



**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY 23 FEBRUARY 2011**

SUBJECT MARKET SOUNDING – CORE AREA WASTEWATER TREATMENT PROGRAM

ISSUE

To report on the results of the recent market sounding for the Core Area Wastewater Treatment Program (CAWTP) procurement strategy approved by the Capital Regional District (CRD).

BACKGROUND

At its meeting of 8 September 2010 the Core Area Liquid Waste Management Committee (CALWMC) recommended to the CRD Board approval of the revised business case for provincial funding and the proposed procurement strategy for the CAWTP. The CRD Board approved the recommendation at its meeting of 8 September 2010.

The CRD Board has approved a procurement strategy which involves delivery of the McLoughlin plant using a design-build (DB) approach and the Hartland biosolids facility as a design-build-finance-operate (DBFO) approach. Conveyance works will be delivered using a combination of DB and design-bid-build (DBB) approach. The CRD, Ministry of Community, Sports and Cultural Development (MCSCD) and Partnerships BC (PBC) have agreed to undertake a joint market sounding on the CRD's proposed procurement strategy. The objective of the market sounding was to solicit industry input from concessionaires and contractors to determine interest in the proposed procurement strategy. The eleven market sounding interviews were less than 60 minutes long and were held between 17 January 2011 and 28 January 2011. The interviews included representatives from the CRD, PBC and MCSCD.

Ernst & Young Orenda Corporate Finance were engaged to facilitate as moderator and to summarize the responses from participants. The *Market Sounding Report dated February 9, 2011*, in Appendix A, provides an overall summary of the results, an overview of the market sounding process, the questions asked, a list of the participants and a summary of the views expressed by the participants for each question.

The following summarizes some of the key findings that support the procurement strategy approved by the CRD:

- 1) All participants indicated that they could bond to the levels required for either the McLoughlin WWTP or biosolids energy centre. The bonding and surety was identified by some participants as a significant issue for a combined procurement approach with value of approximately \$500 million for these two facilities. None of the participants could identify a \$500 million single contract for a wastewater treatment project in North America using alternative delivery procurement (DB, DBO or DBFO). The participants generally indicated that the very large projects are broken down into packages that are in the range of \$250 million or less, similar to what CRD is proposing.
- 2) All participants would bid the McLoughlin WWTP if it included a short-term operating agreement to manage the operation of the facility using CRD staff. One participant was reluctant but most felt that there were not significant issues with managing the operation of the McLoughlin WWTP using CRD staff for a short period of time. Most emphasized the need to provide clarity regarding the operational requirement and labour management responsibilities in the bidding documents.

- 3) Some of the participants indicated that a 3 to 5 year short-term operating agreement was too long and suggested a shorter period which would allow the contractors to manage operations and to provide warranty and operating bonds for a specified period, for example, one to two years, essentially an extended commissioning period. Operator training could be part of that short-term contract, which could reduce the cost of operator training compared to training operators in advance of plant startup.
- 4) All participants indicated that they would bid on the biosolids energy centre DBFO but one of the concessionaires that favoured the combined procurement approach was reluctant, as they would need to partner with a firm specialized in sludge processing and resource recovery to be competitive.
- 5) Most of the participants indicated that they would bid a combined procurement, with most indicating that they would need to form consortia or joint ventures increasing the cost and complexity of the procurement process. The concessionaires favoured the combined approach and were very interested in providing financing with some emphasizing their priority would be to provide project financing.
- 6) The concessionaires indicated that a combined approach would give them the opportunity to optimize the operation of the two facilities, while others, even within the same organization, indicated that there would be greater competition and the CRD would receive the best solution for each facility with separate packages tendered sequentially. A combined approach could result in less than an optimal solution if the proponent did not have equal expertise in both liquids and biosolids facility design. In all likelihood, the large concessionaires would follow the same process as the CRD, that is; complete the process design for the McLoughlin WWTP to establish the output parameters and then make this information available to the designers of the biosolids energy centre. The big difference is that the successful proponent for the large combined tender would have one team working on the biosolids energy centre solution, whereas with the CRD's approach, the output parameters would be made available to the market place as part of a separate procurement process maximizing the opportunity for innovation from proponents with specialized expertise in biosolids processing.
- 7) Some proponents suggested that combining the two projects would be less complex to administer and would eliminate co-ordination issues between contractors. However, regardless of how the McLoughlin and biosolids energy centre are procured, the CRD will have to administer and co-ordinate the multiple contracts associated with the infrastructure to convey the sewage to the treatment facilities, in addition to the two large facilities.

While contradictory views were heard from the participants and sometimes from within the same organization, the results of the market sounding indicate that there is a strong market interest in the procurement strategy approved by the CRD for the McLoughlin WWTP and the biosolids energy centre. Approximately 40 companies have contacted the CRD over the past two years and most have expressed a preference for separate contracts for the WWTP and biosolids energy centre.

It was also clear from the market sounding that clear and unambiguous procurement documents will be essential in reducing perceived risk by proponents and hence the cost to the CRD.

CONCLUSION

The results of the recent market sounding indicate that there is a strong market interest in the procurement strategy approved by the CRD for the McLoughlin WWTP and the biosolids energy centre.

RECOMMENDATION

That the Core Area Liquid Waste Management Committee receive this report for information.

Tony Brcic, PEng
Project Manager, Core Area Wastewater Treatment

J.A. (Jack) Hull, MBA, PEng
General Manager, Integrated Water Services
Concurrence

TB:hr
Attachment: 1

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15 February 2011

Core Area Wastewater Treatment Program - Market Sounding Report

Dear Mr. Hull:

We refer to the contract between the Capital Regional District (CRD) and Ernst & Young Orenda Corporate Finance Inc. (EY) dated 16 June 2007 (the Contract) and subsequent variation letter dated 19 January 2011, through which EY has been engaged to arrange and facilitate a market sounding exercise in relation to the Core Area Wastewater Treatment Program.

Purpose of the Report and restrictions on its use

This Report may only be relied upon by CRD pursuant to the terms referred to in the Contract. Any commercial decisions taken by CRD are not within the scope of our duty of care and in making such decisions you should take into account the limitations of the scope of our work and other factors, commercial and otherwise, which you should be aware of from sources other than our work.

EY disclaims all liability to any party other than CRD for all costs, loss, damage and liability that the third party may suffer or incur arising from or relating to or in any way connected with the provision of this report to the third party. If others choose to rely in any way on the Report they do so entirely at their own risk.

Our role

Ernst & Young's role has been to:

- a) Arrange and schedule market sounding sessions with a short-list of market sounding participants (the Participants) selected jointly by CRD and Partnerships British Columbia Inc. (PBC) for the weeks of January 17th and January 24th;
- b) Distribute the Project Brief developed by the CRD and PBC to the market sounding participants;
- c) Facilitate the discussion within each market sounding session and engage with participants to ensure robust discussion of key issues;
- d) Take minutes for each market sounding session; and
- e) Prepare a summary report of the market sounding (this Report).

The views expressed in this Report are purely the views of the market sounding Participants. Our role has not included commenting on or assessing the validity of views expressed by the Participants.



Should you wish to discuss this Report please contact Gordon Dunfield-Prayero at 604 891 8276.

Sincerely,

*Ernst & Young Brenda
Corporate Finance Inc.*

Ernst & Young Orenda Corporate Finance Inc.

Introduction

The Capital Regional District (CRD) received approval from the Minister of Environment for the Liquid Waste Management Plan Amendment No. 8 in August 2010 for the Core Area Wastewater Treatment Program (CAWTP or Program). The system configuration (see attached plan) in this Amendment includes a 108 million litre per day (ML/d) secondary wastewater treatment plant (WWTP) at McLoughlin Point and a thermophillic anaerobic codigestion facility for sludge processing (biosolids facility or Energy Centre) at the Hartland landfill. The CRD is in the process of identifying potential sites for the biosolids facility that are closer to the McLoughlin Point facility.

The representative WWTP technology proposed for the 1.4 hectare McLoughlin Point site is high-rate primary clarifiers with biological aerated filters (BAF) as the secondary treatment process. The grit removal facilities will be located with the existing screens at the Clover Point and Macaulay Point pump stations. The capital cost estimate for this facility including the outfall but excluding the headworks is \$250 million.

The representative technology for the biosolids facility will include thermophillic anaerobic codigestion, dewatering, drying, struvite recovery, fats, oils and grease (FOG) receiving station and biogas collection and cleaning facilities. The significant benefit with this sludge treatment process is that it provides the CRD with a negative carbon footprint in excess of 5,000 tonnes of CO₂ equivalent per year. The capital cost estimate for the biosolids facility including the sludge conveyance from McLoughlin Point is \$227 million.

The remainder of the CAWTP includes the following conveyance components; the Craigflower pump station, a 5,000 m³ attenuation tank in Saanich East, pump station upgrades at Currie, Clover and Macaulay (the latter two include grit removal), a new forcemain and siphon downstream of Currie and Trent pump stations, and new forcemains from Clover Point and Macaulay Point to McLoughlin Point including crossing the Victoria Harbour by directional drill or tunnel. The capital cost estimate for these components is approximately \$117 million.

Procurement approach

The CRD Board has approved the design-build (DB) procurement method for the McLoughlin Point WWTP. It is proposed that a short-term operating agreement (term of three to five years) would be included with this DB. The DB proponent would be responsible for: day-to-day operations for the term of the operating agreement, the development of all operating procedures, staff training and supervision, and overall plant performance. The operating staff would be CRD employees under a collective agreement with the Canadian Union of Public Employees (CUPE).

The CRD Board has approved the design-build-finance-operate (DBFO) procurement method for the biosolids facility. This component of the program will likely include a 25 year operating agreement to convey the sludge to the biosolids facility, operate the codigestion, biogas, dewatering and drying facilities and maximize revenues through the sale of struvite, biogas and the dried biosolids as well as tipping fees for FOG.

The remainder of the CAWTP conveyance components will be delivered using the design-bid-build (DBB) and, where possible, using DB to encourage innovation. All of these conveyance facilities will be operated by the CRD upon completion.

Market sounding objectives

CRD, Ministry of Community, Sport, and Cultural Development (Ministry) and PBC elected to undertake a joint procurement options market sounding on the proposed CRD CAWTP to solicit industry input to determine interest in project delivery using the procurement strategy approved by the CRD.

Market Sounding Approach

The CRD, Ministry and PBC in conjunction with its advisers EY undertook a series of market sounding interviews for the Program during January 2011. EY was engaged to arrange and facilitate the discussions, take minutes and provide a report summarizing the discussions. **The views expressed in this Report are purely the views of the market sounding Participants. Our role has not included commenting on or assessing the validity of views expressed by the Participants.**

A shortlist group of companies (Participants) was selected by CRD and PBC to participate in the market sounding interviews and provide the responses. Participants are referred to in this Report as concessionaire or contractor. The following companies participated in the market sounding:

- CH2M Hill
- Kiewit
- Veolia
- PCL
- Parsons
- Acciona
- Epcor
- Synagro
- Graham
- Corix
- CDM

A project brief (appended to this report) was circulated to each company providing a summary of the project components and procurement approach together with a list of market sounding questions. Note that the order of the questions stated below is the order as addressed in the discussions. This has been revised from the order presented in the project brief:

1. What is the largest size project your firm is capable of bonding?
2. Would you bid the McLoughlin Plant as a DB contract with a 3 to 5 year operating contract which may be renewed by the CRD? If so, how would you partner?
3. With respect to the McLoughlin Plant, please comment on the pricing and risk transfer implications of a contract structured as a 20 year fixed price contract with a 5 year exit option in favour of the CRD versus a 5 year fixed price contract.
4. What are the implications, in terms of pricing and risk transfer, of the labour arrangements described in the project brief?
5. Would you bid the Energy Centre as a DBFO contract? If so, how would you partner?
6. Would you bid the McLoughlin Plant and the Energy Centre as a combined project, with an element of private financing? If so, how would you partner?
7. What advantages or disadvantages would you see to bidding the two projects separately?
8. What advantages or disadvantages would you see to combining the two projects?

This report provides a summary of the responses received on each of these questions in turn.

Unless otherwise specified, all references to currency in this Report are to Canadian dollars.

Question 1: What is the largest size project your firm is capable of bonding?

For construction bonding, Participants indicated a range of potential bonding capacity from approximately 200 million to in excess of \$1 billion. For water or wastewater projects, Participants were unaware of projects over \$250 million. Typically wastewater projects are in the \$100 million to \$120 million range.

Several contractors stated that their limit on bonding capability had not yet been tested. If bonding was required in excess of the contractor's capability, then in some instances they may look to partner. Bonding outside of their comfortable range could impact on their ability to conduct other areas of their business.

Other guarantees utilized on capital projects have been letters of credit and parent company guarantees. Letters of credit have been used on smaller projects and it was suggested would not be suitable for a project of this magnitude.

A prime contractor could back down their bonding requirement with bonds provided by their subcontractors. However using parent company guarantees from subcontractors avoids the costs of double bonding. One concessionaire commented that they typically require bid bonds from their subcontractors, but once the contract has started they revert to letters of credit or parent company guarantees.

Each project is evaluated on its merits in determining the size of bonding required. One contractor suggested that for these types of projects, 50% bonding is typically sufficient.

Operating bonds are typically put in place to the value of one year's operating costs. One concessionaire stated that they could secure operations bond for \$20 million. Another contractor suggested that warranty bonds can be used for extended operation beyond commissioning.

Question 2: Would you bid the McLoughlin Plant as a DB Contract with a 3 to 5 year operating contract which may be renewed by the CRD? If so how would you partner?

Nearly all the participants stated that they would bid the contract structured this way.

It was acknowledged that having an operating "tail" is fairly common, although it is typically shorter than the 3 to 5 year term suggested. The integration of operations into a DB contract was noted by one concessionaire as valuable to the owner. It is important, however, to have absolute clarity of the term and requirements up front. Moving from 3 to 5 years makes a big difference, as 5 years prompts longer term thinking.

Some concessionaires raised concerns over the short term nature of the operating component, suggesting that they would not be able to bid a 3 to 5 year operating contract economically. One suggested that in any event they would not take on the same level of risk as they would if it were a longer term contract. A 10 to 20 year operating contract would be more attractive. One contractor stated that the short term nature of the operations component would preclude major international operators from bidding.

If the operating phase is to focus on training, then a transfer of operations after 180 days was suggested by one concessionaire.

One contractor suggested that they would not bid if the 3 to 5 year operating tail was included, however they would be receptive to the inclusion of a training requirement or a 2 year maintenance period. For a DBO they would only ever bid as a subcontractor to a lead operator. Conversely, one concessionaire stated that they would look to their construction partner to be the lead.

Partnering approaches will vary depending on the skill set of the participant. Some participants stated that they would be able to take on the whole scope. Some contractors stated that the nature of the operating requirements would impact on whether they needed to partner or not. For example, some contractors have the capability to provide an operations management role, but if providing operations staff they would need to partner with an operator.

Question 3: With respect to the McLoughlin Plant, please comment on the pricing and risk transfer implications of a contract structured as a 20 year fixed price contract with a 5 year exit option in favour of the CRD versus a 5 year fixed price contract.

Most Participants commented that including the 5 year exit option in favour of the CRD would lead them to approach the contract in a similar way to a 5 year fixed price contract. Below are some of the points made by participants:

- The two options would be viewed similarly. The Risk profile is much the same under both and will have similar results. Without a termination payment, they would have exactly the same result. If there is a termination payment, that would have a beneficial impact.
- The 5 year exit option in favour of the CRD turns the 20 year contract to a 5 year fixed price contract unless a termination provision is included to payback upfront expenses.
- Bidding a 20 year fixed price contract with a 5 year exit option, the concessionaire would need to assume exit at 5 years in their model. They would need to receive their required profit upfront rather than over the longer term contract.
- Having the 5 year exit option would increase the price during the first 5 years as the concessionaire would need to recoup their costs of bidding and the costs of setting up operating systems.
- The 5 year exit option will cost more for the CRD. Any option at CRD's call will add to the cost of the project.

One contractor, however, suggested that the 5 year exit option will not affect pricing. All bidders would assume that they are committed for the 20 years and they will disregard the 5 year exit option in their pricing. They have to assume that they will be held accountable for the full 20 years.

Alternative approaches

Some suggestions for different approaches were also made:

- If the 5 year exit option is to be included, it was suggested that CRD ask bidders to propose their required termination fees in the competitive arena.
- A mutual 5 year exit option would be preferable, providing best value and allowing the concessionaire to adjust their price. This would allow them to be more forthright in their risk pricing for the first 5 years. If there was no opportunity to adjust prices, the concessionaire would need to consider the worst case scenario for the first 5 years, and roll that same price forward for the full 20 years.
- Rather than include an exit option, one contractor would rather see the RFP structured requiring 2 separate bids, 5 years operations and 20 operations.
- The 20 year term with a 5 year break option is unusual. Often, rolling renewable operating terms are used.

5 year vs. 20 year term

Many views were expressed on the difference in approach to risk and pricing between the 5 year and 20 year contracts. The five year approach would likely draw DB contractors with operations experience into the lead role, whereas the 20 year term would require operators to take the lead role. A sliding ownership model was suggested by one contractor whereby ownership of the Project Company transfers

to the operator during the early phase of operations such that the operator has complete ownership of the Project Company following the warranty period.

Below is a summary of the comments broadly in favour of the 20 year contract:

- The risk premium will be different looking at a 20 year contract compared with a 3 to 5 year contract. 20 years is a sweet spot for a DBO in this nature. It allows the concessionaire to optimize life cycle costs.
- The concessionaire would approach a 20 year contract differently to a 5 year contract. They would be motivated to consider the whole of life costs and they would go to greater lengths to bring in the right personnel and project manager for a 20 year contract.
- The contractor might take a different approach to design depending on the length of operating period.
- A 20 year fixed price contract has more risk transfer and should result in substantial cost savings for the CRD when compared to a shorter operating contract.
- With a 20 year operating contract, the concessionaire can look into optimizing the project costing. They can take more risk in the first 5 years and receive their return in the later years.
- DB with the 5 year operating contract only is not as attractive for the concessionaire as a 20 year term. The 5-year operating contract will end up being more expensive for CRD.

Below is a summary of the comments broadly in favour of the shorter contract:

- A 20 year contract would limit competition in bidding, as there are fewer contractors interested in the tail.
- The 20 year contract has additional risks and costs for the operator, such as the cost of bonds, insurance and administration.
- The 20 year operation contract could add additional costs as the operator marks up the design and construction costs.
- Having a long term operating contract has the potential to slow the project down, given the politics that go along with "privatisation", not often received favourably by the public. A shorter term project is an easier sell as part of the DB project.
- Energy cost is a big concern for a 20 year contract. They would assume that the owner takes energy price risk.

One concessionaire commented that most of the operating costs are routine maintenance rather than rehabilitation, therefore there would be little difference between pricing 5 year or 20 year operations.

Question 4: What are the implications, in terms of pricing and risk transfer, of the labour arrangements described in the project brief?

Most Participants stated that it would not be a problem to use staff employed under the collective agreement with CUPE. Some stated, however, that if staff were to be employed by CRD then that would introduce complications and problems. Some of the high level comments included:

- The arrangement promotes labour harmony with the overall CRD operations.
- It is challenging, but it can be done.
- It would be difficult to take this on.
- This would not be an issue as long as the expectations are clear in the RFP.
- It is likely manageable, but they would need to study the details of the arrangement further.
- This changes the nature of the operating contract, making it a management contract rather than an operating contract.
- In principle, this approach is workable but the devil is in the detail.

One contractor stated that they would not be a party to a collective agreement, relying on their operating partner to manage that aspect of the project.

Risk transfer

There were varying views on how this arrangement would impact on risk transfer; with most stating that the arrangement does have an impact on the level of risk that can be transferred.

A concern was raised by several of the participants on whether or not they would have control over the workforce. If the workforce was not under their control they would not have disciplinary control or recourse if the employees did not perform. It was suggested that this would increase the performance risk for the project. If they had a direct relationship with the staff and ability to reprimand rather than needing to go through the CRD, that would be preferred.

Another issue raised was that there would be no long-term relationship with the staff.

The contract would need to be very clear on delineation of responsibilities and where specific risks reside. The 3 to 5 year performance criteria need to be directed at areas which the concessionaire has control over. One concessionaire identified that the arrangement would increase the risk retained by CRD.

One contractor stated that it would be difficult to take responsibility for the budgeting of operations, given the labour costs would be out of the operator's control.

Conversely, some contractors were less concerned by the arrangement:

- One contractor stated that they would like to assist in the initial hiring of staff and setting up the management systems. They did not see the labour force as a risk issue for this project, provided they had input in hiring the staff and could develop staff relationships. They would then be able to take on performance risk for the facility.
- One contractor acknowledged the benefit to the owner and stated that there would be no impact on risk transfer. They did not see any additional risk with this arrangement, given that they would be looking to hire local people either way.

Costs

Labour is more costly if the staff are employed by the CRD. For example the pension provisions available to CRD staff are not typically available to private sector employees.

Most were not averse to taking on CUPE employees if they were to be employed directly by the operating company. There are different costs, however, for CUPE employees.

Where some tensions might arise is where, for example, the concessionaire considers a job should only take one person, but union rules require 2 people. Under the proposed arrangement, there would likely be a greater number of staff than if under private sector operations. When it was pointed out by CRD that no such rules would apply in this scenario, this ceased to be a concern.

Pricing will be impacted given that concessionaires can achieve synergies by having control of the employees. The operator can move their own staff around their projects, managing resources optimally. The operator can also better connect with their own technologies and control centres if they are using their own staff.

One contractor, however, commented that they had experience of an owner imposing union issues which came at a cost.

Alternative approaches

Two of the concessionaires suggested that an alternative approach would be for the operator to hire staff under CUPE arrangements and then transfer the employees to CRD after 5 years.

One concessionaire stated that if the DBO was to focus on training of staff rather than operational requirements they would be more comfortable. The concessionaire has proposed a 1 year training scenario on a previous project.

One contractor suggested limiting the role of CRD staff to one licensed operator per shift. This would maintain a level of public sector involvement and reduce the licensing requirements for the private sector operator.

Experiences observed on other projects

Few examples could be cited where a similar arrangement had been used. Where it had been tried, it had been very difficult to transfer performance risk.

Many of the Participants had not seen arrangements like this before, but had experience of employing staff under collective agreements or of signing agreements with unions.

Some had experience of management contracts where the contractor / concessionaire had provided management staff overseeing a workforce of owner employees.

Interest in bidding

Most Participants stated that the arrangement would not discourage them from bidding. Clarity and good information upfront will be important in assisting the market in bidding under this arrangement. One expressed reservations saying that they would have difficulties with the arrangement and would need to consider whether it would be a worthwhile use of their resources to bid. One stated that they would bid but that the arrangement would introduce additional costs.

Question 5: Would you bid the Energy Centre as a DBFO contract? If so, how would you partner?

All the Participants stated that they would bid the contract structured this way.

One concessionaire commented that bringing in the financing component complicates the project from their perspective. Moving to a DBFO from a DBO changes relationships and the team would be fundamentally different. Under DBO there is a single point of accountability. Under a DBFO, this shifts to equity and changes the relationship with the contractor. This is not necessarily negative, just different. One Contractor stated that whether the project was a DBO or DBFO might have implications for their selection of operating partner.

Another concessionaire noted a similar point in that under a DBO they would typically be the prime contractor, however under a DBFO they would be a DBO subcontractor to the DBFO project company.

Responsibilities need to be well defined, e.g. operational requirements and in particular marketing of biosolids.

Many contractors would need to partner with concessionaires or equity providers (infrastructure funds or pension funds) to satisfy the "F" component. Some contractors stated that they would consider investing equity in the project. Typically it would depend on the nature of the project. Some concessionaires stated that they would prefer to lead in the financing of the project, or look to the relevant division in their group.

One concessionaire identified that a strong resource recovery specialist with a good distribution network would be a competitive advantage.

One construction contractor expressed a strong preference for a DBF over a DBFO.

Question 6: Would you bid the McLoughlin Plant and the Energy Centre as a combined project, with an element of private financing? If so, how would you partner?

All participants stated that they would bid, or at least consider bidding the contract structured this way.

One contractor said that they would be deterred by the complexity of the transaction, the high bid costs and potential lengthy procurement process. They considered that it would be challenging to establish terms acceptable to all parties, including the sureties and private finance providers.

One concessionaire stated that it would be difficult to bid and they have not seen it done this way before. Usually the procurement for the treatment plant and the energy centre components are kept separate. They added that they have not seen a waste water project tender this size in North America. The size of the project raises surety issues.

The same concessionaire commented that with two different risk profiles it is very challenging to quantify the risks and combining them increases the risk profile for the individual parts.

Another contractor stated that including finance adds a level of complexity to the project.

One concessionaire indicated its primary interest was in financing the project.

Partnering approach

Many participants stated that their partnering approach would be similar to their approach stated for the Energy Centre DBFO with regards to seeking complementary capabilities and financing partners. Given the size of the project and the bonding requirements, some would need to pursue joint ventures rather than lead on their own. One concessionaire considered that there would be no one contractor who could bid on their own due to the size of surety bonds required.

Example projects

Many contractors were not aware of other wastewater projects having a capital cost of \$500 million being split across two sites. The following examples of smaller projects were provided:

- Fairbanks sewerage water project - 3 sites.
- Sacramento - a split site project for one contract of approximately \$125 million.
- Tallahassee Florida single contract for the DB of two plants, although no finance or operations included. Total cost approximately \$190 million.

The split site nature of this potential project was not considered to be an issue by the participants and it was not considered to be detrimental. However, it was stated that the closer the locations the better.

Several examples were provided of components on separate sites being procured as separate projects.

Some split site DBFO projects were identified however these were in other sectors, such as the Kelowna Vernon Hospital project and the Alberta Schools project.

Question 7: What advantages or disadvantages would you see to bidding the two projects separately?

The table below summarises the views expressed by Participants on the advantages and disadvantages of bidding the two projects separately:

	Advantages	Disadvantages
Bidding	<ul style="list-style-type: none"> • Two opportunities to win. • Different risk profiles for bidders to consider therefore would be better if separated. • Slightly different teams required therefore easier to manage if they are done separately. • Less resources required at any one time therefore spreads the load if done sequentially. • If combined, the project would be treated as two separate projects anyway, each with its own project manager. • Tightens up the scope that design teams can focus on. i.e., there is less scope / variables in the design. 	<ul style="list-style-type: none"> • There would be 2 different procurement processes, two different bid teams, and two different contracts. • If the two projects were procured simultaneously, it would be more challenging for them. CRD commented that they were planning to procure the components sequentially. • Additional time and energy in forming consortia and negotiating with partners.
Competition	<ul style="list-style-type: none"> • Both are large enough projects in their own right to attract competition. • Smaller size contracts will attract more competition from a broader field of contractors which would be to CRD's advantage. One contractor anticipated there would be 6 or 7 potential bidders for each project. • Bonding requirements more easily managed. • \$200 million project entices more local and regional contractors to bid. • More opportunities for local participation. 	<ul style="list-style-type: none"> • For the larger concessionaires, each project on its own would be less attractive due to its size once divided by the partners. Resources are limited and these larger international companies are attracted to the larger projects.

	Advantages	Disadvantages
Technology / Solution	<ul style="list-style-type: none"> • Potentially receive a better individual solution or technology for each component procured separately. Benefit from being able to select the best expert / solution for each plant. • More specialized resource recovery firms can bid on the Energy Centre project. Some may partner or they may try to bid it alone. • Operating license responsibilities should be easier to address with two separate contracts. 	<ul style="list-style-type: none"> • The overall design is not coordinated by one proponent. • Difficult to consider the overall sustainability of the system if procured separately. • Coordination issue between the two facilities with two contractors. Efficiency will be lost around the interface between the two plants. • Interface issues between multiple parties: If one party falls short on their contribution to the system this can lead to disagreements. • WWTP bidders cannot be accountable for the revenue generating capacity of the sludge, for example through biogas production. • Not taking the project to the end of the commercial chain (e.g. distribution of fertiliser), potentially limits the revenue generating capability. • Need to be very prescriptive in the wastewater facility specifications. • Requires CRD to define tight parameters for the quantity and quality of sludge from the WWTP. If that is possible then the split approach would be feasible. • Pipeline management also needs to be factored into the commercial agreements.
Costs / Pricing	<ul style="list-style-type: none"> • Lower transactional complexity could reduce the CRD's procurement costs. 	<ul style="list-style-type: none"> • Higher CRD administrative costs during project design and construction.

	Advantages	Disadvantages
Contract Management	<ul style="list-style-type: none"> • "Eggs not all in one basket" (i.e., not exposing CRD to the performance of a single contractor). • Risk is shared over a broader base. • Easier to manage the individual contracts. 	<ul style="list-style-type: none"> • CRD has to manage two separate contracts, dealing with two contractors.
Process / communications	<ul style="list-style-type: none"> • There is easy delineation between the projects and each project is big enough to stand alone. • Scheduling advantages: If one project is held up by, for example, permitting issues, than the other project can still proceed. It also allows CRD to procure the liquid stream first and then define the solid stream afterwards. • Less risk to the program as each contract is of a manageable size and likely to have fewer challenges obtaining necessary bonding. • Potentially good for public relations because it allows more local contractors to bid. • Plan has already been approved by the CRD board. 	

Question 8: What advantages or disadvantages would you see to combining the two projects?

The table below summarises the views expressed by Participants on the advantages and disadvantages of combining the two projects:

	Advantages	Disadvantages
Bidding	<ul style="list-style-type: none"> • The larger size project will attract international players with increased access to funding. • Larger contractors consider that they have more value to add with a larger scope. • Pursuit cost will be lower if combined. • There may be some big partners who will put more energy into a \$500 million project. 	<ul style="list-style-type: none"> • Only one chance to win. • It will be an expensive pursuit. • There has not been a single wastewater project of this size previously procured in North America. • The consortium may need to include different partners for each facility.
Competition	<ul style="list-style-type: none"> • May not limit the number of bidders as the smaller contractors could team with larger contractors who could wrap their performance obligations. • The project will attract larger companies and international consortia with larger balance sheets. • Once divided by the partners, the larger project is still of a reasonable size to be of interest to larger contractors. 	<ul style="list-style-type: none"> • Would attract different teams, maybe not as many as it will take out the opportunity for local contractors. • Only a handful of national / international contractors would bid, limiting the competition. • The bonding and surety requirement is an issue. • Would attract less competition than two separate contracts.

	Advantages	Disadvantages
Technology / Solution	<ul style="list-style-type: none"> • From the design builder perspective, there would be one team working on the design of the two plants resulting in complementary designs, economies of scale, and some efficiencies of sharing resources. • Better interface on the control of the system and operations between the two plants. • Potentially some efficiencies and synergies across the operations of the two plants. • The selection of technologies could be based on an optimized, integrated project life-cycle enhancing the overall project efficiency and cost-effectiveness. • Could reduce the carbon footprint by considering the sustainability of the whole system. 	<ul style="list-style-type: none"> • The combined project would be challenging. • The performance potential of one facility is capped at the combination of the two facilities. • There are different risk profiles for each project. The Biosolids plant is less complex, but by exposing it to the performance of the WWTP this increases the risk profile and would result in a large risk premium. • The more scope you put into a single project, the less likely you are to secure the best single solution for each component. CRD's preferred Consortium might have a good bio-solid plant approach but not so good waste water treatment plant approach. • Operating license responsibilities would be more difficult to address with one combined contract.
Costs / Pricing	<ul style="list-style-type: none"> • Lower CRD administrative costs during project design and construction. 	<ul style="list-style-type: none"> • Arrangement of sureties will be more challenging. With this size project, the sureties providers can start to dictate terms. • Savings in administrative costs may be more than offset by higher procurement and transaction costs given this approach has not been tried before.
Contract Management	<ul style="list-style-type: none"> • One point of contact and a single point of responsibility for the owner. • CRD need only administer the one contract. 	<ul style="list-style-type: none"> • CRD would be putting all their eggs in one basket. • Could potentially be tied to a team that isn't performing.

	Advantages:	Disadvantages
Process / communications	<ul style="list-style-type: none">• Can procure and build simultaneously.	<ul style="list-style-type: none">• Higher risk to the procurement program given the complexity of the contract.• There have been complaints from smaller local contractors that P3 projects are too big for them. Putting out a major project may upset the local contractors.• Need to resubmit for approval by CRD.

Conclusion

The stated objective for this market sounding exercise was to solicit industry input to determine interest in project delivery using the procurement strategy approved by the CRD.

Feedback from market sounding Participants indicates that industry has a strong interest in participating in the project using the procurement strategy approved by the CRD.



Capital Regional District Core Area Wastewater Treatment Program

Procurement Options Market Sounding
Project Update Brief and Questionnaire

January 2011



Making a difference...together

Capital Regional District – Core Area Wastewater Treatment Program – Project Brief

Project Components

The Capital Regional District (CRD) received approval from the Minister of Environment for the Liquid Waste Management Plan Amendment No. 8 in August 2010 for the Core Area Wastewater Treatment Program (CAWTP). The system configuration (see attached plan) in this Amendment includes a 108 million litre per day (ML/d) secondary wastewater treatment plant (WWTP) at McLoughlin Point and a thermophilic anaerobic codigestion facility for sludge processing (biosolids facility) at the Hartland landfill. The CRD is in the process of identifying potential sites for the biosolids facility that are closer to McLoughlin Point.

The representative WWTP technology proposed for the 1.4 hectare McLoughlin Point site is high-rate primary clarifiers with biological aerated filters (BAF) as the secondary treatment process. The grit removal facilities will be located with the existing screens at the Clover Point and Macaulay Point pump stations. The capital cost estimate for this facility including the outfall but excluding the headworks is \$250 million.

The representative technology for the biosolids facility will include thermophilic anaerobic codigestion, dewatering, drying, struvite recovery, fats, oils and grease (FOG) receiving station and biogas collection and cleaning facilities. The significant benefit with this sludge treatment process is that it provides the CRD with a negative carbon footprint in excess of 5,000 tonnes of CO₂ equivalent per year. The capital cost estimate for the biosolids facility including the sludge conveyance from McLoughlin Point is \$227 million.

The remainder of the CAWTP includes the following conveyance components; Craigflower pump station, 5,000 m³ attenuation tank in Saanich East, pump station upgrades at Currie, Clover and Macaulay (the latter two include grit removal), new forcemain and siphon downstream of Currie and Trent pump stations, and new forcemains from Clover Point and Macaulay Point to McLoughlin Point including crossing the Victoria Harbour by directional drill or tunnel. The capital cost estimate for these components is approximately \$117 million.

Procurement Approach

The CRD Board has approved the design-build (DB) procurement method for the McLoughlin Point WWTP. It is proposed that a short-term operating agreement (term of three to five years) would be included with this DB. The DB proponent would be responsible for; day-to-day operations for the term of the operating agreement; the development of all operating procedures, staff training and supervision; and overall plant performance. The operating staff would be CRD employees under a collective agreement with the Canadian Union of Public Employees (CUPE).

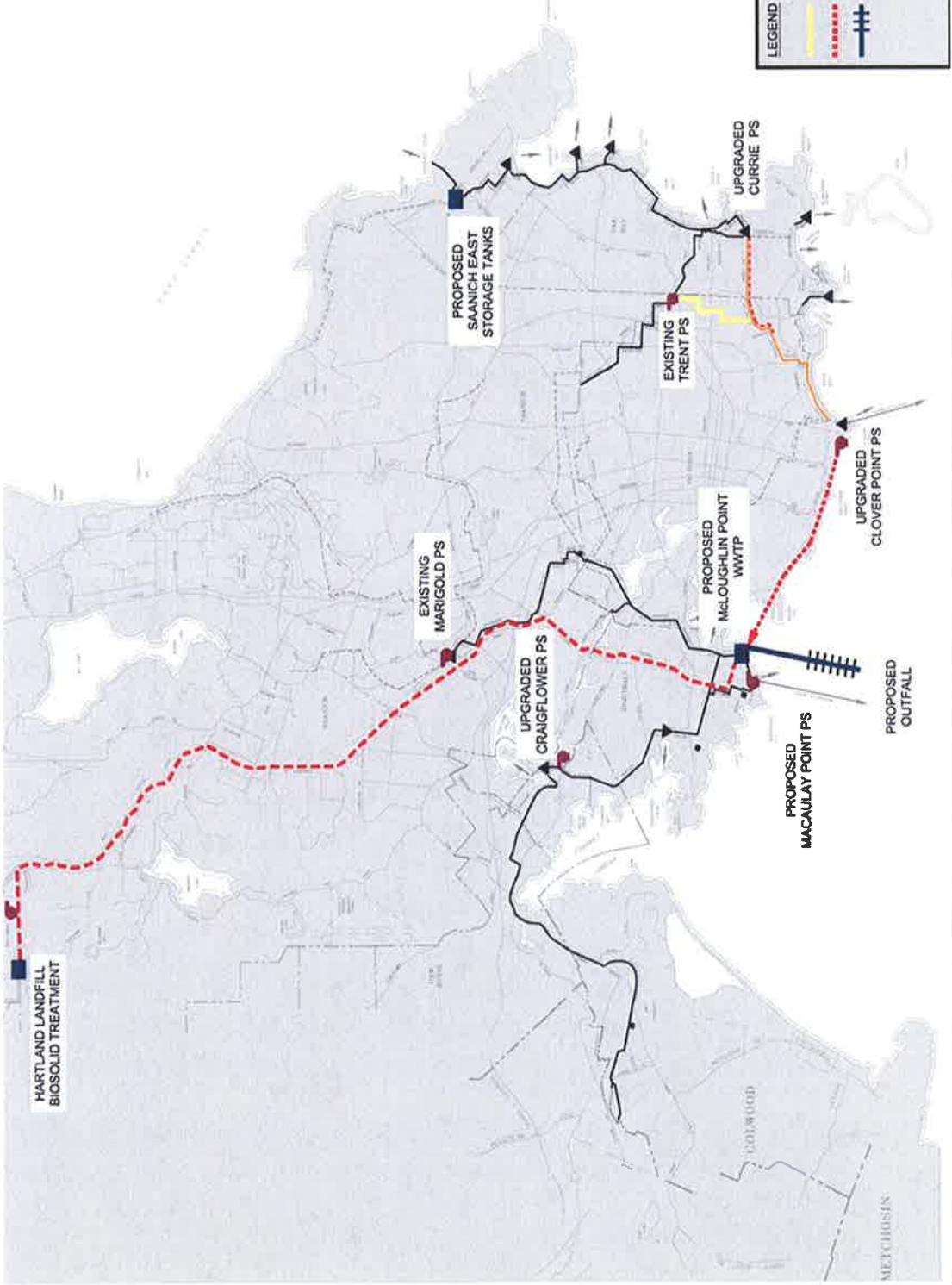
The CRD Board has approved the design-build-finance-operate (DBFO) procurement method for the biosolids facility. This component of the program will likely include a 25 year operating agreement to convey the sludge to the biosolids facility, operate the codigestion, biogas, dewatering and drying facilities and maximize revenues through the sale of struvite, biogas and the dried biosolids as well as tipping fees for FOG.

The remainder of the CAWTP conveyance components will be delivered using the design-bid-build (DBB) and, where possible, using DB to encourage innovation. All of these conveyance facilities will be operated by the CRD upon completion.



LEGEND

- EXISTING FORCEMAIN (black line)
- PROPOSED FORCEMAIN (red dashed line)
- PROPOSED FORCEMAIN (yellow solid line)
- PROPOSED OUTFALL (blue line with vertical bars)



Capital Regional District – Core Area Wastewater Treatment Program Market Sounding

Introduction

The Capital Regional District (CRD), Ministry of Community, Sport, and Cultural Development (Ministry), and Partnerships BC (PBC) have elected to undertake a joint market sounding on the proposed CRD Core Area Wastewater Treatment Program (the Program).

Market Sounding Objective

The Core Area Liquid Waste Management Committee (CALWMC) has approved the business plan and procurement strategy which involves delivery of the McLoughlin Plant using a design-build (DB) approach and the Hartland biosolids facility as design-build-finance-operate (DBFO) approach. Conveyance works will be delivered using a combination of DB and design-bid-build (DBB) approach.

This market sounding is soliciting the industry input to determine interest in project delivery using the procurement strategy approved by the CRD.

The Market Sounding Report will be made public but the interview responses and minutes will be confidential and without attribution. Interviewees will be referred to as concessionaire or contractor.

Market Sounding Questions

1. What is the largest size project your firm is capable of bonding?
2. Would you bid the McLoughlin Plant as a DB contract with a 3 – 5 year operating contract which may be renewed by the CRD? If so, how would you partner?
3. Would you bid the Energy Centre as a DBFO contract? If so, how would you partner?
4. Would you bid the McLoughlin Plant and the Energy Centre as a combined project, with an element of private financing? If so, how would you partner?
5. What advantages or disadvantages would you see to bidding the two projects separately?
6. What advantages or disadvantages would you see to combining the two projects?
7. What are the implications, in terms of pricing and risk transfer, of the labour arrangements described in the project brief?
8. With respect to the McLoughlin Plant, please comment on the pricing and risk transfer implications of a contract structured as a 20 year fixed price contract with a 5 year exit option in favour of the CRD versus a 5 year fixed price contract.