Ardley Reservoir Scoping and Feasibility Study

Drone and Bathymetric Surveys

Overview

Environment and Protected Areas (EPA) is exploring a potential new dam and water storage reservoir on the Red Deer River downstream of the City of Red Deer, near Ardley to reduce the impacts of flood and drought on Albertans and the economy. The Ardley Reservoir Scoping and Feasibility Study was initiated in October 2024. As part of evaluating the technical feasibility of potential dam options, EPA has engaged the Hatch Project Team to complete drone and bathymetric surveys that may require access to privately owned or leased land. No access will occur without the agreement of the property owner. A land access agreement will be completed prior to commencing any activities.

Why do Drone and Bathymetric Surveys?

The surveys provide information about the existing topographic site conditions used to develop the layout for the new potential reservoir.

Bathymetric and drone surveys are a necessary component for a study to understand water depths and riverbed conditions for the purpose of reservoir planning.

Drone surveys

- Drones can be rotary or fixed wing.
- Pilots remotely navigate the drone from the ground and must be in-sight of flight operations teams when in flight.
- Drones are used to collect high resolution topographical elevation information such as video, photogrammetry, and ground elevation data (for example, LiDAR-Light Detection and Ranging).

Bathymetric surveys

- Bathymetric surveys are used to collect underwater topographical data to develop surfaces for hydrotechnical analyses.
- Bathymetric surveys are done from an on-water survey vessel using a boat (motored or non-motored) or remotely operated small boats.
- Surveys are conducted using single beam or multibeam sonar systems. These are selected based on water depth and physical characteristics of water body/course.
- Boats are launched from public launches or accessible sites. There may be minor noise level disruptions caused by intermittent use of drones and boats during this time. The project team is working as fast as able to ensure all necessary survey components are satisfactorily completed.

Survey Station Setup

Photo Credit: Hatch

Hydrographic Survey – Remote Control Vessel

Photo Credit: Hatch

Drone Equipment Aircraft

Photo Credit: Hatch