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Basic Impact Analysis

Bar U Ranch Pekisko Creek Bridge Replacement

Bar U Ranch National Historic Site



July 9, 2013



Parks Canada
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1. PROJECT TITLE	Bar U Ranch Pekisko Creek Bridge Replacement	
2. PROJECT LOCATION (Park, Site, Canal, NMCA)	Bar U Ranch National Historic Site	
3. PROJECT SITE(S)	Bridge crossing Pekisko Creek	
4. PROPONENT	Karen Esarte (Project Manager) and Mike McLean (Site Lead)	
5. PROPONENT CONTACT INFORMATION	P.O. Box 900, Banff, AB, T1L 1K2, 403-431-0891, Karen.esarte@pc.gc.ca	
6. PROJECT DATES	Commencement: 2013-08-15	Completion: 2014-09-01
7. INTERNAL PROJECT FILE #	BU12-04-035	
8. PROJECT DESCRIPTION		
<p>The service bridge that crosses Pekisko Creek within the Bar U Ranch National Historic Site (NHS) was ordered closed in March 2013 for safety reasons after significant cracks in the bridge's wood stringers were found. The bridge provides access between the two halves of the NHS (North and South), and provides access to a wide range of Visitor Experience and site operational activities, including popular events organized by the Friends of the Bar U Association. The existing bridge is a two span bridge, 20 meters in length (each span is 10 meters long) with an "out to out" deck width of 5 meters. This project involves constructing a new bridge superstructure (steel girders, wood deck and wood railings) using the existing concrete abutment and piers. Rip rap armouring will be placed around the north bridge abutment, and around the in-stream piers.</p> <p>Construction:</p> <p><u>Demolition of Existing Bridge Superstructure:</u> Demolition of the existing bridge superstructure is expected to commence after September 3, 2013. Demolition will start by first removing the wood wearing surface, followed by the wood deck and wood railings. The wood stringers (14 in total) will be removed last, likely by a crane from the south approach of the bridge. No in-stream work will be conducted during demolition.</p> <p><u>Construction of New Bridge Superstructure:</u> Construction of the new bridge superstructure will start in September 2013, and substantial completion is expected to be December 31, 2013. Construction of the bridge superstructure will involve placement of new weathered steel or galvanized steel girders (14 girders in total, 7 on the north span and 7 on the south span). Placement of the girders will be completed with a crane on the south approach. No in-stream work will be carried out.</p> <p><u>Rip Rap:</u> Class 1 rip rap will be installed to protect the abutments and piers. Rip rap placement could start as early as August 15, 2013 or be postponed until the following fish window in 2014. The Department of Fisheries and Oceans defined "fish window" for in-stream work in Pekisko Creek is August 15 to September 1. Placement of the rip rap along the north abutment and around the pier will likely require the need of an excavator working in the creek or along the creek banks.</p>		





9. ENVIRONMENTAL COMPONENTS LIKELY TO BE AFFECTED

Pekisko Creek is a tributary of the Highwood River. The Pekisko Creek valley is a wide floodplain with a series of terraces. Stands of Cottonwood trees border the creek banks. Pekisko Creek has been recognized as a tributary with valuable fish spawning and rearing habitat of importance to the Highwood and Bow Rivers.

There is some potential for limited disturbance of riparian habitat during the placement of the rip rap armouring. Rip rap will be placed during periods of low flow in an attempt to minimize sedimentation into the creek and disturbance to water quality.

Given location of National Historic Site and its ranching operations, there are no other key environmental components which need to be considered.

10. IMPORTANT EFFECTS IDENTIFIED

Hydrology

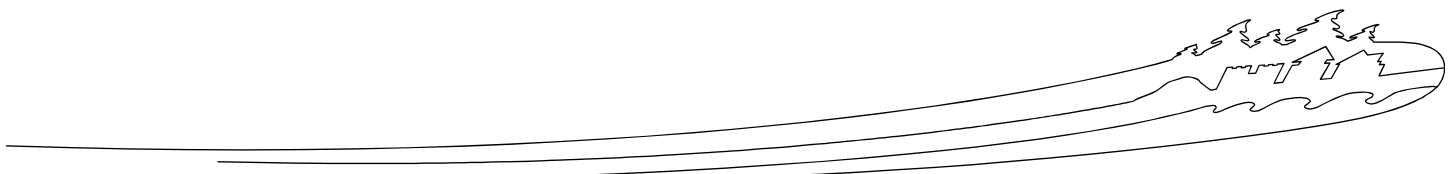
- Potential for constriction of channel width and interference with fish passage

Water Quality

- Sedimentation during rip rap placement which may cause harm to fish, eggs and fry

Direct Loss of Fish/Fish Habitat

- There is some potential for debris and deleterious material to fall into the creek during demolition and construction of the bridge superstructure;
- There is very little impact to vegetation expected;
- Potential damage/loss of habitat





11. MITIGATION MEASURES

No in-stream work will be required during demolition of the existing bridge superstructure, or construction of the new superstructure. Some in-stream work may be required to place rip rap to armour the abutments and in-stream piers.

Work at the site will be limited to daylight hours. All contractor and Parks staff working on the project will be briefed on proper handling and storage of garbage. All food and food waste will be stored in a secure vehicle or disposed of in a garbage bin.

Hydrology

- Use minimal amount of rip rap possible which is appropriately sized;
- Rip rap will be installed at a similar slope to maintain uniform stream bank and natural stream alignment; and
- Rip rap will not interfere with fish passage or constrict channel width

Water Quality

- Equipment servicing (e.g., refuelling) and maintenance will occur offsite and at least 100m back from water body;
- Equipment will be inspected at least daily to check for grease, fuel, and fluid leaks;
- A spill kit will be available on site;
- Vegetable-based hydraulic fluids in equipment will be preferred;
- Rip rap materials transported to site will be clean;
- Acid generating rip rap will be avoided;
- Netting or other appropriate containment system below the bridge to capture all construction debris will be provided. Netting containment system to meet Department of Fisheries and Oceans Operational Statement for Bridge Maintenance to prevent deleterious material from entering the creek. System to be inspected and approved by the Parks Canada Environmental Safety Officer. System should be permeable to allow rain to pass but be capable of trapping hot welding solder;
- All equipment will be thoroughly inspected and cleaned before entering the work site;
- The contractor will complete in-stream work during the window between the Restricted Activity Periods (August 15 to September 1);
- Construction materials and soil shall be stockpiled on previously disturbed areas and not on vegetated areas unless properly protected;
- Waste materials removed from site will be stabilized to prevent them from entering the watercourse. This may include covering spoil piles with biodegradable mats or tarps or planting them with grass or shrubs or stock piling well away from creek;
- The site will be graded to match the existing contours at the site; and
- Construction materials (gravel and aggregate fill) will be inspected at the source pit for weeds before approved to be transported into the site.

Direct Loss of Fish Habitat

- Rip rap materials transported to site will be visually inspected before unloading to confirm they are likely to be clean of seed material;
- All equipment to be thoroughly inspected and cleaned before entering the construction site;
- Remove vegetation only if necessary to safely access work site;
- The relatively small footprint of the disturbed area will be reseeded, if required, with an approved seed mix that meets NHS standards; and
- Follow the same access path so as to limit the footprint of activities.





12. IMPACT SIGNIFICANCE

With application of mitigation measures, no significant adverse impacts are expected as a result of this project. Project will have no or limited impact on ecological integrity of the park. The project will have no impact on commemorative integrity.

13. SITE INSPECTION

- Site inspection not required
- Site inspection required

Surveillance monitoring will not be required as all aspects of the bridge construction will be closely supervised by Waterton-Bar U Field Unit staff.

14. EXPERTS CONSULTED (Including PC Experts)

Department/Agency/Institution	Parks Canada Agency
Contact Information	Brian Spreadbury, Water Lakes Resource Conservation
Date of Request	2013-06
Expertise Requested	Review of EA
Response	N/A – incorporated into EA

Department/Agency/Institution	DFO
Contact Information	Michael Hunka
Date of Request	2013-06-10 left a phone message. June 24, 2013 sent an email with project description and drawings but have not heard back from him as of yet. Parks will continue to try and contact DFO.
Expertise Requested	Advise and approval of project
Response	N/A

15. PUBLIC PARTICIPATION No Yes

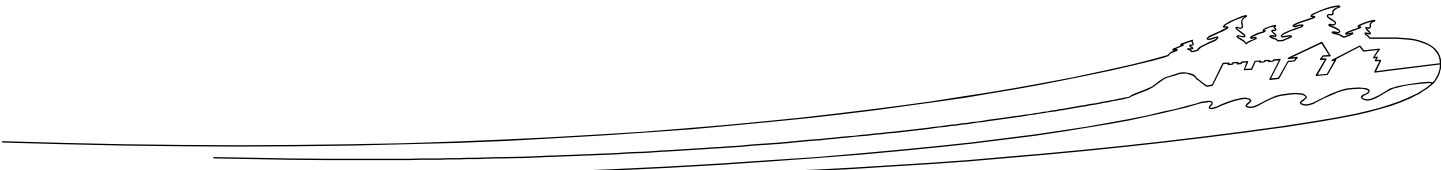
Due to the nature of this project, the project location, as well as historic levels of public interest on small-scale/routine improvement projects, Parks Canada did not solicit public participation for this project at the Bar U NHS.

16. DECISION

Taking into account implementation of mitigation measures outlined in the analysis, the project is:

- Not likely to cause significant adverse environmental effects.
- Likely to cause significant adverse environmental effects.

Empty box for additional comments or notes.





SIGNATURES AND APPROVAL		
EA Author		
Name: Karen Esarte	Title: Structural Engineer	
Signature <i>Karen Esarte</i>	Date 2013-07-09	
DECISION APPROVAL		
Name: Ifan Thomas	Title: Superintendent, Waterton Lakes-Bar U Field Unit	
Signature <i>Ifan Thomas</i>	Date <i>July 11/13</i>	
17. REFERENCE LIST		
Bar U Ranch National Historic Site of Canada 2005 Management Plan DFO Operational Statement for Bridge Maintenance		
18. ATTACHMENTS LIST		
Construction Drawings		
19. ADDITIONAL CONSIDERATIONS / COMMENTS		