Comox Valley REGIONAL DISTRICT

Minutes

Minutes of the meeting of the Liquid Waste Management Plan (LWMP) Technical Advisory Committees (TAC) Meeting #10A held on Tuesday, October 20, 2020 at the Comox Valley Regional District Civic Room and via Zoom Online Conference, commencing at 11:00 am.

PRESENT:

P. Nash, LWMP Project Coordinator	
K. La Rose, Senior Manager of Water/Wastewater	CVRD
J. Boguski, Branch Assistant – Engineering Services	CVRD
Z. Berkey, Engineering Analyst	CVRD
M. Rutten, General Manager of Engineering Services	CVRD
M. Imrie, Manager of Wastewater Services	CVRD
C. Campbell	WSP
A. Dewar	WSP
C. Perry, Town of Comox Engineering	TAC
S. Ashfield, Town of Comox Engineering	TAC

ITEM	DESCRIPTION	OWNER
10.A.1	**Call to Order** Meeting called to order at 11:05am	Paul Nash /Kris La Rose
10.A.2	**Update on LWMP Process and Communications** Update provided on general themes of communication with public heard to date.	Kris La Rose
10.A.3	**Overview of Stage 2 Conveyance Report** All TAC members present were up to date and in the essence of time no overview of options provided.	WSP
10.A.4	**Summary of TACPAC Evaluation from September 28, 2020** Overview of the preliminary evaluation from TACPAC Meeting #10. Significant discussion on the potential risk for groundwater contamination in the Lazo Hill area from all options, and the appropriate place to address this within the evaluation criteria. Potential risk arises from construction phase for trenchless options, and possibility of a future leak in operation of all the options. Discussion at TAC was for consideration of scoring within environmental impacts section of evaluation but was flagged for discussion at TACPAC#11.	Paul Nash
10.A.5	**Preliminary Evaluation of Technical Criteria** A live spreadsheet of the evaluation system was used and the TAC members progressively scored each goal for all the options and then moved on to the next goal. Scoring was done by first comparing the differences of the various options, operating pressures, horizontal directional drilling considerations, phased approach pros and cons etc. and some of the operational attributes that go with them. For each evaluation goal, there was a discussion on the major pros and cons of the options as they relate to the goal in question. For scoring, the options started out with a score of three (out of five) and then putting plus or minus values to the attributes, to create a scoring logic to get the scores from zero to five. It was noted that this was still a subjective process and the logic is still a guide. The final scores agreed upon did not always fit formulaically with the scoring logic.	Paul Nash

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<tr><th>ITEM</th><th>DESCRIPTION</th><th>OWNER</th></tr>
<tr><td>10.A.5</td><td>The scoring tables and the scoring logic are attached as Schedule A, and the final scoring is summarized below.

(Color scale - green boxes = best; yellow = intermediate; pink = worst)
<table>
<tr><th>Goal</th><th>Resilience to External Factors</th><th>Resilience to Internal Factors</th><th>Long Term Solution</th><th>Flexibility to accommodate future changes</th><th>Total</th></tr>
<tr><td>Weight %</td><td>15%</td><td>15%</td><td>10%</td><td>5%</td><td>45%</td></tr>
<tr><td>Opt. 1</td><td>9.0</td><td>3.0</td><td>6.0</td><td>3.0</td><td>21.0</td></tr>
<tr><td>2</td><td>9.0</td><td>9.0</td><td>6.0</td><td>3.0</td><td>27.0</td></tr>
<tr><td>3</td><td>7.5</td><td>6.0</td><td>6.5</td><td>4.0</td><td>24.0</td></tr>
</table>
The major considerations when scoring the technical criteria were:
• For External Factors (earthquakes, flood, etc) there is no practical difference between Options 1 and 2, and the defining difference for Option 3 is the portion of existing concrete pipe that would be remaining in the estuary and along the Dyke Road for the next 20 years. This pipe is at greater risk from the external factors than would be the new pipe in new alignments for Options 1 and 2.
• For Internal Factors, the operating risks for Option 1 and 3 are higher than that of Option 2. For Option 1, it is operating a high pressure system, which is at the limits of wastewater pumping capabilities. And additional issue is that the forcemain in Option 1 is intentionally oversized to reduce pressure loss, but this leads to poor flushing of the pipe, and so an additional maintenance program is required to address this. For Option 3, there are technical risks associated with construction of the Marina Park tie-in, and also a minor risk for operating the existing concrete pipe at a higher pressure for the next 20 years.
• For a long term solution, the only difference between any of the options is that for Option 3, the Courtenay to Comox section of pipe is installed 20 years later than for Options 1 and 2, and so reaches the end of its life 20 years later than for Options 1 and 2.
• For future flexibility, there is a slight benefit to Option 3 as it allows for some design considerations (eg. pipe size/material, specific alignment, trenchless installation technology) to be changed and improved in the future as part of the second phase.

Overall, the TAC reviewed the scoring and felt that the scoring accurately represented that Option 2 is the best technical option, and that there are some minor technical trade-offs that come with phasing it to create Option 3. These trade-offs are the unavoidable cost of creating the financial benefit of Option 3. In considering the closeness of the scoring, it was noted in discussion that the evaluation system was created to compare some very different conveyance options, and the three options on the short list are all very similar to each other, which leads to close scoring.</td><td>Paul Nash</td></tr>
<tr><td>10.A.6</td><td>Round Table
Final discussion on construction risk considerations for the options and the appropriate areas to evaluate was completed including discussion on cost contingencies and social impacts.</td><td>Paul Nash</td></tr>
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ITEM	DESCRIPTION	OWNER
10.A.7	**Adjournment** The meeting was adjourned at 1:02pm.	

Attachments:
Schedule A –Detailed Evaluation Results for Technical Categories.

Evaluation System Description

Category	Goal	Description, Comment	Scored by	Weight %
Technical	Resilience to External Factors	Includes climate change, natural disasters, seasonal impact	TAC	15%
	Resilience to Internal Factors	Operational simplicity and reliability, minimise risk of failure	TAC	15%
	Long Term Solution	Provides asset life, and possibly capacity, beyond the minimum planning horizon.	TAC	10%
	Flexibility to accommodate future changes	Technical Consultants to elaborate	TAC	5%
Technical Total				**45%**

Evaluation Results for Conveyance Technical Category

Color scale - green boxes = best; yellow = intermediate; pink = worst

Goal	Resilience to External Factors	Resilience to Internal Factors	Long Term Solution	Flexibility to accommodate future changes	*Total*
Weight %	**15%**	**15%**	**10%**	**5%**	***45%***
Opt. 1	9.0	3.0	6.0	3.0	***21.0***
2	9.0	9.0	6.0	3.0	***27.0***
3	7.5	6.0	6.5	4.0	***24.0***

Technical Attributes				
Item	**Analysis**	**1**	**2**	**3**
Major Components (construction & operation)	km of estuary pipe	0.0	0.0	0.0 (1)
	km of overland forcemain	**8.8**	**6.7**	**2.3**
	km of HDD trenchless section	0	**2.2**	**1.5**
	km of HDD laydown area	0	2.2	1.5
	Total large pump stations	2	2	2
	Total WWTP's	1	1	1
Construction Impacts	Avoid estuary	Y	Y	N (1)
	Avoid new pump station site	Y	Y	Y
	Avoid road disturbance in central Comox	N	N	N
	Avoid road disturbance in Lazo Hill	N	Y	Y
	Avoid additional WWTP site	Y	Y	Y
	Avoid new KFN pump station	Y	Y	Y
Operational Impacts	Avoid 3rd large pump station	Y	Y	Y
	Avoid critical failure point (overflow risk)	Y	Y	Y
	Avoid additional WWTP	Y	Y	Y

Note 1. Option 3 does not require installation of any new estuary pipe, but does continue to operate the existing pipe in the estuary for 20 years, so it does not "avoid" the estuary until then.

Evaluation by TAC				
Goal	**Description**	**Option 1**	**Option 2**	**Option 3**
Resilience to External Factors	Includes climate change, natural disasters, seasonal impact	**3.0**	**3.0**	**2.5**
Scoring Logic	**Option 3 has increased external risk due to earthquake, storm surge, etc. from the entire remaining Phase 2 portion, for the next 20 years of the 80 year project design life**			
Weight	**15%**	**9**	**9**	**7.5**

Resilience to Internal Factors	Operational simplicity and reliability, minimize risk of failure	**1.0**	**3.0**	**2.0**
Scoring Logic	**Option 1 has the highest operating pressures, closer to limits of materials and highest maintenance requirements. Option 3, Phase 1 is continuing to use the old pipe, which has a slightly greater of risk failure compared to new pipe in addition to a tie-in at marina park between new and old infrastructure.**			
Weight	**15%**	**3**	**9**	**6**

Long Term Solution	Provides asset life, and possibly capacity, beyond the minimum planning horizon.	**3.0**	**3.0**	**3.25**
Scoring Logic	**No difference in asset life between Options 1 and 2, slight advantage to Option 3.**			
Weight	**10%**	**6.0**	**6.0**	**6.5**

Flexibility to accommodate future changes	Technical consultants to elaborate	**3.0**	**3.0**	**4.0**
Scoring Logic	**Option 3 allows for numerous changes (pipe size, material, pumping conditions, alignment, trenchless method) when Phase 2 is constructed**			
Weight	**5%**	**3**	**3**	**4**
Total Technical Category	**45%**	**21.0**	**27.0**	**24.0**