

6.2.9 Mobile Biosolids Dewatering Unit

REPORT BY THE BUSINESS MANAGER SERVICES TO 7 MAY 2014 COUNCIL MEETING

Mobile Biosolids Dewatering Unit Tenderer Negotiations Council Report

GOV400038, 2013/17

RECOMMENDATION

That:

1. **the report by the Business Manager Services on the Mobile Biosolids Dewatering Unit be received;**
2. **Council accept the tender of VoR Environmental Australia Pty Ltd for a Volute Dehydrator in the amount of \$405,900.00 (excluding GST) in accordance with clause 178 of the Local Government (General) Regulation 2005;**
3. **An additional \$73,500 (ex GST) be allocated to the project budget from the sewer fund in the 2014/15 Operational Plan and Budget, adjusting the total project budget from \$350,000 (ex GST) to \$423,500 (ex GST), including an amount of \$17,600.00 in addition to the tender sum to cover, craneage, testing and performance proofing during commissioning; and,**
4. **the unsuccessful tenderers be notified that their tenders were unsuccessful.**

Executive summary

Council is proposing to purchase in 2013/14 a Mobile Biosolids Dewatering Unit to dewater waste sludge at its Mudgee and Gulgong Sewage Treatment Plants.

Council called tenders for the dewatering unit in late 2013. Upon review and assessment of the tenders received, additional information was required from tenderers for Council to make an informed "value for money" assessment.

As such, Council at its meeting of 20 November 2013 resolved as follows:

- Not to accept any of the tenders submitted for the proposed contract.
- Enter into negotiations with TEMA Engineers Pty Ltd (belt press and centrifuge technology), Green Process Pty Ltd (screw press technology) and VoR Environmental Australia Pty Ltd (centrifuge, dehydrator and belt press technology) with a view to obtaining additional information to allow a robust tender assessment and whole of life cost analysis to be undertaken.
- Enter into a contract with the tenderer that offers the best "value for money" for Council.

Negotiations with each of the short-listed tenderers has been undertaken with the information necessary to undertake a whole of life "value for money" assessment now received. This report summarises the tender negotiations and presents a recommendation for Council's consideration and determination.

Detailed report

Council's Sewage Treatment Plants at Mudgee and Gulgong generate waste biosolids (sludge) as a part of the sewage treatment process. Historically, the waste sludge has been stored in ponds on site for a sufficient period to dry, with the dried sludge then removed by excavators.

The purpose of the supply of the Mobile Biosolids Dewatering Unit is to enable the efficient and cost effective dewatering of biosolids from Council's sewage treatment plants. It will allow a single dewatering unit to be used at all of Council's facilities and will eliminate the need for expensive removal of dried sludge by excavators.

Council's objective for this contract is to engage a suitably qualified contractor to supply a Mobile Biosolids Dewatering Unit, capable of efficiently and cost effectively dewatering biosolids at Council's sewage treatment plants.

In accordance with the resolution of Council dated 20 November 2013, negotiations for the tender for the Mobile Biosolids Dewatering Unit have been undertaken with the adopted short-listed tenderers. The short-listed tenderers were as follows:

- TEMA Engineers Pty Ltd
- Green Process Pty Ltd
- VoR Environmental Australia Pty Ltd

Tender negotiations and discussions were held with each individual tenderer to ensure Council officers obtained a thorough understanding of each submission and to ensure officers had sufficient information to determine the whole of life cost of each submission and technology type. The meeting dates and the attendees have been provided in the below table, whilst details of the meetings have been provided as a confidential attachment.

APPLICANT	DATE OF MEETING	TIME OF MEETING	WHO ATTENDED
Green Process Pty Ltd	10 th February 2014	2:00pm	<ul style="list-style-type: none"> • Claire Cam (MWRC) • Richard Minter (MWRC) • Mark Houghton (Green Process)
VoR Environmental Australia Pty Ltd	11 th February 2014	10:30am	<ul style="list-style-type: none"> • Claire Cam (MWRC) • Richard Minter (MWRC) • Cedric Lo (VoR) • Vincent Ho (VoR)
TEMA Engineers Pty Ltd	11 th February 2014	1:30pm	<ul style="list-style-type: none"> • Claire Cam (MWRC) • Richard Minter (MWRC) • Daniel Potente (TEMA)

UPDATED TENDER SUBMISSION DETAILS

Following the completion of the tender negotiation meetings, each of the tenderers submitted updated tender proposals. Details of the updated tender proposals, along with a comparison with their original proposals, are provided as a confidential attachment.

UPDATED TENDER PROPOSALS ASSESSMENT

Included in Attachment A is a summary of the updated tender proposals and an assessment of each tender proposal. Based on the assessment of each tender proposal, the best options available to Council are as follows:

- VoR Environmental – Volute Dehydrator
- TEMA Engineers – Belt Press
- VoR Environmental – Centrifuge
- TEMA Engineers – Centrifuge

In assessing these options, consideration has been given to the whole of life costs for each dewatering option. The polymer consumption for each technology is similar, leaving the main on-going cost considerations being spare parts, maintenance and electricity consumption.

It is noted that the volute dehydrator, being a very simple design, does not need major overhaul works after five years as compared to other options. It will only require the replacement of parts with no balancing or re-alignment works that may be required for the centrifuge or belt press technology options.

Electricity costs have been calculated assuming a design life of 20 years for the unit. Currently, the unit will be used to dewater one Mudgee STP pond (440hrs at 10m³/hr) and one Gulgong STP pond (300hrs at 10m³/hr) annually. It is assumed that after 8 years, the new Kandos STP will come on-line which will have one pond (160hrs at 10m³/hr).

As such, for a 20 year design life, the first 8 years will require 740 hours of unit usage and the next 12 years will require 900hrs of unit usage. Council currently pays approximately 32c/kWhr for electricity.

Based on the above, approximate electricity costs will be as follows:

Unit Details	Unit Power (kW)	Cost @ \$0.32/kWhr for 740hrs	Cost @ \$0.32/kWhr for 900hrs	Total Cost (8yrs at 740hrs and 12yrs at 900hrs)
VoR Volute Dehydrator	6	\$1,421	\$1,728	\$32,102
VoR Centrifuge	29	\$6,867	\$8,352	\$155,162
TEMA Belt Press	9.14	\$2,164	\$2,632	\$48,896
TEMA Centrifuge	55	\$13,024	\$15,840	\$294,272

Given the cost of on-going spare parts/maintenance and electricity costs, the centrifuge technology should not be considered any further. The two units considered further are VoR Environmental's Volute Dehydrator and TEMA Engineers' Belt Press.

Based on information provided by each tenderer during the previously mentioned meetings, the volute dehydrator and belt press maintenance costs are roughly equivalent over a 20 year design life, the volute dehydrator will be of the order of \$16,800 cheaper to operate in terms of electricity costs. Unlike the other options, it would also not require any additional operator resources to operate and maintain.

Based on a whole of life cost assessment, along with the ease of use of the machine and required operator input, the VoR Environmental Volute Dehydrator provides the best value for money for Council.

Financial implications

The initial budget allocation for the Mobile Biosolids Dewatering Unit was \$350,000 in 2013/14. Three hundred thousand dollars was reallocated to the 2014/15 budget during the tendering process due to the long lead times associated with the technologies being considered. Additional funds will be required to be allocated in the 2014/15 financial year.

The total funds required to be allocated to the project will be as follows:

• VoR Environmental Volute Dehydrator	\$405,900
• Cranage, testing and performance proofing during commissioning	\$ 10,300
• Tendering and oncosts	<u>\$ 7,300</u>
	\$423,500

As such, an additional \$73,500 from the sewer fund will be required to be allocated to the Mobile Biosolids Dewatering Unit in the 2014/15 financial year.

A request for financial assistance under the NSW Government Country Towns Water Supply and Sewerage Scheme will be submitted. The request is for 26.3% funding of the total cost of procurement of the Mobile Biosolids Dewatering Unit as part of the Mudgee Sewerage Augmentation Project.

Strategic or policy implications

There are no strategic or policy implications.

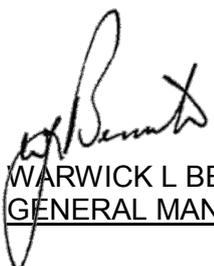
CLAIRE CAM
BUSINESS MANAGER SERVICES


BRAD CAM
DIRECTOR, MID-WESTERN OPERATIONS

23 April 2014

Attachments: 1. Updated Tender Proposal Assessment (included in the confidential section of the business paper)

APPROVED FOR SUBMISSION:


WARWICK L BENNETT
GENERAL MANAGER