

Minutes of the meeting of the Liquid Waste Management Plan (LWMP) Joint Technical and Public Advisory Committees (TACPAC) Meeting #6 held on Friday, March 22, 2019 at the Comox Valley Regional District (CVRD) Boardroom, commencing at 9:00am.

- PRESENT:**
- A. Habkirk, Chair and Facilitator
 - P. Nash, LWMP Project Coordinator
 - K. La Rose, Senior Manager of Water/Wastewater CVRD
 - M. Imrie, Manager of Wastewater Services CVRD
 - C. Wile, Manager of External Relations CVRD
 - J. Boguski, Branch Assistant – Engineering Services CVRD
 - A. Idris, Engineering Analyst CVRD
 - W. Bayless 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
 - C. McColl, K’ómoks First Nation PAC/TAC
 - T. Ennis, Comox Valley Conservation Partnership PAC
 - S. Wood, Comox Business Improvement Association PAC
 - S. Carey, Courtenay Resident Representative PAC
 - T. Servizi, Courtenay Resident Representative PAC
 - K. Niemi, Courtenay Resident Representative PAC
 - K. vanVelzen, Comox Resident Representative PAC
 - D. Jacquest, Comox Resident Representative PAC
 - R. Craig, Comox Resident Representative PAC
 - J. Steel, Area B Resident Representative PAC
 - M. Lang, Area B Resident Representative PAC
 - R. O’Grady, City of Courtenay Engineering TAC
 - S. Ashfield, Town of Comox Engineering TAC
 - G. Bonekamp, Department of National Defence Engineering TAC
 - L. Aitken, Area B Representative Alternate (Observer)
 - D. Hillian, City of Courtenay Councillor (Observer)

ITEM	DESCRIPTION	OWNER
6.1	Call to Order <ul style="list-style-type: none"> • The meeting was called to order at 9:05am 	Allison Habkirk
6.2	Review of Minutes of Meeting # 5 <ul style="list-style-type: none"> • The motion by R. O’Grady, seconded by D. Jacquest that was defeated was not noted in meeting #5 minutes – M. Lang • It was inaccurately stated in the minutes that A. Hamir put forward a motion that the minutes of meeting #4 be adopted. – K. vanVelzen MOTION: That the minutes of meeting #5 be adopted – A. Hamir SECONDED: W. Cole-Hamilton CARRIED	Allison Habkirk

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6.3	<p>Review of LWMP Process Changes</p> <ul style="list-style-type: none"> • We have decided to prioritize and identify a preferred solution for the conveyance component of this LWMP process due to its urgent nature and come back to shortlisting treatment and resource recovery options later. • This is not breaking the conveyance piece off of the LWMP process, it is just addressing the conveyance options first to allow for more in depth analysis of the options. • We plan to short list the treatment and resource recovery long list options in TACPAC meeting #8, after selecting a preferred solution for conveyance if time allows. • CVRD Senior Management met with K’ómoks First Nation (KFN) Chief and Council on February 20 to consult and present long list of options for conveyance, treatment and resource recovery components of the LWMP. • The KFN Chief and Council voiced their strong opposition to all of the estuary alignment option due to archaeological and environmental concerns. • The Chief and Council also voiced their support for treatment options that include UV disinfection. • We recognize the importance of engaging with the KFN and obtaining their support in order to move forward with any of these options because the entire plan area falls within the KFN’s unseeded territory. • The CVRD is going to meet with the KFN Chief and Council on March 27. We will touch base again with Committee members if plans change or KFN does not support any of the options. 	Kris La Rose
6.4	<p>Long List Options – Conveyance</p> <ul style="list-style-type: none"> • From our experience, construction costs in the intertidal zone are twice as much as construction in terrestrial zone because inefficiencies due to tidal cycles, stringent regulations, nature of construction on wet sand and requirement for specialized equipment. • 40 per cent contingency is carried in the Class D cost estimates to account for unknowns at this stage. • An extra 20 per cent contingency is being carried for the tunneling options to account for inherent risk of cost overruns with tunnels. • Asset replacement cost is considered as part of the life cycle costs (60 years for 100 per cent pipe replacement, 25 years for replacement of 40 per cent for structures) • Annual inflation rates are considered: 3 per cent for labour, 3.02 per cent for construction (figures from the <i>Engineering News Record</i> (ENR)) and 5 per cent increase in power demand and energy costs. • What is the proximity of tunnel to water wells that could affect the ground water supply? – M. Lang <ul style="list-style-type: none"> ○ Don’t know the exact answer to that but the interference with well water supply depends on the size and depth of the tunnel relative to the size of the aquifer. However, any 	Walt Bayless

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	<p>impacts are likely to be temporary during the construction period. – W. Bayless</p> <ul style="list-style-type: none"> • Truck traffic across the 17th Street Bridge could be significant, especially if it coincides with the upgrading project of the 5th Street Bridge. This would be worth consideration as a social aspect. – W. Cole-Hamilton • The 3.02 per cent construction inflation rate from ENR seems low, was this an average over a long time? – W. Cole-Hamilton <ul style="list-style-type: none"> ○ Yes, there is a significant uncertainty on the inflation/interest rates but changes in rates won't make a difference in terms of the relative cost of the 'buckets' of the options. – W. Bayless ○ Also, the ENR is a North American index and therefore local variabilities may come into play, especially on the island. – P. Nash 	
6.5	<p>Review of TAC Score of Technical Criteria</p> <ul style="list-style-type: none"> • Was there a consideration for ease of recovery after a disaster? – K. Niemi <ul style="list-style-type: none"> ○ The ease/complexity of recovery was factored in the operational considerations. – W. Bayless • Compared to previous processes I was involved in, it was a good surprise and reassuring to see that the sensitivity analysis resulted in a consistent shift of the option groups/buckets. – R. O'Grady 	Paul Nash
6.6	<p>TACPAC Evaluation of Long List Options – Conveyance</p> <ul style="list-style-type: none"> • Do any of these options affect the septicity of the sewer? Is there a measure to control odour for these options? – J. Steel <ul style="list-style-type: none"> ○ In general, the longer the route, the more septic the wastewater becomes. There are way to mitigate odour such as adding Ferrous Chloride (FeCl₂) in the collection laterals and conveyance mains. However, these are not silver bullets but odour issues can be addressed. – W. Bayless ○ We have hydrogen sulfide (H₂S) concentration at the headworks of about 5 parts per million (ppm) and occasionally that rises to 20 ppm for a short time. Adding FeCl₂ works but it does not eliminate septicity. – M. Imrie ○ It is appropriate to consider the septicity for options that take the longest path of conveyance to the treatment plant.- K. La Rose • To what extent does the geology affect the tunneling options? – T. Ennis <ul style="list-style-type: none"> ○ Our analysis was primarily based off of the available well data on Lazo hill, which mostly show sandy composition. However, a more detailed analysis would be exercised in the detailed study of the short listed options. – W. Bayless • I would prefer evaluating economic benefits based on percentage of cost that stays in the local economy rather than absolute values. – W. Cole-Hamilton (supported by the majority of TACPAC members) 	

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	<ul style="list-style-type: none"> • Access/time required to get to the damaged sections and the environmental damage that may occur in the meantime should be considered in the environmental category. • Where are the archaeological sensitivities considered? – W. Bayless <ul style="list-style-type: none"> ○ The TAC suggested that archaeological factors should be evaluated as part of both environmental and social benefits factors. – K. La Rose • It is important to keep in mind that in addition to the estuary and foreshore, inland areas such as the Comox Road. are known archaeological sites. – T. Ennis • Was the land acquisition cost for the treatment plant of Option 5 considered? <ul style="list-style-type: none"> ○ There was no particular consideration related to any of the options such as those that include a new pump station or a new treatment plant.- K. La Rose • What is the extent of the “general vicinity” noted for replacing the Jane Place Pump Station? <ul style="list-style-type: none"> ○ From a technical perspective, the objective of this new pump station is to use the existing gravity collection system to capture flows. However, locating the pump station and the boundary of the study area is beyond what I can speak to. – W. Bayless ○ We have a circle around the general area for potential pump station placement. At this point, the intent is not to have an inline pump station outside Comox. • Has there been a consideration for the fact that Area ‘B’ residents do not have the benefit of using the wastewater system but would experience the same disruption as the municipalities? And therefore the level of social impact would be different depending on whether those impacted benefit from the system? <ul style="list-style-type: none"> ○ All the septic systems in the valley discharge in the CVWPCC and therefore residents of Area ‘B’ and the other local areas are beneficiaries of the system. Also, the main trigger of this LWMP process is to mitigate the risk of a catastrophic failure of the section of the forcemain along the Willemar Bluffs, which would be in the interest of the entire community to solve. – D. Jacques ○ We are focussed on identifying a solution to the problems related to conveyance in this LWMP process. Topics related to the governance of the sewer system and participation to the service is out of the scope of this LWMP process. – P. Nash • Siting of tunnel shafts, pump stations should be explored in further detail for the short listed options. – S. Ashfield <p>MOTION: That conveyance short list include Option 2A, Option 3A, B and C, and Option 4A. – M. Lang SECONDED – T. Servizi</p>	

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	<ul style="list-style-type: none"> • D. Jacques and R. Craig oppose the motion to include Option 4A in the short list because it scored significantly lower than the other options. <p>MOTION CARRIED – TACPAC consensus on forwarding Option 2A and Option 3A, B and C. Opposition from some members on Option 4A due to its weighting score being so close to other options.</p> <ul style="list-style-type: none"> • Does the results from this LWMP process make the work currently underway at the treatment plant redundant? – A. Hamir • Some work has been delayed until after the LWMP process is complete (such as adding additional clarifier). However, the equalization tanks and work related to odour control are going ahead independent of the LWMP process. – K. La Rose 	
6.7	<p>LWMP Schedule Update</p> <ul style="list-style-type: none"> • May 30 is the start of the FCM Conference and therefore members who are elected officials cannot attend TACPAC 7 as it is currently scheduled. – M. Swift 	
6.8	Preview of TACPAC #7	
6.9	Meeting Adjourned	