

**SPRINGBANK OFF-STREAM RESERVOIR PROJECT  
ENVIRONMENTAL IMPACT ASSESSMENT  
EIS SUMMARY**

Cumulative Effects Assessment  
March 2018

## **7.2 SELECTED VALUED COMPONENTS BY PROJECT PHASE**

The cumulative effects assessment builds on the Project-specific residual effects assessments. In accordance with the the CEA Agency Guidelines for the Project a cumulative effects assessment is required for a VC only where the Project may result in adverse residual effects on that VC; if a VC would not be affected by the Project or would be affected positively, then it may be omitted from the cumulative effects assessment.

### **7.2.1 VCs Assessed in Both Scenarios**

The Project-specific VCs for which adverse residual effects are anticipated during both assessment scenarios and, therefore, also assessed for potential cumulative effects in both scenarios are:

- air quality and climate
- hydrogeology
- surface water quality
- aquatic ecology
- terrain and soils
- vegetation and wetlands
- wildlife and biodiversity
- land use management
- traditional land and resource use
- public health
- infrastructure and services

### **7.2.2 VCs Only Assessed in Flood and Post-flood Operations**

The Project-specific VC for which adverse residual effects are anticipated only during the flood and post-flood operations and, therefore, also assessed only for potential cumulative effects in that scenario, is hydrology. Hydrology was not assessed for construction and dry operations because Project-specific environmental effects on hydrology and sediment transport, with the implementation of mitigation measures, are neutral (i.e., no net change in measurable parameters for hydrology relative to existing conditions). In the absence of residual effects, there is no pathway for cumulative effects and, therefore, no cumulative effects assessment is warranted for hydrology during construction and dry operations.

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### **7.2.3 VCs Not Assessed in Either Scenario**

The Project-specific VCs for which adverse residual effects are not anticipated during either assessment scenarios and, therefore, are not assessed for potential cumulative effects, are:

- acoustic environment
- employment and economy
- historical resources

The following explains why these VCs are not assessed for potential cumulative effects.

#### ***Reason for Exclusion of Acoustic Environment VC***

##### *Construction and Dry Operations*

Due to the preliminary status of the construction execution plan, the potential effects of construction and dry operation on the acoustic environment are modelled without the application of mitigation measures. The unmitigated sound levels at most receptor locations during some phases of construction exceed the noise limits, based on Health Canada's preferred approach for environmental assessments. However, with the application of mitigation, the residual effect on the acoustic environment are expected to be reduced to achieve Health Canada's noise objectives. Upon availability of the detailed construction execution plan, mitigation measures will be developed to meet assessment noise thresholds. No residual effects are predicted. In the absence of residual effects, there is no pathway for cumulative effects and, therefore, no cumulative effects assessment is warranted.

##### *Flood and Post-flood*

During the post-flood phase, inspections would be conducted using light trucks, although some heavy equipment might be brought to site if it is needed for debris removal or facility maintenance and repair. The quantity of equipment required would depend on the severity of the flood. The maximum quantity of heavy equipment required during the post-flood operation would be substantially less than the equipment requirement for construction. Noise effect at all receptors are expected to be below the mitigation noise level (MNL) threshold of 57 dBA  $L_{dn}$ , given the lower intensity of activities expected during post-flood operations. Therefore, residual effects on the acoustic environment during post-flood are not predicted. In the absence of residual effects, there is no pathway for cumulative effects and, therefore, no cumulative effects assessment is warranted.

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***Reason for Exclusion of Employment and Economy VC***

*Construction and Dry Operations*

Potential adverse effects of Project spending relate to increased operational costs due to wage inflation and employee turnover. However, with the implementation of mitigation, it is anticipated that adverse project-specific effects on labour availability will be negligible (i.e., no measurable change from existing conditions). In the absence of residual effects, there is no pathway for cumulative effects and, therefore, no cumulative effects assessment is warranted.

*Flood and Post-flood*

In consideration of existing mitigation measures, the financial cost of 1:50 year, 1:100 year, and design floods from Elbow River, in the absence of the Project, is estimated at approximately \$470 million, \$1.1 billion, and \$1.9 billion, respectively. With the AAD estimated at approximately \$42 million, construction of the Project would reduce the AAD of floods by \$28 million to \$14 million. Over an assumed 100-year operating life, the Project's discounted benefits in terms of flood damage avoidance, exceed its costs; therefore, it would have a net economic benefit. Given that the residual effect will be positive, no cumulative effects assessment is required.

***Reason for Exclusion of Historical Resources VC***

The following applies to both scenarios.

Project-specific environmental effects on historical resources will be mitigated to the standards established by ACT. With mitigation following the recommendation of ACT, no adverse residual environmental effects on historical resources are anticipated. In the absence of residual effects, there is no pathway for cumulative effects and, therefore, no cumulative effects assessment is warranted.

## **7.3 APPROACH TO ASSESSING CUMULATIVE EFFECTS FOR EACH SCENARIO**

The following provides an explanation, given some unique aspects of both the Project and the assessment, of how the two scenarios were assessed in consideration of other projects and activities and the regional context. The first scenario is construction and dry operations and the second is flood and post-flood operations. Note that these encompass the four project *phases*, which is each of those four activities named in the scenario names.