



**QUEENSLAND FLOODS COMMISSION OF INQUIRY**

**SUBMISSION**

FLOOD MAPPING  
3 NOVEMBER 2011

**QFCI**

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## Background

The Insurance Council of Australia received a letter from the Commission dated 18 October 2011 inviting a response to various questions concerning flood mapping. The Insurance Council provides that response below.

## Response

- 1 What area should be covered by a flood map? For example, a local government area, a catchment, a basin, a sub-basin?**
  - 1.1 Flood mapping is relevant to all types of human activity and land-use. This includes forestry, agriculture, manufacturing and industrial, residential, transport and infrastructure. Flood maps should therefore be maintained where these activities occur or are planned to occur in the future. Flood maps have traditionally been maintained by individual local governments for portions of their Local Government Areas (LGA) that have flooding issues. An observation by the insurance industry is that there are frequent boundary issues with LGA based flood mapping where two maps are produced using different methodologies, often resulting in significant flood surface differences for the same ARI event.
  - 1.2 The preferred approach is for flood mapping to be conducted on a catchment basis, ensuring that all factors relevant to the catchment are addressed, rather than isolated mapping for a single LGA within the catchment. Catchments to be considered for flood mapping purposes should be established by each State in consultation with stakeholders and should include all land that is used (or planned to be used) for human activity.
- 2 Who should be responsible for flood mapping? For example, the Queensland Government, the Commonwealth Government, local governments, catchment-based authorities? If some sort of joint responsibility, how would that work in practice?**
  - 2.1 Flood mapping is relevant to land-use planning, emergency response and development control and is therefore a State issue, with some notable delegation to local government for implementation within a State based legislative framework. Flood mapping in QLD should be coordinated by the State in the first instance, with clear legislative requirements to direct its conduct, availability and outputs. Such legislation should direct certain collaborative flood mapping actions to be undertaken on a catchment basis by collective local governments based upon their LGA footprint within designated catchment areas. Commonwealth support for local flood mapping activities should continue under the National Disaster Mitigation Program, where funding is contributed to assist local governments to carry out flood mapping in the public interest, but within a State framework.
  - 2.2 The ICA has previously advocated that the Bureau of Meteorology undertake the coordination role, noting its powers under the Water Act and its current role

in providing flood warnings to the community.<sup>1</sup> However, any Federal agency could perform the role given sufficient resources and legislative authority.

- 3 Who should perform flood mapping? For example, private experts, officers of local State or Commonwealth governments?**
- 3.1 Flood mapping requires significant expertise and should in most instances be contracted to expert flood mapping consultants. Critically, the flood mapping that is outsourced in this way should be defined at State (if not National) level by a common set of core deliverables that all flood maps in Australia should be required to have.
- 3.2 Furthermore, on a catchment basis there should be a consistent regime of inputs to the flood model, to ensure a comparable output across the entire catchment when individual maps are compared. Where bespoke issues are required to be mapped, for a particular development or infrastructure site, those special outputs should only be modelled in addition to the core deliverables common to all flood maps.
- 4 Should there be mapping guidelines to guide all flood mapping completed in Queensland? If so, who should set the guidelines?**
- 4.1 A core set of deliverables should be applicable to all flood mapping in the State. These deliverables should be set by the State in consultation with all stakeholders in the management of the flood risk.
- 5 Who should fund flood mapping? For example, local governments wholly, State government wholly, Commonwealth government wholly, current resilience funding programme arrangements, another type of joint funding involving the State, Commonwealth and local governments? What other funding options are available?**
- 5.1 Flood mapping benefits the entire community by identifying the risk and then by guiding controls and response mechanisms to lower that risk. The benefits extend beyond those who live in the impacted area, to those who rely upon the outputs of the region (farming, manufacturing etc) and further to the nation as a whole who in the event of a major flood have been called upon to fund recovery efforts for damage that in many instances is entirely avoidable or manageable.
- 5.2 Flood mapping is not inexpensive and on the basis that it benefits all, funding for this activity should be shared between local, State and Federal governments under the current resilience funding arrangements.
- 6 What amount of data-sharing is appropriate? Should any agency which completes a flood study be required to share its information with other government agencies, insurance companies and financial institutions? On what terms should it be required to share such information?**

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<sup>1</sup> See Insurance Council of Australia's Submission dated 4 April 2011, pp 4 and 29-32  
<[http://www.floodcommission.qld.gov.au/\\_data/assets/file/0005/6494/Insurance\\_Council\\_of\\_Australia\\_2.pdf](http://www.floodcommission.qld.gov.au/_data/assets/file/0005/6494/Insurance_Council_of_Australia_2.pdf)>

- 6.1 Complete public awareness of the flood risk in any given catchment is of paramount importance. Any flood mapping developed with public money should be publicly available.
- 6.2 The level of detail provided to the public and other stakeholders should be relevant to its intended use. For example:
- 6.2.1 a householder may only require a representation of the flood risk at their own property that is sufficient for them to make a decision regarding their own actions and preparation;
  - 6.2.2 Emergency services require detailed information for populated areas for the evacuation planning;
  - 6.2.3 risk managers such as town planners and insurers require the detailed flood surface (multiple surfaces PMF, 1:100, 1:50, 1:20); and
  - 6.2.4 DEM information for the entire catchment in order to properly assess risks across all property.
- 7 **What types of flood mapping should be available to the public to enable them to be properly informed when making decisions affecting land planning, such as purchasing a property or making a development application, an in the context of an emergency, such as deciding whether and when to evacuate? Should the flood mapping available to them be, for example:**
- a) the flood maps or information uses in local planning schemes;
  - b) flood maps and information held by State government agencies;
  - c) flood maps and information held by Commonwealth government agencies;
  - d) maps showing flood risk, historical flood height at property and similar;
  - e) maps showing evacuation routes;
  - f) maps showing zones of the land that are likely to be flooded in certain eventualities ie when the flood rises about a certain height at a certain gauge.
- 7.1 The preferable approach is to ensure that members of the public receive initial formal advice regarding the local flood risk, at the time of purchase of a property or at the time of lease. However, advising the public of the risk as a one-off when purchasing or leasing is not enough.
- 7.2 Best practice in Australia involves frequent (at least annual) reminders for the occupant of a property that a flood risk exists. Frequent reminders of the risks afford occupants the opportunity to take appropriate preparatory action. An as yet unpublished post flood survey conducted by the Insurance Council indicates that 81.3% of occupants who live in a flood zone and who did not purchase flood insurance, indicated that not knowing they had a flood risk or assuming they had no flood risk was an important factor in their decision not to purchase flood insurance.

- 7.3 Had appropriate regulatory measures been in place to ensure that frequent disclosure of the risks occurred to each household, it is likely that many more would have purchased flood insurance products (available in QLD since 2007). Awareness of the persistent flood risk can be achieved through notices attached to rates notices, pushing the information to households. With regard to flood warnings and alerts, the locations of households exposed to a flood risk are typically predictable, far more so than for other types of natural hazard.
- 7.4 Emergency services presently do an adequate job of warning particular residents (who are exposed to a particular flood) that the hazard is imminent. The effectiveness of warnings given by emergency services would be greatly improved if they were warning residents who had been previously (and frequently) reminded by local government that their property is flood prone.
- 7.5 There are a variety of technical approaches and solutions to displaying and broadcasting flood warning information. The principles for selection of a technical approach should be that:
- 7.5.1 the information comes from a national or state agency that is credible and has responsibility for flood warnings;
  - 7.5.2 the information is presented in a graphical manner, showing the potential extent of a flood surface predicted for an event, including suitable bands of error (worst case and best case scenarios);
  - 7.5.3 the information is presented relative to predicted flood heights, so that consumers of the information will instantly understand the implications of observed river gauge heights (as broadcast by the media) with the predicted impacts for their location downstream;
  - 7.5.4 the information is able to be accessed by media outlets and the public with ease through the internet.
- 8 What sort of information or education should be provided to members of the public to assist them in understanding the maps?**
- 8.1 Ideally the information should be provided in a format that a reasonable person will understand. No significant education campaign or resources should be required if such a program is correctly developed. Any tool developed to provide risk information to the public will need explanatory notes, identifying the limits of accuracy, and a 'how to' section identifying how the information should be interpreted and used by the householder.
- 9 What sort of information or mapping should be available to insurance companies or financial institutions for them to use in decisions about providing products to consumers?**
- 9.1 Insurers and financial institutions should have access to the same information as that used by agencies involved in making decisions about land-use and for development consent.

- 9.2 The role of the insurance industry is to price risk and offer a product to consumers who face risks. If the industry does not have access to detailed flood maps for a catchment it is not possible to accurately determine a premium for the flood risk. This can result in a premium loading to account for the unknown risk or an embargo for that area on offering a flood insurance product, and neither of these outcomes are in the public's (or insurance industry's) interest.
- 9.3 Insurers and other stakeholders involved in assessing risk, need access to hydrology based geospatial flood surfaces for the PMF, 1:100, 1:50 and 1:20 flood events for any given region.
- 9.4 Resolution 16 carried at the 2011 conference of the Local Government Association of Queensland (LGAQ) neatly captures the need to ensure that risk information is made available to insurers, so that products can be developed, refined and then purchased by residents who face a flood risk.