



# Survey Responses Climate Change Considerations chapter: *Australian Rainfall and Runoff: A guide to flood estimation*

12 October 2023

Earlier this year DCCEEW invited feedback from engineers, peak industry bodies, governments and subject matter experts on a [discussion paper](#) that outlined the proposed guiding principles and key considerations for the update to the climate change considerations chapter in [Australian Rainfall and Runoff](#).

The consultation returned over 50 submissions from a range of stakeholder groups including government, asset owners, industry, engineering consultants and academia. This update summarises the findings and next steps.

Thank you for your interest in the update to this important guidance.

## Survey Findings

The survey responses revealed an overwhelming support for the update and overall agreement to the proposed key considerations and guiding principles. It confirmed the primary issues that respondents wish to be addressed are:

- a) the guidance should be updated to reflect the current science and the science review should be separated from the guidance
- b) the guidance should be updated to be consistent and applicable across the greatest range of design flood approaches possible
- c) to the greatest extent possible the wording of the guidance should be unambiguous so that the application of the guidance is consistent
- d) to the extent that the guidance is advisory and not directive or a substitute for regulation, provide clear guidance around decision making
- e) provide stronger recommendations around choices for future emissions scenarios (e.g. Shared Socioeconomic Pathways (SSPs) or warming levels)
- f) provide uncertainty bounds in the climate change projections where feasible.

The survey results also revealed other areas where the update can better reflect the needs of users. A high-level summary of actions resulting from the survey information is in the next table.

Update to the Climate Change Considerations chapter of *Australian Rainfall and Runoff*  
Survey - other identified user needs

High-level survey findings	Proposed treatment in the updated guidance
The application of the guidance is highly variable	Provision of nuanced discussions about climate change elements in practical design and the provision of worked examples to help users apply guidance consistently. This will include clear guidance around consideration of uncertainty, and choice of climate scenarios, baselines, losses and continuous simulation.
The guidance should support users in decision making	<p>'Layering' guidance to provide an easy-to-apply method as a default, with guidance on more sophisticated methods where appropriate.</p> <p>Inclusion of worked examples.</p> <p>Ensuring the scope of the guidance covers all annual exceedance probabilities up to and including the Probable Maximum Precipitation.</p> <p>Provision of information / guidance on spatial variability.</p> <p>Decoupling of Intensity-Frequency-Duration (IFD) scaling factors from temperature projections to allow independent updates in response to new data or policy changes.</p>
The guidance should contain an update mechanism.	<p>The updated guidance will include advice to update temperature projections independently of an update to the science review.</p> <p>The project scope includes the consideration of appropriate chapter update triggers and mechanisms.</p>
The AR&R should not be a substitute for regulation	ARR is an advisory document and is not a substitute for regulation.

## Next Steps

We invite you to continue to influence the update to the Climate Change Considerations chapter of *Australian Rainfall and Runoff*, ahead of the final guidance publication in early 2024.

To have your say:

- Review the science underpinning the update in Hydrology and Earth Systems Sciences [HESD - A systematic review of climate change science relevant to Australian design flood estimation \(copernicus.org\)](#)
- Provide feedback on the draft guidance in a second public consultation process opening in November. Contact [climate.science@dcceew.gov.au](mailto:climate.science@dcceew.gov.au) to stay in touch.

## Read More

The Department of Climate Change, Energy, the Environment and Water (DCCEEW) in partnership with Engineers Australia is updating the Climate Change Considerations chapter of *Australian Rainfall and Runoff: A Guide to Flood Estimation*.

The publication is one of the most widely used references to help engineers and the construction industry manage flood risk for the built environment. The latest version was published in 2019 and since this time, significant new research findings have been generated. Both the scientific and engineering community recognise that an update is required.

Earlier this year DCCEEW invited feedback from engineers, peak industry bodies, governments and subject matter experts on a discussion paper that outlines the proposed guiding principles and key considerations for the update. The survey results have been addressed across three key areas:

1. Submission of a meta-analysis of scientific literature for peer review. The review of science will underpin the updated guidance and provide scientific consensus when incorporating elements of climate change in design flood estimation. The paper is in an open peer review process in Hydrology and Earth System Sciences (HESS). [HESD - A systematic review of climate change science relevant to Australian design flood estimation \(copernicus.org\)](#)
2. Direct inclusion in draft updated guidance. The updated guidance will include nuanced discussions and worked examples of recommendations in design flood estimation. This will support users to apply the updated guidance. DCCEEW will seek user feedback on the draft updated guidance in November 2023, ahead of final publication in early 2024. [Consultation hub | Climate \(dcceew.gov.au\)](#)
3. Referrals to other sources of information. In some cases, survey respondents expressed interest in the guidance including information that falls out of scope of the Climate Change Considerations chapter of ARR. In these cases, the guidance will provide links to relevant references to support users to apply the guidance.

Funded via a grant from the National Emergency Management Authority (NEMA) Disaster Risk Reduction (DRR) Package, the update will improve the climate and disaster resilience of Australia's buildings and infrastructure and will reflect the most recent climate science research, projections and observed data.

For more information or if you have any questions, please email [climate.science@dcceew.gov.au](mailto:climate.science@dcceew.gov.au) or read more at [Climate science in Australia- DCCEEW](#).