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**Subject: CVRD Sanitary Forcemain – Marine and Inland Options Study**

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## Contents

1. Introduction .....	1
2. Environmental Features and Potential Environmental Risks .....	2
3. Regulatory Requirements and Reduced Risk Windows .....	5
4. Mitigating Impacts on Environmental Values .....	6
5. Conclusions .....	7
6. Disclaimer .....	7

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## 1. Introduction

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On July 19, 2019, wsp hired Current Environmental Ltd. to undertake a preliminary environmental constraints assessment for the proposed Inland Sanitary Forcemain alignment shown in Figure 1. This technical memorandum summarizes the following:

- Identify environmental features with the potential to be impacted by the proposed alignment;
- Highlight significant environmental risks;
- Identify permitting requirements and respective durations and timelines associated with each;
- Comment on crossing of any environmental features or waterbodies (e.g. wetlands, creeks etc.).

Potential impacts to First Nations and heritage resources are not addressed in this technical memorandum.



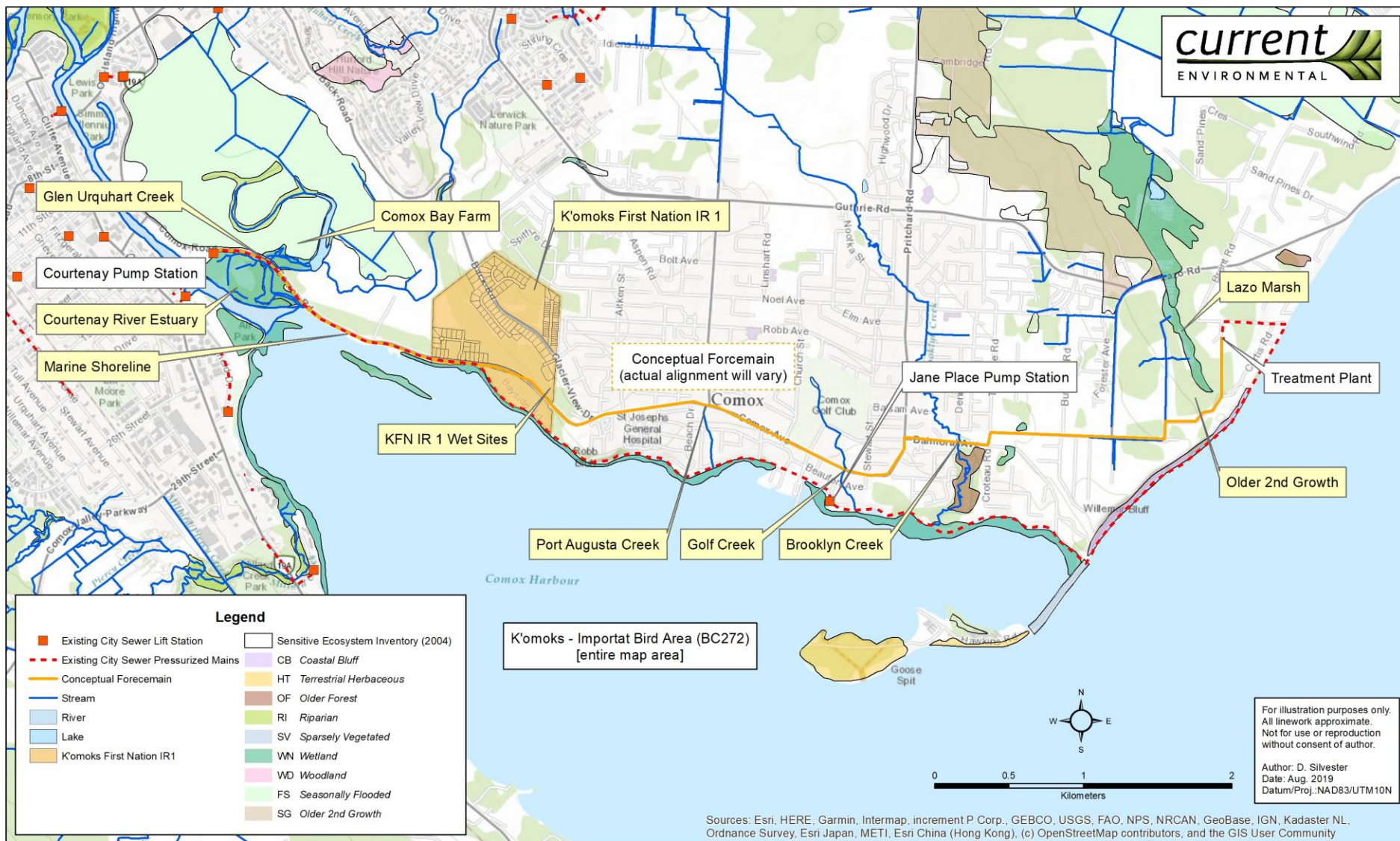
**Figure 1. Conceptual overland sanitary forcemain re-alignment between Courtenay Pump Station and the Comox Valley Wastewater Pollution Control Center (adapted from WSP).**

## 2. Environmental Features and Potential Environmental Risks

As shown in Figures 1 & 2 an estimated 8 km long overland sanitary forcemain is being considered between the existing Courtenay Pump Station and Comox Valley Wastewater Pollution Control Center (CVWPCC). Heading east from the Courtenay Pump Station on Comox Road, the proposed alignment would parallel an estimated 2 km of sensitive habitat including Comox Bay Farm, Courtenay River Estuary, the lower reach of Glen Urquhart Creek and wet sites known to occur on the east end of #1 K'omoks Indian Reserve. The overland alignment lies partially within the 1.3 km<sup>2</sup> Lazo Marsh-Northeast Comox Wildlife Management Area (BC Conservation Lands Program, 2019)<sup>1</sup> and entirely within the 561 km<sup>2</sup> K'omoks Important Bird Area (Canada's Important Bird and Biodiversity Areas Program, 2019)<sup>2</sup>, which includes Comox Bay Farm near Courtenay Pump Station and Courtenay River estuary along Comox Road. Other sensitive watercourses that occur along the 8 km overland alignment include Port Augusta Creek, Golf Creek, Brooklyn Creek and Lazo Marsh. Existing patches of forest stands and thickets are also expected to be encountered along the inland alignment that support wildlife habitat for ungulates and avians.

<sup>1</sup> BC Conservation Lands Program, <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-habitats/conservation-lands/wma/wmas-list/lazo-marsh-north-east-comox>, accessed on July 31, 2019

<sup>2</sup> Canada's Important Bird and Biodiversity Areas Program, <https://www.ibacanada.ca/site.jsp?siteID=BC272>, accessed on Jul 31, 2019



**Figure 2. Overview environmentally sensitive areas located along the conceptual overland sanitary forcemain re-alignment between Courtenay Pump Station and the Comox Valley Wastewater Pollution Control Center.**

Significant environmental risks anticipated during construction of the sanitary forcemain include release of deleterious substances to adjacent sensitive habitat, disturbance to wildlife including avians and amphibians and potential harm to fish and fish habitat. Reduced risk timing windows discussed in Section 3 will apply to work near some sensitive habitats. Table 1 summarizes environmental features and potential environmental risks associated with the proposed overland routing shown in Figure 2.

**Table 1. Summary of environmental features and potential risks**

<b>Chainage (approximate)</b>	<b>Feature(s)</b>	<b>Potential Risks</b>
0 km @ Courtenay PS	<ul style="list-style-type: none"> <li>• Courtenay River estuary</li> <li>• Comox Bay Farm (controlled by Ducks Unlimited Canada and other conservation partners)</li> </ul>	<ul style="list-style-type: none"> <li>• Release of deleterious substances to adjacent sensitive habitat</li> <li>• Impacts to nesting avians during typical breeding period (Mar 1 – Aug 31)</li> <li>• Impacts to seasonal occurring avian species associated with K'omoks (BC272) IBA, including Comox Bay Farm</li> </ul>
0 – 2 km	<ul style="list-style-type: none"> <li>• Courtenay River estuary</li> <li>• Glen Urquhart Cr</li> <li>• wet sites at east end of #1 IR</li> <li>• K'omoks (BC272) IBA</li> <li>• Comox Bay Farm</li> </ul>	<ul style="list-style-type: none"> <li>• Release of deleterious substances to adjacent sensitive habitat</li> <li>• Impacts to nesting avians during typical breeding period (Mar 1 – Aug 31)</li> <li>• Impacts to migrating and rearing salmonids</li> <li>• Impacts to seasonal occurring avian species associated with K'omoks (BC272) IBA, including Comox Bay Farm</li> </ul>
2 – 6 km	<ul style="list-style-type: none"> <li>• Port Augusta Cr (~km 3.8)</li> <li>• Golf Cr (~km 4.6)</li> <li>• Brooklyn Cr (~km 5.6)</li> </ul>	<ul style="list-style-type: none"> <li>• Release of deleterious substances to adjacent sensitive habitat</li> <li>• Impacts to nesting avians (Mar. 1 – Aug. 31) and raptors (Jan. 1 – Aug. 31) during typical breeding periods.</li> <li>• Impacts to migrating and rearing salmonids</li> </ul>
6 – 8 km	<ul style="list-style-type: none"> <li>• Lazo Marsh-Northeast Comox Wildlife Management Area (127 ha)</li> <li>• other existing forest and thicket stands</li> </ul>	<ul style="list-style-type: none"> <li>• Release of deleterious substances to adjacent sensitive habitat</li> <li>• Impacts to nesting avians (Mar. 1 – Aug. 31) and raptors (Jan. 1 – Aug. 31) during typical breeding periods.</li> <li>• Impacts to at-risk amphibians</li> <li>• Impacts to wildlife species associated with Lazo Marsh-Northeast Comox Wildlife Management Area</li> </ul>
8 km @ CVWPCC	Existing forest and thicket stands	Impacts to nesting avians (Mar. 1 – Aug. 31) and raptors (Jan. 1 – Aug. 31) during typical breeding periods.

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### 3. Regulatory Requirements and Reduced Risk Windows

Construction of the proposed sanitary forcemain alignment must be carried out in compliance with all applicable Federal, Provincial, and Municipal environmental legislation and regulations. The anticipated applicable Laws and Regulations would include, but are not limited to the most recent versions of the following:

- Federal Fisheries Act
- Federal Species at Risk Act
- Federal Migratory Birds Convention Act
- BC Wildlife Act
- BC Water Sustainability Act
- BC Heritage Conservation Act
- BC Weed Control Act
- BC Environmental Management Act
- BC Contaminated Sites Regulation
- Comox Valley Regional District (CVRD) Aquatic and Riparian Habitat Development Permit

Works below high-water mark of any non-tidal stream may trigger a *BC Water Sustainability Act Section 11 Notification or Approval* and may also trigger *Request for Review by Fisheries and Oceans Canada*. The anticipated non-tidal stream crossings include Glen Urquhart Creek, Port Augusta Creek, Golf Creek, Brooklyn Creek and Lazo Marsh. Any trenching work adjacent to Comox Rd that encroaches below high-water mark of Courtenay River estuary would trigger a *Request for Review* under various *Sections* of the *Federal Fisheries Act*.

Works in and around other sensitive habitat should be scheduled to avoid potential contraventions of the Provincial *Wildlife Act* or Federal *Migratory Birds Convention Act* and *Species-at-Risk Act*. Work to clear trees and vegetation within right-of-ways or abate hazard trees within adjacent forested habitat should be scheduled to occur outside the typical avian breeding season (Mar. 1 – Aug. 31) or preceded by appropriate bird bio-inventory work to identify nesting species, chronology and mitigation measures to avoid disturbance to active nests.

Table 2 summarizes the anticipated permits required for various project components and the applicable reduced risk timing windows.



**Table 2. Summary of environmental regulatory requirements and reduced risk timing windows**

Project component	Permit(s) Required	Applicable Regulation(s)	Reduced risk timing window
Vegetation clearing (riparian)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	BC Water Sustainability Act – Section 11 Notification, BC Wildlife Act, Federal Migratory Birds Convention Act, CVRD ARHDP	Mar 1 – Aug 31 (for nesting avians)
Vegetation clearing (non-riparian) <sup>1</sup>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	BC Wildlife Act, Federal Migratory Birds Convention Act	Mar 1 – Aug 31 (for nesting avians)
Work in/near watercourses (non-tidal) <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	BC Water Sustainability Act – Section 11 Notification, Fisheries and Oceans Canada - Request for Review, CVRD ARHDP	Jun 15 – Sep 15 (for Coho) <sup>3</sup>
Work below high-water mark (estuarine) <sup>4</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fisheries and Oceans Canada - Request for Review, CVRD ARHDP	Aug 1 – Aug 10 (for adult migrants in Courtenay River Estuary)

Notes:

1. Assumes mitigation measures in place to avoid destruction of avian nests such as avoiding clearing during breeding period or completing pre-clearing avian nest surveys as needed. Provincial permits would be required for unavoidable destruction of eggs or nests.
2. Anticipated non-tidal watercourse crossings include Glen Urquhart Creek, Port Augusta Creek, Golf Creek, Brooklyn Creek and Lazo Marsh.
3. Different timing windows may apply for stream reaches that are known to support other salmonid species such as cutthroat trout, which is Aug 1 – Sep 30.
4. Federal review by DFO would be required for any work below high-water mark of Courtenay River estuary adjacent to Comox Rd.

#### 4. Mitigating Impacts on Environmental Values

Design, planning, and construction of the CVRD Sanitary Forcemain should follow *Procedures for Mitigating Impacts on Environmental Values* (BC Ministry of Environment, 2014)<sup>3</sup> where a mitigation hierarchy for potential impacts will be followed. The key components of the mitigation hierarchy are as follows:

1. Avoid
2. Minimize
3. Restore on-site
4. Offset

<sup>3</sup>MOE (2014). *Procedures for Mitigating Impacts on Environmental Values (Environmental Mitigation Procedures)*, [https://www2.gov.bc.ca/assets/gov/environment/natural-resource-policy-legislation/environmental-mitigation-policy/em\\_procedures\\_may27\\_2014.pdf](https://www2.gov.bc.ca/assets/gov/environment/natural-resource-policy-legislation/environmental-mitigation-policy/em_procedures_may27_2014.pdf), Accessed on July 31, 2019

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## 5. Conclusions

Based on this preliminary environmental assessment, the construction and operation of the CVRD Sanitary Forcemain as shown in Figures 1 & 2 is expected to be completed without significant environmental effects. Any potential adverse effects can be mitigated to result in no, or negligible impacts. Measures should be in place to respond to accidents and malfunctions that have the potential to affect the environment. Provided that this project follows the mitigation hierarchy described in Section 4, temporary encroachment and permanent alterations of the sensitive habitats identified in this technical memorandum are not expected to have an adverse effect on the environment.

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## 6. Disclaimer

This report was prepared exclusively for Comox Valley Regional District by Current Environmental Ltd. The quality of information, conclusions and estimates contained herein is consistent with the level of effort expended and is based on: i) information available at the time of preparation; ii) data collected by the author, technical personnel and/or supplied by outside sources; and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended to be used by Comox Valley Regional District only, subject to the terms and conditions of its contract or understanding with wsp and Current Environmental Ltd. Other use or reliance on this report by any third party is at that party's sole risk.



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Current Environmental Ltd.