Comox Valley REGIONAL DISTRICT

Agenda

Notice of Meeting # 11 of the
LIQUID WASTE MANAGEMENT PLAN
JOINT TECHNICAL AND PUBLIC ADVISORY COMMITTEES (TACPAC)
Tuesday, October 27, 2020
CVRD Civic Room, 770 Harmston Ave. or
via Video Conference (Zoom Call in Details Provided in Email)
10:00 am - 3:45 pm

ITEM, TIME	DESCRIPTION	OWNER
11.1 10:00	Call to Order	Allison Habkirk
11.2 10:00- 10:15	Review of Minutes of Meeting #10 and #10A	Allison Habkirk
11.3 10:15-11:00	Presentation of Public Engagement Results • Summary of feedback from online survey and open houses	Christianne Wile & Kris La Rose, CVRD
Break		
11.4 11:10-11:25	Review of Cumulative Cost Impacts	Kris La Rose, CVRD
11.5 11:25-12:00	Review of Technical Advisory Committee Evaluation of Technical Criteria	Paul Nash
Lunch Break 12:00-12:30		
11.6 12:30-3:30	Evaluating Short List Options – Conveyance • Review of evaluation system and previous evaluation • Discussion • Finalize preferred conveyance solution ***Make a recommendation to the Comox Valley Sewage Commission on the preferred conveyance solution***	Paul Nash /Allison Habkirk
11.7 3:30-3:45	Summary of Next Steps • Provide an update on the timeline and what the TACPAC can expect moving forward	Paul Nash & Kris La Rose
11.8 3:45	Adjournment	Allison Habkirk

Attachments:

1. Minutes of TACPAC Meeting #10, September 28, 2020
2. Minutes of TAC Meeting #10A, October 20, 2020

Comox Valley REGIONAL DISTRICT

Minutes

Minutes of the meeting of the Liquid Waste Management Plan (LWMP) Joint Technical and Public Advisory Committees (TACPAC) Meeting #10 held on Monday, September 28, 2020 at the Comox Valley Regional District Civic Room and via Zoom Online Conference, commencing at 9:00 am.

PRESENT:

A. Habkirk, Chair and Facilitator	
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
J. Warren, Deputy Chief Administrative Officer	CVRD
C. Campbell	WSP
E. Wu	WSP
M. Swift, Town of Comox Councillor	PAC
W. Cole-Hamilton, City of Courtenay Councillor	PAC
A. Hamir, Lazo North – Electoral Area B Director	PAC
T. Ennis, CV Conservation Partnership Alternate	PAC
S. Carey, Courtenay Resident Representative	PAC
K. Niemi, Courtenay Resident Representative	PAC
K. van Velzen, Comox Resident Representative	PAC
D. Jacquest, Comox Resident Representative	PAC
R. Craig, Comox Resident Representative	PAC
L. Aitken, Area B Representative Alternate (observer)	PAC
M. Lang, Area B Resident Representative	PAC
J. Steele, Area B Resident Representative	PAC
H. Dewhirst, Comox BIA	PAC
E. Derby, Island Health	TAC
S. Ashfield, Town of Comox Engineering	TAC

ITEM	DESCRIPTION	OWNER
10.1	**Call to Order** Meeting called to order at 9:00am	Allison Habkirk
10.2	**Brief Orientation for Members Attending Virtually** An introduction and orientation to the meeting process for in-person and virtual attendees.	Allison Habkirk
10.3	**Review of Minutes of Meeting #9** Request for cumulative cost impacts for sewer capital projects to be presented at TACPAC #11. MOTION: To adopt minutes of meeting #9 – W. Cole-Hamilton SECONDED – M. Swift CARRIED	Allison Habkirk
10.4	**Update on Process and Work to Date** Overview of communications and process delay due to COVID-19. Kris La Rose summarized upcoming public consultation events, including virtual and in-person open houses and the focus on having the public complete the	Kris La Rose

ITEM	DESCRIPTION	OWNER
10.4	online survey. An update on additional preliminary technical assessment work that has been completed due to delay, including further geotechnical investigations in and around Comox Road Hill and Lazo Hill was also provided. An update was provided on the Community Benefit Agreement with the K'ómoks First Nations and timeline for the Sewage Commission Decision on the preferred conveyance option anticipated to be in late November/ early December.	Kris La Rose
10.5	**Review of Implementation Process** Due to COVID-19, the business case for reclaimed water was deferred. Recommendation that reclaimed water will be considered as part of the master planning process, and the implementation decision would be a decision of the Sewage Commission. Brief discussion on implementation and splitting of the conveyance from the LWMP process following selection of preferred solution. Will dissenting opinions be provided to the TACPAC? - Yes, dissenting opinions for level of treatment and conveyance will be provided to the TACPAC, for the record. CVRD staff will follow up with the dissenting TACPAC members	Paul Nash
10.6	**Short List Options- Conveyance - Technical** Presentation on alignments and technical considerations for each of the three short-listed conveyance options. Including description of technical considerations for horizontal directional drilling (HDD). Concern that sea level rise values used within the report are too conservative. - At the time of publication of the Stage 2 report sea level rise projections were developed utilizing the best available information, being the City of Courtenay's Integrated Flood Management Study and official government of BC recommendations for projections. In early October, the CVRD's planning department received the preliminary results from a comprehensive Floodplain mapping study for the region, the results of this updated study work will be reviewed and compared to the assumptions made within the Stage 2 report and will be incorporated into the current flood proofing work underway by WSP. Questions around groundwater and risk assessments on wells. - Once preferred conveyance option is selected, a monitoring program will be developed to establish a baseline for quality and quantity of water in the area. A backgrounder for groundwater is available on the LWMP project page on the CVRD's website. Clarification on Figures 3 and 4 of the GW Solutions Hydrogeological report, provided as Appendix C, incorrectly show the Comox No.2 pump station. No Comox No.2 pump station is being considered in any of the short listed options.	Carol Campbell and Eric Wu, WSP

ITEM	DESCRIPTION	OWNER
10.6	Discussion on HDD alignments, construction considerations including staging and laydown areas for the pipe and potential for improvements along alignment. General comments and discussion are provided below: - For both Options 2 and 3, Goose Spit access via Torrence Road will not be closed during the drilling. - Any concerns with difficulties around encountering cobble along HDD alignments? Can be managed by considerations for size of machine and reamer selected for job. There are cost implications with including within the specifications a larger/better quality reamer. - Potential for large costs being encountered with unexpected ground conditions? For current cost estimates carrying a higher contingency for the HDD sections (60%). Not recommending to do more boreholes in Lazo area as results to date have been uniform. Can manage risk with contract language and development of baseline geotechnical report. - Bentonite is used in the drilling process to keep tunnel from collapsing while drilling, it is a heavy dense fluid that becomes inert clay with low permeability. - Frac out of drilling fluids can be a concern at the entry and exit pits if ground is not strong enough at these two locations. Can be avoided by installing a steel tube to fortify ground during drilling. - For option 3 it is not likely that a reduction in drilling costs may be realized for the phase 2 works in the future due to technology advancements. The majority of costs associated with HDD is for the mobilization of the machinery to site. - What is the process for statutory right-of-way's (SRW) for HDD? Similar process to cut and cover, still require an SRW, typically difference is in terms of the SRW agreement, less restrictive for HDD as the pipe is much deeper. i.e. no restriction on planting trees over top forcemain alignment. Owners could refuse the SRW, options if owner refuses includes expropriation or investigating alternative alignment options. What are the odour control facilities included within the costing for each option? - Odour control to be upgraded or included at each of the pump stations as part of the conveyance project. What is the plan for decommissioning the existing forcemain that will no longer be used? - There are a number of options for decommissioning, including complete removal or abandoning in place. The most cost effective and least environmentally impactful option is abandoning in place, future discussion on the options for the existing forcemain is planned.	Carol Campbell and Eric Wu, WSP
10.7	**Short List Options – Conveyance - Financial** Summary of the capital cost, 30 year and 50 year life cycle costs for each of the short listed conveyance options. Explanation on the assumptions used for the development of the life cycle costs, including asset replacement timelines, power and labour costs.	Carol Campbell, WSP

ITEM	DESCRIPTION	OWNER
	Lunch	
10.8	**Evaluating Short List Options - Conveyance** Preliminary review and discussion on the financial, local economic benefit, environmental impacts, greenhouse gas emissions and social categories were completed. The technical evaluation will be completed in a subsequent TAC meeting and presented to the TACPAC at the October 27th meeting. Discussion of pre-determined evaluation criteria for the financial components and evaluating the financial criteria based on net present value (NPV). Due to the development of Option 3, the NPV criteria no longer seems like the appropriate metric because of the need for evaluating the phased option which maximizes use of existing infrastructure and is in line with regional CVRD policies. Staff to present proposed alternate affordability calculation for consideration at TACPAC #11. MOTION: Recommend restructuring of the financial evaluation criteria to fully reflect the cost impacts for the phased option – D. Jacquest SECONDED: W. Cole-Hamilton CARRIED A summary of the general discussion for the local economic benefit, environmental impact and social categories is below: - Consideration on economic impacts for construction through downtown Comox should be captured in the evaluation. - For social construction category, need to capture impact of laydown area impacts for Option 2 and 3 over and above of construction impacts for Option 1, including longer duration of construction impacts. This was a notable change as it was originally expected that the trenchless options would reduce impacts compared with cut and cover, but the laydown areas and duration of their use is a significant local disruption. - Should consideration be made for future impacts for the second phase of Option 3, more people in future therefore could be causing greater future impacts? - Social amenities, Town of Comox will be looking for additional amenities as part of construction through Comox. - Discussion on social amenity potential – the similar nature of all the options make bike lanes the only probable social amenity for this project. - Groundwater considerations will be evaluated within the technical criteria for resilience to external factors.	Paul Nash
10.9	**Preview of TACPAC #11** Summary of what the TACPAC member can expect at the next meeting and a refresher on the open house dates for public consultation.	Paul Nash and Kris La Rose
10.10	**Adjournment** The meeting was adjourned at 2:43pm.	

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

<table>
<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**