Crowsnest Pass Flood Study

Study update notice

We would like to provide an update on the status of the Crowsnest Pass Flood Study.

Steady progress has been made since the study started in spring 2025. Survey and base data collection and hydrology assessment are complete. Hydraulic modelling is in late stages, and the focus of our consultant is shifting to flood mapping. Alluvial fan investigation is proceeding as planned. Technical work is expected to be complete by spring 2026.

We recognize there is tremendous interest in new flood mapping. Our study finalization process includes municipal review and public engagement components. Our goal is to provide useful tools to communities and the public as soon as possible.

The study is being completed under the provincial Flood Hazard Identification Program, the goals of which include enhancement of public safety and reduction of future flood damages through the identification of river and flood hazards. The provincial study is being co-funded through the federal Flood Hazard Identification and Mapping Program.

More information about the Alberta Flood Hazard Identification Program can be found at:

- www.floodhazard.alberta.ca

If you have any questions regarding this work, we can be contacted at:

- Email: epa.flood@gov.ab.ca

Flood Hazard Identification Program: https://www.alberta.ca/flood-hazard-identification-program

Classification: Public

Project background and study progress

The Crowsnest Pass Flood Study will assess and identify flood hazards along the Crowsnest River and 9 tributaries through Crowsnest Pass and Municipal District of Pincher Creek. The study area includes 56 km of the Crowsnest River and significantly shorter lengths of Allison, Blairmore, Drum, Gold, Lyons, McGillivray, Nez Perce, Star, and York Creeks, totalling 19 km. The study also includes an investigation of debris flood and debris flow hazards for an alluvial fan near Blairmore.

The main study components outlined below include new hydraulic modelling and flood mapping, but all deliverables support local emergency response and land-use planning needs.

- **Survey and base data collection** – Complete

  Hydraulic models and flood maps require high-accuracy base data. Field surveys and LiDAR remote sensing are used to collect river and floodplain elevations, channel cross section data, bridge and culvert information, and dedicated flood control structure details.

- **Hydrology assessment** – Complete

  The hydrology assessment estimates flows for a wide range of possible floods along the Crowsnest River and its tributaries, including the 1:2, 1:5, 1:10, 1:20, 1:35, 1:50, 1:75, 1:100, 1:200, 1:350, 1:500, 1:750, and 1:1000 floods.

- **Hydraulic river modelling** – Late stages

  A new hydraulic computer model of the river system will be created using new survey data and modern tools. The model will be calibrated using surveyed highwater marks from past floods to ensure that results for different floods are reasonable.

- **Flood inundation mapping** – Early stages

  Flood maps for thirteen different sized floods, based on the hydraulic model results and the hydrology assessment, will be produced. Flood inundation maps can be used for emergency response planning and to inform local infrastructure design. These maps identify areas of direct flooding and areas that could be flooded if local berms fail.

- **Flood hazard mapping** – Early stages

  Flood hazard mapping divides the 1:100 floodplain into floodway and flood fringe zones and sub-zones, to identify where flooding is deepest and most destructive, reflect the protection provided by flood berms, and provide more information about a wider range of flood hazards. These maps can be used to help guide long-term development planning.

- **Alluvial fan investigation** – Early stages

  Alluvial fans develop when mountain creeks emerge from steep hillslopes onto wide, flat valleys, and can present unique hazards for communities. This investigation will assess and identify debris flood and debris flow hazards for an alluvial fan near Blairmore, including 1:100, 1:500, and 1:1000 debris inundation maps and debris hazard maps.