Date: Wednesday, August 07, 2019
From: Rick Winters, CAO/Director of Operations
Subject: OCWA Proposal for the completion of a Feasibility Study for the BIOGRID Facility
Report: No. OPS2019-79

Recommendation

That the Council of the Township of Georgian Bluffs receives report OPS2019-79 from the CAO / Director of Operations and;

1) authorizes the CAO to submit grant applications to FCM—Capital Projects and the Low Carbon Economy Challenge—Partnership Stream, and

2) that OCWA be authorized to complete the grant submission on behalf of the Township.

Background

The BIOGRID is owned 50% by the Township of Georgian Bluffs and 50% by the Township of Chatsworth. Both municipalities have been desirous in having the facility upgraded to be able to accept, process and treat source separated organics (SSO).

Analysis

Ontario Clean Water Agency (OCWA) was approached in 2018 to discuss potential options regarding the operation and future of the BIOGRID facility in relation to upgrades and the ability to process and treat source separated organics.
Members from OCWA visited the site and met with the operator and CAO to review the facility and discuss projects that OCWA is currently involved with regarding sewage treatment facilities being upgraded to process organic materials and the production of biogas.

OCWA arranged a site tour for representatives from Georgian Bluffs, Chatsworth, Owen Sound and Meaford to visit the City of Toronto’s Dufferin plant that has recently been upgraded to process source separated organics to produce biogas. The site tour was conducted on June 21, 2019.

OCWA has recommended that a feasibility study be conducted on the facility to evaluate in detail the following 6 items:

1. The SSO availability around Grey and Bruce counties and the feasibility of accepting the SSO at the BIOGRID;

2. Innovative reception, separation and digestion technologies and retrofit/upgrades required for anaerobic digestion and associated processes;

3. The most beneficial usage of increased biogas produced, such as electricity generation, upgraded clean fuel and injection into the natural gas pipeline;

4. The current facility tipping fees and present a financial analysis;

5. Review of regulatory landscape, the current market and case studies of similar projects; and

6. The separating of sewage treatment and anaerobic digestion of SSO and other organic wastes resulting in all sewage/septage being disposed of at the existing lagoon.

OCWA’s objective in completing the study is to identify and recommend technically and financially viable approaches to transform the BIOGRID facility using innovative technologies to allow for the receipt of additional organics. The transformation would generate more clean fuels and revenue thereby making the BIOGRID a sustainable facility.

OCWA has agreed to prepare the FCM funding application. The FCM funding application would cover 50% of the total eligible costs. The estimated cost of the feasibility study is $155,384.78 with a 5% contingency. OCWA has
agreed to supply $24,845.00 as an in-kind support and the Township would supply in kind support of $13,000.00 consisting of staff time to assist with data collection. Should the grant application be approved, a net cost of $58,769.89 would result. As the BIOGRID is owned jointly by the Township of Georgian Bluffs and the Township of Chatsworth, the $58,769.89 could be split equally should both municipalities support the grant submission.

The proposed schedule to complete the detailed feasibility study is 34 weeks from the date that authorization to proceed is received.

**Financial Impact**

There is no cost to have the grant applications prepared by OCWA. Should the Township be successful with the grant submission, the Township would be required to contribute $58,769.89 to the study. This could be funded from the provincial grant received in 2019 to assist with finding efficiencies.

**Implications**

Without a proper feasibility study on the available material, innovative technologies and beneficial use of biogas, the BIOGRID will not be a position to make informed decisions pertaining to future operation, expansion and sustainability.

**Strategic Priorities**

N/A

**Conclusion**

OCWA has presented a proposal for the completion of conducting a feasibility study for potential SSO, innovative technologies and beneficial use of biogas for the BIOGRID facility. OCWA is prepared to assist with the submission of a grant application for 50% funding of the proposed feasibility study under the FCM Fund. The cost to the Township/BIOGRID should the funding be approved is $58,769.89.

**Supporting Documentation**

Appendix 1—OCWA Proposal for potential SSO, innovative technologies and beneficial use of Biogas Feasibility Study dated July 31, 2019
Respectfully Submitted:

Rick Winters, C.E.T.
CAO / Director of Operations
Proposal to the
Township of Georgian Bluffs
for potential SSO, innovative
technologies and beneficial use
of Biogas Feasibility Study

SUBMITTED BY

Ontario Clean Water Agency
One Yonge Street, Suite 1700
Toronto, ON M5E 1E5

Date: July 31st, 2019
Proposal No: ITAG-CD-006-019
Rev: 1
July 31, 2019

Rick Winters, CAO
Township of Georgian Bluffs
177964 Grey Road 18, RR #3
Owen Sound, ON, N4K 5N5

OCWA Proposal No: ITAG-CD-006-019

Re: Proposal for feasibility study on Source Separated Organics (SSO) availability, digestion technologies and beneficial use of Biogas at the Derby WW Treatment Works, Georgian Bluffs, Ontario

Dear Mr. Winters,

On behalf of the Ontario Clean Water Agency (OCWA), we are pleased to submit our proposal to the Town of Georgian Bluffs. As a provincial Crown Agency, OCWA provides a comprehensive range of reliable, cost-effective, and environmentally responsible water and wastewater operations, maintenance and engineering services to a large number of municipalities, First Nations, and industrial, commercial and institutional organizations in the Province of Ontario.

OCWA understands that the Township is actively investigating opportunities to retrofit and upgrade its Wastewater Treatment Works (WWTW) into innovative Resource Recovery Facility (RRF). OCWA hereby is proposing to conduct a feasibility study that will include a comprehensive review of various opportunities as listed below:

1) Explore and assess the SSO availability around Grey and Bruce counties and feasibility of accepting the SSO at the Derby WWTW;

2) Assess innovative reception, separation and digestion technologies and retrofit/ upgrades required for anaerobic digestion and associated processes to enable Derby WWTW to accept the additional type and volume of material;

3) Assess most beneficial usage of increased biogas produced, such as electricity generation (similar to what is currently on-site) and/or upgraded to clean fuel (Renewable Natural Gas - RNG) and injected to a natural gas pipeline;

4) Assess the current facility tipping fee and present financial analysis;

5) Review of regulatory landscape and current market and case studies of similar projects and;

6) Evaluate separating sewage treatment and anaerobic digestion of SSO and other organic (non-sewage) wastes (hauled sewage going to lagoon system only)

The overall objective of this study is to identify and recommend technically and financially viable approaches to transform this facility using innovative technologies to allow for receipt of additional organics hence generating more clean fuels and revenue making it a sustainable facility. This approach will assist participating municipalities in diverting the organics from local landfills with additional diversion achieved by beneficially using the resulting digestate.

This proposal provides background information on the proposed study, scope, schedule and a cost estimate to complete the study for the Derby WWTW.
OCWA is well positioned to efficiently procure a qualified sub-consultant through competitive process using its Vendor of Record (VoR) to perform some key technical data analysis and technology assessment and provide both project management and technical/operational expertise with execution of other similar projects in Ontario. OCWA is committed to exploring funding opportunities that could cover up to 50% of the study costs and additional capital for implementation of the recommendation through government funding and or public/private investment based on performance based models.

OCWA’s proposal constitutes a firm and binding offer to the Township of Georgian Bluffs and shall remain irrevocable until October 16, 2019. Our proposal cost is subject to verification of actual cost received from the procurement of sub-consultant.

Thank you for considering OCWA’s services.

Sincerely,

Shelly Bonne-Gelok, P. Eng., MSc.
Program Manager,
Biosolids, Organics and Resource Recovery

Indra Maharjan, P.Eng., CEM, CMVP
Director (A),
Innovation, Technology and Alternative Delivery

Cc: Karen Lorente, Regional Hub Business Manager
   Jim Nardi, Director, Waste Diversion and Climate Resiliency
   Leo-Paul Frigault, Senior Operations Manager, OCWA
   Jackie Muller, Business Development Manager, OCWA
STATEMENT OF CONFIDENTIALITY

OCWA’s Proposal to
Township of Georgian Bluffs for a
SSO, Digester and associated Technology and Biogas usage Feasibility Study

This document has been developed by the Ontario Clean Water Agency in response to the request of the Township of Georgian Bluffs. Information has been provided for the express review of the Township of Georgian Bluffs and is not to be copied or submitted in any way or form to any person(s) or organization(s) without the written authorization of the President and CEO of the Ontario Clean Water Agency. All copyright and intellectual rights to the material provided remain in the ownership of the Ontario Clean Water Agency.
Our Vision
A world leader in water.

Our Mission
To demonstrate service excellence through the delivery of safe, reliable, and cost-effective clean water.

Our Values
OCWA’s values are focused on building trust with clients and other stakeholders.

Transparent
Open and honest communication of our business activities.

Respectful
Build sound relationships with our staff, clients and other stakeholders by embracing diversity, acting responsibly and doing what is right.

Safe
Deliver clean water services to protect our employees, the communities we service, and the environment.

Understanding
Confidence in the knowledge and ability of our people to meet the challenges of the water and wastewater industry. Continuously learn current trends and innovative technologies and/or processes in our industry.

Teamwork
Work together, share our collective expertise and be innovative in delivering exceptional results and achieving our mission.
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1 OCWA Profile

OCWA provides a comprehensive range of reliable, cost-effective and environmentally responsible water and wastewater services to municipalities, First Nations, and public and private sector entities.

i. We have decades of experience operating, maintaining, and managing water and wastewater treatment plants, remote reservoirs, pumping stations, water distribution systems, and wastewater collection systems. OCWA has exceptional experience in achieving safe, compliant performance across all facility sizes and technologies in Ontario.

1.1 Corporate Profile

OCWA has been operating water and wastewater treatment facilities and providing engineering services for over 60 years through our predecessor organizations. Over the decades, our structure has adapted to reflect changes in Ontario’s water treatment market.

Created in 1993 under the Capital Investment Plan Act as a government agency, OCWA reports to the MOECC.

Our core business is the operations, maintenance, and management (O&M) of water and wastewater systems. We currently operate more than 800 water and wastewater treatment facilities and associated systems, serving about 25% of Ontario residents, predominantly under contract with municipal clients.

OCWA operates facilities ranging from rural groundwater systems and lagoons to large urban water and wastewater systems serving millions. We have significant experience in:

- Exceeding compliance requirements even under challenging conditions
- Water and effluent sampling and analysis management
- Asset management and maintenance management systems
- Energy Conservation and Waste Diversion including biosolids management
- Preparing and/or editing operations manuals and operational plans
- Developing SCADA systems that support facility operations
- Implementing electronic process data and remote monitoring systems
- Capital planning and managing capital projects
1.2 Total Solutions Provider

With our operations and maintenance experience and additional support services, OCWA is able to offer ancillary functions to clients outside of our O&M services.

OCWA provides process optimization, energy management, and asset management services to both O&M and non-O&M clients.

We are involved in every stage of asset lifecycle and work closely with industry innovators to bring new technologies and solutions. Our aim is to increase efficiencies and support the financial sustainability and the long term health of your systems.

2 Project Background

The Township of Georgian Bluffs' Derby Wastewater Treatment Works (WWTW) is comprised of hauled sewage receiving (screen, tank, sewer connection to lagoon system, sewer connection to dewatering system) a dewatering process (polymer dosing/mixing, semi-permeable geotextile bag, odour control, sewer connection to lagoon system; transfer pump to hydrolyzer and anaerobic digester); an anaerobic digester system (hydrolyzer, FOG tank, pasteurizer, anaerobic digester, biogas fueled generator, digestate storage tanks) as well as a lagoon system (aerated cell, facultative cell, effluent is used for spray irrigation on-site). The site receives septage and organic waste such as vegetable waste, fats oils and greases (FOG), processing waste for supplements, hospital food waste and food waste from Base Borden.

Organic material (sewage, food waste, FOG) from the Township of Georgian Bluffs is hauled to the treatment plant where, depending on the material and capacity, it is sent directly to the lagoon system; sent directly into the hydrolyzer or FOG tank of the anaerobic digester system or it is dewatered via semi-permeable geotextile bags with the filtrate directed to the lagoon system and the dewatered organic material fed to the anaerobic digester. This will result in a longer landfill lifetime due to diversion of the organic waste and will reduce GHG emissions for the Township via the beneficial use of the digestate and will also enable the Township to respond to a potential ban on organic materials going to landfill.

The process flow diagram illustrates existing plant operations.
3 Objectives

The proposed study for the Derby WWTW will focus on SSO availability across Grey and Bruce Counties, reception and source separation technologies, digester technologies, gas cleaning and upgrading technologies, maximizing the generation of biogas, most beneficial use of biogas and beneficial use of the resulting digestate. The objectives of this study are as follows:

a) review potential SSO or liquid hauled sewage receiving options;

b) review efficient digester process and innovative technologies and identify and investigate opportunities for beneficial use of biogas including but not limited to electricity and RNG;

c) assess available feedstock and beneficial use options for the digestate (i.e., agricultural and non-agricultural land application) and appropriate technologies and;

d) investigate having separate streams for waste processing with hauled sewage going to the lagoon system and other organic wastes (e.g., SSO) going to the anaerobic digester system.
4 Scope and Methodology

The following describes the tasks to be completed for the feasibility study. In addition OCWA will complete the FCM funding application process and progress reporting as required by Green Municipal Fund.

OCWA will assist with FCM funding application that would cover up to 50% of the total eligible cost to be reimbursed upon completion of the study.

Task #1 – Contract Administration, procure

OCWA, as a Crown Agency, will follow public procurement policy and delegation of authority guidelines. OCWA will carry out bulk of the work with its internal team of subject matter experts (SMEs) as listed in this document. OCWA will use its Vendor of Record (VoR) that includes a comprehensive list of qualified pre-approved consultants to procure a sub-consultant to carry out a technical assessment of receiving, source separation, digester treatment and gas cleaning and upgrading technologies, process evaluation for existing and recommended scenarios. OCWA will be responsible to manage the sub-consultant for the study and review the report recommendations and from technical, operational and regulatory perspectives and prepare final report to be presented to the Township.

Task #2 - Background Information Review

Prior to the kick-off meeting and site visit, OCWA will compile all available data for the WWTW. This information will be collected from publicly available sources (e.g., Access Environment), as well as from the Township. OCWA proposes to provide the following information to the consultant for their review and analysis:

- Environmental Compliance Approval (ECA) for the WWTW (#2206-8KSOZV)
- WWTW flows, solids production rates, haulage data;
- Previously completed relevant studies;
- Waste management contract/practices/goals;
- 3 years flow and sewage quality data, sludge production and haulage data, chemical consumption and cost;
- 3 years Ministry of the Environment, Conservation and Parks (MECP) Inspection Reports/Orders
- Financial Plans/Master Plans/Studies within last 10 Years
- Flow and characteristics of sludge digested and post treatment steps; and
- Current OPEX and other cost associated

OCWA technical experts (energy, process, biosolids) will review the analysis done by the consultant and will provide key inputs in evaluation of the options.
Task #3 – Kickoff Meeting, Workshop and Site Visit/Plant Walkthrough

OCWA will coordinate a kick-off meeting with the Township of Georgian Bluffs, selected sub-consultant and operations staff. The purpose of the meeting is to provide the project team with a better understanding of the co-digestion and energy generation feasibility study and to collect more detailed information about the facility. Input from the Township and WWTW operations will be critical in shaping details related to the project objectives.

In conjunction with operations staff, OCWA and the selected sub-consultant will undertake an on-site walkthrough to review the process and layout with operational input on equipment, hydraulic or process limitations; O&M and process and design review. OCWA would obtain operator insight on facility challenges; collect information not available electronically from Task 2; and conduct WWTW operations staff interviews and gather key information that would be deemed valuable for the analysis. The site visit will be conducted by OCWA’s energy, process and biosolids specialist engineers and our support staff as required.

**Deliverables:**
- Meeting #1 Project Kick-Off

Task #4 – Feedstock, Technology Evaluation & Beneficial Use Options

The selected consultant will evaluate options for digestion that must include (but not limited to) the following:

- Survey stakeholders to determine the volume of different types of feedstock that would be available in and around Grey and Bruce Counties. The findings will be used to assess the opportunity of receiving and separation, digestion and gas cleaning and upgrading that would support the organics waste diversion from landfill
- Review solids reception, separation and processing technologies and dewatering and stabilization options
  - Review receiving of hauled sewage (septage), considering this amount may increase and direction of sewage to the lagoon system;
  - Review of cost/benefit analysis of a new solids process with energy and resource recovery;
  - Review options/uses for cost effectiveness and sustainability;
  - Explore co-processing and utilization with other locally generated organic materials (food waste, sludge from nearby WWTWs, etc);
  - Explore beneficial use of biogas including but not limited to electricity generation for internal use and/or RNG
- Explore opportunities for beneficial use of the digestate such as a commercial fertilizer, or non-agricultural source material
- Produce a feasibility study report outlining potential scenarios with cost and benefit analysis for each with environmental benefits
- Explore various partnership and financing models available for implementation
The feasibility study final report will include an evaluation and ranking of the scenarios considered based on agreed upon criteria and will include a recommendation for the implementation of the highest ranked scenario that is economically feasible, supports the production of energy and the diversion of organics from landfill. The evaluation will assess the sustainability of each of the scenarios based on GHG emissions, consideration of potential government policies related to landfilling organic materials and management of hauled sewage, potential income and public acceptability.

The feasibility study final report will provide recommendation on suitable technology related to receiving of organic waste (e.g., SSO) and pre-processing, digester enhancement and gas upgrading and cleaning functions. The feasibility study final report should include the estimated cost of the proposed technology, the quantity and quality of organic waste required and potential biogas that will be produced. The study will also include an analysis of impacts of directing all sewage to the lagoon system for treatment.

The Township will provide the necessary background information required to complete the study such as past studies and reports completed for WWTW, the existing SSO program and planned SSO program for potential municipal partners, biogas production and landfill status. Site visit to the WWTW if required can be arranged. Additional information on available funding program, financing options, GHG emission reduction, securing supply of required organic wastes (e.g., SSO) and sale of RNG in the report is expected.

*Any in-kind support towards completion of feasibility study from the proponent is encouraged to offset the total cash contribution on the part of Township.*

**Task #5 – Stakeholder Engagement**

The assessment of scenarios will include the potential to generate income via receipt of organic waste, sludge, biosolids and hauled sewage (septage) from local municipalities, industries, waste companies and septage haulers. OCWA will work with the Township to identify and engage relevant stakeholders. Stakeholder list will be developed in approval with Township and communication protocol will be established.

**Task #6 – Detail Analysis and Draft Report Presentation**

OCWA will develop and present benefits and limitations of all scenarios with input from the sub-consultant report.

The study will also explore the synergy between the WWTW and the needs of neighbouring food industries, municipal WWTWs, septage haulers and also options to generate additional revenue through processing of additional organic waste, sludge/biosolids/hailed sewage.

A financial analysis will be conducted to derive and compare CAPEX and OPEX for the various scenarios in addition to payback and internal rate of return.

OCWA will review the options from an operational, policy and regulatory and subject matter expert perspective.

**Deliverables:**
Task #7 – Final Report and Presentation

A final version of the report will be issued incorporating the feedback received from the Township. An electronic version of the report will be provided to the Township in a PDF format. OCWA will present the Final report to the Township at an in-person meeting to be scheduled at the conclusion of the project.

Indra Maharjan, OCWA’s Director for this project is also available to present the study results to Council with the consultant’s team.

Deliverables:
• Final study report; and
• Meeting #2 Presentation of study results to the Township

5 Project Team

OCWA will provide the necessary staff, resources, and expertise required to coordinate, conduct and complete the study.

Brief descriptions of the key team members are provided below and detailed resumes for the project team members can be provided upon request.

Indra Maharjan, P.Eng., CEM, CMVP - Director (A), Innovation, Technology and Alternative Delivery

Indra currently leads OCWA’s Innovation, efficiency and optimization group that provides services around energy conservation, climate change and resource recovery projects across Ontario for more than 220 municipalities. His combined knowledge of electricity and gas market, climate change landscape and water and wastewater sector in province and Canada is reflected in projects OCWA developed and delivered. OCWA fosters innovation around technology, process and people within this sector as a key driver to drive energy and GHG reduction. OCWA has been proactively pursing Energy and GHG Conservation, Organics Diversion and Resource Recovery projects across the province through strategic partnership with industry stakeholders, technology providers, research institutions, government and non-government entities. Indra believes in sharing the lessons learnt with the entire sector and learns from other projects. Indra is a lead for the Stratford Net Zero Project implementation and other co-digestion feasibility studies including Belleville and Petawawa studies.

*Indra will act as the overall Project Director for this work and is responsible for QA/QC.*

Jim Nardi – Director, Waste Diversion and Climate Resiliency

Jim has over 30 years of experience in the water and wastewater industry, with extensive knowledge in plant operations, commissioning, optimizing, and the development of standard operating procedures. As VP for two Class 4 biosolids facilities – G.E. Booth WWTF and Clarkson WWTF in the Region of Peel – he has demonstrated ability to adapt to new technologies and processes. Jim has also championed a number of large-scale projects for the Region. He is a member of WEAO, OWWA and WEF and holds a Class 4 Wastewater Treatment Licence.
Jim will provide his expertise around operational areas, maintenance, technology selection and OPEX estimates and is responsible for overall QA/QC.

Shelly Bonte-Gelok, MSc., P. Eng. – Program Manager, Biosolids, Organics and Resource Recovery

Shelly Bonte-Gelok, MSc., P. Eng. - Shelly Bonte-Gelok has been a Professional Engineer for over 15 years, with 20 years of demonstrated and effective project management experience, Shelly has detailed knowledge of the state of the biosolids industry and has delivered on projects and policy provincially, nationally and internationally. Shelly has built an extensive network in the industry and taken on leadership roles in collaboration with plant operators, industry, consultants, academia, municipalities and other provinces/territories to build success across all aspects of residuals and biosolids management and resource recovery. In the last 10 years Shelly has worked across sectors to refocus the policy on organic residuals. Specifically, changing the perception from biosolids as waste, to biosolids as a resource (nutrients, organic matter, energy recovery). Shelly is a valuable team member with technical knowledge of the modern biosolids and resource recovery industry gained from her work in government, consulting and the not-for-profit sector.

For this project, Shelly will act as Project Manager and will provide oversight to ensure the project remains on schedule and on budget in addition to technical expertise.

Dave Neely B.Sc., M.C.L.C, CET. - Process Specialist

Dave has over 35 years of experience in the water and wastewater engineering field. He has successfully managed and executed numerous process optimizations, energy management, and capacity assessment projects at water and wastewater treatment facilities throughout Ontario.

Dave will provide process engineering expertise throughout the study.

Don Hoekstra – Don Hoekstra recently retired from OCWA and currently works as Waste Management consultant. With his 40 years of experience in area of biosolids and Waste management, Don will provide subject matter expert advice to project team regarding Residues and Biosolids Management and other forms of resource recovery. Don is a founding member of the residuals and biosolids committee at the Water Environment Association of Ontario and has served as the chair of the Biosolids and Compost products working group at the Canadian Fertilizer Products Forum (CFIA). His extensive career also includes plant operations, residuals management, products marketing, and resource recovery.

Don will provide biosolids, SSO market and co-digestion expertise throughout the study. Don will also assist with stakeholder engagement

Leo-Paul Frigault, Senior Operations Manager

Leo-Paul (OCWA’s Senior Operations Manager in the area) will support the above noted team and brings over 15 years of experience in the municipal sector as a municipal general manager and has broad experience managing the municipal water and wastewater systems and all municipal staff. Leo-Paul also has Wastewater Collection, Class 1; Water Distribution, Class 1 licences.
Leo-Paul will provide insight from the operational perspective to the team around operating cost and other operational challenges.

6 Schedule

OCWA has developed the following schedule for this project. The timelines will begin once we have received the notification to proceed with the work.

Table 1: Proposed Schedule

<table>
<thead>
<tr>
<th>TASK</th>
<th>SCHEDULE</th>
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<tbody>
<tr>
<td>Procurement of Consultant</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Background Information Review and FCM Funding application</td>
<td>5 weeks</td>
</tr>
<tr>
<td>Kickoff Meeting, Workshop and Site Visit/Plant Walkthrough</td>
<td>5 days</td>
</tr>
<tr>
<td>Review of Background Information</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Feedstock, Technology Evaluation &amp; Beneficial Use Options &amp; Stakeholder Engagement</td>
<td>10 weeks</td>
</tr>
<tr>
<td>Draft Report Preparation</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Final Report and Presentation</td>
<td>4 weeks</td>
</tr>
</tbody>
</table>

7 Project Costs

In reviewing the above scope of work, OCWA proposes a total project budget of $143,539.78 excluding HST. The proposed total project budget includes in-kind costs by Township of $13,000. The total estimated cash contribution from the Township for this project is $58,769.89 which includes OCWA professional fees, sub consultant fees, disbursements and travel expenses. It is an upset limit which will not be exceeded without written approval from the Township. Should additional services be required due to a change in the scope of work, OCWA will advise the Township immediately. The estimated project cost includes sub consultant fees and is subject to change as per the bid submission prices.

A breakdown of the estimated budget by task is provided below. OCWA proposes to invoice the Township based on milestones (i.e., upon notification to proceed, draft report, final report) and each OCWA invoice will include the fees of the selected consultant.

Table 2: Budget Summary

<table>
<thead>
<tr>
<th>TASK</th>
<th>BUDGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding Application, communication and reporting with FCM and Procurement of sub Consultant</td>
<td>$4,568.00</td>
</tr>
<tr>
<td>Background Data Review/ Collection and Stakeholder Engagement</td>
<td>$28,302.50</td>
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<tr>
<td>Feedstock, Technology Evaluation &amp; Beneficial Use Options</td>
<td>$39,515.00</td>
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<tr>
<td>TASK</td>
<td>BUDGET</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Technical, regulatory and off-take market evaluation</td>
<td>$44,152.50</td>
</tr>
<tr>
<td>Report (Draft and Final) and Presentation to Council</td>
<td>$31,447.50</td>
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<tr>
<td>Contingency (5%)</td>
<td>$7,399.28</td>
</tr>
<tr>
<td><strong>Total (excluding HST)</strong></td>
<td><strong>$155,384.78</strong></td>
</tr>
<tr>
<td>Township in-kind support (staff time included in Total above)</td>
<td>$13,000.00</td>
</tr>
<tr>
<td>OCWA in-kind support (not eligible under funding rules)</td>
<td>$24,845.00</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>$143,539.78</strong></td>
</tr>
<tr>
<td><strong>Total Funding Request from FCM (50% of Eligible Cost)</strong></td>
<td><strong>$71,769.89</strong></td>
</tr>
<tr>
<td><strong>Total Cash Contribution from Township</strong></td>
<td><strong>$58,769.89</strong></td>
</tr>
</tbody>
</table>

The total cash contribution from Township for the proposed study is estimated at **$58,769.89** upon approval of 50% funding from FCM and fulfillment of all the requirements of the FCM funding program rules and guidelines.

The staff from Township that will be involved to provide inputs and data collection activities is considered as in-kind contribution from Township and is considered as eligible cost under the FCM guidelines. This will be tracked with the timesheet that will be shared with the Township later. This in-kind contribution is estimated to be around $13,000.

OCWA will contribute an in-kind of $24,845.00 with operational input on the project.

The funding application submission can be made within 5 business days of conditional approval to proceed with the feasibility study by the board/ Township. A copy of resolution is required to be submitted as a part of FCM funding application.