

10.3 Mudgee Flood Study Review

REPORT BY THE DIRECTOR OPERATIONS
TO 21 SEPTEMBER 2022 ORDINARY MEETING
GOV400098, SEW200053

RECOMMENDATION

That Council:

1. **receive the report by the Director Operations on the Mudgee Flood Study Review; and**
2. **amend the 2022/23 budget to provide \$75,000 for the technical review of the 2021 Mudgee Flood Study to be funded from unrestricted cash.**

Executive summary

Mid-Western Regional Council adopted the 2021 Mudgee Flood Study in March 2021. The primary objective of the Flood Study is to develop a robust hydrologic and hydraulic modelling that defines flood behaviour for the flood study area for a range of design flood events.

This report recommends as a result of recent community consultation for the Flood Risk Management Plan that a technical review of the flood study be undertaken including community consultation as part of that process.

The process to review the flood study is highlighted in the graphic below:



Disclosure of Interest

Nil

Detailed report

Mid-Western Regional Council adopted the 2021 Mudgee Flood Study in March 2021. The primary objective of the Flood Study is to develop a robust hydrologic and hydraulic modelling that defines flood behaviour for the flood study area for a range of design flood events.

This report recommends as a result of recent community consultation for the Flood Risk Management Plan that a technical review of the flood study be undertaken including community consultation as part of that process.

The technical review of the Flood Study is initially proposed to include the following key tasks however, there may some changes to this scope as the Flood Risk Management Committee (FRMC) works through the process:

1. Liaise with NSW Spatial Services regarding the availability of recent LiDAR survey data at Mudgee;
2. Prepare Flood Study Update related Community Newsletter and Questionnaire;
3. Collate responses from community consultation process and extract flood data that is suitable for validating/calibrating flood models;
4. Locate and map stormwater drainage infrastructure that is not contained in Council's stormwater asset data base and provide Council with a GIS database of missing drainage infrastructure;
5. Refine the sub-catchment boundaries in the vicinity of the urbanised part of Mudgee and potential future growth areas;
6. Develop new hydrologic model of affected areas (Updated Hydrologic Model);
7. Update structure of Mudgee Flood Study hydraulic model (Updated Hydraulic Model) as follows:
 - a. Incorporate details of additional drainage infrastructure;
 - b. Revise inflow boundaries to reflect the revised sub-catchment layout incorporated in the Updated Hydrologic Model;
 - c. Incorporate new LiDAR survey data / finished ground level data for recent developments in underlying topography; and
 - d. Expand model extent in order to define flooding patterns in potential future growth areas.
8. Calibrate/validate Updated Hydrologic and Hydraulic Models to floods data obtained as of item iii;
9. Run updated Hydrologic and Hydraulic Models for design storm events with Average Exceedance Probabilities (AEPs) of 20%, 10%, 5%, 2%, 1%, 0.5% and 0.2%, as well as the Probable Maximum Flood (PMF);
10. Prepare maps showing the following:
 - a. Design flood envelopes for the 20%, 10%, 5%, 2%, 1%, 0.5% and 0.2% AEP storm events, as well as the PMF;
 - b. Categorisation of the floodplain into floodway, flood storage and flood fringe for the 1% AEP storm event;
 - c. Flood hazard vulnerability classification of the flood plain for the 5%, 1% and 0.2% AEP storm events; and
 - d. Flood emergency response planning classification for the 5%, 1% and 0.5% AEP storm events, as well as PMF.
11. Undertake sensitivity analysis to assess the impact the hydraulic model parameters (i.e. hydraulic roughness values) and a partial blockage of the drainage system has on flood behaviour;
12. Prepare an appendix to the Mudgee Floodplain Risk Management Study and Plan report that sets out the details of the model updates (Updated Flood Study);

13. Preparation for and attendance at the following meetings:

- a. Present the results of the model calibration/validation process to the Floodplain risk Management Committee (FRMC);
- b. Present the draft Updated Flood Study report to the FRMC;
- c. Prepare for and present the finding of the Updated Flood Study at a community workshop during the public exhibition period; and
- d. Attend monthly progress meetings with the Technical Working Group.

Community Plan implications

Theme	Looking After Our Community
Goal	Effective and efficient delivery of infrastructure
Strategy	Provide infrastructure and services to cater for the current and future needs of our community

Strategic implications

Council Strategies

The review is part of the process to update the Mudgee Flood Study 2021 overland flow component.

Council Policies

At the conclusion of the Flood Risk Management Plan process and adoption by Council there may be changes to Councils DCP in terms of the development controls that are applied to flood affected land.

Legislation

NSW Flood Prone Land Policy

Financial implications

This report recommends the allocation of the \$75,000 towards the technical review of the Mudgee 2021 Flood Study. This will be fully funded by Council as grant opportunities for this type of review are not available. Council has already received NSW Government grants for the original flood study development and the Flood Risk Management Study.

It is recommended the \$75,000 be funded from unrestricted cash reserves.

Budget Year	Operating Performance Ratio	Own Source Revenue	Building & Infrastructure Renewal
2022/23	X -	X -	-
Future Years	X -	-	-

Associated Risks

Undertaking this review will provide additional data and provide greater accuracy of the current flood model and identify opportunities to reduce flood risk through the Flood Risk Management Plan. This review will also allow Council to undertake further community consultation. This reduces the risk of

community members not previously being aware of the study having the opportunity to do so and inform the Study.

JULIAN GEDDES
DIRECTOR OPERATIONS

5 September 2022

Attachments: Nil

APPROVED FOR SUBMISSION:

BRAD CAM
GENERAL MANAGER