


## 2021 DIKE INSPECTION CHECKLIST

Dike No. (From database*; formerly "Dike GPS No.): 277	Dike Name (From database*): Erie Creek Dike
Diking Authority: Village of Salmo	Local Authority under EPA: Village of Salmo
Water Course: Erie Creek	Dike Section: All
Date Inspected: Sept 16, 2021	Signed: 

\* Flood Protection Works Database:

[https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/integrated-flood-hazard-mgmt/dikes\\_listed\\_by\\_ownerauthority.pdf](https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/integrated-flood-hazard-mgmt/dikes_listed_by_ownerauthority.pdf)

A. Is the contact person information correct in the Flood Protection Database\*?

√

Yes

☐

No

If no, please provide details below:

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B. Are all of the information for your dike(s) correct in the Flood Protection Database\*?

√

Yes

☐

No

If no, please provide details below (if necessary, attached database sheets with mark-up):

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C. Has the person inspecting the dike reviewed the "Flood Protection Works Inspection Guide", or is familiar with its contents?

√

Yes

☐

No

If not, please refer to "Flood Protection Works Inspection Guide" (2000) for a detailed guide to dike inspection and reporting:

[http://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/integrated-flood-hazard-mgmt/fld\\_prot\\_insp\\_gd.pdf](http://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/integrated-flood-hazard-mgmt/fld_prot_insp_gd.pdf)

## 2021 DIKE INSPECTION CHECKLIST

D. Has the dike crest elevation been surveyed within the last 10 years?

☐ Yes

☒ No

If yes, when was the last survey (year)? \_\_\_\_\_

It is highly recommend that the Diking Authority survey the dike crest at least once every 10 years, to identify potential dike settlement and/or low spots that are not easily identified by visual inspection

E. Was the dike notably damaged in a high flow event this year?

☐ Yes

☒ No

Did the dike damage result in imminent threat of flooding?

☐ Yes

☒ No

If yes to any of the 2 questions above, please briefly describe the damage (location and damage description)

Please describe the actions that were taken to address the damage. If no actions were taken yet, what is the plan?

This next part of the checklist is organized into 5 sections, as follows:

1. Access
2. Dike crest, slope, and fill
3. Bank and erosion protection
4. Appurtenant works
5. Vegetation management

## 2021 DIKE INSPECTION CHECKLIST

### 1. ACCESS - Any obstruction, deterioration or damage to dike access? (access routes, ramps, and gates)

	YES	NO ***	N/A
		√	
<p>Location(s)**:</p> <p>Summary of Issues: No Deficiencies Observed</p> <p>Maintenance Recommendations:</p> <p>When will Recommendations be Completed:</p>			
<ul style="list-style-type: none"> <li>Unauthorized construction or activities (excavations, utilities, structures)</li> </ul>	√		
<p>Location(s)**:</p> <p>Loc. 15 – STA 1+300-STA 1+460</p> <p>Loc. 16 – STA 0+500-STA 1+650</p> <p>Summary of Issues: At locations above residents have constructed fences, gardens, and other structures along dike crest. These structures prevent access to the dike for inspections and maintenance.</p> <p>Maintenance Recommendations: Property owners have been advised that structures are prohibited on dike right of way. Property owners have been advised that emergency removal of structures, if undertaken, will be charged to property owners.</p> <p>Coordinate removal with property owners where appropriate.</p> <p>Since the 2020 inspection some structures, particularly behind properties along Ninth Street have been removed although others remain.</p> <p>When will Recommendations be Completed: Ongoing</p>			

√ Attached photos or sketch with corresponding reference in the checklist (e.g., photo 1...etc) for deficiencies observed – Section 1

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## 2021 DIKE INSPECTION CHECKLIST

### 2. DIKE CREST, SLOPE, AND FILL

#### Any serious issues observed of the following?

	YES	NO <sup>***</sup>	N/A
<ul style="list-style-type: none"> <li>Dike Crest (ruts, loss of surfacing material, cracking)</li> </ul>		√	
<p>Location(s):</p> <p>Summary of Issues: No Deficiencies Observed</p> <p>Maintenance Recommendations:</p> <p>When will Recommendations be Completed:</p>			
<ul style="list-style-type: none"> <li>Settlement, slumping, sink holes (dike fill and/or slope)</li> </ul>	√		
<p>Location(s): Loc. 6 – STA 0+230m Loc. 8 – STA 0+410m</p> <p>Summary of Issues: Loc. 6 – Localized settlement of dike crest Loc. 8 – Localized settlement (low point) behind 1003 – 1005 Ninth St</p> <p>Maintenance Recommendations: Dike crest should be restored to flood design level where required as per Rip Rap Design and Construction Guidelines, BC Ministry of Environment, Lands, and Parks, March 2000.</p> <p>During periods of anticipated high water support sandbagging efforts as required</p> <p>When will Recommendations be Completed: Unknown</p>			
<ul style="list-style-type: none"> <li>Slope instability (slides, sloughs, toe or slope bulges)</li> </ul>	√		
<p>Location(s): Loc. 11 - STA 0+690</p> <p>Summary of Issues: (5) Lock Blocks have slumped and are partially exposed at the crest of the dike and the dike wall is over steep (approximately ¾H:1V slope) at this location.</p> <p>Maintenance Recommendations: The lock blocks should be excavated to locations east and west of the exposed blocks. The alignment of the lock blocks should be reset to the center of the top of the dike and the slope restored to a 2H:1V slope along with installation of geotextile and additional rip rap.</p> <p>When will Recommendations be Completed: This work should be prioritized for the construction season of 2022, budget allowing.</p>			

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## 2021 DIKE INSPECTION CHECKLIST

<ul style="list-style-type: none"> <li>Seepage, piping, boils</li> </ul>	<b>YES</b>	<b>NO<sup>***</sup></b>	<b>N/A</b>
		√	
Location(s): Summary of Issues: No Deficiencies Observed Maintenance Recommendations: When will Recommendations be Completed:			
<ul style="list-style-type: none"> <li>Animal Damage (rodents/beavers, animal burrows, cattle...etc., on crest and/or slope)</li> </ul>	<b>YES</b>	<b>NO<sup>***</sup></b>	<b>N/A</b>
		√	
Location(s): Summary of Issues: No Deficiencies Observed Maintenance Recommendations: When will Recommendations be Completed:			
<ul style="list-style-type: none"> <li>Significant flood levels, loss of freeboard (overtopping or flood reaching within 0.6 m below the crest in the last 12 months)</li> </ul>	<b>YES</b>	<b>NO<sup>***</sup></b>	<b>N/A</b>
		√	
Location(s): Summary of Issues: No Deficiencies Observed Maintenance Recommendations: When will Recommendations be Completed:			

√ Attached photos or sketch with corresponding reference in the checklist (e.g., photo 1...etc) for deficiencies observed– Section 2

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## 2021 DIKE INSPECTION CHECKLIST

### 3. BANK/EROSION PROTECTION

**Any serious issues observed of the following?**

	YES	NO <sup>***</sup>	N/A
<ul style="list-style-type: none"> <li>Bank Protection loss or displacement (steep slopes, beaching, scarping, weathering)</li> </ul>	√		
<p>Location(s): Loc. 2 – STA 0+060m (Priority for Maintenance)</p> <p style="padding-left: 40px;">Loc. 8 – STA 0+410m (Priority for Maintenance)</p> <p style="padding-left: 40px;">Loc. 12 – STA 0+825m</p> <p style="padding-left: 40px;">Loc. 14 – STA 0+950 – 1+165M</p> <p>Summary of Issues: Location 2 is currently awaiting permit approval to be corrected.</p> <p>Location 8 is over steep and shows signs of localized erosion.</p> <p>Locations 12 and 14 are stretches of the dike that were never properly armoured.</p> <p>Maintenance Recommendations: Location 2 is anticipated to be resolved before freshet 2022.</p> <p>Location 8 should be prioritized during the next 1-3 year window of dike maintenance.</p> <p>Locations 12 and 14 should be monitored during periods of high water.</p> <p>When will Recommendations be Completed: Ongoing.</p>			
<ul style="list-style-type: none"> <li>Erosion (toe scour, bed degradation, outflanking)</li> </ul>	√		
<p>Location(s): Loc. 8 – STA 0+410m</p> <p style="padding-left: 40px;">Loc. 13 – STA 0+850</p> <p>Summary of Issues: Loc. 8 - Localized erosion of dike armouring</p> <p style="padding-left: 40px;">Loc. 13 - Localized scour beneath concrete apron near highway overpass bridge</p> <p>Maintenance Recommendations: Regular monitoring of locations for further erosion and scour.</p> <p>Location 8 should be prioritized during the next 1-3 year window of dike maintenance and re-armoured per Rip Rap Design and Construction Guidelines, BC Ministry of Environment, Lands, and Parks, March 2000.</p> <p>When will Recommendations be Completed: Unknown</p>			

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<ul style="list-style-type: none"> <li>Changing Channel Flow Patterns (channel infilling, gravel bars, log or ice jam)</li> </ul>	<b>YES</b>	<b>NO<sup>***</sup></b>	<b>N/A</b>
		√	
Location(s): Summary of Issues: No Deficiencies Observed Maintenance Recommendations: When will Recommendations be Completed:			

### 4. APPURTENANT WORKS

<ul style="list-style-type: none"> <li>Flood Boxes/Pump stations (inlet/outlet channels, gate operation, trash racks, debris, erosion, corrosion, structure, mechanical components)</li> </ul>	<b>YES</b>	<b>NO<sup>***</sup></b>	<b>N/A</b>
		√	
Location(s): Summary of Issues: No Deficiencies Observed Maintenance Recommendations: When will Recommendations be Completed:			

<ul style="list-style-type: none"> <li>Culverts/Discharge Pipes (breaks, holes, cracks, corrosion, deterioration)</li> </ul>	<b>YES</b>	<b>NO<sup>***</sup></b>	<b>N/A</b>
		√	
Location(s): Summary of Issues: No Deficiencies Observed Maintenance Recommendations: When will Recommendations be Completed:			

Attached photos with corresponding reference in the checklist (e.g., photo 1...etc) for deficiencies observed— Section 4

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## 2021 DIKE INSPECTION CHECKLIST

### 5. VEGETATION MANAGEMENT

	YES	NO ***	N/A
<ul style="list-style-type: none"> <li>Vegetation hampers or prevents access?</li> </ul>	√		
<p>Location(s): Loc. 8 - STA 0+410</p> <p style="padding-left: 40px;">Loc. 9 – STA 0+470</p> <p style="padding-left: 40px;">Loc. 15 – STA 1+300 – STA 1+460</p> <p style="padding-left: 40px;">Loc. 16 – STA 1+500 – 1+650</p> <p>Summary of Issues: Locations above have significant vegetation that hampers access to the dike, mostly in the form of trees and landscaping in homeowners' backyards.</p> <p>Maintenance Recommendations: Trees and vegetation should be removed.</p> <p>When will Recommendations be Completed: 2022 &amp; Ongoing</p>			
<ul style="list-style-type: none"> <li>Vegetation reduces visibility to dike toe on each side?</li> </ul>	√		
<p>Location(s): Loc. 1 - STA 0+025</p> <p style="padding-left: 40px;">Loc. 5 – STA 0+170</p> <p style="padding-left: 40px;">Loc. 8 - STA 0+410</p> <p style="padding-left: 40px;">Loc. 9 - STA 0+470</p> <p style="padding-left: 40px;">Loc. 12 - STA 0+825</p> <p style="padding-left: 40px;">Loc. 14 – STA 0+950 – STA 01+165</p> <p style="padding-left: 40px;">Loc. 15 – STA 1+300 – STA 1+460</p> <p style="padding-left: 40px;">Loc. 16 – STA 1+500 – 1+650</p> <p>Summary of Issues: Locations above have trees and vegetation that reduces visibility to either/both toe(s) of the dike.</p> <p>Maintenance Recommendations: Trees and vegetation should be removed.</p> <p>When will Recommendations be Completed: 2022 &amp; Ongoing</p>			

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<ul style="list-style-type: none"> <li>Trees in or near dike (within 2m from toe) with potential for uprooting?</li> </ul>	<b>YES</b>	<b>NO<sup>***</sup></b>	<b>N/A</b>
	√		
<p>Location(s): Loc. 8 - STA 0+410</p> <p style="padding-left: 40px;">Loc. 9 - STA 0+470</p> <p style="padding-left: 40px;">Loc. 14 – STA 0+950 – STA 01+165</p> <p style="padding-left: 40px;">Loc. 15 – STA 1+300 – STA 1+460</p> <p style="padding-left: 40px;">Loc. 16 – STA 1+500 – 1+650</p> <p>Summary of Issues: Locations above have trees within 2m from dike toe.</p> <p>Maintenance Recommendations: Trees within 2m of dike toe should be removed.</p> <p>When will Recommendations be Completed: 2022 &amp; Ongoing</p>			
<ul style="list-style-type: none"> <li>Annual/Multi-year vegetation management plan in place? (if yes, attach management plan to the report)</li> </ul>	<b>YES</b>	<b>NO<sup>***</sup></b>	<b>N/A</b>
		√	
<p>If not, please discuss how one will be put into place: No formal plan in place but the Village did undertake significant vegetation management during summer/fall 2021. The Village has expressed the intent to create a formal Vegetation Management Plan in 2022.</p>			

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# 2021 DIKE INSPECTION CHECKLIST

## Photos

Unauthorized Construction:



Photo 1 – Location 15



Photo 2 – Location 15

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## 2021 DIKE INSPECTION CHECKLIST

Slumping:



Photo 3 – Location 11



Photo 4 – Location 11

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# 2021 DIKE INSPECTION CHECKLIST

## Bank Erosion Protection:



Photo 5 – Location 2



Photo 6 – Location 8

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## 2021 DIKE INSPECTION CHECKLIST

### Vegetation Management:



Photo 7 – Location 14



Photo 8 – Location 12

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