

**SPRINGBANK OFF-STREAM RESERVOIR PROJECT  
ENVIRONMENTAL IMPACT ASSESSMENT  
VOLUME 3B: EFFECTS ASSESSMENT (FLOOD AND POST-FLOOD OPERATIONS)**

Assessment of Potential Effects on Historical Resources  
March 2018

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## **Abbreviations**

ACT	Alberta Culture and Tourism
EIA	environmental impact assessment
HRA	<i>Historical Resources Act</i>
PDA	project development area

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## 13.0 ASSESSMENT OF POTENTIAL EFFECTS ON HISTORICAL RESOURCES

The scope of the assessment and existing conditions for historical resources are presented in Volume 3A, Section 13.1 and 13.2.

This section assesses the effects of the Project on historical resources during flood and post-flood operations.

### 13.1 PROJECT INTERACTIONS WITH HISTORICAL RESOURCES

Table 13-1 identifies for each potential effect, the project components and physical activities that might interact with historical resources during flood and post-flood operations. These interactions are identified by check marks and are discussed below.

**Table 13-1 Project-Environment Interactions with Historical Resources during Flood and Post-flood Operations**

Project Components and Physical Activities	Environmental Effects
	Loss of or alteration to historical resource site contents or site contexts
<b>Flood Operations</b>	
Reservoir filling	-
Reservoir draining	✓
<b>Post-flood Operations</b>	
Reservoir sediment partial cleanup	-
Drained reservoir	
Channel maintenance	-
Road and bridge maintenance	-
NOTES: ✓ = Potential interaction - = No interaction	

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Most of the flood and post flood operations within the reservoir and other project components such as the channel and roads are not expected to interact with historical resources. This is because most activities/ground disturbance within the project development area (PDA) would occur on land that was previously disturbed during construction. Mitigation would be undertaken for all historical resource sites within the PDA prior to or during construction. Project approval for the PDA would only be granted by ACT once all required avoidance and mitigation is complete. No additional effects on heritage resources are expected within the PDA during flood and post flood operations.

Reservoir draining would, however, change the hydrodynamics of the Elbow River from the low-level outlet downstream to Glenmore Reservoir. These changes could affect the integrity of historical resources sites in this area. The effects of the June 2013 flood on historical resources in southern Alberta were considerable. In response Alberta Culture and Tourism (ACT) sponsored a series of post-flood impact assessment studies on the Bow River, Kananaskis River, Jumpingpound Creek, Fish Creek, Highwood River, Sheep River and Tongue Creek (Bohach and Frampton 2015; Bohach 2016; Boland and Langemann 2015; Leyden et al. 2016; Meyer et al. 2016; Porter et al. 2015; Vivian 2014; Vivian and Amundsen-Meyer 2016). Together, these studies have revealed a rich record of threatened archaeological and palaeontological sites of high heritage value under ongoing impact because of natural, flood related erosion. To date, no flood impact assessment has been conducted for the Elbow River, so the existing conditions on the Elbow River downstream of the Project are not known.

ACT has not required assessment of downstream post-flood effects of the Project in any correspondence issued to date. Thus, assessment of the downstream effects on historic resources is outside the scope of this environmental impact assessment (EIA).

## **13.2 ASSESSMENT OF RESIDUAL ENVIRONMENTAL EFFECTS ON HISTORICAL RESOURCES**

This section considers residual effects on historical resources after the application of required mitigation. Site-specific mitigation of project effects on historical resources is provincially regulated. ACT independently assesses the heritage value of historical resources, determines the need for, and scope of, any avoidance or mitigation measures, and issues project approval under the HRA. Since project-specific environmental effects on historical resources are continually mitigated to the standards established by ACT, after implementation of the required avoidance and mitigation measures stipulated for construction and dry dam operations (Volume 3A, Section 13), and Aboriginal consultation, there are no residual environmental effects to historical resources within the PDA from flood and post flood operations.

The residual effects to historical resources downstream of the PDA are unknown and considered to be outside the scope of the assessment, since ACT has not issued any requirements for their assessment.

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### **13.3 DETERMINATION OF SIGNIFICANCE**

A significant adverse residual environmental effect on historical resources is defined as one that results in an unauthorized project-related disturbance to, or destruction of, all or part of a historical resource considered by ACT to be of heritage value, and that is not mitigated or compensated as required by the regulators.

Alberta Transportation has committed to fulfilling all requirements issued under the *Historical Resources Act* to obtain approval prior to construction and Project operations. Since all effects within the PDA would be mitigated prior to or during Project construction, adverse effects would be not significant.

ACT has not issued any requirements for an assessment of flood and post flood operations downstream of the PDA. Flood and post flood operations (draining of the reservoir) could potentially affect sites of high heritage value downstream of the PDA. The significance of these potential effects is unknown.

### **13.4 PREDICTION CONFIDENCE**

ACT will not provide approval for the Project construction until it has completed the review of the HRIAs and is satisfied that all assessment is complete, and that all sites of high heritage value within the PDA are avoided or mitigated as required. AT is aware of its requirements under the HRA and has committed to fulfilling all requirements for avoidance or mitigation. With this commitment, prediction confidence is high for an expectation of effects as being not significant for flood and post flood operations within the PDA. Downstream effects are outside the scope of this assessment.

### **13.5 CONCLUSIONS**

HRIAs for archaeology and palaeontology for the PDA have been undertaken and are under review by ACT. Additional requirements may be issued for deep testing or other additional assessment once ACT has reviewed the HRIAs. After implementation of the required avoidance or mitigation measures, and Aboriginal consultation there are no residual effects.

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## **13.6 REFERENCES**

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