



# Red Deer County and Markerville Flood Study

## Study update notice

We would like to provide an update on the status of the Red Deer County and Markerville Flood Study.

The study started in fall 2022 and we recognize there is tremendous interest in new flood mapping products. Our goal is to provide useful tools to communities and the public as soon as possible.

Our study finalization process includes municipal review and public engagement components. Public engagement for the study, including draft flood inundation maps and draft flood hazard maps, was completed in May 2025, and we are currently assessing all feedback received. More information about our public engagement, including draft reports and flood maps as well as fact sheets that answer common study questions, can be found at:

- <https://www.alberta.ca/red-deer-county-markerville-flood-study-engagement>

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 was 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](http://www.floodhazard.alberta.ca)

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

- Email: [epa.flood@gov.ab.ca](mailto:epa.flood@gov.ab.ca)

## Project background and study progress

The Red Deer County and Markerville Flood Study assesses and identifies flood hazards along 46 km of the Red Deer River, 32 km of the Little Red Deer River, and 33 km of the Medicine River through Red Deer County, including Markerville.

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** – Public engagement complete, assessing feedback

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

- **Hydrology assessment** – Public engagement complete, assessing feedback

The hydrology assessment estimates flows for a wide range of possible floods along the Red Deer, Little Red Deer, and Medicine Rivers, 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** – Public engagement complete, assessing feedback

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

- **Flood inundation mapping** – Public engagement complete, assessing feedback

Flood maps for thirteen different sized floods, based on the hydraulic model results and the hydrology assessment, have been 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** – Public engagement complete, assessing feedback

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.