

Preface

The Commission was set up fourteen months ago to enquire into seven matters arising out of the 2010/2011 floods, identified in the terms of reference as: preparation and planning for the floods by governments, agencies and the community; the adequacy of the response to the floods; management of essential services; the adequacy of forecasts and early warning systems; insurers' performance of their responsibilities; the operation of dams; and land use planning to minimise flood impacts. It was a broad and daunting range of subject matter. Those questions had to be examined over a very large geographical area, because most of the state was affected; inquiries had to be made and hearings held in a variety of locations.

The Commission came under criticism towards the end of its term when it had to re-convene to examine whether the account of operational strategies to which the flood engineers responsible for Wivenhoe Dam had sworn in hearings was in fact correct. Not all of the criticism was fair, or acknowledged the pressures under which the Commission was operating, in endeavouring to cover all of its terms of reference in a limited time. It would have been quite impracticable for the Commission to take all the evidence given on oath before it and check it for inconsistency against the mountain of documents received. Time simply did not allow that. And the Commission's approach across the terms of reference has not been one of seeking to attribute blame; its brief was not to seek out wrong-doers but, as the Order in Council establishing it specifies, to make recommendations for the improvement of preparation and planning for future floods and emergency response in natural disasters, as well as for any legislative change needed. But the need to examine these particular allegations was made all the more acute by the fact that a commission of this kind is so dependent, given its time constraints, on truthful evidence.

As to how the floods were managed, there is no doubt that they took a state more accustomed to drought by surprise. Generally, though, Queenslanders can be relieved that governments at all levels were able to provide a prompt, if not perfect, response, which compares favourably with the apparent paralysis of government agencies and breakdown in order apparent on the Gulf coast after Hurricane Katrina struck New Orleans.¹ In Queensland there was an already existing, coherent emergency management structure, although it had not yet been tested by disaster of these proportions. Although some councils struggled, there was no breakdown in order, and people came to the assistance of others.

There is certainly a good deal of room for improvement in planning for emergency response, as the many recommendations in this report and the interim report demonstrate. But this note of caution must be sounded: the disastrous floods which struck south-east Queensland in the week of 10 January 2011 were unprecedented, in many places completely unexpected, and struck at so many points at once that no government could be expected to have the capacity to respond seamlessly and immediately everywhere, and in all ways needed. A great deal can be done to improve readiness to deal with disaster generally, but it is impossible that any government could be permanently ready to come at once to the assistance of everyone needing help in a disaster of that scale and suddenness, unless it were to maintain a standing force of rescue personnel beyond the present capacity of society to fund.

Even a large dam such as Wivenhoe has a limited flood mitigation capacity when the volume of water entering it is significantly larger than its storage capacity. Its flood mitigation effect for Brisbane was further limited by the fact that floodwaters from other parts of the Brisbane River catchment entered the river downstream of the dam, through the Bremer River and the Lockyer Creek. The flooding in Brisbane and Ipswich could, as Mr Babister's study has shown, have been reduced to some degree had the dam had its capacity reduced to 75 per cent prior to the December rains; but to appreciate what the magnitude of the rain would be and that it would fall in the dam area would have required a more than human capacity of prediction. What is concerning, though, is the apparent inertia of government when the possibility was raised.

The Commission has found non-compliance with the manual under which the dam was to be operated. What should not be overlooked is that the manual itself was ambiguous, unclear and difficult to use, and was not based on the best, most current research and information. The Commission has made a number of recommendations to ensure its thorough review, including of the operating strategies contained in it, based on comprehensive scientific investigations and modelling.

So far as insurance is concerned, the Commission's terms of reference did not extend to what has emerged as the major complaint: the fact that many people thought they were insured for flood, but have found that the wording of their policies actually excludes their claims. It was sensible not to ask the Commission to enquire into the

problem of definition, because it has already been the subject of two other inquiries. But it meant that the field of what was to be addressed was limited to insurers' performance where they were responsible for meeting claims. Despite the Commission's efforts to encourage members of the public to provide their accounts, evidence has been scant, perhaps for reasons which are suggested in the relevant chapter. The Commission has not been prepared to make sweeping findings on limited evidence. Where ways of managing claims better have emerged from the evidence, recommendations have been made.

This report has dealt at considerable length with the land planning systems of the State and their application by councils. In land use planning, attention to flood risk has been ad hoc. The recommendations made are designed to insert into the land planning system uniform controls which will ensure that the risk of flood is consistently recognised and planning assessments made with regard to it. Queensland also lacks a coherent approach to floodplain management; a number of recommendations have been made relating to the need for current and comprehensive flood studies and flood mapping, particularly in urban areas.

One of the heartening aspects of the Commission's work has been the many people who took the time and trouble, whether they were directly affected or not, to write submissions with considered and sincere ideas. Some will be unhappy that their views were not adopted; but I am genuinely grateful to all who contributed their efforts.

I want to thank counsel assisting and the staff of the Commission for their remarkable efforts, energy and esprit de corps over a testing year. Staff members in their twenties abandoned their social lives to work absurdly long hours, oblivious to weekends and public holidays; older Commission officers strained the affections of their families doing the same. Nothing could have been achieved without the hard work and steadiness of purpose of the four counsel assisting. And my thanks go also to the Deputy Commissioners for their good humour and patience through sittings close and far, under all sorts of conditions. Mr O'Sullivan, particularly, made himself available for community meetings around the state, in the towns he knows well from his long career.

It is hoped that this report and the interim report will serve as a detailed record for the future, of what happened in the floods and where things went wrong. The areas to which this report is directed are the longer term. Years of drought did not promote rigour in flood planning, whether in relation to disaster response, dam management or land use. Complacency about flood prevailed, at least in parts of the state, over many years. And there is a risk that the recommendations made here will be enthusiastically taken up in the short term, but, absent another flood disaster in the next few years, priorities will drift and the lessons will be forgotten.

C.E. Holmes
Commissioner

(Endnote)

- 1 A Failure of Initiative: The Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina.
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1 Introduction

Prolonged and extensive rainfall over large areas of Queensland, coupled with already saturated catchments, led to flooding of historic proportions in Queensland in December 2010, stretching into January 2011.¹

Thirty-three people died in the 2010/2011 floods; three remain missing. More than 78 per cent of the state (an area bigger than France and Germany combined) was declared a disaster zone; over 2.5 million people were affected.² Some 29 000 homes and businesses suffered some form of inundation.³ The Queensland Reconstruction Authority has estimated that the cost of flooding events will be in excess of \$5 billion.⁴

The scale of the disaster led to the establishment, on 17 January 2011, of the Commission of Inquiry into the Queensland floods of 2010/2011.

1.1 Report to government

The Queensland Government set the matters that the Commission must consider as part of its inquiries (the 'terms of reference'⁵), and the timeframes in which the Commission must deliver its findings and recommendations to government.

In accordance with the order establishing it, the Commission provided the Queensland Government with an interim report on 1 August 2011. The order originally required the Commission to provide a final report to the Queensland Government by 17 January 2012. The date for the final report (this report) was first extended to 24 February 2012 because of the Commission's extensive public hearing schedule and the volume of evidence to be considered; in late January that date was further extended to 16 March 2012 to allow the Commission to take further evidence in relation to the dam operation strategies applied at Wivenhoe Dam during the January 2011 flood event.

The Commission's interim report focused on those matters that the Commission had identified as needing to be addressed before the 2011/2012 wet season. In particular, it dealt with preparation and



First day of Inquiry hearings, 11 April 2011 (photo courtesy The Courier-Mail)

planning for floods and steps needed to ensure an emergency response that would prevent the loss of life and property. It also recommended that should the Bureau of Meteorology predict with confidence equal to or greater than 2010's prediction another wet season of similar proportions, the full supply level of Wivenhoe Dam should be lowered to 75 per cent in the 2011/2012 wet season (a step which was in fact taken). In all cases, the Commission sought to identify recommendations that could realistically be put into effect in the short term, but it also made recommendations about work of such importance that it should be commenced, even if it could not be completed, before the next wet season.

Given the very short time available to it before the interim report was required to be provided to Government (six months) the Commission endeavoured to make that report as comprehensive as possible about the operation of dams, and emergency warnings, preparation, planning and response to floods, including some aspects of managing the supply of essential services during the 2010/2011 floods.

Some of these issues required further examination and are addressed in this final report. Because the issues of insurance and land planning were not matters which lent themselves to useful recommendations for the next wet season, the Commission deferred its consideration of those aspects of its terms of reference to this final report.

1.2 The Commission of Inquiry

The Commission was established under the *Commissions of Inquiry Act 1950* as an independent body with wide-ranging powers of investigation.

The Honourable Justice Catherine Holmes was appointed as Commissioner to lead the inquiry. Mr James (Jim) O'Sullivan AC and Mr Phillip Cummins were appointed as Deputy Commissioners to assist her.

Two barristers, Mr Peter Callaghan SC and Ms Elizabeth Wilson SC were first appointed as counsel assisting the Commission. Later, Ms Kerri Mellifont SC and Ms Nicole Kefford were also appointed as counsel assisting the Commission. Mr Mark Hinson SC provided advice on aspects of land planning legislation.

Staff of the Commission were drawn from fields of expertise relevant to the Commission's work including the legal, policy, research and policing professions. Experts in certain fields were also engaged to provide advice on particular matters, including hydrology and town planning matters. A list of experts engaged is in *Appendix 5*.

1.3 The Commission's work

The Commission's findings and recommendations in this report and its interim report were the result of an examination of an enormous amount of information. This information was obtained through a variety of means, including written submissions, community meetings, material sought from organisations and individuals with particular knowledge, and public hearings. The Commission sought to ensure it was informed in a balanced way, receiving the views of the public and those of organisations which played a part in the preparation and response to the floods, across a range of perspectives from urban and regional areas.

More than 700 written submissions were received. They addressed the entire range of matters into which the Commission was to inquire.

At the outset of its investigations, the Commission held community consultation sessions in Grantham and Murphys Creek in the Lockyer Valley. No formal evidence was taken at these meetings; it was a useful way for the Commission to hear directly from members of the Lockyer Valley community what they regarded as the questions needing to be considered by the Commission.

The Commissioner and deputies visited the Lockyer Valley twice in January 2011, to see first hand the immediate effects of the devastating flash flooding that occurred there on 10 January 2011. The Commissioner and deputies also visited the Wivenhoe and Somerset dams to see them in operation.

Community meetings were held in 16 locations in central, southern and western Queensland. Led by Deputy Commissioner O'Sullivan, those meetings provided information about how community members could participate in the inquiry process. Through the community meetings, the Commission identified individuals and organisations in regional areas from whom it sought further information. Meetings were held before the interim report, and again after its delivery, when time permitted trips to those communities which could not be visited in the first round. In total, the Deputy Commissioner and Commission staff, including the Commission's police investigators, travelled



2011 flood height marked on gum tree, Balonne River at St George (photo courtesy Gerard Hinchliffe)

some 4154 kilometres throughout Queensland in the course of holding community meetings.

Through the duration of the Commission, community meetings were held in:

- Jericho
- Alpha
- Chinchilla
- Condamine
- Surat
- Tara
- Rolleston
- Theodore
- Mundubbera
- Gayndah
- Gin Gin
- Taroom
- Charleville
- Roma
- Cunnamulla
- Warwick.

The Commission's police investigators obtained information to inform its research by making contact with communities throughout Queensland which were directly affected by the 2010/20211 floods and travelling to regional areas to obtain statements from local people affected by flooding.

The Commission also used its powers under the *Commissions of Inquiry Act 1950* to obtain statements and documents from members of the public, experts, public servants and members of non-government organisations. Some of those individuals were also called

as witnesses in the Commission's public hearings.

Public hearings were held around the state. The Commission sat for 68 days in total, and 6133 pages of transcripts of evidence were produced. Thirty-one days of hearings took place before the Commission's interim report was delivered. In its second round of hearings, the Commission sat again in Brisbane, Ipswich and Emerald, this time focusing on land planning and insurance related issues. It also held hearings for the first time in Bundaberg, Maryborough and Gympie, where it examined, in addition to those issues, the emergency preparation for and response to the 2010/2011 floods. A third round of hearings was held over a ten day period in early February 2012 to examine allegations of misconduct on the part of flood operations engineers in the application and reporting of dam operation strategies for Wivenhoe Dam.

Details of the public hearings held over the entire period of the Commission are set out below:

- Brisbane (49 days)
- Toowoomba (5 days)
- Dalby (1 day)
- Goondiwindi (1 day)
- St George (1 day)
- Ipswich (3 days)

- Rockhampton (1 day)
- Emerald (3 days)
- Bundaberg (2 days)
- Maryborough (1 day)
- Gympie (1 day).

The hearings were held in a range of venues, from town halls to regional court houses. The total number of witnesses who gave evidence in the Commission's public hearings was 345: 176 people gave evidence in the first round of hearings held before the Commission's interim report, 142 people gave evidence in the second round, and 27 witnesses were called in the third round. (Some of those who gave evidence in the third round had also been called as witnesses in the first round of hearings).

The Commissioner presided at each of these public hearings, assisted by the two deputy Commissioners, with the exception of the last part of the public hearings, in which the conduct of Seqwater and its employees in the reporting of dam operation strategies was in issue. At the Commissioner's request, Deputy Commissioner Cummins stood aside on becoming aware that a company for which he had contracted to work after the Commission's close had been engaged by Seqwater to be part of a review committee examining technical work completed for the long term review of the Wivenhoe and North Pine dam manuals. While he remained a Deputy Commissioner, to avoid any possible perception of a conflict of interest, he did not take any further part in the Commission's work.

Hearings were open to the public and conducted within a legal framework: witnesses gave evidence and were cross examined, exhibits were tendered and transcripts prepared. Lifeline counsellors engaged by the Queensland Government were available to support witnesses before, during and after their appearances before the Commission.

There was no requirement for those involved to have legal representation, although some witnesses chose to seek permission from the Commission to be legally represented when they appeared at the hearings.

The Commission received a number of applications from individuals and entities seeking leave to appear as parties in the course of the inquiry. Those whose interests were likely to be affected in an individual, direct and immediate way by the Commission's findings or recommendations were given leave to appear, enabling them to challenge evidence by cross-examination. *Appendix 2* sets out the parties who were granted leave to appear as a party to the proceedings before the Commission.

Those who unsuccessfully sought leave to appear on the basis of a more general interest in the matters the subject of the inquiry were given other opportunities to put forward their views and information, by way of submission, formal statement or being called to give evidence.

In the course of its work the Commission has given effect to the principle of natural justice and has given notice to those whose conduct might be the subject of adverse findings in this and the interim report.

At all times the Commission ensured that its work was as open and accessible as possible to the general public. The Commission's website (www.floodcommission.qld.gov.au) provided information about the progress of the inquiry as well as email, postal and telephone contact details so that anyone, regardless of geographical location, could provide information or submissions to the Commission. The website also provided live streaming of the public hearings. Daily transcripts from the public hearings were placed on the website within 24 hours (and in most cases the same day), so that the public could be kept informed of the Commission's progress. The website proved a very popular source of information for people following the inquiry: for example, in the six months from September 2011 to February 2012, it received over 66 000 visits and nearly 280 000 page views.

Submissions made to the Commission and exhibits tendered as part of the public hearings were also published on the website, redacted of personal information that would breach an individual's privacy, or represent a risk to public safety. Closing submissions made by parties and counsel assisting the Commission on the matters explored in the third round of hearings will be placed on the website on publication of this report, redacted of any submissions adverse to a party's interests about which the Commission did not make a finding. The Commission's view is that it would be unfair to publish allegations damaging to reputation which were not in the event substantiated.

The Commission's interim report and this final report are also available on the Commission's website.

The Commission has conducted its investigations, community meetings, public hearings and delivered its reports well within the budget allocated by the Queensland Government.

1.4 Structure of this report

The report begins with an examination of floodplain management (chapter 2), which is, in many respects, at the heart of the Commission's inquiry. It covers the range of responses to flood risk that the Commission has investigated from its inception to this final report: emergency warnings, preparation, planning and response, dams, levees, and land use planning. This report proposes a fundamental shift in approach; the focus on just one flood, often the so-called '1 in 100 year' flood, must now be abandoned. Floods come in all sizes; a proper approach to flood risk will consider them all.

The second part of the report (chapters 3-11) details the results of the Commission's examination of how local and regional planning systems can best minimise the impact of floods.

This part of the report commences, in chapter 3, with a summary of the land planning framework and how it works, covering the *Sustainable Planning Act 2009* (the legislation which in most cases governs land planning in Queensland), the instruments made under it, and how development is assessed. Bearing in mind that land planning is a complex area of the law, with a peculiar language of its own, the Commission has sought, to the extent possible, to use language intelligible to those not familiar with the intricacies of planning schemes.

Various aspects of state and local planning instruments are considered in chapters 4 and 5 respectively. Chapter 6, on 'satellite' legislation, explains how some pieces of planning legislation which are independent of the *Sustainable Planning Act 2009* operate.

Some particular challenges which flood-susceptible land presents in planning are considered in chapter 7, including the problems of storing hazardous materials on a floodplain and isolation of properties by flooding of low-lying access routes. This chapter also addresses the issue of controls for the development of levees.

How the development assessment process works in practice where flooding is a consideration is detailed, with some particular case examples, in chapter 8.

Chapter 9 considers the role of building controls in minimising damage caused by flooding through the regulation of design and construction, and the implications of possible changes to the Queensland Development Code to regulate building in flood hazard areas.

Chapter 10 provides an overview of the damage caused by the 2010/2011 floods to sewerage, stormwater, electricity, telecommunications, and roads and rail infrastructure. It considers how damage to essential services infrastructure can be minimised in future floods, with a particular emphasis on planning and design measures.

Larger-scale measures to mitigate the impact of flooding are examined in chapter 11 *Buybacks and land swaps*, including the initiative to rebuild Grantham in the wake of the flash flooding disaster of 10 January 2011.

A significant term of reference not dealt with by the Commission in the interim report is the performance of private insurers in meeting their claims responsibilities. This is addressed in chapter 12.

The results of the Commission's investigations into the Queensland Government's response to flooding at active and abandoned mine sites are set out in chapter 13.

The Commission, in its interim report, made a number of recommendations designed to avoid a repetition of the number of flood-related deaths that occurred in the 2010/2011 floods. Chapter 14 of this final report discusses the circumstances of the flood related deaths, and sets out each finding or recommendation made by the Commission to address the systemic issues raised by those deaths.

Chapter 15 concerns a variety of matters raised, but not finally dealt with, in the Commission's interim report: emergency communications; review of disaster management plans; the Queensland Fire and Rescue Service's response to the events of 10 January 2011 and its risk assessment process; the structure and funding of the SES and local SES attempts at providing a warning to Grantham residents on 10 January; and whether the quarry at Grantham had any role in the Grantham flooding.

Chapter 16 examines the application and reporting of dam operating strategies for Wivenhoe Dam. In particular, this chapter examines allegations as to the versions given by Seqwater and its employees of the strategies under which the dam was operated between 7 January and 11 January 2011; conclusions are reached about what in fact occurred and recommendations are made accordingly.

Chapter 17 examines several different aspects of dam operations, including the functioning of some particular dams, the longer term review of the manual, bank slumping, cracks in Somerset Dam, bridges and crossings near dams, and some relevant dam functions of DERM.

The recommendations from this report are set out following the Commissioner's preface. As was the case in the interim report, particular recommendations are also set out in the chapter to which they relate, preceded by a discussion of the facts and material relied on in making them. The recommendations made in the Commission's interim report are set out in *Appendix 3*.

1.5 General observations

All topics in the Commission's interim and final reports are related, in one way or another, to the concept of flood risk. That is a term capable of more than one meaning; although usually it embodies both likelihood of flooding and the consequences of flood when it comes. Sometimes, though, it relates only to likelihood. How it is used in this report depends on context. Where the Commission uses expressions such as 'susceptible to flooding', 'vulnerable to flooding' or 'at risk of flooding' it does not use them in any technical sense; they should be regarded as having their ordinary meaning.

This report does not attempt to catalogue every action taken in preparing for the 2010/2011 floods; it also does not attempt to exhaustively examine every development application or insurance claim. While the Commission did examine particular developments and particular insurance claims, and has set out the results of some of those investigations in this report, it does so by way of illustration of the issues being examined, as part of the Commission's attempt to find a better way of preparing for and responding to floods in the future.

At all times, the Commission has been cognisant of the requirement in its terms of reference to make recommendations that are 'appropriate, feasible and cost effective' to improve the response to any future floods or other natural disasters. Where the Commission has identified a recommendation that has significant cost implications, the report details this in the relevant part, and frames the recommendation appropriately. However, in the time available to it, the Commission has not been in a position to exhaustively seek evidence on the cost of various alternatives. Instead, it has focussed on making recommendations about what might usefully be achieved.

The recommendations made by the Commission are focussed on flood-related matters, given the significance of the particular kind of natural disaster experienced in Queensland. However all levels of government, in considering their response to the recommendations, should consider how they might also be applied in other natural disasters.

(Endnotes)

- 1 A detailed description of the extent of flooding across Queensland is set out in the Commission's interim report, chapter 1 *Summary of weather and flood events*.

- 2 Queensland Government, Operation Queensland: the State Community, Economic and Environmental Recovery and Reconstruction Plan, 2011 [p3].

- 3 Queensland Government, Operation Queensland: the State Community, Economic and Environmental Recovery and Reconstruction Plan, 2011 [p4].

- 4 Queensland Government, Operation Queensland: the State Community, Economic and Environmental Recovery and Reconstruction Plan, 2011 [p4].

- 5 The full terms of reference for the Commission is at *Appendix 1*.