

Report to Development Permit Panel

To:

Development Permit Panel

Date:

September 25, 2019

From:

Wayne Craig

File:

DP 19-850320

Re:

Director of Development

Application by Greater Vancouver Sewerage and Drainage District for a

Development Permit at 1000 Ferguson Road

Staff Recommendation

That a Development Permit be issued at 1000 Ferguson Road in order to allow construction of a concrete dewatering pad and associated uses on a site designated as an Environmentally Sensitive Area.

Wayne Craig

Director of Development

WC:je

Att. 6

Staff Report

Origin

Greater Vancouver Sewerage and Drainage District (GVS&DD) has applied to the City of Richmond for an Environmentally Sensitive Area (ESA) Development Permit (DP) to allow construction of a temporary concrete pad, gravel parking area and associated equipment, along with access at 1000 Ferguson Road (Attachments 1 and 2). As the entire site is currently designated as an ESA, a DP is required prior to Building Permit approval.

The subject site currently contains the Iona Island Wastewater Treatment Plant (IIWWTP) that provides primary sewage and stormwater treatment for the City of Vancouver and the University Endowment Lands, and portions of the Cites of Richmond and Burnaby.

The Province has mandated that the IIWWTP be upgraded to secondary treatment by 2030. A number of Development Permit applications, including the currently application, are setting the stage for that transition. The purpose of this application is to facilitate decommissioning of the site's existing sludge lagoons and stockpiles which currently serve as the dewatering facilities in order to create space for the plant expansion. All digested biosolids accumulated within the lagoons require dredging, dewatering and subsequent off-site transport. The applicant proposes to build a concrete pad and gravel area to house temporary dewatering facilities (screening, centrifugal and associated equipment), for the decommissioning of the lagoons. The total proposed project footprint is 2,745 m² (29,547 ft²), plus 2,005 m² (21,582 ft²) for utilities trenching that require only temporary disturbance and will be restored immediately to current conditions (a mix of lawn and gravel).

In compensation for disturbing 2,745 m² (29,547 ft²) of ESA to develop the concrete pad and gravel area, GVS&DD has committed to undertaking invasive species removal and enhancement of 3,000 m² (32,392 ft²) of low-value natural area within the adjacent regional park (at a ratio of 1.1:1 to the permanent impacts from the project footprint).

Background

Two previous ESA DPs have been recently issued for this site:

- An ESA DP was issued in 2015 to allow the GVS&DD to expand the IIWWTP with a 550 m² (5,920 ft²) screening and de-grit building, a 20 m (66 ft.) diameter thickener, a 25 m² (269 ft²) thickener pump station and four 36 m² (388 ft²) digester mixing pump buildings within the ESA at 1000 Ferguson Road (DP14-676361). The project committed to a minimum of 3,300 m² (35,521 ft²) of landscape restoration (a ratio of 0.5:1 to the project footprint). The as-built information submitted by GVS&DD shows that the applicant exceeded the landscape commitment and that a total of 3,791 m² (40,805 ft²) of ESA has been restored as a result of the project.
- An ESA DP was issued in 2018 to permit construction of facilities to divert sewage from the lagoons, including a temporary dewatering building and storage tanks, a truck loading building for removing the biosolids to off-site locations, and an odour control facility (DP 18-820582). The project committed to 13,666 m² (147,100 ft²) of landscape restoration within the adjacent Metro Vancouver park (a ratio of 1:1 to the project footprint), with an additional 1,275 m² (13,724 ft²) of native landscaping within the site.

Plans for the full redevelopment of the facility to secondary treatment is underway, and staff is working with GVS&DD to determine the necessary permits and approvals.

Development Information

Please refer to the attached Development Application Data Sheet (Attachment 3) for a comparison of the proposed development data with the relevant Bylaw requirements.

Surrounding Development

The area surrounding the site consists of:

• To the north: North Arm of the Fraser River;

• To the east: Iona Beach Regional Park (Canfor Point), managed by Metro

Vancouver;

• To the south: Iona Island causeway; and,

• To the west: Iona Beach, Iona Jetty and the North Arm Jetty. The North Arm Jetty

is under Port of Vancouver jurisdiction.

With the exception of the Iona and North Arm Jetties, Iona Island is entirely designated as "Conservation" in Richmond's Official Community Plan, and zoned "School & Institutional Use (SI)" under Zoning Bylaw 8500.

Staff Comments

The proposed scheme attached to this report has satisfactorily addressed the significant Environmentally Sensitive Area (ESA) issues and other staff comments identified as part of the review of the subject Development Permit application. In addition, it complies with the intent of the applicable sections of the Official Community Plan and is generally in compliance with the School and Institutional (SI) zone. No variances are being sought through this ESA Development Permit application.

Advisory Design Panel

As the scope of this Development Permit does not involve any building design components, the application has not been reviewed by the Advisory Design Panel.

Analysis

Site Planning

The IIWWTP currently provides primary sewage treatment, which involves the removal of primary sludge and anaerobic digestion prior to storage in sludge lagoons. The treated effluent is discharged to the Strait of Georgia, while the treated biosolids are stockpiled onsite following lagoon stabilization. GVS&DD is working towards upgrading the facility to provide secondary waste treatment by 2030.

GVS&DD advises that this application is to allow a concrete pad, gravel area and utility trenches to house dewatering equipment, including screening and centrifugal equipment, as well as associated equipment (a portable truck scale, electrical transformer, electrical control trailers, polymer mixing tank, polymer feed tank and a site trailer). The concrete pad and gravel area would be located adjacent and to the south of the existing IIWWTP. During active operations, biosolids would be

delivered from the lagoons to the dewatering pad via a pump and pipe system (DP Plans 1, 2a, and 2.b).

DP 19-850320

The proposed footprint for the concrete pad is 2,145 m² (23,089 ft²), with an additional 600 m² (6,458 ft²) for the gravel area. Trenches for water and electrical utilities would impact an additional 2,005 m² (21,582 ft²) of ESA. The trench areas are currently a mix of asphalt and lawn, and would be restored to current conditions immediately after installation.

An ESA DP for temporary dewatering facilities to divert treated effluent away from the lagoons was issued in 2018; the temporary dewatering facilities, situated east of the existing treatment facility, will remain operational until the longer term IIWWTP upgrades are complete. This current proposal is to drain sludge from the lagoons so that the land is available for future expansion of the treatment facility.

The dewatering pad is expected to be operational for four to six months a year, from late 2019 until 2023. After dewatering is complete, however, the concrete pad and gravel area may stay in place until 2030 for use as a laydown pad or parking area to support the IIWWTP expansion to secondary treatment. The ultimate use of the area will be determined through future master planning for the expansion project.

To accommodate the proposed concrete pad and gravel area, the entire project footprint would be cleared of existing vegetation. Approximately 1,650 m³ of soil would be removed and replaced with compacted granular material to form a base for the pad. GVS&DD is currently working with the City Parks Department to determine if the excavated soil is suitable for use in City parks.

While the entire project footprint is within the ESA, the area was selected by GVS&DD because of its proximity to the existing IIWWTP and because it has been previously disturbed. A detailed Environmental Assessment completed by AECOM notes that the area to be disturbed is entirely lawn and asphalt, with one tree in poor condition.

ESA Environmental Inventory

The area proposed for the temporary dewatering facility is designated as "Freshwater Wetland" ESA, and is contiguous with "Shoreline" ESA, "Intertidal" ESA and non-ESA natural areas within the Iona Island Regional Park. The total contiguous ESA measures approximately 182.4 ha (450.5 acres) and is designated as a hub in the Ecological Network Management Plan.

The biophysical inventory submitted by Sartori Environmental (completed in July 2019), found no wet areas, rare plants or species-at-risk within the project footprint or its immediate surroundings. Sartori describes the project area as predominantly a maintained grass area associated with the treatment plant, with periodic occurrences of native trees and low-lying shrubs. There is encroachment by a number of non-native and invasive plants species.

Several higher value habitats are identified near the site:

- Biosolid settling lagoons (to be drained) located west of the project area. The applicant is aware that if future expansion of the treatment plant affects this area, a Development Permit may be required;
- The saltmarsh located south of the project site; and

DP 19-850320

The Fraser River estuary.

Sartori notes that wildlife use of the project area is likely limited to transitional use between the adjacent higher value habitats. However, it was noted that the project area and vicinity provide suitable habitat for raptor perching, nesting and hunting. During the inventory, an active bald eagle nest was identified within a 10 m (33 ft) tall black cottonwood tree immediately to the southeast of the project footprint. Species observed during the inventory included: black-capped chickadee, ring billed gull, common yellowthroat, American mink, mallard, barn swallow, song sparrow and spotted sandpiper. No species at risk were observed on the site.

Tree Inventory

The applicant has submitted a Certified Arborist's report which identifies on-site and off-site tree species, assesses tree structure and condition, and provides recommendations on tree retention and removal relative to the proposed development. The report assesses 28 bylaw-sized trees on the subject property (Attachment 4).

Tree Retention

26 trees are proposed to be retained and protected on site. The City's Tree Preservation Coordinator has reviewed the arborist report and has the following comments:

- 26 trees (tag# 004, 005, 006, 011, 014, 019, 022, 025, 047, 049, 050, 054, 056, 058, 067, 073, 130, 138, 199, 477, A, B. C, D, E, 14A) located on the development site are to be retained and protected as per Arborist report recommendation.
- Retained trees should be protected as per City of Richmond Tree Protection Information Bulletin Tree-03.

Tree Removal

Two on-site trees are proposed to be removed. The City's Tree Preservation Coordinator has reviewed the arborist report and has the following comments:

- 1 tree, a birch (tag# 21) is dead. This should be removed and replaced.
- 1 tree, a birch in poor condition (tag# 20), is in conflict with the proposed development. This should be removed and replaced.
- Replacement trees should be provided at a 2:1 ratio as per the OCP.

• If required replacement trees cannot be accommodated on-site, a cash-in-lieu contribution in the amount of \$500/tree to the City's Tree Compensation Fund for off-site planting is required.

Tree Replacement

• The applicant wishes to remove two on-site trees (tag #20 and 21). The 2:1 replacement ratio would require a total of four replacement trees. The applicant has proposed to plant four trees in the proposed development. The required replacement trees are to be of the following minimum sizes, based on the size of the trees being removed as per Tree Protection Bylaw No. 8057.

Table 1: Tree Replacement Calculation

No. of Replacement Trees	Minimum Caliper of Deciduous Replacement Tree	Minimum Height of Coniferous Replacement Tree		
2	6 cm	3.5 m		
2	9 cm	5 m		

Mitigation

The project was intentionally sited in an area with limited sensitive habitat value that is currently lawn situated between the parking lot for the treatment facility and Ferguson Road.

The applicant's Qualified Environmental Professional (QEP) has identified measures to mitigate impacts on the identified bald eagle nest adjacent to the project footprint and any bald eagles that may be using the nest. A 23 m no-construction buffer is recommended, along with a 123 m nest noise protection buffer. The buffers have been identified based on the Provincial Guidelines for Raptor Conservation (2013) for bald eagles' nests in urban contexts.

A Bald Eagle Nest Management Plan will be implemented prior to the commencement of construction to assess for nest occupancy, and if it is determined to be occupied, appropriate mitigation measures to avoid disturbance (such as no construction within the noise protection buffer during nesting season) will be determined by the QEP. Nest occupancy will be monitored weekly by a QEP during the pre- and post-nesting season, and three times a week during nesting season. Daily monitoring will occur if the nest is determined to be occupied. If bald eagles exhibit any abnormal activity as a result of site activity, the QEP will have the authority to temporarily halt or alter the site works.

Silt fencing and catch basin traps will be installed around the perimeter of the dewatering pad, along with wildlife exclusion fencing. A complete erosion and sediment control plan will be prepared prior to construction.

Proposed Compensation and Landscape Restoration

To compensate for impacts to 2,745 m² (29,547 ft²) of ESA within the project footprint, GVS&DD proposes to restore to natural condition an area within Iona Island Park on Canfor Point (a compensation ratio of 1.1:1). Over the past seven years, Metro Vancouver has been working to maintain and restore a red-listed coastal sand dune ecological community within the park. Proposed compensation would include invasive species removal and enhancement of 3,000 m² (32,292 ft²) within the park, resulting in an overall net gain in ecological function and improved connectivity on Iona Island.

6 m wide utility trenches are proposed to be dug for the purposes of servicing the asphalt pad with water and electricity. Temporarily impacting approximately 2,005 m² (21,582 ft²) of ESA, the

trenches are located within areas that are currently either lawn or asphalt; no trees or other significant vegetation will be impacted. After installing the utilities, the trenches will be immediately restored to current conditions and, as a result, no ESA compensation is proposed. The ultimate use of the water and electrical lines will be determined through future master planning for the expansion project.

The proposed compensation area on Canfor Point has a long history of human disturbance and is dominated by grasses, pioneering shrubs and trees. Approximately 80-90% of the plant species are considered invasive, and include Scotch broom and Himalayan blackberry.

Restoration works would include removal invasive plant species, protection of existing native plant species coastal red elderberry and Oregon grape, and enhancement of the compensation area with native plant species. Replanting would focus on riparian plant species suitable to the area's proximity to the Fraser River and which also are likely to be successful in outcompeting invasive species.

Specific enhancement plant species and densities proposed include:

- shore pine (25 trees),
- black cottonwood (50 trees),
- Pacific crabapple (75 trees),
- chokecherry (50 trees),
- red elderberry (500 small trees/shrubs),
- dull Oregon grape (500 plants),
- oceanspray (500 plants),
- trailing blackberry (500 plants), and
- baldhip rose (500).

The proposed compensation plan includes 200 trees at a 100:1 replacement ratio to trees removed for the proposed project, to a total of 2,700 native plants. Plant density would be 0.9 plants/m². Through the compensation plan, the project will continue to improve the habitat conditions within Canfor Park, and re-establish connectivity to the Fraser River floodplain riparian habitat to support greater biodiversity. While the compensation area is not designated as ESA, the ecosystem services resulting from the proposed compensation plan supports the City's objectives for the Ecological Network.

Monitoring and Maintenance

To ensure that the proposed enhancements have the best chance of survival and that invasive species are controlled within Canfor Point, the Metro Vancouver Parks Department has recommended that monitoring and annual reporting by a Qualified Environmental Professional (QEP) occur for five years following completion of the restoration works. Field visits completed in years 1, 2, 3 and 5. Reports will be provided to the City.

The applicant has submitted a letter committing to implementing the works described above by 2020, and to complete monitoring and maintenance of the compensation area following completion (Attachment 5). This is a standard approach where Metro Vancouver is the applicant. Receipt of the commitment letter is included as a Development Permit Considerations (Attachment 6).

Engineering Comments

A Servicing Agreement will not be required for this development. Utility connections and frontage improvements will be addressed at the time of Building Permit.

Ministry of Environment Release

The Ministry of Environment (MOE) has communicated that, while a site investigation is not required for this Development Permit, the applicant is required to secure a release prior to issuing the Development Permit. An MOE Certificate of Compliance or alternative approval to proceed is a condition of the Development Permit. Future development applications at this site may be subject to further requirements from MOE.

Financial Impacts

The application results in an insignificant Operational Budget Impact (OBI) for off-site City infrastructure (such as road works, waterworks, storm sewers, sanitary sewers, street lights, street trees and traffic signals).

Conclusions

The applicant proposes to develop a total of 2,745 m² (29,547 ft²) within an area designated as Environmentally Sensitive Area (ESA) to construct an asphalt pad and gravel area for dewatering equipment as part of upgrades to the IIWWTP. Compensation is proposed through off-site restoration of 3,000 m² (32,292 ft²) within the adjacent Metro Vancouver regional park at Canfor Point. As the proposed, compensation plan would result in a net gain in ESA function; staff recommend that the Development Permit be endorsed, and issuance by Council be recommended.

Jeanette Elmore

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Planner 2

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Attachments:

Attachment 1: Location Map

Attachment 2: Context Map

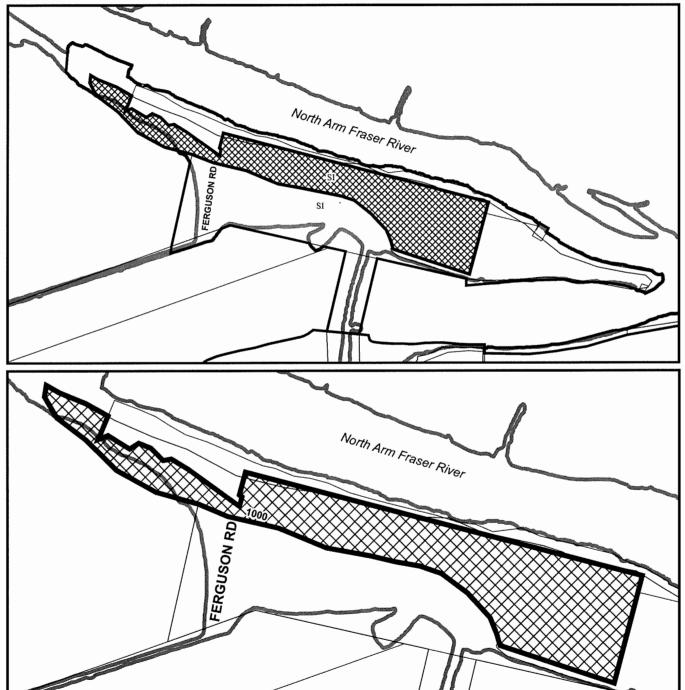
Attachment 3: Data Sheet

Attachment 4: Tree Management Plan

Attachment 5: Committement Letter from Metro Vancouver

Attachment 6 Development Permit Considerations







DP 19-850320

Original Date: 01/18/19

Revision Date:

Note: Dimensions are in METRES





Development Application Data Sheet

Development Applications Department

DP 19-850320 Attachment 3

Address: 1000 Ferguson Road

Greater Vancouver Sewerage and Drainage Greater Vancouver Sewerage and

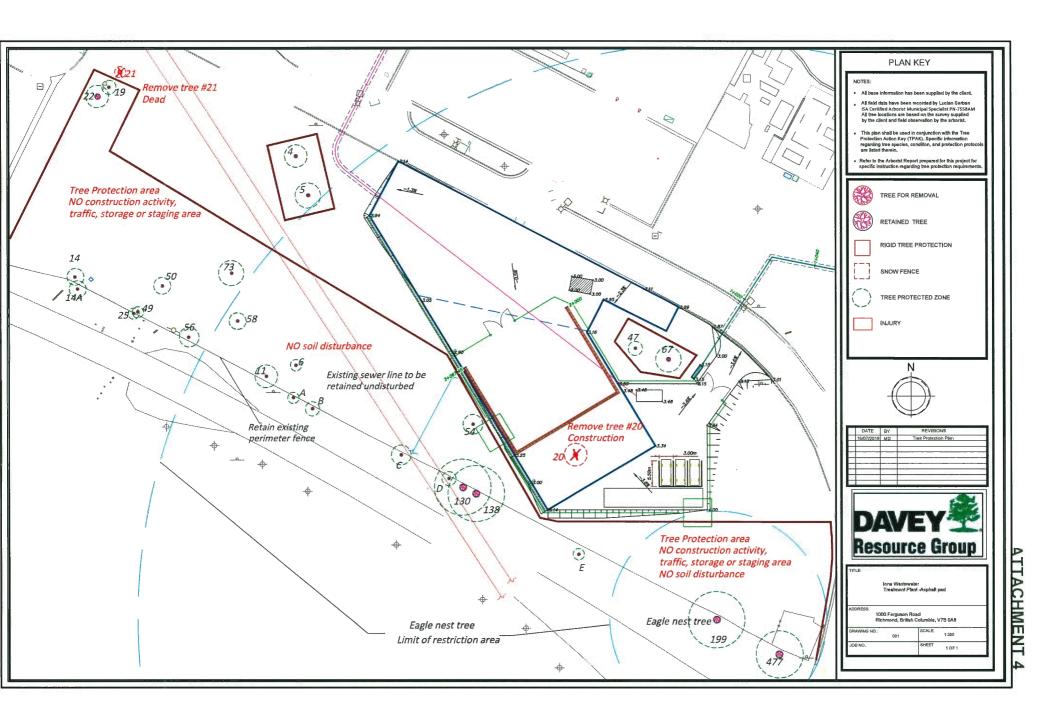
Applicant: District Owner: Drainage District

Planning Area(s): Sea Island

Floor Area Gross: N/A Floor Area Net: N/A

	Existing	Proposed		
Site Area:	48.36 Ha	No change		
Land Uses:	Waste water treatment facility	No change		
OCP Designation:	Conservation	No change		
Zoning:	School and Institutional Use (SI)	No change		
Number of Units:	0	No change		

	Bylaw Requirement	Proposed	Variance
Floor Area Ratio:	No maximum	Consistent with zone	none permitted
Lot Coverage:	No maximum	Consistent with zone	none
Setback – Front Yard:	Min. 6.0 m	Consistent with zone	none
Setback – Side Yard (one side):	Min. 3.0 m	Consistent with zone	none
Setback – Rear Yard:	Min. 3.0 m	Consistent with zone	none
Height (m):	Max. 12 m within 10 m of a residential zone, otherwise no minimum	Consistent with zone	none
Lot Size:	No minimum	Consistent with zone	none
Total off-street Spaces:	None	79 existing 4 new including 1 accessible	none



ATTACHMENT 5



Liquid Waste Services Tel. 604-451-6039

File: SE-06-13-ION-LD

Mr. Wayne Craig, Director of Development

Development Applications Division 6911 No. 3 Road

Dear Mr. Craig:

City of Richmond

Richmond, BC V6Y 2C1

May 31, 2019

RE: DP 19-850320 – Letter of Commitment, Iona Island Wastewater Treatment Plant Lagoon Dredging and Dewatering Pad - Environmental Considerations

The Greater Vancouver Sewerage & Drainage District (GVS&DD) is proposing to construct a new pad to facilitate the dredging and dewatering of the sludge lagoons at its existing Iona Island Wastewater Treatment Plant at 1000 Ferguson Road. To support this work, the GVS&DD has made an application to the City of Richmond for a Development Permit. The Development Permit is for an area of approximately of 2,706 m² on the south side of the wastewater treatment plant, and will include an equipment area, a Truck Loading area, and Truck Turn-Around loop.

The location of the proposed works is zoned by the City of Richmond as an Environmentally Sensitive Area. An Environmental Assessment has been conducted for the project area and a Compensation Plan has been developed which describes compensation measures used to offset project effects that cannot be mitigated through other means.

Based on the above, and to support the Development Permit process, the GVS&DD is committing to the following actions:

- Implement the site restoration, invasive species management and compensation measures outlined in the final Environmental Assessment Report by December 2020 (within 1 year of completion of the facility);
- Undertake and maintain the landscape installations outlined in the final Landscape Compensation Plan by December 2020; and,
- Submit to the City of Richmond for information only, annual monitoring and maintenance reports for 5 years following installation of compensation plantings.

Should you have any questions with respect to this letter, please do not hesitate to contact me.

Sincerely,

Lillian Zaremba, P. Eng.

Acting Program Manager, Utility Residuals Management

LZ/DK

cc: Dave Keeney, MV, LWS Utility Residuals Management

Andreea Irimia, AECOM

29876299



Development Permit Considerations

Development Applications Department 6911 No. 3 Road, Richmond, BC V6Y 2C1

Address: 1000 Ferguson Road

File No.: <u>DP 19-850320</u>

Initial:

Prior to approval of the Development Permit, the developer is required to complete the following:

- 1. Ministry of Environment (MOE) Certificate of Compliance or alternative approval to proceed granted from MOE regarding potential site contamination issues.
- Receipt of a Letter of Commitment from the Greater Vancouver Sewerage and Drainage District to undertake the landscape restoration works as described in the Iona Island Wastewater Treatment Plant Dewatering Pad Construction Environmental Assessment, dated July 2019.

*Prior to Building Permit Issuance, the developer must complete the following requirements:

- Submission of a Construction Parking and Traffic Management Plan to the Transportation Department. Management Plan shall include location for parking for services, deliveries, workers, loading, application for any lane closures, and proper construction traffic controls as per Traffic Control Manual for works on Roadways (by Ministry of Transportation) and MMCD Traffic Regulation Section 01570.
- 2. If applicable, payment of latecomer agreement charges associated with eligible latecomer works.
- 3. Obtain a Building Permit (BP) for any construction hoarding. If construction hoarding is required to temporarily occupy a public street, the air space above a public street, or any part thereof, additional City approvals and associated fees may be required as part of the Building Permit. For additional information, contact the Building Approvals Department at 604-276-4285.

Note:

- This requires a separate application.
- Where the Director of Development deems appropriate, the preceding agreements are to be drawn not only as personal covenants of the property owner but also as covenants pursuant to Section 219 of the Land Title Act.
 - All agreements to be registered in the Land Title Office shall have priority over all such liens, charges and encumbrances as is considered advisable by the Director of Development. All agreements to be registered in the Land Title Office shall, unless the Director of Development determines otherwise, be fully registered in the Land Title Office prior to enactment of the appropriate bylaw.
 - The preceding agreements shall provide security to the City including indemnities, warranties, equitable/rent charges, letters of credit and withholding permits, as deemed necessary or advisable by the Director of Development. All agreements shall be in a form and content satisfactory to the Director of Development.
- Additional legal agreements, as determined via the subject development's Servicing Agreement(s) and/or Development Permit(s), and/or Building Permit(s) to the satisfaction of the Director of Engineering may be required including, but not limited to, site investigation, testing, monitoring, site preparation, de-watering, drilling, underpinning, anchoring, shoring, piling, pre-loading, ground densification or other activities that may result in settlement, displacement, subsidence, damage or nuisance to City and private utility infrastructure.
- Applicants for all City Permits are required to comply at all times with the conditions of the Provincial Wildlife Act and Federal Migratory Birds Convention Act, which contains prohibitions on the removal or disturbance of both birds and their nests. Issuance of Municipal permits does not give an individual authority to contravene these legislations. The City of Richmond recommends that where significant trees or vegetation exists on site, the services of a Qualified Environmental Professional (QEP) be secured to perform a survey and ensure that development activities are in compliance with all relevant legislation.

Signed	Date



Development Permit

No. DP 19-850320

To the Holder:

Great Vancouver Sewerage and Drainage District

Property Address:

1000 Ferguson Road

Address:

c/o AECOM

4th Floor, 3292 Production Way

Burnaby BC V5A 4R4

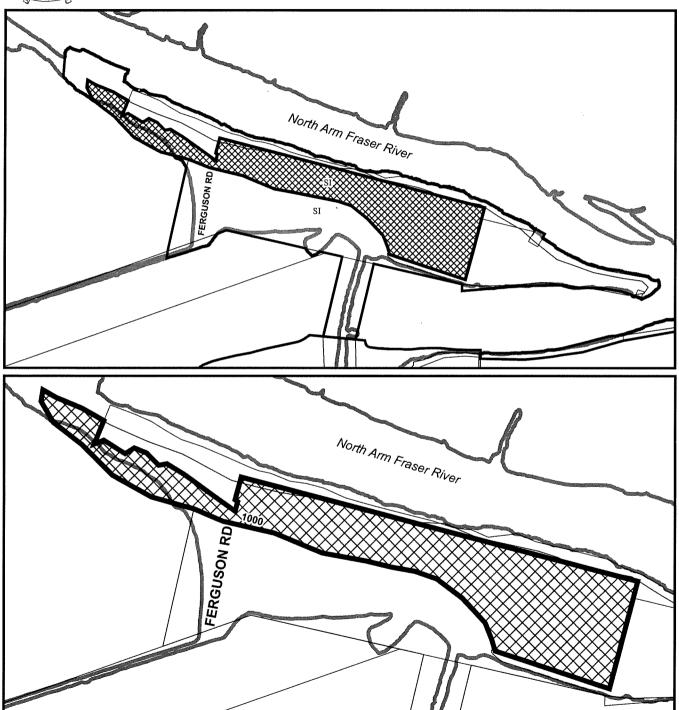
- 1. This Development Permit is issued subject to compliance with all of the Bylaws of the City applicable thereto, except as specifically varied or supplemented by this Permit.
- 2. This Development Permit applies to and only to those lands shown in cross hatch on the attached Schedule "A" and any and all buildings, structures and other development thereon.
- 3. Subject to Section 692 of the Local Government Act, R.S.B.C.: buildings and structures; off-street parking and loading facilities; roads and parking areas; and landscaping and screening shall be constructed generally in accordance with Plans #1., 2, 2.b and 3, attached hereto.
- 4. Sanitary sewers, water, drainage, highways, street lighting, underground wiring, and sidewalks, shall be provided as required.
- 5. As a condition of the issuance of this Permit, the applicant will install the works shown on the Landscape Compensation Plan before 2020, and once in place, the applicant will provide landscape monitoring and maintenance for the restoration area for 5 years following completion.
- 6. If the Holder does not commence the construction permitted by this Permit within 24 months of the date of this Permit, this Permit shall lapse and the security shall be returned in full.
- 7. The land described herein shall be developed generally in accordance with the terms and conditions and provisions of this Permit and any plans and specifications attached to this Permit which shall form a part hereof.

This Permit is not a Building Permit.

AUTHORIZING RESOI OF ,	LUTION NO.		ISSUED BY THE COUNCIL THE	DAY
DELIVERED THIS	DAY OF	,		

MAYOR







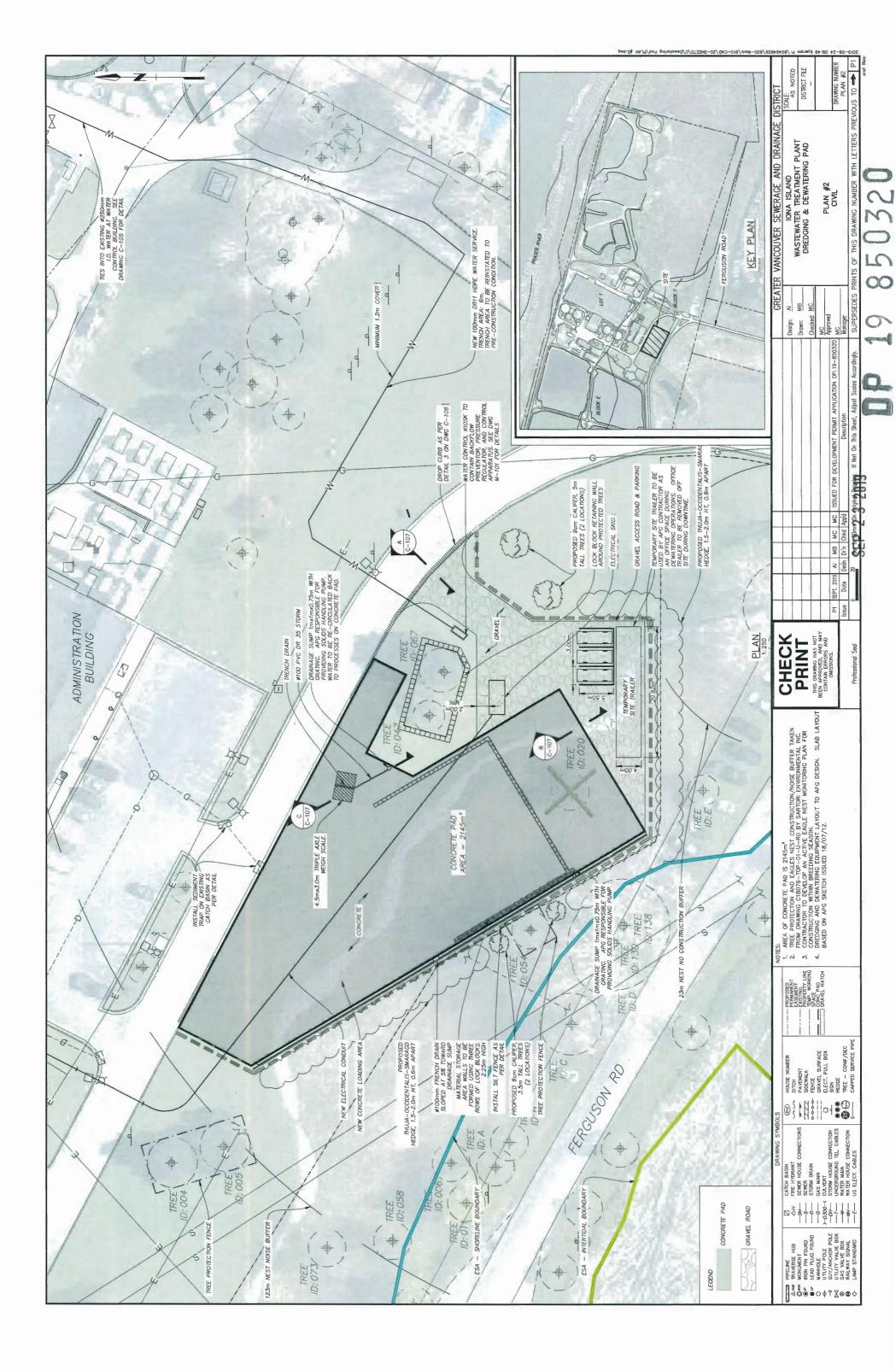
DP 19-850320 SCHEDULE "A"

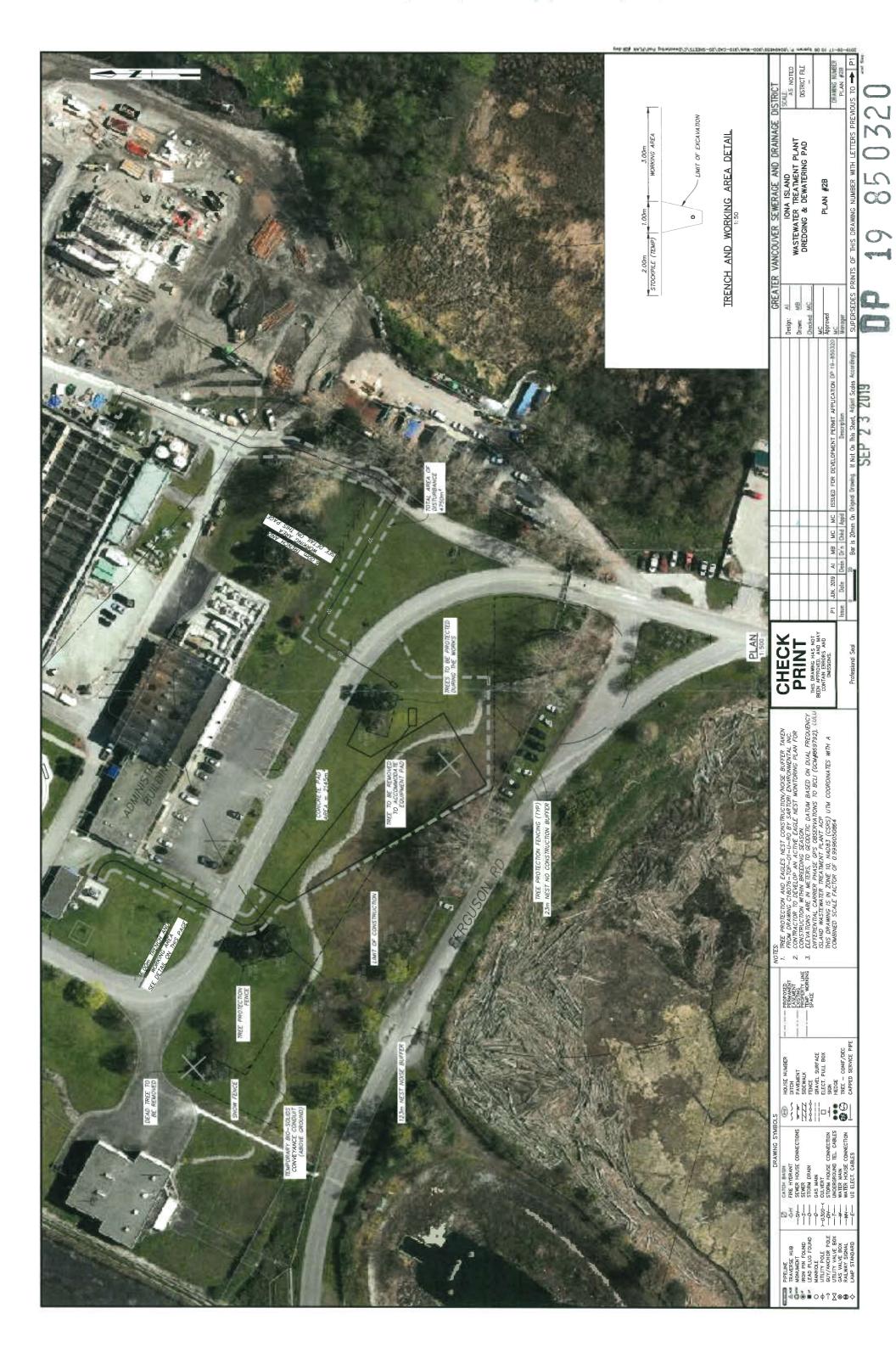
Original Date: 01/18/19

Revision Date:

Note: Dimensions are in METRES







DRAWING NUMBER PLAN #3 GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT

IONA ISLAND

WASTEWATER TREATMENT PLANT

DREDGING & DEWATERING PAD

DISTRICT

SCALE

DISTRICT

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DISTRICT

DISTRIC 020 REGIONAL PARK COMPENSATION 2018
Plan 3

SEPT. 2019 A1 MB MC MC ISSUED FOR DEVELOPMENT PERMIT APPLICATION DP.:19—850320

Date Desin Dr'n Chied Appid Drawing. If Not On This Sheet, Adjust Scales Accordingly.

2

CHECK PRINT
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KEY PLAN

VSATION SUMMARY

- 3000 SQ. METERS (0.3ha) T SITE AREA IN ESA
- EED COMPENSATION SITES FOR HABITAT RESTORATION / NATINE SPECIES PLANTING AT CANFOR PARK SITE IN METRO. VANCOUVER LONG REGIONAL PARK. 3000 SQ. METERS (0.3ha) VSATION RATIO @ 1:1
- 3000 SQ. METERS (0.3ha) 3000 SQ. METERS (0.3ha) COMPENSATION AREA
 - 2700 PLANTS RESTORATION PLANTING
 - NUMBER OF TREES
- 200 TREES @ 3.0m-4.0m O.C. MINIMUM SPACING NUMBER OF SHRUBS,

2500 PLANTS SPACED 1.0m APART

PRESCRIPTION

RE SPECIES REMOVAL. ALL PLANTS AND THEIR ROOTBALLS TO BE REMOVED MATERIALS OFF SITE TO GREEN WASTE FACULTY COORN INCLUDES BINNING AND TRUCKING OF REMOVED MATERIALS OFF SITE TO GREEN WASTE FACULTY USE OF BEST PRACTICES CONTAINMENT AND DISPOSAL TECHNIQUES FOR REMOVED MATERIALS TO LIMIT FURTHER SPREAD IN PARK SPECIES PLANTING: PLANT ALL NATIVE SPECIES IN UNDEPLATING SAND PLANT ALL NATIVE SPECIES IN UNDEPLATING SAND BERRIES BEARING PLANTS DIVERSITY OF NATIVE PLANTINGS INCLUDE FRUITING AND BERRIES BEARING PLANTS

AND MAINTENANCE

5 YEAR MONITORING AND MAINTENANCE PROGRAM (GEP) 80% SURVIVAL RATE WEEDING OF INVASIVE SPECIES AFTER 5 YEARS

	25	20	75	20	200	200	200	200	200
SIZE	5 GAL	5 GAL	5 GAL	3 641	2 GAL	2 GAL	2 GAL	2 GAL	2 GAL
SPACING	3-4m	3-4m	3-4m	3-4m	1m	1m	1111	1111	1m
SPECIES NAME	PINUS CONTORTA	BALSAM POPLAR (SSP. BALSAMIFERA)	MALUS FUSCA	PRUNUS VIRGINIANA	SAMBUCUS RACEMOSA VAR. ARBORESCENS	MAHONIA NERVOSA	HOLODISCUS DISCOLOR	RUBUS URSINUS	ROSA GYMNOCARPA
COMMON NAME	SHORE PINE	BLACK COTTONWOOD	PACIFIC CRAB APPLE	CHOKE CHERRY	RED ELDERBERRY	DULL OREGON GRAPE	OCREANSPRAY	TRAILING BLACKBERRY	BALDHIP ROSE

	PROJECT ? PROJECT ? COMPENSA BROGOSED BEAGLI RE SITE C TOTAL NUM GRASSES. LAMDSCARE PR NIVASIVE . - ALL - ONE MOMITORING AM MOMITORING AM - BOX - BOX
PROPOSED COMPENSATION AREA (3000m²)	APPROVED COMPENSATION AREA (13666m²) OR DP 18-820582

PERMANENT	EXISTING	PROPERTY UNE	SPACE SPACE							
DITCH	PAVEMENT	SIDEWALK	FENCE	GRAVEL SURFACE	ELECT. PULL BOX	SIGN	HEDGE	TOTAL POOR	INEE - CONIL/DEC	CAPPED SERVICE PIPE
3	-	777	9			اوا	***	6	0	
SH FIRE HYDRANT	SEWER HOUSE CONNECTIONS	SEWER	STORM DRAIN	GAS MAIN	CULVERT	STORM HOUSE CONNECTION	UNDERGROUND TEL CABLES	WATER MAIN	WATER HOUSE CONNECTION	IIC ELECT CARIES
HQ.	185	15-		١	>-0300-<	100	1	*	1	
			0							