act (Permit S-271).
- 1999: Approval for a 10 year renewal to Permit S-271 to allow the continued operation of the landfill in the ALR.
- 2002: Repeal of the Soil Conservation Act resulting in soil removal and filling in the ALR being regulated and permitted through the ALC Act and related regulations (i.e. non-farm use application).
- 2009-2011: Exploration and development planning by Ecowaste for a large scale phased industrial development proposed for the portions of the landfill site south of Blundell Road (outside of the ALR, zoned and designated in the OCP for industry), which resulted in the following:
 - Ecowaste obtained appropriate amendments to the operational certificate by the Ministry of Environment (Operational Certificate 4922) to facilitate re-opening and vertical expansion to the landfill outside of the ALR and modify the closure plan to accommodate a suitable grade and structural base to support the industrial development; and
 - Focus on landfill and site modification on Ecowaste industrial lands. When filling and closure of the landfill site for the industrial lands is completed, fill activities will resume on the ALR portion of the landfill site north of Blundell Road (subject site). Currently, active filling on the ALR portion of the landfill site is not being undertaken as the site to the south is filled.
- December 19, 2011: Council granted authorization to open a number of un-built road allowances to allow construction of future public roads to facilitate Ecowaste's development of their industrial land, including Blundell Road between No. 7 Road and Savage Road, in coordination with Ecowaste's redevelopment of their industrial zoned and designated lands to the south of the subject site.
- 2015: endorsement by Council and approval by the ALC for a Non-Farm Use application (AG 14-654361) on the ALR property (subject site) to achieve the following:
 - Continued operation of the existing landfill activities for a period of 20 years (ending in 2035) in order to comply with the Design, Operations and Closure Plan (DOCP) approved by the Ministry of Environment (with a final elevation of 18 m geodetic); and
 - Four soil processing operations (materials recovery facilities) related to the landfill for a period of 20 years on the subject site (ending in 2035).
- January 23, 2017: Development Permit (DP 11-566011) for the industrial land south of Blundell Road was issued by Council to permit a 65 ha (161 acres) Industrial Logistics Park (currently under construction).

Agricultural Capability and Suitability on Completion of Project

**Ecowaste Landfill
7011 No. 7 Road
Richmond, BC**



Prepared for:
Ecowaste Industries Ltd.
200 – 10991 Shellbridge Way
Richmond, BC
V6X 3C6

Prepared by:
Pottinger Gaherty Environmental Consultants Ltd.
#1200 – 1185 West Georgia Street
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PGL File: 079-04.02

December 2014



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1.0 INTRODUCTION

Ecowaste Industries Ltd. (Ecowaste) asked Pottinger Gaherty Environmental Consultants Ltd. (PGL) to provide a short report discussing the agricultural capability and suitability of their landfill following completion of closure and reclamation.

Our report includes a description of the site, a description of the historical and current Site soils, and an assessment of the Site's future agricultural capability/suitability.

2.0 SITE DESCRIPTION

The Site is located in the City of Richmond (Figure 1) and is part of the Ecowaste landfill operated by Ecowaste at 15111 Williams Road in Richmond, BC. The Ecowaste Landfill is comprised of 118ha located between No. 6 and No. 7 Roads and between Granville Avenue and Williams Road. Of the 118ha, a 61ha parcel consisting of two lots are located within the Agricultural Land Reserve (ALR) (ALR site). The remainder is located on a 57ha non-ALR parcel (Industrial Site).

The Ecowaste landfill, including the non-ALR portion, accepts the disposal of inert waste primarily from construction and demolition activities. The landfill also accommodates several related industries as tenants, including yard waste composting facilities, wood processing facilities, and two soil remediation facilities all of which will operate on the ALR portion of the site for the next period of operation.

Following placement of the solid waste, the completed landfill will be improved by placement of a soil cover suitable for agriculture. Soils placed on the ALR-zoned portions of the property are required to meet the BC Contaminated Sites Regulation's Agricultural Land Use Standards and will be designed to enable a wide range of soil bound agricultural uses.

The surrounding area is characterized by:

- North: ALR Agricultural Land Use;
- West: ALR agricultural with a mix of non-farm uses including a golf course/driving range and as well as farm uses;
- South: Non-ALR Ecowaste land fill which will be developed as a logistics-based industrial park once filling is complete; and
- East: Non-ALR Industrial land use operated by Port Metro Vancouver and developed for port-related industrial purposes.

All of the surrounding uses would be compatible with future use of the Site for agriculture.

3.0 BACKGROUND

PGL conducted site investigations and reviewed existing historical reports, maps, and aerial photographs of the Site, pertinent documents at the Agricultural Land Commission (ALC), developing a detailed soil sampling plan, and conducting a Site visit to describe soils.

The entire property has been disturbed from original conditions due to peat extraction and subsequent waste filling activities. Soils vary across the site depending on the state of filling and typically fall into three categories: road network, areas undergoing filling and filled/rehabilitated areas.

This ALR portion of the site will have four sub-contracted operators who will support and enhance Ecowaste's landfill operation. The operators include Tervita Corporation, Quantum Murray, Urban Wood Waste Recyclers and Yardworks/Arrow. Yardworks/Arrow is already located on the site while the remaining three operations are currently located on Ecowaste's industrial property.

4.0 1993 ALC APPROVAL CONDITIONS

The 1993 ALC Resolution #173/93 allowed peat extraction and the deposition of fill to be undertaken on the Ecowaste property subject to Rehabilitation of the Filled Area, and installation of irrigation and drainage. The plan was to reclaim the site to Class 2 agricultural capability with only minor limitations to soil bound agriculture.

4.1 Final Site Preparation and Filling Procedures

Once the final closure elevation has been achieved the Site will be covered with 2m of soils which meet the BC Contaminated Sites Regulations standards for Agricultural Land Use. The final 0.5m of the subgrade will consist of free draining, permeable soil, sand or gravel, while the overlying topsoil will be clean with a coarse fragment content less than 5% with no texture finer than silty clay loam and no coarser than sandy loam. The topsoil will also be placed evenly over the surface to the finish grade.

4.2 Rehabilitation of the Filled Area Procedures

The original approval for fill/rehabilitation as approved by the ALC by resolution #173/93 required that the final improved agricultural capability rating, with irrigation is to be Class 2A. To meet the improved classification, the resolution also required that rehabilitation of the filled area:

- Upon completion of filling , the fill is to be capped with a minimum of 1.0m of medium-textured glacial till material;
- Upon completion of spreading and compacting the capping, a minimum of 0.8m of medium-textured sands are to be placed over the capping;
- The final upper 0.3m is to be loamy sand;
- Encouraging backhauling of good quality agricultural soil for rehabilitation purposes;
- Application of suitable organic matter to the upper 0.3m of reclaimed soil; and
- Preparation of a seedbed if no immediate agricultural use is planned.

Following rehabilitation, the rehabilitated site will be maintained in a high state of agricultural management for a period of no less than five years following completion. Already rehabilitated areas have been either seeded with a forage crop or used for agro-forestry.

4.3 Drainage Control and Drainage System Installation

Drainage control and drainage system installation is detailed in Ecowaste's January 2013 Design, Operations and Closure Plan Submission which is included in Ecowaste's Application for Non-Farm Use and Soil Permit Renewal.

Stormwater and runoff from the site are managed through a storm water drainage and collection system. The leachate that percolates through the cap is managed in a separate leachate collection system. It then undergoes additional treatment via an aeration pond and passage through a constructed wetland before ultimately being discharged to the No. 7 Canal via the Granville Avenue ditch. If appropriate, this leachate could be used for irrigation post closure. If not, irrigation water will be sourced from the local agricultural drainage and irrigation ditches.

4.4 Irrigation Installation

In 2006, Ecowaste retained SYLVIS to design and construct a soil-plant system for use as an irrigation-based leachate treatment option. In 2007, SYLVIS began fabricating topsoil using combinations of sand, biosolids, recycled paper fines and wood waste. These fabricated topsoils were used in the establishment of three treatment plots covering capped portions of the landfill and planted with fast-growing hybrid poplar trees (in 2007), coppicing willows (planted between 2008 and 2010) and forage grasses (seeded in 2010). The soil-plant treatment plots are irrigated with leachate which has undergone treatment in the aeration pond, providing additional leachate treatment capacity, leachate quality improvement, and harvestable biomass. This system also satisfies the agricultural zoning requirement of the site and provides Ecowaste with a biomass crop for harvest and use.

By the end of 2012, the soil plant system was irrigated with a total leachate volume of 4,225mm (308,422m³) in both woodlots combined and 10,359mm (321,141m³) in the grass lot. The poplars, willows, and grasses are in their active phase of establishment, and should continue to increase in their capacity to assimilate leachate and leachate constituents over the near-term.

4.5 Reporting and Monitoring

Monitoring will include preparation of semi-annual reports by a reclamation specialist to ensure compliance with the conditions of the Commission's approval.

5.0 CONCLUSION

On completion of landfilling, the ALR portion of the site will be covered with 2m of soils which will meet the BC Contaminated Sites Regulations standards for Agricultural Land Use as well as provide a Class 2A agricultural capability.

In addition to improving agricultural capability following peat extraction, Ecowaste has continued to meet the conditions of the 1993 ALC Resolution #173/93.

PGL's report established baseline conditions for the portion of the site still undergoing filling activities as proposed in the non-farm use application. This area is proposed for four sub-contracted operators who will support and enhance Ecowaste's landfill operation. The site is primarily composed of three land uses: areas undergoing filling, rehabilitated areas, and road access.

The ongoing filling and rehabilitation works will benefit agriculture through improvements to the agricultural capability and suitability of the ALR site. Filling and subsequent rehabilitation will increase the agricultural capability from 100% 4W in the western portion of the property and 100% Ø5WP in the eastern portion of the property to and agricultural capability of 2A.

On completion of reclamation and preparing the soils for agricultural, the site will be capable of growing a wide range of soil bound agricultural crops. The types of crops and the agricultural systems would be difficult, but the site will be in an area with compatible uses and enough separation from non-farm uses to allow for a wide range of choices.

Respectfully submitted,

POTTINGER GAHERTY ENVIRONMENTAL CONSULTANTS LTD.

Per:



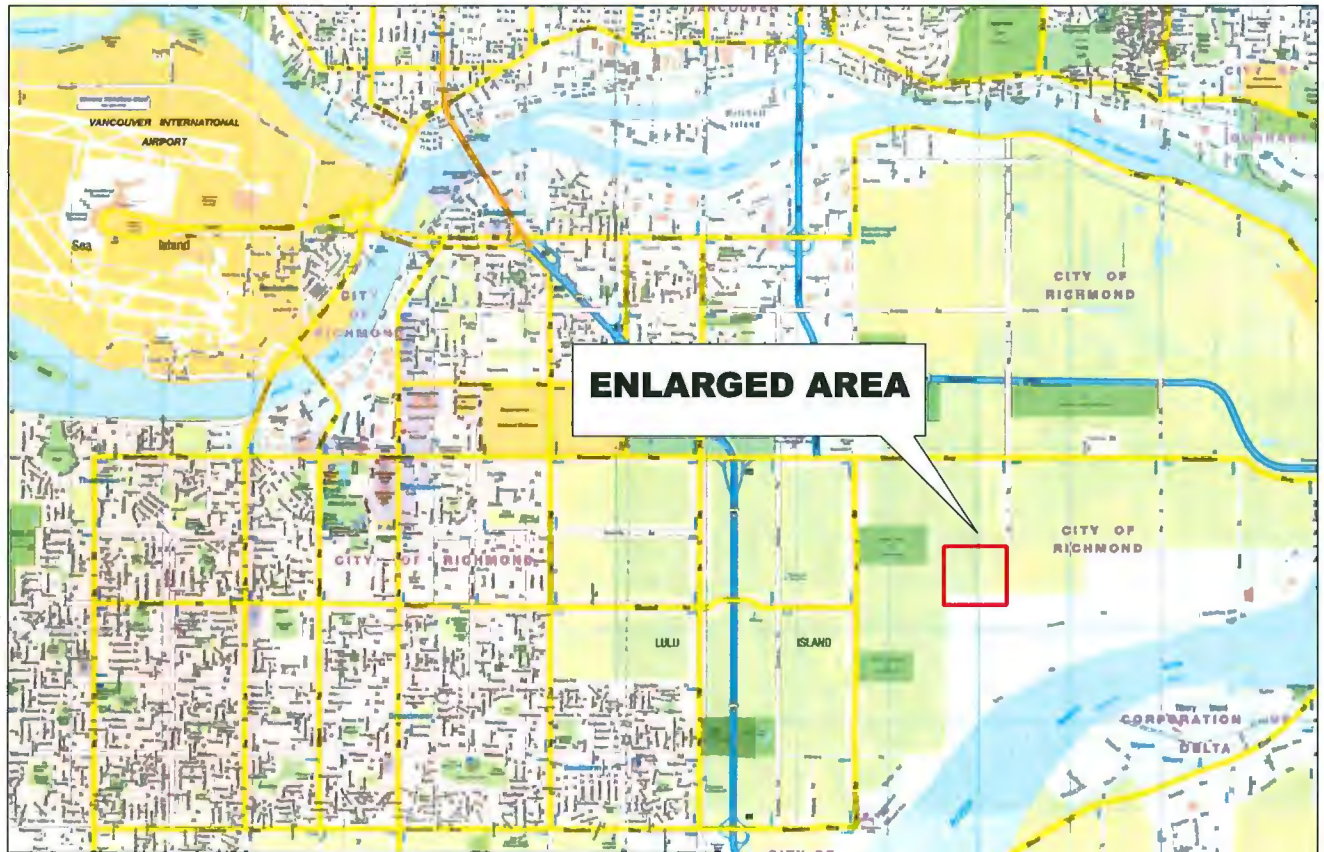
E.L. (Ned) Pottinger, M.Sc., P.Geo., P.Ag.
Senior Consultant and Principal



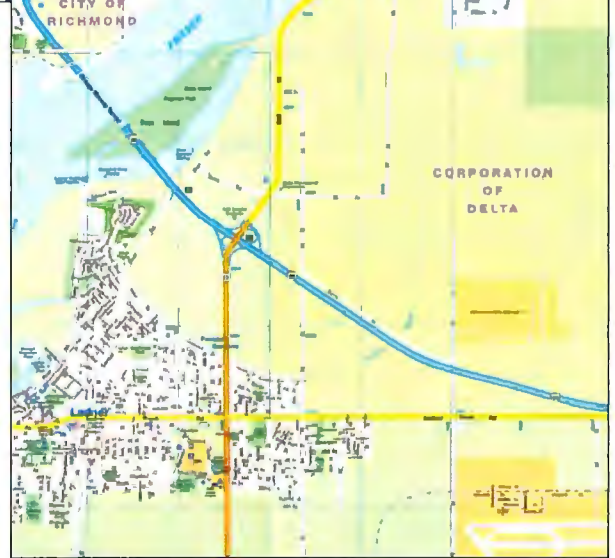
Stewart Brown, M.Sc., P.Ag., R.P.Bio.
Senior Environmental Scientist

ELP/CSB/slr
r-079-04-02-Dec14-Final.doc

Figure



0 1000m
Scale 1:20 000



SITE LOCATION		
7011 No. 7 Road, Richmond, BC		
Ecowaste Industries Ltd.		File No.: 0079-04.01 Date: JULY 2013 Dwg No.: F1.1 Drawn by: IRB
PGL Pottinger Gaherty ENVIRONMENTAL CONSULTANTS		FIGURE 1



1500 - 1185 West Georgia Street
Vancouver, BC V6E 4E6
604 682 3707
pggroup.com

May 28, 2019
PGL File: 0079-04.06

Via E-mail: tland@ecowaste.com

Ecowaste Industries Ltd.
100-3031 Viking Way
Richmond, BC
V6V 1W1

Attention: Tom Land

RE: REHABILITATION PLAN REVIEW, ECOWASTE LANDFILL, RICHMOND, BC

PGL Environmental Consultants (PGL) has prepared this letter in support of Ecowaste Industries Ltd.'s (Ecowaste) updated non-farm use application adding new uses and a 20-year extension. In September 2013, PGL completed a *Soil Survey & Rehabilitation Assessment* for Ecowaste's landfill in Richmond. This letter confirms that the original rehabilitation plan will accomplish the same result with the addition of three new materials recovery facilities and 20-year extension to the original approval.

In 1993, Ecowaste received approval under the *Soil Conservation Act* from the Agricultural Land Commission (ALC) to remove any remaining peat from the Agricultural Land Reserve Site, and then use the Site as part of its landfill operation. In 2015, the ALC approved the application to locate four recycling operations (known as Tervita, Quantum Murray, Yardworks-Arrow, and Urban Wood Recyclers) as an adjunct to the existing landfill on the Site. Additionally, a 20-year extension to continue operating the existing landfill was activated, and an increase to the final elevation at the Site was also approved.

The approval for fill/rehabilitation as approved by the ALC and City of Richmond required that the final improved agricultural capability rating, with irrigation, is to be Class 2A. To meet the improved classification, the resolution also required rehabilitation of the filled area, including:

- Upon completion of filling, capping the fill with a minimum of 1.0m of medium-textured glacial till material;
- Upon completion of spreading and compacting the capping, placing a minimum of 0.8m of medium-textured sands over the capping;
- The final upper 0.3m is to be loamy sand;
- Encouraging backhauling of good-quality agricultural soil for reclamation purposes;
- Applying suitable organic matter to the upper 0.3m of reclaimed soil; and
- Preparing a seedbed if no immediate agricultural use is planned.

With the addition of three more materials recovery facilities and an extra 20 years in the term, but with no changes in the waste stream or final elevations, PGL did not identify a need to make any changes to the 2013 rehabilitation plan to meet the conditions of ALC Resolution #173/93.

LIMITATIONS

This report is accurate at a high level for reasonably foreseeable conditions. The limitations of the work are not always obvious, and the best way to understand them is discussion with the authors in the context of your intended use. This work is a snapshot in time, so any use must consider that conclusions may change materially because of changes in site condition or regulatory context.

Only the addressee, our client, and their agents may rely on this report for the stated purpose. We warrant only that the work was done as described and is similar to the work that would be done by other qualified consultants in this area. Our contract includes limitations on liability related to professional errors and omissions.

CLOSING

We trust that this meets your needs. If you have any questions or require clarification, please contact Stewart Brown or Ned Pottinger at 604-895-7612 and 604-895-7600, respectively.

PGL ENVIRONMENTAL CONSULTANTS

Per:



Stewart Brown, M.Sc., P.Ag., R.P.Bio.
Lead Consultant



E.L. (Ned) Pottinger, M.Sc., P.Geo., P.Ag.
Senior Consultant & Chairman

CSB/ELP/nlo
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August 27, 2019

File: 4922

VIA EMAIL: tland@ecowaste.com

Ecowaste Industries Ltd.
100 – 3031 Viking Way
Richmond BC, V6V 1W1

Attention: Tom Land, President & CEO

RE: Design, Operations and Closure Plan Update, December 2018

Ecowaste Industries Ltd. (Ecowaste) submitted to the Ministry of Environment and Climate Change Strategy (ENV) the document titled “Ecowaste Landfill 4922 Design, Operations and Closure Plan (DOCP) Update” on January 9, 2019. The DOCP improves upon previously submitted plans and reflects requirements set forth in operational certificate (OC) 4922, last amended on September 6, 2017.

It is noted that the DOCP was certified by Tyler Huculak, AScT of GNH Consulting Ltd. The submitted DOCP supersedes all previous Design and Operations Plans and/or Closure Plans for the Ecowaste Landfill. Should there be any inconsistency between the DOCP and OC 4922, the OC must take precedence unless otherwise agreed in writing by the director.

If you have any questions, please contact Cam Webster at (604) 582-5371.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Webster".

Cam Webster, M.Sc., P.Ag.
A/Section Head, Solid Waste Section, Authorizations-South
Environmental Protection Division

In Support of Sustainability

We applaud Richmond Council for its *Strategic Plan 2018-2022*. It focuses on many of the same priorities as Ecowaste does for its landfill: our unique ecology, our contributions to the agricultural sector and our protection of the environment.

Ecowaste believes its request for the City's approval of an expanded Materials Recycling Facility ("MRF") and two additional MRFs on the landfill will make the landfill even more sustainable while directly supporting several of Richmond Council's key strategic focus areas, including:

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.

Priorities include:

1. Continued leadership in **addressing climate change** and promoting circular economic principles.
2. Policies and practices **support Richmond's sustainability goals**.
3. Increase emphasis on **local food systems, urban agriculture and organic farming**.
4. Increase opportunities that encourage daily access to nature and open spaces and that **allow the community to make more sustainable choices**.

A Supported Economic Sector

Facilitate diversified economic growth through innovative and sustainable policies, practices and partnerships.

Priorities include:

1. Demonstrate leadership through **strategic partnerships, collaborations and exploring innovative and emerging economic practices and technical advancements**.
2. Encourage a **strong, diversified economic base while preserving agricultural land** and maximizing the use of industrial land.
3. **Attract businesses** to locate in Richmond and **support employment and training opportunities** in Richmond as we grow.
4. **Inspire the farming and fishing cultures of tomorrow**.

Like the City Ecowaste is attempting to be flexible and responsive to new opportunities, issues and circumstances. And one of the most threatening – both globally and locally – is the climate emergency. One cause of that emergency is how much waste we generate as a society and how poorly that waste is treated at the end of its intended purpose. Ecowaste wants to do its small part to improve this situation by recovering and repurposing more of the demolition, construction and land clearing waste generated in Greater Vancouver every year and which has no other place to go. To do so Ecowaste needs to enlarge the MRF approved in 2015 ("MRF #4") and prepare for 2 new MRFs ("MRF #5" and "MRF #6"). We need Council's support, both for Ecowaste's Non-farm Use Application and for its Development Permit application

What is the waste emergency locally? In Metro Vancouver's November 2017 "**Biennial/5-Year Progress Report on the Integrated Solid Waste & Resource Management Plan**" the amount of construction and demolition waste disposed of at the Vancouver Landfill and by private DLC landfills (including Ecowaste's) grew from 306,065 tonnes in 2010 to 351,076 tonnes in 2016:

The total figure increased to 371,521 tonnes in 2017 [see MV's "**2017 Recycling and Solid Waste Management Summary**"] and to 420,000 tonnes in 2018. With the recent closure of two other private landfills in the region Ecowaste is having to accept a growing share. In 2010 we accepted 86,000 tonnes of DLC waste; this grew to 190,000 tonnes in 2014 and to 220,000 tonnes in 2018. When the Vancouver Landfill closes in 2028 this number will increase significantly. Partly as a reflection of the crisis, BC's Ministry of Environment increased the amount of waste that Ecowaste can accept annually to 320,000 tonnes.

Governments have not only mandated less DLC waste be generated, some like Richmond have required that more of it be recovered and repurposed. Technology has been developed to make that possible and Ecowaste wishes to employ that technology on its landfill in Richmond. It is offering to do so with no public dollars.

The three MRFs – one of which was approved in 2015 but has since been increased in size and scope – will extend the life of Ecowaste's landfill and recover/repurpose more waste. They will:

- be governed by Ecowaste's Operating Certificate issued by the Ministry of Environment and will be subject to the Closure Plan approved by the ministry;
- enable the region to recover/repurpose 45% to 50% more demolition, construction and land clearing waste from the region each year;
- recover or repurpose more types of waste;
- only increase building footprints from 2.7 ha to 6.0 ha of the 60 ha site;
- be removed at the end of the term and rehabilitated for agricultural use.

Approving the three MRFs will mean sufficient DLC waste can be recovered or repurposed to enable the landfill to continue until 2055. This will give the region more time to address the long-term waste crisis and plan for an eventual replacement of Ecowaste's landfill.

NB:

1. There will be no change to the content of the waste stream coming to the landfill – it will continue to be demolition, construction and land clearing waste.
2. There will be no change to the source of this waste, i.e. it will remain primarily the Lower Mainland.
3. There will be no change to the final site elevation of the landfill (18 m) which was approved in 2015.
4. As now, there will be no organics or "green waste" accepted

Ecowaste's plans are also supportive of Metro's **Integrated Solid Waste & Resource Management Plan**, more specifically such sustainability strategies and actions as:

- Strategy 2.4 Target demolition, land clearing and construction (DLC) sector for increased reuse and recycling
 - Action 2.4.2 Implement waste reduction strategies directed toward diverting DLC waste from disposal while supporting opportunities for beneficial use.
 - Action 2.4.3 Review existing DLC recycling and processing capacity, project future needs and develop a strategy to address any identified gaps.

- Strategy 2.7 Target wood for reuse, recycle and energy recovery
 - Action 2.7.3 Encourage highest and best use for wood following waste management hierarchy in the following priority: (a) reuse..., (b) recycle... (c) compost... (d) ...produce biofuels, (e) process wood as a fuel...

- Strategy 4.2 Ensure a disposal site is available for DLC waste
 - Action 4.2.1 Assess long-term disposal of DLC waste remaining after recycling in collaboration with the private sector
 - Action 4.2.2 Identify disposal sites for DLC waste remaining after recycling that will be available when existing disposal facilities reach their capacity

Beyond the general sustainability benefits to the City and region afforded by Ecowaste's landfill and proposed MRFs as noted above, our landfill is likely to become an emergency assembly point for debris resulting from a natural disaster. Depending on the severity of the flooding, seismic event, fire, hurricane or other disaster, Ecowaste's landfill could thus become full much sooner than currently planned. The risks of that happening may be small but the larger MRF #4 and the additional MRFs #5 and #6 would become even more crucial in the event of such a disaster.



Tom Land, President & CEO
Ecowaste Industries Ltd.