

# Queensland Government response to the Floods Commission of Inquiry Interim Report

August 2011



# Message from the Premier

---



The unprecedented natural disasters that devastated Queensland last summer have been seared into our collective memory; thirty-seven people lost their lives and thousands more suffered destruction and despair.

The summer of sorrow is now part of our history, but these events must inform our future. We owe it to those who died and those who suffered to learn the lessons of last summer.

The Queensland Floods Commission of Inquiry has forensically examined the flooding and has recommended steps to refine our capacity to prepare for, and respond to, natural disasters.

While the Commission found that many of our disaster management structures and arrangements are fundamentally sound, it also made many recommendations for improvements.

The Interim Report makes 175 recommendations focused on planning and preparing for the next wet season, and 104 of these relate to Queensland Government responsibilities.

The Queensland Government accepts, and will implement, all of the Commission's recommendations relating to our agencies.

The Interim Report is our blueprint for action and this implementation plan details an additional \$76 million over 5 years to improving our disaster response and flood infrastructure management. That's on top of what agencies are already spending on improving our disaster management system.

Work is already underway on many of the recommendations, and I have established a dedicated unit within the Department of the Premier and Cabinet to coordinate the response across Government agencies.

The Commission identified the importance of collaboration and the need to share responsibility for preparing for and responding to disaster events. All levels of government and the community have an equally important role to play.

We are determined to deliver improvements ahead of the approaching wet season.

Implementing the Commission's recommendations will deliver benefits beyond enhancing our abilities to prepare for and respond to future flood events. It will mean we are ready for the next event – whether it is a storm surge, flood, cyclone, bushfire, health pandemic or oil spill.

The Interim Report may not answer all the questions Queenslanders have about the floods disaster. Another opportunity will come when the Commission conducts a second round of hearings in September and October 2011 to address longer term issues including insurance and land planning.

The Queensland Government will continue to cooperate fully with the Commission and we look forward to the Final Report in February 2012.

While the task is great, our resolve is greater. Queensland will face extreme natural disasters again and together we must ensure the lessons from 2010-11 are never forgotten.

**Anna Bligh MP**  
**Premier of Queensland and Minister for Reconstruction**

# Contents

---

Message from the Premier .....	i
Overview .....	1
Action to date .....	3
Responding together .....	6
Chapter one – Planning and preparation.....	10
Chapter two – Community information and warnings .....	20
Chapter three – Emergency response .....	28
Chapter four – Evacuation, resupply and essential services.....	37
Chapter five – Dam management .....	44
Attachment A: Acronyms .....	53
Attachment B: Interim Report recommendations .....	54

## OVERVIEW

While Queensland's climate offers an enviable lifestyle, it also makes us vulnerable to extreme weather events. Prolonged and intensive rainfall over large areas of Queensland led to significant flooding in December 2010 and January 2011. More than 78 per cent of the state was declared a disaster zone with more than 2.5 million people affected. The estimated cost of the flooding events alone is in excess of \$5 billion<sup>1</sup>.

The Queensland Floods Commission of Inquiry was established on 17 January 2011. The Commission was required to prepare an Interim Report by 1 August 2011 to inform flood preparedness activities ahead of the coming wet season. The Final Report will be released in February 2012.

In preparing the Interim Report, the Commission noted:

*The recommendations have been framed with the underlying aim of preventing future loss of life, injury and damage to property. It remains, however, the case that resourcefulness in natural disasters is not just the province of government: it is the collective responsibility of all sections of society and, more fundamentally, of each individual within the community. It is incumbent on governments at all levels to develop policy and frameworks that establish the arrangements for disaster management, and on the individual, properly informed, to make preparations and decisions.*<sup>2</sup>

The Queensland Government has accepted the Interim Report as a blueprint for implementation and advocates a collaborative approach in preparing for the 2011-12 wet season and beyond. The Interim Report made 175 recommendations, and detailed analysis has identified 104 recommendations for which the Queensland Government has implementation responsibility. While many other recommendations are directed towards local governments and the Commonwealth Government, these activities require a joint effort and the Queensland Government will provide support and assistance where necessary. The following themes provide the strategic framework for implementation.

### **Shared responsibility**

It is impractical to expect a single community, one agency or one level of government to effectively prepare for and respond to a major statewide disaster. Effective disaster management requires a collaborative approach with responsibilities shared by individuals, families, communities and all levels of government. Our emergency response last summer demonstrated the benefits of coordinated team work and highlighted the need for effective communication. Queenslanders expect and deserve efficient services where everyone understands and fulfils their responsibilities.

### **Structural efficiency**

Queensland is part of a national disaster management framework, under which states and territories are responsible for planning for and responding to disasters and emergencies. In line with national strategies, our disaster management structures underpin a risk management approach, with a focus on mitigation and resilience.

---

<sup>1</sup> Queensland Floods Commission of Inquiry, *Interim Report*, p20

<sup>2</sup> Queensland Floods Commission of Inquiry, *Interim Report*, p23

The *Disaster Management Act 2003* provides the legislative basis for Queensland's disaster management arrangements. It establishes a disaster management hierarchy of three levels: the State Disaster Management Group, district disaster management groups, and local disaster management groups. Queensland's State Disaster Management Plan identifies four phases of disaster management: prevention, preparedness, response and recovery<sup>3</sup>. Local government plays a central role in all four phases and local level capability is recognised as the frontline of disaster management.

The Commission noted Queensland's disaster management system functioned effectively when operating as intended.<sup>4</sup> However, as with any system operating under acute pressure, some limitations were exposed. We will work hard to streamline our processes and procedures, provide clear delineation of roles and responsibilities and improve the consistency of our plans.

### **Enhancing our capacity and capability to respond**

It is inevitable that Queensland will face extreme natural disasters again. So we must ensure that all reasonable steps are taken to reduce their severity and mitigate their effects.

Our emergency services personnel are among the best in the world. We must continue to give them our support and build organisational and community resilience to these extreme events. Our focus will be on stronger coordination, improved interoperability and strengthened capacity to provide an integrated response.

To maintain our current high standard of emergency response, the Queensland Government provided almost \$2 million as part of the 2011-12 State Budget to deliver 17 new disaster management staff. These staff will be split between the State Disaster Coordination Centre, which has a 24/7 watch desk capacity, and seven additional regional disaster planning staff to support critical disaster preparation and recovery work.

### **Community education**

Working with communities before a disaster strikes ensures people will be in a better position to deal with the impacts of the disaster. It is incumbent upon governments to ensure communities are as prepared as possible through information programs to mitigate risks and encourage disaster preparation.

The importance of community education and awareness initiatives on flooding was a recurrent theme noted by the Commission. Well-informed and well-prepared communities are essential, as people who understand the risks and know what to do when they eventuate, respond better to disasters.

At an individual and household level, residents can assist by not placing themselves in danger of death or injury, for example, by avoiding driving into flood waters. Residents can also help by being prepared for isolation of up to three days in a disaster and where possible managing the risks to their property. For example, in flood prone areas, houses with habitable floors built above the potential flood height can reduce the loss and damage associated with floods<sup>5</sup>.

### **Floods Commission of Inquiry Delivery Unit**

The Queensland Government has established a delivery unit in the Department of the Premier and Cabinet to coordinate implementation across multiple agencies and ensure appropriate measures are in place before the start of the next wet season.

---

<sup>3</sup> State Disaster Management Group, *Queensland State Disaster Management Plan*, p5

<sup>4</sup> Queensland Floods Commission of Inquiry, *Interim Report*, p115

<sup>5</sup> Office of the Chief Scientist, *Understanding floods: questions and answers*, p28

Some of the measures proposed in the Interim Report's recommendations will be completed in the longer term, such as complex reviews of operations and ongoing training program delivery and maintenance. The Queensland Government will ensure the delivery of these activities as soon as practical and will continue our focus on disaster management arrangements ahead of each wet season.

## ACTION TO DATE

The Queensland Government has already implemented a number of key initiatives to increase preparedness and resilience prior to the 2011-12 wet season.

### **Disaster preparedness**

While the Commission of Inquiry focused on Queensland's floods disaster, the review has informed and strengthened our disaster management arrangements whether for storm surge, flood, cyclone, bushfire, health pandemic or oil spill. The Queensland Government is working with all stakeholders to improve our preparedness and disaster response coordination across the state, including:

- \$1.989 million for 17 new disaster management staff
- improvements to local disaster management planning including evacuation centre arrangements
- more training for SES volunteers and those involved in disaster management
- more trained swift water rescue technicians
- improved local warning systems including SMS alerts and use of social media
- improved communication to tourists and those who speak languages other than English
- improved access to information about road conditions and the dangers of driving during natural disasters

### **Emergency services support**

The 2011-12 State Budget gave an infrastructure and services boost to our emergency services. The budget included \$44 million for fire facilities, urban and rural fire appliances, operational equipment and ICT improvements, including:

- \$11.7 million for 24 new and replacement urban fire and rescue appliances and \$4 million for 25 new and replacement rural fire appliances
- \$4.2 million for an All Hazards Information Management System
- \$1.8 million for a disaster management warehouse in North Queensland to ensure rapid and reliable deployment of high volumes of essential supplies to local communities to assist in response and recovery

### **Operation Queenslander**

The Queensland Reconstruction Authority, through *Operation Queenslander – the State Reconstruction Plan*, has worked solidly to reconnect and rebuild Queensland communities. Progress is on track and activities are now focused on preparations for the next wet season.

### **Planning for stronger, more resilient floodplains**

There is no doubt that the task of managing our floodplains is complex. Balancing the role of the floodplain from protection of agriculture and the environment to stimulating economic development and supporting new population growth is an increasingly difficult process. The Queensland Government acknowledges the Commission of Inquiry will address land planning issues in its Final Report. However

we have taken early action to improve our understanding of our floodplains and build greater resilience through a new program to inform land use planning processes. The program aims to identify both interim and long term solutions, including a mapping product, to promote greater correlation of land use planning and floodplain management particularly at a river sub-basin level.

The Queensland Reconstruction Authority, in conjunction with the Department of Local Government and Planning and the Department of Environment and Resource Management, is preparing a two-part guideline *Planning for stronger, more resilient floodplains* to assist in floodplain management and associated land use planning.

The Authority has reviewed planning schemes across Queensland to determine how flooding matters are currently managed. Mapping has been completed for 24 priority sub-basins across Queensland. The mapping identifies a spatial extent of land potentially at risk of flooding based on historical data such as alluvium soils, contours, cleared vegetation and satellite imagery. This mapping provides broad floodplain information and is not intended to identify a height of flooding nor is it based on a frequency of potential flood.

### **Disaster bereavement service**

In August 2011, the Queensland Government launched a new statewide bereavement service to help people come to terms with the loss of loved ones in natural disasters. The service offers counselling and access to psychologists, social workers, mental health nurses and an Indigenous mental health worker/psychologist. The service will be available for two years and is free for family members who have lost someone as a result of the floods and cyclones. The service is in addition to \$12.5 million worth of counselling and support services, provided predominantly through local governments, to help people with a mental illness get through these difficult times as well as provide on-the-ground support to approximately 5500 people who have been emotionally affected.

### **Rebuilding Grantham together**

The Queensland Government moved quickly to assist in the introduction of temporary planning controls to rebuild flood-affected areas in the Lockyer Valley, Brisbane and Ipswich. The Grantham Reconstruction Area was declared by regulation on 8 April 2011 in accordance with the *Queensland Reconstruction Authority Act 2011*. In an accelerated program which lasted less than four months, including more than two months for community consultation, the *Rebuilding Grantham together* development scheme took effect on 4 August 2011. Approximately 70 residents are participating in an historic land swap scheme coordinated by the Lockyer Valley Regional Council. The scheme allows residents to relocate their principal place of residence to elevated land above the 2011 flood level.

Temporary local planning instruments are also in place for Brisbane and Ipswich. The instruments encourage rebuilding residential areas above the flood immunity level and require new developments to raise the habitable floor height or use flood-resistant building materials to endure a flood event.

### **SES recruitment initiative**

Queensland's SES volunteers battled unprecedented conditions last summer to help their local communities respond to and recover from the natural disasters. The Queensland Government, in conjunction with local government, launched a statewide SES recruitment initiative on 12 June 2011, which included television advertisements. More than 795 expressions of interest have since been received, reaffirming the Queensland spirit embodied by tens of thousands of volunteers during the recovery effort.

The Queensland Government will also provide 56 flood boats and flood boat operation training for SES units across Queensland. Four flood boats for Blackwater, Dysart, Logan East and Mackay have estimated delivery dates before the end of September 2011. A further 10 flood boats are due for delivery in November 2011, five in December 2011, five in February 2012, and a further 32 to follow. SES members will also be provided with access to disaster management training.

### **Surf Life Saving Queensland partnership**

Queensland's surf lifesavers, who proved invaluable during the floods and Cyclone Yasi, are set to play a more formal role in the state's disaster management framework. Surf Life Saving Queensland's operations present significant opportunities for partnership including two helicopters, water craft including inflatable rescue boats and rescue jetskis, all-terrain and 4WD vehicles, a range of lifesaving equipment and 35,000 potentially trained volunteers. The use of these facilities will supplement, not replace, the need for additional emergency services and equipment to support the implementation of the Commission's recommendations.

While surf lifesavers will always remain focused on Queensland beaches, their emergency response trained groups stationed across the state will provide considerable assistance during disaster events. The Queensland Government provides annual funding to Surf Life Saving Queensland and will develop an agreement to integrate surf lifesavers' capabilities into Queensland's disaster management framework. We will also amend disaster management legislation to formalise their role and involvement, and that of the Australian Defence Force and Australian Red Cross, with the State Disaster Management Group.

### **All Hazards Information Management System**

The Queensland Government is developing an All Hazards Information Management System (AHIMS) to coordinate the collection and dissemination of disaster management information. The system will enable a dual flow of information between the State and local governments, and support the creation and distribution of a series of SMS templates.

### **Bruce Highway Upgrade Strategy**

Improving flood immunity is a priority for the Bruce Highway Upgrade Strategy. The Strategy, out for consultation until 9 September 2011, identifies 60 major priorities that include flooding protection and major priority works for inclusion in the Queensland Infrastructure Plan.

### **Wivenhoe Dam**

It is not yet possible to predict whether the Bureau of Meteorology is likely to make a similar season forecast to that made for the 2010-11 wet season. However the Queensland Government has put in place mechanisms to allow a temporary reduction of Wivenhoe Dam to be made in time for the 2011-12 wet season should it be necessary. Seqwater is currently reviewing the Wivenhoe and Somerset Dams Flood Mitigation Manual to develop an Interim Flood Mitigation Manual. The interim manual will take into account the Commission's recommendations including an assessment by an independent expert peer review panel prior to submission to the Department of Environment and Resource Management. The department's Office of the Water Safety Regulator will review the submitted changes to the manual and ensure it is approved and gazetted by 1 October 2011.

The Queensland Government is also undertaking a scoping study to investigate options to increase the flood mitigation performance of Wivenhoe Dam. By November 2011, the Queensland Coordinator-General will have completed a short term assessment of the options including raising the dam wall to increase the flood storage compartment. Seqwater will conduct a long term study which is expected to be complete by mid 2013.

The majority of the Interim Report's recommendations will be implemented through existing resources, however, the Queensland Government will fund a number of new initiatives, as outlined below.

### **Get Ready Queensland public education campaign**

The Queensland Government has developed a *Get Ready Queensland* campaign to encourage Queenslanders to prepare for storms and cyclones, build community resilience and urge people to stay away from flood waters. Developed in consultation with the Local Government Association of Queensland, the campaign will include advertising, online and social media, displays, schools programs and promotional events. A tailored *Get Ready Guide* will also be distributed to Queensland households.

### **New emergency response training and equipment**

In addition to the equipment and training provided to the SES, the Queensland Government has provided training and invested in new equipment for our emergency services personnel. Swift water rescue training was held in July and August 2011, and further training is planned to provide 253 swift water rescue technicians (Level 2) by the end of November 2011. Level 1 and awareness level swift water rescue training has been provided to auxiliary firefighters and further training will be held before the start of the wet season.

A statewide audit of personal floatation devices has ensured that all swift water technicians are issued with new devices. Floatation devices designed for children are also now available on all special rescue appliances. Additional personal floatation devices are being purchased for urban appliances. Further research into devices with rope release and other safety features is currently underway. Waterproof radio cases have been supplied to all regions and a new purchasing arrangement is being developed to include waterproof radio options.

The Queensland Fire and Rescue Service trialled hands-free radios in June 2011 and 100 helmet kits will be purchased for the Special Operations Unit by 1 November 2011. The Unit has also purchased 50 additional radios for rescue technicians to avoid shared communication packs.

### **Call centre communication**

The Queensland Government will provide \$555,000 to increase the ability for Smart Service Queensland to rapidly scale up call centre capacity to respond to the significant increase in calls during a disaster.

## **RESPONDING TOGETHER**

As the Commission acknowledged, it is incumbent on governments at all levels to develop robust disaster management frameworks and arrangements. Queensland is part of a national disaster management framework and we work collaboratively with the Commonwealth Government to develop and strengthen our disaster management arrangements and networks. As local level capability is recognised as the frontline of disaster management, the Queensland Government partners with local governments across the state to support local communities to prepare and respond to disaster events.

A significant collaborative effort is already underway, and the Queensland Government will continue to work with the Commonwealth Government, the Local Government Association of Queensland and other stakeholders to ensure our disaster management arrangements are as effective and coordinated as possible.

## Local Government Association of Queensland

The Commission made 65 recommendations that are relevant to local government. The Queensland Government acknowledges the efforts and commitment of local governments and the Local Government Association of Queensland to implement improvements to local government disaster management arrangements in time for the next wet season.

The Local Government Association of Queensland has commenced work on:

- Developing new protocols with the Bureau of Meteorology, the Australian Red Cross and the RSPCA on behalf of all councils
- Upgrading the protocol for disaster management, in consultation with Emergency Management Queensland and the Queensland Police Service
- Expanding and updating the Local Government Disaster Management Resource Kit, including new disaster management community education resource manual and communication guidelines for councils

These new and updated resources will be completed prior to November 2011 and will be an important tool for councils to ensure that disaster preparations are effective and consistent across local government areas.

Local level responses are central to Queensland's disaster management arrangements and the Queensland Government has already commenced working with local governments to help implement many recommendations, including:

- support to review and update local disaster management plans
- additional training for Local Disaster Coordinators
- floodplain mapping to assist land use planning and floodplain management
- community education programs and campaigns to promote disaster preparedness and mitigate risks
- standard SMS alert message templates for use in issuing emergency warnings

In addition, the Queensland Government is assisting local governments in disaster preparedness, relief and recovery through the following programs and activities.

### **Flexible Funding Program**

Disaster preparedness is one of the key eligible themes for applications for the Flexible Funding Program. The program, under the \$20 million Natural Disaster Relief and Recovery Arrangements Community Development and Recovery Package, provides funds to every local government in Queensland to implement community development and/or disaster preparedness activities. The Department of Communities is currently working with local governments and the Local Government Association of Queensland to support councils to identify what types of activities and information need to be developed.

### **Natural Disaster Resilience Program**

Over the next two years the Queensland Government will contribute \$11 million under the Natural Disaster Resilience Program (NDRP) which is a disaster and community resilience competitive grant program. The NDRP vision is "to reduce Queensland communities' vulnerability to natural hazards by supporting regional councils and other stakeholders to build community resilience." The program can be used to assist less well-resourced councils to fund the installation of ALERT system in appropriate locations.

### **Education campaigns**

The Queensland Government has developed *Get Ready Queensland*, a comprehensive community education, media and advertising campaign, to encourage Queenslanders to prepare for storms, floods and cyclones, build community resilience and urge people to stay away from flood waters. Developed in consultation with the Local Government Association of Queensland, the campaign will commence in September 2011 and will include advertising, online and social media, displays, schools programs and promotional events. We will also seek support from a wide range of organisations in promoting messages to as many people as possible.

### **Queensland Government in-kind support to local councils**

Through the Queensland Reconstruction Authority, the Queensland Government has been providing in-kind support to local councils for work at Grantham and North Queensland as well as floodplain and general mapping services.

In addition, the Queensland Government is providing seven full-time equivalent staff in the Department of Community Safety to provide higher levels of coordination with all 73 local councils, with a particular focus on less well resourced local governments. These staff will provide direct support to councils for advice, direction, expertise and monitoring to improve the quality and effectiveness of local disaster management plans.

### **Flood clean up works**

The Queensland Government is coordinating statewide remediation and resilience works for riparian and coastal ecosystems and landscapes through the Queensland Reconstruction Authority's Environment Sub-Committee. The government has provided \$400,000 to SEQ Catchments Ltd to assist with environmental recovery activities, restoration of vegetation, and in-stream habitat and debris removal. In addition, we have committed a further \$2 million to Healthy Waterways in 2011-12 to assist the rehabilitation of South East Queensland catchments.

In addition, the Queensland Government has secured, from the Commonwealth Government, \$8.414 million additional natural disaster funding assistance for acute riparian, flood plain, coastal and farm clean up works including Lockyer Valley riparian cleanup and phase one stream bank stabilisation. An implementation plan will now be developed to coordinate these activities.

### **Mount Nebo Early Warning System (MNEWS)**

MNEWS is a joint venture with the Queensland Fire and Rescue Service, the Rural Fire Service, Queensland Parks and Wildlife, Queensland Police Service and Moreton Bay Regional Council which was developed to increase the safety of residents of the Mount Nebo area. The system has been operating since 2008 with a grant funded program to extend the system to cover Mount Glorious almost completed. This will see a second siren installed and launched prior to the 2011 bushfire season.

### **Local Government Grants and Subsidies Program**

The \$45 million Local Government Grants and Subsidies Program provides financial support for local governments that demonstrate that they have a limited capacity to self-fund an identified priority project, as evidenced by a financial sustainability evaluation undertaken by the Department of Local Government and Planning.

For 2011-12, the Government will prioritise up to \$5 million of this funding towards vulnerable local governments for one-off purchase of capital equipment, for example the provision of flood warning systems (including sirens, ALERT and SMS warnings) and the provision of additional flood and rainfall gauges. The standard provision regarding co-payment will continue to apply.

## Commonwealth Government

The Commonwealth Government has identified eight recommendations for which it has implementation responsibility either in full or in part and a further 26 which will also require Commonwealth involvement. The Commonwealth Government is preparing a detailed response to these recommendations, to be released publicly in early September 2011.

# CHAPTER ONE: PLANNING AND PREPARATION

## State disaster management planning

3.1	The state disaster management group should include representatives of the Australian Defence Force and the Australian Red Cross in its planning and preparation for the next wet season.	Queensland Government SUPPORT
3.2	Risk management is fundamentally important to disaster management. The Queensland Government should, before the next wet season, ensure that the state-wide natural hazard risk assessment is completed and its results provided to local governments.	Queensland Government SUPPORT
5.4	The C2C program should be incorporated into the state disaster management arrangements and operate within the structure of the state disaster co-ordination centre.	Local Government Queensland Government involvement
5.5	The state disaster management group, Emergency Management Queensland and the Local Government Association of Queensland should do further work before the next wet season to ensure that during a disaster: <ul style="list-style-type: none"> <li>the C2C program meets requests for assistance as efficiently as possible</li> <li>local governments and other prospective participants understand how the C2C program works.</li> </ul>	Queensland Government SUPPORT Local Government involvement
5.74	Alignment of police district boundaries, disaster district boundaries and local government boundaries is unlikely to be feasible in the short-term. However, where police district boundaries are being re-assessed for other reasons, conformity between boundaries of police districts, disaster districts and local government regions, should be a major objective.	Queensland Government SUPPORT
5.79	Local governments and the Queensland Government should work with their New South Wales counterparts to set up procedures for co-ordinating emergency responses in the region of the Queensland/New South Wales border.	Queensland Government SUPPORT Local Government involvement
6.1	Local, district and state disaster management groups should include essential services providers in their disaster planning and preparation and in their meetings at an early stage during disasters.	Queensland Government SUPPORT Local Government involvement

## WHAT HAS BEEN DONE

### State Disaster Management Group [Recommendations 3.1 and 6.1]

The State Disaster Management Group met on 3 August 2011 and the members unanimously committed to work together to implement the Interim Report's recommendations. The Group formally extended membership to the Australian Defence Force, the Australian Red Cross and utilities to advance planning and preparation for the next wet season. Disaster management legislation will be amended to formalise membership and involvement, including Surf Life Saving Queensland, before the start of the next wet season.

Essential services providers including Energex, Ergon Energy, Powerlink Queensland and Telstra are members of the State Disaster Coordination Group. Consultation with electricity suppliers is underway to inform decision-making processes for electricity shut down to critical infrastructure during disaster

events. The Department of Community Safety will have completed engagement meetings with Energex, Ergon Energy, Optus, Telstra, the Insurance Council of Australia and the Australian Retailers Association to progress improved disaster management planning connectivity.

In addition, essential service providers have nominated representatives for district and local disaster management groups and will continue to contribute to disaster planning and preparation as and when requested.

**Natural hazard risk assessment [Recommendation 3.2]**

The Queensland Government, with the support of Risk Frontiers of Macquarie University, has conducted a statewide natural hazard risk assessment. The assessment report will be provided to local governments with interim advice on its input to local disaster management plans.

**Council to Council (C2C) program [Recommendations 5.4 and 5.5]**

The Queensland Government is working with the Local Government Association of Queensland to incorporate the Council to Council (C2C) program into the state disaster management arrangements and develop processes for effective and reliable C2C operations in the State Disaster Coordination Centre.

**Boundary alignment [Recommendation 5.74]**

The Queensland Government is reviewing disaster district boundaries and an interim report and recommendations will be finalised in December 2011. Any recommended realignment of district boundaries will be implemented via regulation.

**Cross border coordination [Recommendation 5.79]**

The Queensland Government has worked closely with the New South Wales Government to improve cross border coordination of emergency responses. Emergency Management Queensland has liaised with NSW SES and the Border Regional Organisation of Councils (including Southern Downs, Goondiwindi, Inverell, Tenterfield, Gwydir, Balonne and Moree Plans) to clarify cross border SES arrangements. A Memorandum of Understanding with the NSW SES will be in place by 1 November 2011.

In addition, the Queensland Ambulance Service and Queensland Fire and Rescue Service both have existing Memorandums of Understanding with their counterparts in New South Wales for cross border operations and assistance.

Relevant Queensland Health service districts also have Memoranda of Understanding in place with New South Wales to provide health services to cross border residents. These districts are working with New South Wales and local governments to ensure all health support response strategies are being implemented.

The Queensland Government is also developing, in consultation with the New South Wales Government, a whole of government Memorandum of Understanding to address cross-border issues, and this is expected to be finalised before the start of the next wet season.

**FUTURE ACTION**

**Natural hazard risk register [Recommendation 3.2]**

The statewide natural hazard risk assessment will be updated to include new natural hazard impact information, improved modelling for regional priority hazards and updated measures reflecting social vulnerabilities and community strengths.

A risk register methodology and supporting guideline will be developed for local government and Queensland Government agencies for the 2012 wet season. The Department of Community Safety will provide training to government officers in the development and use of risk registers, including how the register can be used to inform communities and build community resilience. These documents will be consistent with the requirements of the National Emergency Management Committee.

**Council to Council (C2C) program [Recommendations 5.4 and 5.5]**

The Queensland Government will continue to work with the Local Government Association of Queensland and 73 local government areas to maintain C2C systems and processes in the disaster management environment to ensure the benefits of the program continue to be realised.

**Queensland Strategic Policy Framework for Disaster Management**

The Queensland Government will continue to monitor and review disaster management arrangements to inform a review of the Queensland Strategic Policy Framework for Disaster Management in mid 2012.

**District disaster management planning**

3.7	Emergency Management Queensland should proceed with its proposed reviewing system before the next wet season.	Queensland Government SUPPORT
3.8	Each district disaster co-ordinator should ensure that, before the next wet season, the disaster management plan of every local government in the co-ordinator’s district susceptible to flooding: <ul style="list-style-type: none"> <li>• is consistent with the <i>Disaster Management Act 2003</i></li> <li>• addresses local risks and circumstances</li> <li>• can be used easily in the event of a disaster.</li> </ul>	Queensland Government SUPPORT Local Government involvement
3.9	In order to assist district disaster co-ordinators in this task, and to ensure consistency and effectiveness, Emergency Management Queensland should: <ul style="list-style-type: none"> <li>• provide a standardised approach for district disaster co-ordinators to follow, with all necessary guidance</li> <li>• generally oversee the reviewing process</li> <li>• before the next wet season, review a selection of local disaster management plans of local governments susceptible to flooding, which have already been reviewed at the district level.</li> </ul>	Queensland Government SUPPORT
3.10	Emergency Management Queensland should assess the effectiveness of the review system before the end of 2011, and report its results to the Commission by 31 December 2011.	Queensland Government SUPPORT

**WHAT HAS BEEN DONE**

**Local Disaster Management Plan review system [Recommendation 3.7]**

Emergency Management Queensland has developed a standard plan review tool to direct the assessment of disaster management plans. The tool will be provided to District Disaster Coordinators to review local disaster management group plans before the start of the next wet season.

Queensland Health is also working with local governments to improve coordination in responding to public health risks during natural disasters. Work is underway to investigate collaborative arrangements for monitoring water quality, managing issues related to communicable diseases and distributing vaccinations.

### **District disaster coordination [Recommendation 3.8]**

The Queensland Police Service has appointed 23 executive officers across Queensland to provide executive support to District Disaster Management Groups. These officers have established effective coordination centres in their districts and also networked communication between government agencies and stakeholders. The officers will facilitate disaster management training and provide continuous improvement in service delivery.

### **Disaster management plan review [Recommendations 3.8 and 3.9]**

All District Disaster Coordinators across Queensland have monitored and supported the work undertaken by Local Disaster Management Groups to refine and update their plans.

District Disaster Coordinators will use the standard plan review tool to ensure consistency with the *Disaster Management Act 2003*, to address local risks and circumstances and to check plans are easy to read and implement. Where possible, all local disaster management plans will be reviewed by the start of the 2011-12 wet season.

## **FUTURE ACTION**

### **District disaster coordination [Recommendations 3.8 and 3.9]**

The Queensland Police Service will ensure an annual review of local disaster management plans is included in each District Disaster Management Group's operational plan.

To support District Disaster Coordinators, Emergency Management Queensland will review 22 local disaster management plans by the 1 November 2011. These local plans include areas most susceptible to flooding risk: Banana, Barcoo, Bundaberg, Cairns, Carpentaria, Cassowary Coast, Cook, Doomadgee, Flinders, Hinchinbrook, Ipswich, Isaac, Mackay, Maranoa, Moreton Bay, Rockhampton, Scenic Rim, Somerset, South Burnett, Sunshine Coast, Tablelands and Toowoomba. Similar select reviews will be completed annually.

### **Local Disaster Management Plan review system [Recommendation 3.10]**

Emergency Management Queensland will develop a framework to assess the effectiveness of the local disaster management plan review system and a report will be provided to the Queensland Floods Commission of Inquiry by 31 December 2011. Any improvements identified for the review system will be incorporated into the standard plan review tool by 1 February 2012.

## **Local disaster management planning**

3.3	Emergency Management Queensland should, as part of its review of local disaster management planning guidelines, consider whether consistent activation terminology should be adopted.	Queensland Government SUPPORT
3.4	Every local government susceptible to flooding should ensure that, before the next wet season, its local disaster management plan: <ul style="list-style-type: none"><li>• is consistent with the Disaster Management Act 2003</li><li>• addresses local risks and circumstances</li><li>• can be used easily in the event of a disaster.</li></ul>	Local Government Queensland Government involvement
3.5	Every person who is required to work under a local disaster management plan should be familiar with the plan before the next wet season.	Local Government
3.6	Every local government should publish its disaster management plan (and relevant sub-plans) on its website before the next wet season.	Local Government

4.15	Each local disaster management group should include in its meetings a representative of the operator of any dam upstream of its region which contributes water to flooding.	Local Government Queensland Government involvement
5.6	As part of their planning before the next wet season, local disaster management groups should identify communities which, because of distance, the potential for isolation by disaster, or any other reason, may require specific disaster management arrangements, and take steps to establish them. Such arrangements may include forming disaster management sub-groups in those communities.	Local Government
5.7	Whatever form arrangements take, they should seek to ensure that, in the event that flooding causes isolation: <ul style="list-style-type: none"> <li>• there are lines of communication between the local disaster management group and the community</li> <li>• the community has the basic resources it needs to cope with its situation</li> <li>• the local disaster management group is aware of what supplies the community may need in prolonged disaster, and can respond to requests for assistance in a timely way</li> <li>• potential evacuation routes and centres are known.</li> </ul>	Local Government
5.8	Where a local government forms a sub-group of its disaster management group: <ul style="list-style-type: none"> <li>• the responsibilities of the sub-group must be clearly defined within the local disaster management arrangements</li> <li>• each member of the sub-group must clearly understand his or her role.</li> </ul> The Commission recommends that sub-groups and local disaster management groups set out their respective roles and responsibilities in writing.	Local Government
5.57	Local disaster management groups and district disaster management groups of which the Australian Red Cross is not currently a member should include the Australian Red Cross in disaster preparation and planning as well as response, whether as a member or otherwise (see also recommendation 3.1).	Local Government Queensland Government SUPPORT
7.4	Lockyer Valley Regional Council should immediately develop a plan for the removal of debris, man-made and natural, from waterways in the Lockyer Valley and put it into effect so as to minimise the risk should flooding recur in the coming wet season.	Local Government Queensland Government involvement

## WHAT HAS BEEN DONE

### Local Disaster Management Planning Guidelines [Recommendations 3.3 and 3.4]

Emergency Management Queensland distributed the Local Disaster Management Interim Guidelines to local governments for consultation in July 2011. The final guidelines will be endorsed by the State Disaster Management Group by 31 August 2011 and distributed to local governments to enable disaster management plans to be updated before the start of the next wet season.

Timely activation of local disaster management plans is critical. The decision to activate is dependent upon a number of factors including the perceived level of threat. Activation may either be bottom up or top down. Bottom up activations escalate up through the disaster management arrangements where the local disaster management group requires support and top down activations involve escalation down through the arrangements from the state disaster management group where the imminent threat has a broader implication across the state. The Local Disaster Management Interim Guidelines include activation terminology based on an escalation model of Alert, Lean Forward, Stand Up and Stand Down.

The Queensland Government will engage seven additional disaster planning staff to provide additional assistance to local governments, particularly less well-resourced councils, to improve the quality and effectiveness of local disaster management plans.

### **Damage and reconstruction monitoring [Recommendation 3.4]**

The Queensland Reconstruction Authority has developed the Damage Assessment and Reconstruction Monitoring Strategy to strengthen Queensland's capacity to rapidly assess damage and monitor reconstruction after disaster events. The strategy will contain standard operating procedures to deliver early damage assessments for any 2011-12 events, clarify the roles and responsibilities across State agencies and local government, provide more accurate damage assessment information collection and disseminate information quickly to response and recovery agencies.

### **Local Disaster Management Group membership [Recommendations 4.15 and 5.57]**

Local and district disaster management groups will seek the involvement of the Australian Red Cross, other non-government organisations and utilities in groups where they are not currently a member.

SunWater has reviewed its participation in local disaster management groups and will seek involvement in groups where it does not have an existing relationship.

### **Removal of debris in Lockyer Valley region [Recommendation 7.4]**

The Queensland Government is coordinating statewide remediation and resilience works for riparian and coastal ecosystems and landscapes through the Queensland Reconstruction Authority's Environment Sub-Committee. The Department of Environment and Resource Management has provided technical support and advice for waterways clean up and has developed guidelines to provide landholders who adjoin watercourses with exemptions from seeking authorisations to remove debris and vegetation from watercourses following a natural disaster.

The Queensland Government has provided \$400,000 to SEQ Catchments Ltd to assist with environmental recovery activities, restoration of vegetation, and in-stream habitat and debris removal. In addition, we have committed a further \$2 million to Healthy Waterways in 2011-12 to assist the rehabilitation of South East Queensland catchments and for the ongoing delivery of the Healthy Waterways Program.

## **FUTURE ACTION**

### **Funding for acute riparian, flood plain coastal and farm clean up works [Recommendation 7.4]**

The Queensland Government has secured, from the Commonwealth Government, \$8.414 million in additional natural disaster funding assistance for acute riparian, flood plain, coastal and farm clean up works. Of this \$8.414 million the Queensland Government has committed \$1.697 million to the Natural Resource Management body, SEQ Catchments Ltd. This funding will be used by SEQ Catchments Ltd to assist Lockyer Valley Regional Council and Somerset Regional Council to develop and implement plans for the removal of debris prior to the 2011/12 wet season.

## Disaster management training

3.11	<p>Emergency Management Queensland should endeavour to ensure that before the next wet season:</p> <ul style="list-style-type: none"> <li>• training is provided to those involved in disaster management at the local and district levels to ensure that the respective roles of all agencies, and in particular local government and the Queensland police, during an event are clearly understood</li> <li>• training is provided to all local disaster co-ordinators</li> <li>• training is provided to SES volunteers</li> <li>• local disaster management groups are given practical training based on the event of large-scale flooding across different local government regions (as in Exercise Orko).</li> </ul>	Queensland Government SUPPORT
3.12	If training cannot be provided to every local government and disaster district before the next wet season, priority should be given according to each region's susceptibility to flooding.	Queensland Government SUPPORT

### WHAT HAS BEEN DONE

#### Disaster management training [Recommendations 3.11 and 3.12]

The Queensland Government's implementation of the Commission's disaster management training recommendations will substantially increase the quantity and quality of available training. By 1 November 2011 new course programs will be developed, more training programs will be held across the state, and certain training will be available online.

Emergency Management Queensland, in conjunction with the Queensland Police Service, has conducted disaster management training at district and local levels. From May to August 2011, 901 participants completed the Queensland Disaster Management Arrangement Course and 18 participants completed the Local Disaster Coordinator Course.

Emergency Management Queensland has also developed a disaster management training framework. This framework establishes a clear training pathway for all those with a legislated responsibility under the *Disaster Management Act 2003*.

### FUTURE ACTION

#### Disaster management training [Recommendations 3.11 and 3.12]

By 1 November 2011, Emergency Management Queensland will have conducted the Queensland Disaster Management Arrangements Course for more than 2000 participants and the Local Disaster Coordinator Course for more than 90 participants. It is planned for all Local Disaster Coordinators to complete the course or be assessed as competent through recognition of prior learning. The majority of participants will be from local disaster management groups in areas susceptible to flooding or cyclones. SES members will also be provided with access to disaster management training.

#### Major training exercise [Recommendation 3.11]

A major exercise to provide practical training in managing a large scale event is planned for the Brisbane region in late November or early December 2011. This exercise will follow smaller desktop exercises by Brisbane City Council, Brisbane district, Redland City Council and Moreton Bay Regional Council in October 2011

## Community education

3.13	Before the next wet season, local governments susceptible to flooding should conduct community education programs which provide local information about (at least) the following topics: <ul style="list-style-type: none"> <li>• the measures households should take to prepare for flooding</li> <li>• the roles and functions of the SES and details of how to contact and join it</li> <li>• whom to contact if assistance is needed during a flood</li> <li>• contact details for emergency services in the area</li> <li>• the types of warnings that are used in the area, what they mean and what to do in the event of a warning</li> <li>• where and how to obtain information before, during and after a disaster</li> <li>• what is likely to happen during a disaster (for example, power outages and road closures)</li> <li>• evacuation measures available for groups who require particular assistance (for example, the elderly, ill and people with a disability).</li> </ul>	Local Government  Queensland Government involvement
3.14	To ensure consistency, the Queensland Government should assist local governments to develop and deliver the community education programs.	Queensland Government SUPPORT
3.15	Before the next wet season, the Queensland Government should conduct a public education campaign about the dangers of driving into floodwaters.	Queensland Government SUPPORT
3.16	The campaign should use various media and be designed to reach as many people as possible.	Queensland Government SUPPORT
3.17	The National Emergency Management Committee should, as part of its education initiatives, consider developing a national public education campaign about the dangers of driving into floodwaters, using various media and commencing, if possible, before the next wet season.	Commonwealth Government  Queensland Government involvement
3.18	The Queensland and Commonwealth governments should liaise to ensure a consistent message is delivered to the public.	Queensland Government SUPPORT
5.69	The Queensland Government and councils should ensure information about emergency preparedness, warnings and evacuation is available in the different languages of ethnic groups in the community and in Auslan.	Queensland Government SUPPORT

## WHAT HAS BEEN DONE

### Community education programs [Recommendations 3.14, 3.17, 3.18 and 5.69]

The Queensland Government provides a variety of education materials encouraging community preparedness, resilience and safety. These include:

- *SES Get Ready Guides* – a comprehensive preparedness guide for cyclone, storm, flood and tsunami
- Household Emergency Plans – this guide outlines four steps to developing an emergency plan with all members of the household
- Preparing an emergency kit and evacuation kit – this guide recommends provisions for essential needs in the event of an emergency, and suggests if you live in an area prone to flooding preparing an evacuation kit can save time and stress in the event of a cyclone, storm or flood
- Tune into warnings – this guide ensures people know how to tune in, log on, listen out and act
- Emergency contact information card – this card provides a range of emergency phone and website contacts and suggested options for personal details
- Emergency Rediplan – in partnership with the Australian Red Cross, this guide focuses on household preparedness for people with disabilities, their families and carers
- Check on your neighbours – this guide encourages local neighbourhood interaction to identify who may need support in the event of an emergency

- Prepare your pets – this guide outlines steps to take in looking after pets before and during an emergency

The Queensland Government's disaster management website [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au) also provides a range of useful information including warnings, emergency contacts, policies and guidelines and financial support.

The Queensland Government will continue to collaborate with local governments on appropriate and consistent local messages. We will also continue to work with the Commonwealth Government and other members of the National Emergency Management Committee to highlight the dangers of driving into floodwaters through complementary and consistent messages.

Key documents containing information about being prepared, emergency warnings and evacuation procedures will be translated into languages recommended by Multicultural Affairs Queensland. In addition:

- advertisements will air on ethnic radio stations
- the National Indigenous Radio Service will broadcast 'tune into warnings' messaging in Creole
- television advertisements will include closed captioning
- Emergency Rediplan includes functionality for Auslan and capability for the visually impaired

Essential service providers including Energex and Ergon Energy also conduct large public information campaigns about staying safe and being prepared for storms, floods and bushfires. They also notify customers through a variety of channels regarding power outages and electricity arrangements during disaster events.

### **Get Ready Queensland campaign [Recommendations 3.14, 3.15 and 3.16]**

The Queensland Government has developed *Get Ready Queensland*, a comprehensive community education, media and advertising campaign, to encourage Queenslanders to prepare for storms, floods and cyclones, build community resilience and urge people to stay away from flood waters.

Developed in consultation with the Local Government Association of Queensland, the campaign will commence in September 2011 and will include advertising, online and social media, displays, schools programs and promotional events. We will also seek support from a wide range of organisations in promoting messages to as many people as possible.

A tailored *Get Ready Guide* with fridge magnet will also be distributed to two million Queensland households. The guide provides vital information and safety tips relating to storms, storm surges and storm tides, cyclones, tsunamis, floods and fast flowing flood water (swift water). It outlines four key steps to preparedness, and includes a template for a household emergency plan and key contacts.

To support the *Get Ready Guide*, two separate campaigns will be delivered. A storm and cyclone campaign will be promoted with the theme 'Can you survive for three days?' and will be split to highlight cyclone messages in north and far north Queensland and storm messaging in the remainder of the state. A swift water campaign will be promoted with the theme 'If it's flooded, forget it' and will focus on the dangers of swift water, in particular driving into floodwaters.

*Get Ready Queensland* builds on existing government storm and cyclone education programs and will progressively released for 2011-12 wet season. The Queensland Government will review the *Get Ready Queensland* campaign and identify any modifications in preparation for future wet seasons.

**Flexible funding program [Recommendation 3.14]**

The Flexible Funding Program, under the \$20 million Community Development and Recovery Package National Disaster Relief and Recovery Arrangements, provides funds to every local government in Queensland to implement community development and/or disaster preparedness activities. The Department of Communities is currently working with local governments and the Local Government Association of Queensland to support councils to identify what types of activities and information need to be developed.

## CHAPTER TWO: COMMUNITY INFORMATION AND WARNINGS

### Warnings

4.1	In issuing warnings for a district or region, local and state authorities should use a range of different warning mechanisms effective for the particular district or region, including methods which do not rely on electricity.	Local Government Queensland Government involvement
4.2	Councils should prepare SMS alert templates covering a range of different flood scenarios before the wet season.	Local Government
4.3	SMS alerts should direct recipients to websites or contact numbers providing more detailed information about flood locations and predictions, the location of evacuation centres and evacuation routes.	Local Government
4.4	Councils and Emergency Management Queensland should work together to ensure the approval process does not cause delays in delivering SMS alerts.	Queensland Government SUPPORT
4.5	Wherever possible, Emergency Management Queensland should consult with local disaster management groups before sending emergency alerts to residents. Emergency Management Queensland should inform the local disaster management group, as soon as it can, about any message already sent to residents in that local disaster management group's area.	Queensland Government SUPPORT
4.6	Individuals and businesses should be encouraged to acquire battery operated radios for use in emergencies.	Queensland Government SUPPORT
4.7	Councils should ensure that residents are aware of the frequency of the radio station or stations in their local area that will disseminate flood warnings and other information during disasters	Local Government
4.9	A siren may be appropriate in smaller towns or rural communities susceptible to flash flooding. If councils rely on sirens to warn residents, they should ensure that the community understands the meaning of the siren.	Local Government
4.14	In the course of flood events, warnings referring to gauge heights should include information about the location of the gauge.	Local Government
4.29	The Bureau of Meteorology should endeavour to make clear the areas actually covered by its warnings, and specify what may be expected in particular areas, so that the relevance and significance of any warning is obvious to residents of the area at risk.	Commonwealth Government
4.30	Councils should continue to take responsibility for issuing flash flooding warnings. However, where the Bureau of Meteorology becomes aware of weather conditions likely to cause flash flooding that is likely to endanger life or property in a particular council's region, it should, performing its functions in the public interest, directly communicate that information to the relevant council.	Local Government
4.31	Councils should advise the Bureau of Meteorology of any information they possess about flash flooding (or the immediate prospect of it) likely to endanger life or property in their region, and of any warnings they issue about such flash flooding. The Bureau of Meteorology should consider in each case whether any such warning should be re-published (whether as a warning emanating from the Bureau itself or as attributed to the relevant council) on the Bureau's website, or whether it should provide a link to any council warning or other information regarding flash flooding provided by councils or disaster management agencies.	Local Government
4.32	Where the Bureau of Meteorology has information which leads it to anticipate flash flooding likely to endanger life or property in a specific area, it should publish a warning to that effect on its website.	Commonwealth Government

4.33	The Bureau of Meteorology should do its best to develop working relationships with all councils, particularly for the purpose of exchanging information in severe weather and flood events.	Commonwealth Government Local Government involvement
4.34	The Bureau of Meteorology should expand its volunteer rainfall and river height networks to incorporate residents of the Lockyer Valley, particularly property owners living on watercourses who can provide manually obtained readings of water heights where no automatic gauge is available, or can confirm automatic gauge readings where there is concern about their accuracy.	Commonwealth Government
4.35	The Bureau of Meteorology should consider identifying amateur weather-watch groups it considers credible and likely to have useful local knowledge, and establish means (similar to those available to the storm spotters) by which they can expeditiously communicate with the Bureau.	Commonwealth Government
4.36	Somerset Regional Council, in consultation with Seqwater and the Bureau of Meteorology, should consider how warnings can be provided to residents living near the Brisbane River at Fernvale about the expected level of flooding in their area.	Local Government Commonwealth Government involvement
7.2	Lockyer Valley Regional Council should investigate the feasibility of installing alarm-activating gauges in the creeks at Spring Bluff, Murphys Creek and other communities where communication systems are poor and there is a risk of rapid and unexpected water rise.	Local Government

## WHAT HAS BEEN DONE

### Emergency warnings [Recommendations 4.1, 4.4 and 4.5]

The Queensland Government issues emergency warnings through a variety of different mechanisms as required by the Emergency Alert Operational Guidelines. To help improve direction on the issue of warnings, we have reviewed the emergency alert system and streamlined the approvals processes and increased the number of people authorised to approve an emergency alert. The guidelines will also establish standard templates to accelerate preparation and approval time. Updated Emergency Alert Operational Guidelines will be available on 31 August 2011 and a supporting training program will be begin before 1 November 2011.

Ten new watch desk staff have been employed at Emergency Management Queensland's State Disaster Coordination Centre, tripling current staff numbers and strengthening 24/7 capabilities. The watch desk officers will enhance communication networks and better coordinate disaster information including SMS alert delivery.

In addition, District Disaster Coordinators will ensure a public warnings communication and media plan is included in both district and local disaster management plans before the start of the next wet season.

### Battery operated radios [Recommendation 4.6]

The Queensland Government's *Get Ready Queensland* campaign will promote the importance of ensuring households have access to a battery operated radio. Supporting messages will be included in advertising and education activities, and the *Get Ready Guide* which will be distributed to Queensland households.

The Queensland Government's guide for preparing household emergency kits also includes messages regarding the need for battery operated radios. The guide is available at [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

### Delivering SMS alerts [Recommendations 4.4 and 4.5]

The Emergency Alert Operational Guidelines provide direction on the creation and distribution of SMS alerts. The Queensland Government will produce standard messages templates for emergency alerts for use by all disaster management groups.

In addition, the All Hazards Information Management System (AHIMS) will support the collection and dissemination of disaster management information, including SMS alert templates. The Queensland Government is also working to develop public intelligence and local government intelligence maps to capture information on flood locations, predictions and evacuation. This information could support the delivery of SMS alerts in providing access to more detailed information.

## FUTURE ACTION

### Emergency warnings [Recommendations 4.4 and 4.5]

The emergency alert system will continue to be tested and refined and alert distribution mapping will be completed in 2012.

### All Hazards Information Management System (AHIMS) [Recommendations 4.4 and 4.5]

The All Hazards Information Management System will continue to update its functions as new disaster data sets become available. The Queensland Government will continue to investigate new technology options to support the delivery of coordinated, timely and effective warnings.

## Information about flood levels

4.8	Councils that have not already done so should consider how social media may be used effectively to provide accurate information about flood levels and local conditions to residents during a flood event.	Local Government
4.10	Councils, with the assistance of the Bureau of Meteorology, should examine the feasibility of and priorities for installing additional river height and rainfall gauges in areas of identified need.	Local Government
4.11	Councils, with the assistance of the Bureau of Meteorology, should consider the susceptibility of their regions to flash flooding, and whether it is feasible and necessary to acquire and operate an automated local evaluation in real time system (ALERT system) for particular waterways.	Local Government Commonwealth Government
4.12	The Queensland Government should consider assisting less well-resourced councils to fund the installation of an ALERT system where a case is made for its adoption.	Queensland Government SUPPORT
4.13	Councils should ensure that residents and businesses can clearly understand the impact of predicted flood levels on their property. This may include one or more of the following methods: <ul style="list-style-type: none"> <li>• information on rates notices about flooding at individual properties</li> <li>• geospatial mapping, available to the public, that depicts inundation at certain river heights</li> <li>• flood markers</li> <li>• flood flag maps and floodwise property reports</li> <li>• colour coded maps</li> <li>• information that relates gauge heights with the level of flooding to be expected at a property.</li> </ul>	Local Government  Queensland Government involvement

## WHAT HAS BEEN DONE

### ALERT gauges [Recommendation 4.12]

The National Disaster Resilience Program is a joint State and Commonwealth Government scheme proving \$11 million in 2011-12, with the Queensland Government providing \$5.5 million. Applications are currently being assessed and it is expected the majority of funding will go to flood and cyclone mitigation programs. The program can be used to assist less well-resourced councils to fund the installation of ALERT system in appropriate locations.

### **Flood level information [Recommendation 4.12]**

Emergency Management Queensland has provided many local governments with digital elevation data to assist with inundation mapping and evacuation planning. This information will help local governments to inform their communities about the impact of predicted flood levels on properties, and guide the development of alert information.

### **Planning for stronger, more resilient floodplains [Recommendation 4.13]**

The Queensland Reconstruction Authority is reviewing planning schemes across Queensland to help identify interim and long term ways to support greater resilience and understanding of our flood plains. Mapping has been completed for 24 sub-basins identified as priority areas, and mapping of all priority areas particularly urban centres within these floodplains will be completed by the Authority by the end of 2011.

The Authority has partnered with the Department of Local Government and Planning and the Department of Environment and Resource Management to prepare a two-part guideline to assist floodplain management through local land use planning. It is anticipated that a floodplain mapping product will assist land use planning and floodplain management at a river sub-basin level. The Authority is working with Banana Shire as a case study to develop the guidelines and other councils have been briefed on the project.

The Queensland Government will continue to engage with local governments to assist in the implementation of interim planning measures prior to the adoption of new *Sustainable Planning Act 2009* planning schemes.

The Queensland Reconstruction Authority has also produced an online record of the devastation caused by the floods and Cyclone Yasi using aerial images from across Queensland. The interactive map shows the actual flood line for towns and cities affected by the 2010-11 floods. Additional images of affected regions are added to the map as they become available. The maps will be provided to local governments for land use planning purposes and for display in council offices.

## **Dam operators**

4.16	Dam operators should plan to contact people identified by their emergency action plans about dam outflow in sufficient time for them to be able to respond to the information.	Queensland Government SUPPORT
4.17	Dam operators should ensure each emergency action plan includes a clear statement as to the frequency of, and circumstances in which, warnings will be issued to people listed in the emergency action plan.	Queensland Government SUPPORT
4.18	Dam operators should assess the effectiveness of using SMS and/or email as a bulk instantaneous communication to all people on the notification list while individually contacting those whom it is essential to inform immediately.	Queensland Government SUPPORT
4.19	Seqwater should consider consolidating its communication arrangements and responsibilities in a single document for each dam it operates.	Queensland Government SUPPORT
4.20	The operator of each dam should, upon request, provide to any person on the notification list in the emergency action plan an explanation of the arrangements as to the type and frequency of communications required by that plan.	Queensland Government SUPPORT
4.21	Operators of dams should assess their current compliance with the DERM <i>Queensland Dam Safety Management Guidelines</i> (February 2002), the ANCOLD <i>Guidelines on Dam Safety Management</i> (August 2003), and the Australian Government <i>Emergency Management Planning for Floods Affected by Dams</i> (2009) and if appropriate, comply with those guidelines.	Queensland Government SUPPORT

4.22	Operators should include in their emergency action plan a description of the type of information that will be provided to those on the notification list.	Queensland Government SUPPORT
4.23	Operators of dams should publicise, in a newspaper circulating in the local area and by posting a notice on its website every year before the wet season, the opportunity for local residents immediately downstream of a dam to be included on the existing notification list, and: <ul style="list-style-type: none"> <li>• consider whether an applicant for notification is so close to the dam that the warning time before water from the dam affects them is less than that available through the emergency management system</li> <li>• consider whether they can be effectively notified by SMS or email</li> <li>• if it is necessary to contact the applicant personally, agree with him or her a mode for that communication.</li> </ul>	Queensland Government SUPPORT
4.24	The operator of any referable dam and the local disaster management group should develop a common understanding as to their respective roles in a flood event and the type and frequency of information the dam operator will provide to it and local residents.	Queensland Government SUPPORT
7.1	The Toowoomba Regional Council should consider amending stage one of the Cooby Dam emergency action plan to extend the five kilometre limit for alerting residents downstream of the Cooby Dam.	Local Government

## FUTURE ACTION

### Dam operations [Recommendations 4.16, 4.17, 4.18, 4.19, 4.20, 4.21, 4.22, 4.23 and 4.24]

The following actions are expected to be completed for Queensland Government-owned dams by early 2012:

- updated emergency action plans with:
  - community notification processes regarding dam outflows
  - information regarding the frequency and circumstances in which warnings are issued
  - the preferred communication channels for notifying community members
  - the type and frequency of communication expected by dam operators
  - the type of information that will be provided to those on notification lists
- annual communication reviews to ensure:
  - there are opportunities for local residents immediately downstream of a dam to be included on existing notification lists
  - everyone in need of additional warnings separate to those available through the emergency management system is identified
  - personal communication channel preferences are identified and agreed
- compliance with:
  - the Department of Environment and Resource Management’s Queensland Dam Safety Management Guidelines (February 2002)
  - the ANCOLD Guidelines on Dam Safety Management (August 2003)
  - the Australian Government Emergency Management Planning for Floods Affected by Dams (2009)
- liaison with local disaster management groups to develop a common understanding as to their respective roles in a flood event and the type and frequency of information the dam operator will provide to it and local residents

SunWater, as owner of most of the State’s major water supply dams, is currently undertaking a review of its dam safety guidelines and emergency action plans. It is also working with the Dam Safety Regulator to develop a community communication plan. Any necessary amendments will be implemented prior to the 2011-12 wet season.

The Department of Environment and Resource Management will also provide technical assistance to ensure non-government dams address these recommendations. The department is currently considering

the most effective processes to manage referable dam roles, responsibilities, operations and compliance. The department will develop a policy paper in consultation with dam owners, and an interim process will be established to guide activities for the 2011-12 wet season.

Seqwater will consolidate its communication requirements as part of the interim review of the Flood Mitigation Manual. The manual will be submitted to the Department of Environment and Resource Management by mid September 2011 for approval and gazetting by 1 October 2011.

## Information about road conditions

4.25	The Department of Transport and Main Roads, in its capacity as the primary provider of information about road conditions to the public, should continue to improve the accuracy of road condition information and the timeliness of its distribution to the public and other agencies.	Queensland Government SUPPORT
4.26	The Department of Transport and Main Roads should identify and include local road names when reporting road conditions.	Queensland Government SUPPORT
4.27	The Queensland Government should work with the New South Wales Government to co-ordinate road condition reporting procedures to inform local councils and road users of interstate road conditions in a variety of different ways.	Queensland Government SUPPORT
4.28	In rural and remote areas where telecommunications are not effective, measures that do not rely on internet and mobile telephone services should be implemented to inform the travelling public of road conditions ahead, for example: <ul style="list-style-type: none"> <li>• signs with detailed information</li> <li>• providing tourist information centres and tourist radio stations with information on road conditions.</li> </ul>	Queensland Government SUPPORT
5.78	Local governments should investigate the feasibility of permitting local landowners to carry out temporary repairs on flood-damaged public roads to allow access to their properties.	Local Government

## WHAT HAS BEEN DONE

### Road condition information [Recommendations 4.25 and 4.26]

The Queensland Government is committed to continuously improving its reporting systems for communicating road conditions information to members of the public and other organisations (including interstate agencies), particularly in times of disaster.

The Department of Transport and Main Roads has refined its 13 1940 Traffic and Travel Information Service (website and phone number) including:

- the establishment of a 24/7 contact centre on the South Coast to provide a statewide traffic management centre function
- the improvement in the coverage and capacity of the service to take up to 12,000 calls an hour (through the implementation of the Network Interactive Voice Recording system)
- the introduction of a new website landing page with options to either view quick text information or a map for more detailed information
- the use of Twitter as another information dissemination mechanism for the 13 1940 website
- the introduction of a number of business process improvements to reduce the timeframe between physical road closure and website publication

Road names used by the 13 1940 web service are drawn from the Standard Digital Road Network System. The system has been updated to include alias/local road names and will be activated in September 2011. The website's search engine is also being enhanced to enable location searches using both official and alias names.

#### **Road signs [Recommendations 4.27 and 4.28]**

Road condition information signs are in place in various locations across Queensland. Earlier this year a road condition information sign strategy was developed to identify key locations and priorities for installation across Queensland. The signs will be posted at critical decision-making locations in Queensland and interstate so that road travellers avoid making trips into areas that may be cut off without access to food, fuel and accommodation.

The Department of Transport and Main Roads already provides signage for road closures on state-controlled roads. To help provide advance notice to motorists, we will enhance current arrangements with tourist information centres and tourist radio stations to provide rich site summary (RSS) feeds and/or subscription services from the 13 1940 website. This will enable the timely update of information on road conditions as changes occur on the website.

We will continue to provide road closure information to truck stops and other like businesses frequented by road travellers, and also work with ABC Radio to install road signs to advise motorists of which radio station to tune to for warnings on critical events.

#### **Cross border coordination [Recommendation 4.27]**

Queensland has worked with New South Wales and Victoria to strengthen our cross border arrangements for providing traveller information particularly during critical events. We already have established cross boundary/route advice networks in place between the Department of Transport and Main Roads and the New South Wales Roads and Traffic Authority (RTA), including:

- South Coast Region information sharing protocols in place for Tugun Bypass
- Darling Downs Region daily road conditions report to key regional stakeholders including the RTA.

Direct links between the 13 1940 Traffic and Travel Information website and the RTA website and VicRoads' website are already in place. This connection will be enhanced by direct links to the NSW Traffic Management Centre live traffic website and VicRoads' road conditions information. This will enable road users to obtain specific road condition information across state borders.

The 13 1940 website currently provides a heavy vehicle industry road report to provide information on heavy vehicle and freight restrictions currently in place. We will continue to work with the Queensland Trucking Association to identify further enhancements of assistance to the industry.

### **FUTURE ACTION**

#### **Road condition information [Recommendations 4.25 and 4.27]**

Future initiatives include a pilot project providing text-based road condition advice for select routes and smart phones, and a joint interface for interstate traffic and travel information. Text-to-voice capability is also being developed to ensure greater consistency of message between the website and phone.

**Legislative changes [Recommendation 4.28]**

Legislative changes are being considered to reduce the level of detail required for road closure and conditional access notices so that signs can be installed promptly. Amendments may also be made regarding temporary access on restricted roads so that vehicles can deliver essential supplies.

# CHAPTER THREE: EMERGENCY RESPONSE

## Coordination

5.1	When a local government cannot effectively manage its response to a disaster, disaster management personnel from local governments in a position to assist should be deployed to help the local disaster management group.	Local Government
5.2	Local governments should consider adopting uniform disaster management software, to enable inter-council assistance to be given more easily and effectively.	Local Government
5.3	To ensure effective co-ordination in larger-scale disasters, deployment of personnel (and other resources) between local governments should be facilitated through the Council to Council (C2C) program.	Local Government
5.9	Until the All Hazards Information Management System is in place and allows the status of requests for assistance to be tracked, other means should be used to keep local disaster management groups informed of the progress of requests for assistance.	Local Government Queensland Government Involvement
5.10	A clear protocol should be developed for managing the participation of local and district disaster management groups in the state level teleconferences, to govern and make more efficient participation in the teleconferences.	Queensland Government SUPPORT Local Government involvement
5.29	The Queensland Fire and Rescue Service should consider isolating repeaters during a large scale emergency response. If this solution is found to be feasible, it should be implemented as protocol as soon as possible. If it is not, the Queensland Fire and Rescue Service should explore other solutions to the issue of the fire communications network being overloaded and firefighters resorting to localised networks during large scale emergency response situations.	Queensland Government SUPPORT
5.30	The Queensland Fire and Rescue Service needs to define clearly what its protocol is for volunteer firefighters in disaster scenarios other than fire when they are the only or primary rescue service in a community.	Queensland Government SUPPORT
5.31	The Queensland Fire and Rescue Service should clarify in practical terms the role of firefighters in sandbagging, the provision of road blocks and similar activities.	Queensland Government SUPPORT

### WHAT HAS BEEN DONE

#### All Hazards Information Management System (AHIMS) [Recommendation 5.9]

The Queensland Government has established the All Hazards Information Management System (AHIMS) to provide an information pipeline to build capacity for information sharing across communities.

The system now supports:

- Improvements to the 13 2500 phone service during emergencies to reduce the time and effort required to deliver community requests for assistance to the relevant SES group and local government authorities
- Digital elevation mapping for coastal communities
- A Queensland Fire and Rescue Service Facebook and Twitter presence, and the Emergency Services website
- A mapping system concept to provide shared situational awareness to government and third party stakeholders

### **Disaster response protocols [Recommendations 5.30 and 5.31]**

The Queensland Fire and Rescue Service has developed Disaster Response Protocols to define the role and responsibilities of firefighters and volunteer firefighters in disaster scenarios. The protocols will be finalised before the start of the next wet season.

## **FUTURE ACTION**

### **All Hazards Information Management System (AHIMS) [Recommendation 5.9]**

By December 2011, the AHIMS will provide:

- Further improvements to coordinating requests for assistance sourced from the 13 2500 SES phone service
- Enhanced social media capability for the Department of Community Safety including messages of preparation, resilience and response during disaster events
- Online arrangements to connect community and business offers of assistance to local needs

### **Emergency Virtual Operations Centre (EVO) [Recommendation 5.9]**

The Queensland Government will continue to identify and connect key disaster management systems across Queensland to provide a single information source during disasters. The longer term aim is for this system to become the Emergency Virtual Operations Centre and be available to all disaster management bodies.

### **Communication networks [Recommendations 5.10 and 5.29]**

The State Disaster Coordination Group will develop a protocol before 1 November 2011 to coordinate effective participation of local and district disaster management groups in state teleconferences. It is expected the Emergency Virtual Operations Centre's common operating platform will alleviate the need to provide verbal situation reports.

The Queensland Fire and Rescue Service will continue research into the use of isolating repeaters and other communication solutions for large scale emergency responses. The Queensland Government will also continue investigation of a statewide Government Wireless Network offering a digital radio and wireless data environment to support frontline personnel.

## **Swift water rescue**

5.11	The Queensland Fire and Rescue Service should increase the number of swift water technicians (Level 2) to at least meet the quota for the approved number of rescue technicians in each region.	Queensland Government SUPPORT
5.12	The Queensland Fire and Rescue Service should consider whether the approved number of swift water technicians in each region is appropriate to meet the demands of that region.	Queensland Government SUPPORT
5.13	The Queensland Fire and Rescue Service should revise the Operations Doctrine to clarify: <ul style="list-style-type: none"><li>• how many Level 2 swift rescue technicians and Level 1 support personnel are required to safely perform a swift water rescue</li><li>• the options available to an incident controller at a swift water incident with fewer than the required personnel and what considerations they should take into account in their decision-making.</li></ul>	Queensland Government SUPPORT
5.14	The Queensland Fire and Rescue Service should consider providing Level 1 swift water rescue training to all auxiliary firefighters stationed in areas susceptible to flooding.	Queensland Government SUPPORT

5.15	The Queensland Fire and Rescue Service should ensure all rural fire service volunteers and auxiliary firefighters stationed outside areas susceptible to flooding receive Awareness Level swift water rescue training.	Queensland Government SUPPORT
5.16	The Queensland Fire and Rescue Service should identify areas that are likely to require, but do not have swift water capability during the wet season and consider how it can best provide a permanent capability to any such area.	Queensland Government SUPPORT
5.17	The memorandum of understanding between the Queensland Fire and Rescue Service and Emergency Management Queensland should be finalised.	Queensland Government SUPPORT
5.18	The joint helicopter operations training program contemplated by the memorandum should be devised and provided to all relevant staff of the Queensland Fire and Rescue Service and Emergency Management Queensland.	Queensland Government SUPPORT
5.19	The Queensland Fire and Rescue Service should purchase waterproof radio equipment that: <ul style="list-style-type: none"> <li>• is appropriate for swift water and normal fire fighting environments</li> <li>• will attach securely to firefighters in a way that does not hamper their operations.</li> </ul>	Queensland Government SUPPORT
5.20	The Queensland Fire and Rescue Service should work towards providing hands-free means of communications to swift water technicians for in-water operations.	Queensland Government SUPPORT
5.21	The Queensland Fire and Rescue Service should ensure that rescue technicians on deployment are provided with individual radios, rather than sharing a communications pack.	Queensland Government SUPPORT
5.22	Permanent urban appliances should carry at least five personal floatation devices to ensure there is a floatation device for each firefighter and a spare for rescues.	Queensland Government SUPPORT
5.23	Every rescue appliance should carry personal floatation devices suitably sized for children or infants.	Queensland Government SUPPORT
5.24	The Queensland Fire and Rescue Service should consider upgrading all personal floatation devices to a type which allows the firefighter to release himself or herself from an attached rope in the event of getting caught, or in other life threatening situations.	Queensland Government SUPPORT
5.25	The Queensland Fire and Rescue Service should investigate the feasibility of acquiring motorised inflatable work platforms with guarded propellers to improve the safety of swift water rescue.	Queensland Government SUPPORT
5.26	Queensland Fire and Rescue Service should review whether it has enough vehicles capable of traversing floodwaters.	Queensland Government SUPPORT
5.27	The Queensland Fire and Rescue Service should ensure all station officers are informed about the locations and availability of additional equipment and how to obtain it.	Queensland Government SUPPORT
5.28	The Queensland Fire and Rescue Service should ensure that staff in Ipswich can rapidly obtain additional swift water rescue equipment in the case of an emergency.	Queensland Government SUPPORT

## WHAT HAS BEEN DONE

### Swift water rescue technicians and training [Recommendations 5.11 and 5.12]

Swift water rescue training was held in July and August 2011, including Emergency Management Queensland helicopter crewmen. As a result there are currently 220 swift water rescue technicians (level 2) in Queensland. The authorised number of technicians is 253 and further training is planned to achieve this number by the end of November 2011.

Queensland Fire and Rescue Service regions have reviewed the need for swift water rescue capability based on regional risk, geography and the commitments of each team. While rescue stations are strategically located to best respond to the operational needs of their region, the review identified a need

to increase the number of swift water rescue technicians. Regions are currently assessing the required number of technicians and swift water training is underway to increase technician numbers.

### **Swift water training [Recommendations 5.11, 5.14 and 5.15]**

Queensland Fire Rescue swift water training is designed around the framework of three skill sets: awareness, Level 1 and Level 2.

The swift water awareness package is available to all auxiliary and rural personnel. This DVD ensures all QFRS personnel are aware of the requirements included in swiftwater/floodwater response. It also familiarises viewers with the roles and responsibilities of Level 1 and Level 2 swift water/flood water trained personnel at incidents. Swift Water Awareness covers personal safety, 'size up' and resource requirement identification. It provides rural and auxiliary personnel with the skills to maintain their own personal safety, assess the scene, gather relevant and necessary information, carry out activities within their training (e.g. passive bank search) and request specialty resources.

The second skill set is *Swiftwater Floodwater Rescue Technician Level 1* (dry rescue only) which is designed to equip personnel with the skills to undertake land based rescue activities at the first three levels of the rescue risk scale; Yell, Reach, Throw. All permanent, operational fire fighters and selected auxiliary fire fighters are trained to *Swift Water Rescue Level 1*.

The third level is *Swift Water Rescue Technician Level 2* which is the highest skill set and equips personnel who are now identified as Swiftwater Floodwater Rescue Technicians to undertake rescue activities at all levels of the rescue risk scale, both land and water based.

The Queensland Fire and Rescue Service is developing a course to provide the single discipline of Swift Water Rescue Level 2 for areas that currently do not have this capability. The current program for swift water rescue forms part of a broader package covering five disciplines that takes 12 months to complete. The Queensland Fire and Rescue Service's modified training will expedite the provision of this capability to permanent and auxiliary stations. The course and pilot training program will be completed by the end of November 2011.

### **Swift water rescue capability review [Recommendations 5.13 and 5.16]**

The Queensland Fire and Rescue Service established a Swift Water Rescue Review Committee to review rescue capabilities across the state. Individual region's risk profiles have been analysed to identify the requisite number of rescue technicians, and the Operations Doctrine has been reviewed to clarify optimum operational practices for swift water rescue. An updated doctrine will be released by 1 November 2011.

An implementation team is also working with all regions, including those without existing swift water rescue capabilities, to ensure swift water rescue operational plans are in place by 1 November 2011. The plans will include information about the location, availability and receipt of swift water rescue equipment.

In addition, Surf Life Saving Queensland's emergency response trained groups will also be considered to provide assistance during disaster events.

### **Level 1 swift water rescue training for auxiliary firefighters [Recommendation 5.14]**

There are currently 117 auxiliary firefighters trained in Level 1 swift water rescue. Level 1 swift water rescue training has been provided to a number of auxiliary stations in areas susceptible to flooding

including Airlie Beach, Cooran, Cooroy, Pomona, Proserpine and Warwick. Training is scheduled for Babinda, Cairns South, Innisfail, Mossman, Port Douglas and Tully.

The Queensland Fire and Rescue Service is currently developing a course tailored for auxiliaries to expedite training auxiliary stations in areas susceptible to flooding, however this training is not intended for every auxiliary station across Queensland. An awareness package has been made available for every auxiliary station and will also be made available for all rural brigades to complete on the volunteer portal.

#### **Awareness level swift water rescue training for rural fire service volunteers and auxiliary firefighters [Recommendation 5.15]**

The Queensland Fire and Rescue Service is working to have the majority of auxiliary firefighters complete awareness level swift water rescue training by 1 November 2011. The awareness training will be available for all rural brigades through the volunteer portal and via materials distributed to the regions to help increase access options for volunteers.

#### **Memorandum of Understanding between the Queensland Fire and Rescue Service and Emergency Management Queensland [Recommendation 5.17 and 5.18]**

The Memorandum of Understanding between Queensland Fire and Rescue Service and Emergency Management Queensland including a joint helicopter operations program has been signed. It will improve interoperability between both organisations for remote operations, improve safety, provide greater air/ground coordination and facilitate access for rescue crews to incidents.

Eight Queensland Fire and Rescue personnel have been trained as winch rescue crewmen by Emergency Management Queensland Helicopter Rescue in Townsville. There are two levels of training offered to Queensland Fire and Rescue personnel: an awareness package for all swift water operatives and a higher understanding of winch operations for targeted groups in Cairns, Townsville and Brisbane.

The Queensland Fire and Rescue Service has trained five Emergency Management Queensland rescue crew in Level 2 swift water rescue and 35 rescue crew in Level 1 swift water rescue. By 1 November 2011 there will be an additional eight crewmen training in Level 1 swift water rescue.

#### **Waterproof radios [Recommendation 5.19]**

Waterproof radio cases have been supplied to all regions and a new purchasing arrangement is being developed to include waterproof radio options that meet current transmission and safety standards.

#### **Hands-free communication [Recommendation 5.20]**

The Queensland Fire and Rescue Service trialled hands-free radios in June 2011 and 100 helmet kits will be purchased for the Special Operations Unit by 1 November 2011 dependent on availability from the manufacturer.

#### **Personal radios [Recommendation 5.21]**

The Queensland Fire and Rescue Service's Special Operations Unit has purchased 50 additional radios for rescue technicians to avoid shared communication packs.

#### **Personal floatation devices [Recommendations 5.22, 5.23 and 5.24]**

A statewide audit of personal floatation devices has ensured that all swift water technicians are issued with new devices and floatation devices designed for children are now available on all special rescue appliances. Further research into devices with rope release and other safety features is currently

underway. The final complement of additional personal floatation devices to be provided to appliances is dependent on the outcome of this research.

### **Motorised inflatable work platforms and vehicles capable of traversing floodwaters**

#### **[Recommendations 5.25 and 5.26]**

The Queensland Fire and Rescue Service is investigating the feasibility of acquiring motorised inflatable work platforms with guarded propellers and is conducting a statewide audit of all vehicles, including those capable of traversing flood waters. Motorised equipment requires specialist testing, training and some must be purpose built. This specialist analysis must be completed before any equipment is purchased.

#### **Equipment storage [Recommendations 5.27 and 5.28]**

All Queensland Fire and Rescue Service regions will have swift water rescue operations plans in place by 1 November 2011. The plans will include information about the location, availability and receipt of swift water rescue equipment.

In addition to the swift water cache in Ipswich, Queensland Fire and Rescue Service staff in Ipswich can seek supplementary support from Robina and Beenleigh. Additional equipment can also be supplied from the Beenleigh warehouse.

## **State Emergency Service (SES)**

5.32	Before the next wet season, councils, SES controllers and Emergency Management Queensland should work together to identify and address deficiencies in the ability of the SES to respond effectively to flooding. At the very least, suitable flood boats and flood boat training should be provided to SES units which require them.	Queensland Government SUPPORT
5.33	The Queensland Government and councils should take measures, as soon as possible, to attract more SES volunteers, particularly in areas susceptible to flooding which do not have sufficient numbers. New SES units should be established where possible.	Queensland Government SUPPORT
5.34	The Commission acknowledges that it may not be possible to recruit and train sufficient numbers of SES volunteers to the extent needed before the next wet season. However, this should not prevent steps being taken as soon as possible to identify the factors impeding the recruitment and retention of SES volunteers, action being taken to address them, and the commencing of recruitment activity.	Queensland Government SUPPORT

### **WHAT HAS BEEN DONE**

#### **SES response capabilities [Recommendation 5.32]**

The Queensland Government will provide 56 flood boats and flood boat operation training for SES units across Queensland. Four flood boats for Blackwater, Dysart, Logan East and Mackay have estimated delivery dates before the end of September 2011. A further 10 flood boats are due for delivery in November 2011, five in December 2011, five in February 2012, and a further 32 to follow.

Revisions to the *Disaster Management Act 2003* specified a Memorandum of Agreement between the Department of Community Safety and local governments regarding support to the SES. A Memorandum of Agreement has been developed and provided to local governments for review and a final agreement is expected by 1 November 2011. The Agreement will address the establishment, management, maintenance and support arrangements of the SES.

SES members will also be provided with access to disaster management training to help strengthen their ability to respond to disaster events.

**Recruitment campaign [Recommendations 5.33 and 5.34]**

The Queensland Government, in conjunction with local government, launched a statewide SES recruitment program on 12 June 2011. To date more than 795 expressions of interest have been received. The recruitment process includes criminal history checks and a three month probation period before volunteers can be available for activation. It is anticipated that 200 additional volunteers will be available for activation by 1 November 2011.

The new volunteers will participate in existing SES units, and the Queensland Government and local governments are reviewing areas for potential new units.

As many Queenslanders face competing pressures for their time, it is becoming increasingly difficult to attract and retain volunteers. The Queensland Government will reduce the administrative burden on SES volunteers by improving connectivity to enable direct volunteer input into SES operation systems to ensure timely and accurate data provision. The request for assistance operational tasking tool will continue to be rolled out to increase response effectiveness. A volunteer connectivity project aims to provide computer equipment and internet connection to those SES groups without access, and the volunteer capability project supports technology projects to enhance operational management. In addition, the SES routinely conducts exit interviews with members leaving the service to identify where improvements can be made.

**Emergency Helicopter Network**

5.36	As a matter of priority, the Emergency Helicopter Network requires a system of ‘single point tasking’; that is, a central organisation exercising command and control of all helicopters in the Emergency Helicopter Network, according to availability, task, priority and location. This is a change, which will require all the government agencies concerned to consider the operational needs, resources, protocols, guidelines and training required for its implementation. Ideally, those steps should be completed and the change made before the next wet season.	Queensland Government SUPPORT
5.37	At the very least, by the beginning of the wet season, an interim structure needs to be formally in place under which one organisation is informed of the status, location, capabilities and allocated task of each helicopter in the Emergency Helicopter Network at any given time. The deployment of helicopters should be made through this organisation.	Queensland Government SUPPORT

**WHAT HAS BEEN DONE**

**Emergency Helicopter Network [Recommendations 5.36 and 5.37]**

The Queensland Government will provide single point tasking of the Emergency Helicopter Network to improve monitoring and coordination of helicopter assets, and maximise deployment options by 1 November 2011. Approximately 90 per cent of all aviation tasking is aero medical and is currently managed through the Queensland Emergency Medical System Coordination Centre (QCC). The QCC will remain the central coordinating agency for aero medical helicopter transfers and other tasking events. However during major emergencies or disaster responses, the Queensland Police Service, through the State Disaster Coordination Centre, will be responsible for the coordination of the Emergency Helicopter Network resources.

An Emergency Helicopter Network emergency incident/disaster event tasking protocol will be developed and implemented before the start of the 2011-12 wet season. The protocol will direct information

regarding the status, location, capabilities and associated task of each helicopter in the Emergency Health Network to a single point. This includes the community helicopters coordinated by Queensland Health and the State-owned Emergency Management Queensland helicopters.

## FUTURE ACTION

Queensland Government agencies will continue test and refine the single point tasking arrangements. Ongoing resources will be allocated and requisite guidelines and training will be delivered.

## Call centres

5.35	Before the next wet season, the Department of Public Works should ensure that Smart Service Queensland can manage a significant increase in calls to the 132 500 number, to at least the level that occurred during the 2010/2011 floods.	Queensland Government SUPPORT
5.38	Queensland Police Service call-takers across the state should be trained to a uniform standard, consistent with the standard of the training provided by the Brisbane Police Communications Centre.	Queensland Government SUPPORT

## WHAT HAS BEEN DONE

### Smart Service Queensland 13 2500 [Recommendation 5.35]

The Queensland Government has reviewed Smart Service Queensland's technology networks and infrastructure and taken recommended remedial action, replaced hardware as necessary and reviewed arrangements with vendors such as Telstra.

Smart Service Queensland has reviewed its disaster response activities and has:

- implemented a review of internal business continuity processes
- worked with the Department of Community Safety to streamline processing of calls to the SES hotline 13 2500
- renewed its service delivery agreement with the Commonwealth Government regarding national overflow arrangements.

### Police Communication Centres [Recommendation 5.38]

Call taker training will be conducted at 13 major communication centres across Queensland including Brisbane, Beenleigh, Broadbeach, Cairns, Gladstone, Gympie, Ipswich, Mackay, Maroochydore, Mount Isa, Rockhampton, Toowoomba and Townsville before the start of the next wet season. The training will be delivered by the Brisbane Police Communication Centre.

Police communication centres have also reinforced processes to ensure all communication centre staff deployment considers qualifications, expertise and personal circumstances.

## FUTURE ACTION

### Smart Service Queensland 13 2500 [Recommendation 5.35]

Prior to the start of the next wet season, Smart Service Queensland will:

- update all disaster scripts to enhance service delivery
- hold preparedness meetings with all lead disaster response agencies
- provide annual pre-disaster season staff refresher training
- conduct pre-disaster season testing of end-to-end call overflow arrangements
- review and test the active disaster numbers and assigned routing strategies.

**Police Communication Centres [Recommendation 5.38]**

The Queensland Police Service will continue to provide programs that expose officers to disaster management activities including management of an all hazards response, and build a core base of disaster management experience and expertise.

## CHAPTER FOUR: EVACUATION, RESUPPLY AND ESSENTIAL SERVICES

### Planning and guidelines

5.39	Emergency Management Queensland should finalise the draft evacuation guidelines for approval by the state disaster management group as soon as possible, addressing the issues identified from the 2010/2011 floods.	Queensland Government SUPPORT
5.40	Each council should develop an evacuation sub-plan in accordance with the Emergency Management Queensland guidelines. This includes involving local groups and people in the planning process.	Local Government  Queensland Government involvement
5.41	Councils with existing evacuation sub-plans should review them to ensure they address the issues identified from the 2010/2011 floods.	Local Government  Queensland Government involvement
5.42	Where flooding is governed by a particular watercourse, the evacuation sub-plan should identify triggers in the form of those water level heights at which it is known that preparation for evacuation will be necessary.	Local Government
5.46	Councils should identify a range of evacuation centres as part of their disaster preparation and planning.	Local Government
5.55	All councils should consider entering a memorandum of understanding for evacuation centres with the Australian Red Cross which clearly sets out the roles and responsibilities of the parties in planning and responding to evacuation requirements in a disaster.	Local Government
5.56	Each council with a memorandum of understanding with the Australian Red Cross should consider undertaking practice exercises with the Australian Red Cross to ensure both parties understand their respective roles and responsibilities.	Local Government
5.58	Local and district disaster management groups should notify the Australian Red Cross of their evacuation needs as soon as possible in a disaster.	Local Government  Queensland Government involvement
7.3	Lockyer Valley Regional Council should identify those areas vulnerable to flooding within its region, should identify appropriate evacuation collection points and centres accordingly, and consider whether it should make those known to the community.	Local Government

### WHAT HAS BEEN DONE

#### Evacuation guidelines [Recommendations 5.39 and 5.58]

Emergency Management Queensland has finalised the draft evacuation guidelines in consultation with local government and the State Disaster Management Group will endorse them for release before the end of August 2011. The Queensland Government will continue to work with local governments to ensure evacuation arrangements are completed before the start of the next wet season.

Emergency Management Queensland, through the State Disaster Coordination Centre, coordinates all requests for assistance during disasters. Local and district disaster management training will reinforce the requirement for groups to notify the Australian Red Cross of their evacuation needs as soon as possible in a disaster.

### Evacuation centre planning [Recommendations 5.40 and 5.41]

Queensland Health is working with local governments to plan for health services and support in managing evacuation centres, clarify the roles and responsibilities of health providers, and provide advice on relevant public health issues.

## National Registration Inquiry System

5.59	Disaster response agencies should use the National Registration Inquiry System.	Queensland Government SUPPORT
5.60	During a disaster, councils and the Queensland Police Service should encourage individuals to self-register with the National Registration Inquiry System.	Queensland Government SUPPORT
5.61	Councils should include information about the National Registration Inquiry System as part of their community education.	Local Government

### WHAT HAS BEEN DONE

#### National Registration and Inquiry System [Recommendations 5.59 and 5.60]

The Queensland Evacuation Guidelines note that all evacuees should be registered and the registration documented. Where evacuees decide to relocate to a nominated evacuation centre, their registration should be undertaken as a standard function of evacuation centre management. Consideration is required for registration when evacuees decide to evacuate to family and friends or another alternative safer location. Methods will vary depending on the volume of evacuees and may include the dissemination of a telephone number to call for registration or the completion and submission of registration forms by the evacuee at a suitable location.

When registered, evacuee details will be updated into the National Registration and Inquiry System (NRIS). NRIS is an active computer database filing and retrieval system designed to provide relatives and close friends with basic details of the whereabouts and safety of people they know who may be visiting, living or working in an emergency affected area.

The Queensland Police Service currently encourages individuals to self-register with the NRIS during large scale evacuation events. During small scale evacuations, a police inquiry centre may be established to manage enquiries relating to registered evacuees, possible missing persons and casualties. For large scale evacuations or events of national significance the NRIS is activated and a State inquiry centre is established.

## Community information

5.43	It is a matter for councils whether or not they choose to publicise the location of evacuation centres before a disaster but there is a good deal to be said for doing so, particularly in smaller communities where the options are limited. Whether or not councils publicise the location of evacuation centres before a disaster, they should include in their disaster education programs information on evacuation procedures, and how to ascertain evacuation centre locations and safe evacuation routes.	Local Government
5.44	During floods, councils should as quickly as possible provide people in the relevant areas with advice as to the location of and routes to evacuation centres.	Local Government
5.45	That advice should be given using as many mechanisms as appropriate, including text message, radio and door knocking.	Local Government
5.70	As part of their community education strategy, councils should ensure tourists are made aware of evacuation procedures, how to ascertain evacuation centre locations and safe evacuation routes. That may be done through tourism boards, operators and accommodation providers.	Local Government

Local governments are responsible for these recommendations.

## Centre operations

5.47	Councils should audit identified evacuation centres to ensure the facilities and location are appropriate, preferably in consultation with the Australian Red Cross and the Department of Communities.	Local Government Queensland Government involvement
5.48	Councils should be aware of what facilities are available at each evacuation centre, at particular times of the year.	Local Government
5.49	Councils should identify areas that are susceptible to isolation, including locations in which community groups established informal evacuation centres during the 2010/2011 floods, with a view to incorporating evacuation centres at those locations into their evacuation sub-plans.	Local Government
5.50	Councils should identify community groups who may take responsibility for establishing and operating evacuation centres in the future.	Local Government
5.51	The identified groups and councils should, before the next wet season, establish cooperative arrangements as to how the centres should operate, and to ensure the centres have appropriate facilities.	Local Government

## WHAT HAS BEEN DONE

### Evacuation centres audit [Recommendation 5.47]

The Department of Communities is working with local governments and the Australian Red Cross in the audit evacuation centres to consider the provision of recovery services within the centres and the needs of specific isolated communities.

## Makeshift evacuation centres

5.52	Councils should recognise that community groups may establish makeshift evacuation centres during a disaster. When this occurs, councils need to identify and establish communications with the centres as soon as possible.	Local Government
5.53	Councils should develop plans for the effective and timely re-supply of makeshift centres.	Local Government
5.54	The Queensland Government should investigate the possibility of providing indemnity or obtaining insurance for makeshift evacuation centres established in good faith, and in the absence of official alternatives, to meet community needs.	Queensland Government SUPPORT

### WHAT HAS BEEN DONE

#### Indemnification of makeshift evacuation centres [Recommendation 5.54]

The Queensland Government is reviewing existing indemnity guidelines to investigate the possibility of providing indemnity in circumstances where makeshift evacuation centres are established in good faith, and in the absence of official alternatives, to meet community needs.

## Facilities housing

5.62	In areas susceptible to flooding, councils should identify facilities housing people who may require assistance to evacuate. Councils should work with the operators of these facilities to ensure they have appropriate evacuation plans and that they are aware of the council's disaster management arrangements.	Local Government
5.63	Councils should identify the specific evacuation needs of these facilities, such as increased timeframes for withdrawal or transport by ambulance.	Local Government
5.64	Councils should include the location, contact details, and specific evacuation needs of these facilities in their evacuation sub-plans.	Local Government
5.65	Councils should identify organisations (for example, Meals on Wheels and Bluecare) that provide services to people in the community who may be unable to evacuate without assistance. Councils should include the contact details of these organisations in their evacuation sub-plans.	Local Government
5.66	Councils should work with these service providers to identify: the number of people who may require assisted evacuation; the general nature of their needs, including any necessary medical supplies and equipment; warning message formats and dissemination; increased timeframes needed for evacuation; transportation requirements; and shelter requirements. Councils should include this information in their evacuation sub-plans.	Local Government
5.67	Facilities housing people who may be unable to evacuate without assistance should develop evacuation plans to ensure residents are provided with appropriate transportation, emergency accommodation, trained carers and medical support if necessary. Where possible, residents of those facilities should be relocated to other similar facilities or accommodation other than evacuation centres. These plans should be developed in consultation with councils and relevant agencies such as Queensland Health.	Queensland Government SUPPORT Local Government involvement
5.68	Facilities housing people who may be unable to evacuate without assistance should prepare disaster recovery plans, particularly for the provision of back up power and emergency supplies, including medical oxygen and common medications, to minimise the need for evacuation where there is no direct threat from natural disaster.	Queensland Government SUPPORT

### WHAT HAS BEEN DONE

#### Evacuation plans for those who require assistance [Recommendations 5.67 and 5.68]

As a member of local and district disaster management groups, Queensland Health works with other organisations to plan for medical services and social support for members of the community who may

require assisted evacuation. Health service district evacuation plans have been updated and Queensland Health will continue to facilitate communication between the Commonwealth Department of Health and Ageing and emergency response agencies to ensure the department is involved early to assist in the management of the elderly, including evacuation from aged care facilities.

The Department of Communities is also providing support to ensure the special needs of vulnerable people are identified and addressed.

## Pets and animals

5.71	Councils, as part of their community education program for disaster preparation, should encourage pet owners to consider what they will do with their pets if they need to evacuate.	Local Government
5.72	Councils should work with the RSPCA to develop plans about transporting and sheltering pets should they need to be evacuated with their owners.	Local Government
5.73	Animal shelters, zoos, stables, and similar facilities should develop plans for evacuating or arranging for the care of animals in consultation with their local council. Local disaster co-ordinators should be aware of what plans exist.	Local Government

Local governments are responsible for these recommendations.

## Resupply

5.75	Before the 2011/2012 wet season, all local and district disaster management groups should formally adopt the Queensland Re-supply Guidelines and have arrangements in place for the prompt re-supply of towns, properties and residents isolated by floodwaters.	Local Government Queensland Government involvement
5.76	The Department of Employment, Economic Development and Innovation should establish, preferably with the assistance of AgForce, procedures to co-ordinate fodder drops to isolated landowners in future flood events.	Queensland Government SUPPORT
5.77	The Department of Employment, Economic Development and Innovation should ensure rural communities are aware of the processes and the payment arrangements for fodder drops.	Queensland Government SUPPORT

### WHAT HAS BEEN DONE

#### Queensland Resupply Guidelines [Recommendation 5.75]

The Queensland Resupply Guidelines have been reviewed and will be finalised by 31 August 2011. A training package has been prepared and Emergency Management Queensland is currently working with local governments to identify the needs of relevant regions and a supporting training schedule.

#### Fodder drops [Recommendations 5.76 and 5.77]

As part of the 2010-11 flood response, the Department of Employment, Economic Development and Innovation in conjunction with AgForce coordinated fodder drops for the few producers who required this service. The costs for this service were met by the producer; however recovery grants could be used for this purpose.

The welfare of animals will remain the responsibility of their owners, including the cost of livestock maintenance. The Queensland Government will continue to provide assistance during large scale

disaster events, including fodder drops if they are identified as a need. The Queensland Government will hold a Natural Disaster Response Dialogue with industry groups in October 2011 to discuss how to manage future responses and build on the lessons learnt from the floods and Cyclone Yasi. From this meeting the respective roles and responsibilities for a range of relief and recovery arrangements from natural disasters, such as fodder drops, will be jointly agreed between Department of Employment, Economic Development and Industry and industry organisations. A communication strategy explaining these arrangements will be developed prior to the next wet season.

## Essential services

6.2	Power distributors should review network switching options before next wet season (to optimise switching arrangements) so that, where possible, power is disconnected only to those who are flooded.	Queensland Government SUPPORT
6.3	Power distributors should consider pre-emptively installing generators in areas known to become isolated (but not inundated) during flooding, if the power supply cannot otherwise be maintained.	Queensland Government SUPPORT
6.4	The control and coordination centre for Water Grid operations should be located where, at the least, it is not susceptible to flooding or to its power supply being interrupted.	Queensland Government SUPPORT
6.5	Essential service providers should continue to develop ways to share available resources within their respective industries during disasters.	Queensland Government SUPPORT
6.6	Essential service providers should formalise arrangements to share information about the status of services during a disaster.	Queensland Government SUPPORT
6.7	Brisbane Markets Limited should contact the Brisbane City Council on a regular basis in the lead-up to and during flooding to seek local flood information. In response, the council should provide readily understood information which, as far as possible, explains the level of flooding to be expected at the Rocklea Markets site.	Local Government
6.8	The Brisbane City Council should attend to the clearing of the flood mitigation channel on the western side of the market site before the next wet season.	Local Government

## WHAT HAS BEEN DONE

### Network switching options [Recommendation 6.2]

Energex and Ergon Energy maintain sophisticated network switching procedures to ensure that where possible power is only disconnected to those who are inundated or it is unsafe to provide supply. As each flood event is different, and switching can only be configured for defined areas, the immediate vicinity may be impacted as electrical circuits traverse flooded areas.

Energex and Ergon Energy are reviewing network switching arrangements for their respective regions, and will continue to minimise disruption and optimise arrangements wherever possible using flood mapping analysis. The Energex Flood Plan including modified switching arrangements will be deployed before the start of the 2011-12 wet season. Ergon Energy has reviewed its disaster management plans and submitted its Summer Preparedness Plan to the Department of Employment, Economic Development and Innovation, and Queensland Competition Authority for review.

### Generators in isolated areas [Recommendation 6.3]

Ergon Energy already deploys generators during natural disasters with a focus on critical infrastructure as directed by local disaster management groups. Both Energex and Ergon Energy will develop plans to pre-emptively deploy generators in areas known to become isolated from flood mapping analysis. The

plans will be limited by the extent to which a particular flood event is forecast with adequate time to allow for such deployment, the available number of generators and the extent to which supply can be provided practically.

#### **Shared resources [Recommendation 6.5]**

Queensland's essential service providers will continue to share information through the appropriate disaster management networks. In addition, each organisation maintains formal arrangements, Memoranda of Understanding and networks with industry partners to coordinate resources and will make any necessary refinements ahead of the 2011-12 wet season.

#### **Arrangements for service status updates during disasters [Recommendation 6.6]**

Queensland's essential service providers are working to formalise arrangements to share information about the status of services during a disaster. For example, Energex and Ergon Energy have commenced discussions with major telecommunication service providers Telstra and Optus to address information coordination and reporting.

#### **Electrical infrastructure [Recommendations 6.2 and 6.3]**

The Queensland Reconstruction Authority has partnered with Energex and Ergon Energy to investigate and implement improvements to the future resilience of electrical infrastructure. The Authority is developing a guideline to:

- inform Queenslanders about the electricity supply network and the impact of floods and cyclones on electricity supply
- inform Queenslanders about the impact of the 2010-11 events on the electrical infrastructure network
- identify the lessons learnt from the recent disasters
- include recommendations for electricity distributors, land use planning, emergency planning and management, building and design, and the homeowner.

The guideline will be released for public consultation in late August 2011 and published in October 2011.

#### **SEQ Water Grid Manager [Recommendation 6.4]**

The SEQ Water Grid Manager has two emergency facilities – a primary location and an alternative site. The primary site is on Albert Street, Brisbane and the alternative site is in Spring Hill. During the January floods the Emergency Management Centre was transferred to the alternative site once it was identified flooding would isolate the primary site. The transition was completed in advance ensuring no disturbances to operations. Both primary and alternative sites have redundant power systems and are on separate electrical sub grids.

Updates to the SEQ Water Grid Emergency Response documentation are underway and due to be completed by mid September 2011.

#### **Business continuity [Recommendation 6.5]**

CS Energy and Stanwell have both reviewed their procedures in relation to communication associated with dam operations, and compliance issues relevant to their operations. Any identified enhancements will be implemented.

# CHAPTER FIVE: DAM MANAGEMENT

## Dam operations

2.1	<p>Seqwater should review all arrangements for the operation of the dams during flood events for the entire wet season by 30 September each year, and ensure that all parties are adequately prepared, in the process ensuring that:</p> <ul style="list-style-type: none"> <li>• Seqwater can comply with every aspect of the Wivenhoe and North Pine manuals</li> <li>• the flood operations centre is ready and capable of operating during any flood event of whatever duration, including in terms of communications, equipment, rostering of and facilities for staff</li> <li>• the flood operations centre has available to it all tools, studies, equations and data necessary for it to be fully appraised of the consequences of its operation of the dams, including: <ul style="list-style-type: none"> <li>– hydrodynamic model of the Brisbane River downstream of the Wivenhoe Dam</li> <li>– hydrodynamic model of the Bremer River</li> <li>– copy of damage curves from Brisbane Valley Damage Minimisation Study 2007 equations for flow out of fuse plugs, if initiated.</li> </ul> </li> </ul>	Queensland Government SUPPORT
2.15	<p>Seqwater should:</p> <ul style="list-style-type: none"> <li>• immediately recruit and train additional flood engineers to ensure at least five flood engineers are available for flood operations</li> <li>• establish a formal flood event operation training program for junior engineers to ensure the flood operations centre will be staffed by appropriately qualified and experienced personnel in the medium and long term.</li> </ul>	Queensland Government SUPPORT
2.16	<p>In addition to the on duty flood engineer(s), Seqwater should ensure that the flood operations centre is staffed by a trainee flood engineer on each shift (in addition to the technical assistants) to conduct the modelling.</p>	Queensland Government SUPPORT
2.17	<p>Seqwater should ensure that, during major flood events, flood engineers do not have responsibility for, and are not required to, organise food, sleeping arrangements or access to facilities, such as power supply and communications equipment.</p>	Queensland Government SUPPORT
2.18	<p>An accurate record should be kept of reasons for key decisions, including changes in strategy and releases. Documents relevant to key decisions should also be kept, including:</p> <ul style="list-style-type: none"> <li>• each version of the gate operations spreadsheet which contains a different input gate operation scenario</li> <li>• all graphical depictions of model runs produced</li> <li>• a version of the gate operations spreadsheet which contains the gate operation scenario which will be implemented marked so that it is clear it is the one agreed to be implemented.</li> </ul>	Queensland Government SUPPORT
2.19	<p>Seqwater should ensure that all telephone calls within the flood operations centre are digitally recorded to create an accurate record of decision-making during major flood events.</p>	Queensland Government SUPPORT
2.20	<p>Seqwater should develop procedures which require the flood engineers to check the entries in the flood operations centre's flood event log at a near contemporaneous time, such as the end of their shift, to ensure accuracy and the recording of significant events. Seqwater should make sure that the operation of the flood operations centre enables the flood engineers to comply with that procedure.</p>	Queensland Government SUPPORT
2.21	<p>Seqwater should produce a template situation report in consultation with the flood engineers and recipient agencies. As part of this process, consideration should be given as to whether the quality and timeliness of the dissemination of information about flood operations would be improved if a single document, rather than a situation report and a technical situation report, were used for the purpose of communicating flood operations to all concerned parties. The template situation report should include, at a minimum, dedicated space for the following:</p> <ul style="list-style-type: none"> <li>• meteorological observations and situation, including forecasts</li> <li>• identification of the current operating strategy</li> </ul>	Queensland Government SUPPORT

	<ul style="list-style-type: none"> <li>the strategy, aims and objectives of the flood engineers</li> <li>actual and expected releases</li> <li>any other comments.</li> </ul>	
2.22	<p>Seqwater should create a regular forum for discussion between all operational staff of the flood operations centre and Bureau staff to:</p> <ul style="list-style-type: none"> <li>increase the knowledge of flood operations centre staff about the Bureau's products, abilities, advice and operations</li> <li>reach agreement as to the frequency and type of information to be shared between the Bureau and the flood operations centre during a flood event</li> <li>discuss advances in technology and science in areas including forecasting, data collection and modelling</li> <li>build relationships between the staff of both organisations.</li> </ul>	<p>Queensland Government SUPPORT</p> <p>Commonwealth Government involvement</p>
2.23	<p>Seqwater should give consideration to creating a communications position within the flood operations centre filled by an engineer with experience in dam operations and emergency management processes.</p>	<p>Queensland Government SUPPORT</p>

## WHAT HAS BEEN DONE

### Flood preparedness [Recommendation 2.1]

Seqwater currently complies with all aspects of the Wivenhoe, Somerset and North Pine dam manuals.

The Department of Environment and Resource Management has updated the requirements for the Annual Flood Preparedness Report as part of the Interim Review of Flood Mitigation Manuals. Seqwater will review all arrangements for the operation of the Wivenhoe, Somerset and North Pine dams during flood events for the entire wet season and provide a flood preparedness report for the Department of Environment and Resource Management by 30 September 2011. The department will review Seqwater's report before 1 November 2011. The review and report will be an annual activity.

### Hydrodynamic models, damage curves and fuse plugs [Recommendation 2.1]

Work is progressing on the hydrodynamic model of the Brisbane River downstream of the Wivenhoe Dam. This project is a long term activity and Seqwater has sought international expert advice to assist in the implementation of the hydrodynamic models.

The hydrodynamic model of the Bremer River is being considered by Seqwater. Required modelling will be completed by December 2011.

Seqwater will seek clarification from the Brisbane City Council, Ipswich City Council and Somerset Regional Council on the damage curves from the 2007 Brisbane Valley Damage Minimisation Study to ensure accurate information is held by the flood operations centre.

Equations for flow out of fuse plugs have been completed and this information is now held in the flood operations centre.

### Flood operations centre [Recommendations 2.15, 2.16 and 2.17]

The recently upgraded flood operations centre is ready and capable of operating during any flood event of whatever duration, including provision of communications, equipment, rostering and facilities for staff. It also holds all the tools, studies, equations and data considered necessary to prepare for the wet season.

Seqwater has provided the Department of Environment and Resource Management with a planned manning strategy for the flood operations centre which includes six flood engineers and at least 10 flood officers. The department will consider the strategy before 1 October 2011. Seqwater is also developing a

succession plan to coordinate the identification and development of new flood engineers by mid September 2011. In addition, a program to coordinate the training and development of trainee engineers in the flood operations centre, as well as provide support to the flood engineers will be implemented by October 2011.

The upgraded flood operations centre has arrangements for sleeping, provision of a full kitchen and catering arrangements and arrangements for long term accommodation. The centre also has dual backup generators, access to two separate power grids, backup communication systems and satellite phone connections.

**Records management and communication [Recommendations 2.18, 2.19, 2.20, 2.21, 2.22 and 2.23]**

Seqwater has reviewed the flood event log to refine information records and processes. A decision log will be implemented by mid September 2011. Seqwater will store documents relating to key decisions including:

- each version of the gate operations spreadsheet which contains a different input gate operation scenario
- all graphical depictions of model runs produced
- a version of the gate operations spreadsheet which contains the gate operation scenario which will be implemented marked so that it is clear it is the one agreed to be implemented.

The flood operation centre has trialled the digital recording of conversations on the two dedicated centre phone lines. Digital recording will be installed on both phones by the end of September 2011. In conjunction with digital phone recording and improved operational procedures, flood event logs will include the recording of decision as they are made. These processes will help provide accurate data records for significant events.

The floods operation centre’s situation report has evolved over time. In conjunction with relevant stakeholders, Seqwater will redraft the report to provide a concise summary and in a format suitable for a variety of purposes and audiences by October 2011.

Seqwater holds regular discussions with the Bureau of Meteorology, and these have now been formalised into regular monthly meetings. The first meeting will be held in August 2011.

Seqwater is considering a range of options to provide communication support in the flood operations centre. These include a position with relevant technical expertise and emergency management processes, as well as a position to coordinate dissemination of information to stakeholders during major events. The positions will be finalised in October 2011.

**Alteration of the full supply level**

2.2	It should be accepted that control over temporary alteration of the full supply level of Wivenhoe, Somerset and North Pine dams is solely the function of the Queensland Government acting through the responsible Minister.	Queensland Government SUPPORT
2.3	The regulatory framework by which the responsible Minister can effect a temporary alteration to full supply level should be simplified.	Queensland Government SUPPORT
2.4	For the purposes of making any decision about a temporary alteration to full supply level, the Minister should receive advice from:	Queensland Government SUPPORT

	<ol style="list-style-type: none"> <li>1. Seqwater, as to the flood mitigation impacts of such an alteration</li> <li>2. the Water Grid Manager, as to the security of water supply implications of such an alteration</li> <li>3. the Water Commission, as to both the flood mitigation impacts and the security of water supply implications of such an alteration</li> <li>4. DERM as to an analysis of the above advice, its own advice as to dam safety, the regulatory framework and any other matter within its expertise.</li> </ol>	
2.5	If the Bureau of Meteorology makes a similar seasonal forecast to that made for the 2010/2011 wet season, expressed with equal or greater confidence, for the 2011/2012 wet season, the Queensland Government should temporarily reduce the full supply level of Wivenhoe Dam to 75 per cent, with a concomitant adjustment to the trigger levels for the strategies in the Wivenhoe manual.	Queensland Government SUPPORT  Commonwealth Government involvement

## WHAT HAS BEEN DONE

### Regulatory framework for temporary alteration of the full supply level [Recommendations 2.2 and 2.3]

The Queensland Government accepts sole responsibility for future control over the temporary alteration of the full supply level of Wivenhoe, Somerset and North Pine dams.

The Queensland Government will introduce legislative changes to Chapter 2 of the *Water Act 2000* to clarify the roles of the water entities and to simplify the regulatory framework by which clear advice and recommendations are provided by responsible agencies to allow the Minister to give effect to a temporary reduction in the full supply level, if required, before each wet season. These changes will be completed administratively by 1 October 2011 and legislative amendments will follow.

The entities involved in providing advice and recommendations regarding the temporary alteration of full supply level include Seqwater, the SEQ Water Grid Manager, the Queensland Water Commission, and the Department of Environment and Resource Management.

### Temporary reduction of the full supply level of Wivenhoe Dam to 75 per cent [Recommendations 2.4 and 2.5]

The Queensland Government has put in place mechanisms to allow a temporary reduction of Wivenhoe Dam to be made in time for the 2011-12 wet season should it be necessary. It is not yet possible to predict whether the next wet season will have an increased flood risk. The Bureau of Meteorology will provide seasonal outlook advice to Cabinet and the State Disaster Management Group in the lead-up to the wet season.

Work is underway, in preparation for the 2011-12 wet season, to enable a decision to be made on a temporary alteration of the full supply level of Wivenhoe and Somerset dams, should the Bureau of Meteorology provide a similar forecast to that made for the 2010-11 wet season. This work includes:

- The Queensland Water Commission will provide advice to the Department of Environment and Resource Management on both the flood mitigation impacts and the water security implications of various scenarios related to the full supply volume of Wivenhoe Dam.
- The SEQ Water Grid Manager will provide advice as to the security of water supply implications.
- Seqwater will provide advice as to the flood mitigation impacts and submit a draft report on the interim review of the Flood Mitigation Manual for consideration by the Department of Environment and Resource Management.
- The Department of Environment and Resource Management will then ensure the manual reflects the agreed reduction and general dam safety requirements by 1 October 2011.

- The Department of Environment and Resource Management will investigate the potential implications of temporary changes to full supply level on the environmental flow and water allocation security objectives of the Water Resource (Moreton) Plan 2007 and the rules under the Moreton Resource Operations Plan.

## Wivenhoe Dam manual

2.8	Seqwater should: <ol style="list-style-type: none"> <li>1. conduct an interim review of the Wivenhoe manual</li> <li>2. have the draft manual assessed by independent expert peer reviewers</li> <li>3. consider the expert peer reviews</li> <li>4. submit the draft manual to DERM for approval under the Act so that it can be approved before 1 October 2011.</li> </ol>	Queensland Government SUPPORT
2.9	The following matters require particular attention during the interim review of the Wivenhoe manual: <ul style="list-style-type: none"> <li>• definition of what 'best forecast rainfall' means</li> <li>• prescription about how forecast rainfall information is to be used by the flood engineers</li> <li>• definition of 'predicted lake level' and the use of consistent language throughout the Wivenhoe manual about predicted lake levels</li> <li>• clarification of options for transition to strategies W2 or W3 from strategy W1</li> <li>• clarification of the rules for drawdowns of the dams following flood events</li> <li>• removal of the term 'non-damaging flows' (and similar terms) to describe flows below 4000 m<sup>3</sup>/s at Moggill</li> <li>• clarification of whether W3 allows the flood engineers to release water which would create a flow at Moggill of over 4000 m<sup>3</sup>/s</li> <li>• precise definition of the maximum mechanical capability of the gate opening mechanism</li> <li>• clarification of how part 8.6 should be followed in strategy W4, including clarifying the use of the word 'generally'.</li> </ul>	Queensland Government SUPPORT
2.10	Seqwater should act immediately to establish: <ol style="list-style-type: none"> <li>1. a steering committee to oversee the long term review of the Wivenhoe manual including senior representatives of at least DERM, Seqwater, the Water Commission, the Water Grid Manager, Brisbane City Council, Ipswich City Council and Somerset Regional Council</li> <li>2. a technical review committee comprised of independent experts in at least hydrology, meteorology and dam operations to examine all technical work completed as part of the review.</li> </ol>	Queensland Government SUPPORT  Local Government involvement
2.11	The steering committee should ensure the scientific investigations and modelling outlined in recommendation 2.12 and 2.13 are completed. It should also assess the need for any other work to be done, and instigate any other investigations or work considered necessary for a full and proper review of the Wivenhoe manual.	Queensland Government SUPPORT  Local Government involvement
2.12	The following scientific investigations should be carried out prior to modelling work under the supervision of the steering committee and reviewed by the technical review committee: <ol style="list-style-type: none"> <li>1. review of the design hydrology: <ol style="list-style-type: none"> <li>a. using a stochastic or Monte Carlo or probabilistic approach</li> <li>b. taking into account observed variability in temporal and spatial patterns of rainfall</li> <li>c. taking into account observed variability in relative timings of inflows from the dams and downstream tributaries.</li> </ol> </li> <li>2. production of a digital terrain model incorporating a bathymetric survey of all critical sections of creeks and rivers upstream and downstream of the dam relevant to flood modelling</li> <li>3. assessment of the reliability of the 24 hour, the three day and the five day rainfall forecasts</li> <li>4. consideration of whether and how weather radar can be incorporated into decision making</li> <li>5. requesting information from the Bureau of Meteorology as to its willingness to provide ensemble forecasts</li> <li>6. consideration as to whether and how ensemble forecasts can be incorporated into decision making.</li> </ol>	Queensland Government SUPPORT  Local Government involvement

2.13	<p>The following modelling work should be carried out under the supervision of the steering committee and reviewed by the technical review committee:</p> <ol style="list-style-type: none"> <li>2. modelling across the range of full supply levels, operating strategies and flood events (historical, design and synthetic) in each case assessing the consequences in terms of risk to life and safety and economic, social and environmental damage. In terms of operating strategies, using a full range of strategies including: <ol style="list-style-type: none"> <li>a. a stepped change from W3 to W4</li> <li>b. moving to a higher rate of release earlier in W1</li> <li>c. bypassing W1</li> <li>d. altering maximum release rates under W3</li> <li>e. operating the gates in conjunction with the initiation of any of the fuse plugs in order to achieve a lower rate of discharge</li> </ol> </li> <li>3. simulations to test the robustness of relying on the 24 hour, the three day and the five day rainfall forecasts</li> <li>4. development of a probability distribution for the time between closely spaced flood peaks in the catchment using historical records.</li> </ol>	<p>Queensland Government SUPPORT</p> <p>Local Government involvement</p>
------	--	--

## WHAT HAS BEEN DONE

### Interim review of Wivenhoe and Somerset Dam Flood Mitigation Manual [Recommendations 2.8 and 2.9]

Seqwater is currently reviewing the Wivenhoe and Somerset Dams Flood Mitigation Manual to develop an interim Flood Mitigation Manual. The interim Flood Mitigation Manual will take into account the Commission of Inquiry's recommendations including assessment by an independent expert peer review panel prior to submission to the Department of Environment and Resource Management.

Seqwater and the Department of Environment and Resource Management will ensure the interim review includes the points raised in Recommendation 2.9 including:

- definition of what 'best forecast rainfall' means
- prescription about how forecast rainfall information is to be used by the flood engineers
- definition of 'predicted lake level' and the use of consistent language throughout the Wivenhoe manual about predicted lake levels
- clarification of options for transition to strategies W2 or W3 from strategy W1
- clarification of the rules for drawdowns of the dams following flood events
- removal of the term 'non-damaging flows' (and similar terms) to describe flows below 4000 m<sup>3</sup>/s at Moggill
- clarification of whether W3 allows the flood engineers to release water which would create a flow at Moggill of over 4000 m<sup>3</sup>/s
- precise definition of the maximum mechanical capability of the gate opening mechanism
- clarification of how part 8.6 should be followed in strategy W4, including clarifying the use of the word 'generally'.

The Department of Environment and Resource Management will review the submitted changes to the manual and ensure it is approved and gazetted by 1 October 2011.

### Long term review of the Wivenhoe Dam manual [Recommendations 2.10, 2.11, 2.12 and 2.13]

Seqwater has initiated the formation of a steering committee to oversee a study of the optimisation of Wivenhoe and Somerset Dams including the long term review of the Wivenhoe and Somerset dam manuals.

The steering committee includes senior representatives of the Department of Environment and Resource Management, Seqwater, the Queensland Water Commission, the SEQ Water Grid Manager, Brisbane City Council, Ipswich City Council and Somerset Regional Council.

Seqwater has also initiated the formation of an expert technical review committee comprised of independent experts in at least hydrology, meteorology and dam operations to examine all technical work completed as part of the review.

The detail of the scientific investigations and modelling work to be conducted will be addressed by the steering committee. The committee's first meeting is scheduled for late August 2011.

## North Pine Dam manual

2.25	Seqwater should: <ol style="list-style-type: none"> <li>1. conduct an interim review of the North Pine manual</li> <li>2. have the draft manual assessed by independent expert peer reviewers</li> <li>3. consider the expert peer reviews</li> <li>4. submit the draft manual to DERM for approval under the Act so that it can be approved before 1 October 2011.</li> </ol>	Queensland Government SUPPORT
2.26	Particular attention should be paid during the interim review of the North Pine manual to clarifying the circumstances in which pre-releases under part 8.4 are permitted.	Queensland Government SUPPORT
2.27	Seqwater should act immediately to establish: <ol style="list-style-type: none"> <li>1. a steering committee to oversee the long term review of the North Pine manual including senior representatives of at least DERM, Seqwater, the Water Commission, the Water Grid Manager, Brisbane City Council and the Moreton Bay Regional Council</li> <li>2. a technical review committee comprised of independent experts in at least hydrology, meteorology and dam operations to examine all technical work completed as part of the review.</li> </ol>	Queensland Government SUPPORT Local Government involvement
2.28	The steering committee should: <ol style="list-style-type: none"> <li>1. oversee the continuation of Seqwater's <i>North Pine Dam Acceptable Flood Study Investigations</i> in accordance with the scope and program of activities advised to the Commission as at 6 May 2011</li> <li>2. determine whether any hydrological studies, in addition to those undertaken as part of the <i>North Pine Dam Acceptable Flood Study Investigations</i>, are required</li> <li>3. ensure that modelling across a range of full supply levels and operating strategies, including variations of the gate increments and gate opening intervals is undertaken</li> <li>4. ensure all of the above work is reviewed by the technical review committee.</li> </ol>	Queensland Government SUPPORT Local Government involvement

## WHAT HAS BEEN DONE

### Interim review of North Pine Dam manual [Recommendations 2.25 and 2.26]

Seqwater is currently reviewing the North Pine Dam Flood Mitigation Manual to develop an interim Flood Mitigation Manual. The interim Flood Mitigation Manual will take into account the Commission of Inquiry's recommendations including assessment by an independent expert peer review panel prior to submission to the Department of Environment and Resource Management.

The Department of Environment and Resource Management will review the manual and ensure it is approved and gazetted by 1 October 2011.

### Long term review of the North Pine Dam manual [Recommendations 2.27 and 2.28]

Seqwater will invite senior representatives of the Department of Environment and Resource Management, Seqwater, the Queensland Water Commission, the SEQ Water Grid Manager, Brisbane City Council and Moreton Bay Regional Council to form a steering committee.

Seqwater has initiated the formation of an expert technical review committee comprised of independent experts in at least hydrology, meteorology and dam operations to examine all the technical work

completed as part of the Wivenhoe Dam review, and will consider using the same committee for North Pine Dam.

The steering committee will:

- oversee the continuation of Seqwater's *North Pine Dam Acceptable Flood Study Investigations* in accordance with the scope and program of activities advised to the Commission as at 6 May 2011
- determine whether any hydrological studies, in addition to those undertaken as part of the *North Pine Dam Acceptable Flood Study Investigations*, are required
- ensure that modelling across a range of full supply levels and operating strategies, including variations of the gate increments and gate opening intervals is undertaken
- ensure all of the above work is reviewed by the technical review committee.

## Training

2.6	The requirements of the chief executive of DERM as to training of operational personnel should be provided to Seqwater on a regular and formal basis.	Queensland Government SUPPORT
2.7	Seqwater should ensure all staff and engineers who may be involved in flood operations are involved in formal training exercises which address the full range of possible operating situations.	Queensland Government SUPPORT

## WHAT HAS BEEN DONE

### Training plans [Recommendation 2.6]

The Department of Environment and Resource Management has received a copy of Seqwater's training plan. The training plan and associated implementation will be reported annually in the Flood Preparedness Report and provided to the department before 30 September.

The department is working with Seqwater to refine its training program to ensure all documentation is formalised and that appropriate opportunities exist to enable flood engineers to react to new circumstances.

### Training programs [Recommendation 2.7]

Formal training for flood engineers and flood officers will be completed by September 2011. In addition, a scenario exercise addressing the full range of possible operational situations will also be conducted in September.

## Information, warnings and road crossings

2.14	The Commission recommends that a review be conducted of the number and distribution of ALERT gauges within the Wivenhoe and Somerset catchments. This review should include an assessment of the usefulness and cost effectiveness of installing more gauges, particularly at high elevations in the catchment. Such an assessment would appropriately involve the Bureau of Meteorology, DERM and Seqwater, and the relevant local councils.	Queensland Government SUPPORT Commonwealth Government involvement
2.24	Seqwater should give consideration to posting information about current and future releases on its website during flood events as one method of ensuring accurate and timely information is available to the public.	Queensland Government SUPPORT
2.29	The Moreton Bay Regional Council should investigate options for the upgrade of Youngs Crossing and undertake a cost-benefit analysis of these to determine an outcome which best serves the public interest.	Local Government

2.30	The Moreton Bay Regional Council should consult with Seqwater and the local police, ambulance and fire and rescue services to make arrangements for emergency vehicles to access Vores Road and Grant Street, Whiteside, when Vores Road is closed by the flooding of Whiteside Creek.	Local Government Queensland Government involvement
------	--	---

## WHAT HAS BEEN DONE

### **ALERT gauges [Recommendation 2.14]**

The Bureau of Meteorology, Seqwater, the Department of Environment and Resource Management and local governments will all contribute to the review of the existing network and will coordinate efforts to install new gauges. The department will continue to provide the Bureau and local governments with data and analysis from its gauge network.

Seqwater and local government are in the process of installing a number of new gauging stations.

### **Information online [Recommendation 2.24]**

Seqwater provides a range of information online and is currently considering the most effective process to post situation reports on the website. The process will be finalised in October 2011.

### **Road crossings access [Recommendation 2.30]**

The Queensland Government, through the Brisbane and Redcliffe District Disaster Coordinators, will consult with the Moreton Bay Regional Council regarding access for emergency vehicles of Vores Road and Grant Street, Whiteside, when Vores Road is closed by the flooding of Whiteside Creek. The access will be formalised before the start of the 2011-12 wet season.

## ATTACHMENT A: ACRONYMS

DCS	Department of Community Safety
DDMC	District Disaster Management Coordinator
DDMG	District Disaster Management Group
DoC	Department of Communities
EMQ	Emergency Management Queensland
LDMG	Local Disaster Management Group
LDMC	Local Disaster Management Coordinator
LGAQ	Local Government Association of Queensland
NRIS	National Registration and Inquiry System
QPS	Queensland Police Service
QRFS	Queensland Fire and Rescue Service
SDMC	State Disaster Management Coordinator
SDMG	State Disaster Management Group
SES	State Emergency Service

## ATTACHMENT B: INTERIM REPORT RECOMMENDATIONS

### Chapter 2 Dams

2.1	<p>Seqwater should review all arrangements for the operation of the dams during flood events for the entire wet season by 30 September each year, and ensure that all parties are adequately prepared, in the process ensuring that:</p> <ul style="list-style-type: none"> <li>• Seqwater can comply with every aspect of the Wivenhoe and North Pine manuals</li> <li>• the flood operations centre is ready and capable of operating during any flood event of whatever duration, including in terms of communications, equipment, rostering of and facilities for staff</li> <li>• the flood operations centre has available to it all tools, studies, equations and data necessary for it to be fully apprised of the consequences of its operation of the dams, including: <ul style="list-style-type: none"> <li>– hydrodynamic model of the Brisbane River downstream of the Wivenhoe Dam</li> <li>– hydrodynamic model of the Bremer River</li> <li>– copy of damage curves from Brisbane Valley Damage Minimisation Study 2007</li> <li>– equations for flow out of fuse plugs, if initiated.</li> </ul> </li> </ul>
2.2	<p>It should be accepted that control over temporary alteration of the full supply level of Wivenhoe, Somerset and North Pine dams is solely the function of the Queensland Government acting through the responsible Minister.</p>
2.3	<p>The regulatory framework by which the responsible Minister can effect a temporary alteration to full supply level should be simplified.</p>
2.4	<p>For the purposes of making any decision about a temporary alteration to full supply level, the Minister should receive advice from:</p> <ol style="list-style-type: none"> <li>1. Seqwater, as to the flood mitigation impacts of such an alteration</li> <li>2. the Water Grid Manager, as to the security of water supply implications of such an alteration</li> <li>3. the Water Commission, as to both the flood mitigation impacts and the security of water supply implications of such an alteration</li> <li>4. DERM as to an analysis of the above advice, its own advice as to dam safety, the regulatory framework and any other matter within its expertise.</li> </ol>
2.5	<p>If the Bureau of Meteorology makes a similar seasonal forecast to that made for the 2010/2011 wet season, expressed with equal or greater confidence, for the 2011/2012 wet season, the Queensland Government should temporarily reduce the full supply level of Wivenhoe Dam to 75 per cent, with a concomitant adjustment to the trigger levels for the strategies in the Wivenhoe manual.</p>
2.6	<p>The requirements of the chief executive of DERM as to training of operational personnel should be provided to Seqwater on a regular and formal basis.</p>
2.7	<p>Seqwater should ensure all staff and engineers who may be involved in flood operations are involved in formal training exercises which address the full range of possible operating situations.</p>
2.8	<p>Seqwater should:</p> <ol style="list-style-type: none"> <li>1. conduct an interim review of the Wivenhoe manual</li> <li>2. have the draft manual assessed by independent expert peer reviewers</li> <li>3. consider the expert peer reviews</li> <li>4. submit the draft manual to DERM for approval under the Act so that it can be approved before 1 October 2011.</li> </ol>
2.9	<p>The following matters require particular attention during the interim review of the Wivenhoe manual:</p> <ul style="list-style-type: none"> <li>• definition of what 'best forecast rainfall' means</li> <li>• prescription about how forecast rainfall information is to be used by the flood engineers<sup>8</sup></li> <li>• definition of 'predicted lake level' and the use of consistent language throughout the Wivenhoe manual about predicted lake levels</li> <li>• clarification of options for transition to strategies W2 or W3 from strategy W1</li> </ul>

	<ul style="list-style-type: none"> <li>• clarification of the rules for drawdowns of the dams following flood events</li> <li>• removal of the term 'non-damaging flows' (and similar terms) to describe flows below 4000 m<sup>3</sup>/s at Moggill</li> <li>• clarification of whether W3 allows the flood engineers to release water which would create a flow at Moggill of over 4000 m<sup>3</sup>/s</li> <li>• precise definition of the maximum mechanical capability of the gate opening mechanism</li> <li>• clarification of how part 8.6 should be followed in strategy W4, including clarifying the use of the word 'generally'.</li> </ul>
2.10	<p>Seqwater should act immediately to establish:</p> <ol style="list-style-type: none"> <li>1. a steering committee to oversee the long term review of the Wivenhoe manual including senior representatives of at least DERM, Seqwater, the Water Commission, the Water Grid Manager, Brisbane City Council, Ipswich City Council and Somerset Regional Council</li> <li>2. a technical review committee comprised of independent experts in at least hydrology, meteorology and dam operations to examine all technical work completed as part of the review.</li> </ol>
2.11	<p>The steering committee should ensure the scientific investigations and modelling outlined in recommendation 2.12 and 2.13 are completed. It should also assess the need for any other work to be done, and instigate any other investigations or work considered necessary for a full and proper review of the Wivenhoe manual.</p>
2.12	<p>The following scientific investigations should be carried out prior to modelling work under the supervision of the steering committee and reviewed by the technical review committee:</p> <ol style="list-style-type: none"> <li>1. review of the design hydrology: <ol style="list-style-type: none"> <li>a. using a stochastic or Monte Carlo or probabilistic approach</li> <li>b. taking into account observed variability in temporal and spatial patterns of rainfall</li> <li>c. taking into account observed variability in relative timings of inflows from the dams and downstream tributaries.</li> </ol> </li> <li>2. production of a digital terrain model incorporating a bathymetric survey of all critical sections of creeks and rivers upstream and downstream of the dam relevant to flood modelling</li> <li>3. assessment of the reliability of the 24 hour, the three day and the five day rainfall forecasts</li> <li>4. consideration of whether and how weather radar can be incorporated into decision making</li> <li>5. requesting information from the Bureau of Meteorology as to its willingness to provide ensemble forecasts</li> <li>6. consideration as to whether and how ensemble forecasts can be incorporated into decision making.</li> </ol>
2.13	<p>The following modelling work should be carried out under the supervision of the steering committee and reviewed by the technical review committee:</p> <ol style="list-style-type: none"> <li>1. modelling across the range of full supply levels, operating strategies and flood events (historical, design and synthetic) in each case assessing the consequences in terms of risk to life and safety and economic, social and environmental damage. In terms of operating strategies, using a full range of strategies including: <ol style="list-style-type: none"> <li>a. a stepped change from W3 to W4</li> <li>b. moving to a higher rate of release earlier in W1</li> <li>c. bypassing W1</li> <li>d. altering maximum release rates under W3</li> <li>e. operating the gates in conjunction with the initiation of any of the fuse plugs in order to achieve a lower rate of discharge</li> </ol> </li> <li>2. simulations to test the robustness of relying on the 24 hour, the three day and the five day rainfall forecasts</li> <li>3. development of a probability distribution for the time between closely spaced flood peaks in the catchment using historical records.</li> </ol>

2.14	The Commission recommends that a review be conducted of the number and distribution of ALERT gauges within the Wivenhoe and Somerset catchments. This review should include an assessment of the usefulness and cost effectiveness of installing more gauges, particularly at high elevations in the catchment. Such an assessment would appropriately involve the Bureau of Meteorology, DERM and Seqwater, and the relevant local councils.
2.15	Seqwater should: <ul style="list-style-type: none"> <li>• immediately recruit and train additional flood engineers to ensure at least five flood engineers are available for flood operations</li> <li>• establish a formal flood event operation training program for junior engineers to ensure the flood operations centre will be staffed by appropriately qualified and experienced personnel in the medium and long term.</li> </ul>
2.16	In addition to the on duty flood engineer(s), Seqwater should ensure that the flood operations centre is staffed by a trainee flood engineer on each shift (in addition to the technical assistants) to conduct the modelling.
2.17	Seqwater should ensure that, during major flood events, flood engineers do not have responsibility for, and are not required to, organise food, sleeping arrangements or access to facilities, such as power supply and communications equipment.
2.18	An accurate record should be kept of reasons for key decisions, including changes in strategy and releases. Documents relevant to key decisions should also be kept, including: <ul style="list-style-type: none"> <li>• each version of the gate operations spreadsheet which contains a different input gate operation scenario</li> <li>• all graphical depictions of model runs produced</li> <li>• a version of the gate operations spreadsheet which contains the gate operation scenario which will be implemented marked so that it is clear it is the one agreed to be implemented.</li> </ul>
2.19	Seqwater should ensure that all telephone calls within the flood operations centre are digitally recorded to create an accurate record of decision-making during major flood events.
2.20	Seqwater should develop procedures which require the flood engineers to check the entries in the flood operations centre's flood event log at a near contemporaneous time, such as the end of their shift, to ensure accuracy and the recording of significant events. Seqwater should make sure that the operation of the flood operations centre enables the flood engineers to comply with that procedure.
2.21	Seqwater should produce a template situation report in consultation with the flood engineers and recipient agencies. As part of this process, consideration should be given as to whether the quality and timeliness of the dissemination of information about flood operations would be improved if a single document, rather than a situation report and a technical situation report, were used for the purpose of communicating flood operations to all concerned parties. The template situation report should include, at a minimum, dedicated space for the following: <ul style="list-style-type: none"> <li>• meteorological observations and situation, including forecasts</li> <li>• identification of the current operating strategy</li> <li>• the strategy, aims and objectives of the flood engineers</li> <li>• actual and expected releases</li> <li>• any other comments.</li> </ul>
2.22	Seqwater should create a regular forum for discussion between all operational staff of the flood operations centre and Bureau staff to: <ul style="list-style-type: none"> <li>• increase the knowledge of flood operations centre staff about the Bureau's products, abilities, advice and operations</li> <li>• reach agreement as to the frequency and type of information to be shared between the Bureau and the flood operations centre during a flood event</li> <li>• discuss advances in technology and science in areas including forecasting, data collection and modelling</li> <li>• build relationships between the staff of both organisations.</li> </ul>

2.23	Seqwater should give consideration to creating a communications position within the flood operations centre filled by an engineer with experience in dam operations and emergency management processes.
2.24	Seqwater should give consideration to posting information about current and future releases on its website during flood events as one method of ensuring accurate and timely information is available to the public.
2.25	Seqwater should: <ol style="list-style-type: none"> <li>1. conduct an interim review of the North Pine manual</li> <li>2. have the draft manual assessed by independent expert peer reviewers</li> <li>3. consider the expert peer reviews</li> <li>4. submit the draft manual to DERM for approval under the Act so that it can be approved before 1 October 2011.</li> </ol>
2.26	Particular attention should be paid during the interim review of the North Pine manual to clarifying the circumstances in which pre-releases under part 8.4 are permitted.
2.27	Seqwater should act immediately to establish: <ol style="list-style-type: none"> <li>1. a steering committee to oversee the long term review of the North Pine manual including senior representatives of at least DERM, Seqwater, the Water Commission, the Water Grid Manager, Brisbane City Council and the Moreton Bay Regional Council</li> <li>2. a technical review committee comprised of independent experts in at least hydrology, meteorology and dam operations to examine all technical work completed as part of the review.</li> </ol>
2.28	The steering committee should: <ol style="list-style-type: none"> <li>1. oversee the continuation of Seqwater's <i>North Pine Dam Acceptable Flood Study Investigations</i> in accordance with the scope and program of activities advised to the Commission as at 6 May 2011</li> <li>2. determine whether any hydrological studies, in addition to those undertaken as part of the <i>North Pine Dam Acceptable Flood Study Investigations</i>, are required</li> <li>3. ensure that modelling across a range of full supply levels and operating strategies, including variations of the gate increments and gate opening intervals is undertaken</li> <li>4. ensure all of the above work is reviewed by the technical review committee.</li> </ol>
2.29	The Moreton Bay Regional Council should investigate options for the upgrade of Youngs Crossing and undertake a cost-benefit analysis of these to determine an outcome which best serves the public interest.
2.30	The Moreton Bay Regional Council should consult with Seqwater and the local police, ambulance and fire and rescue services to make arrangements for emergency vehicles to access Vores Road and Grant Street, Whiteside, when Vores Road is closed by the flooding of Whiteside Creek.

### Chapter 3 Disaster frameworks, preparation and planning

3.1	The state disaster management group should include representatives of the Australian Defence Force and the Australian Red Cross in its planning and preparation for the next wet season.
3.2	Risk management is fundamentally important to disaster management. The Queensland Government should, before the next wet season, ensure that the state-wide natural hazard risk assessment is completed and its results provided to local governments.
3.3	Emergency Management Queensland should, as part of its review of local disaster management planning guidelines, consider whether consistent activation terminology should be adopted.
3.4	Every local government susceptible to flooding should ensure that, before the next wet season, its local disaster management plan: <ul style="list-style-type: none"> <li>• is consistent with the Disaster Management Act 2003</li> <li>• addresses local risks and circumstances</li> <li>• can be used easily in the event of a disaster.</li> </ul>
3.5	Every person who is required to work under a local disaster management plan should be familiar with the plan before the next wet season.

3.6	Every local government should publish its disaster management plan (and relevant sub-plans) on its website before the next wet season.
3.7	Emergency Management Queensland should proceed with its proposed reviewing system before the next wet season.
3.8	Each district disaster co-ordinator should ensure that, before the next wet season, the disaster management plan of every local government in the co-ordinator's district susceptible to flooding: <ul style="list-style-type: none"> <li>• is consistent with the Disaster Management Act 2003</li> <li>• addresses local risks and circumstances</li> <li>• can be used easily in the event of a disaster.</li> </ul>
3.9	In order to assist district disaster co-ordinators in this task, and to ensure consistency and effectiveness, Emergency Management Queensland should: <ul style="list-style-type: none"> <li>• provide a standardised approach for district disaster co-ordinators to follow, with all necessary guidance</li> <li>• generally oversee the reviewing process</li> <li>• before the next wet season, review a selection of local disaster management plans of local governments susceptible to flooding, which have already been reviewed at the district level.</li> </ul>
3.10	Emergency Management Queensland should assess the effectiveness of the review system before the end of 2011, and report its results to the Commission by 31 December 2011.
3.11	Emergency Management Queensland should endeavour to ensure that before the next wet season: <ul style="list-style-type: none"> <li>• training is provided to those involved in disaster management at the local and district levels to ensure that the respective roles of all agencies, and in particular local government and the Queensland police, during an event are clearly understood</li> <li>• training is provided to all local disaster co-ordinators</li> <li>• training is provided to SES volunteers</li> <li>• local disaster management groups are given practical training based on the event of large-scale flooding across different local government regions (as in Exercise Orko).</li> </ul>
3.12	If training cannot be provided to every local government and disaster district before the next wet season, priority should be given according to each region's susceptibility to flooding.
3.13	Before the next wet season, local governments susceptible to flooding should conduct community education programs which provide local information about (at least) the following topics: <ul style="list-style-type: none"> <li>• the measures households should take to prepare for flooding</li> <li>• the roles and functions of the SES and details of how to contact and join it</li> <li>• whom to contact if assistance is needed during a flood</li> <li>• contact details for emergency services in the area</li> <li>• the types of warnings that are used in the area, what they mean and what to do in the event of a warning</li> <li>• where and how to obtain information before, during and after a disaster</li> <li>• what is likely to happen during a disaster (for example, power outages and road closures)</li> <li>• evacuation measures available for groups who require particular assistance (for example, the elderly, ill and people with a disability).</li> </ul>
3.14	To ensure consistency, the Queensland Government should assist local governments to develop and deliver the community education programs.
3.15	Before the next wet season, the Queensland Government should conduct a public education campaign about the dangers of driving into floodwaters.
3.16	The campaign should use various media and be designed to reach as many people as possible.
3.17	The National Emergency Management Committee should, as part of its education initiatives, consider developing a national public education campaign about the dangers of driving into floodwaters, using various media and commencing, if possible, before the next wet season.
3.18	The Queensland and Commonwealth governments should liaise to ensure a consistent message is delivered to the public.

## Chapter 4 Forecasts, warnings and information

4.1	In issuing warnings for a district or region, local and state authorities should use a range of different warning mechanisms effective for the particular district or region, including methods which do not rely on electricity.
4.2	Councils should prepare SMS alert templates covering a range of different flood scenarios before the wet season.
4.3	SMS alerts should direct recipients to websites or contact numbers providing more detailed information about flood locations and predictions, the location of evacuation centres and evacuation routes.
4.4	Councils and Emergency Management Queensland should work together to ensure the approval process does not cause delays in delivering SMS alerts.
4.5	Wherever possible, Emergency Management Queensland should consult with local disaster management groups before sending emergency alerts to residents. Emergency Management Queensland should inform the local disaster management group, as soon as it can, about any message already sent to residents in that local disaster management group's area.
4.6	Individuals and businesses should be encouraged to acquire battery operated radios for use in emergencies.
4.7	Councils should ensure that residents are aware of the frequency of the radio station or stations in their local area that will disseminate flood warnings and other information during disasters
4.8	Councils that have not already done so should consider how social media may be used effectively to provide accurate information about flood levels and local conditions to residents during a flood event.
4.9	A siren may be appropriate in smaller towns or rural communities susceptible to flash flooding. If councils rely on sirens to warn residents, they should ensure that the community understands the meaning of the siren.
4.10	Councils, with the assistance of the Bureau of Meteorology, should examine the feasibility of and priorities for installing additional river height and rainfall gauges in areas of identified need.
4.11	Councils, with the assistance of the Bureau of Meteorology, should consider the susceptibility of their regions to flash flooding, and whether it is feasible and necessary to acquire and operate an automated local evaluation in real time system (ALERT system) for particular waterways.
4.12	The Queensland Government should consider assisting less well-resourced councils to fund the installation of an ALERT system where a case is made for its adoption.
4.13	Councils should ensure that residents and businesses can clearly understand the impact of predicted flood levels on their property. This may include one or more of the following methods: <ul style="list-style-type: none"> <li>• information on rates notices about flooding at individual properties</li> <li>• geospatial mapping, available to the public, that depicts inundation at certain river heights</li> <li>• flood markers</li> <li>• flood flag maps and floodwise property reports</li> <li>• colour coded maps</li> <li>• information that relates gauge heights with the level of flooding to be expected at a property.</li> </ul>
4.14	In the course of flood events, warnings referring to gauge heights should include information about the location of the gauge.
4.15	Each local disaster management group should include in its meetings a representative of the operator of any dam upstream of its region which contributes water to flooding.
4.16	Dam operators should plan to contact people identified by their emergency action plans about dam outflow in sufficient time for them to be able to respond to the information.

4.17	Dam operators should ensure each emergency action plan includes a clear statement as to the frequency of, and circumstances in which, warnings will be issued to people listed in the emergency action plan.
4.18	Dam operators should assess the effectiveness of using SMS and/or email as a bulk instantaneous communication to all people on the notification list while individually contacting those whom it is essential to inform immediately.
4.19	Seqwater should consider consolidating its communication arrangements and responsibilities in a single document for each dam it operates.
4.20	The operator of each dam should, upon request, provide to any person on the notification list in the emergency action plan an explanation of the arrangements as to the type and frequency of communications required by that plan.
4.21	Operators of dams should assess their current compliance with the DERM <i>Queensland Dam Safety Management Guidelines</i> (February 2002), the ANCOLD <i>Guidelines on Dam Safety Management</i> (August 2003), and the Australian Government <i>Emergency Management Planning for Floods Affected by Dams</i> (2009) and if appropriate, comply with those guidelines.
4.22	Operators should include in their emergency action plan a description of the type of information that will be provided to those on the notification list.
4.23	Operators of dams should publicise, in a newspaper circulating in the local area and by posting a notice on its website every year before the wet season, the opportunity for local residents immediately downstream of a dam to be included on the existing notification list, and: <ul style="list-style-type: none"> <li>• consider whether an applicant for notification is so close to the dam that the warning time before water from the dam affects them is less than that available through the emergency management system</li> <li>• consider whether they can be effectively notified by SMS or email</li> <li>• if it is necessary to contact the applicant personally, agree with him or her a mode for that communication.</li> </ul>
4.24	The operator of any referable dam and the local disaster management group should develop a common understanding as to their respective roles in a flood event and the type and frequency of information the dam operator will provide to it and local residents.
4.25	The Department of Transport and Main Roads, in its capacity as the primary provider of information about road conditions to the public, should continue to improve the accuracy of road condition information and the timeliness of its distribution to the public and other agencies.
4.26	The Department of Transport and Main Roads should identify and include local road names when reporting road conditions.
4.27	The Queensland Government should work with the New South Wales Government to co-ordinate road condition reporting procedures to inform local councils and road users of interstate road conditions in a variety of different ways.
4.28	In rural and remote areas where telecommunications are not effective, measures that do not rely on internet and mobile telephone services should be implemented to inform the travelling public of road conditions ahead, for example: <ul style="list-style-type: none"> <li>• signs with detailed information</li> <li>• providing tourist information centres and tourist radio stations with information on road conditions.</li> </ul>
4.29	The Bureau of Meteorology should endeavour to make clear the areas actually covered by its warnings, and specify what may be expected in particular areas, so that the relevance and significance of any warning is obvious to residents of the area at risk.

4.30	Councils should continue to take responsibility for issuing flash flooding warnings. However, where the Bureau of Meteorology becomes aware of weather conditions likely to cause flash flooding that is likely to endanger life or property in a particular council's region, it should, performing its functions in the public interest, directly communicate that information to the relevant council.
4.31	Councils should advise the Bureau of Meteorology of any information they possess about flash flooding (or the immediate prospect of it) likely to endanger life or property in their region, and of any warnings they issue about such flash flooding. The Bureau of Meteorology should consider in each case whether any such warning should be re-published (whether as a warning emanating from the Bureau itself or as attributed to the relevant council) on the Bureau's website, or whether it should provide a link to any council warning or other information regarding flash flooding provided by councils or disaster management agencies.
4.32	Where the Bureau of Meteorology has information which leads it to anticipate flash flooding likely to endanger life or property in a specific area, it should publish a warning to that effect on its website.
4.33	The Bureau of Meteorology should do its best to develop working relationships with all councils, particularly for the purpose of exchanging information in severe weather and flood events.
4.34	The Bureau of Meteorology should expand its volunteer rainfall and river height networks to incorporate residents of the Lockyer Valley, particularly property owners living on watercourses who can provide manually obtained readings of water heights where no automatic gauge is available, or can confirm automatic gauge readings where there is concern about their accuracy.
4.35	The Bureau of Meteorology should consider identifying amateur weather-watch groups it considers credible and likely to have useful local knowledge, and establish means (similar to those available to the storm spotters) by which they can expeditiously communicate with the Bureau.
4.36	Somerset Regional Council, in consultation with Seqwater and the Bureau of Meteorology, should consider how warnings can be provided to residents living near the Brisbane River at Fernvale about the expected level of flooding in their area.

## Chapter 5 Emergency response

5.1	When a local government cannot effectively manage its response to a disaster, disaster management personnel from local governments in a position to assist should be deployed to help the local disaster management group.
5.2	Local governments should consider adopting uniform disaster management software, to enable inter-council assistance to be given more easily and effectively.
5.3	To ensure effective co-ordination in larger-scale disasters, deployment of personnel (and other resources) between local governments should be facilitated through the Council to Council (C2C) program.
5.4	The C2C program should be incorporated into the state disaster management arrangements and operate within the structure of the state disaster co-ordination centre.
5.5	The state disaster management group, Emergency Management Queensland and the Local Government Association of Queensland should do further work before the next wet season to ensure that during a disaster: <ul style="list-style-type: none"> <li>• the C2C program meets requests for assistance as efficiently as possible</li> <li>• local governments and other prospective participants understand how the C2C program works.</li> </ul>

5.6	As part of their planning before the next wet season, local disaster management groups should identify communities which, because of distance, the potential for isolation by disaster, or any other reason, may require specific disaster management arrangements, and take steps to establish them. Such arrangements may include forming disaster management sub-groups in those communities.
5.7	Whatever form arrangements take, they should seek to ensure that, in the event that flooding causes isolation: <ul style="list-style-type: none"> <li>• there are lines of communication between the local disaster management group and the community</li> <li>• the community has the basic resources it needs to cope with its situation</li> <li>• the local disaster management group is aware of what supplies the community may need in prolonged disaster, and can respond to requests for assistance in a timely way</li> <li>• potential evacuation routes and centres are known.</li> </ul>
5.8	Where a local government forms a sub-group of its disaster management group: <ul style="list-style-type: none"> <li>• the responsibilities of the sub-group must be clearly defined within the local disaster management arrangements</li> <li>• each member of the sub-group must clearly understand his or her role.</li> <li>• The Commission recommends that sub-groups and local disaster management groups set out their respective roles and responsibilities in writing.</li> </ul>
5.9	Until the All Hazards Information Management System is in place and allows the status of requests for assistance to be tracked, other means should be used to keep local disaster management groups informed of the progress of requests for assistance.
5.10	A clear protocol should be developed for managing the participation of local and district disaster management groups in the state level teleconferences, to govern and make more efficient participation in the teleconferences.
5.11	The Queensland Fire and Rescue Service should increase the number of swift water technicians (Level 2) to at least meet the quota for the approved number of rescue technicians in each region.
5.12	The Queensland Fire and Rescue Service should consider whether the approved number of swift water technicians in each region is appropriate to meet the demands of that region.
5.13	The Queensland Fire and Rescue Service should revise the Operations Doctrine to clarify: <ul style="list-style-type: none"> <li>• how many Level 2 swift rescue technicians and Level 1 support personnel are required to safely perform a swift water rescue</li> <li>• the options available to an incident controller at a swift water incident with fewer than the required personnel and what considerations they should take into account in their decision-making.</li> </ul>
5.14	The Queensland Fire and Rescue Service should consider providing Level 1 swift water rescue training to all auxiliary firefighters stationed in areas susceptible to flooding.
5.15	The Queensland Fire and Rescue Service should ensure all rural fire service volunteers and auxiliary firefighters stationed outside areas susceptible to flooding receive Awareness Level swift water rescue training.
5.16	The Queensland Fire and Rescue Service should identify areas that are likely to require, but do not have swift water capability during the wet season and consider how it can best provide a permanent capability to any such area.
5.17	The memorandum of understanding between the Queensland Fire and Rescue Service and Emergency Management Queensland should be finalised.
5.18	The joint helicopter operations training program contemplated by the memorandum should be devised and provided to all relevant staff of the Queensland Fire and Rescue Service and Emergency Management Queensland.

5.19	The Queensland Fire and Rescue Service should purchase waterproof radio equipment that: <ul style="list-style-type: none"> <li>• is appropriate for swift water and normal fire fighting environments</li> <li>• will attach securely to firefighters in a way that does not hamper their operations.</li> </ul>
5.20	The Queensland Fire and Rescue Service should work towards providing hands-free means of communications to swift water technicians for in-water operations.
5.21	The Queensland Fire and Rescue Service should ensure that rescue technicians on deployment are provided with individual radios, rather than sharing a communications pack.
5.22	Permanent urban appliances should carry at least five personal floatation devices to ensure there is a floatation device for each firefighter and a spare for rescues.
5.23	Every rescue appliance should carry personal floatation devices suitably sized for children or infants.
5.24	The Queensland Fire and Rescue Service should consider upgrading all personal floatation devices to a type which allows the firefighter to release himself or herself from an attached rope in the event of getting caught, or in other life threatening situations.
5.25	The Queensland Fire and Rescue Service should investigate the feasibility of acquiring motorised inflatable work platforms with guarded propellers to improve the safety of swift water rescue.
5.26	Queensland Fire and Rescue Service should review whether it has enough vehicles capable of traversing floodwaters.
5.27	The Queensland Fire and Rescue Service should ensure all station officers are informed about the locations and availability of additional equipment and how to obtain it.
5.28	The Queensland Fire and Rescue Service should ensure that staff in Ipswich can rapidly obtain additional swift water rescue equipment in the case of an emergency.
5.29	The Queensland Fire and Rescue Service should consider isolating repeaters during a large scale emergency response. If this solution is found to be feasible, it should be implemented as protocol as soon as possible. If it is not, the Queensland Fire and Rescue Service should explore other solutions to the issue of the fire communications network being overloaded and firefighters resorting to localised networks during large scale emergency response situations.
5.30	The Queensland Fire and Rescue Service needs to define clearly what its protocol is for volunteer firefighters in disaster scenarios other than fire when they are the only or primary rescue service in a community.
5.31	The Queensland Fire and Rescue Service should clarify in practical terms the role of firefighters in sandbagging, the provision of road blocks and similar activities.
5.32	Before the next wet season, councils, SES controllers and Emergency Management Queensland should work together to identify and address deficiencies in the ability of the SES to respond effectively to flooding. At the very least, suitable flood boats and flood boat training should be provided to SES units which require them.
5.33	The Queensland Government and councils should take measures, as soon as possible, to attract more SES volunteers, particularly in areas susceptible to flooding which do not have sufficient numbers. New SES units should be established where possible.
5.34	The Commission acknowledges that it may not be possible to recruit and train sufficient numbers of SES volunteers to the extent needed before the next wet season. However, this should not prevent steps being taken as soon as possible to identify the factors impeding the recruitment and retention of SES volunteers, action being taken to address them, and the commencing of recruitment activity.
5.35	Before the next wet season, the Department of Public Works should ensure that Smart Service Queensland can manage a significant increase in calls to the 132 500 number, to at least the level that occurred during the 2010/2011 floods.

5.36	As a matter of priority, the Emergency Helicopter Network requires a system of 'single point tasking'; that is, a central organisation exercising command and control of all helicopters in the Emergency Helicopter Network, according to availability, task, priority and location. This is a change, which will require all the government agencies concerned to consider the operational needs, resources, protocols, guidelines and training required for its implementation. Ideally, those steps should be completed and the change made before the next wet season.
5.37	At the very least, by the beginning of the wet season, an interim structure needs to be formally in place under which one organisation is informed of the status, location, capabilities and allocated task of each helicopter in the Emergency Helicopter Network at any given time. The deployment of helicopters should be made through this organisation.
5.38	Queensland Police Service call-takers across the state should be trained to a uniform standard, consistent with the standard of the training provided by the Brisbane Police Communications Centre.
5.39	Emergency Management Queensland should finalise the draft evacuation guidelines for approval by the state disaster management group as soon as possible, addressing the issues identified from the 2010/2011 floods.
5.40	Each council should develop an evacuation sub-plan in accordance with the Emergency Management Queensland guidelines. This includes involving local groups and people in the planning process.
5.41	Councils with existing evacuation sub-plans should review them to ensure they address the issues identified from the 2010/2011 floods.
5.42	Where flooding is governed by a particular watercourse, the evacuation sub-plan should identify triggers in the form of those water level heights at which it is known that preparation for evacuation will be necessary.
5.43	It is a matter for councils whether or not they choose to publicise the location of evacuation centres before a disaster but there is a good deal to be said for doing so, particularly in smaller communities where the options are limited. Whether or not councils publicise the location of evacuation centres before a disaster, they should include in their disaster education programs information on evacuation procedures, and how to ascertain evacuation centre locations and safe evacuation routes.
5.44	During floods, councils should as quickly as possible provide people in the relevant areas with advice as to the location of and routes to evacuation centres.
5.45	That advice should be given using as many mechanisms as appropriate, including text message, radio and door knocking.
5.46	Councils should identify a range of evacuation centres as part of their disaster preparation and planning.
5.47	Councils should audit identified evacuation centres to ensure the facilities and location are appropriate, preferably in consultation with the Australian Red Cross and the Department of Communities.
5.48	Councils should be aware of what facilities are available at each evacuation centre, at particular times of the year.
5.49	Councils should identify areas that are susceptible to isolation, including locations in which community groups established informal evacuation centres during the 2010/2011 floods, with a view to incorporating evacuation centres at those locations into their evacuation sub-plans.
5.50	Councils should identify community groups who may take responsibility for establishing and operating evacuation centres in the future.
5.51	The identified groups and councils should, before the next wet season, establish cooperative arrangements as to how the centres should operate, and to ensure the centres have appropriate facilities.

5.52	Councils should recognise that community groups may establish makeshift evacuation centres during a disaster. When this occurs, councils need to identify and establish communications with the centres as soon as possible.
5.53	Councils should develop plans for the effective and timely re-supply of makeshift centres.
5.54	The Queensland Government should investigate the possibility of providing indemnity or obtaining insurance for makeshift evacuation centres established in good faith, and in the absence of official alternatives, to meet community needs.
5.55	All councils should consider entering a memorandum of understanding for evacuation centres with the Australian Red Cross which clearly sets out the roles and responsibilities of the parties in planning and responding to evacuation requirements in a disaster.
5.56	Each council with a memorandum of understanding with the Australian Red Cross should consider undertaking practice exercises with the Australian Red Cross to ensure both parties understand their respective roles and responsibilities.
5.57	Local disaster management groups and district disaster management groups of which the Australian Red Cross is not currently a member should include the Australian Red Cross in disaster preparation and planning as well as response, whether as a member or otherwise (see also recommendation 3.1).
5.58	Local and district disaster management groups should notify the Australian Red Cross of their evacuation needs as soon as possible in a disaster.
5.59	Disaster response agencies should use the National Registration Inquiry System.
5.60	During a disaster, councils and the Queensland Police Service should encourage individuals to self-register with the National Registration Inquiry System.
5.61	Councils should include information about the National Registration Inquiry System as part of their community education.
5.62	In areas susceptible to flooding, councils should identify facilities housing people who may require assistance to evacuate. Councils should work with the operators of these facilities to ensure they have appropriate evacuation plans and that they are aware of the council's disaster management arrangements.
5.63	Councils should identify the specific evacuation needs of these facilities, such as increased timeframes for withdrawal or transport by ambulance.
5.64	Councils should include the location, contact details, and specific evacuation needs of these facilities in their evacuation sub-plans.
5.65	Councils should identify organisations (for example, Meals on Wheels and Bluecare) that provide services to people in the community who may be unable to evacuate without assistance. Councils should include the contact details of these organisations in their evacuation sub-plans.
5.66	Councils should work with these service providers to identify: the number of people who may require assisted evacuation; the general nature of their needs, including any necessary medical supplies and equipment; warning message formats and dissemination; increased timeframes needed for evacuation; transportation requirements; and shelter requirements. Councils should include this information in their evacuation sub-plans.
5.67	Facilities housing people who may be unable to evacuate without assistance should develop evacuation plans to ensure residents are provided with appropriate transportation, emergency accommodation, trained carers and medical support if necessary. Where possible, residents of those facilities should be relocated to other similar facilities or accommodation other than evacuation centres. These plans should be developed in consultation with councils and relevant agencies such as Queensland Health.

5.68	Facilities housing people who may be unable to evacuate without assistance should prepare disaster recovery plans, particularly for the provision of back up power and emergency supplies, including medical oxygen and common medications, to minimise the need for evacuation where there is no direct threat from natural disaster.
5.69	The Queensland Government and councils should ensure information about emergency preparedness, warnings and evacuation is available in the different languages of ethnic groups in the community and in Auslan.
5.70	As part of their community education strategy, councils should ensure tourists are made aware of evacuation procedures, how to ascertain evacuation centre locations and safe evacuation routes. That may be done through tourism boards, operators and accommodation providers.
5.71	Councils, as part of their community education program for disaster preparation, should encourage pet owners to consider what they will do with their pets if they need to evacuate.
5.72	Councils should work with the RSPCA to develop plans about transporting and sheltering pets should they need to be evacuated with their owners.
5.73	Animal shelters, zoos, stables, and similar facilities should develop plans for evacuating or arranging for the care of animals in consultation with their local council. Local disaster co-ordinators should be aware of what plans exist.
5.74	Alignment of police district boundaries, disaster district boundaries and local government boundaries is unlikely to be feasible in the short-term. However, where police district boundaries are being re-assessed for other reasons, conformity between boundaries of police districts, disaster districts and local government regions, should be a major objective.
5.75	Before the 2011/2012 wet season, all local and district disaster management groups should formally adopt the Queensland Re-supply Guidelines and have arrangements in place for the prompt re-supply of towns, properties and residents isolated by floodwaters.
5.76	The Department of Employment, Economic Development and Innovation should establish, preferably with the assistance of AgForce, procedures to co-ordinate fodder drops to isolated landowners in future flood events.
5.77	The Department of Employment, Economic Development and Innovation should ensure rural communities are aware of the processes and the payment arrangements for fodder drops.
5.78	Local governments should investigate the feasibility of permitting local landowners to carry out temporary repairs on flood-damaged public roads to allow access to their properties.
5.79	Local governments and the Queensland Government should work with their New South Wales counterparts to set up procedures for co-ordinating emergency responses in the region of the Queensland/New South Wales border.

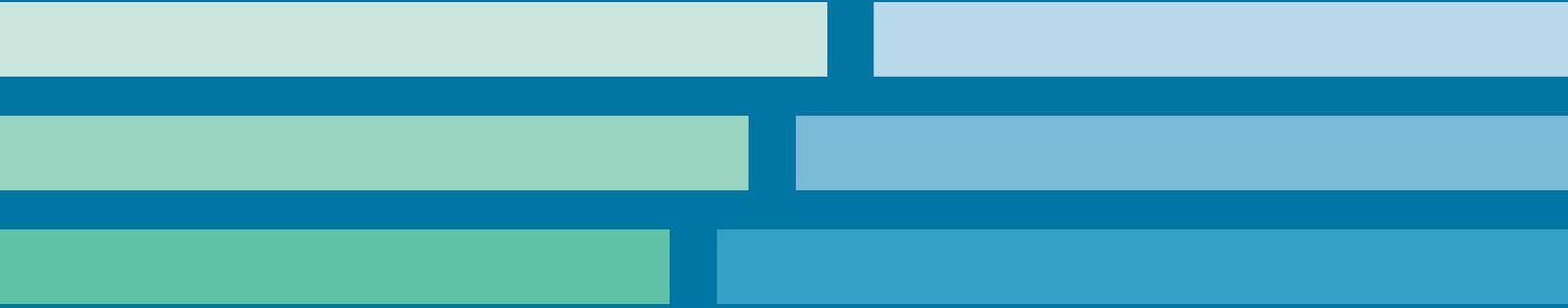
## Chapter 6 Essential services

6.1	Local, district and state disaster management groups should include essential services providers in their disaster planning and preparation and in their meetings at an early stage during disasters.
6.2	Power distributors should review network switching options before next wet season (to optimise switching arrangements) so that, where possible, power is disconnected only to those who are flooded.
6.3	Power distributors should consider pre-emptively installing generators in areas known to become isolated (but not inundated) during flooding, if the power supply cannot otherwise be maintained.
6.4	The control and coordination centre for Water Grid operations should be located where, at the least, it is not susceptible to flooding or to its power supply being interrupted.
6.5	Essential service providers should continue to develop ways to share available resources within their respective industries during disasters.

6.6	Essential service providers should formalise arrangements to share information about the status of services during a disaster.
6.7	Brisbane Markets Limited should contact the Brisbane City Council on a regular basis in the lead-up to and during flooding to seek local flood information. In response, the council should provide readily understood information which, as far as possible, explains the level of flooding to be expected at the Rocklea Markets site.
6.8	The Brisbane City Council should attend to the clearing of the flood mitigation channel on the western side of the market site before the next wet season.

## **Chapter 7 Lockyer Valley and Toowoomba**

7.1	The Toowoomba Regional Council should consider amending stage one of the Cooby Dam emergency action plan to extend the five kilometre limit for alerting residents downstream of the Cooby Dam.
7.2	Lockyer Valley Regional Council should investigate the feasibility of installing alarm-activating gauges in the creeks at Spring Bluff, Murphys Creek and other communities where communication systems are poor and there is a risk of rapid and unexpected water rise.
7.3	Lockyer Valley Regional Council should identify those areas vulnerable to flooding within its region, should identify appropriate evacuation collection points and centres accordingly, and consider whether it should make those known to the community.
7.4	Lockyer Valley Regional Council should immediately develop a plan for the removal of debris, man-made and natural, from waterways in the Lockyer Valley and put it into effect so as to minimise the risk should flooding recur in the coming wet season.



© The State of Queensland (Department of the Premier and Cabinet) 2011.  
Published by the Queensland Government, August 2011,  
100 George Street, Brisbane Qld, 4000.

ISBN **978-1-921960-01-7**

The Queensland Government supports and encourages the dissemination and exchange of information. However, copyright protects this document. The State of Queensland has no objection to this material being reproduced, made available online or electronically but only if it is recognised as the owner of the copyright and this material remains unaltered. Copyright enquiries about this publication should be directed to the Department of the Premier and Cabinet, by email to [copyright@premiers.qld.gov.au](mailto:copyright@premiers.qld.gov.au) or in writing to PO Box 15185, City East, Qld 4002.