



## REQUEST FOR PROPOSALS

### CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL

RFP No. PS20181579

Issue Date: November 28, 2018

Issued by: City of Vancouver (the "City")

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
TABLE OF CONTENTS

---

TABLE OF CONTENTS

<b>PART A - INFORMATION AND INSTRUCTIONS</b>	<b>Pages A-1 to A-6</b>
1.0 The RFP	
2.0 Key Dates	
3.0 Contact Person	
4.0 Submission of Proposals	
5.0 Changes to the RFP and Further Information	
6.0 Proposed Term of Engagement	
7.0 Pricing	
8.0 Evaluation of Proposals	
9.0 City Policies	
10.0 Living Wage Employer	
11.0 Certain Applicable Legislation	
12.0 Legal Terms and Conditions	
APPENDIX 1 Information Meeting and Instructions	
 <b>PART B - CITY REQUIREMENTS</b>	 <b>Pages B-1 to B-14</b>
1.0 Requirements	
 <b>PART C - FORM OF PROPOSAL</b>	 <b>Page C-1 to C22</b>
APPENDIX 1 Legal Terms and Conditions	
APPENDIX 2 Questionnaire	
APPENDIX 3 Commercial Proposal	
APPENDIX 4 Proponent's References	
APPENDIX 5 Certificate of Insurance	
APPENDIX 6 Declaration of Supplier Code of Conduct Compliance	
APPENDIX 7 Personal Information Consent Form(s)	
APPENDIX 8 Subcontractors	
APPENDIX 9 Proposed Amendments to Form of Agreement	
APPENDIX 10 Financial Statements	
APPENDIX 11 Proof of WorkSafeBC Registration	
APPENDIX 12 Conflicts; Collusion; Lobbying	
 <b>PART D - FORM OF AGREEMENT</b>	 <b>Pages D-1 to D-26</b>

## PART A - INFORMATION AND INSTRUCTIONS

### 1.0 THE RFP

- 1.1 This Request for Proposals (the “RFP”) provides an opportunity to submit proposals for review by the City and, depending on the City’s evaluation of proposals, among other factors, to potentially negotiate with the City to enter into a contract. **EXCEPT WHERE EXPRESSLY STATED OTHERWISE IN APPENDIX 1 TO PART C OF THE RFP: (I) NO PART OF THE RFP CONSISTS OF AN OFFER BY THE CITY TO ENTER INTO ANY CONTRACTUAL RELATIONSHIP; AND (II) NO PART OF THE RFP IS LEGALLY BINDING ON THE CITY.**
- 1.2 The RFP concerns the City’s interest in procuring a consultant for design and construction administration services for the Phase 4 Closure Project at the Vancouver Landfill, located in Delta, BC. Details of the City’s objectives and requirements to which the RFP relates are set out in Part B of the RFP. The City welcomes proposals that are responsive to this RFP (“Proposals”) respecting innovative or novel approaches to the City’s objectives and requirements.
- 1.3 The City is interested in selecting an entity, which is not, by the terms hereof, barred from submitting a Proposal, and which does submit a Proposal (each such entity, a “Proponent”) with the capability and experience to efficiently and cost-effectively meet the objectives and requirements described in the RFP. The City currently expects to select such a Proponent and then enter into negotiations with that Proponent, which will conclude in the execution of a contract between the Proponent and the City (such a contract, an “Agreement”). However, the City may: (i) decline to select any Proponent; (ii) decline to enter into any Agreement; (iii) select multiple Proponents for negotiation; or (iv) enter into one or more agreements respecting the subject matter of the RFP with one or more Proponents or other entities at any time. The City may also terminate the RFP at any time.
- 1.4 The City currently intends that Proposals will be evaluated by the City in relation to their overall value, which will be assessed in the City’s sole and absolute discretion. In assessing value, the City expects to consider the factors described in Section 8 below, among others.
- 1.5 **NO BID SECURITY IS REQUIRED FROM PROPONENTS IN CONNECTION WITH THE SUBMISSION OF PROPOSALS BECAUSE NO PROPOSAL WILL BE DEEMED TO BE AN IRREVOCABLE OR OTHERWISE BINDING LEGAL OFFER BY A PROPONENT TO THE CITY. THE LEGAL OBLIGATIONS OF A PROPONENT THAT WILL ARISE UPON THE SUBMISSION OF ITS PROPOSAL WILL BE LIMITED TO THE TERMS AND CONDITIONS STATED UNDER THE HEADING “LEGAL TERMS & CONDITIONS” IN APPENDIX 1 TO THE FORM OF PROPOSAL.**
- 1.6 The execution of an Agreement may be contingent on funding being approved, and the relevant Proposal being approved, by the Vancouver City Council.
- 1.7 The RFP consists of four parts, plus appendices:
- (a) **PART A - INFORMATION AND INSTRUCTIONS:** This part is intended to serve as a guide to the RFP process for Proponents.
  - (b) **PART B - CITY REQUIREMENTS:** This part describes the subject matter of the RFP, in respect of which the City invites Proposals.
  - (c) **PART C - FORM OF PROPOSAL:** This is the form in which the Proposal should be submitted.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART A - INFORMATION AND INSTRUCTIONS

---

- (d) **PART D - FORM OF AGREEMENT:** This part contains a model Agreement (the “**Form of Agreement**”). Any Agreement resulting from the RFP is expected to be substantially in the form of the Form of Agreement.

## 2.0 KEY DATES

- 2.1 Potential Proponents should note the following key dates:

Event	Time and Date
Deadline for Enquiries	January 7, 2019
Closing Time	3:00 pm on January 14, 2019

- 2.2 All references to time in the RFP are references to the time in the City of Vancouver, as indicated in the electronic timestamp the Proposal receives upon delivery to the email address specified herein, which is in turn synchronized to Network Time Protocol (NTP) provided by the National Research Council of Canada adjusted to local Pacific Time Zone.

## 3.0 CONTACT PERSON

- 3.1 All enquiries regarding the RFP must be addressed to:

Brian Brennan  
brian.brennan@vancouver.ca

- 3.2 All enquiries must be made in writing. In-person or telephone enquiries are not permitted.

- 3.3 **IF A POTENTIAL PROPONENT BELIEVES THAT THE CITY MAY BE UNABLE TO SELECT IT DUE TO A CONFLICT OF INTEREST, BUT IS UNCERTAIN ABOUT THIS, THE POTENTIAL PROPONENT IS URGED TO CONTACT THE ABOVE-MENTIONED INDIVIDUAL AS SOON AS POSSIBLE WITH THE RELEVANT INFORMATION SO THAT THE CITY MAY ADVISE THE POTENTIAL PROPONENT REGARDING THE MATTER.**

## 4.0 SUBMISSION OF PROPOSALS

- 4.1 Proponents should submit their Proposals on or before the time and date specified in the bottom row of the table in Section 2.1 above (the “**Closing Time**”).

- 4.2 Each Proponent should submit its Proposal by email in accordance with the following:

- Subject of the file to be: PS20181579 - CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL - Vendor name.
- Document format for submissions:
  - RFP Part C in PDF format - 1 combined PDF file,
  - Appendix 3 (pricing tab) in Excel format, and;
  - Any other attachments if necessary
- Zip the files to reduce the size or email separately if needed.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART A - INFORMATION AND INSTRUCTIONS

---

- Send your submissions to [Bids@vancouver.ca](mailto:Bids@vancouver.ca); do not deliver a physical copy to the City of Vancouver.
- If you did not receive an automated email within few minutes, check your junk folder first, and then contact [Purchasing@vancouver.ca](mailto:Purchasing@vancouver.ca).
- Submitting the files via Drop box, FTP, or similar programs, is not acceptable.

4.3 Proposals must not be submitted by fax.

4.4 To be considered by the City, a Proposal must be submitted in the form set out in Part C (the "Form of Proposal"), completed and duly executed by the relevant Proponent.

4.5 Amendments to a Proposal may be submitted via the same methods, at any time prior to the Closing Time.

4.6 Proposals are revocable and may be withdrawn at any time before or after the Closing Time.

4.7 All costs associated with the preparation and submission of a Proposal, including any costs incurred by a Proponent after the Closing Time, will be borne solely by the Proponent.

4.8 Unnecessarily elaborate Proposals are discouraged. Proposals should be limited to the items specified in Part C of the RFP.

4.9 The City is willing to consider any Proposal from two or more Proponents that wish to form a consortium solely for the purpose of submitting a joint Proposal in response to the RFP, provided that they disclose the names of all members of the consortium and all members complete and sign the first page of the Form of Proposal. Nonetheless, the City has a strong preference for Proposals submitted by a single Proponent, including a Proponent that would act as a general contractor and use subcontractors as required.

4.10 Proposals that are submitted after the Closing Time or that otherwise do not comply in full with the terms hereof may or may not be considered by the City and may or may not be returned to the Proponent, in the City's sole discretion.

## 5.0 CHANGES TO THE RFP AND FURTHER INFORMATION

5.1 The City may amend the RFP or make additions to it at any time.

5.2 It is the sole responsibility of Proponents to check the City's website at: <http://vancouver.ca/doing-business/open-bids.aspx> regularly for amendments, addenda, and questions and answers in relation to the RFP.

5.3 Proponents must not rely on any information purported to be given on behalf of the City that contradicts the RFP, as amended or supplemented in accordance with the foregoing Section 5.2

## 6.0 PROPOSED TERM OF ENGAGEMENT

6.1 The term of any Agreement is expected to be to be approximately three (3) years or until project completion.

## 7.0 PRICING

7.1 All prices quoted in any Proposal are to be exclusive of applicable sales taxes calculated upon such prices, but inclusive of all other costs.

**REQUEST FOR PROPOSALS NO. PS20181579**  
**CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL**  
**PART A - INFORMATION AND INSTRUCTIONS**

---

- 7.2 Prices must be quoted in Canadian currency and fixed prices must be quoted for the full term of the Proponent's proposed agreement.

**8.0 EVALUATION OF PROPOSALS**

- 8.1 The City may open or decline to open Proposals in such manner and at such times and places as are determined by the City.
- 8.2 The City currently intends that all Proposals submitted to it in accordance with the RFP will be evaluated by City representatives, using quantitative and qualitative tools and assessments, as appropriate, to determine which Proposal or Proposals offer the overall best value to the City. In so doing, the City expects to examine not only financial terms, but also (i) Proponents' skills, knowledge, reputations and previous experience(s), including experience(s) with the City (if any); (ii) Proponents' capabilities to meet the City's Requirements (as defined in Part B) as and when needed, (iii) quality and service factors, (iv) innovation, (v) environmental or social sustainability; and (vi) transition costs or challenges. Certain other factors may be mentioned in Part B or elsewhere in the RFP.

Evaluation Criteria	Evaluation Weighting
Technical	65%
Financial	35%
Total	100%

- 8.3 The City will retain complete control over the RFP process at all times until the execution and delivery of an Agreement or Agreements, if any. The City is not legally obligated to review, consider or evaluate Proposals, or any particular Proposal, and need not necessarily review, consider or evaluate Proposals, or any particular Proposal in accordance with the procedures set out in the RFP. The City may continue, interrupt, cease or modify its review, evaluation and negotiation process in respect of any or all Proposals at any time without further explanation or notification to any Proponents.
- 8.4 The City may, at any time prior to signing an Agreement, discuss or negotiate changes to the scope of the RFP with any one or more of the Proponents without having any duty or obligation to advise the other Proponents or to allow the other Proponents to vary their Proposals as a result of such discussions or negotiations.
- 8.5 The City may elect to short-list Proponents and evaluate Proposals in stages. Short-listed Proponents may be asked to provide additional information or details for clarification, including by attending interviews, making presentations, supplying samples, performing demonstrations, furnishing technical data or proposing amendments to the Form of Agreement. The City will be at liberty to negotiate in parallel with one or more short-listed Proponents, or in sequence, or in any combination, and may at any time terminate any or all negotiations.
- 8.6 The City may also require that any proposed subcontractors undergo evaluation by the City.
- 8.7 For the avoidance of doubt, notwithstanding any other provision in the RFP, the City has in its sole discretion, the unfettered right to: (a) accept any Proposal; (b) reject any Proposal; (c) reject all Proposals; (d) accept a Proposal which is not the lowest-price proposal; (e) accept a Proposal that deviates from the Requirements or the conditions specified in the RFP; (f) reject a Proposal even if it is the only Proposal received by the City; (g) accept all or any part of a

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART A - INFORMATION AND INSTRUCTIONS

---

Proposal; (h) split the Requirements between one or more Proponents; and (i) enter into one or more agreements respecting the subject matter of the RFP with any entity or entities at any time. Without limiting the foregoing, the City may reject any Proposal by a Proponent that has a conflict of interest, has engaged in collusion with another Proponent or has otherwise attempted to influence the outcome of the RFP other than through the submission of its Proposal.

## 9.0 CITY POLICIES

- 9.1 The City's Procurement Policy, Ethical Purchasing Policy and related Supplier Code of Conduct found at <http://vancouver.ca/doing-business/selling-to-and-buying-from-the-city.aspx> align the City's approach to procurement with its corporate social, environmental and economic sustainability values and goals. They evidence the City's commitment to maximize benefits to the environment and the community through product and service selection, and to ensure safe and healthy workplaces, where human and civil rights are respected. Each Proponent is expected to adhere to the supplier performance standards set forth in the Supplier Code of Conduct. The Ethical Purchasing Policy shall be referred to in the evaluation of Proposals, to the extent applicable.

## 10.0 LIVING WAGE EMPLOYER

- 10.1 Effective May 1, 2017, the City of Vancouver became a "Living Wage Employer". As such, the City requires all firms that are contracted by the City to provide services on City-owned and leased properties to pay employees who perform those services on City property a Living Wage as calculated by the Living Wage for Families Campaign.

Please see the Living Wage for Families Campaign website for the current Living Wage for Vancouver:

[http://www.livingwageforfamilies.ca/living\\_wages\\_in\\_bc\\_and\\_canada](http://www.livingwageforfamilies.ca/living_wages_in_bc_and_canada)

The Living Wage includes the value of any non-mandatory benefits such as paid sick leave, employer-paid Medical Services Plan premiums and extended health benefits.

The Living Wage for Families has created a Living Wage Calculator to assist with the calculation of an employee's hourly rate with benefits. The Living Wage Calculator can be found at the following website:

<http://www.livingwageforfamilies.ca/employers/living-wage-calculator/>

Proponents should refer to the Form of Agreement attached as Part D to this RFP for the specific requirements related to the Living Wage, which include:

- (a) paying the Living Wage to all employees who perform services pursuant to the Agreement on City property during the term of the Agreement; and
- (b) ensuring that all subcontractors pay the Living Wage to their employees who perform services on City property during the term of the Agreement.

Failure to comply with the Living Wage requirement will entitle the City to terminate the Agreement.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART A - INFORMATION AND INSTRUCTIONS

---

**11.0 CERTAIN APPLICABLE LEGISLATION**

- 11.1 Proponents should note that the City of Vancouver is subject to the *Freedom of Information and Protection of Privacy Act* (British Columbia), which imposes significant obligations on the City's consultants or contractors to protect all personal information acquired from the City in the course of providing any service to the City.
- 11.2 Proponents should note that the *Income Tax Act* (Canada) requires that certain payments to non-residents be subject to tax withholding. Proponents are responsible for informing themselves regarding the requirements of the *Income Tax Act* (Canada), including the requirements to qualify for any available exemptions from withholding.

**12.0 LEGAL TERMS AND CONDITIONS**

- 12.1 The legal obligations of a Proponent that will arise upon the submission of its Proposal are stated in this Appendix 1 to the Form of Proposal. Except where expressly stated in these Legal Terms and Conditions: (i) no part of the RFP consists of an offer by the City to enter into any contractual relationship; and (ii) no part of the RFP is legally binding on the City.

**POTENTIAL PROPONENTS MUST REVIEW THESE LEGAL TERMS AND CONDITIONS CAREFULLY BEFORE SUBMITTING A PROPOSAL.**

## PART B - CITY REQUIREMENTS

The requirements stated in this Part B (collectively, the “Requirements”) are current as of the date hereof, but they may change or be refined in the course of the evaluation of Proposals or otherwise.

Unless otherwise stated, if, and wherever, the Requirements state a brand name, a make, the name of a manufacturer, a trade name or a vendor catalogue number, it is for the purpose of establishing a grade or quality of materials, goods or equipment only. It is not intended to rule out the use of other equivalent materials, goods or equipment. If, however, products other than those specified are proposed in any Proposal, the Proposal must explicitly include under the heading “Alternative Solutions” the names of such products and their manufacturers, any trade names and any applicable vendor catalogue numbers, and the City may request that the Proponent provide specific evidence of equivalency. Evidence of quality in the form of samples may also be requested.

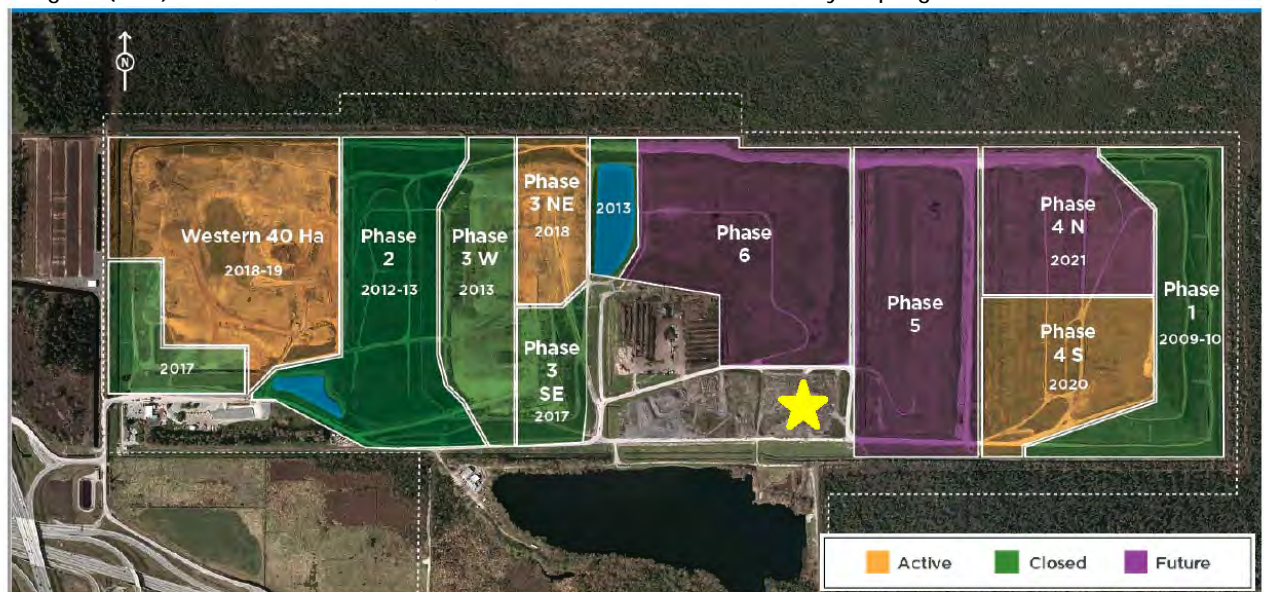
### 1.0 Introduction

To retain a consultant to provide professional services including detailed design and construction supervision services for Phase 4 closure construction, for the Vancouver Landfill.

### 2.0 Background

Owned and operated by the City, the Vancouver Landfill (“Landfill”) serves approximately 70% of the Metro Vancouver region. In operation since 1966, the Landfill is authorized by the BC Ministry of Environment and Climate Change’s (MOE) Operational Certificate (OC) and Metro Vancouver’s *Integrated Solid Waste and Resource Management Plan* (ISWRMP) (<http://www.metrovancouver.org/about/publications/Publications/ISWRMP.pdf>). The current operating agreements with Metro Vancouver and the City of Delta expire in 2037. Additional information about the Landfill can be found in the Landfill’s annual report at <http://vancouver.ca/home-property-development/annual-reports-for-landfill-and-solid-waste-divisions.aspx>

The Landfill’s current filling sequence of the site is shown in the following figure. Closure of Stage 2 (of 3) of the Western 40 Ha, as well as Phase 3NE is currently in progress.



REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

---

Phase 4 is located in the east of the Landfill and is split into two areas, Phase 4 South and Phase 4 North, that have an area of 5.1 hectares and 9.4 hectares, respectively. Phase 4 was largely filled with garbage to a height of approximately 15 metres above sea level (ASL) in the late 1990s. Since 2017, the City has been filling Phase 4S with garbage which is expected to be completed in Q2-Q3 of 2019.

The Landfill's OC issued by the MOE contains a requirement that final cover be applied within one year of final placement of garbage. Since the closure is a geomembrane-based system, construction of Phase 4S closure is scheduled to be completed in summer 2020 during dry weather and Phase 4N, in the summer of 2021. The closure systems will incorporate leachate, landfill gas, and surface water management systems and must integrate with the neighbouring closed Phase 1 area.

As part of the Phase 4 closure works, a new stormwater pond is required to be constructed with Phase 4S closure. This pond will be approximately 2.5 hectares in area, have a capacity of approximately 80,000-100,000 m<sup>3</sup> and will be located south of Phase 6 in the soil stockpile location (marked with a star in the above figure). Additionally, a temporary closure is required on the west slope of Phase 4S to maximize landfill gas capture until the bank is filled against with garbage in Phase 5S.

### 3.0 Summary of Requirement

The City requires professional services to provide detailed design and construction supervision for Phase 4 closure including the stormwater pond ("Capital Works") to be constructed by a Contractor (the "Contractor"). The Consultant's professional services and the Contractor's construction of the Capital Works ("Capital Works Construction") are herein referred to as the Project.

The professional services are for several tasks at the Landfill, including:

- a) Review the City of Vancouver's standard design for closure and gas works as well as improvements made during recent construction and conduct a lessons learned workshop. Note there is an update to the DOPC underway this year which is planned to be completed by year end.
- b) Complete the detailed design and construction supervision of the Phase 4 Closure final cover system, including:
  - i. New vertical gas wells, piping, and condensate management works fully integrated with existing LFG works
  - ii. Modelling and analysis, using settlement monitoring data provided by the City, of Phase 4 and forecast settlement at the time of Capital Works Construction and over the longer term which builds on previous models for closure
  - iii. Surface water management systems, keeping clean water clean during construction and directing by gravity all clean water runoff from Phases 4S and 4N and possibly Phase 1 to the new stormwater pond (designed also to accept clean water from Phase 5 and a portion of Phase 6)
  - iv. Leachate management systems keeping leachate separated from clean surface water fully integrated with existing
  - v. Temporary closure on the west slope of Phase 4S with a minimum lifespan of 15 years

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

---

- vi. Closure materials timing and management, including stockpile locations and quantity tracking, in cooperation with Landfill operations and accounting for materials stockpiled by the City
- vii. Traffic plan development for closure construction and Landfill operations that accounts for customer traffic as well as heavy equipment movements to minimize disruptions to operations

#### 4.0 Work Scope

The Consultant is required to have experience as follows:

- a. Municipal solid waste management in BC
- b. Landfill operations and landfill design
- c. Landfill gas design and operations
- d. Landfill closure design and construction in BC

The City has the following guiding principles for this Project:

- a. Safety is paramount during the life of the Project
- b. Phase 4S closure, including the stormwater pond and temporary closure, must be substantially completed prior to October 31, 2020
- c. Phase 4N closure must be substantially completed prior to October 31, 2021
- d. Connection of new LFG works must minimize downtime of the LFG system, including existing wells
- e. At no time during the Project, a full LFG system outage will be necessary
- f. Project construction cannot prevent or impact regular Landfill operations

The following are specific tasks and requirements for the Work to be provided by the Consultant (the "Tasks", individually, "Task"). Any tasks not identified here but required to complete the Work shall be identified by the Proponent in their Proposal.

##### Task 1 - Review of Previous Work

The Consultant shall review the following:

- a. 2018 update to the *Design, Operations and Progressive Closure Plan for Vancouver Landfill*, Sperling Hansen Associates/SCS Engineers, November 2014
- b. Phase 3NE IFC drawings and specifications with notes on any field modifications
- c. Topography Plans
- d. Other information as required

The Consultant shall facilitate a workshop with City staff and Phase 3NE closure consultants/contractors to review the Phase 3NE Closure project and document any lessons learned.

##### Deliverable for Task 1:

- i. Minutes summarizing key findings from the Lessons Learned Workshop

##### Task 2 - Survey Modeling and Analysis

The Consultant shall be responsible for all surveying required for Phase 4 Closure up to construction. The following tasks outline the work required.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

---

**Task 2A - Surveying and Settlement Monitoring & Modeling/Analysis**

The Consultant shall be responsible for all surveying required for the Phase 4 Closure detailed design as well as any construction surveying required to provide benchmarks for the Contractor and to check the Contractor's work or for payment verification or other purposes.

The City will provide the Consultant with settlement monitoring measurements. The data from settlement monitoring shall be used by the Consultant to:

- a. Update the City's settlement model with the predicted settlement of each of Phase 4S and 4N by the time when Capital Works Construction begins for each area
- b. Estimate the long term settlement of Phase 4S and 4N

Deliverable for Task 2A:

- i. Updated City settlement model.

**Task 2B - Phase 4 Closure Preliminary Grading Plan**

The City's expectation is that some areas of Phase 4S and 4N may require additional fill materials such as garbage, demolition materials or soil to improve grading or for other objectives such as LFG conveyance pipe grades, access roads, drainage etc. as the detailed design of each progresses. The Consultant shall develop a Preliminary Grading Plan for any cutting or filling to be carried out by the City or its contractors to prepare each of Phase 4S and 4N for Capital Works Construction. The grading plan shall be based on elevation to optimize filling where possible.

Deliverable for Task 2B:

- i. A preliminary grading plan of each of Phase 4S and 4N in AutoCAD (electronic version)

**Task 2C - Final Grading Plan**

Following City grading as per the Preliminary Grading Plan in Task 2B, the Consultant shall resurvey the Phase 4 Closure areas and design any final grading to be carried out by the Contractor each year as part of the Capital Works Construction. The grading plan shall be based on minimum grades and design parameters for landfill gas works, stormwater and leachate works, minimum road widths, ditch sizes, pond capacity, etc.

Deliverable for Task 2C:

- i. A final grading plan of each of Phase 4S and 4N in AutoCAD (electronic version).

**Task 2D - Final Survey for Construction**

In addition, once the Capital Works Construction contract is awarded to the Contractor, and immediately prior to Construction, the Consultant shall complete a full topographic survey of the Phase 4S and 4N areas. Once the survey is complete, the cut and fill quantities shall be adjusted to ensure grade requirements are still met.

Deliverable for Task 2D:

- i. A detailed survey plan of the completed Phase 4 areas in AutoCAD (electronic version).

### **Task 3 - Health and Safety**

The Consultant shall be responsible for the health and safety of all Consultants' and Sub-contractors' staff that report to it, either directly or indirectly. The Consultant shall provide a health and safety plan for all of the Consultant's work.

The Consultant will comply with the City's health and safety and security programs. The Consultant's health and safety plan shall incorporate the documents appended to Part D:

- Transfer & Landfill Operations Branch Site Safety Orientation/Agreement
- Vancouver Landfill Gas Control Systems Safe Work Procedures
- Vancouver Landfill Owner's List of Known Workplace Hazards

#### **Deliverable for Task 3:**

- i. A health and safety plan for the Consultant's work on the Project for review and acceptance by the City.

### **Task 4 - Phase 4 Closure Detailed Design**

The Consultant shall develop the detailed design for Phase 4 Closure. The following tasks outline the work required by the Consultant.

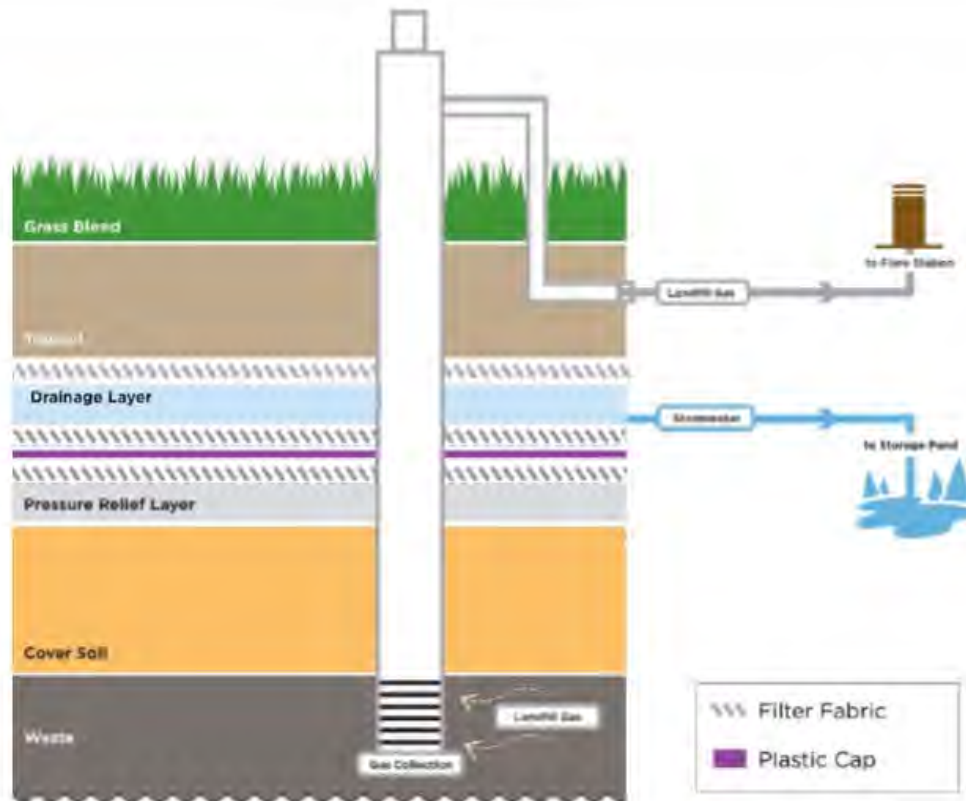
#### **Task 4A - Phase 4 Closure Detailed Design Requirements**

The City's standard design for closure starting from the 300 mm minimum cover over the garbage is as follows and detailed in the following figure:

- 5 - 25 mm recycled crushed concrete (200 mm) pressure relief layer with associated piping (or equally comparable material)
- 12 oz geotextile
- 40 mil LLDPE geomembrane (white)
- 12 oz geotextile
- 5 - 25 mm clear crushed rock (200 mm) drainage layer
- 8 oz geotextile
- Subsoil/topsoil (600 mm)
- Grass

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

---



The Consultant must ensure the following overall goals are met by the detailed design:

- OC requirements are satisfied as well as the *Landfill Criteria for Municipal Solid Waste*, Second Edition.
- The new closure system will integrate seamlessly with Phase 1, accounting for LFG conveyance pipe grades, settlement and stormwater management.
- Stormwater from the Phase 4 closed area must be kept clean and be directed to the new stormwater pond as much as possible by gravity. Pond capacity shall account for short and long term settlement model predictions.
- Leachate management systems must keep leachate separate from clean surface water and integrate with existing systems.
- All Capital Works are able to withstand long term settlement.
- The detailed design will recess all gas piping to allow for a smooth finished surface.

Ancillary items that require analysis include:

- a. Roadways (e.g. Roads 55 and 65) and maintenance roads, including pavement designs, as required
- b. Safety barriers and similar infrastructure, e.g. barricades along roadways such as Roads 55 and 65
- c. Roadway lighting within Phase 4 along access Road 55 consistent with existing site lighting for maintenance purposes
- d. Roadway signage
- e. Roadway pipeline crossings

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

---

#### Task 4B - Landfill Gas Management System Design

The Consultant shall complete the detailed design and commissioning of the LFG works using the City's standard design outlined in the following:

- *Landfill Gas Management Facilities Design Plan for the Vancouver Landfill*, SCS Engineers, 2011
- *Assessment of the Landfill Gas Collection System for the Vancouver Landfill*, SCS Engineers, 2013
- *Phase 3 NE Closure and Phase 4 LFG System Expansion IFC Drawing Package*, SCS Engineers, 2018

The above documents shall be provided to the successful proponent upon contract award. The Phase 3NE IFC drawing package is to be mostly employed as it is the most current design for the Landfill, updated with the below points. For reference, some Phase 3NE drawings have been provided with the RFP as an example of the designs to be employed. These can be found on the FTP site for proponents:

To access the site externally, use your web browser and go to:

<https://webtransfer.vancouver.ca/>

The user ID is : PS20180897DL@coveftp01

The password is: KN24EajD (The password is case sensitive.)

- a. Phase 4 detailed design will include new vertical extraction wells spaced 50 metres apart on centre and extensions of the existing horizontals to the west to the subheader (which will be required to be relocated above the liner system by the Contractor).
- b. The landfill gas and leachate system shall seamlessly integrate with the existing network. Isolation valves between existing systems shall be added for future maintenance or tie-in where appropriate.
- c. Insulation to be considered for air and leachate conveyance that is left exposed due to pipe crossings to be included in design.
- d. Orientation of air and leachate risers around wells will be as follows: condensate will be positioned on the north side of the well, and air risers will be positioned on the south side, making a T/cross shape and not in a line, where possible.
- e. All piping will be designed to allow for future access, inspections, isolation and drainage.
- f. Laterals that connect to subheaders will be sized for final total flow of current and future gas collector connections based on the 2018 DOPC.
- g. Monitoring devices, wellheads, and bubbler system to follow current City inventory and be of QED or similar standard acceptable to the City.
- h. LFG well pumps and associated infrastructure to follow current City inventory. The City prefers Viridian pumps or equivalent for vertical wells.
- i. Addition of vertical gas extraction well extensions to any existing Phase 4 wells as needed. Design to include safe LFG well protection (temporary during construction and permanent).
- j. The reuse of LFG collection piping/valves and other associated parts in storage or as identified.
- k. Provide and implement an LFG pipeline demarcation plan throughout Phase 4.
- l. Road access network for light trucks/Kubota, and possibly hydrovac trucks, to optimize LFG field monitoring within Phase 4, with consideration to travelling over headers, sub-headers, and laterals including required piping protection.

#### Task 4C - New Stormwater Pond Design

Located south of Phase 6, the new stormwater pond is sized to accept clean surface water from Phases 1, 4 and 5 and a portion of Phase 6. Clean water must be directed to the new storm

**REQUEST FOR PROPOSALS NO. PS20181579**  
**CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL**  
**PART B - CITY REQUIREMENTS**

---

water pond by gravity to the fullest extent possible. To the maximum extent possible, Phase 4 clean water shall be diverted away from the north site boundary as has been done with previous closure designs, e.g. Phase 2. The City's intent is that in the near term, clean surface water run-off from the new stormwater pond will be directed into the leachate collection system with the option to discharge clean stormwater to the environment, specifically to Legacy Lake.

This pond will be approximately 2.5 hectares in area, have a capacity of approximately 80,000-100,000 m<sup>3</sup> to be confirmed by the City. The pond design shall be based on capacity requirements after short and long term settlement is taken into account.

#### **Task 4D - Temporary Closure Design**

A temporary closure is required on the west slope of Phase 4S to maximize landfill gas capture until the bank is filled against with garbage in Phase 5S. The Consultant shall provide a design for the temporary closure that will have a design life of a minimum of 15 years. The temporary closure must include a liner system to ensure landfill gas capture meets the 75% regulatory requirement.

#### **Task 4E - Tender Specifications/Drawings Package**

The Consultant shall include the following in the specifications and/or drawings:

- a. The City's Contractor health and safety requirements
- b. Geosynthetic material cover requirements are as follows: 30 days for geotextiles, 10 days for geomembrane, and immediately for geosynthetic clay liner (GCL)
- c. Closure materials timing and management including stockpile locations, timing, and quantity tracking in cooperation with Landfill operations
- d. A construction sequence for the LFG works which is realistic and constructible and will allow wells to be brought online sequentially throughout the construction period where applicable
- e. A traffic plan for closure construction and Landfill operations that accounts for customer traffic as well as heavy equipment movements to minimize disruptions to operations
- f. Contractor laydown areas, utility locations, and avoidance requirements based on coordination with any other parties on site
- g. The Contractor's obligations for surveying, Quality Control testing, documentation, etc.

The City's technical requirements for all drawings are listed in the document titled City Drawing Standard as appended to Part D.

All drawings will be prepared by the Consultant as a single package regardless if sub-consultants are used on the Project. The Consultant shall be responsible for ensuring that drawings for all aspects of the Capital Works integrate fully and are free of conflicts.

#### **Deliverables for Task 4:**

- i. Draft specifications and detailed design drawings at 50% design stage presented in a meeting for review by the City
- ii. Draft specifications and detailed design drawings at 95% design stage presented in a meeting for review by the City
- iii. Develop a Class B cost estimate ( $\pm 15\%$ -25%) at the 50% design stage and a Class A cost estimate ( $\pm 10\%$ -15%) at the 95% design stage
- iv. Documented drawing changes on associated drawings with reference list resulting from 50% and 95% reviews with the City

**REQUEST FOR PROPOSALS NO. PS20181579**  
**CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL**  
**PART B - CITY REQUIREMENTS**

- v. Finalized specifications and drawings at 100% design stage following the City's comments in electronic format
- vi. Finalized specifications and drawings (sealed) as IFT following the City's comments in electronic format

**Task 5 - Tender Requirements**

The Consultant shall Work City to support the City with the tender process as follows:

- a. Review the entire Tender package
- b. Be listed as the City's Consultant in the Tender documents, and coordinate, attend, and document the site meetings required in the Tender process
- c. Respond to all technical questions during the Tender period
- d. Review three lowest bids submissions for variations or alternatives to the Contract requirements or specifications
- e. Assist with evaluating tenders and recommend a Contractor to the City
- f. Develop additional questions for further evaluation as needed
- g. Conduct reference checks

Table 1: Summary of Tendering Requirements

<b>Tendering Process</b>	<b>Consultant's Responsibility</b>	<b>City Provided</b>
Bid document preparation	<ol style="list-style-type: none"> <li>1. Prepares scope of work for construction including all signed and sealed tender drawings, technical specifications, special conditions, and technical concepts, and provides to the City for insertion into the bid document</li> <li>2. Reviews the final version of the bid document</li> </ol>	<ol style="list-style-type: none"> <li>1. Determines sourcing mechanism (ITT, RFP)</li> <li>2. Prepare the front end documents and general conditions for the Tender document package(s) and the contract(s)</li> <li>3. Reviews and finalizes bid documents</li> </ol>
Bid Document Posting/Advertising	<ol style="list-style-type: none"> <li>1. Provides responses to technical questions received from tenderers</li> <li>2. Provides input to bid documents amendments</li> <li>3. Attends and documents site meetings required in the tendering process</li> </ol>	<ol style="list-style-type: none"> <li>1. Posts the bid documents/advertises</li> <li>2. Posts bid document Q&amp;A</li> <li>3. Disseminates technical/Project questions received from proponents to the Consultant</li> <li>4. Posts bid document amendments, Q&amp;A and/or extensions to closing dates</li> <li>5. Organizes and attends site meetings required in the tendering process</li> </ol>
Award Recommendation	<ol style="list-style-type: none"> <li>1. Provide input in recommending tenderers to the City</li> </ol>	<ol style="list-style-type: none"> <li>1. Select tenderers based on the evaluation results</li> <li>2. Prepares the appropriate contract approval document as applicable</li> </ol>
Contract Negotiation & Execution	<ol style="list-style-type: none"> <li>1. Ensures that the scope and specifications in the contract documents are correct prior to execution</li> <li>2. Issues signed and sealed IFC Drawings to awarded Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Primary interfaces with successful tenderer in finalizing contract terms</li> <li>2. Prepares and finalizes contract documents</li> </ol>

**Deliverables for Task 5:**

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

---

- i. Responses to technical questions during tender period to the City for posting

**Task 6 - Construction Phase Responsibilities**

The construction periods will be two periods of 24 weeks and Work will occur at a minimum six (6) days per week, ten (10) hours per day. The actual construction periods shall be finalized on award of the Tender to the successful bidder and the Consultant will be compensated for construction meetings and supervision based on the actual construction period.

The Consultant's responsibilities for this Task will include:

- a. Providing three (3) sets of full size hardcopy IFC drawings for the Contractor
- b. Providing a suitable representative on-site at the Landfill during construction of the Capital Works to meet all construction phase responsibilities as site conditions vary. For this project, a suitable representative must be either the design engineer or someone with equal understanding of design and authority to make autonomous decisions in the field without impacting construction schedule.
- c. Providing daily supervision requirements based on need for the following aspects of the Work:
  - i. Mobilization and construction start up
  - ii. Active Capital Works construction
  - iii. Demobilization and construction wrap up
- d. Communicating (verbal and written) between the City and the Contractor including reviewing all construction meeting minutes prepared by the City's project manager
- e. Inspecting all Contractor work and immediately rejecting any work not meeting design requirements or specifications
- f. Reviewing and responding to all communications, including all submittals, within a maximum of ten (10) working days or such shorter period of time as appropriate for the type of communication and does not cause construction delays; it is City's expectation that most matters will be resolved in a matter of hours and shall not impact the construction schedule
- g. Reviewing all Contractor submissions for variations or alternatives to the Contract requirements or specifications where there is a clear benefit or at the very least, no impact to the City
- h. Assisting the Contractor(s) with work sequencing to provide the most advantageous schedule to the City
- i. Liaising with the City, the Contractor, other City contractors etc. to ensure material deliveries and logistics meet Capital Works construction requirements and/or specifications
- j. Identifying with the Contractor(s) and the City any material storage/lay down areas
- k. Implementing a Quality Assurance Program to ensure that the results of the Quality Control program implemented by the Contractor are representative and accurate. The Quality Assurance Program shall include actions to ensure that all of the Contractor's obligations are being implemented. This includes health and safety requirements, site clean-up, testing, etc.
- l. Ensuring the LFG works construction sequence is followed and documenting any deviations and associated penalties for the Contractor
- m. Ensuring the Contractor's construction activities do not pose a risk of fire to the Landfill through air intrusion or other means
- n. Providing suitable survey benchmarks for Contractor construction surveyors to use for construction surveying purposes and checking their program to ensure accurate information
- o. Recording all changes to the Issued For Construction drawings resulting from change orders and field fits and subsequently preparing accurate Capital Works Construction record drawings

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

---

- p. Ongoing review and updating of health and safety requirements for both the Consultant's staff and the Contractor
- q. Reviewing all change orders and change directives for the Capital Works Construction Contract and providing quantities where needed
- r. Supervising all commissioning activities
- s. Acting as payment certifier, verifying all claims for payments made by Contractor, and where necessary verifying through field or other investigations quantities claimed for payment purposes and completing initial review within 5 days of receipt
- t. Creating a photographic log (labeled appropriately) of the Capital Works construction including all construction activities
- u. Documenting all construction activities and developing weekly site reports tracking progress of the work, activities performed by the Contractor, and action items/corrective actions required from the Contractor, etc. with issuance of same within 3 days

Deliverables for Task 6:

- i. Three (3) sets of full size hardcopy IFC drawings for the Contractor.
- ii. Weekly field reports submitted within 3 days to the Contractor and the City, including deviations from construction sequence, results from sampling and testing, etc.
- iii. A Quality Assurance Program as described above

**Task 7 - Operation and Maintenance Manuals**

The Consultant shall prepare detailed Operations and Maintenance Manuals for Capital Works components to be provided in electronic format. The Manuals will include a simple table outlining the maintenance items and frequency of maintenance (i.e. not just a compilation of vendor information). The Manuals will include all warranties and related documents, a spare parts list and vendor information for ordering the parts.

In addition, the O&M requirements will be suitably summarized and tabulated in a City template for inclusion in the City's overall Preventative Maintenance Program.

Deliverable for Task 7:

- i. Operations and Maintenance Manuals for Capital Works components to be provided in electronic format

**Task 8 - Project Wrap-Up Report**

Once Capital Works construction has been completed with all deficiencies rectified and all payments made to the Contractor (including any holdbacks), the Consultant will prepare a detailed Project Wrap-Up Report. The Project Wrap-Up Report will include:

- a. All design and Record Drawings (Record Drawings) for the Capital Works (including both pdf and AutoCAD files). The Record Drawings shall follow the Record Drawing Standards appended to the Agreement be as described
- b. A detailed photographic log of the Project with each picture having a date, time, location, and caption or description, in electronic format (ideally with longitude and latitude information)
- c. A summary of all Project Tasks with explanation of any changes from design
- d. A summary and explanation of all Project expenditures (including Payments to the Consultant) compared to the Project budget as well as a comparison to both the Consultant's and the Contractor's original Proposal Price and Tender Price

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

---

- e. Descriptions of any Project challenges, including health and safety incidents and resolution
- f. Actual construction schedule with explanation of deviations from the proposed Tender schedule
- g. Lessons learned and recommendations
- h. Appendices including Project meeting notes, inspection reports, testing results etc.

The Wrap Up Report shall be submitted within two months of total completion.

Deliverables for Task 8:

- i. Project Wrap-up report including all Record Drawings and appendices to the City for review in electronic format and one complete hard copy
- ii. Final Project Wrap Up Report following the City's comments in electronic format and one complete hard copy

**Task 9 - Communications**

The Consultant will provide weekly updates to the City throughout the Project. These updates will be through various means including phone conversations, written communications, face-to-face meetings, and the like. The Consultant will provide written results of each Task to the City for approval prior to proceeding to the next Task, unless otherwise agreed to in writing by the City.

Formal Project meetings will include but are not limited to:

- a. Project Kick-Off meeting
- b. Lessons Learned Workshop
- c. Review of 50% Detailed Design
- d. Review of 95% Detailed Design
- e. Draft Capital Works Tender Review
- f. Final Capital Works Tender Review
- g. Construction Tender Bidder's Meeting
- h. Tender Evaluation/Award
- i. Capital Works Construction Kick-Off
- j. Draft Project Wrap-Up Report
- k. Final Project Wrap-Up Report

Other meetings include:

- i. Meetings with the Consulting team every week over the design period until all of the Contractors have achieved Total Performance as defined in the Builders Lien Act (British Columbia)
- ii. Meetings with the City and Contractor(s) every week from the start of Capital Works construction until all of the Contractors have achieved Total Performance as defined in the Builders Lien Act (British Columbia)
- iii. Up to three (3) stakeholder meetings with external stakeholders including MOE, City of Delta, and Metro Vancouver, including preparation of presentation graphics

For the duration of the Project, the Consultant must maintain a Project website or ftp site with access limited to Project participants, with all relevant Project information. All information will be provided to the City in a suitably filed electronic format.

Deliverables for Task 9:

- i. A Project website or ftp with all relevant project information

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART B - CITY REQUIREMENTS

- ii. Weekly updates
- iii. Power point presentation for meetings as required

## 5.0 City Provided

The following documents will available to the Consultant:

- a. *Design, Operations and Progressive Closure Plan for Vancouver Landfill*, Sperling Hansen Associates/SCS Engineers, 2014
- b. Phase 3NE IFC drawings and specifications with notes on any field modifications where possible
- c. *Landfill Gas Management Facilities Design Plan for the Vancouver Landfill*, SCS Engineers, 2011
- d. *Assessment of the Landfill Gas Collection System for the Vancouver Landfill*, SCS Engineers, 2013
- e. Topography Plans

## 6.0 Deliverables

A summary of the deliverables and their deadlines can be found in Table 2 below.

Table 2: Summary of deliverables

Task	Deliverables	Task Deadline	
		Phase 4S	Phase 4N
Task 1: Review of Regulatory Requirements	1. Minutes from Lessons Learned Workshop	March 2019	
Task 2: Survey Modeling and Analysis	1. Updated City settlement model	April, 2019	
	2. Preliminary grading plan	October, 2019	
	3. Final grading plan	December, 2019	
	4. Detailed survey plan of the completed area	March 2020	March 2021
Task 3: Health and Safety	1. A health and safety plan for the Consultant's work	March, 2019	
Task 4: Phase 4 Closure Detailed Design	1. Draft specifications and detailed design drawings at 50% design stage and Class B cost estimate ( $\pm 15\%$ -25%)	July, 2019	
	2. Draft specifications and detailed design drawings at 95% design stage and Class A cost estimate ( $\pm 10\%$ -15%)	October, 2019	
	3. Document all drawing changes		

**REQUEST FOR PROPOSALS NO. PS20181579**  
**CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL**  
**PART B - CITY REQUIREMENTS**

	on associated drawings	November, 2019	
	4. Finalized specifications and drawings at 100% design	December, 2019	
	5. Finalized specifications and drawings (sealed) as IFT	December, 2019	December, 2020
Task 5: Tender Requirements	1. Responses to technical questions during tender period	January, 2019	January, 2020
Task 6: Construction Phase Responsibilities	1. Three (3) sets of full size hardcopy IFC drawings for the Contractor	March, 2020	March, 2021
	2. A Quality Assurance Program	April, 2020	April, 2021
	3. Weekly field reports	Ongoing	Ongoing
Task 7: Operation and Maintenance Manuals	1. Operations and Maintenance Manuals for Capital Works components	December, 2020	December, 2021
Task 8: Project Wrap Up Report	1. Project Wrap-up report including all Record Drawings and appendices	February, 2021	February, 2022
	2. Final Project Wrap Up Report	March, 2021	March, 2022
Task 9: Communications	1. A Project website or ftp	March, 2019	
	2. Weekly updates	Ongoing	
	3. Power point presentations for meetings	Ongoing	

## 7.0 Schedule

Following is the anticipated schedule for the Project, which is subject to change depending on the contractor's schedule for Capital Works Construction.

Milestone	Date	
	Phase 4S	Phase 4N
Project Award and Kick Off Meeting	February 2019	
Tender Issued	December 2019	December 2020
Tender Awarded	March 2020	March 2021
Construction Period	April - October 2020	April - October 2021
Substantial Completion	October 31, 2020	October 31, 2021
Total Performance	November 30, 2020	November 30, 2021

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**PART C - FORM OF PROPOSAL**

RFP No. PS20181579, CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL (the "RFP")

Proponent's Name: \_\_\_\_\_  
"Proponent"

Address: \_\_\_\_\_

Jurisdiction of Legal Organization: \_\_\_\_\_

Date of Legal Organization: \_\_\_\_\_

Key Contact Person: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

The Proponent, having carefully examined and read the RFP, including all amendments and addenda thereto, if any, and all other related information published on the City's website, hereby acknowledges that it has understood all of the foregoing, and in response thereto hereby submits the enclosed Proposal.

The Proponent further acknowledges that it has read and agrees to the Legal Terms & Conditions attached as Appendix 1 to this Form of Proposal.

IN WITNESS WHEREOF the Proponent has executed this Proposal Form:

\_\_\_\_\_  
Signature of Authorized Signatory for the Proponent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name and Title

\_\_\_\_\_  
Signature of Authorized Signatory for the Proponent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name and Title

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**APPENDICES**

The Form of Proposal includes the following attached Appendices:

- APPENDIX 1     Legal Terms and Conditions of RFP
- APPENDIX 2     Questionnaire
- APPENDIX 3     Commercial Proposal
- APPENDIX 4     Proponents References
- APPENDIX 5     Certificate of Insurance
- APPENDIX 6     Declaration of Supplier Code of Conduct Compliance
- APPENDIX 7     Personal Information Consent Form(s)
- APPENDIX 8     Subcontractors
- APPENDIX 9     Proposed Amendments to Form of Agreement
- APPENDIX 10    Financial Statements
- APPENDIX 11    Proof of WorkSafeBC Registration
- APPENDIX 12    Conflicts; Collusion; Lobbying

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

APPENDIX 1  
LEGAL TERMS AND CONDITIONS OF RFP

**1 APPLICATION OF THESE LEGAL TERMS AND CONDITIONS**

These legal terms and conditions set out the City's and the Proponent's legal rights and obligations only with respect to the RFP proposal process and any evaluation, selection, negotiation or other related process. In no event will the legal terms and conditions of this Appendix 1 apply to, or have the effect of supplementing, any Contract formed between the City and the Proponent, or otherwise apply as between the Proponent and the City following the signing of any such Contract.

**2 DEFINITIONS**

In this Appendix 1, the following terms have the following meanings:

- (a) "City" means the City of Vancouver, a municipal corporation continued pursuant to the Vancouver Charter.
- (b) "Contract" means a legal agreement, if any, entered into between the City and the Proponent following and as a result of the Proponent's selection by the City in the City's RFP process.
- (c) "Losses" means, in respect of any matter, all direct or indirect, as well as consequential: claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement whether from a third person or otherwise).
- (d) "Proponent" means the legal entity which has signed the Proposal Form, and "proponent" means any proponent responding to the RFP, excluding or including the Proponent, as the context requires.
- (e) "Proposal" means the package of documents consisting of the Proposal Form (including this Appendix 1), the Proponent's proposal submitted under cover of the Proposal Form, and all schedules, appendices and accompanying documents, and "proposal" means any proposal submitted by any proponent, excluding or including the Proponent, as the context requires.
- (f) "Proposal Form" means that certain Part C of the RFP, completed and executed by the Proponent, to which this Appendix 1 is appended.
- (g) "RFP" means the document issued by the City as Request for Proposals No. PS20181579, as amended from time to time and including all addenda.

**3 NO LEGAL OBLIGATION ASSUMED BY THE CITY**

Despite any other term of the RFP or the Proposal Form, including this Appendix 1 (except only Sections 7, 8.2 and 10 of this Appendix 1, in each case to the extent applicable), the City assumes no legal duty or obligation to the Proponent or to any proposed subcontractor in respect of the RFP, its subject matter or the Proposal unless and until the City enters into a Contract, which the City may decline to do in the City's sole discretion.

**4 NO DUTY OF CARE OR FAIRNESS TO THE PROPONENT**

The City is a public body required by law to act in the public interest. In no event, however, does the City owe *to the Proponent or to any of the Proponent's proposed subcontractors* (as opposed to the public) any contract or tort law duty of care, fairness, impartiality or procedural fairness in the RFP

**REQUEST FOR PROPOSALS NO. PS20181579**  
**CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL**  
**PART C - FORM OF PROPOSAL**

---

process, or any contract or tort law duty to preserve the integrity of the RFP process. The Proponent hereby waives and releases the City from any and all such duties and expressly assumes the risk of all Losses arising from participating in the RFP process on this basis.

## **5 EVALUATION OF PROPOSALS**

### **5.1 Compliance / Non-Compliance**

Any proposal which contains an error, omission or misstatement, which contains qualifying conditions, which does not fully address all of the requirements or expectations of the RFP, or which otherwise fails to conform to the RFP may or may not be rejected by the City at the City's sole discretion. The City may also invite a proponent to adjust its proposal to remedy any such problem, without providing the other proponents an opportunity to amend their proposals.

### **5.2 Reservation of Complete Control over Process**

The City reserves the right to retain complete control over the RFP and proposal processes at all times. Accordingly, the City is not legally obligated to review, consider or evaluate the proposals, or any particular proposal, and need not necessarily review, consider or evaluate the proposals, or any particular proposal, in accordance with the procedures set out in the RFP, and the City reserves the right to continue, interrupt, cease or modify its review, evaluation and negotiation processes in respect of any or all proposals at any time without further explanation or notification to any proponents.

### **5.3 Discussions/Negotiations**

The City may, at any time prior to signing a Contract, discuss or negotiate changes to the scope of the RFP, any proposal or any proposed agreement with any one or more of the proponents without having any duty or obligation to advise the Proponent or to allow the Proponent to vary its Proposal as a result of such discussions or negotiations with other proponents or changes to the RFP or such proposals or proposed agreements, and, without limiting the general scope of Section 6 of this Appendix 1, the City will have no liability to the Proponent as a result of such discussions, negotiations or changes.

### **5.4 Acceptance or Rejection of Proposals**

The City has in its sole discretion, the unfettered right to: accept any proposal; reject any proposal; reject all proposals; accept a proposal which is not the lowest-price proposal; accept a proposal that deviates from the requirements of the RFP or the conditions specified in the RFP; reject a proposal even if it is the only proposal received by the City; accept all or any part of a proposal; enter into agreements respecting the subject matter of the RFP with one or more proponents; or enter into one or more agreements respecting the subject matter of the RFP with any other person at any time.

## **6 PROTECTION OF CITY AGAINST LAWSUITS**

### **6.1 Release by the Proponent**

Except only and to the extent that the City is in breach of Section 8.2 of this Appendix 1, the Proponent now releases the City, its officials, its agents and its employees from all liability for any Losses incurred in connection with the RFP or the Proposal, including any Losses in connection with:

- (a) any alleged (or judicially determined) breach by the City or its officials, agents or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially))

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process,
- (c) the Proponent preparing and submitting the Proposal;
- (d) the City accepting or rejecting the Proposal or any other submission; or
- (e) the manner in which the City: reviews, considers, evaluates or negotiates any proposal; addresses or fails to address any proposal or proposals; resolves to enter into a Contract or not enter into a Contract or any similar agreement; or the identity of the proponent(s) or other persons, if any, with whom the City enters any agreement respecting the subject matter of the RFP.

#### 6.2 Indemnity by the Proponent

Except only and to the extent that the City breaches Section 8.2 of this Appendix 1, the Proponent indemnifies and will protect, save and hold harmless the City, its officials, its agents and its employees from and against all Losses, in respect of any claim or threatened claim by the Proponent or any of its proposed subcontractors or agents alleging or pleading:

- (a) any alleged (or judicially determined) breach by the City or its officials or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially));
- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process, or
- (c) liability on any other basis related to the RFP or the proposal process.

#### 6.3 Limitation of City Liability

In the event that, with respect to anything relating to the RFP or this proposal process (except only and to the extent that the City breaches Section 8.2 of this Appendix 1), the City or its officials, agents or employees are found to have breached (including fundamentally breached) any duty or obligation of any kind to the Proponent or its subcontractors or agents whether at law or in equity or in contract or in tort, or are found liable to the Proponent or its subcontractors or agents on any basis or legal principle of any kind, the City's liability is limited to a maximum of \$100, despite any other term or agreement to the contrary.

### 7 DISPUTE RESOLUTION

Any dispute relating in any manner to the RFP or the proposal process (except to the extent that the City breaches this Section 7 or Section 8.2 of this Appendix 1, and also excepting any disputes arising between the City and the Proponent under a Contract (or a similar contract between the City and a proponent other than the Proponent)) will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:

- (a) The arbitrator will be selected by the City's Director of Legal Services;
- (b) Section 6 of this Appendix 1 will: (i) bind the City, the Proponent and the arbitrator; and (ii) survive any and all awards made by the arbitrator; and
- (c) The Proponent will bear all costs of the arbitration.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**8 PROTECTION AND OWNERSHIP OF INFORMATION**

**8.1 RFP and Proposal Documents City's Property**

- (a) All RFP-related documents provided to the Proponent by the City remain the property of the City and must be returned to the City, or destroyed, upon request by the City.
- (b) The documentation containing the Proposal, once submitted to the City, becomes the property of the City, and the City is under no obligation to return the Proposal to the Proponent.

**8.2 Proponent's Submission Confidential**

Subject to the applicable provisions of the *Freedom of Information and Protection of Privacy Act* (British Columbia), other applicable legal requirements, and the City's right to publicly disclose information about or from the Proposal, including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the RFP, the City will treat the Proposal (and the City's evaluation of it), in confidence in substantially the same manner as it treats its own confidential material and information.

**8.3 All City Information Confidential**

- (a) The Proponent will not divulge or disclose to any third parties any non-public documents or information concerning the affairs of the City which have been or are in the future provided or communicated to the Proponent at any time (whether before, during or after the RFP process). Furthermore, the Proponent agrees that it has not and must not use or exploit any such non-public documents or information in any manner, including in submitting its Proposal.
- (b) The Proponent now irrevocably waives all rights it may have by statute, at law or in equity, to obtain any records produced or kept by the City in evaluating its Proposal (and any other submissions) and now agrees that under no circumstances will it make any application to the City or any court for disclosure of any records pertaining to the receipt, evaluation or selection of its Proposal (or any other submissions) including, without limitation, records relating only to the Proponent.

**9 NO CONFLICT OF INTEREST / NO COLLUSION / NO LOBBYING**

**9.1 Declaration as to no Conflict of Interest in RFP Process**

- (a) The Proponent confirms and warrants that there is no officer, director, shareholder, partner, employee or contractor of the Proponent or of any of its proposed subcontractors, or any other person related to the Proponent's or any proposed subcontractor's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is: (i) an official or employee of the City; or (ii) related to or has any business or family relationship with an elected official or employee of the City, in each case, such that there could be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of the Proposal by the City, and, in each case, except as set out, in all material detail, in a separate section titled "Conflicts; Collusion; Lobbying" in the Proposal in accordance with the form set out in Part C - Appendix 12.
- (b) The Proponent confirms and warrants that there is no person having an interest (as defined above) who is a former official, former employee or former contractor of the City and who has non-public information relevant to the RFP obtained during his or her employment or engagement by the City, except as set out, in all material detail, in a separate section titled

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

"Conflicts; Collusion; Lobbying" in the Proposal in accordance with the form set out in Part C - Appendix 12.

**9.2 Declaration as to No Conflict of Interest Respecting Proposed Supply**

The Proponent confirms and warrants that neither the Proponent nor any of its proposed subcontractors is currently engaged in supplying (or is proposing to supply) goods or services to a third party such that entering into an agreement with the City in relation to the subject matter of the RFP would create a conflict of interest or the appearance of a conflict of interest between the Proponent's duties to the City and the Proponent's or its subcontractors' duties to such third party, except as set out, in all material detail, in a separate section titled "Conflicts; Collusion; Lobbying" in the Proposal in accordance with the form set out in Part C - Appendix 12.

**9.3 Declaration as to No Collusion**

The Proponent confirms and warrants that:

- (a) the Proponent is not competing within the RFP process with any entity with which it is legally or financially associated or affiliated, and
- (b) the Proponent is not cooperating in any manner in relation to the RFP with any other proponent responding to the RFP,

in each case, except as set out, in all material detail, in a separate section titled "Conflicts, Collusion, Lobbying" in the Proposal in accordance with the form set out in Part C - Appendix 12.

**9.4 Declaration as to No Lobbying**

The Proponent confirms and warrants that:

- (a) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors is registered as a lobbyist under any lobbyist legislation in any jurisdiction in Canada or in the United States of America; and
- (b) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors has engaged in any form of political or other lobbying whatsoever with respect to the RFP or sought, other than through the submission of the Proposal, to influence the outcome of the RFP process,

in each case, except as set out, in all material detail, in a separate section titled "Conflicts, Collusion, Lobbying" in the Proposal in accordance with the form set out in Part C - Appendix 12.

**10 GENERAL**

- (a) All of the terms of this Appendix 1 to this Proposal Form which by their nature require performance or fulfillment following the conclusion of the proposal process will survive the conclusion of such process and will remain legally enforceable by and against the Proponent and the City.
- (b) The legal invalidity or unenforceability of any provision of this Appendix 1 will not affect the validity or enforceability of any other provision of this Appendix 1, which will remain in full force and effect.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

- (c) The Proponent now assumes and agrees to bear all costs and expenses incurred by the Proponent in preparing its Proposal and participating in the RFP process.

**11 INDEPENDENT LEGAL ADVICE**

THE PROPONENT ACKNOWLEDGES THAT IT HAS BEEN GIVEN THE OPPORTUNITY TO SEEK INDEPENDENT LEGAL ADVICE BEFORE SUBMITTING ITS PROPOSAL FORM, INCLUDING THIS APPENDIX 1.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**APPENDIX 2  
QUESTIONNAIRE**

Complete this Appendix 2 - Questionnaire in the form set out below.

**Executive Summary**

In the space below, or attached to this Form of Proposal as an additional Appendix clearly titled "Executive Summary", provide a brief executive summary of your Proposal.

**Proponent Overview**

In the space below, or attached to this Form of Proposal as an additional Appendix clearly titled "Proponent Overview and Experience", provide a description of the Proponent's company, purpose and history of successes. Highlight the proponent's accomplishments, achievements and experience as prime consultant on similar gas and closure projects. Select a maximum of 5 projects undertaken within the last 5 years. The same information should be supplied for any proposed subcontractors.

Information that should be supplied:

- clearly indicate how this project is comparable/relevant to the requested project;
- brief project description and intent. Narratives should include a discussion of design;
- philosophy and approach to meet the intent, design challenges, and resolutions;
- budget control and management - i.e. contract price & final construction cost - explain variation;
- project schedule control and management - i.e. initial schedule and revised schedule - explain variation;
- names of key personnel responsible for project delivery; and
- awards received.

**Key Personnel**

In the space below, or attached to this Form of Proposal as an additional Appendix clearly titled "Key Personnel", identify and provide professional biographical information for the key personnel that would perform the Proponent's work, outlining their intended roles in meeting the Requirements and highlighting their previous experience with:

- a. Municipal solid waste management in BC;
- b. Landfill operations and landfill design;

**REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL**

---

- c. Landfill gas design and operations; and
- d. Landfill closure design and construction administration in the province of British Columbia, Canada.

Please also attach to this Form of Proposal as an additional Appendix CVs and a complete organization chart, identifying all roles and areas of responsibility.

#### **Work Plan and Schedule**

In the space below, or attached to this Form of Proposal as an additional Appendix clearly titled "Work Plan and Schedule", detail the sequential process by which the Proponent proposes to undertake the work. The Proponent should also demonstrate capability to perform the services and meet project challenges and to provide a plan of action.

Information that should be supplied:

- The functional and technical requirements;
- Significant issues, opportunities, challenges and constraints;
- Review Project schedule and assess risk management elements that may affect the project;
- Work Plan - detailed breakdown of deliverables, laid out per Task specified in the General Requirements;
- Project schedule - proposed major milestone schedule, with the City's preferred dates taken into consideration; and
- Risk management strategy.

#### **Value Added Service and Innovation**

Notwithstanding any other provision hereof, the City welcomes Proposals respecting innovative or novel approaches to the City's objectives and requirements and may consider value-creating Proposals that derogate from the Requirements. In the space below, or attached to this Form of Proposal as an additional Appendix clearly titled "Value Added Service and Innovation" note any proposed innovative approaches to meeting the City's requirements.

#### **Supplier Diversity**

In the space below, or attached to this Form of Proposal as an additional Appendix clearly

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

titled "Supplier Diversity" indicate the Proponent's company profile with regards to social value and economic inclusion supporting equity, diversity, inclusion and reconciliation, including social/environmental certifications, workforce diversity and/or if owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).

<b>Majority owned/controlled/ by:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Women</li> <li><input type="checkbox"/> Indigenous Peoples</li> <li><input type="checkbox"/> Non-Profit/Charity (Social Enterprise)</li> <li><input type="checkbox"/> Coop</li> <li><input type="checkbox"/> Community Contribution Corporation (3C/CCC)</li> <li><input type="checkbox"/> Ethno-cultural Persons</li> <li><input type="checkbox"/> People with Disabilities</li> <li><input type="checkbox"/> LGBTQ+</li> <li><input type="checkbox"/> Other: please indicate</li> </ul>	<b>Workforce Diversity:</b> <ul style="list-style-type: none"> <li>% Women</li> <li>% Indigenous Peoples</li> <li>% Ethno-cultural People</li> <li>% People with Disabilities</li> <li>% LGBTQ+</li> <li>% Other: please indicate</li> </ul>	<b>Social / Environmental Certifications</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> BCorp</li> <li><input type="checkbox"/> BuySocial</li> <li><input type="checkbox"/> Supplier Diversity Certification</li> <li><input type="checkbox"/> Fairtrade</li> <li><input type="checkbox"/> Green Business Certification (ie. LEED, ClimateSmart)</li> <li><input type="checkbox"/> Other: please indicate</li> </ul>
---	--	---

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

APPENDIX 3  
COMMERCIAL PROPOSAL

Complete this Appendix 3 - Commercial Proposal in the Excel sheet provided with the RFP, which is available on the FTP for Proponents:

To access the site externally, use your web browser and go to: <https://webtransfer.vancouver.ca/>  
The user ID is : PS20180897DL@coveftp01

The password is: KN24EajD (The password is case sensitive.)

Proponent to provide proposed pricing and payment terms, which should be in accordance with Part A, Section 7 of the RFP (as well as any other sections of the RFP imposing requirements as to pricing).

Please ensure Appendix 3 - Commercial Proposal is provided as a separate file to the entire Proposal in Microsoft Excel format when submitting your proposal.

☐

By checking this box, the Proponent hereby confirms that the above Commercial Proposal is based on the payment of wages to employees of the Proponent and Subcontractors that comply with the City's Living Wage Policy as described in Section 10.0 of Part A and in the Form of Agreement attached hereto as Part D. For Commercial Proposals submitted electronically, please color in the box.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**APPENDIX 4  
PROPONENT'S REFERENCES**

Complete this Appendix 4 - Proponents References in the form set out below.

Client Name # 1	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

Client Name # 2	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

Client Name # 3	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

APPENDIX 5  
CERTIFICATE OF INSURANCE

Appendix 5 is to be duly completed and signed by the Proponent's insurance agent or broker as evidence of its existing insurance, along with a letter from its insurance broker or agent indicating whether or not (and, if not, then to what extent) it will be able to comply with the insurance requirements set out in the Form of Agreement, should the Proponent be selected as a successful Proponent. (Any successful Proponent will also be required to provide proof of the satisfaction of all insurance requirements prior to or concurrently with the City entering into any Agreement.)

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**APPENDIX 6**  
**DECLARATION OF SUPPLIER CODE OF CONDUCT COMPLIANCE**

Complete this Appendix 6 - Declaration of Supplier Code of Conduct Compliance in the form set out below.

**Purpose:**

All proposed suppliers are to complete and submit this form to certify compliance with the supplier performance standards set out in the Supplier Code of Conduct.

The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct (SCC) <[http://vancouver.ca/policy\\_pdf/AF01401P1.pdf](http://vancouver.ca/policy_pdf/AF01401P1.pdf)>. The SCC defines minimum labour and environmental standards for City suppliers and their subcontractors.

Suppliers are expected to comply with the aforementioned standards upon submitting a tender, proposal, application, expression of interest or quotation to the City, or have a plan in place to comply within a specific period of time. The City reserves the right to determine an appropriate timeframe in which suppliers must come into compliance with these standards. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration and include this declaration with its submission:

As an authorized signatory of \_\_\_\_\_ (*vendor name*), I declare that I have reviewed the SCC and to the best of my knowledge, \_\_\_\_\_ (*vendor name*) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted in the table below (*include all violations/convictions that have occurred in the past three years as well as plans for corrective action*).

Section of SCC / title of law	Date of violation /conviction	Description of violation / conviction	Regulatory / adjudication body and document file number	Corrective action plan

I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of \_\_\_\_\_ (*vendor name*).

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

APPENDIX 7  
PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Appendix 7 - Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

RFP

Reference #PS20181579

Title: CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL

With the provision of my signature at the foot of this statement I, \_\_\_\_\_

\_\_\_\_\_ (Print Name)

consent to the indirect collection from \_\_\_\_\_

\_\_\_\_\_ (Print Name of Proponent)

of my personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

_____ Signature	) ) ) )	_____ Date
--------------------	------------------	---------------

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**APPENDIX 8  
SUBCONTRACTORS**

Complete this Appendix 8 - Subcontractors in the form set out below by listing all of the subcontractors that the Proponent proposes to use in carrying out its work under an Agreement, or state that the Proponent does not propose to use any subcontractors.

If selected to enter into an Agreement with the City, the Proponent may be limited to using subcontractors listed in its Proposal. If the City objects to a subcontractor listed in a Proposal, the City may permit a Proponent to propose a substitute Subcontractor acceptable to the City.

Subcontracted Scope		
Subcontractor		
Contact (name, title, email, telephone no.)		
Approximate Percent of the Work to be Subcontracted		
Social Value Business - shall mean a business that has a recognized environmental or social certification and/or is majority owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).	In the space below, or in a separate section, detail the Proponent's proposed use of Social Value Businesses as sub-contractors/consultants (if any) and provide brief company profiles of those Social Value Businesses and descriptions of how they qualify as Social Value Businesses.	
The Subcontractor's Relevant Experience (Identify at least three similar projects within the last five years, including the client)	1. Project Name:	
	Client:	
	Nature of Work:	
	Value:	
	Client Contact:	
	2. Project Name:	
	Client:	
	Nature of Work:	
	Value:	
	Client Contact:	
	3. Project Name:	
	Client:	

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

	Nature of Work:	
	Value:	
	Client Contact:	

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**APPENDIX 9**  
**PROPOSED AMENDMENTS TO FORM OF AGREEMENT**

Complete this Appendix 9 - Proposed Amendments to Form of Agreement in the form set out below by detailing any proposed amendments to the Form of Agreement. If no amendments to the Form of Agreement are proposed, state "none". It is at the City's sole discretion whether or not these proposed amendments will be considered for the Form of Agreement.

Section / General Condition	Proposed Amendment	Rationale and Benefit

APPENDIX 10  
FINANCIAL STATEMENTS

Intentionally deleted.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

APPENDIX 11  
PROOF OF WORKSAFEBC REGISTRATION

Attached as Appendix 11 to this Form of Proposal proof of valid WorkSafeBC registration.

REQUEST FOR PROPOSALS NO. PS20181579  
CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL  
PART C - FORM OF PROPOSAL

---

**APPENDIX 12**  
**CONFLICTS; COLLUSION; LOBBYING**

Complete this Appendix 12 - Conflicts; Collusion; Lobbying in the form set out below by setting out any exceptions to the declarations in Section 9 of the Legal Terms and Conditions attached as Appendix 1 to this Part C - Form of Proposal or indicate that there are no exceptions, as applicable.

Exceptions to Declaration as to no Conflict of Interest in RFP Process (Section 9.1 of Legal Terms and Conditions)	
Exceptions to Declaration as to No Conflict of Interest Respecting Proposed Supply (Section 9.2 of Legal Terms and Conditions)	
Exceptions to Declaration as to No Collusion (Section 9.3 of Legal Terms and Conditions)	
Exceptions to Declarations as to No Lobbying (Section 9.4 of Legal Terms and Conditions)	

PART D  
FORM OF AGREEMENT



PROFESSIONAL SERVICES AGREEMENT  
PS20181579 CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER  
LANDFILL

THIS AGREEMENT is made as of the [day] day of [month/year] (the "Effective Date")

BETWEEN:

CITY OF VANCOUVER

453 West 12<sup>th</sup> Avenue  
Vancouver, British Columbia  
V5Y 1V4

(the "City")

OF THE FIRST PART

AND:

[CONSULTANT NAME]  
[address]

(the "Consultant")

OF THE SECOND PART

(the City and the Consultant are hereinafter sometimes  
referred to individually as "Party" and collectively as  
"Parties")

BACKGROUND:

- A. The City requires the professional services described herein, and desires to engage the Consultant to perform said services.
- B. The Consultant has agreed to perform the said services in accordance with the terms and conditions of this Agreement.

NOW THEREFORE, in consideration of the mutual covenants and promises made by the Parties and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereby agree as follows:

## 1.0 INTERPRETATION

1.1 In this Agreement, including the recitals, schedules and appendices to this Agreement, the following words and terms, unless the context otherwise requires, shall have the meanings set out below:

- (a) **"Agreement"** means this Professional Services Agreement inclusive of all schedules, appendices, exhibits or other documents attached hereto or incorporated herein by reference, as amended from time to time;
- (b) **"Applicable Laws"** means all statutes, regulations, by-laws, codes, rules, notices, orders, directives, standards and requirements of every competent federal, provincial, regional, municipal and other statutory authority applicable to the Consultant, any Sub-contractor and the Services, including the Vancouver Building By-law, the British Columbia Building Code, and the British Columbia Fire Code, all as may be in force from time to time;
- (c) **"City's Site"** means any land and/or premises owned by the City on which or in respect of which the Services are performed by the Consultant;
- (d) **"City's Project Manager"** means the City's employee, or his/her delegate, who is authorized in writing to deal with the Consultant on behalf of the City in connection with the Services, or to make decisions in connection with this Agreement;
- (e) **"Confidential Information"** has the meaning set out in Section 15.1
- (f) **"Contract Document"** refers to each of the individual documents composing the Agreement, including this Professional Services Agreement (exclusive of the documents attached hereto or incorporated herein by reference) and each schedule, appendix, exhibit or other document attached to this Professional Services Agreement or incorporated into the Agreement by reference;
- (g) **"Deliverables"** has the meaning set out in Section 17.1;
- (h) **"GST"** means the tax payable and imposed pursuant to Part IX of the Excise Tax Act (Canada), as amended or replaced from time to time;
- (i) **"Living Wage"** means the hourly wage established by the Living Wage Certifier from time to time during the Term, which includes: (i) direct wages; and (ii) the value of any non-mandatory benefits such as paid sick leave, employer-paid Medical Services Plan premiums and extended health benefits;
- (j) **"Living Wage Certifier"** means the Living Wage for Families Campaign, any successor entity, or, in the event the Living Wage for Families Campaign ceases to carry on operations, such other living wage certification entity designated by the City to the Consultant in writing;
- (k) **"Living Wage Employee"** means any and all employees of the Consultant and all Sub-contractors of the Consultant that perform any part of the Services on a property owned by or leased to the City, including all streets, sidewalks and other public rights of way, for at least one consecutive hour, but excluding Students, volunteers and employees of Social Enterprises;
- (l) **"Project Team"** has the meaning set out in subsection 2.2(c);
- (m) **"Proposal"** means the proposal submitted by the Consultant in response to the RFP, a

copy of which is attached hereto, or incorporated by reference herein by operation of, Appendix B;

- (a) "PST" means the provincial sales tax payable and imposed pursuant to the *Provincial Sales Tax Act* (British Columbia), as amended or replaced from time to time;
- (n) "RFP" means Request for Proposal PS20181579 CONSULTANT FOR PHASE 4 CLOSURE - VANCOUVER LANDFILL, together with all addenda and questions and answers attached hereto, or incorporated by reference herein by operation of, Appendix C;
- (o) "Services" has the meaning set out in Section 2.1;
- (p) "Social Enterprise" means a business that: (i) is owned by a non-profit organization or community services co-operative; (ii) is directly involved in the production and/or selling of goods and services for the combined purpose of generating income and achieving social, cultural, and/or environmental aims; and (iii) has a defined social and/or environmental mandate;
- (q) "Student" means an individual who is enrolled in a school, college, university or other educational institution and is employed by the Consultant or a Sub-contractor, as the case may be, to obtain practical workplace experience as a requirement of or credit for their education;
- (r) "Sub-contractor" has the meaning set out in Section 4.1; and
- (s) "Term" means the term of this Agreement as specified in Section 12.1.

1.2 The Contract Documents are complementary and what is called for by any one will be as binding as if called for by all. In the event of any conflict or inconsistency between or among any of the Contract Documents, the Contract Documents will be interpreted in the following order of priority, from highest to lowest:

- (a) this Agreement, excluding all appendices;
- (b) Appendix A - Scope of Services;
- (c) Appendix B - Insurance Requirements; and
- (d) Appendix C - Proposal.

1.3 In this Agreement, including the recitals, schedules and appendices to this Agreement, except as expressly stated to the contrary or the context otherwise requires:

- (a) the recitals and headings to sections, schedules and appendices are for convenience and reference only and will not affect the interpretation of this Agreement;
- (b) the terms "this Agreement", "hereof", "herein", "hereunder" and similar expressions refer, unless otherwise specified or the context otherwise requires, to this Agreement taken as a whole (including any and all attached schedules and appendices) and not to any particular section, subsection or other subdivision;
- (c) each reference to a statute is deemed to be a reference to that statute and any successor statute, and to any regulations, rules, policies and criteria made under that statute and any successor statute, each as amended or re-enacted from time to time;
- (d) each reference to a rule, guideline, policy, regulation or directive is deemed to be a

reference to any successor or replacement of such rule, guideline, policy, regulation or directive;

- (e) words importing the singular include the plural and vice versa and words importing gender include all genders;
- (f) references to time of day or date mean the local date or time in Vancouver, British Columbia;
- (g) all references to money mean lawful currency of Canada;
- (h) the word "written" includes printed, typewritten, faxed, e-mailed or otherwise capable of being visibly reproduced at the point of reception and "in writing" has a corresponding meaning; and
- (i) the words "include" and "including" are to be construed as meaning "including, without limitation".

## **2.0 CONSULTANT'S SERVICES TO THE CITY**

2.1 The Consultant will provide and be fully responsible for the following services (the "Services"):

- (a) the services described in Schedule A - Scope of Services;
- (b) the services which the Consultant proposed to provide in the Proposal; and
- (c) all services not specifically included in subsections 2.1(a) and 2.1(b), but which are necessary or incidental to the completion of such other Services.

2.2 The Consultant will be fully responsible for:

- (a) coordinating the Services with the City's Project Manager, or his/her delegate, and ensuring that the performance of the Services does not adversely impact any design or construction schedule for any project or work and/or services provided by the City's other consultants, in each case to which the Services relate;
- (b) taking all steps required in placing, effecting and maintaining insurance and providing evidence of insurance as set out in Appendix A - Insurance Requirements; and
- (c) maintaining and supervising its employees and Sub-contractors (the "Project Team") described in Section 3.1.

2.3 The Consultant represents and warrants to the City that the Consultant possesses the necessary skills, knowledge, qualifications and experience to perform the Services to the reasonable satisfaction of the City.

2.4 The Consultant will perform the Services:

- (a) with that degree of care, skill and diligence normally applied in the performance of services of a similar nature and magnitude to those contemplated by this Agreement at the time and place the Services are rendered;
- (b) in accordance with sound current professional practices and design standards; and
- (c) in conformity with any and all Applicable Laws.

- 2.5 The Consultant will commence the Services promptly and will use every reasonable effort to carry out the Services in accordance with:
- (a) the requirements and appendices of this Agreement, or
  - (b) where no date is specified for the provision of any component of the Services by this Agreement, such completion dates as are reasonably specified from time to time by the City.
- 2.6 The Consultant will not permit, do or cause anything to be done at any time which could allow any lien, certificate of pending litigation, judgment or certificate of any court or any mortgage charge, conditional sale agreement, personal property security interest or encumbrance of any nature to be imposed or to remain on title to the City's Site or any other City property.

### **3.0 PROJECT TEAM**

- 3.1 Subject to Section 3.2, the Consultant will utilize only the Project Team members noted in the Proposal.
- 3.2 Except for substitutions required by circumstances not within its reasonable control, the Consultant may not make substitutions of Project Team members without the prior written consent of the City, which consent will not be unreasonably withheld, delayed or conditioned.
- 3.3 For the purposes of this Section 3, "substitutions required by circumstances not within its reasonable control" means substitutions required by virtue of illness, death, injury, pregnancy, medical leave, or termination of employment or contract, but expressly excludes situations where the Project Team member is called upon to perform services for another client of the Consultant, its Sub-contractor or their affiliates.
- 3.4 The City may, with stated reasons and acting reasonably, request that the Consultant replace a Project Team member. The Consultant will, subject to scheduling and staffing considerations, make commercially reasonable efforts to replace the individual with someone of substantially similar competency and experience.
- 3.5 Regardless of whether or not the City consents to a substitution, or requests a substitution, the City will not be liable to pay additional compensation to the Consultant for any replacement Project Team member.

### **3A Living Wage**

- 3A.1 Subject to Section 3A.2, it is a condition of this Agreement that, for the duration of the Term, the Consultant pays all Living Wage Employees not less than the Living Wage.
- 3A.2 Notwithstanding Section 3A.1, the Consultant has up to 6 months from the date on which any increase in the Living Wage is published by the Living Wage Certifier to increase wages for all Living Wage Employees such that all Living Wage Employees continue to be paid not less than the Living Wage.
- 3A.3 The Consultant shall ensure that the requirements of Section 3A.1 apply to all Sub-contractors.
- 3A.4 A breach by the Consultant of its obligations pursuant to Sections 3A.1 and 3A.3 shall constitute a material breach by the Consultant of this Agreement that shall entitle the City to terminate this Agreement with immediate effect if the Consultant has not remedied such breach within the time period specified by the City in writing to the Consultant.
- 3A.5 The Consultant shall maintain up-to-date records and accounts which clearly document its

satisfaction of the requirements of this Article 3A and shall make the same available to the City upon request. The City may request copies of all such records and accounts which shall be provided to the City by the Consultant (subject to reimbursement of the Consultant's reasonable copying costs and any other direct costs and expenses, if any) at any time prior to the expiry of 365 days after completion of all of the Services or earlier termination of this Agreement. For avoidance of doubt, any records and accounts provided by the Consultant in accordance with this Section 3A.5 shall be deemed to be Confidential Information.

3A.6 The Consultant shall prepare and submit to the City in a format reasonably acceptable to the City before January 31 of each calendar year of the term or, for each partial calendar year of the term, within 30 days of the expiry of the term a living wage report setting out:

- (a) the number of Living Wage Employees of the Consultant and each Sub-contractor who were paid a Living Wage pursuant to this Section 3A during the previous calendar year or portion thereof that would not have received a Living Wage for substantially similar work but for the obligations of the Consultant pursuant to this Section 3A; and
- (b) the total incremental costs incurred by the Consultant, including any amounts paid to Sub-contractors, in order to fulfill its obligations pursuant to this Section 3A to pay a Living Wage to the Living Wage Employees described in Section 3A.6(a).

#### 4.0 SUB-CONTRACTORS

4.1 Unless expressly permitted pursuant to Section 3.0, the Consultant may not engage any contractor or consultant (in each case a "Sub-contractor") for the performance of any part of the Services, unless the Consultant has first obtained the written consent of the City, which consent may be arbitrarily withheld.

4.2 The Consultant will administer, coordinate, and manage all Services provided by any Sub-contractors, and will assume full responsibility to the City for all work performed by the Sub-contractors in relation to the Services and will pay all fees and disbursements of all Sub-contractors, subject to reimbursement by the City where the City has expressly agreed in this Agreement that such reimbursement is to be separate from and additional to the fees and disbursements payable to the Consultant.

4.3 Where a Sub-contractor is used by the Consultant under this Agreement, the Consultant will legally bind the Sub-contractor to comply with this Agreement.

4.4 Nothing in this Agreement will create any contractual relationship between a Sub-contractor and the City.

#### 5.0 BASIS OF PAYMENT TO THE CONSULTANT

5.1 In consideration of the Services performed by the Consultant to the satisfaction of the City and in strict conformity with the terms hereof, the City will pay the Consultant the fees and reimbursable expenses prescribed herein, plus GST and PST as applicable to the sale made to the City hereunder.

5.2 The fees for the Services are described in this Section 5.0 and in **[Reference each relevant section of the Proposal or other schedule to this Agreement and ensure there are no inconsistencies.]** Subject to Section 5.3, payment to the Consultant will be based on hours worked by employees of the Consultant or by the Sub-contractors multiplied by the applicable hourly charge-out rates stated in the Proposal.

5.3 If there are maximum, lump sum or other limiting amounts for fees or disbursements indicated herein for the Services or for portions thereof, then notwithstanding anything to the contrary in

this Agreement the maximum fees or disbursements to be paid by the City to the Consultant for the Services or such portions of the Services will not exceed those stated amounts, except as mutually agreed in writing. Any limit on the fees or disbursements to be paid by the City to the Consultant will in no way diminish the duties and obligations of the Consultant to provide the Services covered by this Agreement.

- 5.4 Notwithstanding anything to the contrary contained in this Agreement, save as otherwise mutually agreed in writing subsequent to the date hereof (or pursuant to Section 6.0), the total professional fees payable to the Consultant for the Services (not including GST AND PST or disbursements) will not exceed \$[insert amount].
- 5.5 Notwithstanding anything to the contrary contained in this Agreement, save as otherwise mutually agreed in writing subsequent to the date hereof (or pursuant to Section 6.0), the total disbursements for which the City will reimburse the Consultant in respect of the Services will not exceed \$[insert amount] (the "Fixed Disbursement Amount") ].
- 5.6 [Notwithstanding anything to the contrary contained in this Agreement, save as otherwise mutually agreed in writing subsequent to the date hereof (or pursuant to Section 6.0), the maximum liability of the City hereunder (the "Maximum Fees and Disbursements") will be \$[insert amount], plus GST and PST as applicable to the sale made to the City hereunder.
- 5.7 Subject to any "Fixed Disbursement Amount" defined herein, or any other limit on disbursements stated herein, the City will reimburse the Consultant for disbursements reasonably incurred by the Consultant in the performance of the Services. Reimbursement of these expenses by the City will be at actual cost without any addition for overhead or profit.
- 5.8 If the Consultant has engaged Sub-contractors, then the Consultant will make full payment to said Sub-contractors for work performed in relation to the Services. [Subject to any "Fixed Disbursement Amount" defined herein, or any other limit on disbursements stated herein, the City will reimburse the Consultant for payments made to Sub-contractors at amounts equal to such actual payments without any additions for overhead and profit to the Consultant.
- 5.9 The Consultant will, by the 25<sup>th</sup> day of each month, provide to the City's Project Manager a draft invoice with an attached detailed account of all charges to be claimed by the Consultant for the preceding month (if any). The City's Project Manager shall review the draft, raise any concerns with the Consultant within ten working days and, after settlement of any issues (in the City's Project Manager's discretion), approve the draft invoice. The Consultant, if so requested, will meet with the City's Project Manager to expedite and settle of the draft invoice. The Consultant will submit its final invoice, as per the approved draft invoice, to the City of Vancouver, Attention: Accounts Payable, by email to [APInvoice@vancouver.ca](mailto:APInvoice@vancouver.ca). The invoice must contain:
  - (a) the Consultant's name, address and telephone number;
  - (b) the City purchase order number;
  - (c) the name of the City's Project Manager;
  - (d) the invoice number and date;
  - (e) details of any applicable taxes (with each tax shown separately); and
  - (f) tax registration number(s).
- 5.10 If the City does not approve of or wishes to further review, audit or otherwise seek clarification concerning any of the Consultant's invoices, for whatever reason, the City will not be liable for

interest charges in respect of that invoice for the period from the date the invoice is submitted until the date that the invoice is paid, provided however, the City will use reasonable efforts to have the review, audit or clarification resolved within a 60 day period. The City will, if it approves the amount of such invoice, cause the respective invoice to be paid within 30 days of approval by electronic funds transfer to the bank account indicated by the Consultant.

- 5.11 The Consultant will keep proper accounts and records of all costs and expenditures forming the basis of any billing to the City, including but not limited to hours worked, details of all disbursements and percentage amounts of work completed. The City will be entitled to verify the accuracy and validity of all billings and payments made by auditing and taking extracts from the books and records of the Consultant and by such other means as will be reasonably necessary or advisable.
- 5.12 The Consultant shall provide bank account information to the City to enable the City to make payments by electronic funds transfer, as contemplated hereby.

#### **6.0 CHANGES TO SCOPE OF SERVICES**

- 6.1 The City's Project Manager may, from time to time and at any time on prior written notice to the Consultant, vary the scope of Services to be provided by the Consultant. In that case and where this Agreement contains delivery dates and/or limits as to fees or disbursements (or a defined "Maximum Fees and Disbursements") for all or any part of the Services, such delivery dates and/or limits will be adjusted as agreed to by both Parties in writing, and failing agreement, as reasonably determined by the City's Project Manager.
- 6.2 Should the Consultant consider that any request or instruction from the City's Project Manager constitutes a change in the scope of Services, the Consultant will provide the City's Project Manager with notice in writing within ten days of such request or instruction. If the Consultant does not deliver written notice to the City within the time period specified, the City will not be obligated to make any payments of additional fees, disbursements or out of pocket expenses to the Consultant.
- 6.3 The City's Project Manager will consider the Consultant's written notice (if any) within a further ten days of receipt of the Consultant's notice and determine and advise as to whether the request constitutes a change in the scope of the Services and, if necessary, the method by which the variation will be scoped and reimbursed. If the City determines that the professional fees payable to the Consultant should be increased due to an increase in the scope of the Services then any such increases will be based on the hourly rates set out in Section [insert] of the Proposal.

#### **7.0 RELEASE AND INDEMNIFICATION**

- 7.1 The Consultant now releases the City, its officials, officers, employees and agents from all costs, losses, damages and expenses, including those caused by personal injury, death, property damage, loss and economic loss arising out of, suffered or experienced by the Consultant, its Sub-contractors, and their respective officers, employees and agents in connection with their performance of the Services under this Agreement.
- 7.2 In undertaking the Services, the Consultant acknowledges that the Consultant has inspected the City's Site, agrees to accept the City's Site "as-is" and undertakes to take all precautions necessary to ensure the safety of all persons employed or contracted by the Consultant to perform the Services.
- 7.3 Despite any insurance coverage of the City, the Consultant hereby agrees to indemnify and save harmless the City of Vancouver and its successors, assigns, official, employees, agents and authorized representatives and each of them (in each case an "Indemnified Party") from and

against all costs, losses, claims, damages, actions, and causes of actions (collectively referred to as "Claims") that an Indemnified Party may sustain, incur, suffer or be put to at any time either before or after the expiration or termination of this Agreement, that arise out of errors, omissions or negligent acts of the Consultant, its Sub-contractors, or their respective officers, employees or agents under this Agreement excepting always that this indemnity does not apply to the extent, if any, to which the Claims are caused by errors, omissions or negligent acts of an Indemnified Party.

7.4 This indemnity will not affect or prejudice the City from exercising any other rights that may be available to it at law or in equity.

7.5 The release and indemnity set out above will survive the expiry or sooner termination of this Agreement.

## **8.0 INSURANCE**

8.1 The Consultant will comply with the insurance requirements set out in Appendix A - Insurance Requirements.

## **9.0 WORKSAFEBC**

9.1 The Consultant agrees that it will procure and carry and pay for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Agreement. The Consultant agrees that the City has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the City to the Consultant. The City will have the right to withhold payment under this Agreement until the WorkSafeBC premiums, assessments or penalties in respect of work done or service performed in fulfilling this Agreement have been paid in full.

9.2 The Consultant will provide the City with the Consultant's and each Sub-contractor's WorkSafeBC registration number and clearance letters from WorkSafeBC confirming that the Consultant and each Sub-contractor are registered in good standing with WorkSafeBC and that all assessments have been paid to the date thereof prior to the City having any obligation to pay monies under this Agreement. The Consultant will indemnify the City and hold harmless the City from all manner of claims, demands, costs, losses, penalties and proceedings arising out of or in any way related to unpaid WorkSafeBC assessments owing from any person or corporation engaged by the Consultant in the performance of this Agreement or arising out of or in any way related to the failure to observe safety rules, regulations and practices of WorkSafeBC, including penalties levied by WorkSafeBC.

9.3 Whenever the Consultant is required or permitted to perform any Services on any City sites, the Consultant is now appointed and now accepts appointment as the "prime contractor" (as defined in the WorkSafeBC regulations) in connection with such Services.

## **10.0 CITY INFORMATION/APPROVALS**

10.1 No reviews, approvals or inspections carried out or information supplied by the City will derogate from the duties and obligations of the Consultant (with respect to designs, reviews, inspections, approvals or otherwise), and all responsibility related to the Services will be and remain with the Consultant. For greater certainty, any information provided by the City to the Consultant, whether under the RFP or under this Agreement, including any studies, reports, plans, drawings, or specifications, is provided to the Consultant for information purposes only and may not be relied upon by the Consultant.

## 11.0 COMMUNICATION BETWEEN CONSULTANT AND CITY

- 11.1 The City appoints [insert name] [email address] as the City's Project Manager for the purposes of this Agreement.

In the event of the revocation in writing of [insert name]'s appointment as the City's Project Manager by the City, [insert name] will have no further authority under this Agreement, except as may be specifically designated in writing by the City and agreed to in writing by [insert name], and all references to the City's Project Manager in this Agreement will thereafter be deemed to be a reference to the City or to such other person designated in writing by the City to the Consultant.

The City's Project Manager may from time to time delegate to a representative the performance of or the authority to perform the duties, responsibilities, rights and obligations of the City in respect of which the City's Project Manager has been designated and appointed its sole and exclusive agent.

- 11.2 The Consultant appoints [insert name] [email address] as its representative for the purposes of this Agreement (the "Consultant's Project Manager").
- 11.3 Unless otherwise agreed to in writing by the Parties, all material communication between the Consultant and the City regarding this Agreement, including performance of the Services, will be between the City's Project Manager and the Consultant's Project Manager.

## 12.0 TERM OF AGREEMENT

- 12.1 This Agreement will commence on the Effective Date and will expire on the completion of the Services, which Services must be completed by [insert date] (the "Term").

## 13.0 TERMINATION

- 13.1 The City at any time, in its sole judgment, may, whether or not cause exists, terminate the services of the Consultant in whole or in part by giving ten days' prior written notice to the Consultant. If termination is not for cause, the Consultant will be paid for all Services properly performed to the date of the delivery of the said notice (subject to the terms of this Agreement) plus all necessary and reasonable wind-up costs incurred, if any, in closing out the Services or the part terminated.
- 13.2 Despite Section 13.1, in no event and under no circumstances will the Consultant's "necessary and reasonable wind-up costs incurred" pursuant to Section 13.1 exceed \$2,000.00 (including all taxes).

## 14.0 ASSIGNMENT

- 14.1 The Consultant will not assign this Agreement in whole or in part except with the prior written consent of the City, which consent will not be unreasonably withheld, delayed or conditioned. Any attempt to assign this Agreement without such consent will be void and of no effect. However, the Consultant will be permitted to assign this Agreement to any entity into, by or with which the business or assets of the Consultant have been merged, acquired, consolidated or re-organized, or any entity which purchases all or substantially all of the business or assets of the Consultant, provided always that the Consultant first provides the City with:

- (a) reasonable particulars of the transaction (permitting the City to independently verify the nature of the transaction); and
- (b) a legally enforceable covenant from the new entity confirming that it is legally bound

to the City to perform this Agreement.

## 15.0 CONFIDENTIALITY

- 15.1 In the course of or for the purpose of performing the Services, the Consultant will obtain or have access to information, including but not limited to technical information, financial information and business information, which is confidential to the City, and is the exclusive, world-wide property of the City and/or its suppliers and customers (collectively "Confidential Information"). Excluded from the definition of Confidential Information is:
- (a) information which is in, or becomes part of, the public domain, not due to the Consultant's breach of this Agreement or the Consultant's actions;
  - (b) information which was previously in the Consultant's possession and did not originate from the City; and
  - (c) information which lawfully becomes available to the Consultant from a third party not under an obligation of confidence to the City regarding such information.
- 15.2 The Consultant will not use or reproduce the Confidential Information other than as reasonably required for the performance of the Services under this Agreement. The Consultant will not, without the prior written consent of the City given on such terms and conditions as it prescribes in its sole discretion, disclose or allow access to the Confidential Information to any person, except to only those of its own employees who have a need to know the Confidential Information solely for the provision of the Services, and who have been advised of its confidential nature and have agreed to be bound by the confidentiality and use-restriction provisions in this Section 15.0. The Consultant will take all reasonable precautions against the Confidential Information being used by or disclosed to any unauthorized person.
- 15.3 If the Consultant is required by any law, legal proceeding, or court or government order, to disclose any Confidential Information, the Consultant shall limit its disclosure of such Confidential Information to the extent and purpose legally required, provided that prior to any disclosure the Consultant will promptly notify the City in writing of the existence and the terms, and conditions of the required disclosure and, at the City's request and expense, co-operate in obtaining a protective order or other assurance that confidential treatment and restrictions on use will be accorded such Confidential Information.
- 15.4 The City is subject to the *Freedom of Information and Protection of Privacy Act* (British Columbia), which imposes significant obligations on the City's contractors to protect all personal information acquired from the City in the course of providing services to the City. The Consultant confirms and acknowledges its obligations to comply with all obligations imposed on it pursuant to the *Freedom of Information and Protection of Privacy Act* (British Columbia) with respect to all personal information received from the City whether as part of the Confidential Information or otherwise.
- 15.5 The Consultant acknowledges that in the event of a breach by the Consultant or any of its employees of their respective confidentiality obligations pursuant to this Section 15.0, damages alone would not be an adequate remedy. The Consultant therefore agrees with the City that, in addition to and without limiting any other right or remedy it may have, the City will have the right to an immediate injunction or other available equitable relief in any court of competent jurisdiction enjoining any threatened or actual breach of such obligations.
- 15.6 The Consultant shall return all copies of the Confidential Information to the City, in all tangible forms and media, and delete all Confidential Information resident in any databases or systems, upon the earliest of the following dates:

- (a) completion of the Services;
- (b) expiration or earlier termination of this Agreement; and
- (c) written request of the City for return of the Confidential Information;

provided that the Consultant shall have the right to retain one copy of the Confidential Information solely for archival purposes or as otherwise may be required by law, subject to its ongoing confidentiality and restricted use obligations.

15.7 This Section 15.0 shall survive the expiration or earlier termination of this Agreement.

#### 16.0 NO PROMOTION OF RELATIONSHIP

16.1 The Consultant will not disclose or promote its relationship with the City, including by means of any verbal declarations, announcements, sales, marketing or other literature, letters, client lists, websites, internet domain names, press releases, brochures or other written materials (the “Communications”) without the express prior written consent of the City (except as may be necessary for the Consultant to perform its obligations under this Agreement).

16.2 Furthermore, the Consultant undertakes and will cause all of its Sub-contractors to undertake not to disclose or promote its relationship with the City in any Communications in a manner which could suggest or create an association, express or implied, between the Consultant and the City. Without limiting the generality of the foregoing, the Consultant will not refer to or use any website, domain name, official emblem, logo or mascot of the City of Vancouver in any Communications, without the express prior written consent of the City.

#### 17.0 DELIVERABLES

17.1 As a result of or as part of providing the Services, the Consultant may receive, create, produce, acquire or collect one or more of the following:

- (a) products, goods, equipment, supplies, models, prototypes and other materials;
  - (b) information and data;
  - (c) reports, drawings, plans, designs, depictions, specifications and other documentation; and
  - (d) any other items identified in this Agreement as deliverables;
- (collectively, the “Deliverables”).

17.2 Deliverables are deemed not to include:

- (a) any item not required to be produced by the Consultant or supplied to the City as part of or together with the Services, provided that if the City has paid or is liable to pay for any portion of such item’s creation, production, acquisition or collection then such item shall be deemed to be a Deliverable;
- (b) any item produced as a result of the Services, which is specified in this Agreement as being excluded from the Deliverables category; and
- (c) any item which pre-existed the effective date of this Agreement, that is owned by a third party or that is used by the Consultant as part of the services provided to any of its other customers (the “Pre-Existing Materials”).

- 17.3 All Deliverables will be owned solely by the City unless otherwise expressly provided herein. The City shall have the complete and unfettered right to use and deal with the Deliverables for its own benefit in any way it sees fit without limitation, and without accounting in any way to the Consultant.
- 17.4 The Consultant will keep accurate records and provide regular reports to the City about the Deliverables as they are created or acquired, and grant to the City access to the Deliverables at all times on reasonable notice. The Consultant will treat each Deliverable as subject to the confidentiality provisions set out in Section 15.0 unless advised otherwise by the City.
- 17.5 Each Deliverable, as to the whole or that portion of the Deliverable then existing, will be delivered by the Consultant to the City on the earliest of each of the following events:
- (a) the date specified in this Agreement for the delivery of such Deliverable;
  - (b) immediately on the date of expiration or sooner termination of this Agreement; or
  - (c) the date specified by written notice of the City requesting delivery of all or any part of the Deliverable.
- 17.6 The Consultant transfers to the City, free of all liens and encumbrances, ownership of each Deliverable, and assigns all of its world-wide present and future rights, title and interest in and to each Deliverable, including copyright, effective as of the date of creation or acquisition of such Deliverable by the Consultant. The Consultant irrevocably waives, in favour of the City, all moral rights in the Deliverables. The Consultant will obtain from its employees and any independent contractors, all required assignments and releases of intellectual property, and waivers of moral rights, in the Deliverables. The Consultant will not assert any rights to or interests in, or apply for or register any copyright or other rights or interests in, the Deliverables, or assist any other person in doing so. The Consultant shall provide to the City, during and after the term of this Agreement, any reasonable assistance required for the City to obtain, perfect and enforce its ownership of and rights in the Deliverables, including without limitation execution of assignments and transfers of the Deliverables. This Section does not apply to Pre-Existing Materials.
- 17.7 The Consultant will not incorporate any Pre-Existing Materials in any Deliverable without first:
- (a) advising the City, in writing, of the nature of the Pre-Existing Materials and their proposed use and obtaining the City's written consent to do so;
  - (b) acquiring from each third-party owner of such Pre-Existing Materials, a fully paid-up, perpetual, non-exclusive license, in writing, for the City to use the Pre-Existing Materials as part of the Deliverable; and
  - (c) granting, in writing, to the City with respect to such Pre-Existing Materials that the Consultant owns, a fully paid-up, perpetual, non-exclusive license to use the Pre-Existing Materials as part of the Deliverable.
- 17.8 The Consultant represents and warrants that the Deliverables will not infringe, misappropriate or misuse any copyright, patent, trade-mark, trade secret, or confidential or proprietary information of a third party. The Consultant shall defend, indemnify and hold the City harmless from and against any and all damage, liability, cost and expense incurred by the City in connection with any claim by a third party that a Deliverable infringed, misappropriated or misused its copyright, patent, trade-mark, trade secret, or confidential or proprietary information.

## 18.0 NOTICES

- 18.1 Any notice required or permitted to be given to the Consultant will be sufficiently given if delivered in writing by the City's Project Manager to the Consultant's Project Manager personally or, if mailed, by registered mail to the last known address of the Consultant.
- 18.2 Any notice required or permitted to be given to the City will be sufficiently given if delivered in writing by the Consultant's Project Manager to the City's Project Manager personally or, if mailed, by registered mail to City of Vancouver at 453 West 12<sup>th</sup> Avenue, Vancouver, B.C., V5Y 1V4 (addressed to the attention of the City's Project Manager).

## 19.0 NO CONFLICT OF INTEREST

- 19.1 The Consultant agrees that during the Term the Consultant will not engage in any conduct which would or might put the interests of the City into conflict with the interests of any other person, whether or not a client of the Consultant's. Without limiting the general scope of this Section 19.1 and by way of example only, the Consultant is prohibited from and will not provide any services which assist or could be seen to be assisting any person in responding to a request for proposal or invitation to tender, or otherwise giving that person an unfair competitive advantage over other proponents or tenderers responding to a request for proposal or invitation to tender by the City. The Consultant now acknowledges that a breach of this Section 19.1 could constitute not only a breach of this Agreement but also a violation of the *Competition Act* (Canada) and *Criminal Code* of Canada, and accordingly, could be punishable as a crime (as well as a breach of contract).
- 19.2 The Consultant now confirms and warrants that there is no officer, director, shareholder, partner or employee or other person related to the Consultant's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is:
- (a) an elected official or employee of the City; or
  - (b) related to or has any business or family relationship with an elected official or employee of the City, such that there would be any conflict of interest or any appearance of a conflict of interest in the administration of this Agreement or the performance of the Services.

## 20.0 NON-RESIDENT WITHHOLDING TAX

- 20.1 If the Consultant is a non-resident of Canada as defined in Canadian income tax legislation, the City may withhold from all monies payable under this Agreement such amounts as set out in Canadian income tax legislation, unless a Canada Revenue Agency waiver has been provided to the City within the time limit required under the Canada Revenue Agency administrative guidelines as in effect from time to time and, in any event, prior to payment of an invoiced amount.
- 20.2 The City shall receive full credit under this Agreement for monies withheld as of and from the date of the withholding and no interest will be payable by the City on sums withheld and later paid directly to the Consultant.
- 20.3 The Consultant shall indemnify the City for any losses, damages or expenses incurred by the City as a result of the Consultant's failure to properly disclose to the City its non-resident status, as defined in Canadian income tax legislation.

**21.0 COMPLIANCE WITH LAW**

21.1 The Consultant will comply with the City of Vancouver License By-law and maintain a valid business license throughout the duration of this Agreement.

21.2 The Consultant agrees that it will during the Term comply with all Applicable Laws.

**22.0 GOVERNING LAW AND RESOLUTION OF DISPUTES**

22.1 This Agreement will be governed by the laws of the Province of British Columbia and the courts of British Columbia will have exclusive jurisdiction to determine all disputes arising under this Agreement and the Parties now irrevocably agree to submit all disputes to the courts of British Columbia for resolution.

**23.0 INDEPENDENT CONSULTANT**

23.1 This Agreement is a contract for services and the Consultant, its permitted Sub-contractors, and the officers, directors, shareholders, partners, personnel, affiliates and agents of the Consultant and its permitted Sub-contractors are not, nor are they to be deemed to be, partners, appointees, employees or agents of the City.

23.2 The Consultant will not represent to anyone that the Consultant has any authority to bind the City in any way or that the Consultant is an employee or agent of the City.

**24.0 INDEPENDENT LEGAL ADVICE**

24.1 The Consultant acknowledges that the Consultant has been given the opportunity to seek independent legal advice before executing this Agreement.

**25.0 TIME FOR PERFORMANCE**

25.1 **Time of the Essence.** Time shall be of the essence of this Agreement.

25.2 **Unavoidable Delay.** Notwithstanding Section 25.1, except for the performance of obligations to pay money, the time periods for the City and the Consultant to perform under this Agreement will be extended for periods of time during which their performance is delayed or prevented due to an Unavoidable Delay. For the purposes of this Section, an “**Unavoidable Delay**” means any circumstances beyond the reasonable control of the party trying to perform (such as, for example, acts of God, war or other strife or governmental action) but expressly excludes any and all delays caused by the Consultant’s lack of financial resources; the Consultant’s insolvency ; strikes, lockouts or other withdrawals of services arising out of any labour dispute involving the City, the Consultant or a Sub-contractor; or governmental action taken in the enforcement of any law specifically against the Consultant or its Sub- Consultants. If an Unavoidable Delay occurs, the non-performing party will, as soon as possible after the occurrence of the Unavoidable Delay, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of its obligations under this Agreement.

**26.0 GENERAL**

26.1 **No Waiver.** No action or failure to act by the City shall constitute a waiver of any right or duty under this Agreement, or constitute an approval or acquiescence in any breach hereunder, except as may be specifically agreed in writing by the City.

26.2 **Severability.** The invalidity, illegality or unenforceability of any portion or provision of this Agreement or the occurrence of any event rendering any portion or provision of this Agreement

void shall in no way affect the validity or enforceability of any other portion or provision of this Agreement. Any void portion or provision shall be deemed severed from this Agreement and the balance of this Agreement shall be construed and enforced as if this Agreement did not contain the particular portion or provision held to be void. The Parties further agree to amend this Agreement to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken position.

- 26.3 **Remedies Cumulative.** The remedies of the Parties provided for in this Agreement are cumulative and are in addition to any remedies available to the Parties at law or in equity. No remedy will be deemed to exclude or restrict the right of a Party to any other remedies against the other Party and a Party may from time to time have recourse to one or more of the remedies specified in this Agreement or at law notwithstanding the termination of this Agreement.
- 26.4 **Further Assurances.** Each Party shall execute such further and other documents and instruments and do such further and other acts as may be necessary to implement and carry out the provisions and intent of this Agreement.
- 26.5 **Entire Agreement.** The Contract Documents constitute the entire agreement between the Parties with respect to the subject matter hereof, and supersede all previous communications, representations and agreements, whether oral or written, with respect to the subject matter hereof.
- 26.6 **Amendment.** This Agreement shall not be amended except as specifically agreed in writing by both the City and the Consultant.
- 26.7 **Joint and Several Liability of Joint Venture Participants.** If the Consultant is a joint venture of two or more entities, it is understood and agreed that the grants, covenants, provisos, claims, rights, powers, privileges and liabilities of the entities who comprise the Consultant shall be joint and several.
- 26.8 **Schedules and Appendices.** The schedules and appendices attached hereto are incorporated by reference in and form an integral part of this Agreement.
- 26.9 **Set-Off.** The City may at its option, withhold and set-off against any amount owing to the Consultant (whether under this Agreement or otherwise) any amounts payable by the Consultant to the City (whether under this Agreement or otherwise) and the amount of any damages suffered or claims made or to be made by the City as a result of any other claim it may have against the Consultant, whether such claim is at law or in equity or tort or on any other basis.
- 26.10 **Enurement.** This Agreement shall enure to the benefit of and be binding upon the City and the Consultant and their respective successors and permitted assigns.
- 26.11 **Execution.** This Agreement may be executed in one or more counterparts each of which will constitute an original and together will constitute one and the same Agreement. This Agreement may be executed by the Parties electronically or by facsimile and if so executed and transmitted, this Agreement will be for all purposes as effective as if the Parties had delivered an executed original Agreement.

As evidence of their agreement to be bound by the above contract terms, the City and the Consultant each have executed this Agreement as of the day and year first above written.

CITY OF VANCOUVER

by its authorized signatories:

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: Chief Purchasing Official

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: General Manager, Engineering Services Department

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: General Manager, Legal Services Department

[INSERT NAME OF CONTRACTOR]

by its authorized signatories:

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

APPENDIX A - SCOPE OF SERVICES

*(TO BE INSERTED PRIOR TO CONTRACT EXECUTION)*

## APPENDIX B - INSURANCE REQUIREMENTS

**A1.1 Required Types/Amounts** Prior to commencing the Services, the Consultant will obtain at its own expense:

- (a) a professional (errors and omissions) liability insurance policy with limits of not less than \$2,000,000 per claim and not less than \$5,000,000 in aggregate, protecting the Consultant against all claims for loss or damage arising out of any error or omission of the Consultant or the Consultant's personnel in the performance of the Services; and
- (b) a commercial general liability insurance policy with a limit of not less than \$2,000,000 per occurrence, protecting the Consultant and the Consultant's personnel against all claims for personal injury, bodily injury including death, and property damage or loss, arising out of the operations of the Consultant or the actions of the Consultant or the Consultant's personnel. The policy must include contractual liability coverage, a cross-liability clause in favour of the City and, name the City and the City's officials, employees and agents as additional insureds.

**A1.2 Required Policy Terms**

All required insurance policies must remain in full force and effect at all times until completion of the Services or earlier cancellation of this Agreement, and for a period of not less than two years thereafter, and must:

- (a) be obtained from and issued by insurers authorized to carry on business within British Columbia, on terms satisfactory to the City's Director of Risk Management, acting reasonably;
- (b) be primary insurance in respect to the City, and any insurance or self-insurance maintained by the City will be in excess of this insurance and will not contribute with such policies; and
- (c) contain a provision that such insurance coverage will not be cancelled without the insurer giving the City at least 60 calendar days' prior written notice,

and, for any property insurance carried by the Consultant, contain a clause that waives the insurer's right of subrogation against the City and the City's officials, employees and agents.

**A1.3 Insurance Certificate**

Prior to signing, and immediately following the signature of, this Agreement, the Consultant shall have provided, or shall provide, the City's Project Manager with evidence of all required insurance to be taken out in the form of one or more certificate(s) of insurance. The certificate(s) of insurance will identify the Agreement title, number, policyholder and scope of work and must not contain any qualifications or disclaimers. Proof of insurance, in the form of such certificate(s) of insurance (or copies of the policy(ies) themselves, if requested), will be made available to the City's Project Manager at any time during the performance of the Services immediately upon request.

**A1.4 Sub-Contractors' Insurance**

The Consultant will provide in its agreements with its Sub-contractors insurance clauses in the same form as in this Agreement. Upon request, the Consultant will deposit with the City's Project Manager detailed certificates of insurance for the policies of its Sub-contractors (or copies of the policy(ies) themselves, if requested) and a copy of the applicable insurance

clauses from its Sub-contractor agreements.

**A1.5 Insurance Requirements Additional to any other Requirements**

The Consultant and each of its Sub-contractors will provide, at its own cost, any additional insurance which it is required by law to provide or which it considers necessary.

**A1.6 Insurance Requirements Independent of Agreement Obligations**

Neither the providing of insurance by the Consultant or the Sub-contractors in accordance with this Agreement, nor the insolvency, bankruptcy or the failure of any insurance company to pay any claim accruing, will be held to relieve the Consultant from any other provisions of this Agreement with respect to liability of the Consultant or otherwise.

APPENDIX C - PROPOSAL

*(TO BE INSERTED PRIOR TO CONTRACT EXECUTION)*

APPENDIX D - TRANSFER & LANDFILL OPERATIONS BRANCH SITE SAFETY ORIENTATION/AGREEMENT



## Engineering Services - VL

# Safe Operating Procedure

<b>Title:</b>	Site Safety Orientation and Agreement
<b>Branch:</b>	Transfer & Landfill Operations
<b>Site:</b>	Vancouver Landfill
<b>VanDoc:</b>	ENG – TLO 0 VL Active SOP's 0 #3 Site Safety Orientation and Agreement

REVISION HISTORY				
Rev. No.	DCR#	Description	Date Created/Revised	Created/Revised by
1		Complete revision	Revised Nov 2017	R. Weiss (OHS Supt), Tech Team

The City of Vancouver, Transfer & Landfill Operations Branch requires that all persons working on the Vancouver Landfill (VL) site receive the following orientation before any work begins, and at regular intervals in future. The orientation identifies the hazards that may be encountered, and requirements which are in place for your safety. All individuals shall understand and agree to comply with this document to have access to work on this site.

This orientation shall be delivered by Transfer and Landfill Operations or Equipment Services staff. Please note that you will receive this orientation at least every six (6) months or if it has been more than six (6) weeks since your last visit to the Vancouver Landfill site.

### **CONTRACTORS / VENDORS / CITY OF VANCOUVER BRANCHES**

Contractors, vendors or employees from other City of Vancouver branches must receive the following orientation before commencing business on the Landfill site. Each contractor, vendor or City of Vancouver employee (or team of employees) will be assigned a Landfill Site Contact as a point of contact for any questions or reporting of hazards, concerns or incidents. It is the responsibility of the contractor, vendor or City of Vancouver employee to communicate with their Site Contact in advance of their visit or at a minimum as soon as they arrive on site.

The name of your Landfill Site Contact person is: \_\_\_\_\_  
Cell number: \_\_\_\_\_

### **SITE CONTACT – CHECK WHICH SECTIONS THE READER MUST COMPLETE**

- ☐ Part One - General Safety – Pages 2 to 10, sign page 13
- ☐ Part Two - Equipment Services (EQS) Landfill Garage – Pages 11 to 12, sign page 13 (required only by those who will be entering the EQS Landfill Garage).

## PART ONE - GENERAL SAFETY

### I. SITE PLAN

**Site Address** 5400 72<sup>nd</sup> Street, Delta, BC

**Contact Numbers**

Landfill Office	604.606.2700
First Aid Cell Phone	604.603.1655



**SEE APPENDIX “A” FOR ROAD NUMBERING MAP**

### II. LANDFILL SITE HAZARDS

The hazards that may be encountered at the Landfill are listed in alphabetical order by area below.

√ General Site Hazards – Apply to all workers.			
<ul style="list-style-type: none"> <li>• Animal or insect stings</li> <li>• Confined spaces (as marked)</li> <li>• Electrical hazards</li> <li>• Eye hazards (ie. Dust)</li> <li>• Fall protection (working at height of ≥10 ft.)</li> <li>• Fires/explosions</li> <li>• Landfill gas</li> </ul>		<ul style="list-style-type: none"> <li>• Mobile equipment and vehicle traffic</li> <li>• Poor housekeeping</li> <li>• Power outage</li> <li>• Slips, trips, and falls</li> <li>• Spills</li> <li>• Weather (affects equip/vehicle operation, walking surfaces, etc.)</li> </ul>	
☐ Residential Drop-Off (RDO) Area		☐ Disposal Area Active Face	
<ul style="list-style-type: none"> <li>• Asbestos</li> <li>• Bed Bugs</li> <li>• Compressed gas cylinders</li> <li>• Cuts (blades, sharp objects, puncture)</li> <li>• Dust, including silica</li> <li>• Equipment tipping/rollover</li> <li>• Flying objects</li> </ul>		<ul style="list-style-type: none"> <li>• Heat/cold stress for worker</li> <li>• Lifting hazards</li> <li>• Mobile equipment and vehicle traffic</li> <li>• Needle sticks</li> <li>• Noise</li> <li>• Toxic gases</li> <li>• Violence</li> </ul>	
<ul style="list-style-type: none"> <li>• Asbestos</li> <li>• Bioaerosols (mould, bacteria, wastewater)</li> <li>• Bio-hazardous materials</li> <li>• Compressed gas cylinders</li> <li>• Cuts (blades, sharp objects, puncture)</li> <li>• Dust, including silica</li> <li>• Equipment tipping/rollover</li> </ul>		<ul style="list-style-type: none"> <li>• Flying objects</li> <li>• Heat/cold stress for worker</li> <li>• Landfill gas</li> <li>• Mobile equipment and vehicle traffic</li> <li>• Needle sticks</li> <li>• Noise</li> <li>• Toxic gases</li> <li>• Uneven terrain</li> </ul>	
☐ Compost Facility		☐ Scalehouse	☐ Leachate Pump Station
<ul style="list-style-type: none"> <li>• Bioaerosols (mould, bacteria)</li> <li>• Dust, including silica</li> <li>• Equipment tipping/rollover</li> <li>• Flying Objects</li> </ul>		<ul style="list-style-type: none"> <li>• Blood borne pathogens (money handling)</li> <li>• Congestion &amp; obstructions</li> <li>• Dust, including silica</li> <li>• Long stationary posture</li> <li>• Vehicle traffic</li> <li>• Noise</li> <li>• Violence</li> </ul>	<ul style="list-style-type: none"> <li>• Confined spaces</li> <li>• Electrical (lockout)</li> <li>• Landfill gas</li> <li>• Leachate</li> </ul>
☐ Flare Station		☐ Other Areas	
<ul style="list-style-type: none"> <li>• Above-ground pressurized pipelines</li> <li>• Compressed gas cylinders</li> <li>• Confined spaces (marked)</li> <li>• Congestion &amp; obstructions</li> <li>• Electrical (lockout)</li> <li>• Flame flashback during flare start-up</li> </ul>		<ul style="list-style-type: none"> <li>• Heat/cold stress for worker</li> <li>• Hot surfaces</li> <li>• Landfill gas</li> <li>• Lifting hazards</li> <li>• Vehicle traffic</li> <li>• Noise</li> <li>• Overhead hazard</li> <li>• Toxic gases</li> <li>• Working alone or in isolation</li> </ul>	
		<b>Site Contact To List &amp; Discuss (i.e.: C&amp;D Recovery Project, Closed Areas, Landfill Service Maintenance Yard, Dirt Site, Burns Bog)</b> <ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> </ul>	

Various controls have been implemented to minimize the risk of all the listed hazards. If you have any questions or concerns about hazards or require further information, please discuss with your Site Contact.

**NOTE:** If you notice a hazard or unsafe condition, **please correct it immediately**. If you are unable to correct the hazard or unsafe condition yourself, report it immediately to your Site Contact.

### III. SAFETY RULES

#### **SIGN IN AND OUT**

- **All contractors/vendors/City of Vancouver employees must sign in and out** on a “Vancouver Landfill Sign-in Sheet” at the Landfill Administration Building Office or Technical Trailer Office during regular office hours.
- Choose the sign in location where your Site Contact is located. Example: If your Site Contact has an office in the Technical Trailer, then you should sign in at the Technical Trailer and inform your Site Contact of your arrival.
- Please note sign in/sign out locations on the map below.

#### **Landfill Administration Building Office**

Location: 2<sup>nd</sup> Floor on East Side of Administration Building.

Tel: **604.606.2710**

Hours: Mon to Fri, 7:00am – 3:30pm.

#### **Technical Trailer Office**

Location: south of main parking lot and Administration Building. Office entrance at south end of building.

Tel: **604.606.2700**

Hours: Mon to Fri, 7:30am – 4:00pm.



- **After hours sign in/out:** The Administration Office closes by 3:30 pm. The Technical Trailer Building closes by 4:00 pm. The main gate closes at 6:00 pm.
- If you will be on site after the offices or the gate closes, inform your Site Contact and indicate on the sign in sheet what your expected time out will be.
- Sign out in person or by phone according to your Sign out Time as listed in the table:

Sign In Location	Sign Out In Person	Sign Out By Phone
Did you sign in at the Administration Building?	Then sign out in person at the Administration Building before 3:30 pm	Or sign out by phoning 604.606.2710
Did you sign in at the Technical Trailer Building?	Then sign out in person at the Technical Trailer before 4:00 pm	
Still at the Vancouver Landfill between 4:00 pm and 6:00 pm?	Sign out at the Weighscales	Or sign out by phoning 604.506.3159 (Sub Foreman)
On site after 6:00 pm?		Phone 604.506.3159 (Sub Foreman)

### VEHICLE ACCESS TO & OPERATION WITHIN THE LANDFILL



- Rules for vehicles entering the Vancouver Landfill
  - Vehicles authorized to by-pass the scales
    - Some vendors and City of Vancouver vehicles have been authorized to by-pass the scales and therefore are permitted to by-pass the vehicle line up on 72<sup>nd</sup> street. **ONLY VEHICLES WITH AUTHORIZATION MAY BY-PASS.**
  - Vehicles not authorized to by-pass
    - When entering the site from along Burns Drive and 72<sup>nd</sup> street, vehicles may not pass the inbound line-up during operating hours, **unless traffic control persons are actively managing traffic and the traffic control person gives you a clear direction to by-pass.** If no traffic control persons are present, then unauthorized vehicles must wait in line.

- If a traffic control person is present, vehicles may signal to traffic control persons that they would like to bypass by putting on their 4-way flashers. Do not proceed until the traffic control person notes your flashers and gives you clear instruction to bypass.
- All drivers/operators must observe traffic control measures (i.e., stop signs, no stopping road markings, speed signs, warning signs and cones).
- The speed limit on the Landfill premises is **30 km/h, and 15 km/h adjacent to the scales.**
- Seatbelts must be worn at all times while vehicles are in motion, no exception.
- To prevent exhaust fumes from entering the scalehouse, all vehicles must turn off their engines when sitting at the weighmaster window on the scales.

### ***DISTRACTED DRIVING***

- The use of cellular phones while operating vehicles or equipment is prohibited by City policy and the BC Motor Vehicle Act unless in a Province-approved hands-free mode. Always move to a safe place out of the way of any equipment or vehicles prior to using a cellular phone or engaging in any other non-mobile activity.
- The use of listening devices with headphones (such as music players) is prohibited while on site by City policy.
- The Vancouver Landfill has many persons on the ground and vehicles moving in close proximity to each other. A distracted driver is considered a **HIGH RISK** to both vehicles and persons on the ground. **Distracted drivers will be asked to leave the site and will not be permitted access without written permission from the Landfill Manager or designate.**

### ***SMOKING***

- Smoking is only permitted in the designated smoking location on the south west corner of the Administration building parking lot. Smokers will find a covered area at this location.
- Smoking is not permitted at any other location within the Landfill.



### **SCAVENGING**

- Scavenging is prohibited anywhere in the Landfill. Scavenging is the search for and collection of anything from discarded waste.

### **CONED OFF, SIGNED AREAS, ASBESTOS DEPOSITS**

- Be aware of and stay clear of coned-off areas; these are closed to protect you from hazards.
- Be aware that asbestos is routinely managed at the Landfill. Asbestos is required to be double bagged and poses no harm if the bags are not disturbed. Asbestos is disposed of within areas posted with asbestos signs or wording.

### **WORKSAFEBC COMPLIANCE**

- Comply with WorkSafeBC regulations when entering any confined space, depression, or potentially poorly ventilated areas.

## **IV. FIRST AID ATTENDANT – CALL **604.603.1655** (PLEASE WRITE THIS NUMBER DOWN)**

- All injuries, even minor injuries, are to be reported to the first aid attendant and your Site Contact. The first aid room is located at the southeast corner of the Landfill Administration building. (Location noted on the following page picture)
- Notify the designated First Aid Attendant at **604.603.1655** (VL First Aid Cell Phone). If no answer, contact the Landfill Office at **604.606.2700** to alert the First Aid Attendant.

### **EMERGENCY REQUIRING AN AMBULANCE**

- For injuries requiring an ambulance call 911 immediately, then inform the Landfill First Aid Attendant and your Site Contact (dial "9" first from land lines).

## **V. IN THE EVENT OF AN EMERGENCY**

- Report any fires, spills, accidents or other emergencies to the Landfill Office immediately. In the event of an emergency that requires outside response, call 911 immediately and then inform the Landfill Office at **604.606.2700** and your Site Contact.
- The Landfill Manager or designate is responsible for contacting additional authorities as required.
- For detailed information, refer to the Vancouver Landfill Emergency Response Plan.

### **SAFETY DURING AN EMERGENCY**

- In an emergency, your first priority is to warn others and evacuate the immediate area. Do not put yourself in danger.
- If not directly and helpfully involved, report to the **Emergency Muster Station** in the north end of the employee parking lot near the entrance to the Administration Building.



- Do not return to the site until instructed that it is safe.
- During an emergency muster, you must be present for a head count. Do not leave the Vancouver Landfill until you are directed to do so.
- If the emergency involves chemical products or materials, Material Safety Data Sheets for materials used on site are located in Superintendent's office and are available online at the Vancouver CityWire website. Ask your Site Contact to assist with accessing MSDS information.
- Materials brought onto site by contractors/other City branch workers require MSDS sheets.

## VI. HEALTH AND SAFETY CONCERNS

- If you have any health or safety concerns, please discuss them with your Site Contact.

## VII. INCIDENT REPORTING

- **Incident Definition:** An accident or other occurrence, which resulted in, or had the potential for causing an injury or occupational disease. Incidents may include near misses, minor injuries, medical aid treatments, doctor visits, and/or injuries resulting in lost time accidents (*e.g. structural and equipment failures*).
- **Near-Miss Definition:** Incident without injuries but with potential to cause a serious injury; an event which had strong potential to be an injury that required medical aid, time loss or fatality, however did not result in an injury to an employee. A near miss can be loosely defined as a "close call" or a "near hit". Near misses may include property/equipment damage.
- ❖ The above incidents must be reported to your Site Contact immediately without delay. All injuries shall be managed in accordance with VL Injury/Illness and First Aid procedures. If you are unable to get in touch with your Site Contact, report the incident to the Landfill Office at **604.606.2700**.

## **VIII. PERSONAL PROTECTIVE EQUIPMENT (PPE)**

All PPE must meet WorkSafeBC requirements for workers accessing the Landfill. PPE is required in all locations outside the Main Parking Lot or the Technical Trailer Office parking lot.

1) The following are necessary on the site:

- Yellow Hi-visibility reflective vest or coveralls as per City of Vancouver requirements.
- Safety protective footwear (heavy-duty, above the ankle, construction-type safety boots with an external triangular green CSA patch). Boots should also be approved as shock-resistant when working on electrical systems (display an external white  $\Omega$  CSA patch).
- Approved safety eyewear.
- Hearing protection at the Landfill Active Face, Residential Drop-Off Area, Demolition Area, Compost Facility, Flare Station or any area requiring hearing protection.
- Respirator with appropriate filtering cartridges or paper particulate mask as directed by the Site Contact or where mandatory wearing signs are located.

2) Also necessary where appropriate:

- Hard hat.
- Fall protection in situations where a fall of 3 metres (10 feet) or more could occur, or from a lesser height but which represents a higher risk of injury.
- Other specific equipment where determined necessary or by regulation for the particular situation or as directed by the Site Contact.

## **IX. HEAVY EQUIPMENT**

There are many varieties of heavy equipment used at the Landfill. Due to their size and operating speed, heavy equipment operators have restricted visibility for person standing or walking on the ground. **FOR YOUR SAFETY, ALWAYS GIVE HEAVY EQUIPMENT A WIDE SAFETY ZONE.**

- Do not walk in the active tipping area of the Landfill.
- Do not move into the vicinity of any vehicle or mobile equipment until you have made eye contact with the operator/driver and ensured that he/she is aware of your presence.
- Remember that people are more mobile than equipment – it is your responsibility to stay out of the way. Do not, at any time, walk behind any vehicle or piece of heavy equipment.
- Remain outside of the swing radius of excavators, approximately 15 metres (50 feet), unless absolutely necessary. If entry is required within that radius, make eye contact and communicate with the operator so they are aware of your location.
- In the demolition dumping area, maintain a safe distance between trucks (one truck and trailer length or 75 feet/23 meters). End dump style demolition trucks pose an extreme hazard of tipping over on their side when the box is lifted.
- All heavy equipment must be turned off before fuelling.

## **X. LANDFILL GAS HAZARDS**

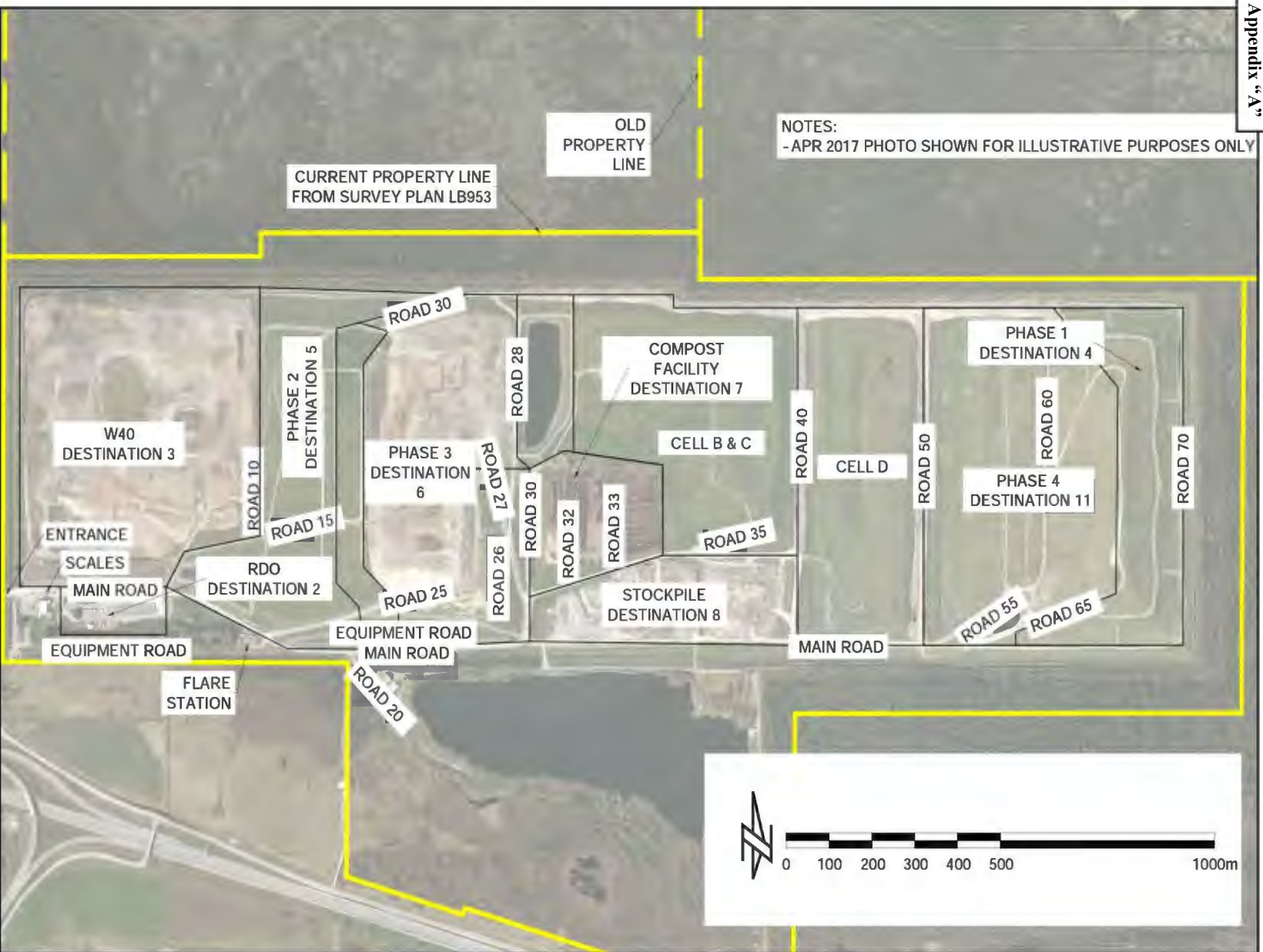
Landfill gas is produced by underground waste deposits and exists within the Landfill and in gas collection system piping and equipment. Gases can collect in confined spaces, depressions, and poorly ventilated areas.

- Never enter a signed/marked confined space without prior approval from your Site Contact.
- Do not access the fenced enclosure at the Flare Station or conduct any work around the landfill gas system without prior approval from your Site Contact.
- Do not alter any component of the landfill gas collection system without prior authority from the Landfill Manager or designate.
- If possible, stand upwind of wells or any other landfill gas works. If an accidental or uncontrolled release of landfill gas is believed to have occurred near your work area, attempt to remove yourself from the area by taking a path that is crosswind from the source and attempt to get upwind if it is determined to be safe to do so. Immediately notify the Landfill Manager or your Site Contact.
- If a hydrogen sulphide (rotten eggs) odour is detected remove yourself from the area and notify the Landfill Manager or Site Contact.
- More information about Landfill Gas is available upon request from your Site Contact.

## **XI. WORKING ALONE**

- Determine with your Site Contact whether your work is considered working alone. Each time you access the Vancouver Landfill and when you will be working alone, you must tell your Site Contact where you will be located while working alone.
- Persons working alone must receive adequate training from their employer or home branch before being permitted to work alone at the Vancouver Landfill. You must follow your employers working alone procedures, including any check in's required by that procedure.
- Persons working alone must sign in and out at the Landfill Administration office and advise reception staff they will be working alone.

Appendix "A"



## **PART TWO – EQUIPMENT SERVICES (EQS) LANDFILL GARAGE**

### **SAFETY ORIENTATION**

This section is to be used in conjunction with the Site Safety Orientation and Agreement that is in place at the Vancouver Landfill (VL). This applies to all persons working at the Landfill and includes contractors hired by Equipment Services (EQS) to perform work on site. Each person must receive the complete VL orientation prior to work commencing, paying special attention to the sections that are most pertinent to the work they will be performing. All applicable WSBC rules are in effect while working in or around the garage as well as all other areas operated by Transfer and Landfill Operations.

#### **I. GENERAL SAFETY ISSUES:**

The garage has hazards that are common to most vehicle / equipment repair facilities and they include, but are not limited to:

- Open vehicle repair pits
- Overhead hazards associated with the use of a bridge crane
- Hazards associated with the use of compressed air
- Hazards associated with the use of compressed gases (oxygen / acetylene)
- Various oils, solvents and other chemicals
- Slip and trip hazards
- Congested work areas
- Hazards associated with the movement of large industrial machines and their parts
- Exposure to contaminants that are found at the Landfill

#### **II. PERSONAL PROTECTIVE EQUIPMENT (PPE)**

All PPE must meet WSBC and City of Vancouver requirements and must be used in accordance with the manufacturer's instructions. The required PPE necessary for working in the Equipment Services Garage is as follows:

- High visibility coveralls or vest
- Safety footwear (above the ankle CSA green triangle and Ω symbol)
- Approved safety eyewear
- Hearing protection as required in the garage and outside as per the Vancouver Landfill requirements

Also necessary where appropriate:

- Respirator
- Hard hat
- Bump cap
- Dust mask
- Gloves (choose protection relative to the hazard)

#### **III. WORKING ALONE AT THE EQS SHOP**

EQS staff will be signing on to "SafetyLine Mobile Worker Monitoring System" through the Equipment Services procedure. Contractors will be required to stay with EQS / TLO staff OR log into the existing SafetyLine system in place with the Vancouver Landfill.

**IV. IN THE EVENT OF AN EMERGENCY AT THE EQS SHOP**

Respond as per the TLO orientation and be sure that any contractors on site are accounted for and kept under the care of EQS or TLO staff until authorized to be released.

**V. FIRST AID AT THE EQS SHOP**

The TLO procedures for receiving first aid are to be followed. All injuries are to be reported to the first aid attendant and the worker's immediate supervisor.



## Engineering Services - VL Safe Operating Procedure

### **SAFETY ORIENTATION AGREEMENT for CONTRACTORS and VENDORS**

#### **LEGAL TERMS AND CONDITIONS**

- You agree that entry to and use of the Site is at your own risk and that neither the City of Vancouver, nor its employees or agents will be liable for any loss or injury to person or property whether or not caused by negligence.
- You agree to comply at all times with the above requirements and to follow the instructions of the Landfill Manager, or designate, and/or the First Aid Attendant at all times.
- You agree to reimburse the City of Vancouver for any and all costs, losses and damage which may be caused by your failure to carry out safe working practices while on the site or to otherwise comply with this Site Safety Orientation/Agreement.
- The terms of this Site Safety Orientation/Agreement are additional to, and not in replacement of any other agreement between you and the City of Vancouver. However, in the event of any inconsistency between the two, this agreement prevails.

**NOTE: Complete this sign off if you are not a City of Vancouver employee**

#### **STATEMENT OF RESPONSIBILITY**

Name \_\_\_\_\_

Company &  
Nature of Work \_\_\_\_\_

Cell Phone \_\_\_\_\_

I certify that I have read, understood and agree to comply with and be bound by this Site Safety Orientation/Agreement.

Signature \_\_\_\_\_

Date \_\_\_\_\_

#### **CITY OF VANCOUVER EMPLOYEES**

**\*\*\* Enter name if you are a City of Vancouver employee (no signature is required)**

The following City of Vancouver employee has been provided the Site Safety Orientation.

Name of CoV Employee (Please print) \_\_\_\_\_

Branch \_\_\_\_\_

#### **Office use only - Orientation Provided By**

Name & Title \_\_\_\_\_

Company/Branch/Date \_\_\_\_\_

**DISTRIBUTION:** Detach page 14 and give to the Office Support Clerk for data entry.  
Pages 1 to 13 may be given to the person receiving the orientation for their use.

APPENDIX E - VANCOUVER LANDFILL GAS CONTROL SYSTEMS SAFE WORK PROCEDURES

# City of Vancouver

## Landfill Gas Safe Work Procedure - Overview

### Table of Contents

Landfill Safety .....	5
General Safety Rules.....	5
On-site First Aid .....	5
In Event of an Emergency .....	6
Health and Safety Concerns .....	6
Personal Protective Equipment (PPE) .....	6
Heavy Equipment .....	7
Landfill Gas Hazards .....	7
Working Alone .....	7
Air Intrusion .....	8
LFG MSDS .....	8
Landfill Gas Basics.....	16
Fire and Emergency .....	20
Fire Prevention & Monitoring .....	20
Fire Monitoring with Gastec Gas Tubes .....	20
Emergency Response.....	21
Fires .....	21
Figure 1 - Phases of Landfill Gas Production .....	17
Figure 2 - Landfill Gas Collection & Beneficial Use System 2015 .....	18
Figure 3 - Landfill Gas Collection System 2015.....	19
Figure 4 - Flare Station Emergency Stop Button .....	24

#### Glossary of Terms

**Condensate Drainage System** – Infrastructure that allows water that condenses from the saturated landfill gas to drain from the header pipe to prevent blocking the flow of gas

**Condensate Trap (CT)** – Infrastructure located along the sub-header pipes and on side slopes that traps condensate from entering the flares station and is conveyed by gravity into the leachate collection ditches

**Condensate** – The liquid phase produced by the condensation of steam or any other gas (landfill gas)

**PPE** – Personal protective equipment refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or infection.

**LEL** – Lower Explosive Limit, the lowest concentration (5%) of a gas or vapour in air capable of producing a flash of fire in the presence of an ignition source,

**UEL** – Upper Explosive Limit, the upper concentration (15%) of a gas or vapour in air capable of producing a flash of fire in the presence of an ignition source

**Header** – Pipe network connecting sub-header pipes to the blower/flare station system; sloped at 5% grade

**Sub-header** – Pipe network connecting laterals to the header

**Leachate** – any liquid that, in the course of passing through matter, extracts soluble or suspended solids or any other component of the material through which it has passed.

**LFGMS** – Landfill Gas Management Suite; database used to enter all data gathered by the Landtec Gem 5000 gas analyzer; used to generate maps, tables, and graphs, and to track monitoring.

**LFG** – Abbreviation for Landfill Gas

**Lateral** – Pipe network connecting individual wells to the sub-header

**Gas Manifold** – The unity between a sub-header and header; where gas flow and quality can be measured for an individual field

**SCFM** – Standard Cubic Feet per Minute

**Gemming** – The act of using a Landtec GEM 5000 gas analyzer to monitor landfill gas

**Gem** – Synonymous with Landtec; device used to monitor landfill gas

**Flare HMI (Human Machine Interface)** – Software used to control the flare station remotely

**Field Flow** – Software that allows the user to review field flow and pressure data of the site remotely

**Calibration Gas** – A series of gases used to calibrate the Landtec GEM 5000 gas analyzer; methane high, nitrogen, carbon monoxide, hydrogen sulfide

**VanDocs** – VanDocs is the City's record and document management system.

**Trimble** – A device used in conjunction with the Plexus compressor box to measure and record the water level in vertical gas extraction wells.

**Plexus** – A device used in conjunction with the Trimble to measure and record the water level in vertical gas extraction wells.

**Rescans** – Rescans are gas wells that need to be re-monitored as they have exceeded the limits of one of the parameters measured.

**Fouling** – A mineral calcite scale that sticks to the inside of LFG gas extraction wells.

**Static Pressure** – The pressure exerted by the gas that is coming out from the gas well

**System Pressure** – The pressure exerted by the flare station blowers

## Landfill Safety

The City of Vancouver, Transfer & Landfill Operations Branch requires that all persons working on the Vancouver Landfill (VLF) site receive the Site Safety Orientation before any work begins. The orientation includes an outline of safety issues and requirements at the Landfill.

**Note:** For more safety information regarding specific tasks, refer to the Vancouver Landfill Gas Safe Operating Procedures located on VanDocs and H: Drive, or ask a current landfill gas technician or supervisor.

### General Safety Rules

- When entering the site, vehicles may not pass the inbound line-up during operating hours, unless traffic control persons are actively managing traffic. Vehicles may signal to traffic control persons that they would like to bypass by putting on their 4-way flashers.
- Smoking anywhere on the site is prohibited.
- Scavenging is prohibited.
- The speed limit on the Landfill premises is 30 km/h, and 15 km/h adjacent to the scales.
- All drivers/operators must observe traffic control measures
- Be aware of and stay clear of coned-off areas;
- Seatbelts must be worn at all times while vehicles are in motion.
- The use of cellular phones while operating vehicles or equipment is prohibited by City policy unless in a Province-approved hands free mode. Always move to a safe place out of the way of any equipment or vehicles prior to using a cellular phone or engaging in any other non-mobile activity.
- Be aware that asbestos is routinely managed at the Landfill. Stay upwind of any yellow bags at the Landfill active face.
- The use of listening devices with headphones (such as music players) is prohibited while on site by City policy.
- Comply with WorkSafeBC regulations when entering any confined space, depression, or potentially poorly ventilated areas.

### On-site First Aid

- The first aid room is located at the southeast corner of the Landfill Administration building.
- For emergencies, call 911 (dial “9” first from land lines).
- Notify the designated First Aid Attendant at 604.603.1655 (VLF First Aid Cell Phone). If no answer, contact the Landfill Office at 604.606.2700 to alert the First Aid Attendant.

### In Event of an Emergency

- Report any fires, spills, accidents or other emergencies to the Landfill Office immediately. In the event of an emergency that requires outside assistance, call 911 immediately. The Landfill Manager is responsible for contacting additional authorities as required.
- In an emergency, your first priority is to warn others and evacuate the immediate area. Do not put yourself in danger.
- If not directly and helpfully involved, report to the Emergency Muster Location in the north end of the employee parking lot.
- Do not return to the site until instructed that it is safe.
- Material Safety Data Sheets for materials used on site are located in Superintendent's office and available online. Materials brought onto site require MSDS sheets
- For detailed information, refer to the Vancouver Landfill Emergency Response Plan.

### Health and Safety Concerns

- If you have any health or safety concerns, please discuss them with your site contact.
- An incident means an accident or other occurrence, which resulted in, or had the potential for causing an injury or occupational disease. Incidents may include near misses, minor injuries, medical aid treatments, doctor visits, and/or injuries resulting in lost time accidents (e.g. structural and equipment failures).

### Personal Protective Equipment (PPE)

All PPE must meet WorkSafeBC requirements

- The following are necessary while on the site:
- Hi-visibility reflective vest or coveralls.
- Safety protective footwear (heavy-duty, above the ankle, construction-type safety boots with an external triangular green CSA patch). Boots should also be approved as shock-resistant when working on electrical systems (display an external white CSA patch).
- Approved safety eyewear.
- Hearing protection at the Landfill Active Face, Residential Drop-Off Area, Demolition Area, Compost Facility, and Flare Station.

Also necessary where appropriate:

- Respirator, Hard hat, Masks
- Fall protection in situations where a fall of 3 metres (10 feet) or more could occur, or from a lesser height but which represents a higher risk of injury;

- Other specific equipment where determined necessary or by regulation for the particular situation.

### Heavy Equipment

- Do not walk in the active tipping area of the Landfill.
- Do not move into the vicinity of any vehicle or mobile equipment until you have made eye contact with the operator/driver and ensured that he/she is aware of your presence.
- Do not, at any time, walk behind any vehicle or piece of heavy equipment.
- Remain outside of the swing radius of excavators, approximately 15 metres (50 feet), unless absolutely necessary.
- In the demolition dumping area, maintain a safe distance between trucks (one truck and trailer length). End dump style demolition trucks pose an extreme hazard of tipping over on their side when the box is lifted.
- All equipment must be turned off before fueling.

### Landfill Gas Hazards

- Landfill gas exists in the Landfill and in gas collection system piping and equipment and can collect in confined spaces, depressions, and poorly ventilated areas.
- Do not access the fenced enclosure at the Flare Station or conduct any work around the landfill gas system.
- Do not alter any component of the landfill gas collection system without prior authority from the Landfill Manager or designate.
- If possible, stand upwind of wells or any other Landfill gas works. If an accidental or uncontrolled release of landfill gas is believed to have occurred near your work area, attempt to remove yourself from the area by taking a path that is crosswind from the source and attempt to get upwind if it is determined to be safe to do so. Immediately notify the Landfill Manager or designate of the release.
- If a hydrogen sulphide (rotten eggs) odour is detected remove yourself from the area and notify the Landfill Manager or designate.
- More information about Landfill Gas is available upon request from your Site Contact.

### Working Alone

- Determine with the Site Contact designate whether your work is considered Working Alone.
- You must receive adequate orientation and training before working alone.
- Working alone requires all City staff to be logged into SafetyLine application. See Safe Operating Procedure (SOP) for Working Alone

### Air Intrusion

The LFG extraction plant should not be operated if there is an excessive air leak in the gas pipe or equipment, as excessive leaks can introduce significant amounts of oxygen into the pipe. The LFG burner tip is a source of controlled combustion, which requires fuel such as landfill gas and oxygen to sustain combustion. The source of oxygen at the burner tip is from ambient conditions controlled by the automated draft air louvers mounted on the flare shell. If there are significant amounts of oxygen in the gas pipe, the flame may propagate down the pipe causing injury to staff and/or damage equipment. Therefore it is crucial to investigate and eliminate all air leaks.

If there is an air leak at within the landfill gas infrastructure, there will be oxygen detected at the flare station analyzer. Contact Landfill Gas City Staff immediately.

### LFG MSDS

#### LANDFILL GAS MSDS

##### SECTION 1 – INFORMATION



Product Identifier	LANDFILL GAS
Recommended Use	Landfill gas is a by-product of solid waste decomposition and is flared or used in waste to energy applications as a combustion fuel source.
Restrictions on Use	Intended for direct combustion only, not intended for ambient or compressed storage. Condensate should be removed from the gas prior to delivery or use.
Supplier	City of Vancouver, Transfer and Landfill Operations
Street Address	5400 - 72 <sup>nd</sup> Street, Delta, BC V4K 3N2
Emergency Telephone	Landfill First Aid 604-603-1655

##### SECTION 2 – HAZARD IDENTIFICATION

Hazard Classification	Flammable Gas (Category 1)  Acute Toxic Inhalation (Category 2)
-----------------------	---

## Engineering Services – Vancouver Landfill

### Landfill Gas Safe Work Procedure Overview

Symbol	 
Signal Word	Danger
Hazard Statements	<p>H220: Extremely flammable gas</p> <p>H330: Fatal if inhaled</p> <p>H335: May cause respiratory irritation</p>
Precautionary Statements	<p>P202: Do not handle until all safety precautions have been read and understood.</p> <p>P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P260: Do not breathe gas.</p> <p>P271: Use only outdoors or in a well-ventilated area.</p> <p>P284: In case of inadequate ventilation wear respiratory protection.</p> <p>P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P310: Immediately contact medical services if you feel unwell.</p> <p>P377: Leaking gas fire - do not extinguish unless leak can be stopped safely.</p> <p>P381: Eliminate all ignition sources if safe to do so.</p>
Other Hazards	Simple asphyxiant.

#### SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS - MIXTURE

Chemical Name	Common name and synonyms	CAS Registry Number	Concentration

## Engineering Services – Vancouver Landfill

### Landfill Gas Safe Work Procedure Overview

Methane	Sewer gas	74-82-8	30% to 60% (average 50%)
Carbon Dioxide	CO <sub>2</sub>	124-38-9	30% to 60% (average 37%)
Hydrogen Sulphide	H <sub>2</sub> S	7783-06-4	< 100 ppm
Benzene		71-43-2	< 1 ppm

- Section 4 – First Aid Measures

Inhalation	Remove victim from contaminated area to fresh air. Administer artificial respiration if required and seek medical assistance. Administer oxygen. Call a physician.
Skin Contact	Wash affected area with soap and water.
Eye Contact	Flush with water. If irritation persists obtain medical assistance.
Ingestion	Not applicable.
Most important symptoms and effects	Acute exposure can result in asphyxia and/or hydrogen sulphide poisoning.
Immediate Medical Attention and Special Treatment, if Necessary	Treat symptomatically and for hydrogen sulphide poisoning.

#### SECTION 5 - FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Dry Chemical, Carbon Dioxide (CO <sub>2</sub> ), foam, or water fog.
Unsuitable Extinguishing Media	Do not extinguish a fire involving landfill gas unless the flow of gas can be stopped, otherwise an explosive gas-air mixture could be formed creating a more dangerous environment than the original fire.
Specific Hazards Arising from Mixture	Hazardous combustion products: CO <sub>2</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , Volatile Organic Compounds.
Special Precautions for Fire-Fighters	Use self-contained breathing apparatus. Check surrounding areas for hydrogen sulphide and explosive gases.

#### SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures	Evacuate all personnel from area surrounding a release. Have leak made safe. Eliminate ignition sources such as flames or electrical sparks. Ventilate areas. Do not approach an area where a release has occurred without a combustible gas, hydrogen sulphide, carbon dioxide and carbon monoxide monitor. Use self-contained breathing apparatus if approaching a release.
Environmental Precautions	Monitor for accumulated gases, especially in low-lying areas.
Methods and Material for Containment and Cleaning Up	A gas release should not be contained. Ventilate areas where gas may have accumulated. Gas may be heavier than air and accumulate in low-lying areas.

#### SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling	Do not work in an area where gas could be present or released without a personal gas detector or equivalent level of protection.  Ensure there are no sources of ignition; post area as “No smoking, open flames, or sparks”. Use non-sparking tools and explosion proof equipment.
Conditions for Storage	Ensure there are no sources of ignition in storage or concentration areas.  Compatible materials for contact surfaces: stainless steel, HDPE or similar.  Incompatible materials: mild steel, non-corrosion resistant materials.

#### SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters	WorkSafe BC Occupational Health and Safety Regulation
Methane	1,000 ppm (8 Hour)
Carbon Dioxide	5,000 ppm (8 hour) 15,000 ppm (15 minute)
Hydrogen Sulphide	10 ppm (Ceiling)
Flammable gas	20% LEL

## Engineering Services – Vancouver Landfill

### Landfill Gas Safe Work Procedure Overview

Engineering Controls	Use spark proof or intrinsically safe equipment when dealing with potentially explosive atmosphere. Adequate ventilation of possible combustion products are required.
<b>Individual Protection Measures (Personal Protective Equipment)</b>	
Eye/Face Protection	Safety glasses if in contact with condensate.
Skin Protection	Rubber or nitrile gloves if in contact with condensate.
Respiratory Protection	If engineering controls and work practices are not effective in controlling exposure to landfill gas, then positive pressure self contained breathing apparatus is required.
Thermal Hazards	Non-sparking flame resistant clothing when in areas where gas is within explosive concentrations.

#### SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colourless Gas
Odour	Pungent odour similar to rotten eggs.
Odour Threshold	0.001 to 0.13 ppm
pH	Condensate pH is acidic, pH 4 to 6.
Melting/Freezing Point (°C)	Not applicable.
Boiling Point/Range (°C)	Not applicable.
Flashpoint (°C) and Method	Not applicable.
Evaporation Rate	Not applicable.
Flammability	Yes
Upper Explosion Limit (% by volume)	15%
Lower Explosion Limit (% by volume)	5%
Vapour Pressure	Not applicable.

## Engineering Services – Vancouver Landfill

### Landfill Gas Safe Work Procedure Overview

(mm Hg)	
Vapour Density (air=1)	Varies with composition 0.5 (methane) to 1.5 (CO <sub>2</sub> ).
Relative Density	Not applicable.
Solubility	Not applicable.
Partition Coefficient n-octanol/water	Not applicable.
Auto-ignition Temperature (°C)	Approximately 600
Decomposition Temperature (°C)	Not applicable.
Viscosity	Not applicable.

#### SECTION 10 – STABILITY AND REACTIVITY DATA

Reactivity	When mixed with oxidizer and ignition source, explosion can occur.
Chemical Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	May react with oxidizers.
Conditions to Avoid	Sparks, open flames, static discharge.
Incompatible Materials	Oxidizers. Condensate affects untreated metal components.
Hazardous Decomposition Products	CO <sub>2</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , Volatile Organic Compounds.

#### SECTION 11 – TOXICOLOGICAL INFORMATION

Route of Entry	Inhalation
Acute Toxicity	Fatal if inhaled.
LC50 Inhalation rat	444 ppm (4 hour exposure)
LCLo Inhalation human	800 ppm (5 minutes)
Effects of Acute	Landfill gas can act as a simple asphyxiant by displacing oxygen.

## Engineering Services – Vancouver Landfill

### Landfill Gas Safe Work Procedure Overview

Exposure to Product	Asphyxiation symptoms include headaches, rapid respiration, nausea, CNS depression, disorientation, unconsciousness, coma and death.
	Hydrogen sulphide is an acute toxicant. Symptoms include eye irritation, respiratory irritation, and cough. Effects at higher concentrations included nausea, vomiting, vertigo, headache, confusion, unconsciousness, and death.
Skin Corrosion/Irritation	Condensate may cause irritation.
Serious Eye Damage/Irritation	Hydrogen sulphide can be irritating to mucous membranes. Condensate may cause eye damage.
Respiratory or Skin Sensitization	None reported.
Effects of Chronic Exposure to Product	None known.
Germ Cell Mutagenicity	None reported.
Carcinogenicity	None reported.
Reproductive Toxicity	None reported.
Specific Target Organ Toxicity - Single Exposure	Hydrogen sulphide can be irritating to mucous membranes. Condensate may cause eye or skin damage.
Specific Target Organ Toxicity - Repeated Exposure	None known.
Aspiration Hazard	Not available.

#### SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity	Inhalation hazard.
Persistence and degradability	Not applicable.
Bioaccumulative Potential	No bioaccumulation known.

## Engineering Services – Vancouver Landfill

### Landfill Gas Safe Work Procedure Overview

Mobility in Soil	Not applicable.
Other Adverse Effects	None known.

#### SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal	Not applicable
----------	----------------

- Section 14 - Transport Information

UN Number	UN1971
UN Proper Shipping Name	Methane
Transport Hazard Class	2.1 - Flammable gas
Packing Group	Not applicable.
Environmental Hazards	No
Special Precautions	Not applicable.
Transport in Bulk (Marine)	Not applicable.

#### SECTION 15 - REGULATORY INFORMATION

Safety, Health and Environmental Regulations Specific to the Product	Not applicable.
--	-----------------

#### Section 16 – Other Information

Preparation Date	August 2015
------------------	-------------

## Landfill Gas Basics

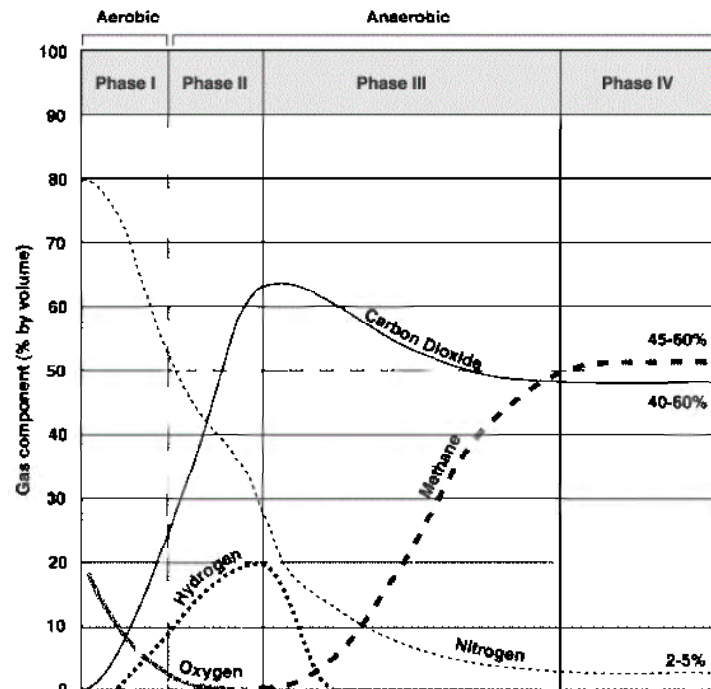
A large percentage of municipal solid waste is composed of biodegradable materials. Under normal conditions, naturally occurring microorganisms will biodegrade organic waste material, for example, food waste, paper, and wood and yard trimmings resulting in a by-product landfill gas. The major constituents of landfill gas are methane and carbon dioxide, however trace concentrations of a variety of other compounds may also be present in LFG, including hydrogen sulphide, mercaptans, and volatile organic compounds, which can create nuisance odours, degrade air quality and contribute to the greenhouse gas effect, and result in adverse health effects.

Generally, the amount and composition of the organic waste in a landfill directly affects the quality and quantity of LFG that will be generated, however other environmental factors further play a part in dictating LFG generation.

The composition of landfill gas is directly dependent on the biological phase of decomposition. There are 4 phases of landfill gas production:

As a landfill is initially constructed the void space is filled with air (79% nitrogen, 21% oxygen).

1. As the oxygen is consumed by the microorganisms, carbon dioxide is produced along with hydrogen and water vapour.
2. Anaerobic methane-forming conditions develop and methane and carbon dioxide concentrations will almost be equal (e.g., 45% carbon dioxide, 55% methane).
3. Anaerobic conditions have developed. Landfill gas methane concentration will be slightly higher than carbon dioxide concentrations (e.g., 60% methane, 40% carbon dioxide).
4. As waste stabilization is completed over time, the landfill gas eventually is replaced with air. Methane and carbon dioxide concentrations decrease while oxygen and nitrogen increase.



**FIGURE 1 - PHASES OF LANDFILL GAS PRODUCTION**

The main components of landfill gas are methane and carbon dioxide. Trace gases of carbon monoxide, hydrogen sulphide, hydrogen gas, and oxygen are also present in landfill gas which can cause noticeable negative effects on gas production.

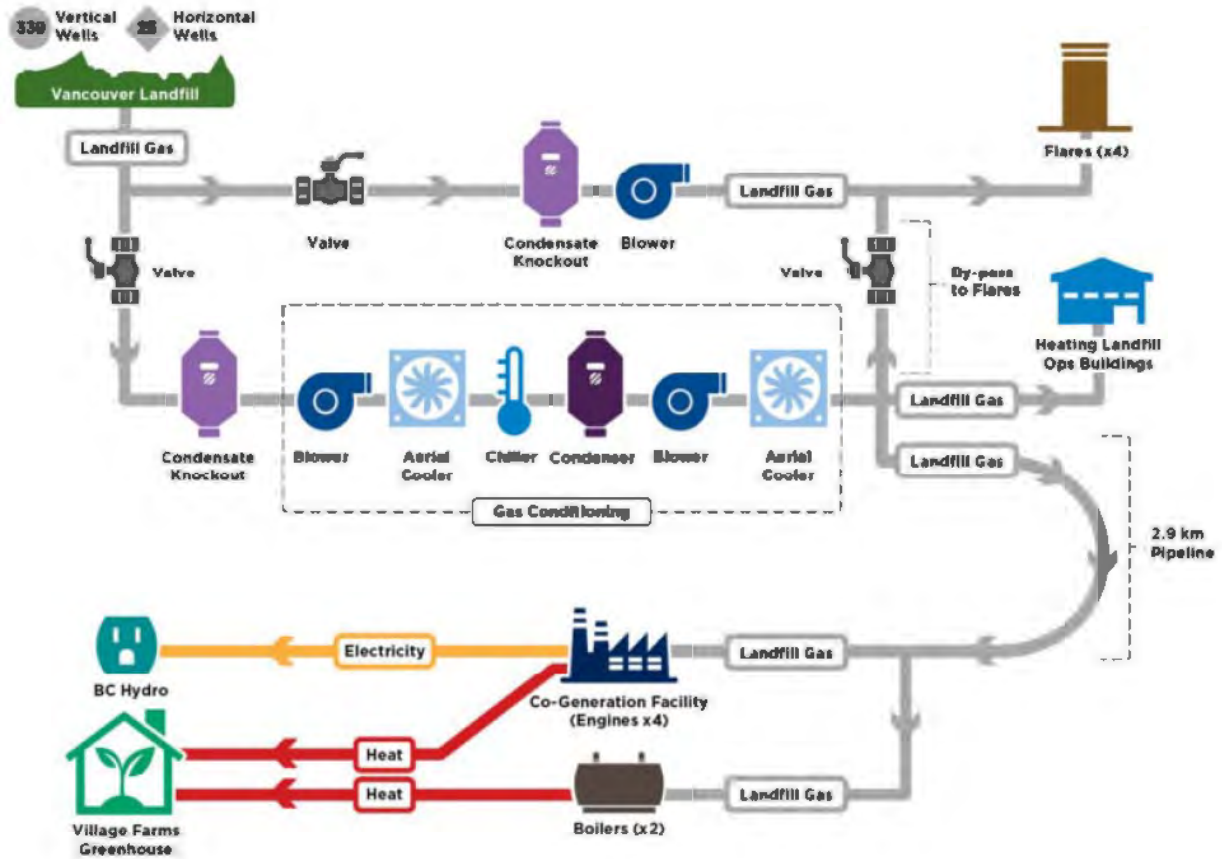
- **Methane** – The main by-product of landfill gas production. At room temperature and pressure, methane is colourless and odourless, and is lighter than air. It is 20 times more harmful to the environment and is flammable when mixed with air.
- **Carbon Dioxide** – The secondary by-product of landfill gas production. At room temperature and pressure, CO<sub>2</sub> is colourless, odourless, and heavier than air.
- **Oxygen & Nitrogen** – Not by-products of landfill gas production but become present in the landfill gas when operating a collection system due to air intrusion. Oxygen is highly flammable and can cause landfill fires.
- **Trace Gas** - Landfill gas contains trace amounts of H<sub>2</sub>S, CO, Sulfides, Disulfides, Mercaptans, H<sub>2</sub>, NMOC's and many more. These trace constituents are responsible for the odour in the landfill gas and are the most toxic.

The City of Vancouver has operated an active landfill gas (LFG) collection and flare system (figure 2) since 1991. The system was initially installed to control odour and had the added benefit of reducing greenhouse gas emissions. In December 2002, the City entered into a 20-year agreement with Maxim Power (Maxim) for landfill gas utilization and the following year Maxim commissioned a gas conditioning facility at the Landfill. In 2014, Maxim sold their

## Engineering Services – Vancouver Landfill

### Landfill Gas Safe Work Procedure Overview

equipment for landfill gas conditioning (located at the Landfill Gas Flare Station) and co-generation facility (located off site) to Village Farms International, owners and operators of the greenhouse site that hosts the co-generation facility. Currently, a small portion of the gas is directed to the Landfill Administration buildings where it is used to provide space heat.



**FIGURE 2 - LANDFILL GAS COLLECTION & BENEFICIAL USE SYSTEM 2015**

Currently at the Vancouver Landfill, there are 386 (2016 data) monitoring points over 7 distinct areas that collect gas, with more planned in the future.



FIGURE 3 - LANDFILL GAS COLLECTION SYSTEM 2015

## Fire and Emergency

### Fire Prevention & Monitoring

Fire prevention, monitoring, and investigation are of upmost importance at the landfill and diligence is required when dealing with the potential of fire. Common signs of potential for a landfill fire include:

- Visuals signs
  - Venting gases emanating from the subsurface
  - Dead vegetation
  - Snow melt
- Ground settlement
  - As gases and ash are produced, void space is created and the ground will settle
- Gas composition (carbon monoxide, oxygen)
  - Carbon monoxide of >200 indicates possible fire in the area
  - Fire unlikely if oxygen less than 1%, oxygen greater than 5% holds risk of spontaneous combustion of material
- High temperatures
  - Surface temperature greater than 140°F

If you think a fire may be present, immediately contact your supervisor or landfill manager and investigate further.

For more information regarding landfill mechanics, health and safety, and more, see Landfill Fire Training Course Manual prepared by [www.landfillfire.com](http://www.landfillfire.com).

### Fire Monitoring with Gastec Gas Tubes

Gastec gas tubes are used for monitoring to obtain accurate carbon monoxide readings from a flow of gas. If a gas well that has been monitored with a Landtec GEM 5000 gas analyzer and sees carbon monoxide concentrations above 200ppm, further investigation is required. Due to the chemical cells inside of the monitoring device, there may be interference from hydrogen sulphide, resulting in false positives. Gastec tubes are used to confirm the actual concentrations of the gas stream. To use these tubes:

1. Break the tip off both ends of the detector tube using the tip-breaker that is on the end of gas sampler
2. Push the pump handle all the way forward (in), and insert the gas tube into the sampler so that the arrow on the gas tube points towards the sampler
3. Align the red line on the back plate and the guide mark (100 or 50) on the pump handle
  - a. 100 means a 100mL full pump stroke sample, while 50 means 50mL half pump stroke. To determine which is required, check the gas tube box.

4. Direct the gas tube into the gas stream and pull full back on the pump handle until it locks into place
5. Wait until the sampling time has elapsed, which can be confirmed by a colour change on the back of the pump handle indicator (dark during sampling, white once completed)
6. Unlock the pump handle by twisting a quarter turn and restore it to its initial position
7. Continue the required number of times (n=1 on gas tube indicates 1 pump is required)

Temperature is also a key indicator for the presence of a potential fire. A surface or gas temperature monitored to be above 140°F (60°C) is a key sign of a potential landfill fire and should be further investigated.

Document	VanDocs Record Number
Gastec - How to sample Carbon Monoxide	DOC/2016/236613
Gastec Tube User Manual	DOC/2016/225443

Carbon dioxide to methane ratios can also indicate the presence of fire. With a ratio of greater than 1, further investigation is required. To learn more about these ratios, see “LFG Scatter Plots” in this document.

## Emergency Response

In the event of a serious medical emergency or where outside help is required, appoint a specific person to contact 911 and have that person report back that 911 has been called. Contact the First Aid Attendant through the radio or at 604-603-1655 (cell). For minor injuries, contact the first aid attendant for treatment.

In the event of additional risks on the job that may pose a safety hazard, contact your supervisor or the Manager of Transfer & Landfill Operations for further instructions by radio or cell phone.

Refer to the VLF First Aid Response and the VLF Emergency Response Safe Work Procedures for procedures that must be followed in the event of an emergency.

## Fires

### *Surface fires*

Surface fires generally involve recently buried or uncompacted refuse situated on or close to the surface in the aerobic decomposition layer (1-4 feet in depth). These fires can be greatly intensified by presence of landfill gas, which may cause the fire to spread throughout the landfill.

Generally burning at relatively low temperatures, surface fires can be characterized by the emissions of dense white smoke and productions of incomplete combustion (carbon monoxide). Common sources of surface fires include dumping of hot loads into the landfill and from human activity (smoking, vehicles driving in waste, construction & maintenance, arson).

#### *Underground fires*

Underground fires are fires that occur deep below the surface of the landfill and involve materials that are months to years old. These are the most difficult fires to extinguish. Underground fires have the potential to create large voids in the landfill, which can cause cave-ins of the landfill surface. Furthermore, they can produce flammable and toxic gases (carbon monoxide) and have the potential to damage and destroy leachate containment liners as well as landfill gas infrastructure.

The most common cause of underground fires is an increase in oxygen content in the subsurface, which increases bacterial activity and raises temperatures. These areas of increased temperatures or “hotspots” can come in contact with pockets of methane and result in a fire.

Of particular concern with underground fires is the fact that they tend to smolder for weeks, to months at a time and can be quite difficult to identify. Generally, an underground fire can be confirmed by the following signs at the landfill:

- Substantial settlement over a short period of time
- Smoke or smoldering odor emanating from the landfill or gas extraction system
- Elevated levels of carbon monoxide (above 1000ppm)
- Elevated temperatures in the extraction system (above 140°F)

**Note:** It is diligent to get a certified laboratory analysis of a landfill gas sample to confirm the concentrations of carbon monoxide as interference may occur in the chemical cells of the GEM 5000 Gas analyzer.

#### *Extinguishing Landfill Fires*

Fire and rescue services will be supplied primarily by the Delta Fire Department. However, the Landfill trains personnel to be able to respond to small fires or in situations when the fire department can not readily respond. The Landfill does not have suitable equipment or personnel training for rescue operations and these functions will be provided by the Delta Fire Department.

The Fire Team should be comprised of personnel trained in firefighting. They may assist with either extinguishing fires or fire prevention during an emergency condition, their duties include:

- Attempt to extinguish fires within the limits of training and equipment available.
- Inspect facilities and advise the On Site Commander of high fire hazards.
- Mitigate fire risks.

The Fire team reports to and takes direction from the Field Team Leader. The activities require working closely with the Safety Officer.

If a landfill fire has been confirmed, the following steps should be taken:

- Check for landfill gas collection pipes in the vicinity of the fire. If pipes are in the area, you will be required to turn off the header and have the pipes isolated from the collection system.
- All personnel fighting a landfill fire should wear a respirator equipped with organic vapour/HEPA cartridges. Note that this cartridge does not protect against carbon monoxide, which is present during a fire.
- If the fire is visible, dirt is preferred to water for extinguishing garbage fires.
- The City of Vancouver water truck as well as the on-site Contractor's trucks can be used to transport water from the pond. An underground fire is typically difficult to extinguish. If in doubt, large volumes of water should be applied using the Contractor's trucks and water truck.
- Monitor the area around the Landfill for smoke. Persons should be evacuated from any area subject to thick or continuous smoke.
- Place a light plant in the area to provide for overnight fire watch and fire control activities.

For more detailed information, see Landfill Emergency Response Plan Supervisor Training Guide.

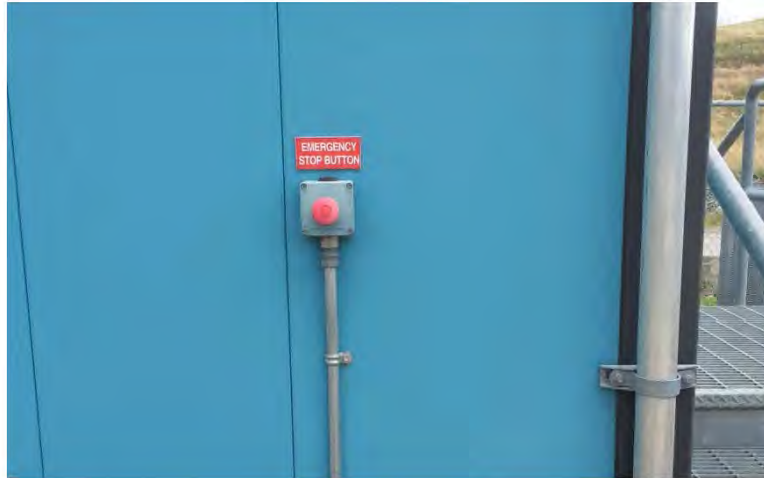
### ***Flare Station Fire***

The flare station has numerous safety shut offs to minimize the risk of fire or explosion. If a fire or explosion were to occur at the flare station, the emergency stop should be engaged to cut off flow of landfill gas to the station and to decrease risk of further damage. When the emergency stop is engaged, flares and blowers will stop and landfill gas will remain in the landfill infrastructure.

Emergency stop can be engaged either remotely or physically at the flare station. At the flare station, the emergency stop button can be located on the wall of the south side of the trailer (see figure below). Pushing this button will stop all processes at the flare station. After pushing the E-stop, call Village Farms (604-940-6012 or 604-818-5448) to update them of the situation and to request they turn off their blowers to prevent landfill gas from passing through the station

# Engineering Services – Vancouver Landfill

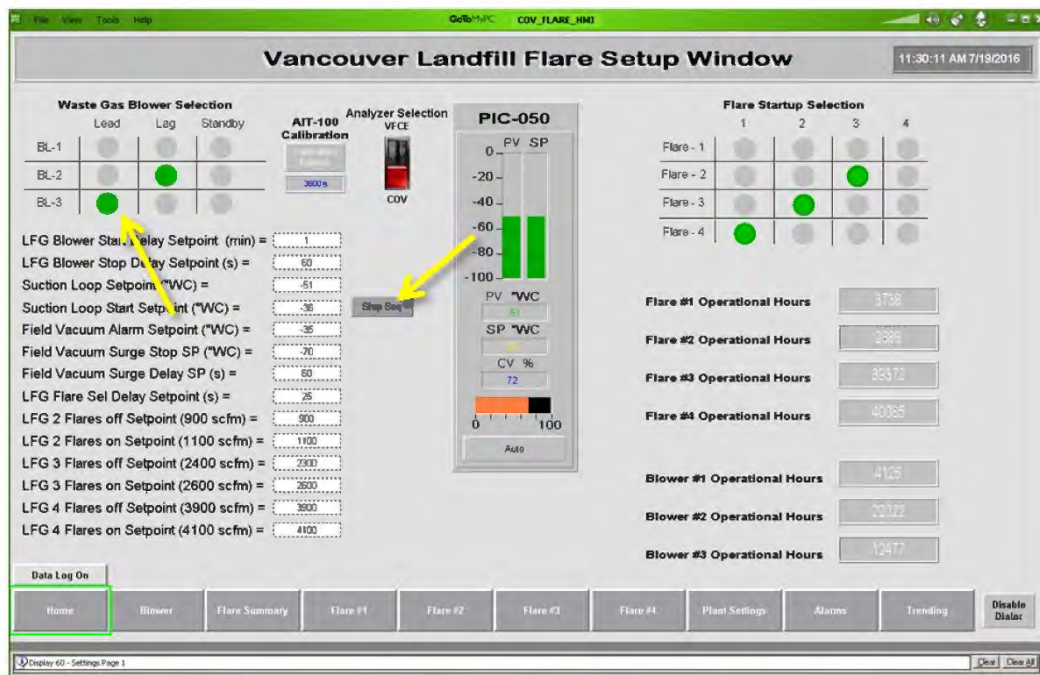
## Landfill Gas Safe Work Procedure Overview



**FIGURE 4 - FLARE STATION EMERGENCY STOP BUTTON**

To shut off the flare station remotely through the Flare HMI:

1. Call Village Farms (604-940-6012 or 604-818-5448) to update them of the situation and to request they turn off their blowers to prevent landfill gas from passing through the station
2. Open Flare HMI
3. Open the plant settings tab and press the “stop sequence” button



4. Take the blowers and flares out of sequence by clicking the green buttons on the plant settings tab, this should turn them grey.
5. Switch the blowers and flares to manual mode to ensure that they do not turn on and ensure gas does not flow through the station
6. Open each flare tab and press the “E-stop” button to ensure that the flares are off



7. Monitor the Flare Summary tab to ensure that all activity at the flare station is seized

Overtime as landfill gas is being produced and the flare station is not pulling any gas, the system will start to pressurize. Within 24 hours, a field reconnaissance of the fields should be conducted to determine if any valves, monitoring devices, flanges, or caps are open and leaking gas to the environment. If any gas is leaking to the atmosphere, it must be closed. This is the case for Area 2 West, Area 2 East, and Area 3.

The exception to this is where there is a flexible geomembrane liner (phase 01, phase 02, and phase 03). As the pressure builds within the system, the flexible geomembrane liner can become damaged. Therefore, if the flare station/ blowers are down for an extended period of time, a landfill gas technician will have to conduct a field reconnaissance and monitor the pressure below the flexible geomembrane liner within 12 hours. Pressures below the liner should **not** exceed +10"WC.

- If the static pressure below the liner is >10"WC then the LFG technician must relieve the pressure by opening up wells/vents across the field

For more detailed information, see O&M Manual for Vancouver Landfill Gas Control System.

#### *Earthquakes*

During an earthquake, it is very important to remain calm and to protect yourself:

- Drop underneath a table, inside a vehicle, or any structure that will protect you from falling objects. Move away from windows, overhead fixtures, bookcases, or anything else that can fall
- Cover and protect your head
- Hold onto your cover and stay there until the shaking has stopped. Count to 60 seconds after shaking has stopped and then proceed to remove yourself and go to muster location if safe to do so

If you are outside during an earthquake:

- Remain outside, in an open area away from buildings, trees, powerlines and roads
- If in a vehicle, remain there until safe to do so
- Count to 60 seconds after shaking has stopped and then proceed to remove yourself and go to muster location if safe to do so

After the shaking has stopped:

- Check for safety hazards such as fire, electrical hazards, gas leaks, or water leaks
- Open the Flare HMI to see if the flare station is still running. Possible shifting in the ground may have broken gas lines
  - Shutting down the flare station may be necessary

**Note:** Keep telephones and roads open for emergency use. Should not be used unless for emergencies after large events such as earthquakes or explosions. The City of Vancouver may require employees to assume emergency response assignments.

#### *Severe Weather*

Severe weather such as high winds and thunder and lightning can cause operational problems at the Vancouver Landfill. On the site, we are the highest point for long distances, and while on top of phase 01, 02, or 03, you will be the highest object for lightening to strike.

In the event of lightning and severe weather:

- Return to your vehicle and stay inside until safe to do so
- Try and avoid open fields, tops of hills, or near ridge lines
- Stay away from tall, isolate objects (power lines, monitoring devices)

- If you are in a group of people, spread out to avoid the current traveling between group members
- Stay away from water and damp items such as ropes or rags
- Stay away from metal objects such as fences and poles
- Return inside if safe to do so until severe weather passes

Weather data including rain fall, pressure, and wind velocity can be viewed at the City of Vancouver Landfill located in the technical trailer.

**Note:** For more information regarding the Davis Vantage Pro 2 weather station visit the following site: <http://www.davisnet.com/solution/vantage-pro2/>

#### *Prolonged Power Outage*

If a power outage occurs at the landfill, the backup generator will engage and operations will run accordingly. However, if the generator fails to start, the flare station will go down. If this is the case, certain precautions will need to be made.

Overtime as landfill gas is being produced and the flare station is not pulling any gas, the system will start to pressurize. Within 24 hours, a field reconnaissance of the fields should be conducted to determine if any valves, monitoring devices, flanges, or caps are open and leaking gas to the environment. If any gas is leaking to the atmosphere, it must be closed. This is the case for Area 2 West, Area 2 East, and Area 3.

The exception to this is where there is a flexible geomembrane liner (phase 01, phase 02, and phase 03). As the pressure builds within the system, the flexible geomembrane liner can become damaged. Therefore, if the flare station/ blowers are down for an extended period of time, a landfill gas technician will have to conduct a field reconnaissance and monitor the pressure below the flexible geomembrane liner within 12 hours. Pressures below the liner should **not** exceed +10"WC.

- If the static pressure below the liner is >10"WC then the LFG technician must relieve the pressure by opening up wells/vents across the field

#### *Landfill Gas Release*

The most likely means of detecting a landfill gas release include odours from hydrogen sulphide, personal gas detector readings, or flare station alarms.

If a landfill gas released is detected in an area:

- Immediately remove yourself from the area (crosswind or upwind if the source is known)
- Do not enter any depressions or low lying areas as gas may accumulate in these spots
- Move to higher elevation if possible
- Divert all personnel and traffic from the area
- Monitoring the ambient air using a personal gas detector for any dangerous gas concentrations that may be present
- If the area of landfill gas release is known, isolate the system from the collection system
- If source, concentrations, or a person has ill effects, immediately call 911 and request assistance (SCBA system to help isolate release)

#### ***Compressed Gas Cylinder Release***

An emergency with a compressed gas cylinder occurs when it is leaking, has exploded, or appears to be sufficiently damaged that it may leak or explode. Once a compressed gas cylinder has exploded, the risks remaining are fires and damages from projectiles and the situation should be handled as a fire emergency.

Signs of a compressed gas cylinder leaking include hissing and producing a stream of vapour. If you encounter a leaking compressed gas cylinder immediately turn off all machinery, equipment, and electrical appliances within the vicinity. Evacuate area and call 9-1-1. Be aware of the possibility that a leak could have frozen over and the cylinder has not yet been emptied.

Damaged cylinders have a greater likelihood of leaking or exploding during handling or while in storage. If possible and safe, perform a controlled release of the contents prior to storage, and if not, call manufacturer.

APPENDIX F - VANCOUVER LANDFILL OWNER'S LIST OF KNOWN WORKPLACE HAZARDS

## Vancouver Landfill Owner's List of Known Workplace Hazards

CONTRACT TITLE VANCOUVER LANDFILL PHASE 4 CLOSURE WORKS

PROJECT MANAGER (CITY EMPLOYEE) TONIA ZOUENKO

CONTRACT NAME & # (IF KNOWN) \_\_\_\_\_

### Purpose

This document shall be completed by the project manager, who shall list all the known worksite hazards and all the existing work process hazards that will be associated with the upcoming contract. The completed document shall then be provided to all potential contractors, as part of the tender package, so the project can be bid appropriately based on the known worksite hazards.

### Definitions

**Project Manager** - the City employee designated to be the liaison with the contractor for the purpose of managing, overseeing, coordinating or in any other way administering the contract.

### Instructions for Completion

The document must be completed in full. Choices for each entry are:

Y - Yes - the known worksite hazard or existing work process hazard does exist

N - No - the known worksite hazard or existing work process hazard does not exist\*

NA - Not Applicable - worksite hazard or existing work process is not applicable for this contract type

TBD - a third party (environmental consultant) will address the issue (primarily for a hazardous materials assessment)

\*based on reasonable estimation from all input by persons with expertise or relevant knowledge and understanding

### Information from Hazardous Materials Assessments Provided by a Third Party

A hazardous materials assessment may be completed prior to the Project Manager completing the Owners List of Known Workplace Hazards. Any such assessment should be referenced by the Project Manager in this document and provided with the tender package. Hazardous materials may include asbestos, lead, crystalline silica, ammonia, PCB's, CFC's, moulds, mercury, ozone depleting substances (ODS), radioactive substances.

### Work Description:

Consulting work for design and construction management of the City of Vancouver Landfill Phase 4 Closure Works. The consultant must provide a site-specific H&S Plan for the Consultant's activities, and must abide by Transfer and Landfill Operations and Contractor's H&S Programs.

### Work Changes

If there are any changes to the work description, please review this document to ensure any additional hazards posed by the new scope of work are identified.

<b>1. ASBESTOS-CONTAINING MATERIALS</b> - asbestos is accepted for disposal at the landfill in accordance with the asbestos policy, asbestos trench/work area at the active face, residential drop off area asbestos bin, buried throughout the Landfill site with some locations identified, and any area of the site due to accidental receipt.	Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)
a) Asbestos containing materials (ACM) may be encountered	Y
b) A hazardous materials assessment for asbestos is provided in the tender package	N
c) A hazardous materials assessment for asbestos is the responsibility of the contractor	Y

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>2. LEAD-CONTAINING MATERIALS</b> - disturbance of lead-based paint, buried wood, electrical circuitry or metal alloys.	Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)
a) Inorganic lead-containing materials may be encountered	Y
b) A hazardous materials assessment for lead is provided in the tender package	N
c) A hazardous materials assessment for lead is the responsibility of the contractor	Y

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>3. OTHER HAZARDOUS MATERIALS</b> - moulds and spores (at the Landfill active face and composting facility), wastewater treatment plant residuals, i.e. grit and sludge/scum screenings (at the Landfill active face), water treatment plant residuals (at the Landfill active face), bottom ash (on roads 40/50, at the Landfill active face), leachate/condensate (throughout the site), ammonia (ammonia-containing fridges accepted at RDO)	Yes (Y) No (N) Not Applicable (NA) To Be Determined (TBD)
a) A resource document for (list the specific hazardous material) is provided in the tender package	N
b) A resource document for (list the specific hazardous material) will be provided in the tender package	N
c) A hazard assessment for (list the specific hazardous materials) will be the contractors responsibility	Y

If yes to any, provide the applicable document upon request:

Moulds and spores - Landfill Control Measures Against Exposure to Microbiological Agents - Safe Operating Procedure

Wastewater treatment plant residuals - Wastewater Treatment Residuals OH&S Info - 2014-03

Water treatment plant residuals - Drinking Water Treatment Residuals OH&S Info - 2014-03

Bottom ash: Safe Operating Procedure: Bottom Ash Management at Vancouver Landfill and Executive Summary of Vancouver Landfill Bottom Ash Management: Occupational Exposure Assessment and Human Health Risk Assessment

Ammonia - Management of Ammonia-Containing Refrigerators - Safe Operating Procedure

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>4. CONFINED SPACES</b> - as marked on site at flare station, pump station, compost, scales, admin parking lot. Examples include flares, sewer manholes, sewer wet wells, water/oil separator, drainage sump, utility chambers.	Yes (Y) No (N) or Not Applicable (NA)
a) A hazard assessment (for entry and inspection only) from the City of Vancouver is provided in the tender package	N
b) The City of Vancouver shall provide procedures to isolate adjacent piping, or to lock out equipment (complicated systems only)	N
c) The contractor shall be responsible for isolation and lockout procedures in the confined space	Y

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>5. LOCK OUT</b> - lockout procedures required for specific equipment and electrical systems (ie. electrical repair, pump maintenance/repair).	Yes (Y) No (N) or Not Applicable (NA)
a) Lockout will be required to isolate or prevent the unexpected release of energy (electrical, mechanical, hydraulic, chemical, thermal, kinetic, gravitational, pneumatic)	Y
b) Work will be performed on or near energized equipment, lines, or circuits	Y

If yes to a) or b) describe:

There are currently lights on roads near the closure area that will need to be turned off, and locked out, before any extension work is undertaken.

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>6. FALL PROTECTION</b> - any time a person will be exposed to a fall of 10' or greater, or a fall of less than 10' where serious injury may occur: tree pruning, working on a roof, window and ledge cleaning, window replacement, roll-up door replacement/maintenance, tent installation, awning/canopy installation, overhead air exchange installation/maintenance, construction inspection and testing services.	Yes (Y) No (N) or Not Applicable (NA)
a) Workers will be exposed to a potential fall in excess of 3 m (10 feet), or to a fall of less than 3 m which would likely result in a serious injury (ex. impalement on rebar)	Y
b) Scaffolding or ladders will be required to be secured to a building or structure	NA

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>7. OVERHEAD AND UNDERGROUND UTILITIES</b> - overhead high voltage power lines, underground utilities i.e. gas, water, sewer, etc.	Yes (Y) No (N) or Not Applicable (NA)
a) There will be electrical hazards associated with overhead power lines such as limits of approach and contact	Y
b) Necessary assurances (in writing) have (or will be) obtained by the City, through the utility company, for any work where minimum limits of approach cannot be maintained (provide documentation and review at pre job meeting with the successful contractor candidate). Form 30M33 is the assurance in writing acceptable to WorkSafe BC.	N
c) Necessary assurances must be obtained (in writing) by the successful contractor, through the utility company, for any work where minimum limits of approach will not be able to be maintained. Form 30M33 is the assurance in writing acceptable to WorkSafe BC.	Y
d) Underground or hidden utilities are located on the job site. Any excavation or drilling work in proximity to an underground utility service must be undertaken in conformity with the requirements of the owner of that utility service. The work will require the owner's utility plans and/or BC1 Call package as appropriate.	Y

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>8. CONSTRUCTION, EXCAVATION, SHORING AND DEMOLITION</b>	Yes (Y) No (N) or Not Applicable (NA)
a) As Prime Contractor, the City of Vancouver project manager will submit the Notice of Project (refer to When is a Notice of Project Required)	NA
b) Workers will be required to enter an excavation over 1.2m (4 ft) in depth	Y

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>9. CHEMICALS, SOLVENTS, FUMES, VAPORS, AND/OR DUSTS</b> - various nuisance dust	Yes (Y) No (N) or Not Applicable (NA)
a) The worksite has chemicals solvents, fumes, vapors or dusts that may affect the contractor	Y
b) Material Safety Data Sheets for controlled products at the worksite will be available, on request, to the contractor	Y

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

<b>10. NOISE</b> - Landfill active face, Residential Drop Off Area, flare station, compost facility, demolition area	Yes (Y) No (N) or Not
--	-----------------------------

	Applicable (NA)
a) Employees will be exposed to noise levels above 85dba	Y

If a) is Yes, the Vancouver Landfill Noise Exposure Control plan is available on request.

Consultant must provide site-specific H&S plan for the Consultant's activities, and must abide by Transfer Landfill Operations and Contractor's H&S programs.

OTHER HAZARDS (NOT IDENTIFIED ABOVE)	Yes (Y) No (N) or Not Applicable (NA)
a) compressed cylinder gas release (residential drop off area, flare station, active face)	NA
b) eye hazards (throughout the site)	Y
c) fires/explosion (Landfill active face, composting facility, flare station, equipment, throughout the site)	Y
d) mobile equipment/vehicle traffic (throughout the site)	Y
e) needle stick/blood borne pathogens (in garbage/on wheels/tracks of equipment) -	Y
f) spills (known/unknown materials)	Y
g) Silica dust (background levels at active face, demolition area, and scales)	Y
h) trip/slip hazards (throughout the site)	Y
i) violence (scalehouse, RDO, active face, compost)	NA
j) Landfill gas arising from the decomposition of municipal solid waste (flare station, active face, landfill gas piping system, demolition area, pump station, low lying areas such as trenches or ditches)	Y
k) Equipment tipping/rollover (RDO, active face, compost, demolition area)	Y
l) Hot surfaces (equipment, flare station)	Y

<b>KNOWN WORKPLACE HAZARDS LIST COMPLETED BY</b>	
Project Manager Name (print): <i>Tonia Zouenko</i>	
Project Manager Signature: <i>[Signature]</i>	Date: <i>Nov. 7, 2018</i>
Title: <i>Acting senior project manager</i>	Phone: <i>604-829-9315</i>

## APPENDIX G – RECORD DRAWING STANDARDS

### Record Drawings Standards

The record drawings must accurately show any wires, pipes, geomembranes, and other features and shall include:

- AutoCAD file(s) and printable PDF.
- Marked up version of the full size IFC set.

The coordinate system must be NAD83UTM10-meters for both survey pickup and for drawings. The records should note the construction date for individual pay items. The actual survey pickup must be given as a .CSV file and it must include this information:

- Point number in following format:
  - 201805150001 representing the time of the survey 2018-05-15 followed by the point number 0001
- Northing
- Easting
- Elevation
- Description, where the description must include:
  - For horizontal pipe, conduit or wire:
    - Specify whether it is a pipe, conduit or wire
    - Whether the top of pipe or the invert has been picked up
    - Diameter (for non-circular members, the shape should be measured and specified)
    - Colour
    - Material
    - Slotted, perforated, corrugated or solid pipe
    - Picture name (if a picture has been taken)
    - Any other observations taken by the surveyor
  - For vertical pole, pipe, conduit or wire:
    - Specify whether it is a pole, pipe, conduit or wire
    - Whether the center, north quadrant, east quadrant, west quadrant or south quadrant of pipe has been picked up
    - Diameter (for non circular members, the shape should be measured and specified)
    - Colour
    - Material
    - Slotted, perforated, corrugated or solid pipe
    - Picture name (if a picture has been taken)
    - Any other observations taken by the surveyor
  - For geosynthetics:
    - Specify if it is a geomembrane, geotextile, GCL or other
    - Colour
    - Picture name (if a picture has been taken)
    - Any other observations taken by the surveyor
  - For others:
    - Clearly describe the feature (i.e. manhole center, 30" diameter, concrete, see picture P20180619.jpg)

The frequency of topographic survey must be at a minimum every 10 m on a regular grid and at 5 m spacing on the perimeter of the survey area. As-built surveys for pipelines and other linear features shall be at 3 m intervals (every 10 ft.). The pick-up location shall be the top-of-pipe. In addition, more survey points must be picked up if there is any change in properties, for example:

- Bend
- Diameter, thickness, etc
- Tee, cross, valve, etc
- Slotted, perforated, etc

The record drawings must:

- Reference the survey files
- Not rely on scale (only dimensions, coordinates, and survey point references must be relied on)
- Specify key points (i.e. end points of pipes, bends in pipes, features, etc; it is acceptable to have a leader and reference a point number, key points should be to scale (i.e. be at correct electronic locations))
- Allow the reader to be able to locate all features to within 150mm (or better if deemed necessary) in the field (i.e. survey pickup should be accurate to within 50mm (or better if deemed necessary), but not all survey points need to be put on the drawings especially in the case of long straight runs of pipes, just the most important ones).
- Before construction begins, the Contractor shall provide for Engineer's approval, a list with naming conventions and abbreviations used for survey point description.

The raw drawings shall be provided to the Engineer in AutoCAD and as PDF files in addition to the printed sealed ones.

Copies of the as-built drawings should be given to the Engineer.