

Minutes of the meeting of the Liquid Waste Management Plan (LWMP) Joint Technical and Public Advisory Committees (TACPAC) Meeting #7 held on Monday, September 30, 2019 at the Comox Valley Regional District (CVRD) Boardroom, commencing at 1:00 pm.

- PRESENT:**
- A. Habkirk, Chair and Facilitator
 - P. Nash, LWMP Project Coordinator
 - M. Rutten, General Manager Engineering Services CVRD
 - K. La Rose, Senior Manager of Water/Wastewater CVRD
 - M. Imrie, Manager of Wastewater Services CVRD
 - J. Wallis, Branch Assistant – Engineering Services CVRD
 - Z. Berkey, Engineering Analyst CVRD
 - C. Engisch Baseline Archaeological
 - A. Bennett WSP
 - C. Campbell WSP
 - D. Grimes MJA
 - M. Swift, Town of Comox Councillor PAC
 - W. Cole-Hamilton, City of Courtenay Councillor PAC
 - A. Hamir, Lazo North – Electoral Area B Director PAC
 - M. Horton, K’ómoks First Nation PAC/TAC
 - A. Gower, Comox Valley Chamber of Commerce PAC
 - E. Nowak, CV Conservation Partnership Alternate PAC
 - H. Dewhirst, Comox Business Improvement Association PAC
 - S. Carey, 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
 - D. Winterburn, BC Shellfish Growers Association PAC
 - J. Steel, Area B Resident Representative Alternate PAC
 - L. Aitken, Area B Representative Alternate (observer) PAC
 - M. Lang, Area B Resident Representative PAC
 - R. O’Grady, City of Courtenay Engineering TAC
 - S. Ashfield, Town of Comox Engineering TAC

ITEM	DESCRIPTION	OWNER
7.1	<p>Call to Order</p> <ul style="list-style-type: none"> • Meeting called to order at 1:00pm 	Allison Habkirk
7.2	<p>Round Table of Introductions</p>	Allison Habkirk
7.3	<p>Review of Minutes of Meeting #6 and #6A</p> <ul style="list-style-type: none"> • Not stated in minutes is the decision if Option 3C will require a pump station due to the elevation of gravity lines (page 6 of technical impacts). – K. vanVelzen • Not reflected in minutes are the discussions regarding the combination of Options 3A, 3B, 3C, to one single option – K. vanVelzen 	Allison Habkirk

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7.3	<ul style="list-style-type: none"> • Incorrect spelling of Don Jaquest’s name, page 4 and 5 of the meeting minutes – R. Craig • Incorrect spelling of the word ‘unseeded’ (unceded) on page two of the #6 meeting minutes – R. Craig <p>MOTION: With items noted, minutes of meeting #6 and #6A be adopted – R. Craig SECONDED: K. vanVelzen CARRIED</p>	Allison Habkirk
7.4	<p>Update on LWMP Process and Current Status Kris La Rose, provided an update to TACPAC members on what the LWMP project team has been working on since meeting #6 & #6A, including K’ómoks First Nation (KFN) consultation, follow-up odour dispersion modelling and a review of Area ‘B’ representation on Comox Valley Sewage Commission.</p> <p>Presentation: Comox Valley Sewage Service Liquid Waste Management Plan</p> <p>Comments</p> <ul style="list-style-type: none"> • Is there a policy for KFN’s role on Sewage Commission? – A.Hamir <ul style="list-style-type: none"> ○ Recommendation carried at the Sewage Commission meeting dated September 17, 2019: D. Hillian/K. Grant: THAT the Sewage Commission invite the K’ómoks First Nation to appoint an observer to the Sewage Commission, thereby helping to broaden awareness on all parties and to assist KFN with improving its ability to participate in decision-making for key community infrastructure. – M. Rutten • Will there be a similar policy that we have with KFN for Electoral Area B – A. Hamir <ul style="list-style-type: none"> ○ There was a similar motion carried at the Sewage Commission meeting dated September 17, 2019: D. Hillian/K. Grant: THAT the Sewage Commission direct staff to develop a policy through which the Electoral Area B (Lazo North) Director is invited to attend Sewage Commission meetings, in a defined capacity, to speak to and ask questions around specific topics that relate to the infrastructure and operations located in Electoral Area B. - K. La Rose • If a referendum was held that failed, what would become of the project? – M. Swift <ul style="list-style-type: none"> ○ Regulatory drivers and constraints still exist, so an analysis of the project and recommendations would be brought forward to the Sewage Commission for decision. – K. La Rose 	Kris La Rose
7.5	<p>K’ómoks First Nation – Archeology Chris Engisch provided an overview of the archeological sites and permitting requirements.</p>	Chris Engisch, Baseline Archaeological Services

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7.5	<p>Presentation: Archaeological Overview of LWMP</p> <p>Comments</p> <ul style="list-style-type: none"> • Would this archeological project provide the committee advanced archeological information prior to the implementation of the Liquid Waste Management Plan – A. Habkirk <ul style="list-style-type: none"> ○ Yes, to some extent – C. Engisch • What would the tunnelling and permitting requirements be through First Nations lands? – R. O’Grady <ul style="list-style-type: none"> ○ Because of project size, this will have to be discussed with the KFN and the Province. – C. Engisch • Could there be any archeological findings outside KFN land and what happens if archaeological artifacts are found outside KFN? – S. Carey <ul style="list-style-type: none"> ○ Yes, most of the foreshore around the estuary falls within known archeologically sensitive areas. The likelihood of finding remains off the foreshore are less. Permits will be in place for all excavation within known archeological zones – C. Engisch ○ Chance find protocols would be in place for all excavation . – A. Gower 	Chris Engisch, Baseline Archaeological Services
7.6	<p>Treatment Technical Memorandums</p> <p>Aline Bennett, WSP, updated the committee on technical processes, and reviewed the treatment technical memorandums, provided as part of the agenda, on emerging contaminants, micro plastics and viruses.</p> <p>Presentation: An Overview of Microplastics, Emerging Contaminant and Viruses in Wastewater</p> <p>Comments</p> <p>Micro-Plastics:</p> <ul style="list-style-type: none"> • With the application of SkyRocket, will the micro plastics be recycling through the process? R. Craig <ul style="list-style-type: none"> ○ Not aware if micro-plastics will wash out of soil and be reintroduced in the process. – A. Bennett <p>Emerging Contaminants of Concern:</p> <ul style="list-style-type: none"> • Is anyone in Canada measuring CEC’s in effluent to understand what kinds of chemicals are getting through? Have we measured our own effluent to see how we compare? – D. Jacquest <ul style="list-style-type: none"> ○ Mainly relying on the European experience. Measuring of CEC’s is somewhat understood but not well known. – A. Bennett ○ We have not sampled for CEC’s in our effluent, it is not routinely sampled in Canada and is very expensive to do so.. – M. Imrie ○ Not aware of any continuous sampling in Canada, but there have been several “spot” studies at WWPT’s. – P. Nash ○ Cannot stop consumers using materials, but can encourage different types of disposal to limit load. – M. Rutten 	WSP

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7.6	<ul style="list-style-type: none"> ○ Main loads come through the body to the effluent stream. <ul style="list-style-type: none"> - A. Bennett ● Request upgrade costs in comparison to Quebec and Montreal plant secondary treatment system – R. O’Grady <p>Viruses:</p> <ul style="list-style-type: none"> ● Committed to install disinfection system at facility. This work will help develop needs. – K. La Rose ● Would ultra-violet (UV) system transfer environmental costs/risks, have unintended consequences? – M. Lang <ul style="list-style-type: none"> ○ Different forms of treatment can result in different disinfection by-products being formed. UV systems are generally used as disinfection by products aren’t produced as part of the process. – A. Bennett ● MSC’s no longer proven to be effective indicator of Norovirus – D. Winterburn <ul style="list-style-type: none"> ○ WSP, A.Bennett to follow-up after meeting ● Page 5 on the report on Viruses talks about the possibility of PAA. – D. Jacquest <ul style="list-style-type: none"> ○ PAA is an emerging science and could be possible – A. Bennett 	WSP
7.7	<p>Conveyance – Tunnelling 101 Doug Grimes, McMillen Jacobs Associates and Carol Campbell, WSP, reviewed the different trenchless technologies for conveyance.</p> <p>Presentation: CVRD – Liquid Waste Management Plan, Trenchless Conveyance Options</p> <p>Comments</p> <ul style="list-style-type: none"> ● Why the cost variance between options? – D. Jacquest <ul style="list-style-type: none"> ○ Presenting order of magnitude costs for the varying tunnelling technologies – Doug Grimes ● Have contingency numbers been included in the cost summary? – R. O’Grady: <ul style="list-style-type: none"> ○ There could be cost variances because of substructure and other unknown factors – soil type can be quite variable. – D. Grimes ○ Cost variance also depends on the total length to drill. – C. Campbell ● What is the assumption on the length of tunnel? – Don Jacquest <ul style="list-style-type: none"> ○ Working on optimizing the tunnel solution to minimize cost but maximize benefits of tunnelling. – D. Grimes/C. Campbell ● What is the cost comparison of trenchless technologies to open cut – R. O’Grady <ul style="list-style-type: none"> ○ Open cut is the most cost effective in terms of up front capital – C. Campbell ● What are the land use implications for obtaining right of way’s – R. O’Grady <ul style="list-style-type: none"> ○ We are working with a consultant, D. Aberdeen on this portion of work, our understanding is the process is similar to 	WSP & McMillen Jacobs Associates

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7.7	<p>establishing Statutory Right of Ways for traditional cut and cover projects. – K. La Rose</p> <ul style="list-style-type: none"> • Are pricing options going to be revised based on review of tunnelling technologies? – A. Gower <ul style="list-style-type: none"> ○ Yes they will. – C. Campbell • How much cover is needed when drilling under a house/building? – P. Nash <ul style="list-style-type: none"> ○ Two to three meters minimum. – D. Grimes • How deep will the pipe be? – M. Horton <ul style="list-style-type: none"> ○ Currently reviewing the depth of pipe, roughly around 20 meters at deepest points but again, reviewing to try and optimize tunnelling solution. – D. Grimes • What is the normal amount of geotechnical investigations needed to reduce risk ahead of construction? – M. Rutten <ul style="list-style-type: none"> ○ Preliminary investigation usually includes four boreholes per each alignment, depending on the results more may be required if the samples show variability. – D. Grimes • What is the project delivery model that will be used for the conveyance portion of the LWMP and what is the role that McMillen Jacobs usually plays on projects? – R. O’Grady <ul style="list-style-type: none"> ○ McMillen Jacobs typically works as an owners engineer for design build projects or manages design and engineering for design bid build projects. – D. Grimes ○ This project is likely to be delivered as design bid build, but a procurement options analysis will be undertaken before settling on a project delivery method. – K. La Rose 	WSP & McMillen Jacobs Associates
7.8	<p>Review of Next Steps</p> <ul style="list-style-type: none"> • Considering archeological impacts could be added as evaluation criteria. Discussion on if TACPAC are in favour to consider. <ul style="list-style-type: none"> ○ Could be included/ considered under existing social benefits criteria – D. Jacquest ○ Could be considered as part of technical discussion as well – R. O’Grady • Will be working with KFN on conveyance options ahead of next TACPAC meeting, so timing is not entirely known. • Next meeting to be arranged as soon as possible - three to four weeks of notice will be provided. Meeting could discuss conveyance or treatment depending on consultation with KFN. 	Kris La Rose
7.9	Meeting Adjourned	