

**Collection of Information to Quantify the Types and Volumes  
of Solid and Liquid Organic Biomass in the City of  
Burnaby and Township of Langley Suitable for Biomass  
Cultivation and/or Bioenergy Production**

**Closing Date and Time**

Electronic proposals must be received by 3 pm (PST)  
Friday 26<sup>th</sup> March, 2010

**Contact Person**

All enquiries related to this Request for Proposals ('RFP'), including any requests for information and clarification, are to be directed, via email, to the following Contact Person. Enquiries and responses will be recorded and may be distributed to all prospective proponents.

Mathew Dickson  
Program Manager  
Renewable Agri-energy Initiative  
B.C. Agricultural Research and Development Corporation  
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Ministry of  
Agriculture  
and Lands

## Executive Summary

The result of this study will be quantification of the current types and volumes of agricultural<sup>1</sup>, municipal<sup>2</sup> and forestry<sup>3</sup> solid and liquid<sup>4</sup> organic waste in the City of Burnaby and Township of Langley<sup>5</sup> suitable for biomass cultivation and/or bioenergy production<sup>6</sup>. The study is led by a joint industry and government Steering Committee, with membership from B.C. Ministries of Agriculture and Lands, B.C. Agricultural Research and Development Corporation, Life Sciences B.C., Ministry of Community and Rural Development, Metro Vancouver, Irwin Maclaren Inc, B.C. Hydro, National Research Council Canada and Terasen gas.

Specifically, through the use of survey(s) and/or questionnaire(s), this study will provide very detailed information on the current types and volumes of solid and liquid organic waste suitable for biomass cultivation and/or bioenergy production from 50<sup>7</sup> of the largest agricultural, municipal, and forestry point sources in the City of Burnaby and Township of Langley<sup>8</sup>. Furthermore, by building upon existing solid and liquid organic waste type and volume information and data for the City of Burnaby and Township of Langley, and through educated estimates where necessary, this study will also provide an accurate picture of the total current types and volumes of agricultural, municipal, and forestry solid and liquid organic waste in the City of Burnaby and Township of Langley that is suitable for biomass cultivation and/or bioenergy production.

Once completed, this study will provide detailed enough information to enable the accurate assessment of opportunities for new or enhanced biomass cultivation and/or bioenergy production facilities from current, suitable solid and liquid organic waste in the City of Burnaby, Township of Langley and surrounding areas. Furthermore, the survey(s) and/or questionnaire(s) design and method of delivery used to collect information from the 50 point sources will also act as a template for future biomass quantification projects in other municipalities throughout B.C.

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<sup>1</sup> Including organic waste from primary agriculture, animal processing and large-scale industrial grains and other food processing/distribution facilities.

<sup>2</sup> Including organic waste from residential, commercial, institutional, demolition, land clearing, public works collection locations and construction sources.

<sup>3</sup> Including organic waste from forestry activities and pulp mills.

<sup>4</sup> Liquid organic waste means organic effluent that is discharged into a municipal sewer system.

<sup>5</sup> The reason for selecting the City of Burnaby and Township of Langley is that this will limited the geographic extent of the study to two small areas. This limitation will ensure that the study will provide detailed enough information so that it is useful to project proponents considering new or enhanced biomass cultivation and/or bioenergy production facilities in the City of Burnaby, Township of Langley and surrounding areas.

<sup>6</sup> This includes microalgae cultivation, anaerobic digestion, gasification, boiler combustion, biodiesel and ethanol production. As such, all solid and liquid organic wastes should be included that are not likely to exceed known toxins or pollutants that may limited their application for biomass cultivation and/or as a bioenergy feedstock.

<sup>7</sup> This is 50 point sources in total, and not 50 point sources from each of the three sectors.

<sup>8</sup> This point source information may be used to support future physical and chemical sampling research to determine the most beneficial use(s) of organic wastes for biomass cultivation and/or bioenergy production.

## **Terms of Reference and Study Requirements:**

### **Goals:**

1. Collect very detailed information on the current types and volumes of solid and liquid organic waste from 50 of the largest agricultural, municipal, and forestry solid and liquid organic point sources in the City of Burnaby and Township of Langley that is suitable for biomass cultivation and/or bioenergy production.
2. Provide an accurate picture of the total current types and volumes of agricultural, municipal and forestry solid and liquid organic waste in the City of Burnaby and Township of Langley that is suitable for biomass cultivation and/or bioenergy production.
3. This information will facilitate the introduction or enhancement of commercially viable biomass cultivation and/or bioenergy production facilities by enabling project developers to accurately assess the current types and volumes of agricultural, municipal, and forestry solid and liquid organic waste in the City of Burnaby, Township of Langley and surrounding areas.

### **Objectives of this Study:**

1. To develop a list of all the agricultural, municipal<sup>9</sup> and forestry organic waste point sources in the City of Burnaby and Township of Langley. This list must include the following information for each point source:
  - a. name and actual geographic location (either street address or post code of the physical location, and not the mail box address);
  - b. appropriate contact information (contact name, telephone and email);
  - c. type of facility (e.g., dairy farm, food processor, school, hospital, etc);
  - d. volume of production (if available); and
  - e. other information that might provide a useful indication of the point source's solid and liquid organic waste volumes.
2. To populate a map of the City of Burnaby and Township of Langley, with all the agricultural, municipal, and forestry organic waste point sources plotted and categorized by type (e.g., dairy farm, food processor, school, hospital, etc).<sup>10</sup>
3. To develop survey(s) and/or questionnaire(s) that will be used to acquire detailed information on the types and volumes of solid and liquid organic waste from 50 of the largest agricultural, municipal, and forestry organic solid and liquid point sources in the City of Burnaby and Township of Langley that is suitable for biomass cultivation and/or bioenergy production. This tool should be able to elicit detailed information on:
  - a. whether the organic waste is separated from non-organic waste;

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<sup>9</sup> For Object 2, municipal point sources are only to include food wholesale, retail, distribution, processing and manufacturing, hotels, schools, restaurants and hospitals.

<sup>10</sup> The 50 point sources that answer the survey(s)/questionnaire(s) will be offered full anonymity. As such, the information on this map will be limited to point source location and type only (unless permission to do otherwise is given by the point source).

- b. whether the organic waste could potentially be kept separate from non-organic waste;
  - c. distinct organic waste categories (e.g., meat scraps, flotation sludge, tallow, oil, fats and greases, whey, etc);
  - d. whether the organic waste categories are separate or mixed;
  - e. whether the organic waste categories could potentially be kept separate;
  - f. economic incentives necessary to encourage organic waste separation (into an organic waste stream and/or individual organic waste) to enable alternative waste management solution if an alternative is possible;
  - g. whether the organic waste is accessible and available for collection and if it is already used or committed contractually to an existing processor, public or private;
  - h. monthly weight/volume (tonnes wet weight or M<sup>3</sup>) of each organic waste category for both diverted and disposed amounts;
  - i. monthly and seasonal weight/volume fluctuations in each organic waste category for both diverted and disposed amounts;
  - j. current organic waste management solutions for each organic waste category, whether it is considered a biomass cultivation and/or bioenergy production use or not, and associated cost; and
  - k. desire to voluntarily partake in future physical and chemical sampling research (such as carbon content, NPK and heavy metal analysis) by provision of organic waste sample(s).
4. To use the survey(s) and/or questionnaire(s) developed for Objective 3 to collect the abovementioned point source organic waste information from 50 of the largest agricultural, municipal, and forestry organic solid and liquid point sources in the City of Burnaby and Township of Langley. This point source information must be collected in such a way as to allow future physical and chemical sampling research to determine the most beneficial use(s) of organic wastes for biomass cultivation and/or bioenergy production.
5. To collect additional existing solid and liquid organic waste type and volume information and data, and use educated estimates where necessary, on total current types and volumes of agricultural, municipal and forestry solid and liquid organic waste in the City of Burnaby and Township of Langley. This information and the information collected for Objective 4 must be collated into a succinct, clear, focused and useful report that clearly illustrates and quantifies the total types and volumes of agricultural, municipal and forestry solid and liquid organic waste in the City of Burnaby and Township of Langley suitable for biomass cultivation and/or bioenergy production.

**Guiding Principles:**

1. The purpose of this study is to quantify the current types and volumes of agricultural, municipal and forestry solid and liquid organic waste in the City of Burnaby and Township of Langley that is suitable for biomass cultivation and/or bioenergy

production. Therefore, it is important for the proponent to consider several key solid and liquid organic waste criteria, including, but not limited to:

- a. organic waste type and suitability;
  - b. organic waste volumes, lack of contamination and availability;
  - c. organic waste volume and composition fluctuations; and
  - d. organic waste pricing.
2. The proponent must be familiar and have experience with designing and delivering survey(s)/ questionnaire(s) to acquire detailed information. Furthermore, the proponent must also have experience and knowledge in the field of organic waste management and bioenergy production. Creation of a study team to cover all these areas is strongly encouraged.
  3. It is expected that the proponent will source existing solid and liquid organic waste type and volume information and data from Steering Committee members. Irrespective of the source, all pertinent and useful information must be included in the final report.
  4. The 50 point sources that answer the survey(s)/questionnaire(s) will, if necessary, be offered full anonymity. As such, if necessary, the proponent must ensure that the solid and liquid organic waste from these 50 point sources cannot be individually identified in the final report.

### **Timelines**

| <b>EVENT</b>   | <b>ANTICIPATED DATE</b>                  |
|--|--|
| RFP issued   | Wednesday 3 <sup>rd</sup> February 2010  |
| PFP closing date   | Friday 26 <sup>th</sup> March 2010       |
| Shortlist of successful proposals notified (if applicable)   | Wednesday 7 <sup>th</sup> April 2010     |
| Presentations by short listed proponents (if applicable)   | Wednesday 14 <sup>th</sup> April 2010    |
| Successful proponent notified & contract drafting  | Thursday 15 <sup>th</sup> April 2010     |
| List of point sources and survey(s)/questionnaire(s) developed and submitted to Steering Committee                             | Wednesday 16 <sup>th</sup> June 2010     |
| Survey(s)/questionnaire(s) and list of point source, with comments, returned to Consultant                                     | Wednesday 30 <sup>th</sup> June 2010     |
| Final survey(s)/questionnaire(s) and list of point source submitted to Steering Committee                                      | Friday 16 <sup>th</sup> July 2010        |
| 50 point sources selected by to Steering Committee   | Wednesday 28 <sup>th</sup> July 2010     |
| All information collection completed, including survey(s)/questionnaire(s), first draft report delivered to Steering Committee | Monday 1 <sup>st</sup> November 2010     |
| Draft report, with comments, returned to Consultant  | Wednesday 24 <sup>th</sup> November 2010 |
| Final report submitted   | Wednesday 15 <sup>th</sup> December 2010 |

## **Reporting and Deliverables**

Formal deliverables are to be provided in electronic, Word and pdf format, as follows:

1. a categorised list (including any ancillary information) of all agricultural, municipal and forestry organic waste point sources in the City of Burnaby and Township of Langley, and maps with all the point sources (Objective 1 – 2);
2. a copy of the survey(s)/questionnaire(s) that was used to acquire detailed information on the types, volumes and availability of solid and liquid organic waste from 50 of the largest agricultural, municipal, and forestry point sources in the City of Burnaby and Township of Langley, and detailed information as to how the survey(s)/questionnaire(s) were conducted (Objective 3);
3. detailed information and results from the 50 point source interviews, with appropriate graphs, charts, etc. to clearly illustrate the information collected (Objective 4); and
4. a succinct, clear, focused and useful summary of the total current types and volumes of agricultural, municipal and forestry solid and liquid organic waste in the City of Burnaby and Township of Langley suitable for biomass cultivation and/or bioenergy production (Objective 5).

The final comprehensive report should include an executive summary and approximately a 30 – 60 page report plus necessary supplemental information appendices. The report **MUST** clearly address all 5 objectives of this study. Lists, survey(s)/questionnaire(s), drafts and any other documents submitted to the Steering Committee for comments in accordance with the timelines stipulated above must be submitted in electronic Word format. The timelines presented above apply unless changes explicitly approved by the Steering Committee and Consultant have been made.

The Consultant team will work with the Steering Committee to obtain guidance and direction on relevant issues, actions, study approaches and to obtain feedback at predetermined study milestones (see timelines above).

The Steering Committee is at no time responsible for editing or formatting the draft or final report. If, when the final report is submitted, it has **NOT** been edited and formatted to an acceptable standard, the project manager will take it upon himself to have the report professionally formatted and edited by a local company. The cost of this formatting and editing will be subtracted from the Consultant's final payment.

The Consultant must be prepared to present the final findings of the study to a group of invited individuals in either Vancouver or Victoria sometime in 2011.

All finalized materials resulting from this contract will belong to B.C. Ministry of Agriculture and Lands. All materials will be made available on the B.C. Ministry of Agriculture and Lands website and information will be distributed to anyone who expresses an interest.

### **Steering Committee:**

- Mathew Dickson B.C. Agricultural Research and Development Corporation;
- Ann Eastman Ministry Agriculture & Lands;
- Bob Ingratta Life Sciences B.C.;
- Jodi Dong Ministry of Community and Rural Development;
- Marla Bondar Metro Vancouver;
- James Irwin Irwin Maclaren Inc;
- Alex Tu B.C. Hydro;
- Patrick McGinn National Research Council Canada; and
- Ken Ross Terasen Gas.

This Steering Committee will be the primary group evaluating the work of the Consultant and will provide input as the study progresses. It is expected that the Consultant should arrange for conference calls every two to three weeks to provide progress reports and to discuss issues related to study management, direction and delivery.

### **Budget**

This contract should be for a maximum of \$75,000.

### **Guidelines for your Proposal**

Responses to this Request for Proposal (RFP) will outline the process proposed to carry out this work, including performance measures for each of the 5 objectives. Proposals must clearly identify the work that will be undertaken and the associated costs. Proposals must **NOT** exceed 15 pages in length, while any appendices must **NOT** exceed 10 pages in length (for a **TOTAL MAXIMUM LENGTH** of 25 pages). Any proposals that exceed this requirement **MAY NOT** be considered by the Steering Committee.

### **Submission Format**

In order to receive a uniform format of proposal from all service proponents, the following formatting guidelines have been provided. **It is strongly recommended that these guidelines are followed closely:**

1. Letter of Introduction:
  - a. an introductory page of the proponent and proponent's submission. This should include a brief history of your company and how long you have been in business. If consultants or firms are combining forces to submit a joint bid, the proposal should clearly identify the lead consultant responsible for the study.
2. Proposed Approach:
  - a. an outline of the proposed approach and procedures in order to meet Objectives 1 – 5;

- b. a sample of the survey(s)/questionnaire(s) and a detailed description of the survey(s)/questionnaire(s) type (e.g., paper, on-line, phone) that will be used to satisfy Objective 3;
  - c. a detailed description of the survey(s)/questionnaire(s) delivery method (e.g., letters, emails, phone calls, interviews, some combination thereof) that will be used to ensure a high response rate to satisfy Objective 4; and
  - d. identification of the study manager, key study support personnel and demonstration of sufficient local knowledge and resources to successfully deliver the survey(s)/questionnaire(s).
3. Qualifications and References:
- a. details of the consulting team’s experience, knowledge and success in:
    - i. creating and using survey(s)/questionnaire(s) to acquire detailed and difficult to obtain information;
    - ii. appropriate organic waste management and bioenergy production related knowledge and expertise;
    - iii. experience in collecting and presenting large amounts of information in a clear, succinct, focused and useful manner; and
    - iv. study management and experience working with government and industry.
  - b. include a brief (1 – 3 pages) resume of the persons providing the services and clearly identify any subcontractors that you would engage to assist in study completion; and
  - c. provide a minimum of two references. These will be contacted to verify your firm’s experience and work quality.
4. Costs (all costs and rates must be expressed in CAD\$, excluding GST):
- a. an outline of anticipated total cost for completing the proposed work; and
  - b. an outline of proposed hourly rates and anticipated work hours required for each identified task.
5. Appendices:
- a. any supplemental information you consider to be of value and assistance in evaluating your response; and
  - b. brief samples of work showing experience in **SIMILAR** studies (provide web links to your earlier publications or study reports that are of **DIRECT** relevance to this study. Do **NOT** submit full reports in paper form).

**Selection Criteria**

The proponent must be familiar and have experience in the technical and social aspects of designing and delivering difficult survey(s)/ questionnaire(s) to acquire detailed information, organic waste management/biomass cultivation/bioenergy production and GIS mapping.

Selection will be made by the Steering Committee and will be based on:

- demonstrated understanding of the scope of the study, including proposed approach, and adherence to the submission format provided above;
- demonstrated familiarity and experience in creating and delivering survey(s)/questionnaire(s) to acquire detailed information;
- demonstrated survey(s)/questionnaire(s) delivery course of action to ensure a high response rate;
- demonstrated local knowledge and sufficient resources to successfully deliver the survey(s)/questionnaire(s);
- demonstrated organic waste management and bioenergy production knowledge and experience;
- organizational approach to the study and in working with the Steering Committee;
- qualifications and experience of the firm and key individuals assigned to the study;
- demonstrated ability to effectively integrate information with clarity and strategic focus;
- demonstrated credibility in dealing with industry at all levels;
- cost and control mechanisms; and
- absence of perceived conflict of interest with your duties under the agreement.

### **Submission Instructions and General Information**

This section states the proposal submission procedures that are to be followed and general information regarding the RFP process:

- It is the responsibility of the proponent to inquire about and clarify any requirements of the RFP that are not clearly understood.
- All conditions and provisions of this RFP are assumed to be accepted by the proponent and incorporated by reference in the response, except those conditions and provisions expressly excluded by the proponent.
- On the basis of the information received, the Steering Committee may select the proponent(s) whose proposal represents the best overall value as solely determined by the Steering Committee, and discuss the terms and conditions which would govern any resulting contract. Best value will include, but is not limited to:
  - relevant experience, capability, and qualifications in effectively providing comparable services on other similar studies;
  - the respondent's plan to provide the required services; and
  - the respondent's financial proposal including payment terms.
- The Steering Committee, as a result of issuing this RFP, has no obligation to award a contract, is not bound to select the lowest priced proposal, and reserves the right to reject any and all proposals. In no event will the Steering Committee be responsible for costs of proposal preparation, submission or any other activities such as presentations or interviews related to the selection process. Proposals will not be returned.
- Proposals must be submitted no later than 3pm (PST) Friday 26<sup>th</sup> March, 2010.

- Proposals received after the closing time will not be considered.
- Individual presentations (20 – 30 minutes) by the short-listed proponent(s) will be required and these will occur on the 5<sup>th</sup> working day after the successful short-listed applicants have been informed. Individual presentations can be made in person at 808 Douglas Street, Victoria, or via a conference call combined with a Power Point presentation. In the latter case, the final version of the Power Point presentation should be submitted electronically no later than 4pm on the day prior to the presentation date. After the presentations, proponents should be prepared to answer questions (30 minutes) posed by the Steering Committee and to substantiate any areas of the proposal submitted including their own qualifications for the services required.
- Best efforts will be made to ensure that all proposals submitted by proponents will be held in strict confidence. However, the Steering Committee may reproduce any of the proponent's proposal and supporting documents for internal use by the Steering Committee in the selection process or for any other purpose required by law.