

QUEENSLAND FLOODS
COMMISSION OF INQUIRY

STATEMENT OF RUSSELL KEITH CUEREL

I, **RUSSELL KEITH CUEREL** of c/- 41 George Street Brisbane in the State of Queensland, Manager, Infrastructure Management, Office of the Water Supply Regulator, Department of Environment and Resource Management (DERM), solemnly and sincerely affirm and declare:

Requirement from Queensland Floods Commission of Inquiry

1. I have seen a copy of a letter dated 7 September 2011, which is attachment **RKC-01**, from the Commissioner, Queensland Floods Commission of Inquiry to me requiring a written statement under oath or affirmation, and which details the topics my statement should cover.

Item 1: His role and position within the Department of Environment and Resource Management (DERM).

2. I am a civil engineer. I graduated from the Queensland Institute of Technology (as it was then known) in 1981. I am not currently registered with a professional body nor am I required to be in my substantive position. My current substantive position is Manager, Infrastructure Management (PO6), reporting to the Director-Water Infrastructure Asset Management and Standards, Office of the Water Supply Regulator. I have been in this position since September 2009.
3. In this role my principal responsibility is the assessment of Drinking Water Quality Management Plans for drinking water service providers under the *Water Supply (Safety and Reliability) Act 2008*. However, I also oversee the work of one engineer providing advice to the Department of Community Safety (DCS) on:
 - a. the implementation of flooding requirements of SPP1/03 in local government planning schemes; and
 - b. the payment of government subsidy for flood mitigation projects.
4. Going back (from the most recent) my previous positions and responsibilities have been as follows:
 - a. 2009: Project Manager, Metering (AO8), reporting to the Director, Implementation and Support Unit, Regional Service Delivery – a project managing the implementation of the department's rural water metering policy.
 - b. 2004-2009: Project Manager, Metering (AO8), reporting to the Director, Water Use Unit, Water Allocation & Management – project managing the implementation of the department's rural water metering policy. Within this

period I also contributed to the industry focussed review and update of the Queensland Urban Drainage Manual.

- c. 2002-2004: Principal Policy Officer - Floodplain and Stormwater Management (PO5), reporting to the Director, Water Use Unit, Water Allocation & Management –working on projects as directed (including the Rural Water Use Efficiency Program, State Flood Risk Management Policy project and administration of the Regional Flood Mitigation Program).
- d. 2000-2002: Engineer (PO4), reporting to the Director, Water Use Unit, Water Allocation & Management –working on projects as directed (including the State Flood Risk Management Policy project and administration of the Regional Flood Mitigation Program).
- e. mid-1990's-2000: Engineer (PO4), reporting to the Manager, Regional Planning, Regional Infrastructure Development - working on projects as directed (including the State Flood Risk Management Policy project and administration of the Regional Flood Mitigation Program)

Item 2: The role of DERM in drafting and administering the State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (SPP 1/03).

- 5. The role of DERM in drafting and administering the State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (SPP 1/03) is as follows:.

Drafting

It is my recollection that the SPP1/03 was drafted over the period between 2001 and 2003. DCS (then Department of Emergency Services, DES) was responsible for drafting SPP1/03 and, as I recall, set-up a DCS project team to develop the SPP. DCS also established a Government Advisory Committee to “*provide strategic and practical advice to the Department of Emergency Services at each stage of the development of the State Planning Policy and supporting Guidelines*”. See Attachments **RKC – 02**.

The Committee had representation from a number of agencies (as they existed at the time) such as Main Roads, Environment Protection Agency, Dept. of Premier and Cabinet, Dept. of Local Government and Planning, State Development, Qld Transport, Public Works, and the Qld Fire and Rescue Authority and was chaired by the Director, Disaster Mitigation Unit, Counter Disaster and Rescue Services, Department of Emergency Services (DCS).

In my position as an Engineer (PO4), Water Use Unit, Water Allocation & Management, my role at that time was to prepare a draft discussion paper for public consultation on the development of a State Flood Risk Management Policy. Because of my work on that project, I was directed to attend the meetings of the Government Advisory Committee – initially in support of my then director (Water Use Unit), and subsequently as Water Management and Use's representative.

DCS also requested that the department provide some material for the SPP Guideline – specifically with respect to identifying a natural hazard management area for flooding and the options that could be used. Again, as I was a project officer working on the department’s State Flood Risk Management Policy project at the time (and had earlier involvement with the development of floodplain management guidelines) I was directed by my manager to prepare an initial draft of some of the content of Appendix 2 for the DCS project team to develop into the guideline.

Administering

The former Water Management and Use business unit (and subsequently the Office of the Water Supply Regulator from about late 2006/early 2007) of the department provides high level technical advice to DCS, when requested, on whether planning schemes meet the requirements of SPP1/03 with respect to flood.

Item 3: How DERM interacted with the Department of Local Government and Planning (DLGP) and the Department of Community Safety (DCS) during the process of drafting the SPP 1/03.

6. As a PO4 engineer at the time, my interaction with the Department of Local Government and Planning (DLGP) and the Department of Community Safety (DCS) during the process of drafting the SPP 1/03 was as outlined above - i.e. participation on the Government Advisory Committee and the provision of strategic and practical advice to DCS. I was not responsible for any high-level discussions between the two departments.
 - a. I was the project officer on an existing departmental project to develop a State Flood Risk Management Policy. The State Flood Risk Management Policy project was established by the then Regional Infrastructure Development (RID) business unit under the Manager, Infrastructure Planning and Management. It arose from recommendations made by the Queensland Flood Coordination Committee chaired by the Executive Director, RID – see attachments **RKC – 03**;
 - b. By the time DCS launched its project to develop the SPP, an internal re-organisation of the department meant the State Flood Risk Management Policy project (and staff) was transferred to the Water Management and Use business unit under the Director, Water Use.

Because of the similar nature and (at that stage) timing of the two projects, the state-wide public consultation for both was carried-out jointly. I attended all sessions to conduct the presentations on the State Flood Risk Management Policy proposal along with DCS staff (and their contractors) who conducted the SPP1/03 sessions.

Item 4: How DERM interacts with the DLGP and DCS to administer the SPP 1/03. Please explain by reference to the specific examples of:

- a) The Brisbane City Plan;

- b) Bundaberg City Plan;
- c) Ipswich Planning Scheme; and
- d) Emerald Shire Council Planning Scheme.

7. I cannot answer for the department generally, but so far as my current role in OWSR is concerned there is no interaction with DLGP. OWSR only interacts with DCS in their administration of SPP 1/03.

It should be noted that planning scheme controls introduced by local governments in implementing SPP1/03 can only ensure *new* development has a reduced exposure to flooding. They cannot eliminate all flood risk nor can they reduce the number of existing properties already at risk of flooding – except when owners seek to redevelop those properties.

With respect to the specific examples and OWSR's role in providing advice to DCS, departmental records indicate the following:

- a. *Brisbane City Plan* – no record of receiving the Plan for comments being provided by WM&U or OWSR to DCS on the Brisbane City Council City Plan. Comment has been provided to DCS on one or two specific development proposals – see attachment **RKC-04**.
- b. *Bundaberg City Plan* – record of comment provided to DCS by WM&U recommending Bundaberg City Council be required to justify its adoption of a defined flood event lower than the 1% AEP; and an administrative query regards how the map(s) defining the Natural hazard management area flood should be included in the Plan – see attachment **RKC – 05**.
- c. *Ipswich Planning Scheme* – no record of receiving the Plan for comments. Comment (date unknown) was provided to DCS on the Walloon-Thangoona Master Plan Amendment of this Plan – see attachment **RKC – 06**.
- d. *Emerald Shire Council Planning Scheme* – records indicate that WM&U provided input to a draft letter from DCS (then DES) to DLGP which states that the Emerald IPA Planning Scheme (at the first state interest check stage) was not considered to have implemented the SPP - see attachment **RKC – 07**.

Item 5: The role that DERM plays (in conjunction with DCS and DLGP) in monitoring whether each local government has:

- a) **An adequate flood map;**
 - b) **Carried out adequate flood studies;**
 - c) **Identified an appropriate defined flood event in its planning scheme; and**
 - d) **Taken steps to appropriately reflect the SPP 1/03 with respect to flood in its planning scheme.**
8. To the best of my knowledge, the role DERM has is to advise DCS when they seek OWSR's comment at the time a local government submits their planning scheme to the State.

- a) *An adequate flood map* - OWSR checks the flood map that has been included in the planning scheme – i.e. it is for the 1% AEP flood and whether it shows which areas and properties are affected. OWSR does not check the accuracy of any underlying modelling or other supporting studies;
- b) *Carried out adequate flood studies* – e.g. OWSR confirms whether the flood information in the scheme appears to reflect what the Department knows about the most current information for the area (e.g. if a study has been funded by the government for that area, the outcomes of that study should be reflected in the plan)
- c) *Identified an appropriate defined flood event in its planning scheme* – where a local government has adopted a DFE below the 1% AEP, OWSR will provide comments to DCS on how the local government might justify a lower AEP (e.g. they have assessed and understand the risks associated with impact of larger floods and the community understands that a more frequent, but less severe flood has been used as the DFE);
- d) *Taken steps to appropriately reflect the SPP 1/03 with respect to flood in its planning scheme.* - OWSR will comment on whether the provisions applying to development within the natural hazard management area-flood reflect the “specific outcomes” stated in the SPP and are compatible with the proposed “solutions for development in a natural hazard management area – flood” in the SPP Guideline – see attachment **RKC-08**.

I am unaware of any other role that DERM has in monitoring local governments in this context.

Item 6: Whether DERM has any role in initiating flood studies for catchment areas or local government areas, and if so, a description of that role.

- 9. To the best of my knowledge, flood studies for catchment areas or local government areas are generally initiated by local governments or are a requirement placed on developers by local government.

OWSR has no role in initiating flood studies for catchment areas or local government areas and I am not aware of other areas of DERM having a role in initiating flood studies for catchment areas or local government areas as part of their normal responsibilities.

I am not aware of DERM initiating flood studies generally. Historically, I am aware that individual flood or flood-related studies have been undertaken or commissioned by DERM, however I only have direct knowledge of two (Warwick around 1994/5, and the Nogoia floodplain around 1996) and so can only comment on these.

- a. Warwick was undertaken by the department’s surface water modelling group to support a departmental project under the Manager-Regional Planning, Regional Infrastructure Development for the development of a floodplain management guideline

- b. Nogoia was also undertaken by the department's surface water modelling group to support the development of a Floodplain Management Plan developed by the department's Rockhampton office for the Nogoia Floodplain Management Board (a Joint Local Government comprising the then 3 local councils of Peak Downs, Emerald and Bauhinia Shires) to control the construction of rural levees .

Item 7: Whether DERM has any role in providing funding or other assistance for flood studies, flood models or flood maps and, if so: who such funding or assistance is provided to and the basis for such funding or assistance.

- 10. OWSR does not directly provide any funding or other assistance for flood studies, flood models or flood maps and I am not aware of the position of other parts of DERM in relation to provision of funding or other assistance.

The current State - Commonwealth Natural Disaster Resilience Program provides funding to local and state agencies for disaster mitigation related activities - including flood. The administration (and state funding) of this program in Queensland is the responsibility of DCS. However, OWSR does have a role in assisting DCS administer the program. OWSR's assistance is in the form of determining whether flood mitigation related projects selected for funding (including flood studies) have met their project milestones and are hence eligible to receive payment.

The process for selection of projects that receive funding under the Natural Disaster Resilience Program is the responsibility of DCS.

Item 8: With respect to the position described in SPP 1/03 that, generally, the appropriate flood event for determining a natural hazard management area (flood) is the 1% Annual Exceedance Probability (AEP) flood;

- a) Who or what body made the final decision as to that position;
 - b) Why a flood height standard was chosen rather than an approach that specifies areas of risk (such as high, medium or low risk of inundation);
 - c) Why a flood height standard was chosen as compared to other methods for identifying natural hazard management areas (flood);
 - d) Why the 1% AEP flood was chosen (as compared to a different AEP flood);
 - e) How the 1% flood was chosen, including a description of all relevant consideration;
 - f) Whether any advice was received from any other government department or agency regarding that position, and a description of that advice.
- 11. With respect to the position described in SPP 1/03 that, generally, the appropriate flood event for determining a natural hazard management area (flood) is the 1% Annual Exceedance Probability (AEP) flood; my response is as follows:
 - a. To the best of my recollection, the Government Advisory Committee (described under paragraphs 3 and 4 of this statement) discussed the issue based on information brought to the Committee by its members and would

have recommended this approach to the Chair (DES). I do not have minutes to confirm this.

- b. As *risk of inundation* is inherent in the AEP assigned to a particular flood, I understand the question to mean high, medium or low risk with respect to the flood hazard? There are three parts to the response to this item:
 - i. Firstly, it is my understanding that for an SPP to “take effect”, the area to which it applies must be defined – hence the concept of a *natural hazard management area* had to be established (someone with expert knowledge of the legislated planning framework from DLGP or DCS would be best positioned to explain this).
 - ii. Secondly, within the “natural hazard management area –flood” the specific outcomes of the SPP (e.g. people remain safe) are aimed at addressing the various levels of risk associated with the form of the flood hazard (e.g. deep or shallow, fast or slow flowing, etc). Appendix A also provides guidance on appropriate developments in the various flood hazard zones in Table A2.1 (adapted from the 2000 national guidelines¹)
 - iii. Lastly, although there would have been suggestions in the literature that the defined flood event (or events) for planning purposes should be based on a locality specific “risk” basis, the 1% AEP flood was the most widely accepted standard nationally at that time. It should also be noted that the SPP does recommend higher levels of flood immunity for Community Infrastructure required to operate during or immediately following a flood event (refer Appendix 9 of the SPP Guideline).
- c. I believe my response to (b.) addresses this question.
- d. The 1% AEP flood was the most widely accepted standard nationally and, at the time, represented a significant improvement in flood immunity over past practices in many localities in Queensland.
- e. As I understand it, information was put to the Government Advisory Committee on the adoption of variable flood standards by local governments around the state at that time and the general acceptance in other jurisdictions nationally of the 1% AEP flood.
- f. I don’t recall any other advice besides the issue being debated at meetings of the Government Advisory Committee. There may have been information sourced by the DES project team from other organisations seen to be taking a lead in the floodplain management field at the time (such as the Gold Coast City Council) but only DCS can confirm this.

¹ Floodplain Management in Australia: Best Practice Principles and Guidelines, SCARM Report No.73 2000

Item 9: In respect of item 8, please attach all relevant briefing notes, papers and records of decisions.

12. a). All the relevant briefing notes, papers and records of decisions that have been able to be retrieved at the time of this statement are attachments **RKC – 02** to **RKC – 07** inclusive. The search is continuing and whatever is retrieved will be provided to the Commission.
- b). I have attached as attachments as **RKC – 09**, a draft memorandum of understanding correspondence and briefing note in relation to the provision of the specialist advice on flood issues. The MoU is incomplete and unsigned. However, the MoU does not need to be finalised for department staff involved in its administration to understand and carry out the function.
- c). I refer to letter dated 02 Nov 2010 from EMQ to DERM confirming the arrangements through an exchange of letters. See the last document on Attachment RKC – 09. The letter also notes that Queensland is no longer represented on the National Flood Risk Advisory Group.

Item 10: The meaning and operation of section 6.6 of the SPP 1/03, including:

- a) **Clarification of how the SPP 1/03 applies to a development application where the local government has not appropriately reflected the SPP 1/03 and has not adopted a defined flood event in its planning scheme; and**
- b) **Examples of different ways in which local government area, and how different approaches are ultimately reflected in the relevant planning scheme.**
13. (a). The meaning and operation of section 6.6 of the SPP 1/03 relating to how it applies to a development application where the local government has not appropriately reflected the SPP 1/03 and has not adopted a defined flood event in its planning scheme is not a matter I am qualified to comment on.
- (b) With respect to different ways in which local governments determine the defined flood event for their local government area, I am generally aware that local governments may use a number of methods to determine the defined flood event. Current best practice is to undertake a flood (numerical) modelling study that results in a range of floods being investigated to determine the areas affected. The range of floods is based on Annual Exceedence Probabilities and ideally should cover all theoretically possible floods including the Probable Maximum Flood. Such studies can be time consuming and expensive and rely heavily on adequate data being available (rainfall, stream-flow, terrain, etc) to give reliable results. Alternatives to this method are mostly based on using historic information (which is also usually used as a check against modelled results) such as analysing the stream-flow records or simply using the largest known flood (flood of record). Numerical flood modelling generally provides the most information (e.g. identification of significant flow paths at each level of inundation and an estimate of the probable maximum flood) and therefore allows a more confident implementation of mitigation measures – including planning measures.

Item 11: What involvement DERM has in commenting on or drafting the Queensland Planning Provisions.

14. I cannot answer for the department generally with respect to its involvement in commenting on or drafting the Queensland Planning Provisions. I have had no role in commenting on or drafting the Queensland Planning Provisions and only became aware they existed as the result of an internal email around mid-January 2011.

I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867*.

Signed

Russell Keith Cuere

Taken and declared before me, at Brisbane this 14th day of September 2011

~~Solicitor/Barrister/Justice of the~~
~~Peace/Commissioner for Declarations~~