

Thank you for the opportunity to provide an initial response to what appears to be a very detailed peer review undertaken by BMT.

- The NSW floodplain management process is complex, and stakeholder driven. The outcomes of the study represent the views and areas of interests of the project stakeholders (Council, community, SES, FRMAC and DPIE) not only that of the consultant. The approach applied to studies has to be adaptable but guided by a State based framework, the initial project brief and the available funding to undertake the study. Studies are not formula driven; best practice is a 'fit for purpose' approach within these constraints.
- Fundamentally, the peer review does not answer the question whether the study undertaken, met the scope as defined by the project brief (considering jurisdictional guidance) or was 'fit for purpose' within the available budget.
- In addition:
 - Some of the items suggested in the peer review make no consideration of the points above, and could possibly be more suited to a study with more available funding or to other catchments where the stakeholder interests differ.
 - Some of the items suggested are inconsistent with NSW floodplain management practice, for example the pairwise method, suggested (ID 4-14) to test the sensitivity of the rankings within the multi criteria assessment, is recommended by Queensland Government's Department of Transport and Main Roads, however Infrastructure Australia does not recommend its use.
 - Some items suggest a lack an understanding of approaches applied in large inland NSW river catchments. For example, the modelling undertaken for the levees considering freeboard and levee failure (ID 3-5, 4-4, 4-5) has been undertaken in accordance with guidance provided by DPIE, appropriate for large inland river catchments.
 - Some of the aspects identified as part of the peer review are already recommendations (ID 2-1, 3-1, 4-2, 4-6, 4-7, 4-9, 4-15, 4-18, 6-1) from the Floodplain Risk Management Study and Plan, whilst others are repeated at multiple ID items, exaggerating the list.
 - Some of the aspects would have been resolved if the peer reviewer had sought additional information before presenting a conclusion, for example:
 - The suggested inaccuracies in the floor level database (ID 3-2, 3-7, 4-11) are not correct. The peer reviewers have not analysed the correct information.
 - Maintenance costs have been included in the calculation of BCR (ID 4-10). The peer reviewers have not analysed the correct information, presented a conclusion and then ID-4-12 seeks additional information.
 - Section 4.6.2 makes assumptions regarding the criteria used in the Multi Criteria Assessment and identifies aspects ID 4-13 to 4-16. The criteria meaning was workshopped with the FRMAC with explanatory pamphlets and presentations provided. The peer reviewers have not reviewed this information.
- WMAwater continue to consider the points raised in the peer review and will provide a more detailed response in the near future. However, based on an initial high level review of the peer review, it appears that the far majority of items raised are aspects which would not contribute to a material change to the outcomes of the study.

Councils are responsible for the management of flood prone land in NSW in accordance with the NSW Government Flood Prone Land Policy. The Flood Prone Land Policy and its supporting document, the Floodplain Development Manual set out an established and longstanding framework and process to assist Councils in implementing the policy. This is further supported by numerous guidelines developed or supported by the NSW Government Department of Planning Industry and Environment (DPIE), as practice has evolved. DPIE also provide direct funding and technical support for projects.

The framework emphasises the flexible fit-for-purpose approach and consultative manner required for successful floodplain management. Fundamentally, this approach ensures that while being undertaken in accordance with the overarching framework, studies are able to evolve to focus on particular aspects as the local context and needs of the various stakeholders are understood. The role of consultants is to deliver a report in collaboration with the project stakeholders (Council, community, SES, FRMAC and DPIE) that is fit-for-purpose, considering the objectives of the stakeholders, within a range of constraints, including regionally specific factors, the type of flood behaviour, scale of risk, budget allocation and timeframe. The Floodplain Risk Management Study provides technical advice, driven by stakeholder input to facilitate decision making on options to manage flood risk. This is unlike many other technical investigations undertaken by consultants including flood studies, where the primary contributor is the technical consultant.

The peer review has perhaps lost sight of the complexities in the floodplain management process, where the study tends to focus on the aspects that are important to the stakeholders, those who live and work in the floodplain itself. The peer review does not provide an answer to the question - did the study follow a best practice approach at the time and was the study fit-for-purpose with the provided scope and budget available?. The peer review identifies an approach suggested as best practice, which shows a constrained understanding of the fit-for-purpose NSW Floodplain Risk Management Process and regionally appropriate approaches. It appears to have not considered the original scope of the project nor have an understanding of the factors which evolved the direction of the study. Instead, the approach suggested ignores a key tenant of the Floodplain Development Manual that there is no one size fits all approach, and applying the suggestions, the resulting study would be far more formula driven and drive a separation from a stakeholder input guided process.

It is surprising that the peer review contains a number of recommendations which are:

- inconsistent with long standing NSW State-wide policy,
- suggested as being best practice, where they do not align with national or NSW jurisdictional advice, or
- that are inappropriate in large inland river catchments.

An example is the use of the pairwise method to test the sensitivity of the rankings within the multi criteria assessment, discussed in Section 4.6.4.1. The pairwise method is recommended by the Queensland Government's Department of Transport and Main Roads, however Infrastructure Australia's *Guide to multi-criteria analysis – Technical guide for the assessment framework (July 2021)*, states

“... these tools should be considered with caution as they provide a process for considering subjective inputs but may not add value or rigour, and usually cannot be validated using quantitative methods. In particular, pairwise ranking can suffer from complexity in implementation, results which are not logical, and extreme outputs.”

Additionally, the peer review references percentage increases in rainfall intensity as a result of climate change derived from ARR2019, these factors are not appropriate in large inland catchments where runoff generation is remote from the location of flooding. While the peer review acknowledges the method applied in the Floodplain Risk Management Study is appropriate, it is concerning as the reference highlights a lack of familiarity and understanding of methods and guidance appropriate in large inland river catchments.

The ramifications of some of the suggested inclusions would result in setting precedence for the region and NSW as a whole. This would result in a dramatic shift in the available funding distribution, while reducing the ability of studies to be tailored to address the key issues at hand, within the regional and stakeholder constraints.

Some of the suggested approaches, although they appear to be more applicable in other jurisdictions such as QLD, may provide added value for Council and other stakeholders in their broader floodplain management responsibilities, but in the context of the Technical Brief and study objectives, available budget and the evolution of the scope throughout the study, were not needed/warranted. If they had been included would have come at the cost to other aspects or would not contribute to a material change in the project outcomes. The peer reviewer's own example report *Gloucester Floodplain Risk Management Study and Draft Plan (2021)* reinforces the fit-for-purpose non formula driven approach, by not including all aspects identified as part the peer review.

In undertaking a peer review it is impossible, particularly in a stakeholder driven study, to develop an understanding of the day-to-day communications and decisions which drove project outcomes over the two-year project timeframe, however it is normal practice to identify the aspects where additional information from the consultant may provide clarification. Instead, the peer review makes assumptions, which are not always correct and draws conclusion based on this. An example of this would be the analysis of property floor levels presented in Section 3.2.2 of the review. Digging a little deeper shows that the data analysed as part of the peer review does not directly inform the calculation of damages and a check has shown that the damages calculations are correct. This item was classified as an Error with High Significance but could very simply be shown to not be an error if clarification had been sought as part of the peer review.

These aspects cloud the primary purpose of the peer review, making it difficult to determine if the study is in fact fit-for-purpose and has followed the established jurisdictional specific approach. Additionally, the review does not provide any guidance on the likely change to project outcomes from the recommendations.

WMAwater will continue to review and respond to the points raised within the peer review however before significant investment is made, it is suggested that advice is sought from DPIE on which aspects would be

considered appropriate within a NSW jurisdictional context, and for the Murrumbidgee River catchment at Wagga Wagga.

Council and the project stakeholders then need to weigh up the investment that the suggestions in this review would require and the value that they would bring to the overall outcomes of the project. However, it is our opinion based on an initial high level review of the report, that the far majority of items raised are aspects which would not contribute to a material change to the outcomes of the study.