

APPENDIX “A” – SCOPE OF SERVICES

Purpose

The purpose of this Request for Proposal (RFP) is to retain the services of a qualified consultant (Consultant) to provide assistance to the Capital Regional District (CRD) in developing wastewater treatment system solution sets using agreed to sites resulting from the Westside and Eastside site selection and public consultation processes. Each solution set is to be subjected to a comprehensive feasibility and costing analysis using the following intertwined general baseline criteria:

- the project must meet or exceed provincial and federal requirements
- the project must serve all existing sewered areas upon commissioning
- design for a 15-year horizon with additional “just in time” expansion options
- optimize climate change mitigation, resource recovery and environmental sustainability
- minimize project capital and operating costs
- minimize life cycle cost

The goal of this analysis is to identify and present for consideration the solution sets that best satisfy each of the following basic objectives:

- most cost effective
- maximum resource recovery and environmental benefit that optimizes response to climate change through reduced greenhouse gas emissions. Resource recovery encompasses, but is not limited to, effluent heat, reclaimed water, struvite, biogas and beneficial use of biosolids
- balanced, cost effective and resource recovery/environmental benefit

Project Objectives and Guiding Principles

The following Guiding Principles have been established by the Core Area Liquid Waste Management Committee:

1. Undertake a fair and transparent process.
2. Collaborate and achieve incremental consensus building amongst all participants.
3. Achieve value for money for taxpayers and meet the CRD’s project budget.
4. Optimize existing infrastructure.
5. Fiscally equitable amongst facility users based on design capacity benefit.
6. Contribute to regional sustainability and respond to climate change.
7. Optimize resource recovery, supported by prudent business case analysis. Consider use of effluent heat, reclaimed water, struvite, biogas and beneficial use of biosolids.
8. Integrate proposed wastewater treatment and resource recovery facilities within the community.
9. Engage in a robust public consultation process at each phase of the planning process.

10. Ensure that the planning process and revisions to the current approved Liquid Waste Management Plan (LWMP) resulting from the planning process are conducted under the umbrella of the CRD to preserve federal and provincial funding to the extent possible.
11. Identify wastewater and residual solids treatment solutions for all seven municipalities and the two First Nations that meet or exceed applicable regulatory requirements.
12. Acknowledge that investments made by participants in community assets over and above the LWMP are outside the scope of the project.
13. Acknowledge the following guidelines, which are designed to preserve the autonomy of the municipalities and First Nations while maintaining the requirement to provide a holistic regional sewage treatment solution under the umbrella of the CRD:
 - (a) Each municipality will have authority over zoning for treatment plants within that municipality. Each municipality, not the CRD, will be responsible for either identifying a suitable site or sites within the municipality or for collaborating with another municipality that has agreed to host a site.
 - (b) Each municipality hosting a site assumes primary responsibility for determining the public process required to obtain approval for that site. These public processes will be led by the municipalities, in conjunction with CRD and relevant consultants.
 - (c) Costs will be allocated on the basis of actual costs to serve each participant. The cost of a plant serving only one municipality would be allocated entirely to that municipality and, similarly, the cost of a plant and conveyance systems serving a sub-set of municipalities will be allocated entirely among those participants. No municipality will be obliged to share the cost of plant or conveyance system in another municipality except by agreement between them, and the CRD, as approved by the Board.
 - (d) Individual municipalities or sub-systems will determine levels of treatment and resource recovery, provided they meet the standards required by regulators and funders. Benefits of resource recovery will be allocated in the same way as costs.
 - (e) Grant funding should be allocated to reduce costs of systems on the basis of the current cost sharing formula and will be the basis of how future debt servicing costs are allocated among municipalities.
 - (f) Independent technical consultant will continue to liaise and work with municipal staff groups.

Further refinement of these objectives and approaches have been taken by both the Westside and Eastside Select committees. The following is an excerpt from the Westside Select Committee project framework regarding the Project Purpose:

Evaluate options and recommend site(s) for potential liquid waste treatment and resource recovery facility for the Westside municipalities as a conceptual amendment to the CRD's LWMP that will:

- Optimize existing infrastructure, where practical
- Be developed in a collaborative manner
- Be environmentally sound
- Based on the best business case scenario that maximizes benefit to the best value for taxpayers
- Meet the unique needs of the Westside in a proactive and timely way
- The process will be efficient and cost effective
- Engage and consult with Westside residents and First Nations
- Meets deadlines and funding set by the federal and provincial governments

The following guiding principles have been established by the Eastside Select Committee:

- Optimizing response to climate change by optimizing resource recovery and minimizing life cycle cost.
- Identifying priority sites
- Ensuring public engagement is focused, meaningful and pragmatic
- Restoring public confidence in the process and outcomes
- Ensuring efficiency and maximizing available public funding
- Ensuring efficiency by including life cycle costs in the consideration of total costs.
- Seeking a clear mechanism for identification and selection of technical options
- Open to considering opportunities to integrate wastewater and residual solids with treatment of other waste streams in the region that may be presented to the Committee through the market sounding process approved by the CRD Board
- Support for rapid consultation beginning with striking advisory committee in March and public consultation complete by late June or July.

The above principals guide how the overall project will be undertaken. These terms of reference do not include direct consultation with the public; this will be conducted by the Select Committees.

Background

The participating municipalities (Victoria, Saanich, Oak Bay, Esquimalt, View Royal, Colwood and Langford) and the Esquimalt and Songhees Nations are in the process of identifying potential site options and wastewater treatment solution sets for either a sub-regional or regional treatment system as Phase 1 for preparing a potential amendment to the Core Area Liquid Waste Management Plan (LWMP). These potential siting options and solution sets will be identified by the Westside and Eastside Select Committees through direct facilitation with the participants, extensive public consultation, and a series of workshops with the participants.

While the participants in this service may not have similar ultimate objectives and may either individually or as sub-groups pursue options that have different business approaches, timelines, risk tolerance and/or environmental objectives, they will be delivered within the CRD's Core Area Liquid Waste Management Plan and within the CRD's existing service authority.

Phase 2 of this process will be a feasibility and costing analysis carried out by the Consultant of the preferred wastewater treatment system solution sets to determine the regulatory requirements and compare the costs against the existing overall funding envelope of \$788 million. The costing analysis should emphasize the budget starting with baseline costs and noting all add-ons costs with the premise of secondary treatment as the baseline.

It is anticipated that timelines for construction outlined in the approved Core Area Liquid Waste Management Plan will not be met under this process. The Consultant will develop revised timelines for the Plan and indicate the likelihood of meeting federal timelines under the Fisheries Act.

In completing Phase 2, the Consultant will identify capital, operating and maintenance costs for wastewater treatment, residual solids treatment, required upgrades or changes to conveyance infrastructure, disposal system(s), resource recovery systems and potential revenues from resource recovery for the preferred solution set(s).

Proponent Eligibility

The Consultant will have no past affiliation with the Seaterra Program, the Peer Review Team or any other core area wastewater treatment planning study commissioned by the CRD since the 2006 Ministry of Environment directive to implement secondary treatment was issued.

Scope of Work

PHASE 1 – Public Consultation and Identification of Potential Siting Solution Sets (by others)

This phase of the process will be completed by the Westside and Eastside Select Committees and be approved by the Core Area Liquid Waste Management Committee (CALWMC). Its purpose will be to identify potential siting options and system solution sets (up to four preferred) for sub-regional and regional wastewater treatment systems for further analysis in Phase 2 by the Consultant.

PHASE 2 - Feasibility and Costing Analysis (by the Consultant)

This phase of the process will be completed by the Consultant to develop a shortlist of system solution sets, based on the preferred options that emerge from the Select Committee processes.

1. Each solution set is to be subjected to a comprehensive feasibility and costing analysis using the following intertwined general baseline criteria:
 - project must meet or exceed provincial and federal requirements
 - project must serve entire sewered area upon commissioning
 - design for a 15-year horizon with additional “just in time” expansion options
 - optimize resource recovery opportunities, both current and future potential, based on municipal OCPs and Regional Growth Strategy
 - minimize project capital and operating costs
 - minimize life cycle cost
2. The goal of this analysis is to identify and present for consideration the solution sets that best satisfy each the following basic objectives:
 - most cost effective
 - maximum resource recovery and environmental benefit
 - balanced cost effectiveness and resource recovery/environmental benefit
3. Each solution set option must provide service to all 7 core area municipalities and First Nations under the LWMP when commissioned, whether by a single regional facility or by a network of sub-regional facilities.
4. Each solution set should be based on the best utilization of the existing infrastructure, as is practical and subject to condition and capacity. Infrastructure realignment and conveyance modifications shall be analyzed for each solution set including both capital and operating costs.
5. The viability/risk/expense of using new wastewater treatment technologies at each facility should be considered in the context of optimizing resource recovery such as effluent heat, reclaimed water, struvite, biogas, syngas and/or beneficial use of biosolids.

6. Solution set sites must be considered under the lens of community “values”, which include zoning, design attributes, impacts and mitigation requirements brought forward from the Phase 1 public consultation process.
7. Overall environmental impact of each solution set shall be considered, including a high-level construction/operation carbon balance for each option.
8. The level of wastewater treatment shall be sufficiently high to meet receiving environment requirements and resource recovery objectives (i.e., tertiary treatment for all reclaimed wastewater and not less than secondary with advanced oxidation for the non-recovered portion of the waste stream).
9. A minimum of 2 alternatives for the treatment of residual solids should be provided to:
 - (a) identify sites that can accommodate both wastewater and residual solids treatment; and
 - (b) treat all residual solids at the Hartland RRC facility, as outlined in the LWMP.
10. The costing analysis shall be based on both a 30- and 50-year life cycle, including capital, operating and maintenance costs. The capital cost estimates developed as part of this analysis shall use costing criteria consistent with previous CRD costing analysis work to date, to allow direct comparison with the established project budget. These factors include but are not limited to design and construction contingencies, indirect costs, administration costs, interim financing and inflation costs to mid-point of construction, project management costs, environmental impact study costs, site contamination costs, and the consistent use of discount rates for life cycle analysis of costs, revenues from certain resource recovery and carbon credits. The capital cost estimates developed will have an accuracy range of -15% to +25%.
11. Preliminary cost sharing implications at a municipal level shall be identified for each solution set based on capital design capacity benefit, as outlined in the Project Objectives and Guiding Principles 3 and 10c) above.
12. The development of a realistic high-level schedule for the design and construction of the wastewater conveyance, treatment and disposal facilities envisaged herein, including pipelines, pumping stations, storage, treatment plants and outfalls. The schedule will include the time required to obtain approvals for effluent disposal as necessary for the option(s) developed, including: new outfalls for marine and freshwater discharge, rapid infiltration basins for ground discharge and reclaimed water use.
13. Potential to integrate other waste streams from the region into the wastewater treatment project in the future.
14. Provide advice on what potential procurement options are available based on current funding agreements and advice on next steps.

A final report and interim status reports shall be presented to the Core Area Liquid Waste Management Committee.

In parallel with Phase 1 and prior to Phase 2, the solution sets will be presented to the Ministry of Environment (at staff level) for review and to receive feedback on potential LWMP amendment implications and regulatory requirements regarding reclaimed water use and effluent disposal to freshwater or ground. This feedback should highlight any system redundancy requirements and reporting requirements, such as engineering and environmental studies.

Other Considerations:

1. Design Criteria

The CRD has developed design criteria for year 2030 design flows, including: population projections; industrial, commercial and institutional equivalents; and inflow and infiltration. This information will be provided to the consultant as the basis for their analysis. Consultation with First Nations to confirm allocated design capacity is required with CRD staff support.

Upgrades and/or modifications to linear infrastructure to transport sewage to the wastewater treatment plants at the selected locations will be identified by the CRD and municipal staff. The consultant will be responsible for developing cost estimates for these upgrades and/or modifications and incorporating them into the overall cost estimates for the wastewater treatment plants.

Each wastewater treatment plant will be required to meet the minimum Municipal Wastewater Regulations to ensure treatment requirements are met:

- secondary treatment for flows up to 2xADWF (average dry weather flow)
- primary treatment for flows from 2xADWF to 4xADWF
- preliminary treatment for flows greater than 4xADWF

Wastewater treatment plants that do not discharge to the receiving environment via an outfall must demonstrate system redundancy and be approved by the Ministry of Environment (MOE) for:

- all flow conditions that exceed the maximum tertiary capacity of the treatment plant
- complete failure of the plant
- any condition that requires bypassing the tertiary level of treatment.

Plants that are designed for secondary treatment will require an outfall.

2. Available Documentation

Background Reports

The following past reports and documentation will be made available to the Consultant (note that this list is not intended to be exhaustive);

- The Path Forward – The Supporting Report to the Response of the MOE (June 2007)
- Resources from Waste – Integrated Management Phase 1 Study Report, Fidelis (February 2008)
- Resources from Waste Peer Reviews – Peer Review Responses (February 2008)
- Program Development Discussion Papers, Associated Engineering/CH2MHill/Kerr Wood Leidal (May 2008-May 2009)
- Peer Review Team Report (May 2009)
- CRD Core Area Inflow and Infiltration Program I&I Analyses Results: October 2006 to March 2008 – Final Report (July 2009)
- CRD Core Area Wastewater Treatment Program – Option 1A, 1B and 1C Report Stantec/Brown & Caldwell (September 2009)
- CRD Core Area Wastewater Treatment Program – Option 1A, Stantec/Brown & Caldwell (December 2009)
- CRD – CAWTP – Effluent Reuse and Heat Recovery for the University of Victoria & Surrounding Area, Stantec (January 2010)

- CRD – CAWTP – Feasibility Study for Heat Recovery for James Bay and Downtown Victoria, Stantec (January 2010)
- Biosolids Management Plan, Stantec/Brown & Caldwell (November 2009)
- Capital Regional District, Core Area Liquid Waste Management Plan, Amendment #7 (approved January 2010)
- Capital Regional District, Core Area Liquid Waste Management Plan, Amendment #8 (approved August 2010)
- Capital Regional District, Core Area Liquid Waste Management Plan, Amendment #9 (approved July 2014)
- Land suitability for a biosolids facility in the Core Area of the Capital Regional District, Westland Resources (September 2010)
- Core Area Wastewater Treatment Program Option1Aprime2 (June 2011)
- Capital Regional District Wastewater Plant – Discharge – Stage 1 Environmental Impact Study (March 2009)
- Technical Memo: CAWTP Indicative/Detailed Design/Wastewater Characterization and Design Loads, Stantec (January 2013)
- Stage II EIS Pre-Discharge Monitoring, Worley Parsons (February 2013)
- Environmental Impact Study of Core Area Wastewater Treatment Program Facilities Volume 1 of 3, Tera Consultants (updated March 2014)
- Environmental Impact Study of Core Area Wastewater Treatment Program Facilities Volume 2 of 3, Tera Consultants (updated May 2014)
- Project Description: Core Area Wastewater Treatment Program, Tera Consultants (updated March 2014)
- Land suitability and siting analyses, various, as presented to committee in closed session
- Core Area Inflow & Infiltration Program Annual Report 2012
- CALWMP Amendment #6 - Letter of approval from Minister Penner (December 2007)
- CALWMP Amendment #7 - Letter of approval from Minister Penner (February 2010)
- CALWMP Amendment #8 - Letter of approval from Minister Penner (August 2010)
- CALWMP Amendment #9 - Letter of approval from Minister Penner (July 2014)

Current Reports

The following current reports will be made available to the Consultant:

- Core Area Liquid Waste Management Plan – Sanitary Sewer Overflow Management Plan: 2014 Update
- Eastside and Westside Select Committee technical reports
- Request for Technical Information responses to Core Area Liquid Waste Management Committee (March 2015)
- Webcasts of Westside Innovation Days – <https://www.crd.bc.ca/westside-solutions/information-materials/innovation-days>

3. CRD Support

CRD staff will provide technical support including real estate services, operations and cost sharing considerations of existing and proposed conveyance infrastructure, geographical information and mapping and engineering. CRD staff will also provide administrative and logistics support, as required, for workshops and meetings amongst participants.

CRD staff will be responsible to renegotiate funding agreements and pursue alternative grant funding sources. The CRD will also be the primary contact with senior governments in regards to regulatory issues and amendments to the LWMP.

Budget

A budget breakdown for consulting time for different aspects of the work shall be provided as part of the fee proposal. The fee proposal shall be submitted in a separate envelope from the technical proposal.

The budget allowance for this feasibility and costing analysis is \$250,000.

Information Required

The following information is required as a proposal for this work:

1. the proponent's vision of the project, proposed approach and understanding of the CRD's objectives;
2. a clear statement of the roles and responsibilities of the various participants in the project;
3. a summary of the consulting team's experience with developing collaborative solutions through workshops and public engagement;
4. a summary of experience with:
 - municipal infrastructure design, construction and operation
 - wastewater and residual solids management
 - costing and financial analysis of similar projects including life cycle costs
 - evaluation and comparison of different emerging and proven technologies, including those that might allow for integration of other waste streams
 - optimization of sites, technology and resource recovery
 - assessment of net environmental gain from applicable technologies
 - understanding provincial and federal sewage regulations
 - alternative project procurement models
5. a discussion of unique aspects of the consulting team, or its approach to certain requirements of the terms of reference, which might enhance the outcome of the project and add value to the information required;
6. in tabular form, an estimate of each team member's time allocation to each aspect of the project, based on the requirements indicated and the consultant's vision for the project;
7. a project schedule indicating significant milestones and proposed meetings with the CRD and participants of the service;
8. a statement of commitment that personnel named in the proposal will be available for the duration of the project, except where prevented by circumstances beyond the control of the consultant;
9. the location of project personnel while working on this project; and
10. fee proposal (submitted in separate envelope) on a daily and upset monthly retainer.

Reporting

The Consultant will report to the General Manager, Parks & Environmental Services. In order to ensure transparency and achieve public confidence in the analysis, the CRD will retain a Technical Oversight Panel of up to five individuals with relevant technical expertise to provide oversight of this work. This Panel will report directly to the Core Area Liquid Waste Management Committee.

Meetings

Proponents shall allow for the following meetings, in addition to meetings with CRD and municipal staff:

- at least 10 council and committee meetings, and ongoing liaison with municipal staff
- presentation of draft report and recommendations to CRD and municipal staff
- presentation of draft report and recommendations to the Core Area Liquid Waste Management Committee
- a final meeting with all municipal participants and CRD and municipal staff to discuss the draft report prior to completion of the final report
- presentation of results to the Core Area Liquid Waste Management Committee and CRD Board for approval

Deliverables, Milestones and Schedule

The Consultant will present a PowerPoint report on the recommended solution set to the Core Area Liquid Waste Management Committee by September 30, 2015. The final report is to be completed for CRD Board approval on October 14, 2015.