



Development Permit

DP2401A (RDCK)

Date: May 6, 2024

Issued pursuant to Section 490 and 491 of the *Local Government Act*

1. This Development Permit is issued to the Regional District of Central Kootenay of Nelson, BC as the registered owner (hereinafter called the "Permittee") and shall only apply to those lands within the Regional District of Central Kootenay, in the Province of British Columbia legally described as LOTS 4, 5 and 6 DISTRICT LOT 2335 KOOTENAY DISTRICT PLAN 788 (PIDs 016-035-526, 016-035-542, and 016-035-861) as shown on the attached Schedules 1 and 2, forming part of this Permit, referred to hereafter as the "said lands".
2. This Development Permit is issued subject to compliance with all of the bylaws of the Regional District of Central Kootenay applicable thereto, except as specifically varied or supplemented by this Permit.
3. This Development Permit shall not have the effect of varying the use or density of land as specified in the applicable Zoning Bylaw of the Regional District of Central Kootenay, nor a Floodplain Specification under Section 524 of the *Local Government Act*.
4. The said lands have been designated 'Tourist Commercial (TC)' and are located within a Development Permit Area pursuant to the *Electoral Area 'A' Comprehensive Land Use Bylaw No. 2315, 2013* as amended.
5. The Permittee has applied to the Regional District of Central Kootenay to undertake trail and bridge works proposed within the riparian area of Crawford Creek, and said lands for this purpose. Pursuant to this Development Permit and subject to the terms and conditions herein contained, as well as all other applicable Regional District Bylaws, the Regional District of Central Kootenay hereby authorizes the use of the said lands for the above landscape works.
6. The Permittee is required to obtain approval in writing from the Regional District of Central Kootenay prior to the construction any new buildings, external additions to existing buildings or for any deviation from the development authorized under Section 5 of this Development Permit. Furthermore, the Permittee is hereby advised of the following requirements:
 - 6.1 The Regional District of Central Kootenay Building Department requires that the Permittee obtain a demolition permit and/or building permit prior to the removal of any existing buildings and structures, the renovation, expansion or alteration of any existing building and the construction of any new building.
 - 6.2 Development is authorized in accordance with the terms described in "*Crawford Creek Regional Park Trail and Bridge Upgrades - Riparian Assessment*" prepared by EcoLogic Consultants Ltd., dated March 26, 2024 hereinafter referred to as "The Report" and attached to this permit as Schedule 3. Compliance with all terms, conditions, guidelines and recommendations is required.
7. As a condition of the issuance of this Permit, the Regional District shall hold an irrevocable Letter of Credit submitted by the Permittee in the amount of \$4, 687.50 to ensure the landscaping and restoration requirements as set forth in Section 6 are completed and in accordance with the following provisions:
 - 7.1 A condition of the posting of the Letter of Credit is that should the Permittee fail to carry out the works and services as herein above stated, according to terms and conditions of this permit within the time

provided, the Regional District may use the Letter of Credit to complete these works or services by servants, agents or contractors, and any surplus shall be paid over to the Permittee. If the amount of funds is insufficient to cover the actual cost of completing the works, then the Permittee shall pay such deficiency to the Regional District immediately upon receipt of the Regional District's bill for same.

- 7.2 The Permittee shall complete the landscaping works required by this Permit prior to January May 6, 2026. Within this time period the required landscaping must be inspected and approved by the Regional District.
- 7.3 If the landscaping is not approved within this time period, the Regional District has the option of continuing to renew the Letter of Credit until the required landscaping is completed or has the option of drawing from the Letter of Credit to complete the required landscaping. In this event, the Regional District or its agents have the irrevocable right to enter into the property to undertake the required landscaping for which the Letter of Credit was submitted.
- 7.4 If the landscaping is approved within this time period without the Regional District having to draw the on the Letter of Credit, 90% of the original amount of the Letter of Credit shall be returned to the Permittee.
- 7.5 A hold back of 10% of the original amount of the Letter of Credit shall be retained until a final inspection is undertaken within 12 months of the date of the original inspection and approval was given to the landscaping. If the landscaping receives approval at final inspection, the 10% hold back will be returned to the Permittee. If after the final inspection, approval of the landscaping is not given, the Regional District has the option of continuing to renew the Letter of Credit until the required landscaping is approved or has the option of drawing on the Letter of Credit the funds to complete the required landscaping. In this event, the Regional District or its agents have the irrevocable right to enter onto the property to undertake the required landscaping for which the Letter of Credit was submitted.
8. The said lands shall be developed strictly in accordance with the terms and conditions of this Development Permit and the requirements of all applicable Regional District Bylaws as well as any plans and specifications which may, from time to time, be attached to this Permit shall form a part thereof.
9. In accordance with the Local Government Act, if the development authorized by this Development Permit is not commenced within two years of the date of this Permit, this Permit shall lapse.
10. In accordance with the Local Government Act, 'Notice' shall be filed in the Land Title Office that the said lands are subject to this Development Permit.
11. The terms of this Development Permit including subsequent amendments, are binding on all persons who acquire an interest in the said lands associated with this Permit.
12. It is understood and agreed that the Regional District has made no representations, covenants, warranties, guarantees, promises, or agreement (verbal or otherwise) with the Permittee other than those in this Development Permit. It is solely the responsibility of the Permittee to ensure that the requirements of all other applicable government agencies are satisfied.
13. This Development Permit does not constitute a building permit.
14. This Development Permit shall come into force and effect 14 days after the date of issuance unless a Waiver of Appeal is received from the Permittee at which time the Development Permit shall be deemed to be issued

upon receipt of the Waiver of Appeal. OR If a Notice of Appeal is received the Development Permit shall be suspended until such time as the Board of the Regional District of Central Kootenay has decided the Appeal.



For:

Sangita Sudan, General Manager of Development and Community Sustainability Services

May 14, 2024

Date of Approval (date of review and approval)

May 14, 2024

Date of Issuance (pending receipt of securities)

Schedule 1: Subject Property



REGIONAL DISTRICT OF CENTRAL KOOTENAY
Box 590, 202 Lakeside Drive,
Nelson, BC V1L 5R4
Phone: 1-800-268-7325 www.rdck.bc.ca
maps@rdck.bc.ca

Development Permit Areas

Environmentally Sensitive

Legend

- Residential Cluster
- RDCK Streets
- Cadastre
- Address Points

Map Scale:

1:9,028

Date: March 1, 2024



The mapping information shown are approximate representations and should only be used for reference purposes. The Regional District of Central Kootenay is not responsible for any errors or omissions on this map.

Schedule 2: Revegetation Plan Schematic

Figure 8.2-1. Revegetation area (bright green).

- **Bridge Replacement.** Any exposed soil outside of the trail base created by the bridge replacement will be seeded with native grass. Any required shrub removal will be compensated for in the proposed riparian planting along the new trail route.
- **New Trail Construction.** The 155m of new trail that will be construction within the SPEA along the south side of the pond will affect roughly 233m² of riparian habitat (entirely composed of invasive reed canary grass). To compensate for this disturbance, riparian plantings along the 155m of pond edge is proposed. The areas between the high-water mark of the pond and top of bank along the proposed trail route is approximately 690m².

The revegetation plan will include the harvest of live cottonwood, willow and red-osier dogwood stakes from appropriate nearby areas. Live stakes are cuttings made from existing vegetation when they are dormant (spring or fall) in a manner that will not affect the source plant. The live stakes will be planted in clusters in suitable locations along the riparian area adjacent to the new trail construction. A total of 250 live stakes is proposed.

Schedule 3: “Crawford Creek Regional Park Trail and Bridge Upgrades, Riparian Assessment” prepared by EcoLogic Consultants Ltd., dated March 26, 2024



Crawford Creek Regional Park Trail and Bridge Upgrades Riparian Assessment Report

PRESENTED TO:

Regional District of Central Kootenay
202 Lakeside Drive
Nelson, BC V1L 5R4

PRESENTED BY:

EcoLogic Consultants Ltd.
224 – 998 Harbourside Drive
North Vancouver, BC V7P 3T2

Prepared by:

Ryan Durand, M.Sc., R.P.Bio.

March 26, 2024

TABLE OF CONTENTS

Table of Contents.....	ii
List of Figures	iii
List of Tables.....	iii
List of Photos.....	iii
1. Project Overview.....	1
2. Methodology.....	2
3. Site Context.....	2
3.1 Ecological Communities	2
3.2 Species at Risk	2
3.3 Fish and Fish Habitat	3
3.4 Existing Development.....	3
3.5 Streamside Protection and Enhancement Area (SPEA).....	3
4. Proposed Development	1
4.1 Existing Trail Upgrades	1
4.2 Proposed New Trail	4
4.3 Bridge Replacement	5
5. Impact Assessment	7
5.1 Existing Trail Upgrades	7
5.2 Proposed New Trail	7
5.3 Bridge Replacement	7
6. Environmental Management	8
6.1 Nesting Bird Work Windows	8
6.2 Work in and Around Water	8
6.3 Oil and Fuels	9
6.4 Site Cleanup and Demobilization	9
6.5 Spill Response.....	9
6.6 Spill Reporting	11

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7.	Chance Finds	11
8.	Revegetation Plan	12
8.1	Existing Trail Upgrades	12
8.2	Proposed New Trail	12
8.3	Bridge Replacement	13
9.	Closure	13
	References	14

List of Figures

Figure 1-1.	Existing and Proposed Trails.	1
Figure 3.5-1.	Streamside Protection and Enhancement Area.	1
Figure 5.3-1.	Proposed bridge and abutment.....	7
Figure 8.2-1.	Revegetation area (bright green).	12

List of Tables

Table 3.2-1.	Species at Risk.	2
Table 5.6-1.	Externally Reportable Quantities for Commonly Used Substances.....	11

List of Photos

Plate 4.1-1.	Existing trail looking north.....	1
Plate 4.1-2.	Existing trail looking south.....	2
Plate 4.1-3.	Example of the trail construction system proposed by the East Shore Trail and Bike Association.....	3
Plate 4.2-1.	Proposed new trail location, looking west from the access road.....	4
Plate 4.2-2.	Proposed new trail location, looking west along the edge of the pond.....	5

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Plate 5.3-1. Existing bridge looking downstream. 6

Plate 5.3-2. Existing bridge looking upstream. 7

Disclosure

This report was prepared by Ryan Durand, M.Sc., R.P.Bio, a qualified environmental professional as per the Riparian Areas Protection Regulation (RAPR) and Regional District of Central Kootenay's Draft Standardized Terms of Reference for Riparian Assessment Report definitions. This report was prepared for, and at the expense of, the Regional District of Central Kootenay parks department, in accordance with the Riparian Areas Protection Regulation Technical Assessment Manual (Volume 1.1, Nov. 2019), to support a Development Permit.

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1. PROJECT OVERVIEW

Crawford Creek Regional Park is located on Kootenay Lake near the community of Crawford Bay. The park contains a variety of well-used trails, many of which were created before the regional park was formed, including trails located along old roads and spoils from the modified watercourses. The Regional District of Central Kootenay (RDCK) and East Shore Trail and Bike Association are planning to upgrade existing trails, create a new trail, and replace an old bridge (Figure 1-1).

The site description is 15941 Highway 3A, Lot 5 Plan NEP788 District Lot 2335 Kootenay District, PID: 016-035-542.

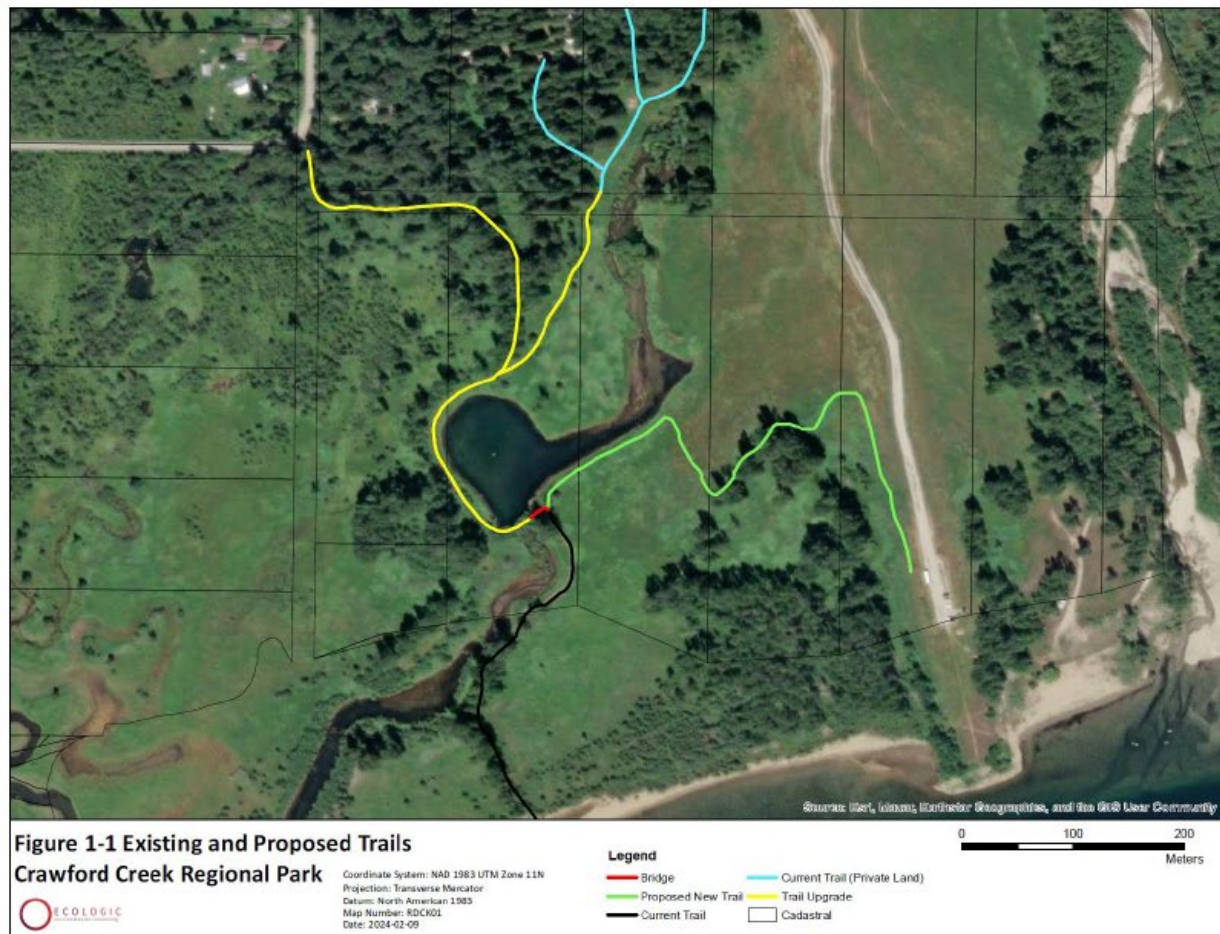


Figure 1-1. Existing and Proposed Trails.

2. METHODOLOGY

To determine the Streamside Protection and Enhancement Area (SPEA) for this project, the RAPR simple method was used as the trails and bridge are located in a park that has no permanent development (aside from trails), and the watercourses have permanent flows and are fish bearing.

A site visit was completed on April 5, 2023. Field work included an assessment of the planned trails, trail upgrades, and the existing bridge. As a comprehensive biophysical assessment (including ecosystem mapping, biodiversity inventory, and rare species inventory) was completed in 2020 (Durand and Ehlers), additional surveys were not completed for this project.

3. SITE CONTEXT

3.1 ECOLOGICAL COMMUNITIES

The proposed projects occur within a variety of habitat types, including modified areas (existing trails, old fields) modified wetlands, and the unknown stream (Durand and Ehlers 2020). The modified wetlands are old marsh and/or swamp communities that are now dominated by invasive reed canarygrass (*Phalarus arundinacea*).

3.2 SPECIES AT RISK

A total of 10 at risk species are known to occur in the park (Table 3.2-1; Durand and Ehlers 2020). Of these species, only Bobolink (*Dolichonyx oryzivorus*) occurs near the proposed project, as it is known to nest in the old hay fields to the north of the proposed new trail.

Table 3.2-1. Species at Risk.

Group	Scientific	English	Status
Bird	<i>Ardea herodias</i>	Great Blue Heron	B
Bird	<i>Botaurus lentiginosus</i>	American Bittern	B
Bird	<i>Chordeiles minor</i>	Common Nighthawk	SC
Bird	<i>Cygnus columbianus</i>	Tundra Swan (migration)	B
Bird	<i>Dolichonyx oryzivorus</i>	Bobolink	B (T)
Bird	<i>Hirundo rustica</i>	Barn Swallow	B
Fish	<i>Salvelinus confluentus</i>	bull trout	B
Invertebrate	<i>Anguispira kochi</i>	banded tigersnail	B
Invertebrate	<i>Cryptomastix mullani</i>	Coeur D'Alene Oregonian	B
Mammal	<i>Ursus arctos</i>	grizzly bear	B (SC)

B = provincially blue-listed. SC = COSEWIC Special Concern. T = COSEWIC Threatened.

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3.3 FISH AND FISH HABITAT

The unnamed stream (Habitat Wizard #340-243400-05100) has no information regarding fish presence. As there are no fish obstructions between the project site and the confluence with Beaver Creek (which is known to be fish bearing), it is assumed that the unnamed stream and pond are fish bearing. The unnamed stream and pond were modified in 1967 when the pond was constructed, and the stream dredged and widened (Durand and Ehlers 2020). As a result, much of the riparian area around the pond is elevated from dredging spoils and is grass dominated without significant shrub or tree cover.

The pond has a fine textured mineral soil substrate, and evidence of variable water levels. It has previously been dammed by beavers. The unnamed stream has a short section (~20m) of gravel substrate under the bridge, with the majority of the downstream sections comprised of deep dredged channels with fine mineral soil substrates and a series of active beaver dams.

3.4 EXISTING DEVELOPMENT

The only existing development, as defined by the RAPR, is the current trail system in the park.

3.5 STREAMSIDE PROTECTION AND ENHANCEMENT AREA (SPEA)

Using the simple assessment method, a SPEA of 30m was determined (Figure 3.5-1). This was determined as the aside from the existing trails, there is no limit to potential riparian vegetation, and the watercourses are considered to be permanent and fish bearing.



4. PROPOSED DEVELOPMENT

4.1 EXISTING TRAIL UPGRADES

Approximately 780m of existing trail will be upgraded. The trail follows old roads through the forested area on the north side of the park, branching at the pond and continuing south along the west side of the pond towards the lake (Figure 1-1). The trail branch runs to the northeast towards the private campground. Approximately 340m of the existing trail falls within the 30m SPEA (Figure 3.5-1).

The existing trail system was built on an old road system and is variable in terms of width and condition (Plates 4.1-1 and 4.1-2). Portions of the existing trail are overgrown, narrow and some edges are rough and failing. The proposed upgrades include using geotextiles and crushed gravel to make a consistent 1.5m wide trail, and plate tampers and other small equipment will be used to create a stable base (Plate 4.1-3).



Plate 4.1-1. Existing trail looking north.

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Plate 4.1-2. Existing trail looking south.

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Plate 4.1-3. Example of the trail construction system proposed by the East Shore Trail and Bike Association.

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4.2 PROPOSED NEW TRAIL

A new trail is proposed to start at the existing parking lot and run to the west and connect into the existing trail network (Figure 1-1). The first 425m of the trail will be built through a modified reed canarygrass dominated field (Plate 4.2-1) adjacent to stands of black cottonwood (*Populus balsamifera*). The last 155m of the trail runs along the edge of the old, constructed pond before tying into the existing trail network at the bridge crossing (Plate 4.2-2).

The trail will require the removal of existing surficial material (organic material and upper soil horizon) using a small excavator. Geotextile and a 4" layer of crushed gravel will be used to create the 1.5m wide trail surface, with larger rock, deeper gravel, and drainage pipe (placed to divert water away from the pond) used as needed. The final surface will be compacted with a plate tamper, and any disturbed areas will be reclaimed using native vegetation.

The first 425m section of the trail is not in the vicinity of any waterbody and will not require permits. The 155m section along the pond will be constructed fully in the dry and is above the highwater mark of the pond, but within the 30m SPEA (Figure 3.5-1).



Plate 4.2-1. Proposed new trail location, looking west from the access road.



Plate 4.2-2. Proposed new trail location, looking west along the edge of the pond.

4.3 BRIDGE REPLACEMENT

The existing bridge on the trail system is poorly built and has eroding abutments (Plate 4.3-1 and 4.3-2). The bridge location is also frequently dammed by beavers and has experienced considerable erosion over the years. A new clear span aluminum bridge is proposed to be installed at the same location (Figure 4.3-1). To limit future beaver interactions with the crossing, the bridge will be anchored to wooden abutments on compacted soil at a higher elevation than the existing trail height, thereby ensuring that regardless of beaver activity, the bridge will remain functional, and beavers cannot build a dam against it. All bridge abutment and installation work will be completed in the dry above the highwater mark. Sedimentation and erosion controls will be installed prior to the start of earthworks (Section 6). It is recommended that a Qualified Environmental Professional be on site during the bridge construction, especially any required earthworks.

The existing bridge, pilings, and rock gabions will be removed and properly disposed of. The bridge structure and decking will be removed by hand from the dry. The pilings will be removed by hand if possible, and with an excavator if required. The rock gabions that are in the wetted portion of the creek will be removed with the use of an excavator if possible, but based on the condition of the wire enclosures, it is likely that they will have to be removed by hand. There is ample room on the current trail to operate a small excavator entirely in the dry. The rocks from the gabions will be incorporated into the trail design (above the high-water mark) if possible or removed from site.

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Restoration of the abutment area may require soil stabilization and replanting with native grass and shrubs. Section 6 contains recommendations to address potential construction risk.



Plate 5.3-1. Existing bridge looking downstream.



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Plate 5.3-2. Existing bridge looking upstream.

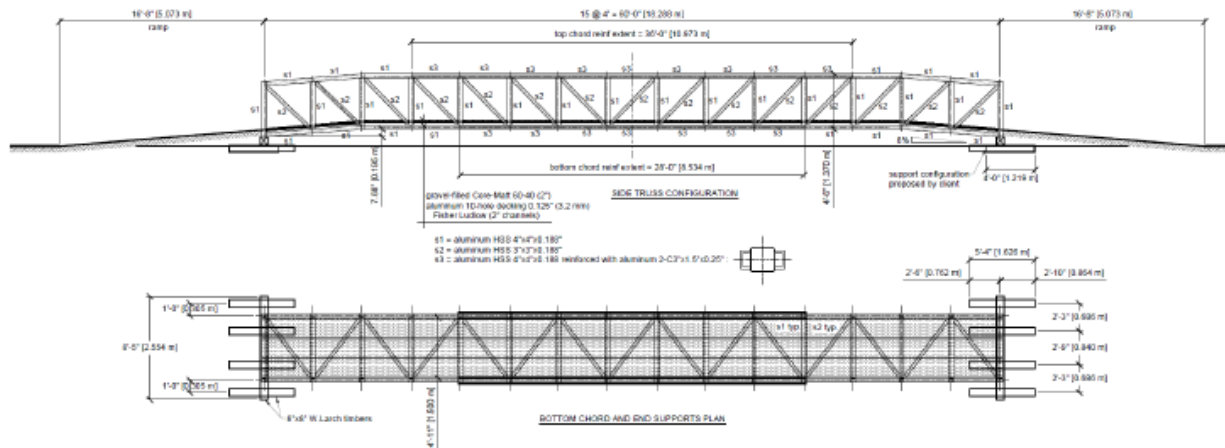


Figure 5.3-1. Proposed bridge and abutment.

5. IMPACT ASSESSMENT

5.1 EXISTING TRAIL UPGRADES

The existing trails all occur in dry terrestrial areas, and no alterations to water drainage or riparian areas are required. Minimal vegetation pruning along the trail edges will be required, similar to annual regular maintenance that already occurs in the park. No impacts are expected to occur from the trail upgrades.

5.2 PROPOSED NEW TRAIL

There are no significant habitat impacts expected from this project, as the trail is above the highwater mark of the pond and is fully within areas currently dominated by invasive reed canarygrass. Approximately 155m of the new trail section along the pond is within the 30m SPEA, resulting in a loss of roughly 233m² of riparian habitat. As the existing riparian area has low habitat and ecosystem function value, the creation of the new trail will not have a significant effect.

5.3 BRIDGE REPLACEMENT

The new bridge will be predominantly constructed within the existing trail footprint. Minimal disturbance is expected from construction and will be limited to minor vegetation removal and/or trimming and soil disturbance. The disturbed area will primarily be within the reed canarygrass area that will be part of the new trail development. Proper environmental management (Section 6) will ensure that impacts to the stream and riparian areas are minimized.

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The removal of the existing bridge and rock gabions will result in the potential for a temporary increase in turbidity due to workers standing in the stream, and any fines that may be released when the embedded portion of the rock gabion is removed. The effect of the turbidity will be temporary and is not expected to impact fish or fish habitat. All efforts should be made to limit disturbance within the wetted portion of the creek, with the bulk of the rock from the gabion removed by workers standing in the dry.

The removal of the existing bridge and construction of the new bridge will not significantly modify the stream bed or fish habitat.

6. ENVIRONMENTAL MANAGEMENT

The following is recommended to ensure that environmental risk is minimized during all construction activities.

6.1 NESTING BIRD WORK WINDOWS

While minimal vegetation removal is required for this project (largely limited to the pruning vegetation along the edges of the existing trails and creek crossing), no vegetation removal will occur during the period of mid-April to the end of July. If bird nests or cavities are identified within the work areas, all construction should cease until a Qualified Environmental Professional can assess and clear the area.

6.2 WORK IN AND AROUND WATER

Construction activities proposed for this Project have the potential to impact a number of water quality parameters. The operation of machinery may introduce chemicals such as fuels, oils, and greases. The contractor(s) must perform construction activities in a manner that prevents contaminants or other deleterious substances potentially harmful to aquatic life enter a waterbody. Environmental protection measures for work in-and-around water include:

- All equipment and machinery will be clean, free of fluid leaks, and in good working order prior to the commencement of work.

Portions of the project have the potential to create sedimentation. Silt fences must be installed as necessary when working near water in areas where runoff could reach the waterbody. Silt fences must be installed by digging a small trench and fully burying the bottom of the fence to ensure sediments can not pass under it. The fences must be regularly maintained to ensure they are properly functioning and removed from the worksite after the project is completed and there is no longer a risk of erosion and sedimentation.

6.3 OIL AND FUELS

All re-fueling will occur at least 10 m from and watercourse with the proper containment in place. Spill kits will also be on site for the duration of the Works.

- Portable spill kits will be stored on every piece of equipment/machinery and the location of spill kits will be made available to all Project workers.
- Fuel storage areas (at least 30m from any waterbody) will be regularly inspected and fuel containers monitored for unaccounted losses. All leaks or spills will be isolated, contained, and immediately cleaned up to the satisfaction of the EM.
- Refueling will be done with the utmost care and will have spill pads wrapped around nozzle ends for incidental drips.
- Spills (of an applicable/reportable volume) will be reported immediately to regulatory agencies as required by the applicable legislation.
- Storage sites must be used only for fuel and hazardous substances or contaminated equipment.

6.4 SITE CLEANUP AND DEMOBILIZATION

The contractor shall remove all surplus materials, wastes, and equipment from the site in a timely manner. All equipment will be cleaned thoroughly before leaving site to prevent spread of invasive plant species. Upon completion of the work, the contractor(s) will be responsible for a thorough cleanup of the work area to ensure that all wastes from its operations are removed.

6.5 SPILL RESPONSE

Spill kits and equipment, such as sorbent pads, booms, and leak-proof waste containers, must be readily available on site in the quantities required for the quantities of fluid being handled. The contractor(s) are responsible for ensuring that all crews are adequately trained and equipped to deal with potential environmental incidents.

Spill Response Procedures

1. Ensure Safety

- Ensure personal/public, electrical, and environmental safety.
- Never rush in; always determine the product spilled before taking action.
- Ensure no ignition sources if spill consists of flammable material.
- Warn people in the immediate vicinity.
- Wear appropriate personal protective equipment (PPE).

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2. Stop the Flow (when possible)

- Act quickly to reduce the risk of environmental impacts.
- Stop the flow or the spill at its source.
- Close valves, shut off pumps, or plug holes/leaks.

3. Secure the Area

- Limit access to the spill area.
- Prevent unauthorized entry onto the site.

4. Contain the Spill

- Block off and protect drains and culverts.
- Prevent spilled material from entering drainage structures.
- Use spill sorbent material to contain the spill.
- If necessary, use a dyke or any other method to prevent any discharge off-site.
- Make every effort to minimize contamination.

5. Notify and Report

- Notify the RDCK of incident (provide spill details).
- When necessary, make the first external call to Emergency Management BC (formally PEP) 1.800.663.3456 (24 hours).
- Provide necessary spill details to other external agencies.

6. Clean-up

- All equipment and/or material used in clean-up (e.g., used sorbent, oil-containment materials, etc.) must be disposed of in accordance with BC MOE requirements.
- Accidental spills may produce special wastes (e.g., material with more than 3% oil).
- All waste disposals must comply with the BC Environmental Management Act and its Regulations.

7. Spill Report. The spill report will include the following information:

- name and phone number of person reporting the spill,
- name and phone number of person involved with the spill,
- location and time of the spill,

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- type and quantity of material spilled,
- cause and effect of spill,
- details of action taken or proposed to contain the spill and minimize its effect,
- names of agencies on the scene, and
- names or other persons or agencies advised.

6.6 SPILL REPORTING

The contractor must immediately report all spills regardless of quantity, and all environmental incidents to the RDCK. If the RDCK cannot be contacted within one hour, it is the responsibility of the contractor to report externally reportable spills (see Table 5.6-1).

All spills to water will be reported to applicable external regulatory agencies.

Table 5.6-1. Externally Reportable Quantities for Commonly Used Substances

Product	Quantity
Class 2.1 - flammable gas (e.g., propane)	10 kg or 10 min duration.
Class 2.2 - non-flammable gas (e.g., SF6, CO2)	10 kg or 10 min duration.
Class 3 – flammable liquids	100 L
Class 8 - corrosive liquid acids and caustics (e.g., battery acid) ⁴	5 kg or L
Oil & Waste Oil (less than 2 ppm PCBs)	100 L
Leachable toxic waste (e.g., used antifreeze)	25 kg or L
Pesticides & Herbicides	5 kg or L
Other Substances (e.g., new antifreeze, power-wash water)	200 kg or L

7. CHANCE FINDS

The East Shore Trail & Bike Association's workplan includes the following:

"Chance Finds Procedures for Archeological Materials The East Shore Trail & Bike Association operates on the traditional territory of the Ktunaxa Nation and within the unceded lands of the Secwepemc, Syilx and the Sinixt Nations. The East Shore Trail and Bike Association adheres to Chance Finds Procedures outlined by the Ktunaxa First Nation and RSTBC. We review the procedures with our laborers, contractors and volunteers before any work commences. See Recreation Trails Master Plan and PDF Document from Ktunaxa Lands."

8. REVEGETATION PLAN

8.1 EXISTING TRAIL UPGRADES

No revegetation is required for the existing trail upgrades as construction will occur within the existing trail footprint.

8.2 PROPOSED NEW TRAIL

The 155m of new trail that will be construction within the SPEA along the south side of the pond will affect roughly 233m² of riparian habitat (entirely composed of invasive reed canary grass). To compensate for this disturbance, riparian plantings along the 155m of pond edge is proposed. The areas between the high-water mark of the pond and top of bank along the proposed trail route is approximately 690m² (Figure 8.2-1). This area will be planted with live stakes of cottonwood, willow (*Salix* spp.), and red osier dogwood (*Cornus sericea*), all of which occur in the park and are readily available to use as donor plants. As the riparian area is dominated by reed canarygrass, the use of seeds, small shrubs or herbs is not recommended as they will not be able to outcompete the grass and are unlikely to survive.

Planting will be completed in early spring or late fall when the donor plants are dormant. Is recommended that the live stakes be at least 2m in length and 5-10cm in diameter. The stakes should be pushed into (holes may have to be created using a stake or small auger) wet to moist soil along the edge of the pond in small, erratically sized clumps to replicate natural conditions. A minimum of 100 willow, 100 dogwood, and 25 cottonwood live stakes is recommended. While the entire 690m² will not be planted (in order to replicate natural conditions whereby erratically sized and spaced clumps of shrubs and trees is expected), the revegetation area is just shy of a 3:1 replacement ratio for the disturbed area and will provide significant wildlife habitat values.



Figure 8.2-1. Revegetation area (bright green).

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8.3 BRIDGE REPLACEMENT

The bridge replacement is not expected to alter the existing ecological community within the stream riparian areas as it will be built on the existing trail footprint. A small (10-20m²) portion of reed canarygrass riparian area will be disturbed on the east side of the stream. This disturbance was accounted for within the proposed new trail revegetation plan.

Any exposed soil due to construction will be seeded with native grass species.

9. CLOSURE

Based on this assessment, the upgrade of existing trails will not have an impact on riparian areas or fish habitat. The construction of the bridge and new trails will affect riparian vegetation, however as the riparian areas are dominated by invasive reed canarygrass, the revegetation plan will result in a net benefit to riparian and fish habitat. The bridge removal will potentially have a temporary negative effect on water quality but is not expected to have an impact on fish habitat.

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REFERENCES

Durand, R. and T. Ehlers. 2020. Crawford Bay Regional Park Biophysical Assessment. Prepared for the Regional District of Central Kootenay by EcoLogic Consultants Ltd. and Masse Environmental Consultants Ltd.