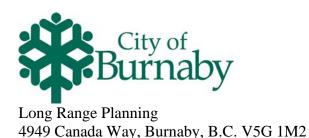
Select Documents re: Burnaby's GRO compost processing facility

Compiled by the Burnaby NOW

Table of Contents

- p. 2 Notification of Environmental Review Committee decision (March 8, 2022)
- p. 6 Notification of Environmental Review Committee decision (June 9, 2022)
- p. 9 Memo to Development and Urban Design division (June 15, 2022)
- p. 13 Public council report on GRO (Feb. 6, 2023)
- p. 25 Public council report on Fraser Foreshore lands acquisition (March 31, 2004)
- p. 33 Environmental Review Committee meeting minutes (Feb. 27, 2022)
- p. 56 Closed council report on GRO (Nov. 21, 2022)



Notification of Environmental Review Committee Decision

DATE: 2022 March 8

Telephone: (604) 294-7420

FAX: (604) 570-3680

FILE NO. ERC22-00002

PROPERTY: 4800 Riverbend Drive

PROPONENT: City of Burnaby

CITY CONTACT: Rushi Gadoya / Mark Sloat (Community Planning)

DECISION:

The ERC has reviewed the proposal to develop an organics processing facility and district energy facility on a portion of the lands at 4800 Riverbend Drive.

The ERC reviewed the proposal with regards to the streamside protection provisions in the Zoning Bylaw (S6.23) and city policies, strategies, guidelines and bylaws for community development and ecosystem protection and environmentally sensitive areas.

The initial rezoning report (REZ21-25, Closed Council, 2021 August 31) noted a requirement for preparation of an ecological assessment to advance the rezoning application. The ERC received and accepted a preliminary ecological assessment report prepared in accordance with City guidelines.¹ It is understood that further, more detailed assessments are required if the rezoning application is to proceed.

There is new information for consideration. The subject lands proposed for development were dedicated as parkland by bylaw in 2005 (Bylaw No. 11988). Supporting Council

¹ Preliminary Ecological Assessment Report - prepared by GHD Consultants., dated February 7, 2022

² The following reports are relevant: 1) Council meeting 2004/03/22. 2004 March 31. Subject: Acquisition of Environmentally Sensitive Lands Burnaby Fraser Foreshore Park. 2) Council meeting 2005/09/19. 2005 September 19. Subject: 2005 Park Dedications. 3) Bylaw No. 11988. Cited as Burnaby Park Dedication Bylaw 2005

reports document the significant ecological values of these lands and of the larger Burnaby Fraser Foreshore Park and the importance of acquiring these lands and dedicating them for permanent protection.

The ecological significance of the site is discussed in greater detail in a report commissioned by Parks, Recreation & Cultural Services in 2006 to understand suitability of the site for various park programming options.³ Information presented in the preliminary ecological assessment report submitted to the ERC largely confirm the findings of the first report.

Based on our review, the ERC's conclusions and recommendations are as follows:

Conclusions

- There is insufficient information to recommend this rezoning application be advanced.
- The most critical information required is the identification of suitable and feasible sites for off-site compensation and confirmation of presence of provincially and or federally listed species and ecosystems at risk. We understand that more detailed assessments to be undertaken at optimal times in 2022 would consider impacted habitat and offsite compensation options in more detail, as well as species and ecosystems at risk.
- The amount of off-site compensation is substantial and considered by the ERC to be a significant constraint to the project. The preliminary ecological assessment report found that **4.25 hectares** (possibly more based on designs reviewed at the ERC meeting and limitations on planting the face of the dike) of off-site riparian enhancement and **14 hectares** of off-site wetland enhancement is necessary to support the project. Future assessment, if this rezoning application is to advance, should aim to identify suitable sites and assess feasibility, include an accounting of costs for implementation, monitoring and maintenance, as well as ease of construction and site availability.
- There is sufficient information, without further ecological assessment, to recommend that this rezoning application not be advanced because of the environmental sensitivity of the lands.
- The City's Environmental Sensitive Areas Strategy (1992) identifies the lands as a site of 'regional importance' with regards to ecosystems and ecological significance.

³ Burnaby Fraser Foreshore Park, Environmental Report. Prepared for Parks Planning, Design and Development. Prepared by Strix Environmental Consulting. 2006

- Metro Vancouver Sensitive Ecosystem Inventory (SEI) identifies several
 ecologically significant ecosystems on the subject lands, including different
 wetland types and riparian areas. ⁴ Previous reports and the preliminary
 ecological assessment report confirm the presence of these environmentally
 sensitive and ecologically significant areas.
- A unique attribute of the wetlands on the site is the periodic daily inundation and retreat of water because of rising and falling tides within the Fraser River estuary, which creates a mosaic of unique habitats and ecosystems types within the subject lands. Some of these ecosystems types are potentially of special concern (blue listed) or endangered or threatened (red listed) in accordance with provincial and federal guidelines, emphasizing their importance for conservation.⁵ Even if not listed, the ecosystems are unique and contribute to the ecology of the site.
- The lands are part of the Fraser River floodplain and are one of the last remaining naturalized areas within the floodplain from Surrey to the mouth of the Fraser River. The City's ESA strategy, Environmental Sustainability Strategy and anticipated future policy work in climate adaptation and community resilience align with land development approaches that aim to avoid development in active floodplains and retain natural ecosystems for the benefits they provide.
- The environmental sensitivity of the lands was the primary reason the lands were dedicated as parkland by bylaw in 2005.
- The off-site compensation required is substantial. Also, while the compensation strategy is based on a 2:1 area-based enhancement ratio, we understand the preference will be on enhancing existing wetlands, rather than acquiring new lands for enhancement or restoration. This means that there will be permanent loss of wetland and other ecosystems, on an area basis, resulting from the footprint of the development, and possibly residual negative impacts on the remaining lands within Burnaby Fraser Foreshore Park from the change in land use. ⁶

Recommendations

- Re-evaluate site options with the new information at hand in order to select a site that is less environmentally sensitive. New information includes: a more comprehensive understanding of environmental sensitivities; park status; the

⁴ The draft Metro 2050 plan is an update of the regional growth strategy. The updated plan includes the SEI map and requires local governments to adopt regional context statements that will protect, restore and enhancement these lands. The plan also calls on local governments to locate new infrastructure away from natural hazard areas (active floodplain, for example).

⁵ The preliminary ecological assessment report prepared for the ERC notes that additional assessments planned for 2022 will confirm whether provincial and or federally listed species are present, and the extent, on the subject lands. ⁶ Between 2009 and 2014, 1,600 hectares of sensitive and modified ecosystems were lost in the region, including 120 hectares of wetland (Metro Vancouver Regional Planning, Policy Review Summary, Environment, here) The proposed project will result in the permanent loss of 7.5 hectares of wetland in the Fraser River floodplain.

ecological significance of the subject lands; and the requirements and feasibility of off-site compensation.

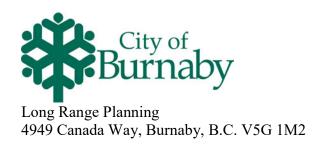
- Consider de-coupling the district energy system from the GROW facility. We understand that there are time sensitivities to advancing a district energy system at this location. The district energy system footprint is much smaller than the larger footprint required for the GROW facility and may be more supportable. Further, the rationale that the district energy system be located in close proximity to the waste to energy facility is much stronger.
- If further study of the subject lands is undertaken, expand the scope to include an analysis of natural assets and the value of ecosystems services provided by the study lands within Burnaby Fraser Foreshore Park. The results of the study can inform the business case for the project and the selection of a suitable site.

References:

4800 *Riverbend Drive ERC Type 3 Application Form.pdf* – application form prepared by Public Works on behalf of property owner (City of Burnaby).

Preliminary Ecological Assessment Report – prepared by GHD Consultants., dated February 7, 2022

Bylaw No. 11988 – Burnaby Park Dedication Bylaw 2005.



Notification of Environmental Review Committee Decision

DATE: 2022 June 9

Telephone: (604) 294-7420

FAX: (604) 570-3680

FILE NO. ERC22-00002 / REZ21-00025

PROPERTY: 4800 Riverbend Drive

PROPONENT: City of Burnaby

CITY CONTACT: Rushi Gadoya / Mark Sloat (Community Planning)

DECISION:

The ERC has reviewed the proposal to develop an organics processing facility and district energy facility on a portion of the lands at 4800 Riverbend Drive.

The ERC reviewed the proposal with regards to the streamside protection provisions in the Zoning Bylaw (S6.23) and city policies, strategies, guidelines and bylaws for community development and ecosystem protection, and environmentally sensitive areas.

The scope of this ERC review was narrowed to the technical components of the ecological assessment, application of the impact mitigation hierarchy presented in the report (minimize, mitigate, off-set and compensate), and preliminary off-setting and compensation required. Other information received from the ERC members regarding site selection and the ecological context of the site will be provided to Development and Urban Design (Planning and Building Department) in separate correspondence, for consideration as part of the rezoning application review process.

s. 13(1), s. 12(3)(b)

The ERC received and accepted a preliminary ecological assessment report

prepared in accordance with City guidelines.¹ It is understood that further, more detailed assessments are necessary.

The subject lands proposed for development were dedicated as parkland by bylaw in 2005 (Bylaw No. 11988).² Supporting Council reports document the ecological values of these lands and of the larger Burnaby Fraser Foreshore Park.

The ecological significance of the site is discussed in greater detail in a report commissioned by Parks, Recreation & Cultural Services in 2006 to understand suitability of the site for various park programming options.³

Based on our review, the ERC's conclusions and recommendations are as follows:

Conclusions

- The methodologies used and the findings of the preliminary ecological assessment are accepted as technically sound and aligned with standards and practices for mitigating, offsetting and compensating impacts to sensitive ecosystems.
- The offset and compensation strategy summarized in Table 1.2 is accepted as suitable for a submission to meet provincial and federal regulator requirements of the Water Sustainability Act, Fisheries Act, and other applicable legislation.
- We understand that additional information is needed to establish ecological baseline conditions and to refine the offset and compensation strategy.
- The most critical information required is the identification of suitable and feasible sites for off-site compensation and confirmation of presence of provincially and or federally listed species and ecosystems at risk. We understand that more detailed assessments to be undertaken at optimal times in 2022 would consider impacted habitat and offsite compensation options in more detail, as well as species and ecosystems at risk.
- The amount of off-site compensation is a potential constraint to the project. The preliminary ecological assessment report found that **4.25 hectares** (possibly more based on designs reviewed at the ERC meeting and limitations on planting the face of the dike) of off-site riparian enhancement and **14 hectares** of off-site wetland enhancement is necessary to support the project. Future assessment should aim to identify suitable sites and assess feasibility, include an accounting of costs for implementation, monitoring and maintenance, as well as ease of construction and site availability.

¹ **Preliminary Ecological Assessment Report** – prepared by GHD Consultants., dated February 7, 2022

² The following reports are relevant: 1) Council meeting 2004/03/22. 2004 March 31. Subject: Acquisition of Environmentally Sensitive Lands Burnaby Fraser Foreshore Park. 2) Council meeting 2005/09/19. 2005 September 19. Subject: 2005 Park Dedications. 3) Bylaw No. 11988. Cited as Burnaby Park Dedication Bylaw 2005

³ Burnaby Fraser Foreshore Park, Environmental Report. Prepared for Parks Planning, Design and Development. Prepared by Strix Environmental Consulting. 2006

Recommendations

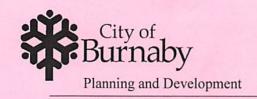
- Proceed with additional ecological studies to establish complete ecological baseline conditions to support site design and feasibility studies, provincial and federal regulatory permitting requirements, and the rezoning application.
- Develop the Offset and Compensation Strategy in more detail to identify options, specific sites, feasibility, costing for implementation, and a monitoring and maintenance period, in accordance with City guidelines.
- Plan for inclusion of environmentally sustainable building materials and designs, as outlined in Section 9.4, including but not limited to rain gardens for rainwater management features, green roofs to reclaim natural habitat, wildlife and bird friendly designs.
- Undertake climate change and natural hazard risk assessments for the project, specifically in relation to development on a floodplain, sea level rise, potential flooding, and subsidence.
- Assess the natural assets and ecosystem services provided by the areas within the Local Study Area and Site Study Area.
- These recommendations should be completed to support a full costing and feasibility analysis of the project in support of the rezoning application.

References:

4800 Riverbend Drive ERC Type 3 Application Form.pdf – application form prepared by Public Works on behalf of property owner (City of Burnaby).

Preliminary Ecological Assessment Report – prepared by GHD Consultants., dated February 7, 2022

Bylaw No. 11988 – Burnaby Park Dedication Bylaw 2005.



TO:

INTER-OFFICE MEMORANDUM

DEVELOPMENT AND URBAN DESIGN

DATE: 2022 June 15

Attention: Johannes Schumann

FROM: SENIOR ENVIRONMENTAL PLANNER

FILE: 3100001

Reference: REZ #21-25 ERC 22-01

SUBJECT: 4800 RIVERBEND DRIVE, REZ #21-25

PROPOSED GROW / DE FACILITY

This memorandum presents information relevant to the development application review process for the proposed GROW / DE facility at 4800 Riverbend Drive (REZ21-00025). The information arose from review of the application (ERC22-01) to the City's Environmental Review Committee (ERC) for the proposed project. The scope of the ERC's review and Decision Statement was on the technical aspects of the ecological assessment and strategies for site mitigation, habitat offsetting and compensation. A Decision Statement was issued (see *attached*). The information provided is additional information that supplements previous comments from staff compiled through the development review process.

LOCAL CONTEXT

- The City's Environmentally Sensitive Areas Strategy (1992) identifies the lands as an environmentally sensitive area (ESA) deemed to be of 'regional importance' with regards to ecosystems and ecological significance.
- From a previous ecological assessment report prepared for the subject lands, it was found that the lands comprise various wetland ecosystem typologies. A unique attribute of the wetlands on the site is the periodic daily inundation and retreat of water because of rising and falling tides within the Fraser River estuary, which creates a mosaic of unique habitats and ecosystems types within the subject lands. Some of these ecosystems types are potentially of special concern (blue listed) or endangered or threatened (red listed) in accordance with provincial and federal guidelines, emphasizing their importance for conservation. Even if not listed, the ecosystems are unique and contribute to the ecology of the site. As part of the scope of work for the GROW / DE facility, more detailed site assessments are planned to determine the specific wetland ecosystem types.
- The lands are part of the Fraser River floodplain and are one of the last remaining naturalized floodplain areas from Surrey to the mouth of the Fraser River. The City's ESA strategy, Environmental Sustainability Strategy and anticipated future policy work in climate adaptation and community resilience align with land development approaches that aim to avoid development in active floodplains and retain natural ecosystems for the benefits they provide.

- The previous ecological assessment report recognized the regional ecological significance of these lands and recommended conservation and a precautionary approach to future park
- programming development.
 The environmental sensitivity of the lands was the primary reason the lands were dedicated

as parkland by bylaw in 2005.

REGIONAL CONTEXT

- Metro Vancouver Sensitive Ecosystem Inventory (SEI) identifies several ecologically significant wetland ecosystems on the subject lands, including different wetland types and riparian areas. Previous reports and the preliminary ecological assessment report confirm the presence of these environmentally sensitive and ecologically significant areas.
- Metro 2050 update of the Regional Growth Strategy. Goal 3: Protect the Environment, Address Climate Change, and Respond to Natural Hazards. Development of the subject lands does not align with some goals and strategies of the updated RGS.
 - O With regards to Strategy 3.1 (Protect and enhance Conservation and Recreation lands), the RGS identifies part of Fraser Foreshore Park, adjacent to the proposed GROW site, as Conservation and Recreation Lands (Map 2). The RGS requires municipalities to adopt regional context statements that include policies to protect the integrity of lands with a Con Rec designation from activities in adjacent areas. Developing mitigation strategies for potential impact to adjacent ecosystems is part of the scope of work for the GROW / DE project. However, even with mitigation strategies, it may prove challenging to completely avoid impact to the adjacent wetland ecosystems of Fraser Foreshore Park.
 - o With regards to Strategy 3.2 (Protect, enhance, restore, and connect ecosystems), the RGS requires municipalities to recognize the SEI mapping (Map 11 in the RGS) or more detailed local ecological and cultural datasets and include policies that generally aim to protect and enhance these areas and support the consideration of natural assets and ecosystem services in land-use decision making and land management practices. The proposed GROW site is contained within a wetland area identified on the SEI mapping.
 - o With regards to Strategy 3.3 (Advance land use, infrastructure, and human settlement patterns that reduce energy consumption and greenhouse gas emissions, create carbon storage opportunities, and improve air quality), while the GROW / DE facility would contribute to reducing emissions by sustainable processing of organic waste and providing an energy source for a DE system, this RGS strategy focuses more on land use and growth management to reduce community emissions, including reducing development pressure in areas that naturally store and sequester carbon (for example, conservation lands, wetlands).

- With regards to Strategy 3.4 (Advance land use, infrastructure, and human settlement patterns that improve resilience to climate change impacts and natural hazards), it is acknowledged that the GROW / DE facility would contribute to reducing emissions thereby mitigating climate change, but this RGS strategy encourages growth away from natural hazard areas like floodplains and areas prone to subsidence and that this should be reflected in a municipality's regional context statement. Noted is that there is provision in the RGS for risk mitigation where development in hazardous areas is unavoidable.
- A Metro 2050 RGS background policy paper reported that between 2009 and 2014, 120 hectares of wetlands in the region were lost. The proposed GROW / DE facility will result in the permanent loss of 8 hectares of wetland ecosystem (at this time, the off-setting and compensation strategy is proposed to focus on enhancing existing wetlands, rather than creating new wetland). Using this 5 year trend, the proposed GROW / DE facility may contribute 6.5% of typical wetland ecosystem loss over a 5 year period within the region. This does not consider the uniqueness of this tidally influenced wetland and possible residual negative impacts on the remaining wetland ecosystems within Burnaby Fraser Foreshore Park.

COMMENTS

- The proposed GROW / DE facility is a commendable approach to reducing community and corporate greenhouse gas emissions by processing organic waste to produce biogas for use by municipal operations and for re-purposing waste heat from the incinerator for a district energy system. It is understood the facility may create a revenue stream for processing organic waste from across the region. Such a facility will help reduce community and corporate emissions, which aligns with the City's Corporate Energy Strategy, the Climate Action Framework, certain strategies in the ESS, and the CEEP.
- This project involves trade-offs. The location selected has significant ecological values that may result in permanent loss of a unique ecosystem features and functions that are regionally significant, even with application of the standard mitigation hierarchy of 1) minimize 2) mitigate 3) off-set and 4) compensate. Because of this, there is not full alignment with the ecosystems component of the Climate Action Framework, or the ecosystem protection elements of the ESS, as well as the ESA Strategy. The location is on the floodplain of the Fraser River, which does not align with best practices for climate adaptation. Our review also finds that there is not full alignment with the RGS, while acknowledging that such a facility will help reduce greenhouse gas emissions.
- It is understood that further ecological assessment will be undertaken in 2022 to establish a baseline and analyze off-setting and compensation options for wetland and fish habitat losses. The ERC decision recommends additional assessment of climate change and natural hazard risk, as well as natural assets and ecosystem services provided by the area impacted by the proposed development footprint.

DEVELOPMENT AND URBAN DESIGN Subject: 4800 Riverbend Drive, REZ #21-25 Proposed GROW / DE Facility

- The goal should be a full costing and feasibility analysis, including a consideration of tradeoffs, for consideration in the review of the development application and decision by Council.
 Creating new wetlands, rather than enhancing existing wetlands, should be considered, although this may require land acquisition.
- The footprint of the GROW facility is significantly larger than the DE facility alone. An assessment of cost and feasibility could consider retaining only the DE on this site if other feasibility factors emerge (cost of construction and dike realignment, lack of suitable offsetting and compensation habitats, for example). The smaller size of the DE facility may be more aligned with the RGS policies that may allow for some suitably sized municipal infrastructure in relation to environmentally sensitive areas, natural hazard areas.
- If this project were to proceed, it would require removal of bylaw dedicated parkland. Consideration could be given to off-setting this loss with dedicating other cityowned lands as park land for conservation. Note that this would be a separate accounting exercise from the wetland and riparian habitat off-setting and compensation requirements.

Mark Sloat, Senior Environmental Planner PLANNING AND DEVELOPMENT

Mus Mus

MS:sa

Attachment

Copied to: General Manager Planning and Development

Deputy General Manager Planning and Development

Director Community Planning Manager Climate Action and Energy

R:\Long Range Clerical\DOCS\MS\Memos\2022\Proposed GROW DE Facility 4800 Riverbend (2022.06.15).Docx





TO: CHIEF ADMINISTRATIVE OFFICER DATE: 2023 January 26

FROM: GENERAL MANAGER FILE: 36600-03

LANDS AND FACILITIES

Reference: Green Recycling Organic Waste (GROW)

SUBJECT: GREEN RECYCLING ORGANIC WASTE (GROW) PROJECT UPDATE -

PORTION OF 4800 RIVERBEND DRIVE

PURPOSE: To provide Council an update and information on planned next steps for the

Green Recycling Organic Waste (GROW) project.

RECOMMENDATION:

1. THAT Council authorize staff to continue with the next steps for the Green Recycling Organic Waste (GROW) project proposed to be located on a portion of 4800 Riverbend Drive, as described in this report.

REPORT

1.0 INTRODUCTION

In 2015, Metro Vancouver implemented a green waste disposal ban for residents and businesses, prohibiting its disposal in the waste stream. Since 2020, staff have been evaluating the feasibility of a City-owned green waste processing facility that could recycle green waste (i.e. food scraps and yard waste) collected from citizens and businesses, and replace the current requirement for processing in a private facility outside of Burnaby. The proposed Green Recycling Organic Waste or "GROW" facility in Burnaby could process up to 150,000 tonnes of green waste annually from Burnaby and beyond, providing additional organic waste processing capacity within the region while creating high-quality compost and renewable natural gas (RNG). The facility would strengthen the City's commitment to long-term sustainability, reduce greenhouse gas (GHG) emissions, support the Metro Vancouver region and partners, and contribute to achieving the region's waste diversion goals.

The purpose of this report is to provide Council with a project update and information on planned next steps.

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

2.0 POLICY CONTEXT

The proposed GROW facility aligns with policy objectives contained in Burnaby's Corporate Strategic Plan (2022), Climate Action Framework (2020), Environmental Sustainability Strategy (2016), Community Energy and Emissions Plan (2016), and Economic Development Strategy (2007).

3.0 BACKGROUND

3.1 Directions from Council

At its 2020 March 30 Open meeting, Council approved the completion of a preliminary feasibility study for a City-owned green waste processing facility. The purpose of the feasibility study was to provide recommendations on processing technology options, analysis of end markets for compost materials, ownership and operating models, energy recovery options, and overall economic feasibility.

The City has since received the preliminary study, which found that a green waste processing facility is feasible and that the financial viability of the facility improved substantially with an increase in operating capacity and the addition of biogas production, but that siting opportunities within the Burnaby area are limited due to large site size requirements and zoning considerations. The preliminary study recommended a facility with up to 150,000 tonnes per year operating capacity including anaerobic digestion for biogas production. A portion of the City-owned property at 4800 Riverbend Drive has been identified as a suitable location for a facility of this size.

At its 2021 August 30 Open meeting, Council received an Initial Report from the Planning and Development Department proposing a zoning change to support development of a GROW facility on a portion of 4800 Riverbend Drive (Rezoning Reference #21-25), which forms part of Burnaby Fraser Foreshore Park. At that time, the portion of the property proposed to be used for the GROW facility was not identified as dedicated park land. It has since been determined that the whole of 4800 Riverbend Drive is dedicated park land, necessitating removal of park dedication from the portion of the property proposed to be used for the GROW facility in order to support the project. The Initial Report also notes that the site is contemplated to be used to support infrastructure for a proposed District Energy Utility.

Further direction from Council is required to advance the GROW project and its objectives.

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

2023 January 26...... Page 3

3.2 Project Objectives

The objectives of the GROW facility are to:

- demonstrate leadership in climate action and environmental sustainability, through implementation of Council-adopted policy;
- process up to 150,000 tonnes of organic waste annually, including approximately 30,000 tonnes from Burnaby, with the remaining tonnage to be sourced from neighbouring communities and businesses;
- obtain price certainty for Burnaby's green waste, in the form of a fixed tip fee which is sufficiently less than the market rate, adjusted annually for inflation;
- provide anaerobic digestion which produces both biogas and a digestate which is then composted, with the biogas upgraded to produce renewable natural gas; and
- place the facility in service by December 2026.

3.3 Project Rationale and Benefits

The GROW project has the potential to be a world-class green waste processing facility that offers numerous benefits in the areas of climate action, community building, and fiscal responsibility and resilience. These benefits are detailed below:

Climate Action:

- GROW would reduce GHG emissions associated with green waste collection and transportation. Burnaby's green waste would be managed locally, where it is generated.
- The facility would generate biogas to create renewable natural gas from waste, which displaces fossil fuel natural gas.
- GROW would contribute to the circular economy through the use of renewable natural gas to fuel City vehicles and to power the facility's own processes.
- There is the potential to recover heat from the composting and anaerobic digestion process for use at a proposed District Energy Utility facility that is contemplated to be co-located at the site.
- The project would strengthen the City's commitment to long-term sustainability, support the Metro Vancouver region and partners, and contribute to achieving city, regional, provincial, and federal goals for green waste diversion, recycling, and renewable energy.

Community Building:

 GROW would produce high-quality compost that can be used for community gardens and urban farming, supporting and enhancing local food security.

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

2023 January 26......Page 4

 The project would provide educational opportunities through an on-site learning center, where schools and other community groups can witness their green waste being converted into renewable energy and compost.

Fiscal Responsibility and Resilience:

 The City's green waste is currently processed at a private composting facility in Delta, one of very few green waste processing facilities within the Metro Vancouver region. This limited processing capacity has led to high tipping fees and repeated price increases. GROW would ensure cost-certainty for green waste management and provide the opportunity for preferential pricing on tipping fees for the City.

3.4 Site Information and Selection

As shown in **Figure 1** on page 5, the recommended project site is on a portion of the Cityowned 4800 Riverbend Drive. This 40.3 hectare (99.57 acre) site is dedicated park land and forms part of the 70.8-hectare (175 acre) Burnaby Fraser Foreshore Park. The GROW facility requires a footprint of approximately 8.5 hectares (21 acres) or 12% of the overall park. The facility is proposed to be located in an area that is not currently used for recreational purposes. It is noted that the site has several artificially channelized waterways and was previously disturbed when it was cleared, ditched, and farmed between approximately 1930 and 1965.

The site's current use is regulated by or reflected in the following bylaws and land use plans:

- Burnaby Zoning Bylaw (P3 Park and Public Use District zoning);
- Big Bend Development Plan (Park and Public Use designation);
- Official Community Plan (inclusion in the Green Zone Lands map);
- Park Dedication Bylaws 9976 and 11988; and
- Metro Vancouver Regional Growth Strategy, entitled "Metro 2040: Shaping our Future" (southwest portion of site noted as a conservation and recreation area, with the balance noted as a general urban area).

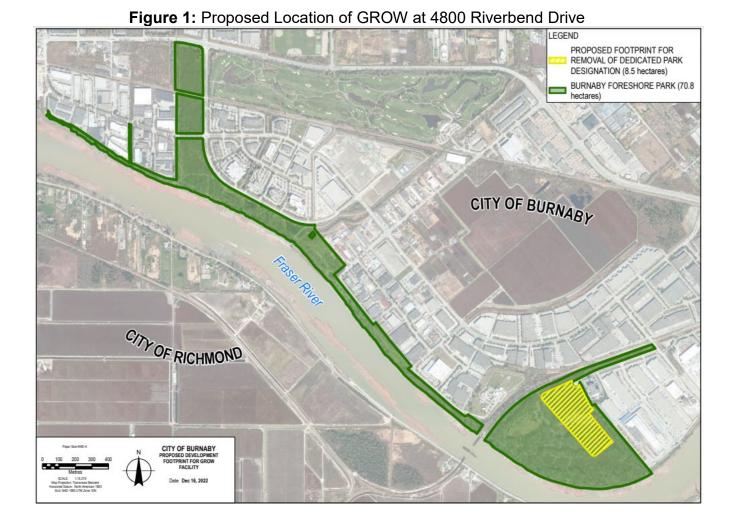
Siting the GROW facility on a portion of park land is proposed following an extensive search of City-owned sites. Two key criteria for consideration included large site size to develop a functional facility and distance from residential areas to minimize operational impacts, such as noise, odour, and traffic. The recommended site at 4800 Riverbend Drive is the only site option to meet the required criteria, with the added benefit of being adjacent to the existing Metro Vancouver Waste-to-Energy Facility (WTEF). The proximity of the GROW facility to the WTEF and potential co-location of the GROW facility with the proposed District Energy Utility facility offers the following synergies:

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

2023 January 26......Page 5

- traffic to the GROW facility would use an established traffic corridor already used to access the WTEF;
- green waste contaminants such as metal, plastics, and other non-organic wastes from GROW can be disposed at the WTEF with minimal transport cost; and
- the composting process would generate some heat, which could potentially be recovered and tied into the District Energy Utility facility, depending on the technology.



From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

4.0 PROJECT UPDATE

The project team has confirmed that GROW is technically feasible and financially viable. Staff have determined the necessary steps to allow the use of the site for development of GROW, which include undertaking an alternative approval process to enable Council adoption of a bylaw to remove the park dedication for that portion of 4800 Riverbend Drive proposed to be used for the GROW facility site, Council adoption of certain Zoning Bylaw, OCP and development plan amendments, and a robust environmental enhancement and compensation program. Further next steps will involve appropriate communications and public engagement and market sounding to identify the most appropriate commercial framework for the project. These items are discussed in the following sections.

4.1 Technical Feasibility

Technical evaluation of composting and anaerobic digestion methods concluded that a tunnel composting system ¹, accompanied by a plug-flow anaerobic digestion system² is a suitable option to meet operational demands while maintaining economic feasibility. This combination allows for treatment of green waste and optimal biogas generation based on the assumed feedstock composition. The project technology decision will be confirmed at later stages as the project proceeds.

4.2 Financial Viability

The financial feasibility of this project was assessed at the preliminary feasibility stage based on estimates of capital expenditures, operating costs, revenue sources, and financial parameters. Estimates were based on industry knowledge of projects of similar size and scope. A financial model was developed to estimate the per-tonne cost of a facility under various planning scenarios including sensitivity analysis. Compared with the City's current green waste management expenditures, the preliminary feasibility study identified that developing a 150,000 tonnes per year facility that can sell excess capacity and enter into a renewable natural gas (RNG) off-take agreement with Fortis BC would be most economically feasible.

It is estimated that the GROW facility can generate approximately \$165 per tonne of net revenue (based on a 20-year planning horizon). The project net revenue estimate is based on tipping fees on the excess capacity (approximately 100,000 tonnes per year), heat recovery, and the sale of compost and RNG. The estimated capital cost of the project

¹ Composting is the process of breaking down organic waste by microorganisms in the presence of oxygen to produce a stable product that can be used as soil amendment. Composting in concrete tunnels allows the process to be fully enclosed for temperature, moisture, and airflow control.

² Anaerobic digestion is the process of breaking down organic materials by bacteria in the absence of oxygen to produce biogas. Plug-flow digestor vessels are a type of continuous-feed digestor where the high-solids-slurry moves through the reactor like a plug and biogas is recovered. The proposed technology is based on the feedstock being mixed green waste, which typically has a higher solids content compared to food waste only streams.

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

2023 January 26......Page 7

is \$182 million including a 25% contingency. This financial model shows a potential positive revenue of \$18.21 per tonne from a GROW facility with 150,000 tonnes per year capacity.

The table below summarizes the results of the business case in the preliminary feasibility study.

 Table 1: Summary of Preliminary Feasibility Financial Model

	Current	GROW
Processing Capacity (tonnes/year)	n/a	150,000
Construction Cost (incl. 25% contingency)	n/a	\$182,000,000
Operational Costs (per tonne)	n/a	\$85.31
Revenue (per tonne)	n/a	\$165.81
Total Cost (per tonne)	\$122.45	(\$18.21)

While the City initially contemplated a 50,000-tonne facility, the preliminary feasibility study determined a 150,000 tonnes per year facility would have more commercial appeal and provide revenue generating potential for the City.

The project financial model will be updated during detailed feasibility to reflect:

- additional input from industry leaders and technology providers;
- current global financial conditions:
- land value; and
- the cost of required on and off-site habitat compensation.

It should be noted that the above section reflects a preliminary financial analysis, and the model outputs will change as the project evolves and the model structure and assumptions are firmed up reflecting a market-ready opportunity.

4.3 Alternative Approval Process and Bylaw to Remove Park Dedication

Developing the GROW facility on a portion of 4800 Riverbend Drive will require removing the park dedication over that portion of the property required for the facility, which can only be done by a bylaw adopted with the approval of the electors. Under the *Community Charter*, there are two ways the approval of the electors can be obtained: (1) by way of a vote using the assent voting process (i.e. referendum); or (2) through the alternative

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update - Portion of 4800 Riverbend Drive

2023 January 26......Page 8

approval process (i.e. former counter petition process). Staff intend to pursue the Alternative Approval Process (AAP) to remove the park dedication for that portion of 4800 Riverbend Drive required to develop the GROW facility.

The AAP can be used to help local governments understand whether the community views a particular matter as "significant", and if necessary, whether the matter then warrants being taken to an assent vote for broader citizen engagement.

Undertaking an AAP involves:

- determining the number of electors the process applies to (whether to the whole or only part of the City);
- establishing the elector response form, which involves formulating the question to be posed to the electors and determining whether to allow for single or multiple elector responses on each form;
- establishing a deadline for electors to respond;
- publishing notice of the AAP;
- · collecting elector responses up until the established deadline; and
- determining and certifying the results after the deadline.

If following the above process, less than 10% of eligible electors object, then approval of the electors has been obtained and Council may proceed with adopting the park dedication removal bylaw. If more than 10% of eligible electors object, then the assent of the electors must be obtained through the assent voting process (i.e. referendum) should Council wish to continue to pursue adoption of the park dedication removal bylaw.

More details on the AAP process and timeline and the park dedication removal bylaw will be presented for Council's consideration at a later Council meeting.

It should be noted that the City has a long history of securing and protecting park and open space. More than 25% of Burnaby is now park and open space – about 2,465 hectares, or six times the size of Stanley Park in Vancouver. As aforementioned, siting the GROW facility on an 8.5-hectare (21 acre) portion of parkland has been proposed following an extensive search of City-owned sites, and in recognition that, on balance, the project offers numerous environmental benefits. It should be further noted the proposed reduction in park land is off-set by the recent dedication of four park areas totalling 82.97 hectares (204.05 acres), which received elector approval during the October 2022 local election.

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

2023 January 26......Page 9

4.4 Environmental Approvals and Compensation

The project team has sought to minimize the environmental impact of the conceptual design for GROW by pushing it as far back from the Fraser River as possible, stacking some elements on the site to reduce the development footprint, and avoiding portions of the site with higher environmental value. Nevertheless, it is acknowledged that the development of GROW will affect 8 hectares of wetland habitat (4.4 hectares swamp, 2.5 hectares forest, and 1.1 hectares marsh) and will require both federal and provincial permits prior to construction. A site-specific Ecological Assessment identified the local, regional, provincial, and federal regulating agencies that require consultation on permitting, including: the City of Burnaby, Metro Vancouver, BC Ministry of Environment and Climate Change Strategy, BC Ministry of Forests, BC Ministry of Water, Land and Resource Stewardship, the Department of Fisheries and Oceans (DFO), Environment Canada, Canadian Wildlife Service, and First Nation governments. The project team commenced the application process for certain long lead permits in January 2023.

A robust environmental compensation program, which has been reviewed by the City's Environmental Review Committee (ERC) and other City staff, is proposed to mitigate environmental impacts and involves a mix of on-site and off-site compensation. The on-site work includes creating high-value habitat that is in short supply in the Fraser River basin, replacing low-quality fish habitat in drainage ditches with a new salmon-supporting tidal marsh and salmon-supporting tidal creeks. On-site work also includes forest enhancement. The off-site habitat compensation includes enhancement and preservation efforts at three (3) City-owned sites to provide a net gain of floodplain forest, marsh and swamp habitats. The wetland and fish habitat impacts, compensation, and net benefits are summarized in Table 2. Notably, the overall compensation strategy offers a 3.2 to 1 habitat gain to loss ratio and would be the largest program package of environmental enhancement the City has ever undertaken. The net habitat gain to loss ratio is further increased to 3.7:1 when taking into account natural swamp area the City intends to preserve.

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

Table 2: Wetland Impacts and Offsetting

Wetland	Loss of	Proposed	Proposed Wetland Mitigation Off-Site (ha)			
Class	Wetland Extent in Project Footprint (ha)	Wetland Restoration/ Enhancement On-Site (ha)	Burnaby Fraser Foreshore Park, Glenlyon Parkway Restoration/ Enhancement	Riverside and Marshland Bog Forest Park Restoration/ Enhancement	Lougheed and Phillips Preservation	Ratio (Gain: Loss)
Floodplain Forest (Fm50, Fl50)	2.5	9.1	5.4	-	-	5.8:1 enhancement
Marsh (Wm)	1.1	1	1.2	-	-	2:1 restoration
Swamp (Ws50, Ws51)	4.4	-	0.4	8.5	4.3	2:1 restoration only 3:1 with preservation
Total	-8.0	+10.1	+7.0	+8.5	+4.3	3.2:1 overall with restoration 3.7:1 overall including preservation

5.0 NEXT STEPS

Having confirmed technical and financial feasibility and the process to make a portion of 4800 Riverbend Drive available for a GROW facility, staff are proposing to undertake the following next steps to advance the project:

<u>Communications and Public Engagement (February 2023 to ongoing)</u>. Similar to other major City projects, a communications and public engagement program is proposed to be launched to share information about the GROW project, its benefits, and the proposed AAP. Project-specific materials will be created for the GROW project, including a dedicated webpage and email address, project overview and fact sheets, FAQs, technical backgrounders, a media package, social media products, and consultation and engagement materials.

<u>Commence Environmental Permitting Submissions (January 2023)</u>. As numerous environmental permit applications need to be made to DFO, BC Ministry of Forests, BC Ministry of Water, Land and Resource Stewardship and other regulatory bodies with

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

ample lead time, the project team intends to commence the application processes in January 2023.

Alternative Approval Process (AAP) and Park Dedication Removal Bylaw (February 2023 to Q2 2023). Staff propose to advance a Council report in February 2023 which will (1) seek Council authorization to prepare the park dedication removal bylaw to remove the park dedication for that portion of 4800 Riverbend Drive required for the proposed GROW facility, and include the bylaw on the same Council agenda for first, second and third reading, and (2) detail and seek specific approval to pursue the AAP to obtain elector approval for Council to adopt the park dedication removal bylaw. A further Council report in Q2 2023 will summarize the results and outcome of the AAP.

<u>Zoning Bylaw, OCP and Development Plan Amendments (Q2 to Q3 2023)</u>. If the AAP is successful, staff intend to pursue the following bylaw and land use plan amendments to permit the GROW facility on a portion of the subject property:

- Zoning Bylaw Amendment: The site is currently zoned P3 Park and Public Use, which does not permit the GROW facility, as it is considered an industrial use. As such, a Zoning Bylaw amendment is necessary. Staff will bring forward a future Zoning Bylaw amendment report for Council consideration, with final adoption of the bylaw amendment conditional on the approval of the park dedication removal under the AAP and final adoption of the park dedication removal bylaw.
- Big Bend Development Plan Amendment: As the Big Bend Development Plan currently designates the site for Park and Public Use, staff intend to pursue a plan amendment to designate that portion of the site supporting the GROW facility for industrial use. This plan amendment would be undertaken concurrently with the above noted Zoning Bylaw amendment and would also be conditional on the approval of the park dedication removal under the AAP and final adoption of the park dedication removal bylaw.
- Official Community Plan Amendment: The site is currently included in the Green Zone Lands map in the Official Community Plan. An OCP amendment removing this designation (and other similar references throughout the OCP) and adding the proposed industrial use is necessary. Staff will advance the necessary OCP amendment report for Council's consideration, with final adoption of the bylaw amendment being conditional on the approval of the park dedication removal under the AAP and final adoption of the park dedication removal bylaw.
- The site is designated "General Urban" under Metro Vancouver's regional growth strategy, *Metro 2040*. Industrial uses are permitted in the General Urban designation, and therefore an amendment to *Metro 2040* is not required.

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update – Portion of 4800 Riverbend Drive

Market Sounding (Q1 2023), RFQ (Q2 to Q3 2023), RFP (Q4 2023 to Q1 2024). Staff intend to validate current commercial assumptions in Q1 2023 by engaging potential project partners in advance of issuing a Request for Qualifications in a "market sounding" exercise. Discussion and feedback from this exercise will inform the commercial terms to be included in the procurement documents, ensuring they are understood and broadly acceptable to the market, thereby increasing the project's appeal to potential bidders. Upon confirmation of funding and commitment to the project, staff would issue a Request for Qualification followed by a Request for Proposals, with the intent of entering into contractual agreements by the end of Q1 2024.

<u>Construction (2024 to 2026)</u>. Site preparation activities are proposed to be targeted to commence in Spring 2024, with construction completion, commissioning, and the start of facility operations by the end of 2026.

6.0 SUMMARY AND RECOMMENDATION

The GROW project offers numerous climate action, environmental, community building, and financial benefits to the City. The proposed project site was selected following an extensive review of City-owned properties, carefully weighing overall project benefits against other considerations. While the project requires removal of park dedication and development on approximately 8 hectares of wetland habitat, the GROW project intends to offset the loss through like-for-like habitat restoration, and enhancement and preservation of other wetland sites in the City, yielding over three times more habitat area overall. Furthermore, the City has recently dedicated over ten times more area as park than this project proposes to remove. On balance, the project provides an excellent opportunity for the City to demonstrate leadership in achieving the sustainability and waste-diversion goals of the region.

It is recommended that Council authorize staff to continue with the next steps for the GROW project proposed to be located on a portion of 4800 Riverbend Drive, as described in this report.

Jámes Lota, P.Eng., MBA, MPA

GENERAL MANAGER LANDS AND FACILITIES

JL/nh

Copied to: Deputy Chief Admin Officer CFO

General Manager Engineering

General Manager Planning and Development General Manager Parks, Recreation and Culture

General Manager Corporate Services Senior Manger Legislative Services

City Solicitor

Item Manager's Report No. Council Meeting 2004/03/	01
Manager's Report No	10
Council Meeting 2004/03/	122

TO:

CITY MANAGER

2004 March 31

FROM:

DIRECTOR PLANNING AND BUILDING

OUR FILE: PA-11-GP-01

SUBJECT:

ACQUISITION OF ENVIRONMENTALLY SENSITIVE LANDS

BURNABY FRASER FORESHORE PARK

PURPOSE: To advise Council of the conclusion of a City acquisition of lands on the Fraser River

foreshore for inclusion within the Burnaby Fraser Foreshore Park system.

RECOMMENDATION:

1. THAT a copy of this report be forwarded to the Environment Committee and the Parks, Recreation and Culture Commission for information purposes.

REPORT

1.0 BACKGROUND

On 1997 July 21, Council authorized staff to enter into negotiations with Canada Lands Company Ltd. (CLC) to expand the area of the Burnaby Fraser Foreshore Park through the acquisition of a 26 acre parcel adjacent to the Fraser River at 8357 Wheaton Street, Burnaby. On 2001 August 7, Council further authorized staff to negotiate with Canada Lands Company Ltd. for the acquisition of an additional contiguous area of 16.4 acres located at 4750 Riverbend Drive (formerly Thom Street), Burnaby.

The proposed acquisition was based on the significant role that the subject lands have in supporting and enhancing the ecological and public park functions of the adjacent Burnaby Fraser Foreshore Park lands. The subject acquisition area is shown in context with the existing adjacent Burnaby Fraser Foreshore Park lands on Figure 1, attached.

On 2004 March 8, Council approved the acquisition of the subject lands (42.4 acres), and as of 2004 March 26, these environmentally significant lands have been transferred into City ownership for park and conservation purposes.

This report outlines the results of the negotiation concluded with the Canada Lands Company Ltd. for the \$5.28 million acquisition of the subject properties by the City, describes the environmental values of the property, and highlights next steps for the incorporation of the property into the Burnaby Fraser Foreshore Park system for environmental protection and public access and enjoyment through the developing trail system within the Big Bend area.

2.0 BURNABY PARK AND ENVIRONMENTAL LANDS INITIATIVES

The City has an extensive, diverse and enviable range of parks and open spaces which have provided for the protection and conservation of natural landscapes in the City. Park acquisition and conservation has been a cornerstone of City planning and development, with over 5,400 acres (almost 25%) of the City land base now protected as park. These parks represent the key ecosystems within the City, including watercourses and ravines, wetlands and lakes, bog areas, forests, and coastal and estuarine foreshore, and include both core habitat areas, and connecting ecological corridors.

In addition to acquiring lands, the City has worked diligently with stewardship groups, landowners, and other government agencies to protect and enhance ecological features and functions both within and outside of park areas. These programs have included extensive public education and awareness projects, initiatives to prevent pollution from entering watercourses and natural areas, protection of streamside vegetation, environmental restoration of previously degraded lands, and environmental monitoring and scientific study.

The City also participates in integrated, regional-scale environmental planning, and is an active partner in programs such as the ongoing Greater Vancouver Regional District Biodiversity Conservation Strategy, Fraser River Estuary Managment Program, and Burrard Inlet Environmental Action Plan. In summary, the initiatives outlined above reflect the City's commitment to a balanced, sustainable, and ecologically responsible approach to planning and development for which it has received numerous awards. This key acquisition by the City on the Fraser River furthers the City's already considerable commitment to the environment.

3.0 BURNABY FRASER FORESHORE PARK

Existing Park Lands

Within the Big Bend Development Plan area, the City has protected over 400 acres of land for park purposes. Prior to the subject acquisition, through implementation of the Big Bend Development Plan and related initiatives, the City had acquired title to approximately 60% of the foreshore along the North Arm of the Fraser River. The 40 acre riverside parcel (Site A on Figure 2, attached) acquired from the Canadian National Railway Company in 1991 has become a major component of the Burnaby Foreshore Park system for appreciation of natural habitats and passive recreational use. With this 1991 acquisition, the Burnaby Fraser Foreshore Park encompassed an area of 135 acres. In 1994, the City, together with the Department of Fisheries and Oceans (DFO), embarked on a three year program to reestablish rearing habitat for salmon as well as to enhance the natural landscape to maximize wildlife values of these lands.



The enhancement program involved the creation of tidal wetland and marsh areas on the west side of the park, and the creation of additional tidal marshes and channels on the east side of the park. The central area was improved to create a meadow habitat for birds of prey. Park improvements not only enhanced the fisheries and wildlife habitats, but also provided for trail networks and observation points to allow for structured opportunities for nature interpretation and public awareness of the habitat resource present in the park.

Subject Acquisition

The subject 42.4 acre acquisition area is contiguous with the adjacent portion of the Burnaby Fraser Foreshore Park lands. This acquisition makes an ecologically significant contribution to the legacy embodied in the public ownership of lands within the Burnaby Fraser Foreshore Park system. With this acquisition, the City will have over 175 acres of land along the Fraser River in public ownership representing 70% (5 km) of the Burnaby foreshore along the North Arm of the Fraser River. To the east of the subject property, as part of the development approval process for Glenwood Industrial Estates and property at 5600 Riverbend Drive, the City secured public access along the Fraser River within statutory rights-of-way from these private property holdings. The remaining foreshore properties within the eastern section of the Big Bend are expected to remain in private ownership, and as feasible, the City will continue to seek public access to the foreshore of these properties as part of any future redevelopment applications.

Environmental Values

The subject site is within the natural Fraser River flood plain and subject to periodic inundation. The lands are characterized by a variety of wetlands of various subtypes, the most significant of which is a wet meadow area located diagonally across the central portion of the site. The wet meadow is subject to regular tidal changes in water levels. The meadow area is classified as a *Tidal Freshwater Marsh* as it is subject to daily tidal inundation. This wet grassland type is a relatively rare habitat type in Burnaby and the surrounding region. Since European settlement, 75% of the wetlands in the Lower Mainland have been lost, with remaining areas isolated in small parcels. Wetlands are one of the most biologically diverse ecosystem types, and are an important component of the Pacific flyway for migrating birds. They also play a role in removing contaminants from waterways.

The wet grassland type is a primary breeding habitat for a variety of bird species, some of which have been in decline in the Lower Mainland, especially the Northern Harrier and Short-eared Owl. The surface water in the wet meadow is of sufficient depth to deter most natural ground predators, such as foxes and coyotes. As such, it provides a refuge for ground

nesting birds that is not available in the dryland grass area of the adjacent Park. As well, the hardhack-willow clumps and shrub growth surrounding the meadow provide ideal nesting habitat for Common Yellowthroats, Willow Flycatcher, Warbling Vireo, Cedar Waxwing, Yellow Warbler and MacGillivray's Warbler, all of which benefit from the reduced disturbance from humans and natural predators provided by the wetness of the meadow. The juxtaposition of the open meadow and the adjacent woodland also provide habitat for treenesting species that can use adjacent open areas for foraging. In addition, this area serves to support many species currently present in the adjacent Park by providing additional feeding and nesting habitat thereby increasing the inherent stability of the existing ecosystem.

From a biological perspective, within the context of the existing adjacent park lands, the subject acquisition brings an additional habitat area and biological community to the park that is not currently represented in the existing and proposed park areas. It adds a wet grassland meadow to an existing mix of river riparian area, dry grassland, mixed forest, shrub borders, ponds and rearing channels. These elements of the Park are particularly well represented at the margins of the wet grassland habitat, thus providing ideal opportunity for interpretative programs, within a relatively discrete area, to highlight the inter-relationship of habitat types ranging from fish habitat to nesting areas for birds and other animals. As well, it is the transition areas between the wet grassland and surrounding shrub to forest areas that produce the most biologically diverse plant and animal communities which are of considerable interest and educational value to park visitors. Finally, it is important to note that larger natural areas have greater value than smaller segmented parcels as they are more resilient to environmental impacts.

Figure 2, attached, summarizes some of the environmental features of the current and subject park lands.

4.0 NEXT STEPS

Given the quality of the ecological and environmental assets associated with these lands, the Mayor's Office previously wrote to the Federal Minister of Environment, the Provincial Minister of Water, Land and Air Protection and to the Director GVRD Parks to request a financial contribution towards the cost of the acquisition of the subject properties. At this time, staff are continuing to pursue financial contributions towards the City expenditure for this recent acquisition of environmentally sensitive lands.

The Canada Lands Company has expressed an interest in working with the City in a joint effort to extend the Urban Trail system from Tillicum Street and Fraser Park Drive through the expanded Burnaby Fraser Foreshore Park lands to connect into the planned and developing Urban Trail system on Riverbend Drive and within the Glenwood Industrial Estates development. The City has a total allocation of \$550,000 within the 2004 - 2008



Provisional Capital Program for the Fraser Foreshore Urban Trail system. Planning and Parks staff would propose to work with the Canada Lands Company and GVRD Parks under the Greenway Program to leverage City capital funds to provide for the eastward extension of the Big Bend Urban Trail system through the expanded Burnaby Fraser Foreshore Park lands and to develop appropriate habitat appreciation and interpretation opportunities.

As part of this work, staff would advance City rezoning of the properties to the P3 Park and Public Use District and review benefits of the subdivision consolidation of the two new parcels and appropriate road closure areas to prepare the properties for future park dedication.

It is recommended that a copy of this report be forwarded to the Environment Committee and the Parks, Recreation and Culture Commission for information purposes.

S. Belhouse, Director

PLANNING AND BUILDING

LP/jc Attachments (2)

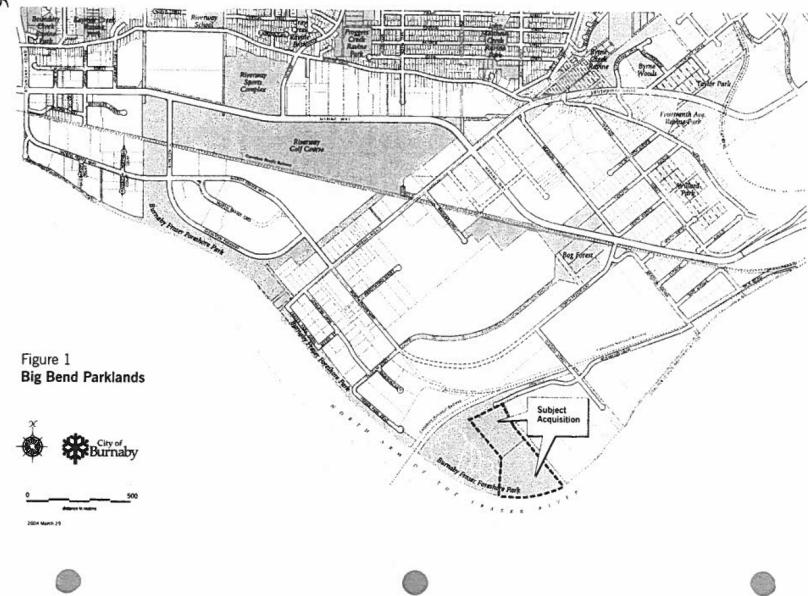
cc: Director Finance

Director Parks, Recreation and Cultural Services

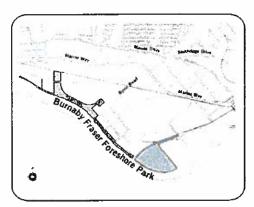
Director Engineering

City Solicitor

R:\Long Range Clerical\DOC\$\Lou\Council Reports\Cl.C Burnaby Fraser Foreshore Park.wpd



Burnaby Fraser Foreshore Park



Wetlands are one of the most biologically diverse ecosystems in Canada. Over the past century however, 96% of the wetlands on the North Arm of the Fraser River have been lost to development, and remaining areas are isolated in small parcels.

In 1991, the City of Burnaby sought to protect valuable wetland habitat, by purchasing 40 acres of seasonally-flooded land on the Burnaby bend of the Fraser River (Site A). The City worked with Fisheries and Oceans Canada, and other agencies to a rehabilitate a diversity of habitats on this land including salmonid rearing channels, riparian forests, and a dry meadow for raptor habitat.

The City has now acquired an equivilent additional area of seasonally flooded, riparian and wet meadow habitat contiguous to the existing park (Site B). This acquisition creates a core nature park of biologically diverse ecosystems within a central portion of the Big Bend area.

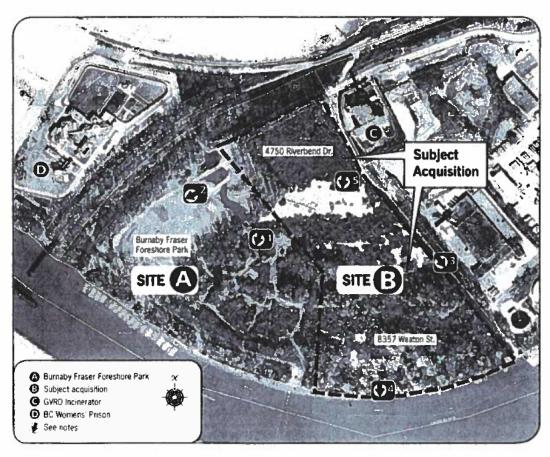


Figure 2 **Environmental Features**





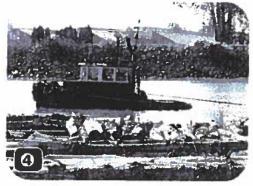
The eastern portion of the existing park includes salmonid rearing channels constructed by the City and Fisheries and Oceans Canada in 1994. These channels are currently inaccessible to human park users, and provide juvenile salmonids with protected waters for rearing. The City plans to construct controlled interpretive viewing overlooking a small section of the channels to inform and educate park users.



The western portion of the existing park includes a dry grassland meadow, which provides excellent hunting habitat for raptors. Trails wind along the western edge of the meadow, but do not intrude into the meadow.



Site B includes seasonally inundated riparian forest that is considered fish habitat. A service road runs along the eastern and northern edge of the parcel, providing a beautiful walking environment.



The City will seek to develop a environmentally sensitive walking and cycling trail through the forest of Site B to connect with the City's trail network. This trail may provide opportunities for public viewpoints of the working Fraser River.





The northern section of Site B includes a rare wetland tidal meadow. The City will protect the wet meadow in parkland. Trails would avoid the meadow to prevent bird disturbance, but allow limited viewing opportunities.

The wet meadow has been classified as a Tidal Freshwater Marsh and is a primary breeding habitat for a variety of bird species, some of which have been in decline in the Lower Mainland, especially the Nothern Harrier and Short-eared Owl. The daily tidal inundations deter most predators such as foxes and coyotes, providing protected nesting habitat for birds. These same birds may then use the adjacent riparian forest and dry meadow for hunting.



Environmental Review Committee Minutes

Burnaby City Hall, Planning Department Conference Room

Agenda Item 1 of 1

Date, Time	February 24, 2022
File No.	ERC22-02 / REZ21-00025
Address	4800 Riverbend Drive
Stream name	Sturgeon Slough, Salmon Slouh, East-West Ditch, Ditch A, Ditch B, Ditch C, Fraser River

Present (ERC & other City staff):
Rushi Gadoya, Planning
Mark Sloat, Planning
Christine Ensing, Planning (CA&E)
Mandy Wardell, Engineering
Rod Pleasance, Engineering
Alekxos Sarter, Parks

Proponent(s):

Erik Scmidt (Public Works) – Applicant Lisa Look (Solid Waste and Recycling, Engineering)

Roxy Hasior (Engineer – GHD)

Stef Godrich (Biologist – GHD)

Deacon Liddy (Engineer – GHD)

Jesse Anaka (Biologist – GHD)

Proponents' Summary and Q&A

The proponent presented an overview of the proposed development, including the required infrastructure, operational requirement, brief discussion on site selection and council endorsement.

Q: is it an operational requirement to situate District Energy and GROW facility together? A: it is ideal to locate both facilities together for future operational requirements and to serve the River District (Vancouver) with potential expansion of serving New Westminster in future. Other locations along Big Bend were researched, and other parts of the City (Still Creek industrial area), however were not deemed feasible.

Q: is there an alternative design that could reconfigure the GROW facility elements/buildings in a way that utilizes less space? A: reconfiguration can be taken into consideration during the final design, however stacking building elements on top of each other would result in significant geotechnical mitigation measures which may render the design unfeasible.

The proponent presented an overview of the Preliminary Ecological Assessment. Q: please identify the blue and red listed ecosystem, and potential impacts from proposed development?

A: Although the ecosystems are mapped and recorded in the EA report, further studies relating to each species and various habitat present in the area is required.

The ERC noted compensation planting on dyke is not an acceptable based on City experience with the provincial diking authority. In the past, the City has experienced challenges regarding compensation planting and natural vegetation establishment on dike on other site (Byrne Creek for eg.). The proponent noted that the habitat impacts and compensation analysis would require adjustment to take this into account.

The ERC inquired about the strategy proposed to compensate for the impacts of proposed development on environmental values, including wetland loss, riparian vegetation loss and ditch infill. The proponent responded that further assessment is required to identify level of compensation required.

Q: will the Province be looking for enhancement of existing wetland or creation of a new wetland as part of compensation? A: the intention and preference is to enhance and restore already impact wetland as opposed to creating a new wetland. Further confirmations from Province will be required at the design stage.

The ERC emphasized the environmental values present on site, more specifically the uniqueness of site due to flooding. The site is a dedicated park that represents key ecosystem within the City, including watercourses and ravines, wetlands and lakes, bog areas, forests and coastal and estuarine foreshore and includes both core habitat areas and connecting ecological corridors. The site is within the natural Fraser River flood plain and subject to periodic inundation. The site is subject to regular tidal changes in water levels. This wet grassland type is relatively rare habitat type in Burnaby. Q: can something of this value be recreated as compensation?

The proponent acknowledged the presence of environmental values and unique environmental characteristics of site. The site is subject to seasonal flooding, and the area has responded to flooding from landscape perspective, with new vegetation evolved in response to flooding. The concept of compensation is capturing flows from these ditches and supporting the flow connecting to Sturgeon and Salmon Sloughs. This maintains the integrity of riparian vegetation and ecological components in the area, which is important part of the process.

Q: elaborate on the impacts of engineering fill on off-site area and changes to landscape around the facility? The proponent responded by noting that further studies to understand water balance component may be required. In compliance with the Zoning Bylaw, the site will be raised to 3.9 m AMSL to mitigate flooding. This was identified as part of preliminary process. The soil present is significantly porous. For geotechnical reasons, engineering fill is required to allow GROW facility to be built on such porous soil.

Q: has the timeline associated with other regulatory authorities including WSA Section 11 approval (for changes in and around the stream) and DFO (Fisheries Act review and requirements to divert and construct a new stream) was taken into consideration as part of

project planning? A similar project on a different site took 16 months to receive approval from the Province.

The proponent responded that at the design phase, the project will be referred to the Province. Proponent experience is 50-90 days to receive permits.

Q: regarding height of the dyke proposed and if flooding on neighboring properties was factored into the design? A: the proponent mentioned different types of design dykes will be considered as part of Geotechnical study. The footprint of development (8.52 ha) is less than half the size of site (17.7 ha), as such, impacts to neighbouring properties are expected to be minimal. However, further studies are warranted to understand the potential flooding impacts on neighbouring properties resulting from lost floodplain storage.

Q: what are the impacts of proposed development on red and blue listed species, and listed species at risk? JA informed that further studies are warranted. A. Studies will be conducted from spring onwards for amphibians.

Q: discuss the difference between a "stream" and "wetland", with consideration to the definition of a stream in the City's Zoning Bylaw? A: proponent responded that a wetland connected through overland flow to a stream is considered a stream. Changes to such a wetland requires WSA Section 11 approval. RH further clarified that a stream is an integral part of wetland, and vegetation associated with the stream is regulated by Riparian Areas Protection Regulation. The proponent used the RAPR methodology to differentiate between wetlands that meet the definition of stream from those that do not but are still considered wetlands in accordance with the Water Sustainability Act.

The ERC raised concerns with the location of district energy. A section of sturgeon slough is piped in the area where district energy is proposed. The proponent confirmed that the waste energy and district energy requires this connection for the hot water and other utilities. The ERC reiterated that all facilities are currently proposed on PARKLAND and that the site is a dedicated PARK under the Council adopted bylaw. The site is also within the GREENZONE as identified in the Regional Strategic Plan regulated by Metro Vancouver. This requires various permits, plan amendments, etc. at different levels of government (local, regional and provincial). Also noted is, in accordance with the Community Charter, a new bylaw that removes lands previously dedicated as Park may only be adopted with approval of the electorate. To dedicate the subject lands as Park, the City did allow for the electorate to vote on this issue in 2005 and the initiative was supported.

ERC Discussion

The ERC identifies red-flags for the proposal to move forward. The development is not suited for the subject site from an environmental / ecological perspective. Even with proposed enhancement of existing already impacted wetlands and riparian areas at a 2:1 area-based ratio, the project will result in lost wetland / floodplain area (the footprint of the site) of significant ecologically value. The Site Study Area (SSA) is shown in Figure 1 of the report. The report

notes that the SSA is one of the last remaining naturalized areas within the floodplain of the lower Fraser River valley.

It seems apparent that the site was deemed suitable for the proposed development based primarily on city ownership, proximity to the Waste to Energy facility and the size of the parcel. The status of the portion of the subject lands as entirely dedicated parkland was not known initially. The status of the land as dedicated parkland by bylaw and this most recent preliminary ecological assessment therefore represents new information. It is reasonable then that site selection could be revisited and incorporate this new information to identify a suitable location. The ERC is not aware of the site selection process, including what sites were considered.

It is understood that the DE facility and the GROW facility are not operationally linked. While there may be some operational efficiencies as a 'clean energy hub', we understand that the close proximity to the Waste to Energy facility is necessary for the DE facility, but that the GROW facility could be located elsewhere.

The subject site is within the natural Fraser River flood plain and is subject to periodic inundation. Variety of wetlands of various subtypes and wet meadow area are located within the site, making this an ecologically important site for environmental conservation purposes. The wetlands are one of the most biologically diverse ecosystem types and play an important role in removing contaminants from waterways. It is clear that the many of the ecosystem types within the subject lands are unique to Burnaby and to the region because of the floodplain and periodic daily inundation.

The site was dedicated as PARK by Council from a biological perspective to bring in the additional habitat area and biological community to the park that was not represented in the existing park. Fragmentation of this park, resulting from the proposed development, from the other parts of park would make the adjacent area less resilient to environmental impacts and disrupt the habitat connectivity in the area.

The report's finding is that off-site compensation is required in the order of 4.25 hectares of riparian vegetation (possibly more because of planned planting on the dike) and 14 hectares of wetland. The ERC questions the feasibility of finding suitable off-site existing riparian and wetland ecosystems to enhance. Such systems would have to be degraded, of appropriate size and preferred to be contiguous. Availability of suitable lands has not yet been investigated by the proponent. Land acquisition could be necessary. Suitability and feasibility of compensation lands, including costs for installation and monitoring and maintenance, and acquisition if required, should be determined and factored into the decision making process.

There is not sufficient information to support the proposed development. The ERC understands that some of the information lacking is to be collected later this spring and summer when conditions are ideal to undertake further ecological assessment. Availability of suitable and feasible compensation areas, and costs, could be explored at that time.

At the same time, the preliminary ecological assessment brought forth to the ERC confirms the ecological significance and environmental sensitivity of the subject lands, which were the main

reason why the lands were dedicated as parkland by bylaw in 2005. It is apparent that there will be both direct impacts resulting from the footprint of the development and offsite detrimental environmental impacts from the land use change. With the preliminary ecological assessment, the ERC finds it reasonable to recommend not supporting this development proposal and requesting the proponent identify an alternative site with less ecological values and environmental sensitivity.

There are plans to extend the Urban Trail system through the Burnaby Fraser Foreshore Park to connect into the planned and developing Urban Trail system on Riverbend Drive and within the Glenwood Industrial Estates development. The proposed development may disrupt the plan and impact on habitat connectivity.

The facility currently as proposed seems constrained and may require a future expansion, which would in turn, further impact the park, riparian area and ecological habitat in the area. Consideration should be given to future impacts of proposed expansion into parkland, should this application move forward.

[Additional discussion, Zoom meeting with ERC members, 2022 March 8]

The 'conclusions and recommendations' below were sent to the ERC members (Rod, Christine, Mandy, Rushi, Alekxos was absent) for review and then discussed at the meeting noted above. There was overall agreement with the minutes and conclusions and recommendations.

- ERC members noted that the DE facility is time sensitive, which supports a recommendation to split the DE from the GROW
- ERC / ENG members noted that DE needs to be located as close as possible to the
 waste to energy facility, while the GROW's proximity is a 'nice to have' but not required
 or necessary for its operation
- There was discussion around the list of other sites considered and wanting to see the list.
- The lack of consideration of the site in relation to sea level rise and habitat fragmentation was noted.

Conclusion and Recommendations

The ERC has reviewed the proposal to develop an organics processing facility and district energy facility on a portion of the lands at 4800 Riverbend Drive.

The ERC reviewed the proposal with regards to the streamside protection provisions in the Zoning Bylaw (S6.23) and city policies, strategies, guidelines and bylaws for community development and ecosystem protection, and environmentally sensitive areas.

The scope of this ERC review was narrowed to the technical components of the ecological assessment, application of the impact mitigation hierarchy presented in the report (minimize,

mitigate, off-set and compensate), and preliminary off-setting and compensation required. Other information received from the ERC members regarding site selection and the ecological context of the site will be provided to Development and Urban Design (Planning and Building Department) in separate correspondence, for consideration as part of the rezoning application review process.

The initial rezoning report (REZ21-25, Closed Council, 2021 August 31) noted a requirement for preparation of an ecological assessment to advance the rezoning application. The ERC received and accepted a preliminary ecological assessment report prepared in accordance with City guidelines.¹ It is understood that further, more detailed assessments are necessary.

The subject lands proposed for development were dedicated as parkland by bylaw in 2005 (Bylaw No. 11988).² Supporting Council reports document the ecological values of these lands and of the larger Burnaby Fraser Foreshore Park.

The ecological significance of the site is discussed in greater detail in a report commissioned by Parks, Recreation & Cultural Services in 2006 to understand suitability of the site for various park programming options.³

Based on our review, the ERC's conclusions and recommendations are as follows:

Conclusions

- The methodologies used and the findings of the preliminary ecological assessment are accepted as technically sound and aligned with standards and practices for mitigating, offsetting and compensating impacts to sensitive ecosystems.
- The offset and compensation strategy summarized in Table 1.2 is accepted as suitable for a submission to meet provincial and federal regulator requirements of the Water Sustainability Act, Fisheries Act, and other applicable legislation.
- We understand that additional information is needed to establish ecological baseline conditions and to refine the offset and compensation strategy.
- The most critical information required is the identification of suitable and feasible sites for off-site compensation and confirmation of presence of provincially and or federally listed species and ecosystems at risk. We understand that more detailed assessments to be undertaken at optimal times in 2022 would consider impacted habitat and offsite compensation options in more detail, as well as species and ecosystems at risk.

¹ **Preliminary Ecological Assessment Report** – prepared by GHD Consultants., dated February 7, 2022

² The following reports are relevant: 1) Council meeting 2004/03/22. 2004 March 31. Subject: Acquisition of Environmentally Sensitive Lands Burnaby Fraser Foreshore Park. 2) Council meeting 2005/09/19. 2005 September 19. Subject: 2005 Park Dedications. 3) Bylaw No. 11988. Cited as Burnaby Park Dedication Bylaw 2005

³ Burnaby Fraser Foreshore Park, Environmental Report. Prepared for Parks Planning, Design and Development. Prepared by Strix Environmental Consulting. 2006

- The amount of off-site compensation is a potential constraint to the project. The preliminary ecological assessment report found that **4.25 hectares** (possibly more based on designs reviewed at the ERC meeting and limitations on planting the face of the dike) of off-site riparian enhancement and **14 hectares** of off-site wetland enhancement is necessary to support the project. Future assessment should aim to identify suitable sites and assess feasibility, include an accounting of costs for implementation, monitoring and maintenance, as well as ease of construction and site availability.

Recommendations

- Proceed with additional ecological studies to establish complete ecological baseline conditions to support site design and feasibility studies, provincial and federal regulatory permitting requirements, and the rezoning application.
- Develop the Offset and Compensation Strategy in more detail to identify options, specific sites, feasibility, costing for implementation, and a monitoring and maintenance period, in accordance with City guidelines.
- Plan for inclusion of environmentally sustainable building materials and designs, as outlined in Section 9.4, including but not limited to rain gardens for rainwater management features, green roofs to reclaim natural habitat, wildlife and bird friendly designs.
- Undertake climate change and natural hazard risk assessments for the project, specifically in relation to development on a floodplain, sea level rise, potential flooding, and subsidence.
- Assess the natural assets and ecosystem services provided by the areas within the Local Study Area and Site Study Area.
- These recommendations should be completed to support a full costing and feasibility analysis of the project in support of the rezoning application.

References:

4800 Riverbend Drive ERC Type 3 Application Form.pdf – application form prepared by Public Works on behalf of property owner (City of Burnaby).

Preliminary Ecological Assessment Report – prepared by GHD Consultants., dated February 7, 2022
Bylaw No. 11988 – Burnaby Park Dedication Bylaw 2005.



CLOSED COUNCIL REPORT

TO: CHIEF ADMINISTRATIVE OFFICER DATE: 2022 November 15

FROM: GENERAL MANAGER FILE: 36600-03

LANDS AND FACILITIES

Reference: Green Recycling Organic Waste (GROW)

SUBJECT: GREEN RECYCLING ORGANIC WASTE (GROW) - PROJECT UPDATE

PURPOSE: To provide Council a project update and information on planned next steps.

RECOMMENDATION:

1. THAT Council authorize staff to continue advancing work on developing the Green Recycling Organic Waste (GROW) project at 4800 Riverbend Drive as described in this report.

REPORT

1.0 INTRODUCTION

Beginning in 2019, the City has been evaluating the feasibility of a City-owned Green Waste Processing Facility (Green Recycling Organic Waste, GROW) which could recycle the organic materials (food scraps, yard waste) collected from citizens and businesses and replace the current requirement for processing in a private facility outside of Burnaby.

The proposed GROW facility will process up to 150,000 tonnes of green waste annually from Burnaby and beyond, providing additional organic waste processing capacity within the region while creating high-quality compost and renewable natural gas (RNG). The facility will strengthen our commitment to long-term sustainability, reduce greenhouse gas (GHG) emissions, support our region and partners, and contribute to achieving the region's waste diversion goals.

The purpose of this report is to provide a project update and information on planned next steps to Council.

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 2

2.0 POLICY CONTEXT

GROW aligns with policy objectives contained in Burnaby's Climate Action Framework (2020), Burnaby's Corporate Strategic Plan (2022), Burnaby's Environmental Sustainability Strategy (2016), Burnaby's Community Energy and Emissions Plan (2016), and Burnaby's Economic Development Strategy (2007).

3.0 BACKGROUND

3.1 Previous Reports to Council

On 2020 March 23, Council approved the completion of the feasibility study for GROW and authorized the use of the Gaming Reserve in the amount of \$150,000 to finance the study.¹

On 2021 April 12, City staff presented results of the preliminary feasibility study and facility siting options for a City-owned green waste processing facility. The study found that:

- A City-owned facility could be feasible;
- The financial viability of the facility improved substantially with an increase in operating capacity and the addition of biogas production; and
- Siting opportunities within the City of Burnaby containing appropriately sized and zoned land parcels are limited.

Council approved the direction for staff to begin detailed feasibility and conceptual design work for a facility located at 4800 Riverbend Drive with a 150,000 tonnes per year operating capacity including anaerobic digestion for biogas production.

On 2021 August 25, Council received an Initial Report from the Planning and Development Department proposing a zoning change to support development of the GROW facility on the subject site (Rezoning Reference #21-25). ²

 At that time, a portion of the 4800 Riverbend Drive site was identified as dedicated park. It has since been determined that the entire site is dedicated park, including the portion proposed to be used for the GROW facility. The necessary steps to allow the use of the site for development of the GROW facility are summarized in Section 5.

¹ 2020 March 23 Financial Management Committee report adopted by Council

² 2021 August 30 Rezoning #21-25 (Portion of 4800 Riverbend Drive)

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 3

On 2022 October 15, as part of the civic ballot, the public approved the dedication of four park areas totaling 82.97 hectares (204.05 acres). In comparison, the amount of parkland that needs to be undedicated for the GROW facility (outlined in Section 5 of this report) is eight (8) hectares only. In addition, several hectares of land have been identified for wetland compensation.

3.2 Project Objectives

The objectives of the GROW facility are to:

- Process up to 150,000 tonnes of organic waste annually which includes approximately 30,000 tonnes from Burnaby, with the remaining tonnage to be sourced from neighboring communities and businesses.
- Obtain price certainty for Burnaby's green waste, in the form of a fixed tip fee which is sufficiently less than the market rate, adjusted annually for inflation.
- Provide anaerobic digestion which produces both biogas and a digestate which is then composted, with the biogas upgraded to produce renewable natural gas.
- Place the facility in service by December 2026.

3.3 Project Rationale and Benefits

3.3.1 Why GROW?

Burnaby encourages green waste recycling as it reduces waste, lowers methane emissions, and creates compost and bioenergy, with the addition of anaerobic digestion. In 2015, Metro Vancouver implemented a green waste disposal ban for residents and businesses which prohibits disposal in the waste stream. The City's green waste, which includes both food scraps and yard waste is currently processed at a private composting facility in Delta.

3.3.2 Why Now?

There currently exists few green waste processing facilities within the Metro Vancouver region. This limited processing capacity has led to high tipping fees and repeated price increase. Burnaby has identified a potential location where green waste processing could be feasible and by acting now can secure cost certainty into the future. Burnaby has an opportunity to develop a world-class green waste processing facility and contribute to the production of renewable energy.

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 4

3.3.3 Project Benefits

The benefits of GROW facility are:

GROW is climate action.

- Reduces GHG emissions associated with green waste collection and transportation. Burnaby's green waste can be managed locally, where it is generated.
- Generates biogas to create renewable natural gas from waste, which displaces fossil fuel natural gas.
- Contributes to the circular economy through the use of renewable natural gas to fuel City vehicles and to power the facilities own processes.
- Potentially recovers heat from the composting and anaerobic digestion process for use at a proposed District Energy Utility (DEU)³ facility co-located at 4800 Riverbend Drive
- Strengthens commitment to long-term sustainability, the region and our partners, and contributes to achieving the region's waste diversion goals. The GROW facility is aligned and committed to achieving city, regional, provincial, and federal goals for green waste diversion, recycling, and renewable energy.

GROW strengthens our community.

- Produces high-quality compost that can be used for community gardens and urban farming.
- Provides educational opportunities with an on-site learning center where schools and other groups can witness their green waste being converted into renewable energy and compost.

GROW supports fiscal responsibility and resilience.

 Creates cost-certainty for green waste management and provides the opportunity for preferential pricing on tipping fees for the City of Burnaby.

3.4 Site Information

As shown in **Figure 1**, the recommended project site is located at the terminus of Riverbend Drive, on City-owned land within the 70.8-hectare (175 acres) Burnaby Fraser Foreshore Park. The GROW facility requires a footprint of approximately 8.5 hectares (21 acres) or 12% of the 70.8-hectare Burnaby Fraser Foreshore Park. The facility is

³ DEU facility is a separate capital project that is being undertaken by Lands & Facilities department, with reporting to Council planned for Q1 2023

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 5

proposed to be located in an area that is currently not used for recreational purposes and thus has less conservation value than what the park dedication status might suggest.

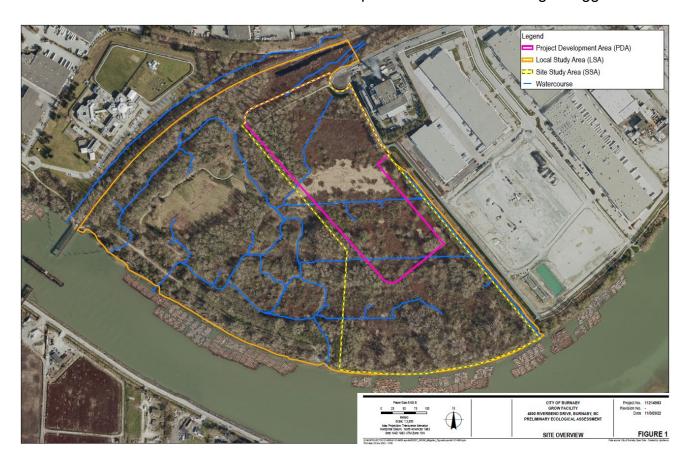


Figure 1: Proposed Location of GROW on 4800 Riverbend Drive

3.4.1 Land Use Context

The site's current use is regulated by or reflected in the following bylaws and land use plans:

- Burnaby Zoning Bylaw (P3 Park and Public Use District zoning);
- Big Bend Development Plan (Park and Public Use designation);
- Official Community Plan (inclusion in the Green Zone Lands map);
- Park Dedication Bylaws 9976 and 11988; and
- Metro Vancouver Regional Growth Strategy, entitled Metro 2040: Shaping our Future (southwest portion of site noted as a conservation and recreation area, with the balance noted as a general urban area).

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 6

3.4.2 Site Selection

The recommended site at 4800 Riverbend Drive was the only site option to meet the required criteria:

Criteria	4800 Riverbend Drive			
Sufficient area to develop a functional facility	✓ 21 acres available			
Located within a commercial/ industrial area	✓ Surrounded by commercial and industrial uses			
Proximity to the existing Metro Vancouver Waste-to-Energy Facility (WTEF)	✓ Directly adjacent to the WTEF site			

The proximity of the GROW facility to Metro Vancouver's WTEF and potential colocation of the GROW facility with the City's DEU facility offers the following synergies:

- Traffic to the GROW facility would use an established traffic corridor already used to access the WTEF.
- Disposal of green waste contaminants (such as metal, plastics, and other nonorganic wastes) from GROW to the WTEF.
- The composting process will generate some heat and it is possible that the heat could be recovered and tied into the DEU facility, depending on the technology.

4.0 PROJECT UPDATE

Since the initial report to Council, staff have been analyzing the technical feasibility, financial viability, and potential commercial framework for GROW, all of which are summarized below.

4.1 Technical Feasibility

Technical evaluation of composting and anaerobic digestion methods concluded that a tunnel composting system ⁴, accompanied by plug-flow anaerobic digestion system ⁵ is a

⁴ Composting is the process of breaking down organic waste by microorganisms in the presence of oxygen to produce a stable product that can be used as soil amendment. Composting in concrete tunnels allows in process to be fully enclosed for temperature, moisture, and airflow control.

⁵ Anaerobic digestion is the process of breaking down organic materials by bacteria in the absence of oxygen to produce biogas. Plug-flow digestor vessels are a type of continuous-feed digestor where the high-solids-slurry moves through the reactor like a plug and biogas is recovered. The proposed technology is based on the feedstock being mixed green waste, which typically has a higher solids content compared a food waste only streams.

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 7

suitable option to meet operational demands while maintaining economic feasibility. This combination allows for treatment of green waste and optimal biogas generation based on the assumed feedstock composition. The project technology decision will be confirmed at later stages and will consider input from the selected Project Partner.

4.2 Financial Viability

The financial feasibility of this project was assessed at the preliminary feasibility stage based on estimates of capital expenditures, operating costs, revenue sources and financial parameters. Estimates were based on industry knowledge of projects of similar size and scope. A financial model was developed to estimate the per-tonne cost of a Cityowned and operated facility under various planning scenarios including sensitivity analysis. Compared with the City's current green waste management expenditures, it was determined that developing a 150,000 tonnes per year facility that can sell excess capacity and enter into a renewable natural gas (RNG) off-take agreement with Fortis BC is economically feasible.

It was estimated that the GROW facility can generate approximately \$165 per tonne of net revenue (based on a 20-yr planning horizon). The project net revenue estimate is based on tipping fees on the excess capacity (approximately 100,000 tonnes per year), heat recovery, and the sale of compost and RNG. The estimated capital cost of the project is \$182 million including a 25% contingency. The financial model shows a potential positive revenue of \$18.21 per tonne from the facility.

The table below summarizes the results of the business case in the pre-feasibility study.

	Current	GROW
Processing Capacity (tonnes/year)	n/a	150,000
Construction Cost (incl. 25% contingency)	n/a	\$182,000,000
Operational Costs (per tonne)	n/a	\$85.31
Revenue (per tonne)	n/a	\$165.81
Total Cost (per tonne)	\$122.45	(\$18.21)

 Table 1: Summary of pre-feasibility financial model

The pre-feasibility study contemplated a 50,000 tonne facility; however, this option has been eliminated as a 150,000 tonne facility will have more appeal to potential delivery partners, provide revenue generating potential for the City.

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 8

The project financial model will be updated during detailed feasibility to reflect:

- Additional input from industry leaders and technology providers;
- Current global financial conditions;
- Land value; and
- The cost of on and off-site habitat compensation.

It should be noted that the above section reflects a preliminary financial analysis, and the model outputs will change as the project evolves and the model structure and assumptions are firmed up reflecting a market ready opportunity.

ction 90(1)(e) the acquisition, disposition or expropriation of land or improvements, if the council considers that	
closure could reasonably be expected to harm the interests of the municipality; (k)negotiations and related	
cussions respecting the proposed provision of a municipal service that are at their preliminary stages and that,	in the
w of the council, could reasonably be expected to harm the interests of the municipality if they were held in pub	olic;
)a matter that, under another enactment, is such that the public may be excluded from the meeting;	

5.0 NEXT STEPS

The next steps staff intend to undertake to advance the project include communications and public engagement, seeking Council approval to initiate the alternative approval process and introduce a bylaw to remove the park dedication, environmental permitting,

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 9

seeking Council approval to amend Zoning Bylaw, Official Community Plan and land use plan, market sounding, and future Open Council reports.

5.1 Communications and Public Engagement

Effective and transparent communications will be required to garner support for the development of GROW.

5.1.1 Why are we undertaking communications and public engagement?

Publicly available information on GROW is currently limited and can be found in the 2022-2026 Financial Plan, the initial rezoning report, and some media coverage. The purpose of undertaking formal communications and engagement is to educate the public and stakeholders regarding the benefits of GROW and to gain public support for the project including the required removal of park dedication and environmental compensation.

5.1.2 What are we going to do?

The project team will use best-practices with open, accessible and transparent communications to align messaging with the overall GROW objectives, predict and plan for issue-specific communications needs, practice active listening with all impacted groups, and undertake the engagement activities required to meet regulatory requirements, as described in Section 5.3.

Project-specific materials will be created for GROW, including:

- GROW web page:
- GROW email address;
- Project overview and fact sheets, "by the numbers";
- FAQ's (see the sample list in *Attachment 1*);
- Technical backgrounders;
- Media package news release, facts sheet, backgrounder, images/video;
- Social media products strategy, content calendar, graphic design, video production and editing, scheduling, posting, testimonials, monitoring; and
- Consultation and engagement e.g. ads, signage, poster boards, feedback forms.

All products will be developed with accessibility in mind and will follow best practices in using and creating accessible content.

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 10

A list of internal and external communications channels is provided in *Attachment 2*.

5.1.3 When do we intend on undertaking this work?

As shown in Section 5.6.2, the public communications program would be launched following the approval of a separate report to Open Council in 2023 January and run in parallel to the Alternative Approval Process (AAP).

5.2 Alternative Approval Process and Bylaw to Remove Park Dedication

Developing the GROW facility at the subject site will require removing the park dedication over that portion of the site required for the GROW facility, which can only be done by a bylaw adopted with the approval of the electors. Under the *Community Charter*, there are two ways the approval of the electors can be obtained: (1) by way of a vote using the assent voting process (i.e. referendum); or (2) through the alternative approval process (i.e. former counter petition process). It is proposed that the City pursue the Alternative Approval Process (AAP) to remove the park dedication for that portion of 4800 Riverbend Drive required to develop the GROW facility.

The AAP can be used to help local governments understand whether the community views a particular matter as "significant", and if necessary, whether the matter then warrants being taken to an assent vote for broader citizen engagement.⁶

Undertaking an AAP involves:

- Determining the number of electors the process applies to (whether to the whole or only part of the City);
- Establishing the elector response form, which involves formulating the question to be posed to the electors and determining whether to allow for single or multiple elector responses on each form;
- Establishing a deadline for electors to respond;
- Publishing notice of the AAP;
- · Collecting elector responses up until the established deadline; and
- Determining and certifying the results after the deadline.

⁶ https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/local-governments/governance-powers/alternative approval process guide.pdf

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 11

If following the above process, less than 10% of eligible electors object, then approval of the electors has been obtained and Council may proceed with adopting the park dedication removal bylaw. If more than 10% of eligible electors object, then the assent of the electors must be obtained through the assent voting process should Council wish to continue to pursue adoption of the park dedication removal bylaw.

The expected timeline to complete the AAP from the time of Council approval to proceed is between two to three months (to meet the minimum statutory requirements) and six to nine months (to allow for broader information-sharing, and public engagement).

More detail on the AAP process and the park dedication removal bylaw will be presented for Council's consideration in 2023 February, as described in Section 5.6.2 of this report. The AAP would be conducted after third reading but prior to final adoption of the park dedication removal bylaw. Should the AAP be successful, adoption of the park dedication removal bylaw would require a two-thirds vote of all members of Council.

5.3 Environmental Approvals and Compensation

The site has several artificially channelized waterways and was previously disturbed when it was cleared, ditched, and farmed between approximately 1930 and 1965.

The development of GROW will have environmental impacts with 8 hectares of wetland habitat (4.4 hectares swamp, 2.5 hectares forest, 1.1 hectares marsh) requiring both federal and provincial permits for development. The Ecological Assessment identified the local, regional, provincial, and federal regulating agencies that require consultation on permitting for the project development, including the City of Burnaby, Metro Vancouver, BC Ministry of Environment and Climate Change Strategy, BC Ministry of Forest, Land, Natural Resources Operations and Rural Development (FLNRO), the Department of Fisheries and Oceans (DFO), Environment Canada, Canadian Wildlife Service and First Nation governments. The project team will pursue the required approvals and permits and intends to commence the application process for certain long lead permits prior to the outcome of the AAP.

Obtaining permits will require a robust compensation program.

- The environmental impact of the conceptual design for GROW was minimized by pushing it as far back from the Fraser River as possible, stacking some elements on the site to reduce its size, avoiding portions of the site with higher environmental value.
- The environmental compensation program proposed for GROW has been reviewed by the City's Environmental Review Committee (ERC) and other City staff and involves a mix of on-site and off-site compensation:

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 12

- The on-site work has three parts creating a new salmon-supporting tidal marsh, creating new salmon-supporting tidal creeks, and new forest enhancement.
- The off-site habitat compensation includes enhancement and preservation efforts at three (3) nearby City-owned sites to provide a net gain of floodplain forest, marsh and swamp habitats.
- The overall compensation strategy with a 3.6:1 habitat gain to loss ratio will be presented to DFO, FLNRO and other regulatory bodies to support permitting and authorization of the works.

The wetland and fish habitat impacts, compensation, and net benefits are summarized in Table 1.

Wetland	Loss of	Proposed	Proposed Wetland Mitigation Off-Site (ha)				
Class	Wetland Extent in Project Footprint (ha)	Wetland Restoration/ Enhancement On-Site (ha)	Brechin Lots Restoration	Glenlyon Parkway Enhancement	Lower Sussex Crk Preservation	SW Corner of Lougheed and Phillips Preservation	Ratio (Gain: Loss)
Floodplain Forest (Fm50, Fl50)	2.5	9.1	-	5.4	-	-	5.8:1 enhancement
Marsh (Wm)	1.1	1.9	-	1.2	-	-	2.8:1 restoration
Swamp (Ws50, Ws51)	4.4	-	0.9	-	0.3	9.8	0.2:1 restoration only 2.5:1 with preservation
Total	-8.0	+11.0	+7.6	•	+10.1	•	3.6:1 overall

Table 2: Wetland Impacts and Offsetting

5.4 Zoning Bylaw, OCP and Development Plan Amendments

Staff intend to pursue the following bylaw and land use plan amendments to permit the GROW facility on a portion of the subject property:

Zoning Bylaw Amendment: The site is currently zoned P3 Park and Public Use, which does not permit the GROW facility, as it is considered an industrial use. As such, a Zoning Bylaw amendment is necessary. Staff will bring forward a future Zoning Bylaw amendment report for Council consideration, with Final Adoption of the bylaw amendment conditional on the approval of the park dedication removal under the AAP.

To: Chief Administrative Officer

From: General Manager Lands and Facilities

- Big Bend Development Plan Amendment: As the Big Bend Development Plan currently designates the site for Park and Public Use, staff intend on pursuing a plan amendment to designate that portion of the site supporting the GROW facility for industrial use. This plan amendment would be undertaken concurrently with the above noted Zoning Bylaw amendment and would also be conditional on the approval of the park dedication removal under the AAP.
- Official Community Plan Amendment: The site is currently included in the Green Zone Lands map in the Official Community Plan. An OCP amendment removing this designation (and other similar references throughout the Plan) and adding the proposed industrial use is necessary. Staff will advance the necessary OCP amendment report for Council's consideration, with Final Adoption of the bylaw amendment being conditional on the approval of the park dedication removal under the AAP.

The site is designated "General Urban" under Metro Vancouver's regional growth strategy, *Metro 2040*. Industrial uses are permitted in the General Urban designation, and therefore an amendment to Metro 2040 is not required.

5.5 Market Sounding

The City intends to validate the proposed commercial assumptions in early 2023 by engaging potential contractors in advance of issuing the RFQ in a 'market sounding' exercise. The purpose of this exercise is to ensure that the commercial terms included within the procurement documents are understood and broadly acceptable to the market, thereby increasing the market's awareness of the project and their desire to compete to

council considers that disclosure could reasonably be expected to harm the interests of the municipality; (k)negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public; (m)a matter that, under another enactment, is such that the public may be excluded from the

To: Chief Administrative Officer

From: General Manager Lands and Facilities

5.6 Timeline

5.6.1 Project Schedule

Approximate dates for the key project milestones are listed below:

Milestones	Tentative Date
Open Council Report – Project update	January 2023
Open Council Reports – AAP process and park dedication removal bylaw	February 2023
Commence environmental permitting submissions to DFO, FLNRO and other regulatory bodies	February 2023
Confirm Metro Vancouver interest	March 2023
Conduct market sounding	March 2023
AAP results; if AAP successful, final adoption of park dedication removal bylaw, and amendments to the Zoning Bylaw, OCP and Big Bend Community Plan	April – May 2023
Confirm funding plan and commitment	April 2023
Request for qualification in market & evaluation	May - July 2023
Request for proposal in market & evaluation	September 2023 – January 2024
Finalize contract and contract award	February - March 2024
Commence site preparation	March 2024
Biological activation and construction completion	December 2026
Start of facility operations	December 2026

Table 3: Key milestones and tentative dates

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 15

5.6.2 Future Council Reports

Staff intend to bring forward a series of Open Council reports for Council's consideration.

1. Project Update (January, 2023)

This report would summarize project benefits, communications and public engagement framework, and reference future Council reports on the details of the AAP and park dedication removal process, and on the required amendments to the Zoning Bylaw, OCP and Development Plan.

2. AAP Process and Park Dedication Removal Bylaw (February, 2023)

This report will describe the alternative approval process and seek Council approval to: (a) undertake an AAP to obtain approval of the electors to proceed with the park dedication removal for the required portion of 4800 Riverbend Drive; (b) establish a recommended date as the deadline for receiving elector responses; (c) establish elector response forms in the proposed form and format *attached* to the report, which proposed form will allow for either a single elector response on each form, or for multiple elector responses, and will also include the proposed wording of the question or statement being considered in the AAP; and (d) make a fair determination of the total number of electors of the area to which the AAP process applies based on the methodology used and recommended by staff. This report would also attach the proposed form of the park dedication removal bylaw.

3. AAP Results (Spring, 2023)

This report would summarize the results and outcome of the AAP.

4. Zoning Bylaw, OCP, and Big Bend Community Plan Amendments (Spring to Summer 2023)

If the AAP is successful, reports seeking authority to amend the Zoning Bylaw, OCP, and Big Bend Community Plan, including information on the necessary public notification processes, would be advanced for Council consideration.

To: Chief Administrative Officer

From: General Manager Lands and Facilities

Re: Green Recycling Organic Waste (GROW) Project Update 2022 November 15......Page 16

6.0 CONCLUSION

The development of GROW project requires removal of park dedication for the site. The proposed site has no natural watercourses, and is not used for recreational purposes, and thus has less conservation value than what the park dedication status might suggest.

The project has multiple environmental and climate action benefits in addition to the financial benefits to the City. The project demonstrates the City's leadership in helping achieve the sustainability and waste-diversion goals of the region.

Following this report, staff will proceed on the basis outlined in this report including but not limited to preparing communication and marketing materials to support the AAP, bringing forward the Open Council reports as described in section 5.6.2 of this report, pursuing a detailed feasibility analysis, developing an updated financial model, preparing for permitting and regulatory approvals, and finalizing the commercial framework.

It is recommended that Council authorize staff to continue advancing work on developing the Green Recycling Organic Waste (GROW) project at 4800 Riverbend Drive as described in this report.

James Lota, P.Eng., MBA, MPA

GENERAL MANAGER LANDS AND FACILITIES

JL/nh

Attachments

Copied to: Deputy Chief Admin Officer CFO

General Manager Corporate Services

General Manager Engineering

General Manager Planning and Development

General Manager Parks, Recreation and Cultural Services

Narratives – Sample FAQs*

Question	Response *(a more robust FAQ will need to be developed and reviewed)
How much land does GROW need?	The size or footprint of GROW has been reduced as much as possible by doing things like making the best use of available space, and stacking components. The GROW facility needs 8.5 hectares (21 acres) of land. A large site is needed to gain the benefits of scale to serve Burnaby and beyond (150,000 tonnes or about XX% of Metro Vancouver's annual organic recycling material).
Why this location?	Other sites outside Burnaby were sought and no other municipalities were interested in partnering on this project. Other options in Burnaby were reviewed, but they all had significant issues and were dropped from further consideration.
How was 4800 Riverbend used in the past?	The site was previously disturbed when it was cleared, ditched, and farmed for many years. There are no natural flowing waterways on the site now. The remnants of an "old field" can still be seen today.
How are the environmental impacts being reduced?	The GROW facility site is pushed as far back from the Fraser River as possible. The portions of the site with higher environmental value have been avoided and protected for the most part. The portion of the site proposed for the GROW facility uses land with lower environmental value.
How much environmental compensation is being proposed?	The environmental compensation being proposed is the largest program package of environmental enhancement the City has ever done and it would have a significant overall net environmental benefit from creating high-value habitat that is in short supply in the Fraser River basin. A mix of on-site and off-site compensation is being proposed. The on-site work has three parts – creating a new salmon-supporting tidal marsh, creating new salmon-supporting tidal creeks, and new forest enhancement. Existing low-quality on-site fish habitat (drainage ditches) would be replaced with high-quality on-site fish habitat (wetlands and habitat for young salmon).
Is a land exchange being proposed?	The City of Burnaby has a long history of securing and protecting park and open space. More than 25% of Burnaby is now of park and open space (about 24.65 square kilometers or 2,465 hectares – that's six times the size of Stanley Park). The GROW facility needs 0.34% of Burnaby's park and open space.

Internal

- City of Burnaby Brand/Style Guide
- City of Burnaby Staff
 - Intranet
 - Email
 - Social media
- Council
 - Council meetings
 - Council information packages
 - Social media

External

- · City of Burnaby Brand/Style Guide
- City of Burnaby website Projects page: Dedicated GROW project page
 - Project overview scope, benefits, community engagement, schedule, regulatory/permitting/procurement (when relevant)
 - Relevant links
 - FAQ
 - Images: concept design, location, etc.
 - Short video
 - Contact information
- City of Burnaby website News page: GROW-specific
 - News releases
 - Fact Sheets
 - Backgrounders
 - Contact information
- City of Burnaby Primary Social Media channels (utilize main channels, not project-specific)
 - Facebook, Twitter, Instagram, LinkedIn
- · City of Burnaby Direct Email, Direct Mail (if relevant), site signage + QR codes
- Issues Management
 - Prepare FAQ for potential issues/responses
- Regulatory and permitting processes