

Sheep River Hazard Study Update

We would like to provide an update on the status of the Sheep River Hazard Study.

Substantial progress has been made since the multi-year study started in fall 2015. Survey and base data collection, hydrology assessment, hydraulic modelling, and channel stability investigation work are complete. Flood inundation mapping and flood hazard mapping are in late stages of review. Technical work on the study is expected to be complete by summer 2019.

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

The Sheep River Hazard 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.

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, the project engagement specialist, Julia Frohlich, can be contacted at:

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Project Background and Study Progress

The Sheep River Hazard Study will identify and assess river-related hazards along 50 km of the Sheep River upstream of the Highwood River confluence, and 35 km of Threepoint Creek upstream of the Sheep River confluence. The study area includes Foothills County, Black Diamond, Millarville, Okotoks, and Turner Valley.

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 & 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 Sheep River and Threepoint Creek, including the 2, 5, 10, 20, 35, 50, 75, 100, 200, 350, 500, 750 and 1000-year floods. The analysis includes data from the 2013 flood.
- **Hydraulic River Modelling – Complete**
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 – Late 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 – Late Stages**
Flood hazard mapping divides the 100-year floodplain into floodway and flood fringe zones, to identify where flooding is deepest and most destructive. These maps can be used to help guide long-term development planning.
- **Flood Risk Assessment & Inventory – Early Stages**
An inventory of structures at risk of flooding for all of the mapped flood scenarios will be created. This flood risk assessment and inventory can support future flood damage assessments.
- **Channel Stability Investigation – Complete**
This investigation will provide insight into general channel stability along the Sheep River and Threepoint Creek. It will compare current and historic riverbank locations and channel cross sections as far back as 1949 using historic aerial photos.