

**DATE:** February 15, 2018

**FILE:** 5340-01

**TO:** Chair and Members  
Comox Valley Sewage Commission

**FROM:** Russell Dyson  
Chief Administrative Officer

Supported by Russell Dyson  
Chief Administrative Officer

*R. Dyson*

**RE: Comox Valley Sewerage Service - Planning Process**

---

### **Purpose**

To outline to the Comox Valley Sewage Commission options for a sewer planning process, and recommend a path forward towards selection of a solution for conveyance of flows from the Courtenay and Jane Place Pump Stations to the Comox Valley Water Pollution Control Centre (CVWPCC).

### **Recommendation from the Chief Administrative Officer**

THAT a Liquid Waste Management Plan be developed, as per the provisions of the Environmental Management Act, for the Comox Valley Sewerage System;

AND THAT terms of reference for technical and public advisory committees to help guide the Liquid Waste Management Planning process be developed and brought back to the sewage commission for feedback;

AND THAT procurement of an engineering consultant with expertise in Liquid Waste Management Planning, wastewater treatment and conveyance be engaged to complete the engineering analysis required by the planning process and support the public consultation process and advisory committees;

AND FINALLY THAT staff report back to the Comox Valley Sewage Commission at regular intervals during the planning process.

### **Executive Summary**

In October 2017 the Comox Valley Sewage Commission concluded that a more cost effective and lower risk alternative likely exists to the Comox No. 2 Pump Station project. At that time, staff committed to bringing back a recommended planning process designed to determine if a better solution exists. Key considerations when selecting a planning process are as follows:

- It is crucial that the region follow a planning process that inspires confidence and buy-in for the outcome from all stakeholders.
- Authorization for the required borrowing could be undertaken through a subsequent electoral assent process like an alternate approval process or referendum, or the planning process itself could be selected to include an embedded authorization mechanism.
- While the better than expected condition assessment results have bought us time to undertake a planning process, there is still an elevated risk of releases of raw wastewater into

the environment from a failure of the Willemar Bluffs forcemain or overflow at the Courtenay and Jane Place Pump Stations.

Four planning process options were assessed, ranging from the business as usual model of staff working with guidance of technical consultants and a series of one on one consultations, to a formal and prescriptive planning process like the provincial Liquid Waste Management Plan (LWMP) process. The results of the assessment indicate that:

- The strength and rigor of the LWMP consultation process, along with the final stamp of approval by the independent provincial review would provide the highest level of stakeholder confidence in the outcome. However, the LWMP process takes significantly longer due to the multiple provincial reviews.
- The preferred option is to undertake a LWMP process for the all Comox Valley Sewerage System (CVSS) works, with the option of splitting all of the conveyance components (forcemain and/or pump station upgrades) out of the LWMP process once the consultative stage has selected the preferred conveyance solution, unless the risks of forcemain failure or pump station overflow have been mitigated in the interim.
- To avoid delaying implementation of a conveyance solution and resolution of the risks of sewer overflow or rupture, the LWMP scope must be focused and adhered to throughout the planning process.
- This approach would involve creating a technical advisory committee (TAC) with representation from local government technical staff, agencies and other technical stakeholders and a public advisory committee (PAC) to pull representatives from all non-technical stakeholders together.
- An electoral assent process for the conveyance solution undertaken immediately after the consultation focused first and second stage of the LWMP process, while still fresh in the community’s minds, should have a high probability of success.
- The results of this planning work will also support a strong grant application for the resulting infrastructure project, and over the longer term, an approved LWMP (kept up to date with the required updates every five years) will provide authorization for borrowing required for latter phases of infrastructure expansion.
- If the recommended approach is supported by the Comox Valley Sewage Commission, staff will report back in March with the Terms of Reference (TOR) and engage an engineering consulting firm to help guide the technical side of the planning process. The consultation process would be led by the Comox Valley Regional District (CVRD) with support from Zinc Strategies and the technical consultant.

Prepared by:

Concurrence:

***K. La Rose***

Kris La Rose, P.Eng  
Senior Manager of  
Water/Wastewater Services

***M. Rutten***

Marc Rutten, P.Eng  
General Manager of  
Engineering Services

**Stakeholder Distribution (Upon Agenda Publication)**

Island Health	✓
---------------	---

**Background/Current Situation**

Wastewater from the City of Courtenay and the Town of Comox is transmitted to the CVWPCC through a large diameter forcemain that follows the shoreline from the Courtenay River estuary to

Goose Spit, along Willemar Bluff and then on to the CVWPCC. The section along Willemar Bluff has deteriorated and poses significant environmental and operational risks.

The Comox No. 2 project was initially conceived of in 2005 as part of the “Forcemain Re-alignment Study” completed by CH2MHill in response to the uncovering of the forcemain along Willemar Bluffs in 2003. The project was further supported during the sewer master planning process as a way to decommission the Willemar Bluffs section of forcemain by instead redirecting the wastewater flows through a new pump station up and over the Comox Peninsula directly overland to the CVWPCC.

In January 2017 the CVRD initiated an indicative design process for delivery of the Comox No. 2 project as a design-build project. In parallel with that work, several investigations were undertaken to resolve potential red flags associated with the project, including the condition of the foreshore forcemain that would remain in service, and the risk to local groundwater from the project.

At the October 2017 Comox Valley Sewage Commission meeting staff presented the results of these investigations, concluding that:

- Capital and lifecycle costs associated with the Comox No. 2 Pump Station would be significantly higher than previously understood.
- Addition of an inline booster style pump station like Comox No. 2 into the sewer conveyance system would increase the risk of overflow at the Courtenay and Jane Place Pump Stations.
- Installation of a new, direct overland forcemain from the Courtenay Pump Station to the CVWPCC could be a more cost effective solution over the long term.
- The condition of the foreshore forcemain, including the Willemar Bluffs section, is better than expected which has bought time to ensure the region implements the optimum solution.

Consequently, the Comox Valley Sewage Commission passed a motion directing staff to undertake a detailed analysis of alternatives and consult further with municipal staff and other stakeholders regarding possible alternative forcemain alignments from the Courtenay Pump Station to the CVWPCC.

### **Sewer Conveyance Planning Process Objectives**

Prior to recommending a sewer conveyance planning process, thought was first given to the primary objectives of the process. The recommended planning process must consider and balance the following objectives:

#### **1. Instill Confidence in the Process**

The process to date has highlighted the sensitivity and significant long term implications of sewer conveyance to the Comox Valley. Moving forward it is imperative that the CVSS service selects and implements the best long term solution for conveyance of wastewater flows from the Courtenay Pump Station and Jane Place Pump Station to the CVWPCC, with as wide a support as possible from the community and other stakeholders.

Given the nature and scale of the project there is no inexpensive, non-controversial solution. All feasible solutions will have real or perceived impacts on the community. It is crucial that the region follow a planning process that inspires confidence and buy-in for the outcome from all stakeholders.

#### **2. Provide Authorization for Required Borrowing**

The upgrades underway at the CVWPCC and biosolids composting facility due for completion in 2018 and 2019 will be consuming the majority of accumulated capital works

reserves, which means that the sewage conveyance solution, once selected, will require significant borrowing.

Authorization for this borrowing could be undertaken through a subsequent electoral assent process like an alternate approval process or referendum, or the planning process could be selected to include an embedded authorization mechanism.

### **3. Expedite Selection of a Sewer Conveyance Solution**

While the better than expected condition assessment results have bought time to undertake a planning process, an elevated risk of forcemain failure remains along Willemar Bluffs. Also, and arguably more pressing, the Courtenay Pump Station is at or over capacity during peak wet weather events. Either of these risks have the potential to result in significant releases of raw wastewater into the environment.

There are a range of available options for undertaking a planning process of this magnitude, each with advantages and disadvantages. Staff considered four options, listed below, the key points, advantages and disadvantages for each option are summarized in Appendix A.

#### **1. Business as Usual**

- a. Work with consultants, sewer advisory, and commission in parallel with multi-faceted consultation process, including a combination of public events and one on one meetings with jurisdictions and other stakeholders.

#### **2. Technical Advisory Committee (TAC)**

- a. Create a committee with representation from local government technical staff, agencies and other technical stakeholders to guide selection of a preferred solution.

#### **3. TAC and Public Advisory Committee (TACPAC)**

- a. Same as TAC, but with addition of a public advisory committee (PAC) to pull together all non-technical stakeholders into a single group.

#### **4. Liquid Waste Management Plan (LWMP)**

- a. A multi-phase process similar to TACPAC, but following a formal and comprehensive technical and consultative process laid out by the province, and with each phase followed by lengthy provincial review.

The LWMP process has strong merits for consideration as the planning process for sewer conveyance. It incorporates a robust consultation process guided by the province, embedded authorization for borrowing, and the ability to include authorization for upgrades to the CVWPCC already underway. The strength and rigor of the consultation process, along with the final stamp of approval by the independent provincial review would provide the highest level of stakeholder confidence in the outcome. Appendix B provides the typical staged process for a LWMP.

However, the LWMP process comes along with at least an additional year delay above what would be expected from following a focused TACPAC process. See Appendix C for a comparison of timelines between the TACPAC and LWMP options. With the reduced but still elevated risk of forcemain failure on Willemar Bluffs and the risk of overflow at the Courtenay Pump Station, that delay is likely unacceptable for the conveyance portion of a possible LWMP scope.

The preferred option is to undertake a LWMP process for all CVSS works, and then split the conveyance component (will vary depending on outcome of the planning process, but assumed to include the full conveyance solution – forcemain and pump station upgrades) out of the LWMP process once the consultative stage has selected the preferred conveyance solution. The borrowing for the selected conveyance solution would be achieved through an alternate approval process or referendum, and the LWMP would continue to completion for authorization of the remaining key

elements of the CVSS capital and regulatory program. To avoid delaying implementation of a conveyance solution and resolution of the risks of sewer overflow or rupture, the LWMP scope would have to be focused and adhered to throughout the planning process.

This approach would involve creating a TAC with representation from local government technical staff, agencies and other technical stakeholders and a PAC including representatives from all non-technical stakeholders groups. Together the TAC and PAC would help guide selection of a preferred solution and should provide a similar level of confidence in the recommended conveyance solution approaching that of the LWMP, but in a much shorter time frame. An electoral assent process undertaken immediately after the consultation focused first and second stage of the LWMP process, while still fresh in the community's minds, should have a good probability of success.

Continuing with completion of the LWMP for other elements of the CVSS capital and regulatory program will:

- Facilitate regulatory approvals for CVWPCC upgrades;
- Support strong grant applications for the associated infrastructure projects; and
- Over the longer term, an approved LWMP (kept up to date with the required updates every five years) will provide authorization for borrowing required for latter phases of infrastructure expansion.

### **Next Steps**

Should the Comox Valley Sewage Commission approve staff's recommendation to develop the TOR for a LWMP, TAC and PAC, staff will report back to the commission in March with the TOR and engage an engineering consulting firm to help guide the technical side of the planning process. The consultation process would be led by the CVRD with support from Zinc Strategies and the technical consultant.

### **Policy Analysis**

The CVRD operates a sewerage service primarily for the City of Courtenay and Town of Comox, established by Bylaw No. 2541, being the "Comox Valley Sewerage Service Establishment Bylaw No. 2451, 2003".

At its October 24, 2017 meeting the Comox Valley Sewage Commission approved the following recommendations:

*THAT a detailed analysis of alternative forcemain alignment options be performed and compared to the Comox No. 2 project;*

*AND THAT the Comox Valley Regional District consult with the local municipalities, the K'ómoks First Nations, the public and other stakeholders regarding alternative forcemain alignments from the Courtenay Pump Station to the Comox Valley Water Pollution Control Center;*

*AND THAT the Comox Valley Regional District identify and pursue grant funding opportunities to help reduce the financial impact of a solution to decommissioning the Willemar Bluffs forcemain;*

*AND FINALLY THAT the results of the alternative analysis and consultation on alternative forcemain alignments be brought back to the Comox Valley Sewage Commission to inform a final decision on selection of a solution to decommission the Willemar Bluffs forcemain.*

### Options

The Comox Valley Sewage Commission has the following options:

1. Direct staff to develop the TOR for a LWMP, TAC and PAC to help guide selection of a sewer conveyance planning solution and provide authorization for borrowing and regulatory measures required for the CVSS over the next ten years.
2. Direct staff to develop a TOR for a TAC and PAC focused approach to guide selection of a sewer conveyance solution.

The LWMP process incorporates a robust consultation process guided by the province, will allow for the extraction of the sewer conveyance solution from the planning process for a separate embedded authorization for borrowing, and provide the ability to include authorization for upgrades to the CVWPCC already underway. The strength and rigor of the consultation process, along with the final stamp of approval by the independent provincial review would provide the highest level of stakeholder confidence in the outcome. Staff recommend option No. 1.

### Financial Factors

Reserve funds will be drawn to minimum levels to help fund capital projects over the next 10 years and additional new debt will be required to help bridge the gap. Borrowing of funds will require approval through either an alternate approval process or LWMP process. The amount of new debt anticipated will be reliant upon the recommended conveyance option.

The budgeted cost to complete the engineering analysis for conveyance options is \$200,000 and is included within the 2018-2022 financial plan. Staff will be seeking to identify and respond to all grant funding opportunities to minimize impacts to service users.

### Legal Factors

None.

### Citizen/ Public Relations

As part of the proposed approach significant public consultation will be completed. Public review of the draft report will be completed at each stage of the project with public feedback being incorporated into the subsequent phases. The timing of the public consultation is outlined within the LWMP flow chart attached as Appendix B. Consultation will be supported by the technical consultant and Zinc Strategies.

### Attachments:

- Appendix A – “Planning Process Options”
- Appendix B – “LWMP Process Flow Chart”
- Appendix C – “Comparative Planning Process Schedules”

**Appendix A- Sewer Conveyance Planning Options**

<b>Planning Options</b>	<b>Description</b>	<b>Advantages</b>	<b>Disadvantages</b>
Business as Usual (BAU)	Work with consultants, sewer advisory and commission in parallel with multi-faceted consultation process, including a combination of public events and one on one meetings with jurisdictions and other stakeholders.	<ul style="list-style-type: none"> <li>• Fastest process.</li> </ul>	<ul style="list-style-type: none"> <li>• Given recent history of process, will not necessarily provide strong confidence in the outcome.</li> <li>• Would be followed by separate electoral assent process for associated borrowing.</li> </ul>
Technical Advisory Committee (TAC)	Create a committee with representation from local government technical staff, agencies and other technical stakeholders to guide selection of a preferred solution.	<ul style="list-style-type: none"> <li>• Inclusion of more brainpower increases certainty of selecting the best solution.</li> <li>• Developed with the right terms of reference and membership would improve public and stakeholder buy-in to solution.</li> </ul>	<ul style="list-style-type: none"> <li>• Added committee and process will result in a longer process than BAU</li> <li>• Pulls all technical stakeholders into a single committee, but still requires consultation with public and other non-technical stakeholders one on one.</li> <li>• Would be followed by separate electoral assent process for associated borrowing.</li> </ul>
TAC and Public Advisory Committee (PAC) (TACPAC)	Same as TAC, but with addition of a PAC to pull together all non-technical stakeholders into a single group.	<ul style="list-style-type: none"> <li>• Same as TAC but also streamlines the public consultation process and increases likelihood of community support for preferred solution.</li> </ul>	<ul style="list-style-type: none"> <li>• As with TAC, added committee and process will result in a longer process than BAU – but having all non-technical stakeholders together could slightly speed up the process.</li> <li>• As with BAU and TAC, would be followed by alternate approval process.</li> </ul>

**Appendix A- Sewer Conveyance Planning Options**

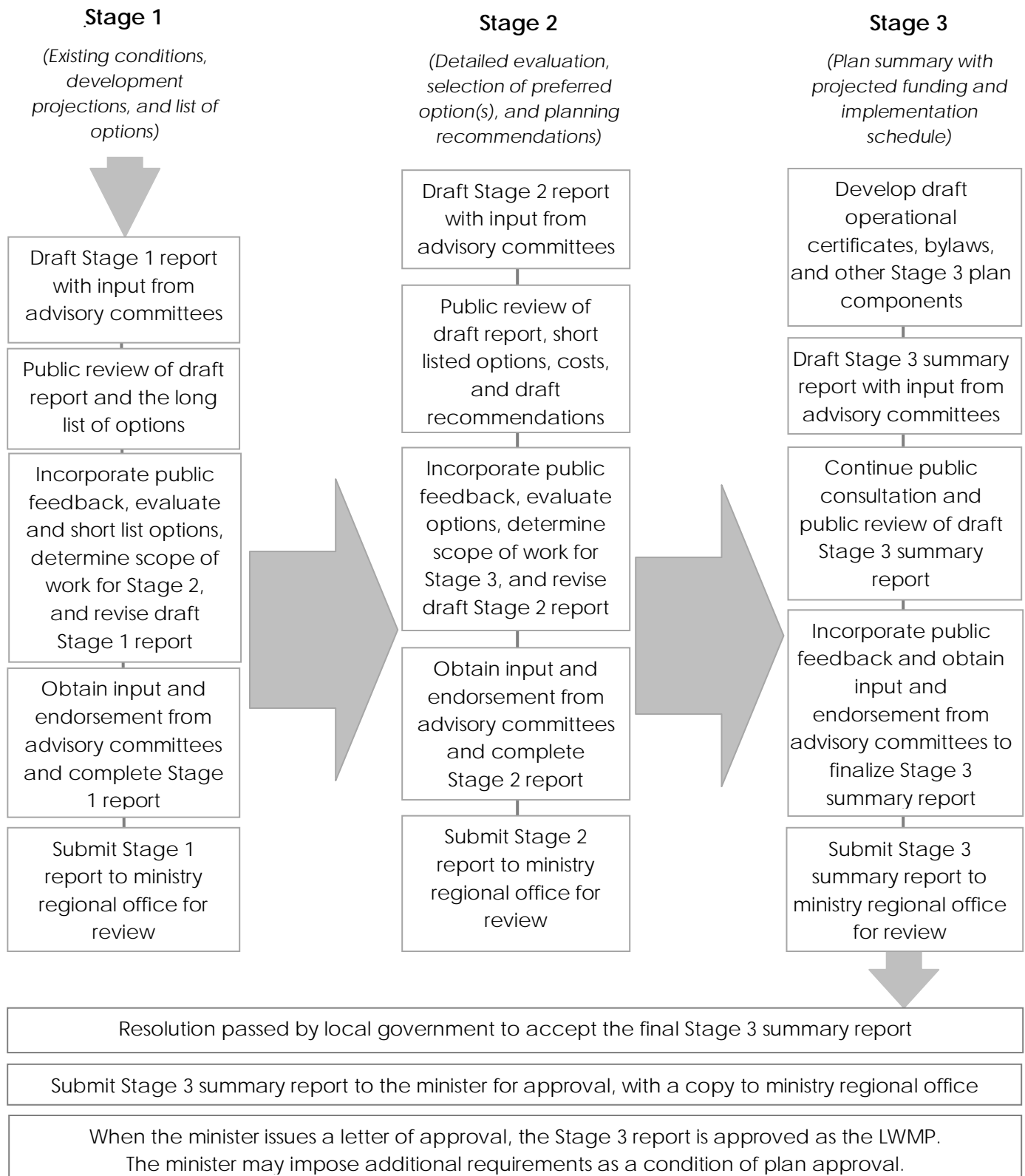
Planning Options	Description	Advantages	Disadvantages
<p align="center">Liquid Waste Management Plan (LWMP)</p>	<p>A multi-phase process similar to TACPAC, but following a formal and comprehensive technical and consultative process laid out by the province, and with each phase followed by lengthy provincial review.</p>	<ul style="list-style-type: none"> <li>• Culminates in an approved plan that can be used to authorize bylaws relating to implementation of the plan, including borrowing required for associated capital projects.</li> <li>• Scope of planning process could be expanded to include authorizations required for the Comox Valley Water Pollution Control Centre (CVWPCC) effluent quality driven upgrades currently planned for 2019/2020.</li> <li>• Includes embedded authorizations for environmental impact study and registration of the CVWPCC under the municipal wastewater regulation.</li> </ul>	<ul style="list-style-type: none"> <li>• Need for provincial reviews of each of the three phases adds at least 18 months to the planning process, even when duration of sequential electoral assent process required by TACPAC is considered.</li> </ul>



### Diagram 1: Typical Three-Stage Planning Process

(Refer to Section 4.4 of the Guidelines for the Three Stage Process)

- Local government initiates plan voluntarily OR minister directs local government to prepare a plan
- Local government passes a resolution
- Local government establishes advisory committees and informs the ministry and other agencies
- Determine scope of work for Stage 1 and initiate public consultation process



	2018				2019				2020				2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Option 1 - TAC PAC or 'LWMP-lite'</b>																								
Engage technical consultant	█																							
Form Technical and Public Advisory Committees	█	█																						
Identify long list		█																						
Reduce to short list			█																					
Selection of preferred solutions				█																				
AAP or referendum for borrowing for all CVSS capital projects					█																			
Detailed design for all CVSS capital projects						█	█	█																
Construction for all CVSS capital projects									█	█	█	█	█	█										
Operation for all CVSS capital projects															█	█	█	█	█	█	█	█	█	

<b>Option 2 - LWMP for entire CVSS, conveyance broken our for separate assent</b>																								
	2018				2019				2020				2021				2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Engage technical consultant	█																							
Form Technical and Public Advisory Committees & LWMP TOR	█	█																						
Identify long list		█																						
Reduce to short list			█																					
Selection of preferred solutions				█																				
AAP or referendum for sewer conveyance					█																			
Detailed design and procurement of sewer conveyance						█	█	█																
Construction of sewer conveyance									█	█	█	█	█	█										
Operation of sewer conveyance															█	█	█	█	█	█	█	█	█	
Provincial review of stage 2 LWMP					█	█	█																	
Drafting stage 3 LWMP						█	█																	
Provincial review and approval of stage 3 LWMP							█	█	█															
Detailed design and procurement of remaining sewer projects									█	█	█	█												
Construction of remaining capital projects													█	█	█	█	█							
Operation of remaining sewer projects																	█	█	█	█	█	█	█	