



TOWN OF LADYSMITH

A SPECIAL MEETING OF THE
COUNCIL OF THE TOWN OF LADYSMITH
TUESDAY, JANUARY 28, 2014

PART A - 5:00 p.m. – CITY HALL COUNCIL CHAMBERS - 410 ESPLANADE
PART B – 6:30 p.m. – COMMUNITY SERVICES CENTRE - 630 SECOND AVE.

AGENDA

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PART A OPEN MEETING CALL TO ORDER 5:00 P.M. (COUNCIL CHAMBERS)

1. AGENDA APPROVAL

2. STAFF REPORT

- 2.1. Request for Proposals for Supply and Delivery of MBBR/DAF Equipment for the Wastewater Treatment Plant 1 - 13

3. CLOSED MEETING (IMMEDIATELY FOLLOWING OPEN MEETING)

In accordance with section 90(1) of the *Community Charter*, this section of the meeting will be held *In Camera* to consider a matter regarding labour relations or other employee relations.

PART B OPEN MEETING RECONVENE 6:30 P.M. (COMMUNITY SERVICES CENTRE/ SENIORS' CENTRE)

4. PRESENTATIONS/DELEGATIONS

4.1. Delegation - North Oyster Diamond Ratepayers

A member/members of the organization will be at the meeting to provide comments regarding the proposed boundary extension.

4.2. Couverdon Real Estate/TimberWest Boundary Extension Application

Presentation by Frank Limshue, Couverdon Real Estate/TimberWest

Staff Recommendations:

- 1) That Council determine if it wishes to direct staff to proceed with the proposed boundary extension submitted by Couverdon Real Estate/TimberWest and that the Mayor and Corporate Officer be authorized to sign the proposal for submission to the Provincial government.
- 2) That Council determine if it wishes to direct staff to proceed with the Alternative Approval Process for the proposed boundary extension submitted by Couverdon Real Estate/TimberWest, to be concluded by the end of March, 2014, in accordance with the legislation.
- 3) That Council determine if it wishes to direct staff to submit a notice of the proposed boundary extension to the BC Gazette in accordance with the legislation.

5. ADJOURNMENT



Town of Ladysmith
STAFF REPORT

To: Ruth Malli, City Manager
From: John Manson, PEng
Date: January 20, 2014
File No:

Re: Requests for proposals for Sewage Treatment Plant Upgrade - Stage III

RECOMMENDATION(S):

That Council authorize the Town and Opus DaytonKnight to enter negotiations with World Water Works to finalize the details of the equipment, controls and pricing with a view to entering into a contract with World Water Works to supply and deliver the MBBR/DAF equipment to the Town, and, if successful, to enter into a contract with World Water Works. In the event that the Town is unable to successfully conclude negotiations with World Water Works under the above terms, that Council authorize the Town and Opus DaytonKnight to enter negotiations with Veolia on the same terms as above.

PURPOSE:

To permit the acquisition of the above noted equipment through an RFP process.

INTRODUCTION/BACKGROUND:

As part of the Stage III Sewage Treatment Plant Upgrade, the Town will be acquiring a specialized piece of sewage treatment equipment, namely a "Moving Bed Bio-Reactor" (MBBR), as well as a "Dissolved Air Flotation" (DAF) system. These two systems will provide the necessary level of treatment to meet our Liquid Waste Management Plan objectives in the coming years. This specific type of equipment was pre-selected by our Consultants, Opus Dayton and Knight, primarily due to the more efficient site footprint, compared to alternative types of processing equipment.

In order to facilitate the timely completion of the main project design, and ensure that the facility is appropriately designed to accommodate to the specific equipment, it is necessary to pre-select the process equipment prior to the award of the main project. The Town obtained submissions through a pre-qualification process to ensure that only equipment and suppliers with experience and a good proven track record are considered for the project.

As noted in the January 23, 2014 letter from our consultants (Appendix "A"), three proposals were received, from Veolia, World Water Works (WWW), and Degremont. Proposals were evaluated on both a technical as well as a non-technical basis, in accordance with section 14 of the RFP process. Points were given by our evaluation team, for adjusted

cost, design concept, equipment performance, and firm experience. Clarifications and price adjustments were made for some of the submissions, as provided for in the Request for Proposal process, to ensure that all proponents were evaluated in a fair and comparable way. The proponents were also made aware of the price adjustments, including the evaluation using two alternate system sizing's.

The results of the evaluation indicate that the point score for two proponents are very close, specifically the submissions from WWW, and Veolia.

From a technical point of view, our Consultants are recommending proceeding to negotiate a contract with WWW for these reasons:

- Equipment complexity (simpler equipment configuration with WWW);
- Fewer types of chemicals required;
- Reduced process flow complexity;

The consultants also wish to note that despite the recommendation, the Town would also be well suited with the submission from Veolia. Council may therefore wish to consider other factors in deciding to proceed with either of the submissions from WWW or Veolia, considering that the evaluations were so close between them.

To assist, we have asked our Consultants to attend the Council meeting to answer any questions that Council may have.

SCOPE OF WORK:

Supply only of the MBBR and DAF sewage treatment equipment for the Stage III Sewage Treatment Project, currently nearing design completion.

ALTERNATIVES:

Council could consider entering into negotiations leading to a contract with one of the alternate submissions.

FINANCIAL IMPLICATIONS:

In accordance with the Purchasing Policy, Council must approval all select bid contracts over \$50,000.

This equipment was included in the Financial Plan under the Waste Water Treatment Plant Capital Upgrade. It is funded through reserves and borrowing.

LEGAL IMPLICATIONS:

The Town is following the Purchasing Policy in making this recommendation to Council to acquire this equipment.

RESOURCE IMPLICATIONS:

This high priority project is within our current work program.

ALIGNMENT WITH SUSTAINABILITY VISIONING REPORT:

Aligns with the Innovative Infrastructure Vision.

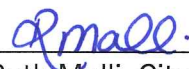
ALIGNMENT WITH STRATEGIC PRIORITIES:

Supports Strategic Direction A – “Wise Financial Management”.

SUMMARY:

Submissions were received from Veolia, World Water Works (WWW), and Degremont for the Sewage Treatment Plant Stage III Upgrade for equipment Pre-Purchase. Staff are recommending that Council authorize the Town and Opus DaytonKnight to enter negotiations with World Water Works to finalize the details of the equipment, controls and pricing with a view to entering into a contract with World Water Works to supply and deliver the MBBR/DAF equipment to the Town, and, if successful, to enter into a contract with World Water Works. In the event that the Town is unable to successfully conclude negotiations with World Water Works under the above terms, that Council authorize the Town and Opus DaytonKnight to enter negotiations with Veolia on the same terms as above.

I concur with the recommendation.



Ruth Malli, City Manager

ATTACHMENTS:

Letter from Opus Dayton and Knight Dated January 23, 2014



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VIA E-MAIL

January 24, 2014

Mr. John Manson, P.Eng., FEC
Director of Public Works
Town of Ladysmith
Box 220 - 410 Esplanade
Ladysmith, B.C. V9G 1A2

D-21808.01.00300

Dear Mr. Manson:

Town of Ladysmith WWTP Upgrade Phase 3
RFP 2013-218-MBBR/DAF
Supply and Delivery of MBBR/DAF Equipment

The project team at Opus DaytonKnight has completed the review of responses to the second issue of the RFP for the supply and delivery of the MBBR/DAF equipment for the Phase 3 upgrade of the Town of Ladysmith (Town) wastewater treatment plant (WWTP).

The following letter presents a summary of the review, with a recommendation that Council authorize the Town and Opus DaytonKnight to enter negotiations with World Water Works to finalize the details of the equipment, controls and pricing with a view to entering into a contract with World Water Works to supply and deliver the MBBR/DAF equipment to the Town, and, if successful, to enter into a contract with World Water Works. In the event that the Town is unable to successfully conclude negotiations with World Water Works under the above terms, that Council authorize the Town and Opus DaytonKnight to enter negotiations with Veolia on the same terms as above.

1.0 Proposal Closing

The second issue of the RFP for the supply and delivery of the MBBR/DAF equipment closed on November 22, 2013. Three preselected and qualified manufacturers with proven technologies were requested to submit responses – Infilco-Degremont (Degremont), Veolia and World Water Works – and all three responded with complete submissions prior to the deadline. The submissions from all proponents were in compliance with the RFP requirements.

All price quotations in the proposals were significantly lower than the engineer's estimate of \$3.5M prior to taxes.

Of the three proponents, Degremont did not include PST in their RFP quotation on the basis that, as an American company, they did not have a PST number and did not have to remit this tax to the BC Government. We clarified this with the Town's Financial Director, and confirmed that the Town is required to self-assess for PST. After review with the Financial Director, it was clear that the equipment being supplied under this contract is not PST exempt. As a result, we adjusted the price quotation from Degremont to include PST.

At the closing, the prices quoted by each proponent is illustrated in Table 1.1 below:

Table 1.1: Summary of RFP Price Quotes

Item	World Water Works	Veolia	Degremont
Base Price	\$2,619,975	\$2,476,205	\$2,729,413
PST	\$183,398	\$173,334	\$191,059
GST	\$130,999	\$123,810	\$136,471
Total	\$2,934,272	\$2,773,350	\$3,056,943

2.0 Proposal Review

The Request for Proposal undertaken by the Town was performance based and provided the proponents with flexibility to propose unique proprietary equipment to achieve the best value for the Town. This flexibility resulted in some differences in the scope of supply among the three proponents due to the unique equipment proposed by each proponent.

A detailed review of the technical aspects of each proponents submission, supported by a review of the company information included with each submission, is attached in Table 1. A detailed review of the financial aspects of each submission, accounting for additional plant costs or savings not directly related to the supply contract, is attached in Tables 2a and 2b. In the course of these reviews each proponent was contacted in writing for clarifications related to equipment, scope and process performance.

Price adjustments were requested from all proponents to provide additional equipment or to remove certain components from the scope of supply if they were not necessary for the operation of the proponent's equipment.

Price adjustments were also made to the quoted prices from Veolia and Degremont to allow for the construction of mixing tanks which are necessary for the proponents process to function, but are not included in the proponents scope of supply.

The following scope changes and price adjustments were made:

1) World Water Works

- Remove the mixers and pH meters for the rapid mix tanks from the scope of supply. These were illustrated on the proposal drawings, but rapid mix tanks are not required

for the operation of World Water Works DAF tanks. This resulted in a price reduction of \$38,257 before taxes.

- Remove the Compressors from the scope of supply. These were illustrated on the proposal drawings, but rapid mix tanks are not required for the operation of World Water Works DAF tanks. This resulted in a price reduction of \$21,000 before taxes.
- World Water Works also included the equipment for the first tank in the MBBR process design. This tanks is not required for initial operations, but is recommended for the build out flows. If this is removed from the scope of supply, World Waterworks offered a reduction of \$56,500 before taxes.
- World Water Works offered a price reduction of \$94,500 before taxes to supply smaller DAF systems rated at 7,200 m³/day instead of the units offered in the proposal, which have a capacity of 10,800 m³/day.

No further changes or adjustments were made to the prices from World Water Works.

2) Veolia

- No items were removed from Veolia's scope of supply. Price adjustments were made to supply a larger DAF system with a capacity of 10,800 m³/day to match the capacity of the DAF supplied from World Waterworks. This resulted in a price increase of \$160,800 before taxes.
- Veolia's DAF system requires mixing tanks for coagulant and polymer which are not supplied by Veolia. These tanks will be concrete construction in the building as part of the main contract. The mixers for these tanks are included in the scope of supply from Veolia, but the installation and hook-up of these is additional. The estimated cost for the construction of these tanks, and the installation and hook-up of the mixers is \$70,000, which is added to the base supply cost of the Veolia system.
- Veolia's DAF system requires coagulant (alum) which is not required by World Waterworks. The additional cost for a chemical storage tank and chemical pumps is estimated at \$15,000 which is added to the base supply cost of the Veolia system.

No further changes or price adjustments were made to the scope of supply from Veolia.

3) Degremont

- Price adjustments were made to supply 50 HP Blowers rather than the 75 HP Blowers included in the proposal. This resulted in a price reduction of \$41,360 before taxes.
- Degremont's DAF system requires mixing tanks for coagulant which are not supplied by Degremont (mixing tanks for polymer are included in the package DAF plant). These tanks will be concrete construction in the building as part of the main contract. The mixers for these tanks are included in the scope of supply from Degremont, but the installation and hook-up of these is additional. The estimated cost for the

construction of the rapid mix tanks, and the installation and hook-up of the mixers is \$20,000, which is added to the base supply cost of the Degremont system.

- Degremont's DAF system requires coagulant (alum) which is not required by World Waterworks. The additional cost for a chemical storage tank and chemical pumps is estimated at \$15,000 which is added to the base supply cost of the Degremont system.

No further adjustments were made to the prices from Degremont. Degremont were not requested to provide a price for a package plant with a capacity of 10,800 m³/day. The maximum package DAF system from Degremont is rated for the flow of 8,200 m³/day.

A summary of the detailed technical review is provided in Table 2.1 below

Table 2.1: Technical and Company Review Summary

Item	World Water Works	Veolia	Degremont
Summary of Company Information	Private company based in Oklahoma mainly with US business Financial information not provided (not requested in RFP)	Large Public Multi-national company with Canadian base in Montreal Detailed financial information provided (not requested in RFP)	Large public multi-national company with US base in Virginia Detailed financial information provided (not requested in RFP)
MBBR	Extensive experience in North America through Chief Technology Officer (ex Kaldnes/Veolia since 2010)	Worldwide experience through purchase of Kaldnes in 2007 with numerous plants worldwide.	Worldwide experience (although less than Veolia) with numerous plants world-wide
DAF	Proprietary DAF from WWW Capacity: 10,800 m ³ /day DAF model was requested in RFP – exceeds flow criteria Uses Nikuni pump with air intake at pump impellor (compressor not required) Coagulation with Rapid mix not recommended; uses polymer injected into DAF inlet flow header. \$94,500 credit to supply DAF at 7,200 m ³ /day	DAF from FRC (large DAF manufacturer) Capacity: 7,200 m ³ /day Capacity is as requested in RFP flow criteria Uses standard pump recycle with air compressors and saturation tube Requires Coagulation in Rapid mix tank and polymer with slow mix flocculation tanks \$160,800 extra to supply DAF at 10,800 m ³ /day	AQUADAF from Degremont Capacity: 7,200 m ³ /day Capacity as requested in RFP flow criteria Uses standard pump recycle with air compressors and saturation tank Requires Coagulation in Rapid mix tank and polymer with slow mix flocculation tanks 10,800 m ³ /day DAF cannot be supplied as package.

The financial information, and the adjusted cost basis for evaluation, is summarized in the following two tables:

Table 2.2: Summary of Adjusted RFP Prices (Adjusted to 7,200 m³/day DAF Flow)

Item	World Water Works	Veolia	Degremont
Base Price	\$2,619,975 (1)	\$2,476,205	\$2,729,413
On-site Process Tanks	\$0	\$85,000 (3)	\$35,000 (4)
Supply DAF at 7,200 m ³ /day	-\$94,500 (2)	\$0	\$0
Equipment not required	-\$115,757 (2)	\$0	-\$41,360 (4)
Adjusted Base Price	\$2,409,718	\$2,561,205	\$2,723,053
PST	\$168,680	\$173,335	\$191,059
GST	\$120,486	\$128,060	\$136,153
Total	\$2,698,884	\$2,862,600	\$3,050,265

Table 2.3: Summary of Adjusted RFP Prices (Adjusted to 10,800 m³/day DAF Flow)

Item	World Water Works	Veolia	Degremont
Base Price	\$2,619,975 (1)	\$2,476,205	\$2,729,413
On-site Process Tanks	\$0	\$85,000 (3)	\$35,000 (4)
Supply DAF at 10,800 CMD	\$0	\$160,800 (3)	Not available as Package
Equipment not required	-\$115,757 (2)	\$0	-\$41,360 (4)
Adjusted Base Price	\$2,504,218	\$2,722,005	\$2,723,053
PST	\$175,295	\$184,590	\$191,059
GST	\$125,361	\$136,100	\$136,153
Total	\$2,804,874	\$3,042,695	\$3,050,265

(1) Base price includes DAF at 10,800 m³/day

(2) See Paragraph 1 above – includes rapid mixers, pH meters, compressors and equipment in first tank

(3) See paragraph 2 above. (4) See paragraph 3 above.

Based on the tables above, the detailed tables attached, and the review of the documents submitted, we make the following observations:

1) World Water Works:

- World Water Works was prequalified for the proposal.
- In the base quote, the DAF supplied by World Water Works is about 50% greater capacity than the DAF from Veolia which will result in performance and process benefits and much greater flexibility for servicing or operating upsets.
- The World Water Works system only requires polymer for flocculation (no coagulant is required) resulting in simpler operation and less chemical handling and deliveries.
- The DAF operation is simpler with duplex Nikuni recycle pumps which entrain air into the pump impeller and eliminate the need for air saturation tanks and compressors. This has a benefit: simpler controls and maintenance. It also has a risk: repair is expensive and parts are not readily available. The risk with the Nikuni pump is that, if wear on the impellers is greater than expected, performance will suffer and maintenance costs will increase. However, this risk of this to Ladysmith is considered to be low.
- World Water Works have included the aeration equipment for the first tank in their submission. This equipment is not required initially and a further credit of \$56,500 has been offered by World Water Works to not supply these.
- The DAF system from World Water Works is a proprietary DAF. World Water Works offered a reduction to supply this in polypropylene. We do not recommend polypropylene for the long life cycle required from Municipal wastewater equipment and infrastructure.
- World Water Works did not provide any financial information. This was not requested in the RFP, but was provided by Degremont and Veolia, who are large public companies.
- World Water Works have local representation from Waste n'Watertech in Kelowna and Calgary, but have not indicated any Canadian service facility.
- World Water Works have no installations in Canada to date but have several MBBR/DAF facilities in the US – mainly for industry.

2) Veolia:

- Veolia was prequalified for the proposal. Veolia is a large international company with diverse operations in the water and wastewater business, and a Canadian office in Montreal.
- In the base quote, the DAF supplied by Veolia treats 7,200 CMD which was the design flow specified in the documents. The DAF supplier to Veolia for this project is FRC who are a specialty DAF manufacturer based in Georgia with an office in Ontario. FRC has supplied hundreds of DAF systems to (mostly) industrial customers, and was the DAF manufacturer for Siemens Water for their MBBR/DAF systems.

- The DAF system from Veolia uses pre-treatment by flocculation and coagulation in separate tanks, which is standard process treatment for solids removal by DAF in wastewater treatment.
- The DAF operation uses standard centrifugal recycle pumps and an air compressor and saturation tank to dissolve air into recycle water. This may require some additional maintenance for the compressors, but parts for all components are readily available.
- Veolia did not include the aeration equipment for the first tank in their submission. This equipment is not required initially, and, Veolia confirm that it is not required for the build-out flows and BOD Loads.
- Veolia and FRC have service operations in Canada and Veolia has supplied 8 MBBR systems in Quebec and Ontario, including 1 MBBR/DAF and 2 MBBR/Actiflo systems.

3) Degremont:

- Degremont was prequalified for the proposal. Degremont is a large international company with diverse operations in the water and wastewater business, and a North American head office in Virginia.
- In the base quote, the DAF supplied by Degremont treats 7,200 m³/day which was the design flow specified in the documents. Degremont manufacture their own proprietary DAF which has been widely used in water treatment and is regarded as a very high quality DAF. However, this Degremont did not supply any references for this DAF in an MBBR/DAF configuration. Degremont, however, did warranty the performance.
- The DAF system from Degremont uses pre-treatment by flocculation and coagulation in separate tanks, which is standard process treatment for solids removal by DAF in wastewater treatment.
- The DAF operation is uses standard centrifugal recycle pumps and an air compressor and saturation tank to dissolve air into recycle water. This may require some additional maintenance for the compressors, but parts for all components are readily available.
- Degremont did not include the aeration equipment for the first tank in their submission. This equipment is not required initially, and, Degremont confirm that it is not required for the build-out flows and BOD Loads.
- Degremont supplied numerous MBBR references in North America including one in Canada. All Degremonts DAF references were for drinking water plants, including one in Canada.

3.0 Evaluation

An evaluation was carried out by members of the project team with representatives from the Town. The evaluation process followed the process and parameters outlined in Part 14 of the Instruction to Proponents in the RFP. The evaluation was carried out based on the equipment costs based on the RFP and life cycle costs were not taken into account for this evaluation.

The evaluation team assigned weightings to each parameter as illustrated in table 4.1 below:

Table 3.1: Evaluation Ratings

Rating Parameter	Weighting
14.1 (1) - Cost	30%
14.1 (2) - Design Concept	20%
14.1 (3a) - Equipment Performance	10%
14.1 (3b) - Equipment Capacity	10%
14.1 (4) - Firm Project Experience	30%
14.1 (5) – Technical/Commercial	Not rated since all firms satisfied RFP requirements and did not note any exceptions
Total	100%

Cost and project firm experience were allocated the highest rating, but the same for both parameters. Since all companies were prequalified, and the quoted costs were within a 10% range from lowest to highest, the price adjustments are important to this parameter. After adjustments, World Water Works had the lowest overall price and Degremont the highest for both scenarios. The score for price was determined as the ratio of the lowest adjusted price, and the adjusted price of the proponent being evaluated, multiplied by 10 for a maximum score of 10.

Design concept was rated at 20 overall. In this parameter, World Water Works rated highest due to a simpler DAF system and a rolling mixing pattern in the MBBR tanks that makes for better DO control in summer.

For equipment performance, World Water Works rated slightly ahead but all companies are essentially equal on this point.

For equipment capacity, all companies rated the same. However, it should be noted that Degremont do not have a package DAF system at a capacity of 10,800 m³/day.

For firm project experience, Veolia rated the highest through the ownership of Kaldnes which was the original developer of the MBBR/DAF system, its large size and presence in the water and wastewater market. On this point, World Water Works rated lower due to less company experience and smaller size.

Each parameter was rated out of a maximum score of 10. The total rating score for each proponent was determined by multiplying the rating by the weighting for each parameter and adding up the total.

Since the closing submissions were based around different sized DAF systems, the evaluations were carried out for two scenarios:

- Flow at 7,200 m³/day with price adjustments illustrated in Table 2.2
- Flow at 10,800 m³/day with price adjustments as illustrated in Table 2.3.

The results of the evaluation are illustrated in the table below for the two scenarios described:

Table 4.2: Evaluation Results

	Scenario 1 (7,200 m ³ /day)	Scenario 2 (10,800 m ³ /day)
World Water Works	8.50	8.50
Veolia	8.43	8.37
Degremont	8.05	5.73 (1)

(1) Capacity rated low since Degremont do not have package DAF size over 8,200 m³/day

Under both scenarios, World Water Works narrowly ranked the highest, with Veolia a close second and Degremont third.

4.0 Conclusion and Recommendation

The second RFP for the MBBR/DAF equipment has resulted in three very competitive proposals for the supply of the MBBR/DAF equipment which are well below the original engineers estimates of \$3.5M before taxes.

The proponents for this RFP were invited to submit responses, and all were considered to be capable of providing the necessary process equipment and expertise for the successful completion of the upgrade to secondary treatment for the Ladysmith WWTP.

The evaluation results for all proponents are very close, especially between Veolia and World Water Works. The proposal from World Water Works appears to offer better value for the Town based on:

- Simpler DAF operations with the Nikuni Pump which combines recycling and air saturation
- Use of a single chemical – polymer – which reduces chemical deliveries and handling
- The direct flow from the MBBR to the DAF without chemical mixing tanks reduces the process steps, making for simpler operations.

Our recommendation is that Council authorize the Town and Opus DaytonKnight to enter negotiations with World Water Works to finalize the details of the equipment, controls and pricing prior to the Town entering a contract with World Water Works to supply and deliver the MBBR/DAF equipment to the Town, and if successful, to enter a contract with World Water Works.

In the event that the Town is unable to successfully conclude negotiations with World Waterworks under the above terms, that Council authorize the Town and Opus DaytonKnight to enter negotiations with Veolia on the same terms as above.

We trust this review and recommendation will meet with the Town's satisfaction and approval.

Yours truly,

Opus DaytonKnight Consultants Ltd.



Seamus Frain, P.Eng.



Roger Warren, P.Eng.

SF/RW/ma

cc. R. Malli