Fact Sheet

Provision of 2023 Logan and Albert Rivers flood model

Introduction

The Logan and Albert Rivers flood model 2023 (a minor upgrade of the 2021 model) was accepted by Council on 27 October 2023. It provides the most current understanding of flood risk for properties in the Logan and Albert Rivers floodplain. To minimise risk to the community, Council offers this model for use in assessing and mitigating flood risk.

Request Process

To request the flood model (XP-RAFTS hydrologic model, and/or TUFLOW hydraulic model) or output data please contact River and Catchment Engineering (see contact details below). We will discuss and confirm your requirements and the availability of the requested information. We may ask you to provide a spatial layer showing your area of interest.

You will then need to complete the PS2 – Property Information form available from Council's website. Please refer to the Flood Information section and note the supply timeframes and fees (refer to Council's Register of Recovery Cost Fees and Charges). Payment and a completed Data Agreement will be needed before the data is supplied.

The supply of the 2023 Logan and Albert Rivers flood model requires purchase of the hydrological model and large hydraulic model (Items 23 and 24 on the PS2 form). Individual items may be purchased as required. The flood model output (water surface level, depth, velocity, hazard, etc.) is supplied on a per 1 km^2 tile basis. Each 1 km^2 tile is supplied in .tif format and projected to GDA2020 Zone 56.

Technical Specification

The update of the Logan and Albert Rivers flood model was undertaken between 2019 and 2023 by a specialist engineering consultancy, in accordance with the Australian Rainfall and Runoff (ARR) 2019 industry methodologies. The model is:

- based on a 2021 LIDAR topographic dataset and has a grid resolution of 10m
- considered technically complete and was formally accepted for use in October 2023
- not suitable for the assessment of local creek flooding and may not be suitable for detailed site-specific flood risk assessment.

Due to the size of the 2023 Logan and Albert Rivers flood model, significant computer processing capability is required.

The model was developed using TUFLOW version “2018-03-AD-iSP-w64” in HPC-GPU mode. The model requires a CUDA core GPU card with a compute capability score of 7.0 or higher (https://developer.nvidia.com/cuda-gpus).

The model requires approximately 3 GB of GPU memory to initialise.

For the 1% AEP event, the estimated run times using an NVIDIA Geforce RTX 2080 Ti (with a compute capability of 7.5) were as follows:

- a 24 hour duration simulation takes approximately 8 hours to complete.
- a 72 hour duration simulation takes approximately 17 hours to complete.
- a 168 hour duration simulation takes approximately 20 hours to complete.

Note that these times assume simulation of the complete hydrograph at the downstream end of the model. Run times may vary according to output requirements.

More information

Type of request	Contact details
Find out the status of flood risk or flood modelling on a property in Logan	07 3412 3412 or council@logan.qld.gov.au Email subject: River and Catchment Engineering - flood level enquiry
Request a flood model, flood model report or flood model output	07 3412 3412 or council@logan.qld.gov.au Email subject: River and Catchment Engineering - flood data request
How flood levels may impact development or building work	07 3412 5269 or council@logan.qld.gov.au Email subject: Development enquiry – flood impact