

Staff report

DATE:	October 6, 2016
ТО:	FILE: 5360-20/CV Chair and directors Comox Valley Regional District (Comox Strathcona waste management) board
FROM:	Debra Oakman, CPA, CMA Chief Administrative Officer
RE:	Project status report - October 2016 CVWMC new engineered landfill - cell 1 construction and leachate treatment facility

Purpose

To provide a project status report for the Comox Valley waste management centre (CVWMC) new engineered landfill - cell 1 construction (cell 1) and the leachate treatment facility design and construction.

Policy analysis

At the June 16, 2016 Comox Valley Regional District, Comox Strathcona waste management board (CSWM board) meeting the board approved the following resolution:

THAT a contract be awarded to New Lining Solutions Inc. for the Comox Strathcona waste management service new engineered landfill – cell 1 project in an amount not to exceed \$5,756,081.30 plus applicable taxes;

AND FURTHER THAT in the event that New Lining Solutions Inc. does not execute the contract within ten days of its receipt of the Notice to Award in accordance with the Instructions to Tenderers, that a contract be awarded to the second lowest bidder, Wacor Holdings Ltd., for the Comox Strathcona waste management service new engineered landfill – cell 1 project in an amount not to exceed \$5,808,830.12 plus applicable taxes;

A contract was executed with Wacor Holdings Ltd (Wacor) on July 13, 2016 for the cell 1 construction.

At the September 15, 2016 CSWM board meeting the board approved the following resolution:

THAT as a result of a competitive process the contract for the design and construction of the Comox Valley waste management centre leachate treatment facility be awarded to Maple Reinders Inc. in an amount not to exceed \$7,444,600 plus applicable taxes;

Executive summary

The expansion of the CVWMC is a large and complex project required to provide additional airspace volume to the Comox Strathcona solid waste service. The project is included in the 2012 Comox Strathcona solid waste management plan (CS-SWMP) and meets or exceeds all of the current provincial requirements for landfill design, construction, and operation. The project is made up of two main components – cell 1 construction and the leachate treatment facility. The following sections highlight project progress for each of the main components.

Cell 1 construction:

The cell 1 construction is a large capital project with a tight construction schedule. The project is essentially an earthworks project consisting of the excavation of a 430,000m³ cell (four times the size

of the large infiltration pond built as part of CVWMC phase 1 closure), the installation of a 66,000m² geomembrane liner system, the installation of a leachate collection and pumping system as well as a new service access roads.

The construction portion of this project is scheduled to be completed by the end of 2016. In support of Wacor's contract for the construction of the new landfill cell, Tetra Tech EBA is providing construction management and construction quality assurance services.

Work completed since the beginning of the cell 1 contract includes:

- Clearing and grubbing of area for cell 1
- Bulk excavation of cell 1 and construction of stockpiles 1, 2, 3 and 4
- Screening and production of subgrade material for cell 1

Work underway includes:

- Placement of subgrade material
- Berm and ditch construction
- Installation of cell 1 liner

Upcoming work includes:

- Road construction
- Leachate collection pipe installation
- Leachate force main installation
- Equalization pond construction

Leachate Treatment Facility:

The leachate treatment facility is based on membrane bio reactor (MBR) technology, and includes a bioreactor, followed by membrane filtration, and finally a metals removal stage before effluent is discharged to an onsite infiltration bed. This particular technology is proposed because of its ability to treat leachate to strict effluent quality guidelines, and the compactness, robustness, and flexibility of the system. Design work for the leachate treatment facility is planned for the fall of 2016, with construction planned for winter 2017.

A tentative project Gantt chart for cell 1 construction and the leachate treatment facility can be seen in appendix A.

Project Costs

The cell 1 construction project consists of detailed engineering design, construction works, construction management, construction quality assurance and overall project management. The project includes specific contingencies for construction and for engineering services as well as contingency for the overall project. Total project costs are estimated at \$7,514,000.

The cost for the design, construction, and full commissioning of the leachate treatment facility including construction management, construction quality assurance, and contingency is estimated to be completed at \$8,545,000.

A summary of the projects' budget up to September 19, 2016 is provided in appendix B. As the project progresses towards completion the attached cost summary table will be updated to show actual costs as well as the estimate to complete. In this way an up to date estimated final cost for the project will be maintained.

Communications

In an effort to provide timely project information to the CSWM board and the community, a "project update" newsletter will be regularly published on the Comox Valley Regional District website throughout the project until completion. Photographs documenting the construction progress to date are attached as appendix C.

Recommendation from the chief administrative officer:

This report is for information purposes only.

Respectfully:

D. Oakman

Debra Oakman, CPA, CMA Chief Administrative Officer

Concurrence:	Concurrence:	Concurrence:
C. Makinson	J. Mathers	M. Rutten
Cole Makinson, EIT Engineering Analyst	James Mathers Senior Manager of CSWM Services	Marc Rutten, P.Eng General Manager of Engineering Services
Attachments: Appendix A –	"CVWMC Cell 1 and Leachate Treatm	ent Project Schedule"

Attachments: Appendix A – "CVWMC Cell 1 and Leachate Treatment Project Schedule" Appendix B – "CVWMC Cell 1 and Leachate Treatment Cost Summary" Appendix C – "Construction Photos"

			DRA	AFT C	ell 1 C	Construction and Leachate Treatment Facility Project	Sc
ID	0	Task Name	Duration	Start	Finish	un 5, '16 Jul 3, '16 Jul 31, '16 Aug 28, '16 Sep 25, '16 Oct 23, '16 Nov 20, '16 Dec 18, '16 Jan 15, '17 Feb 12,	'17 M
1	-	Cell1 Construction	78 days	Wed 7/13/16	Fri 10/28/16	16 V 13 56 11 22 2 13 24 4 13 26 7 16 25 5 26 1 12 25 5 14 25 5 16	21 10
2		Clearing and Grubbing	23 days	Wed 7/13/16	Fri 8/12/16	16	
3		Cell Excavation	40 days	Mon 7/25/16	Fri 9/16/16		
4	11.	Perimeter Berm	11 days	Mon 8/29/16	Mon 9/12/16	16	
5	11	Anchor Trench	12 days	Mon 9/19/16	Tue 10/4/16	16	
6	11	Engineered Liner System	30 days	Mon 9/19/16	Fri 10/28/16	16	
7							
8		Road Construction	73 days	Sat 6/25/16	Tue 10/4/16	16	
9		Cell Access Road	40 days	Sat 6/25/16	Thu 8/18/16		
10		Service Roads	12 days	Mon 9/19/16	Tue 10/4/16	16	
11							
12		Leachate Collection	41 days	Fri 10/14/16	Fri 12/9/16	16	
13		Piping Installation in Cell	12 days	Fri 10/14/16	Mon 10/31/16	16	
14	11	Force Main Installation	30 days	Mon 10/31/16	Fri 12/9/16	16	
15	11	Equalization Pond Construction	30 days	Mon 10/31/16	Fri 12/9/16	16	
16							
17		Leachate Facility Design	85 days	Tue 9/27/16	Mon 1/23/17	17	
18	11	Leachate Pre-Design	20 days	Tue 9/27/16	Mon 10/24/16		
19		Review Period	5 days	Tue 10/25/16	Mon 10/31/16		
20		MoE Approvals	25 days	Tue 11/1/16	Mon 12/5/16		
21	11	Foundation Permit	5 days	Tue 11/15/16	Mon 11/21/16		
22	11	Finalize Design	60 days	Tue 11/1/16	Mon 1/23/17		
23							
24		Leachate Facility Construction	160 days	Tue 11/22/16	Mon 7/3/17	17	
25	11	Site Preparation	10 days	Tue 11/22/16	Mon 12/5/16		
26		Concrete Work (slabs, walls, etc.)	40 days	Tue 12/6/16	Mon 1/30/17		
27	11	Building Permits	10 days	Tue 1/10/17	Mon 1/23/17		
28		Building Construction	50 days	Tue 1/24/17	Mon 4/3/17		
29		Process Equipment Installation	40 days	Tue 4/4/17	Mon 5/29/17	17	
30	11	Infilration Bed Construction	30 days	Tue 4/18/17	Mon 5/29/17	17	
31	1	Site grading and roadworks	25 days	Tue 5/30/17	Mon 7/3/17		
32							
33	_	Start-Up and Commissioning	54 days	Tue 5/30/17	Fri 8/11/17		
34	#1	Equipment Start-Up and Testing	14 days	Tue 5/30/17	Fri 6/16/17		
35		Tentative Process Conditioning	20 days	Mon 6/19/17	Fri 7/14/17		
36	_	Fentative Sludge Dewatering	10 days	Mon 7/17/17	Fri 7/28/17		
37	# !	Tentative Performance Testing	20 days	Mon 7/17/17	Fri 8/11/17		
38		Substantial Completion	0 days	Fri 6/16/17	Fri 6/16/17	<u>17</u>	

Project: Project1 Date: Fri 9/23/16	Task Split	Progress Milestone	~	Summary Project Summary	 External Tasks Deadline External Milestone 	
	•			Page 1		



Appendix B

New Engineered Landfill Cell 1, including the Leachate Treatment Facility, Loan Authorization (Bylaw No. 351, 2014)

Key Task Description	Project Status		Actual Costs to Date (A)		Estimate to Complete (B)		Estimate at Completion (A+B)	
Wacor - Contract for New Engineered Landfill Cell 1 Construction								
General Construction and Civil Works	In progress (contract signed July 13, 2016)	\$	1,727,513.30	\$	3,581,316.82	\$	5,308,830.12	
Provisionals (equalization pond, force main)	TBD	\$	-	\$	600,000.00	\$	600,000.00	
Contingency			0	\$	500,000.00	\$	500,000.00	
Sub Total		\$	1,727,513.30	\$	4,681,316.82	\$	6,408,830.12	
Tetra Tech EBA - Contract for Construction Management and Construction Quality Assurance								
Project Management	In progress (contract signed July 26, 2016)	\$	2,138.03	\$	18,972.93	\$	21,110.96	
Contract Management	In progress	\$	23,177.76	\$	65,534.06	\$	88,711.82	
CQA	In progress	\$	6,263.85	\$	207,221.67	\$	213,485.52	
Reporting	In progress	\$	-	\$	28,607.28	\$	28,607.28	
Contingency for Provisional Items	TBD	\$	-	\$	103,847.38	\$	103,847.38	
Sub Total		\$	31,579.64	\$	424,183.32	\$	455,762.96	
Other								
Other Consulting Services (design, tender preparation and review)	ТВО	\$	-	\$	149,406.92	\$	149,406.92	
Project Contingency	TBD	\$	-	\$	500,000.00	\$	500,000.00	
Sub Total		\$	-	\$	649,406.92	\$	649,406.92	
Total		\$	1,759,092.94	\$	5,754,907.06	\$	7,514,000.00	

Key Task Description	Project Status	Actual Costs to Date (A)	Estimate to Complete (B)	Estimate at Completion (A+B)	
Leachate Treatment Facility					
Maple Reinders DB Leachate Treatment Facility	Contract to be signed	\$-	\$ 7,444,600.00	\$ 7,444,600.00	
Contingency (10%)	ТВО	\$ -	\$ 744,460.00	\$ 744,460.00	
Engineering Services (CM/CQA and other)	RFP Still Required	\$-	\$ 355,940.00	\$ 355,940.00	
Total		\$ -	\$ 8,545,000.00	\$ 8,545,000.00	
Remaining unallocated Debt				\$ 5,491,000.00	

Date: September 19, 2016

\$21,550,000



 OFFICE EBA-RIV
 DES JB
 CKD CS
 REV 0
 DRAWING

 SHEET No. 3 of 20
 DWN JB
 APP GLT
 STATUS D
 C-03

Photo Locations



Photo 1: Stockpiles 1 and 2 in Foreground, Cell 1 Excavation in Background



Photo 2: Cell Excavation



Photo 3: Cell Excavation



Photo 4: Screening of Subgrade





Photo 5: Placement of Subgrade



Photo 6: Placement of Subgrade



Photo 7: Stockpile 2



Photo 8: Final Shaping of Slope Prior to Lining

