

# Bow River Reservoir Options

## Phase 2: Feasibility Study

### Activity Description Sheet – Environmental Fieldwork

#### Overview

Alberta Environment and Parks (AEP) continues to explore options to build additional reservoir capacity on the Bow River upstream of Calgary to reduce the impacts of flood and drought on Albertans and the economy. The Bow River Reservoir Options (BRRO) initiative is being approached in phases. The Phase 1: Conceptual Assessment was completed in spring 2020 and identified three reservoir options: Morley, Relocated Ghost Dam and Glenbow East. The Phase 2: Feasibility Study is now underway and will further evaluate the three reservoir options. As part of the feasibility study, AEP's consultant, Wood Environment & Infrastructure Solutions, will be completing environmental fieldwork.



#### Why do environmental fieldwork?

The feasibility study scope of work includes conducting environmental fieldwork **to establish and document the current environmental site conditions and evaluate potential impacts** (which will be considered when selecting an option). The following environmental disciplines will complete fieldwork:

- Vegetation and Wetlands
- Historical Resources
- Environmental Site Assessments (ESAs)
- Wildlife
- Soils
- Groundwater
- Fisheries

#### What does environmental fieldwork consist of?

##### Vegetation and Wetland Surveys

- Field staff will park in a suitable place and walk to the survey area.
- Vegetation surveys consist of observing and documenting rare plants and weeds. Vegetation surveys are done in both the spring and summer.
- Wetland surveys are undertaken in the summer and use indicators such as vegetation, soil and hydrologic characteristics to confirm the presence, type and permanence of wetlands. On occasion, soils may be sampled using a hand auger, trowel or shovel. Any holes are backfilled prior to leaving the site.
- Photos may be taken during vegetation and wetland surveys.

##### Wildlife Surveys

- Field staff will park in a suitable place and walk to the survey area.
- Wildlife surveys are undertaken in the spring, summer and winter to identify significant habitat, species in the area and species of concern.
- Wildlife surveys consist of observing and documenting amphibians and songbirds, winter animal tracking, and viewing their habitat (reconnaissance).
- Amphibian surveys are conducted at night near wetlands or creeks. Biologists listen for frog and toad breeding calls.
- Songbird surveys occur close to sunrise. Biologists listen for birds singing.
- All amphibian and songbird species heard at each location are recorded.
- Winter animal tracking is conducted by documenting species in the area by observing animal tracks (footprints) left in the snow.
- Habitat reconnaissance surveys are conducted at the same time as songbird surveys. Important habitat features such as rocky cliffs, wetlands, nests and dens are documented.
- Photos may be taken during wildlife surveys.

For more information, visit: <https://www.alberta.ca/bow-river-reservoir-options.aspx>  
Questions? Contact us today at [aep.bowbasin@gov.ab.ca](mailto:aep.bowbasin@gov.ab.ca) or call 310-3773.

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## Soils Surveys

- Field staff will access soil survey locations by a combination of pickup truck, walking, all-terrain vehicle or boat.
- Soils fieldwork is scheduled for early summer but may be done later in the year.
- Objective is to identify soil types and properties, and characterize the landform.
- At identified sample locations, scientists use a hand auger and shovel to expose the earth and classify the soils.
- All utilities are identified and marked before digging, and all holes are backfilled before leaving the site.
- Field notes and photos are recorded by the field personnel.



Photo: Wood

## Historical Resources

- Field staff will park in a suitable place and walk to the survey area.
- An archaeologist walks the land and observes select landforms to confirm the results of desktop work.
- The select landforms are photographed, and field notes and observations are documented.

## Environmental Site Assessments (ESAs)

- There are multiple levels of ESAs; the initial site screening assessments will be completed as part of the feasibility study.
- The field component of the initial phase of the ESAs consist of field staff driving to a suitable access point and walking to areas of interest.
- The field component includes taking photos and notes of the study areas, focusing on areas of potential environmental concern such as potential contamination sites.

## Groundwater

- Field staff will park in a suitable place and walk to the well.
- Pre-selected existing water wells will be confirmed in the spring or summer, preferably under dry conditions.
- Characteristics of the wells, including GPS coordinates, elevation and general condition, will be recorded.
- Photos of the wells and surrounding landscape may be taken.
- Water levels in the wells may be measured using an acoustic sounder, if practical and with permission. Downhole measuring tapes or sensors will not be used.
- A groundwater sample may be collected from a raw water outlet, if available and with permission.
- A water well survey questionnaire will be provided to the well owner and can be reviewed in person, if agreed to.

## Fisheries

- Field staff will use a combination of jet boat and wading. The jet boat will be launched from public launches.
- The fisheries surveys will consist of habitat identification, classification and mapping within the aquatic study area.
- Spawning surveys will be completed to identify any areas where salmonid species (trout and whitefish) may use habitat within the study area for this critical life stage.
- Spawning surveys are conducted in the fall as the low flow and clear water conditions allow biologists to easily identify redds, which are depressions in the river substrate dug by spawning trout.
- GPS locations are recorded for all identified redds and the data will contribute to the habitat quality rating.



Photo: Wood

## Will the results be shared with landowners?

The final Bow River Reservoir Options – Phase 2: Feasibility Study report will be available to the public following completion of the feasibility study in spring 2023. The report will include the findings of the environmental fieldwork.