



Brisbane City Council JANUARY 2011 FLOOD ACTION PLAN

Including
Flood Response Review
Queensland Floods Commission of Inquiry
Interim Report and Final Report

COMPLETED



Dedicated to a better Brisbane

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Brisbane City Council’s January 2011 Flood Action Plan to address the 53 affirmations and recommendations from the independent Flood Response Review was released on 24 June 2011.

The Flood Action Plan was updated with Addendum 1 to address the 74 recommendations relevant to Council from the Queensland Floods Commission of Inquiry interim report, and re-released on 16 August 2011.

Addendum 2 addresses the 50 recommendations relevant to Council from the Queensland Floods Commission of Inquiry final report.



A message from the Lord Mayor



Brisbane is a great place to live, where residents enjoy an enviable climate and lifestyle in and around the waterways that criss-cross our city including the Brisbane River that flows through the city to our beautiful Moreton Bay.

However, the subtropical climate makes our city prone to storms and flooding. Such was the case in January 2011, when Brisbane experienced a significant flood event.

The release of this final update of Brisbane City Council's January 2011 Flood Action Plan again demonstrates Council's commitment to best preparing this city for inevitable future natural disasters. I am committed to making sure that Council makes the most of every opportunity to prepare the city. This Flood Action Plan is a complete version of Council's response to the January 2011 Flood incorporating recommendations from the independent Flood Response Review Board, and the Queensland Floods Commission of Inquiry Interim Report and Final Report.

The Commission's final report stated that 'at some time in the future, parts of Queensland will experience floods of a magnitude as great as, or greater than, those of the 2010/11 wet season'.

The city is built on a flood plain, and while we cannot flood proof our city, we can take measures to reduce the risk and the impact to Brisbane's infrastructure, homes, businesses and residents.

Council will continue to help our city prepare for flooding, but we cannot do this on our own. Living with flooding after January 2011 signals a new chapter of flood risk management where the community and Council must look to each other and work together to reduce the impact of flooding.

There will always be a limit to what we can prepare for and what we can prevent, which is why Council has also taken measures to improve our ability to respond to and recover from disasters.

And Council is making great progress with this through the implementation of the Flood Action Plan. As at 30 June, Council has addressed 50 of the 53 Flood Response Review recommendations, and 73 of the 74 Commission of Inquiry interim report recommendations.

With the Flood Action Plan, Council is ensuring that our organisation and the people of Brisbane are better prepared for the future.

A handwritten signature in blue ink, appearing to read 'Graham Quirk'.

**Graham Quirk
LORD MAYOR**

11 JULY 2012

Affirmations

The Board affirms Council's approach to its business as usual and risk management policies. The Board recommends that:

In relation to Council activities, Information Services Branch reviews its Business Continuity Plans (BCPs) to ensure the capacity exists to maintain the data centre, including an alternative site capable of taking over without delay and to maintain Council's website at all times, particularly during significant disasters.

AFF001.1

Council's Plan	Delivery Date
• Define web demand strategy	Completed
• Implement Phase 1 of the cloud infrastructure for website	June 2011
• Approve data centre strategy	August 2011
• Review and update Information Services Branch Business Continuity Plans	September 2011
• Implement Phase 2 of web demand strategy and finalise review of key business applications utilising the data centre strategy	October 2011

Line of business managers review BCPs to ensure their ongoing robustness and to capture any lessons learnt from the flood event.

AFF001.2

Council's Plan	Delivery Date
• Review and update all Business Continuity Plans with learnings from January 2011 floods	September 2011

Contracts and arrangements be reviewed to ensure that the business continuity plans for key external outsourced service and infrastructure providers are understood, robust and able to support Council during times of emergency and disaster.

AFF001.3

Council's Plan	Delivery Date
• Review all critical outsource contracts and arrangements to include a clause in their contracts ensuring they are able to support Council during times of emergency and disaster	October 2011

In relation to the Brisbane Central Business District and high-rise residential building inundation, that Council consider hosting a symposium for all affected parties with a view to identifying best practice approaches to ensure improved flooding resilience.

AFF001.4

Council's Plan	Delivery Date
• Plan symposium and book venue and speakers	June 2011
• Issue invitations	July 2011
• Conduct symposium	September 2011

The Board affirms Council's approach to training, exercising and workforce planning in relation to disaster management preparation. The Board recommends that further emphasis be placed on:

Individual and team training, including opportunities to attend Emergency Management Australia Disaster and Emergency Response courses.

AFF002.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> Plan, develop and implement the Disaster Operations 12-month training schedule 	Ongoing
<ul style="list-style-type: none"> Plan, develop and implement the annual legislative training requirements (e.g. Local Disaster Coordination Centre exercises at level 3 and 4, Local Disaster Management Group exercise and Immediate Action Team exercise) 	Ongoing
<ul style="list-style-type: none"> Deliver training programs (e.g. Introduction to Queensland Disaster Management, Incident Management Training, Australasian Inter-service Incident Management System and Local Disaster Coordination Centre Essentials) 	Ongoing
<ul style="list-style-type: none"> External events, conferences and exercises available as programmed (e.g. Emergency Management Australia (EMA) and Australian Emergency management Institute (AEMI) Beyond Command and Control, Design and manage activities that exercise elements of emergency management and Coordinate resources within a multi-agency emergency response) 	Ongoing
<ul style="list-style-type: none"> Conduct exercise between Council's Crisis Communication Team and Local Disaster Coordination Centre 	August 2011
<ul style="list-style-type: none"> Conduct exercise between Regional Incident Management Teams and Local Disaster Coordination Centre to ensure new Standard Operating Procedures are effective and understood. 	November 2011
<ul style="list-style-type: none"> Update the Disaster Operations Learning Framework 	December 2011
<p>* The above "ongoing" milestones will run from July 2011 to June 2012 and be reported on quarterly</p>	

Workforce planning to reflect a needs analysis including disaster management related job descriptions, and a specific Council term be developed to describe "internal volunteers" to avoid confusion and to reflect the professional nature of the training and tasks.

AFF002.2

Council's Plan	Delivery Date
<ul style="list-style-type: none"> Identify the training needs of disaster management related employee roles and job descriptions and include these in the updated training program, including an updated definition of internal volunteers 	October 2011

Annual exercises continue to be conducted with a theme of "Brisbane Ready for Summer".

AFF002.3

Council's Plan	Delivery Date
<ul style="list-style-type: none"> Implement annual "Brisbane Ready for Summer" exercise program 	October 2011

The Board affirms the operations and workings of the Local Disaster Coordination Centre (LDCC) and, in particular, the integration of operations (tasking), intelligence, public information, logistics and the coordination with external supporting agencies. The Board recommends that:

Further training and development occur for senior appointments including LDCC Incident Controllers and group leaders as well as for more junior appointments.

AFF003.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Identify the senior Local Disaster Coordination Centre Incident Controllers and Group Leaders, as well as more junior appointments, and deliver training	October 2011

The Disaster Intelligence Group's structure, manning and core competencies be reviewed and further staff training be conducted.

AFF003.2

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Review and update the Disaster Intelligence Group Standing Operating Procedures and competencies	July 2011
<ul style="list-style-type: none">• Create and deliver new training material	August 2011
<ul style="list-style-type: none">• Conduct training	October 2011
<ul style="list-style-type: none">• Test new Standard Operating Procedures in a simulated disaster activity to ensure new procedures are effective and understood	November 2011

The Forward Planning Group's responsibilities to the Brisbane City Local Disaster Management Group (BCLDMG) and to the LDCC be examined to remove ambiguity.

AFF003.3

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Review and amend the Forward Planning Group Standard Operating Procedures	July 2011
<ul style="list-style-type: none">• Test new Standard Operating Procedures in a simulated disaster activity to ensure new procedures are effective and understood	November 2011

Enhancements to process be implemented including:

Ensuring that Situation Reports are well drafted and widely distributed on a regular basis using multiple communications channels.

AFF003.4

Council's Plan

- Update the Local Disaster Coordination Centre and Regional Incident Management Team situation report procedures and distribution lists
- Test new Standard Operating Procedures in a simulated disaster activity to ensure new procedures are effective and understood

Delivery Date

October 2011

November 2011

Developing a readily accessible database of frequently asked questions to address "who does what" to support the LDCC staff and agencies (this could also include information available on Council's Call Centre database).

AFF003.5

Council's Plan

- Develop a readily accessible database of frequently asked questions to address "who does what" to support the Local Disaster Coordination Centre staff and agencies

Delivery Date

September 2011

Synchronising the shifts of Council and agencies staff working in the LDCC to better facilitate handover briefings.

AFF003.6

Council's Plan

- Create common Standard Operating Procedures for Local Disaster Coordination Centre and business unit shifts
- Test new Standard Operating Procedures in a simulated disaster activity to ensure new procedures are effective and understood

Delivery Date

September 2011

November 2011

Improvements to logging incoming and outgoing information and tasking.

AFF003.7

Council's Plan

- Identify opportunities for improvement to logging of incoming and outgoing information and tasking
- Update Standard Operating Procedures for logging of incoming and outgoing information and tasking
- Test new Standard Operating Procedures in a simulated disaster activity to ensure new procedures are effective and understood

Delivery Date

July 2011

September 2011

November 2011

Formalising the written briefing processes for handovers between shifts.
AFF003.8

Council's Plan	Delivery Date
• Create shift handover procedure and review email address lists for the Local Disaster Coordination Centre and Regional Incident Management Teams	September 2011
• Communicate the shift handover procedure	October 2011
• Test new Standard Operating Procedures in a simulated disaster activity to ensure new procedures are effective and understood	November 2011

The Board affirms Council's flood intelligence management and information dissemination arrangements. The Board recommends that Council undertake upgrades to the Flood Information Centre (FIC) along the following lines:

Review and update Standing Operating Procedures (SOPs), including a major update of selected Brisbane River and Creek Flooding SOPs, river flood maps and storm tide maps, property counts and critical infrastructure lists.

AFF004.1

Council's Plan	Delivery Date
• Scope the river flood maps project	July 2011
• Scope the critical infrastructure lists project	July 2011
• Revise the River Flooding Standard Operating Procedures	October 2011
• Create new Creek Flooding Standard Operating Procedures	October 2011
• Test new Standard Operating Procedures in a simulated disaster activity to ensure new procedures are effective and understood	November 2011
• Update the river flood maps, storm tide maps, property counts and critical infrastructure lists	December 2011

Upgrade the Brisbane River Flood Forecast Reporting System to the most extreme flood event (Probable Maximum Flood) and to include a flood forecast system for Brisbane creeks.

AFF004.2

Council's Plan	Delivery Date
• Complete scope of the project	October 2011
• Prepare Implementation Plan and Technological Requirements for system upgrade	June 2012
• Identify new system/processes for a Creek Flood Forecast System	June 2012
• Commence forecast reporting system	June 2013

Conduct additional training and exercises including with the LDCC and Queensland Government agencies, and develop better communications protocols.

AFF004.3

Council's Plan	Delivery Date
• Involve the Flood Information Centre in the Local Disaster Coordination Centre exercise, when Standard Operating Procedures will be tested in a simulated disaster activity to ensure new procedures are effective and understood	November 2011
• Scope requirements for a further Flood Information Centre exercise and training plan	December 2011
• Deliver the exercise and review/feedback session	June 2012
• Review and refine communication protocols where necessary	October 2012

Provide computers capable of GIS modelling tasks and 3D visualisation analysis.
AFF004.4

Council's Plan

- Purchase and install computers

Delivery Date

September 2011

Provide a dedicated flat screen television for situation awareness and news monitoring.
AFF004.5

Council's Plan

- Purchase and install flat screen television

Delivery Date

September 2011

The Board affirms Council's approach to implementing a range of early warning systems and alert measures across a number of delivery channels.

The Board recommends that Council examine and develop the range and variety of early warning systems and alert measures; including the proposed National Emergency Warning System, social media platforms and further improve the effectiveness of door knocking.

AFF005.1

Council's Plan	Delivery Date
• Identify opportunities to expand the Early Warning Alert Service	August 2011
• Investigate and implement if suitable the use of crowd-sourcing tools to improve the ability to collate, intelligently analyse and distribute information	September 2011
• Identify opportunities for improvement to alert measures and methods	October 2011
• Contract additional services if required	October 2011
• Update Standard Operating Procedures if required	October 2011

The Board affirms the contribution of region-based RIMTs noting that they provide a critical layer in the command and control structure for dealing with the on ground situation, managing local resources and coordinating external resources allocated to them. The Board recommends that:

A senior officer be assigned to mentor each Regional Incident Management Team Manager and conduct high level discussions with the LDCC.

AFF006.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Continue to assign a senior officer to the Regional Incident Management Teams and update Standard Operating Procedures 	October 2011

Dedicated Regional Incident Management Team operations rooms be established.

AFF006.2

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Identify and assess suitability of Regional Incident Management Team sites 	August 2011
<ul style="list-style-type: none"> • Update the Standard Operating Procedures for Local Disaster Coordination Centre and Regional Incident Management Teams 	October 2011
<ul style="list-style-type: none"> • Establish the ability (and facilities) to 'stand up' the Regional Incident Management Team operation room(s) at short notice 	October 2011
<ul style="list-style-type: none"> • Test new Standard Operating Procedures in a simulated disaster activity to ensure new procedures are effective and understood 	November 2011

Planning for alternative Regional Incident Management Team sites, in the event that the primary sites become unusable, be conducted.

AFF006.3

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Identify possible alternative Regional Incident Management Team sites 	August 2011
<ul style="list-style-type: none"> • Assess suitability of alternative Regional Incident Management Team sites 	August 2011
<ul style="list-style-type: none"> • Formalise arrangements with current owners of sites 	September 2011
<ul style="list-style-type: none"> • Develop a contingency plan for relocation in the event that a Regional Incident Management Team site becomes unusable 	September 2011
<ul style="list-style-type: none"> • Update the Regional Incident Management Team Standard Operating Procedures to include the Regional Incident Management Team site contingency plan, and complete an alternative site relocation plan 	October 2011
<ul style="list-style-type: none"> • Approve alternative Regional Incident Management Team sites 	June 2012

The Board affirms Council's planning for and implementation of evacuation centres as detailed in the Disaster Management Plan. The Board recommends that further consideration be given to refining Council's evacuation centre planning to address:

Greater decentralisation of evacuation centres, particularly for communities that are known to be prone to isolation by flooding.

AFF007.1

Council's Plan	Delivery Date
• Environmental Health Officer to audit Council-owned sites	Completed
• Environmental Health Officer to audit private-owned sites June 2011	
• Environmental Health Officer to provide an updated full information brief on each of the identified existing sites	July 2011
• Work with the locally elected officials, community groups and Queensland Police Service to consider establishing Community Support Centres / Community Information Centres	October 2011
• Complete interim Isolated Communities Sub-Plan of the Disaster Management Plan	October 2011
• Implement final Isolated Communities Sub-Plan of the Disaster Management Plan, following community and key stakeholder engagement	November 2011

Early and close liaison with Red Cross, particularly in regard to registration of evacuees and vetting of volunteers.

AFF007.2

Council's Plan	Delivery Date
• Memorandum of Understanding with Red Cross in place	Completed
• Review the Memorandum of Understanding Standard Operating Procedures for evacuee registration and volunteer/staff vetting, and amend the Memorandum of Understanding as required	October 2011

Early and close liaison with Queensland Police Service (QPS) in regard to exclusion of persons not suitable to be in a general public evacuation centre.

AFF007.3

Council's Plan	Delivery Date
• Review the Red Cross Memorandum of Understanding and update the Standard Operating Procedures regarding Queensland Police Service's role	July 2011

The special needs of frail, aged, incapacitated, nursing home and oxygen-dependant evacuees for whom separate and special arrangements need to be made.

AFF007.4

Council's Plan	Delivery Date
• Update the Evacuation & Emergency Human Services Plan and Standard Operating Procedures to include information on how to manage special needs evacuees.	August 2011

Social, cultural and religious diversity of evacuees, including those with a non-English speaking background.
AFF007.5

Council's Plan

- Update the Evacuation & Emergency Human Services Plan and Standard Operating Procedures

Delivery Date

October 2011

Purchase and supply of special items such as personal hygiene kits and baby requisites.
AFF007.6

Council's Plan

- Update the Evacuation & Emergency Human Services Plan and Standard Operating Procedures

Delivery Date

October 2011

The Board affirms Council's action in rapidly increasing sandbag production to a total of more than 390,000.

The Board recommends that estimates be developed of likely sandbag demand for regions during future flood events and that the best situated potential sites for filling and distribution points in each region be identified.

AFF008.1

Council's Plan	Delivery Date
• Develop flooding scenarios (river, king tide and creek)	July 2011
• Estimate sandbag requirements based on flooding scenarios	August 2011
• Develop processes to determine how these would best be deployed	September 2011
• Amend Local Disaster Coordination Centre Standard Operating Procedures	October 2011

The Board affirms Council's collaborative efforts with QPS and the Australian Defence Force (ADF) in providing a workable framework for overall traffic management.

The Board recommends that the Council consider developing advanced plans, in consultation with QPS, to improve traffic flow in flood recovery congested areas including converting some streets into one way, route designation for heavy vehicles and identification for residents' vehicles.

AFF009.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Procure four more radio base stations	Completed
<ul style="list-style-type: none">• Work in consultation with Queensland Police Service to assist in the development of relevant and suitable Traffic Management Plans	October 2011

Recommendations

The Board recommends that the term, DFL, be used exclusively in public documents concerning flood planning levels for Brisbane, regardless of the cause of the flooding.

REC001.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> Conduct a risk based review of all documents and identify critical and non-critical documents to be reviewed and amended 	October 2011
<ul style="list-style-type: none"> Implement the use of Defined Flood Level terminology in critical documents 	December 2011
<ul style="list-style-type: none"> Evaluate options and make recommendations for amendments to non-critical documents 	February 2012
<ul style="list-style-type: none"> Develop an implementation plan and implement amendments to non-critical documents 	February 2012 onwards

The Board recommends that Council use a more readily understandable description of flood levels (to reflect BoM descriptions).

REC002.1

Council's Plan	Delivery Date
This recommendation applies to event specific communications.	
<ul style="list-style-type: none"> Ensure severe weather early warning alert message services are consistent with Bureau of Meteorology alerts 	July 2011
<ul style="list-style-type: none"> Develop an implementation strategy to address this recommendation based on an analysis of current flood level communication issues and existing communication products 	October 2011
<ul style="list-style-type: none"> Develop a community engagement strategy to determine and test the most effective flood level information 	December 2011
<ul style="list-style-type: none"> Implement strategy 	October 2012

The Board recommends that effort continue to be put into providing more localised (property, street, suburb and Ward) information regarding inundation and flood level forecasts through a range of channels including the Early Warning Alert Service EWAS, Floodwise Property Report and Flood Flag Maps (including rate notices to draw attention to the existence of the Floodwise Property Report) and flood markers.

REC003.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Incorporate a registration drive for Early Warning Alert Service as part of Council's ongoing community education programs including the "Summer Storm" campaign 	Completed
<ul style="list-style-type: none"> • Develop interim flood level maps based on the Temporary Local Planning Instrument 	Completed
<ul style="list-style-type: none"> • Update FloodWise Property Reports to refer to both the Defined Flood Level and the 2011 flood levels 	Completed
<ul style="list-style-type: none"> • Include information in Council rates notices directing residents to the availability of flood information 	Completed
<ul style="list-style-type: none"> • Provide localised information from the Brisbane River Flood Forecast Reporting System, including information for individual properties to enable property owners to determine when water may enter their property 	Ongoing
<ul style="list-style-type: none"> • Investigate additional methods by which this information can be more widely disseminated to the community 	Ongoing
<ul style="list-style-type: none"> • Undertake feasibility study to determine additional information to be incorporated into the existing FloodWise Property Reports, such as a king tide flood flag, creek names and two year Average Reoccurrence Interval (50% chance) flood levels for each property 	September 2011
<ul style="list-style-type: none"> • Investigate the opportunity to reflect gauge height information for the three gauge locations at City, Jindalee and Moggill, in a range of information products including media releases, website information and amendments to the FloodWise Property Reports to link to the Brisbane River Flood Forecast Reporting System 	November 2011
<ul style="list-style-type: none"> • Install flood markers throughout Brisbane 	December 2011
<ul style="list-style-type: none"> • Implement additional functionality/information into FloodWise Property Reports 	June 2012

The Board recommends that the Flood Flag Map be further developed to enable NearMap data obtained on the morning of 13 January 2011 to be included and accessed.

REC004.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Investigate the opportunity to display additional information on the Flood Flag Maps 	November 2011

The Board recommends that Council investigate the Flood COP system and examine its utility, in conjunction with hand held devices, to improve the efficiency and effectiveness of data collection, the provision of information, the prioritisation of tasks and the deployment of resources.

REC005.1

Council's Plan	Delivery Date
• Investigate new systems/products	September 2011
• Test systems	December 2011
• Develop business case to purchase product	January 2012
• Implement then train staff in new system	June 2012

The Board recommends that Council further develop its capabilities to produce flood maps for a larger set of scenarios based on a range of 2000 to 20,000 m3/s in electronic and hard copy format.

REC006.1

Council's Plan	Delivery Date
• Scope the project	July 2011
• Produce additional interim maps	December 2011
• Investigate improved technology solution and develop and deliver maps	June 2012

The Board recommends that Council review the disaster management arrangements for a major flooding situation as they apply to Pullenvale Ward.

REC007.1

Council's Plan	Delivery Date
• Identify opportunities for improvement	August 2011
• Develop Isolated Communities Sub-Plan of the Disaster Management Plan to include Pullenvale Ward, following engagement with locally elected officials, community groups and Queensland Police Service	November 2011

The Board recommends that Council review the disaster management arrangements for a major flooding situation as they apply to Tennyson Ward to ensure the ongoing provision of a flood-free Ward Office.

REC008.1

Council's Plan	Delivery Date
• Investigate and develop preferred option	August 2011

The Board recommends that Council examine appropriate ways for Councillors to assist during disaster events, particularly given their community leadership responsibilities and their detailed local knowledge of circumstances and capabilities that exist in their Wards, in a way which does not cut across the existing and appropriate arrangements detailed in Council's disaster management arrangements.

REC009.1

Council's Plan	Delivery Date
• Document the needs and responsibilities of Councillors	August 2011
• Update Standard Operating Procedures to include a Councillor Liaison cell in the Local Disaster Coordination Centre	October 2011
• Provide Councillor briefing	October 2011

The Board recommends that permanent flood markers be installed on key roads that are known to become flood affected to complement other public awareness and safety campaigns.

REC010.1

Council's Plan	Delivery Date
• Identify marker installation locations	August 2011
• Design and document markers	August 2011
• Manage the manufacture and installation of markers	January 2012

The Board recommends Council develop a process for handling donated goods separately from evacuation centres.

REC011.1

Council's Plan	Delivery Date
• Develop a process for handling donated goods separately from evacuation centres and incorporate in the Volunteer Guidelines	October 2011

The Board recommends Council implement strategies in relation to volunteer clean up activities for:

Development of a proforma briefing sheet for volunteers based on experience gained in this flood event.
REC012.1

Council's Plan

- Develop a pro forma briefing sheet for flood volunteers

Delivery Date

October 2011

Identification of house team leaders to liaise with residents so that clean up activity is in accordance with the residents' wishes.

REC012.2

Council's Plan

- Develop Volunteer Guidelines

Delivery Date

October 2011

Ensuring the provision of appropriate health care arrangements to accompany deployed volunteer groups.

REC012.3

Council's Plan

- Develop Volunteer Guidelines

Delivery Date

October 2011

In conjunction with QPS, developing processes to ensure the security of flooded residents' dwellings during volunteer cleanup activity.

REC012.4

Council's Plan

- Develop Volunteer Guidelines

Delivery Date

October 2011

Making provision for a co-ordination cell within the LDCC particularly for individual volunteers.

REC012.5

Council's Plan

- Develop Volunteer Guidelines

Delivery Date

October 2011

The Board recommends that Council develop a comprehensive single list of potential sites suitable for temporary waste collection, incorporate a liaison officer from the CWS team into the LDCC; and strengthen the link between procurement and waste management during a disaster by establishing a dedicated liaison officer position in the City Waste Services (CWS) team.

REC013.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Develop a comprehensive single list of potential sites suitable for temporary waste collection 	October 2011
<ul style="list-style-type: none"> • Update Standard Operating Procedures to include City Waste Services Liaison Officer(s) in the Local Disaster Coordination Centre 	October 2011

The Board recommends that, in relation to planning, Council undertake a complete Flood Risk Management analysis for the area of Brisbane affected by flooding from the Brisbane River and associated tributaries in line with National Flood Risk Advisory Group (NFRAG) and other relevant guidelines. This would require a detailed assessment of the benefits and costs of a full range of flood mitigation options.

REC014.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Council would support being a part of a State Government led project to complete a Flood Risk Management analysis for the area of Brisbane affected by flooding, as part of or following a whole of Brisbane River catchment hydrology and flood study. This is expected to be an expensive and long-term project. Council notes that the Queensland Floods Commission of Inquiry is likely to recommend a similar approach. These comprehensive studies should include a whole of Brisbane River Catchment flood study, which extends beyond the Dam catchments, and includes tributaries such as the Bremer River and Lockyer Creek along with major creek inflows such as Oxley Creek. Council considers that it is a necessary stakeholder in this process. This process will be part of the likely discussions between relevant parties arising out of the work of the Queensland Floods Commission of Inquiry. 	August 2011

The Board recommends that:

Council investigate the feasibility of the installation of devices to prevent backflow from river flooding in locations such as in parts of the Central Business District (CBD) and in high rise buildings which would not have been flooded otherwise, where all those potentially affected by backflow flooding have responsibility for oversight of the maintenance of the device in working order.

No backflow prevention device should be incorporated into the stormwater network system unless a complete risk based flood management analysis has confirmed that this is the best option.

REC015.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Scope project and gather data to inform the potential application of backflow prevention technology in three case study areas being the Central Business District, Rosalie/Milton and New Farm areas	July - August 2011
<ul style="list-style-type: none">• Seek community input on backflow issues in the three case study areas via Talk to Council sessions, Living in Brisbane newsletter and direct mail	September 2011
<ul style="list-style-type: none">• Conduct technical investigations to assess the risks, issues and opportunities associated with backflow prevention technology in the three case study areas. There will be further community consultation in each of the case study areas at the conclusion of the technical investigations.	October 2011 - May 2012
<ul style="list-style-type: none">• Concurrently, carry out a desktop review to identify other sites across the city that flooded in January 2011 which may warrant a more detailed investigation and analysis as detailed above. The desktop review will be followed by community consultation in identified areas.	August - December 2011

The Board recommends that Council investigate the feasibility and appropriateness of establishing local levees to protect areas of strategic significance such as the Rocklea Markets. This will require a complete risk based flood management analysis.

REC016.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Council supports the investigation by property owners to assess the feasibility and appropriateness of establishing levees. Council will provide a framework to be used by property owners who wish to undertake this assessment. This may include hydrological assessments to be undertaken on a user pays basis. Construction of levees would be the responsibility of the asset owner. Council will work collaboratively with areas of strategic significance, such as the Rocklea Markets, to undertake risk based flood management analysis.	October 2011

ADDENDUM 1

Queensland Floods Commission of Inquiry
Interim Report Recommendations



Commission of Inquiry interim report recommendations that were already in place or have been implemented by Brisbane City Council

3.4 Every local government susceptible to flooding should ensure that, before the next wet season, its local disaster management plan:

- is consistent with the Disaster Management Act 2003
- addresses local risks and circumstances
- can be used easily in the event of a disaster.

COI023.1

Council's Action	Delivery Date
• Continue to publish Council's Disaster Management Plan on website	Completed
• Continue the Disaster Management Plan review process	Completed

3.6 Every local government should publish its disaster management plan (and relevant sub-plans) on its website before the next wet season.

COI024.1

Council's Action	Delivery Date
• Continue to publish Council's Disaster Management Plan on website	Completed
• Continue the Disaster Management Plan review process	Completed

4.2 Councils should prepare SMS alert templates covering a range of different flood scenarios before the wet season.

COI026.1

Council's Action	Delivery Date
• Continue to use Council's pre-prepared Early Warning Alert Service and Creek Flooding Alert Service SMS templates for a range of different disaster scenarios	Completed

4.6 Individuals and businesses should be encouraged to acquire battery operated radios for use in emergencies.

COI027.1

Council's Action	Delivery Date
• Continue to incorporate into the "Brisbane Ready for Summer" campaign	Completed
• Continue to publish on Council's website	Completed

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.

COI029.1

Council's Action	Delivery Date
• Continue to incorporate social media in crisis communications	Completed

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.

COI031.1

Council's Action	Delivery Date
• Continue with the four creek ALERT systems currently in place	Completed
• Continue with plan to deliver six additional creek ALERT systems	June 2012

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.

COI032.1

Council's Action	Delivery Date
• Identify upstream dam operators or their representatives	Completed
• Include upstream dam operators or their representatives and the Water Grid Manager in Local Disaster Management Group meetings	Ongoing

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.

COI033.1

Council's Action	Delivery Date
• Continue compliance with Queensland Disaster Management Arrangements and supply personnel to other local governments as required	Completed

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.

COI035.1

Council's Action	Delivery Date
• Continue to support other councils	Completed
• Review disaster management arrangements once guidance is received from the Queensland Government regarding the incorporation of C2C into Queensland Disaster Management Arrangements	TBA

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.

CO1038.1

Council's Action	Delivery Date
• Memorandum of Understanding with Red Cross in place	Completed

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.

CO1039.1

Council's Action	Delivery Date
• Continue to conduct testing and annual exercises with the Local Disaster Management Group and the Red Cross	Completed

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).

CO1040.1

Council's Action	Delivery Date
• Red Cross continue to be a member of the Local Disaster Management Group	Completed

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.

CO1041.1

Council's Action	Delivery Date
• Memorandum of Understanding with Red Cross in place	Completed

5.59 Disaster response agencies should use the National Registration Inquiry System.

CO1042.1

Council's Action	Delivery Date
• Memorandum of Understanding with Red Cross in place	Completed

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.

CO1050.1

Council's Action	Delivery Date
• Continue to include essential services providers in disaster planning and preparation	Completed
• Continue to include essential services providers in Local Disaster Management Group meetings at an early stage during disasters	Completed

Commission of Inquiry interim report recommendations that are not yet addressed in Brisbane City Council's Flood Response Review Action Plan

2.27 Seqwater should act immediately to establish:

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
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.

COI020.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Remain a stakeholder in this recommendation 	As required

2.28 The steering committee should:

1. 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
2. determine whether any hydrological studies, in addition to those undertaken as part of the *North Pine Dam Acceptable Flood Study Investigations*, are required
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
4. ensure all of the above work is reviewed by the technical review committee.

COI020.2

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Remain a stakeholder in this recommendation 	As required

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:

- the measures households should take to prepare for flooding
- the roles and functions of the SES and details of how to contact and join it
- whom to contact if assistance is needed during a flood
- contact details for emergency services in the area
- the types of warnings that are used in the area, what they mean and what to do in the event of a warning
- where and how to obtain information before, during and after a disaster
- what is likely to happen during a disaster (for example, power outages and road closures)
- evacuation
- measures available for groups who require particular assistance (for example, the elderly, ill and people with a disability).

COI025.1

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Incorporate into the "Brisbane Ready for Summer" campaign 	October 2011

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.

COI028.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Incorporate into the "Brisbane Ready for Summer" campaign	October 2011

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.

COI030.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Scope the project and methodology	October 2011
<ul style="list-style-type: none">• Undertake feasibility study for additional river height gauges within Council boundaries	January 2012

5.2 Local governments should consider adopting uniform disaster management software, to enable inter-council assistance to be given more easily and effectively.

COI034.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Engage with Local Government Association of Queensland to consider adopting uniform disaster management software	October 2011

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.

COI036.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Engage with Emergency Management Queensland to develop protocol	October 2011

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.

COI021.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Conducted initial flood boat training session in conjunction with Emergency Management Queensland• Work with Emergency Management Queensland to conduct further flood boat training sessions	

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.

COI022.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Identify location for and commence work to establish new depot	July 2012

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.

COI037.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Review and update crisis communications procedures	December 2011

5.61 Councils should include information about the National Registration Inquiry System as part of their community education.

COI025.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Incorporate into the "Brisbane Ready for Summer" campaign	October 2011

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.

COI044.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Investigate options and select solution	December 2011
<ul style="list-style-type: none">• Implement solution	March 2012

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.

COI045.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Liaise with Tourism Queensland and other stakeholders as required	December 2011
<ul style="list-style-type: none">• Develop a plan	June 2012

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.

CO1046.1

Council's Plan	Delivery Date
• Incorporate into the "Brisbane Ready for Summer" campaign	October 2011
• Include standard message on disaster event specific page on Council's website	December 2011

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11)

CO1047.1

Council's Plan	Delivery Date
• Update the evacuation sub-plan	December 2011

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.

COI048.1

Council's Plan	Delivery Date
• Liaise with appropriate State Government agencies to determine the relevant State Government agency policy lead for zoos, stables and similar facilities	October 2011
• Update evacuation sub-plan	December 2011

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.

COI049.1

Council's Plan	Delivery Date
• Liaise with the District Disaster Management Group to determine the implementation strategy	November 2011
• Incorporate Queensland Re-supply Guidelines in Disaster Management Plan	December 2011

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.

COI051.1

Council's Plan	Delivery Date
• Establish a working relationship with Brisbane Markets Limited	September 2011

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.

COI052.1

Council's Plan	Delivery Date
<ul style="list-style-type: none">• Debris cleared from the flood mitigation channel• Clear vegetation from the flood mitigation channel, subject to Queensland Government environmental approvals	Completed TBA

Commission of Inquiry interim report recommendations that are partially addressed in Brisbane City Council's Flood Response Review Action Plan but require additional work

2.10 Seqwater should act immediately to establish:

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
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.

Aligns with Flood Response Review Action Plan recommendation **REC014.1** (page 20)

Additional Council Plan

- Representative on Seqwater steering committee

Delivery Date

August 2011

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.

Aligns with Flood Response Review Action Plan recommendation **REC014.1** (page 20)

Additional Council Plan

- Representative on Seqwater steering committee

Delivery Date

August 2011

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:

1. review of the design hydrology:
 - a. using a stochastic or Monte Carlo or probabilistic approach
 - b. taking into account observed variability in temporal and spatial patterns of rainfall
 - c. taking into account observed variability in relative timings of inflows from the dams and downstream tributaries.
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
3. assessment of the reliability of the 24 hour, the three day and the five day rainfall forecasts
4. consideration of whether and how weather radar can be incorporated into decision making
5. requesting information from the Bureau of Meteorology as to its willingness to provide ensemble forecasts
6. consideration as to whether and how ensemble forecasts can be incorporated into decision making.

Aligns with Flood Response Review Action Plan recommendation **REC014.1** (page 20)

Additional Council Plan

- Representative on Seqwater steering committee

Delivery Date

August 2011

2.13 The following modelling work should be carried out under the supervision of the steering committee and reviewed by the technical review committee:

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:
 - a. a stepped change from W3 to W4
 - b. moving to a higher rate of release earlier in W1
 - c. bypassing W1
 - d. altering maximum release rates under W3
 - e. operating the gates in conjunction with the initiation of any of the fuse plugs in order to achieve a lower rate of discharge
2. simulations to test the robustness of relying on the 24 hour, the three day and the five day rainfall forecasts
3. development of a probability distribution for the time between closely spaced flood peaks in the catchment using historical records.

Aligns with Flood Response Review Action Plan recommendation **REC014.1** (page 20)

Additional Council Plan

Delivery Date

- Representative on Seqwater steering committee

August 2011

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:

- 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.

Aligns with Flood Response Review Action Plan affirmation **AFF004.1** (page 7)

Additional Council Plan

Delivery Date

- Update the Flood Information Centre Standard Operating Procedures

October 2011

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:

- meteorological observations and situation, including forecasts
- identification of the current operating strategy
- the strategy, aims and objectives of the flood engineers
- actual and expected releases
- any other comments.

Aligns with Flood Response Review Action Plan affirmation **AFF004.1** (page 7)

Additional Council Plan

Delivery Date

- Update the Flood Information Centre Standard Operating Procedures

October 2011

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.

Aligns with Flood Response Review Action Plan affirmation **AFF005.1** (page 9)

Additional Council Plan

Delivery Date

- Review and update crisis communications procedures

December 2011

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.

Aligns with Flood Response Review Action Plan affirmation **AFF004.1** (page 7)

Additional Council Plan

Delivery Date

- Update the Flood Information Centre Standard Operating Procedures

October 2011

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.

Aligns with Flood Response Review Action Plan affirmation **AFF004.1** (page 7)

Additional Council Plans

Delivery Date

- | | |
|---|---------------|
| • Engage the Bureau of Meteorology to determine appropriate protocol for information advice | November 2011 |
| • Update the Flood Information Centre Standard Operating Procedures as required | December 2011 |

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.

Aligns with Flood Response Review Action Plan affirmation **AFF004.1** (page 7)

Additional Council Plans

Delivery Date

- | | |
|---|---------------|
| • Engage the Bureau of Meteorology to determine appropriate protocol for information advice | November 2011 |
| • Update the Flood Information Centre Standard Operating Procedures as required | December 2011 |

5.8 Where a local government forms a sub-group of its disaster management group:

- the responsibilities of the sub-group must be clearly defined within the local disaster management arrangements
- each member of the sub-group must clearly understand his or her role.

The Commission recommends that sub-groups and local disaster management groups set out their respective roles and responsibilities in writing.

Aligns with Flood Response Review Action Plan recommendation **REC007.1** (page 17)

Additional Council Plans

Delivery Date

- | | |
|--|---------------|
| • Implement for Local Disaster Management Group sub-committees | Completed |
| • Incorporate into the Isolated Communities Sub-plan | November 2011 |

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11)

Aligns with Flood Response Review Action Plan affirmation **AFF007.5** (page 12)

Additional Council Plan

- Complete stakeholder consultation

Delivery Date

September 2011

Aligns with Flood Response Review Action Plan affirmation **AFF007.6** (page 12)

Additional Council Plan

- Complete stakeholder consultation

Delivery Date

September 2011

5.41 Councils with existing evacuation sub-plans should review them to ensure they address the issues identified from the 2010/2011 floods.

Addressed by Flood Response Review Action Plan Board affirmations **AFF007.1** (page 11) and **AFF007.6** (page 12)

Aligns with Flood Response Review Action Plan affirmation **AFF007.5** (page 12)

Additional Council Plan

- Complete stakeholder consultation

Delivery Date

September 2011

5.45 That advice should be given using as many mechanisms as appropriate, including text message, radio and door knocking.

Aligns with Flood Response Review Action Plan affirmation **AFF005.1** (page 9)

Additional Council Plan

- Review and update crisis communications procedures

Delivery Date

December 2011

5.60 During a disaster, councils and the Queensland Police Service should encourage individuals to self-register with the National Registration Inquiry System.

Aligns with Flood Response Review Action Plan affirmation **AFF007.2** (page 11)

Additional Council Plans

Delivery Date

- | | |
|---|--|
| <ul style="list-style-type: none"> • Update Memorandum of Understanding with Red Cross • Review and update crisis communications procedures | <p>October 2011</p> <p>December 2011</p> |
|---|--|

CO1043.1

Council's Plan

Delivery Date

- | | |
|---|----------------------|
| <ul style="list-style-type: none"> • Include standard message on disaster event specific page on Council's website | <p>December 2011</p> |
|---|----------------------|

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.

Aligns with Flood Response Review Action Plan affirmation **AFF007.4** (page 11)

Additional Council Plans

Delivery Date

- | | |
|--|---|
| <ul style="list-style-type: none"> • Develop evacuation planning tools for facilities housing people who may require assistance to evacuate • Hold a forum with the operators of facilities housing people who may require assistance to evacuate and organisations that provide services to people in the community | <p>December 2011</p> <p>December 2011</p> |
|--|---|

5.63 Councils should identify the specific evacuation needs of these facilities, such as increased timeframes for withdrawal or transport by ambulance.

Aligns with Flood Response Review Action Plan affirmation **AFF007.4** (page 11)

Additional Council Plans

Delivery Date

- | | |
|--|---|
| <ul style="list-style-type: none"> • Develop evacuation planning tools for facilities housing people who may require assistance to evacuate • Hold a forum with the operators of facilities housing people who may require assistance to evacuate and organisations that provide services to people in the community | <p>December 2011</p> <p>December 2011</p> |
|--|---|

5.64 Councils should include the location, contact details, and specific evacuation needs of these facilities in their evacuation sub-plans.

Aligns with Flood Response Review Action Plan affirmation **AFF007.4** (page 11)

Additional Council Plan

Delivery Date

- Update the evacuation sub-plan

December 2011

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.

Aligns with Flood Response Review Action Plan affirmation **AFF007.4** (page 11)

Additional Council Plans

Delivery Date

- Develop evacuation planning tools for facilities housing people who may require assistance to evacuate
- Hold a forum with the operators of facilities housing people who may require assistance to evacuate and organisations that provide services to people in the community
- Update the evacuation sub-plan

December 2011

December 2011

December 2011

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.

Aligns with Flood Response Review Action Plan affirmation **AFF007.4** (page 11)

Additional Council Plans

Delivery Date

- Develop evacuation planning tools for facilities housing people who may require assistance to evacuate
- Hold a forum with the operators of facilities housing people who may require assistance to evacuate and organisations that provide services to people in the community
- Update the evacuation sub-plan

December 2011

December 2011

December 2011

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.

Aligns with Flood Response Review Action Plan affirmation **AFF007.4** (page 11)

Additional Council Plans

Delivery Date

- | | |
|--|----------------------|
| <ul style="list-style-type: none"> • Develop evacuation planning tools for facilities housing people who may require assistance to evacuate | <p>December 2011</p> |
| <ul style="list-style-type: none"> • Hold a forum with the operators of facilities housing people who may require assistance to evacuate and organisations that provide services to people in the community | <p>December 2011</p> |

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.

Aligns with Flood Response Review Action Plan affirmation **AFF007.4** (page 11)

Additional Council Plans

Delivery Date

- | | |
|--|----------------------|
| <ul style="list-style-type: none"> • Develop evacuation planning tools for facilities housing people who may require assistance to evacuate | <p>December 2011</p> |
| <ul style="list-style-type: none"> • Hold a forum with the operators of facilities housing people who may require assistance to evacuate and organisations that provide services to people in the community | <p>December 2011</p> |

Commission of Inquiry interim report recommendations that have been addressed in Brisbane City Council's Flood Response Review Action Plan

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.

Addressed by Flood Response Review Action Plan affirmation **AFF002.1** (page 3)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF005.1** (page 9)

4.4 Councils and Emergency Management Queensland should work together to ensure the approval process does not cause delays in delivering SMS alerts.

Addressed by Flood Response Review Action Plan affirmation **AFF005.1** (page 9)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF005.1** (page 9)

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:

- information on rates notices about flooding at individual properties
- geospatial mapping, available to the public, that depicts inundation at certain river heights
- flood markers
- flood flag maps and floodwise property reports
- colour coded maps
- information that relates gauge heights with the level of flooding to be expected at a property.

Addressed by Flood Response Review Action Plan recommendations **REC003.1** (page 16), **REC004.1** (page 16) and **REC010.1** (page 18)

4.14 In the course of flood events, warnings referring to gauge heights should include information about the location of the gauge.

Addressed by Flood Response Review Action Plan recommendation **REC003.1** (page 16)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11) and recommendation **REC007.1** (page 17)

5.7 Whatever form arrangements take, they should seek to ensure that, in the event that flooding causes isolation:

- there are lines of communication between the local disaster management group and the community
- the community has the basic resources it needs to cope with its situation
- 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
- potential evacuation routes and centres are known.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11) and recommendation **REC007.1** (page 17)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11)

5.46 Councils should identify a range of evacuation centres as part of their disaster preparation and planning.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11)

5.48 Councils should be aware of what facilities are available at each evacuation centre, at particular times of the year.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11) and recommendation **REC007.1** (page 17)

5.50 Councils should identify community groups who may take responsibility for establishing and operating evacuation centres in the future.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11) and recommendation **REC007.1** (page 17)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11) and recommendation **REC007.1** (page 17)

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.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11) and recommendation **REC007.1** (page 17)

5.53 Councils should develop plans for the effective and timely re-supply of makeshift centres.

Addressed by Flood Response Review Action Plan affirmation **AFF007.1** (page 11) and recommendation **REC007.1** (page 17)

ADDENDUM 2

Queensland Floods Commission of Inquiry
Final Report Recommendations



Recommendations from the Queensland Floods Commission of Inquiry final report that have been addressed by Brisbane City Council

2.1 The steering committee of the Wivenhoe Dam and Somerset Dam Optimisation Study should consider whether it would be more effective for the floodplain management investigation to be removed from the Wivenhoe Dam and Somerset Dam Optimisation Study.

Council's Plan

- As a member of the Steering Committee, Council has agreed to remove floodplain management investigations from the Wivenhoe Dam and Somerset Dam Optimisation Study

Delivery Date

Completed

2.16 Councils and the Queensland Government should display on their websites all flood mapping they have commissioned or adopted.

Council's Plan

- Continue to provide free flood maps on Council's website

Delivery Date

Completed and ongoing

2.18 Councils that do not currently do so should consider offering an online database which allows the public to conduct a search on a parcel of land to find development approvals relevant to that parcel of land.

Council's Plan

- Continue to make Development Assessment applications available on Council's website

Delivery Date

Completed and ongoing

8.2 Councils should make their flood and overland flow maps and models available to applicants for development approvals, and to consultants engaged by applicants.

Council's Plan

- Make flood and overland flow maps and models available to applicants for development approvals, and to consultants engaged by applicants

Delivery Date

Completed and ongoing

10.9 All councils should, resources allowing, map the overland flow paths of their urban areas.

Council's Plan

- Map the overland flow paths of Council's urban areas

Delivery Date

Completed

10.15 Councils should conduct education campaigns directed to ensuring that all residents and property owners in areas identified as being at risk of backflow flooding are aware of the circumstances in which backflow flooding can occur, the hazard it presents and what should be done if it occurs.

Council's Plan

- Continue with the existing community education program around flooding, including backflow flooding

Delivery Date

Completed and ongoing

15.1 Councils should support and encourage business owners to develop private flood evacuation plans by providing the following to business owners in areas known to be affected by flood:

- information about the benefits of evacuation plans
- contact details of relevant council and emergency service personnel for inclusion in evacuation plans.

Council's Plan

- Include information about evacuation plans on Council's website

Delivery Date

Completed

15.2 Councils should consider making available to business owners locality specific information that would assist them to develop evacuation plans for commercial premises, for example, any evacuation sub- plan created under Emergency Management Queensland's disaster evacuation guidelines.

Council's Plan

- Provide information to business owners to assist with developing an evacuation plan

Delivery Date

Completed

17.1 The steering committees of the Wivenhoe Dam and Somerset Dam Optimisation Study and the North Pine Dam Optimisation Study should consider removing the water supply security investigation from each study.

Council's Plan

- As a member of the Steering Committees, Council has agreed to remove water supply security investigations from the Wivenhoe Dam and Somerset Dam and North Pine Dam Optimisation Studies

Delivery Date

Completed

17.2 The Steering committee of the North Pine Dam Optimisation Study should consider whether it would be beneficial for the floodplain management investigation to be removed from the North Pine Dam Optimisation study.

Council's Plan

- As a member of the Steering Committee, Council has agreed to remove floodplain management investigations from the North Pine Dam Optimisation Study

Delivery Date

Completed

Recommendations from the Queensland Floods Commission of Inquiry final report that are being addressed by Brisbane City Council

- 2.2 Brisbane City Council, Ipswich City Council and Somerset Regional Council and the Queensland Government should ensure that, as soon as practicable, a flood study of the Brisbane River catchment is completed in accordance with the process determined by them under recommendation 2.5 and 2.6. The study should:
- be comprehensive in terms of the methodologies applied and use different methodologies to corroborate results
 - involve the collation, and creation where appropriate, of the following data:
 - rainfall data including historical and design data and radar
 - stream flow data
 - tide levels
 - inundation levels and extents
 - data on the operation of Wivenhoe and Somerset dams
 - river channel and floodplain characteristics including topography, bathymetry, development and survey data
 - involve determining the correlation between any of the data sets above
 - produce suitable hydrologic models run in a Monte Carlo framework, taking account of variability over the following factors:
 - spatial and temporal rainfall patterns
 - saturation of the catchment
 - initial water level in dams
 - effect of operating procedures
 - physical limitations on the operation of the dams
 - tidal conditions
 - closely occurring rainfall events
 - validate hydrologic models to ensure they reproduce:
 - observed hydrograph attenuation
 - probability distributions of observed values for total flood volume and peak flow
 - timing of major tributary flows
 - observed flood behaviour under no dams conditions and current conditions
 - produce a suitable hydraulic model or models that:
 - are able to determine flood heights, extents of inundation, velocities, rate of rise and duration of inundation for floods of different probabilities
 - are able to deal with movement of sediment and changes in river beds during floods
 - are able to assess historical changes to river bathymetry
 - are able to be run in a short time to allow detailed calibration and assessment work
 - characterise the backwater effect at the confluence of the Brisbane and Bremer rivers and other confluences as appropriate
 - involve analysis of the joint probability of floods occurring in the Brisbane and Bremer rivers (and any other pair of rivers if considered appropriate)
 - be iterative, and obtain a short-term estimate of the characteristics of floods of different probabilities in all significant locations in the catchment (at least Brisbane City, Ipswich City and at Wivenhoe Dam) in order to determine the priorities for the rest of the study.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Council will work with the Queensland Government, Ipswich City Council and Somerset Regional Council on a collaborative approach to produce a Terms of Reference to outline the scope, objectives, methodology, estimated costs and responsibilities for the study, which is expected to be completed in several stages over the next two to three years 	Ongoing (Queensland Government-led)

2.4 A recent flood study should be available for use in floodplain management for every urban area in Queensland. Where no recent study exists, one should be initiated.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Develop a prioritised schedule for the delivery of flood studies across Brisbane's creek catchments, taking into account any guidance that may be provided by the Queensland Government 	June 2013
<ul style="list-style-type: none"> • Complete top priority creek flood studies 	June 2015
<ul style="list-style-type: none"> • Complete all other flood studies for use in flood management of Brisbane's creek catchments 	Post June 2016

2.6 By reference to the order of priority determined in accordance with recommendation 2.5 (*in the Queensland Floods Commission of Inquiry final report*), the Queensland Government and councils should together ensure that the council responsible for each urban area in Queensland has access to current flood study information. This will include determining:

- a) a process or processes by which the flood studies will be completed, including the involvement of the Queensland Government and relevant councils
- b) how, and from whom, the necessary technical and financial resources will be obtained
- c) a reasonable timeframe by which all flood studies required will be completed.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Develop a prioritised schedule for the delivery of flood studies across Brisbane's creek catchments, taking into account any guidance that may be provided by the Queensland Government 	June 2013
<ul style="list-style-type: none"> • Document the process for completing flood studies including how studies should be undertaken and involvement of elected representatives, the Queensland Government and other relevant agencies 	June 2013
<ul style="list-style-type: none"> • Consult with stakeholders on the documented process 	June 2014
<ul style="list-style-type: none"> • Complete top priority creek flood studies 	June 2015
<ul style="list-style-type: none"> • Complete all other flood studies for use in flood management of Brisbane's creek catchments 	Post June 2016

2.7 As far as practicable, councils should maintain up-to-date flood information.

Council's Plan	Delivery Date
• Develop a prioritised schedule for the delivery of flood studies across Brisbane's creek catchments, taking into account any guidance that may be provided by the Queensland Government	June 2013
• Complete top priority creek flood studies	June 2015
• Complete all other flood studies for use in flood management of Brisbane's creek catchments	Post June 2016

2.8 When commissioning a flood study, the body conducting the study should:

- check whether others, such as surrounding councils which are not involved in the study, dam operators, the Department of Environment and Resource Management, and the Bureau of Meteorology, are doing work that may assist the flood study or whether any significant scientific developments are expected in the near future, and decide whether to delay the study
- discuss the scope of work with the persons to perform the flood study as well as surrounding councils which are not involved in the study, dam operators, the Department of Environment and Resource Management, and the Bureau of Meteorology.

Council's Plan	Delivery Date
• Document the process for completing flood studies including how studies should be undertaken and involvement of elected representatives, the Queensland Government and other relevant agencies	June 2013
• Consult with stakeholders on the documented process	June 2014

2.9 Elected representatives from councils should be informed of the results of each flood study relevant to the council's region, and consider the ramifications of the study for land planning and emergency management.

Council's Plan	Delivery Date
• Document the process for completing flood studies including how studies should be undertaken and involvement of elected representatives, the Queensland Government and other relevant agencies	June 2013
• Consult with stakeholders on the documented process	June 2014

2.10 Elected representatives from all agencies involved in a flood study should be informed of recommendations made for future work, and determine, on a risk basis, whether that further work is to be completed.

Council's Plan	Delivery Date
• Document the process for completing flood studies including how studies should be undertaken and involvement of elected representatives, the Queensland Government and other relevant agencies	June 2013
• Consult with stakeholders on the documented process	June 2014

2.12 Councils in floodplain areas should, resources allowing, develop comprehensive floodplain management plans that accord as closely as practicable with best practice principles.

Council's Plan	Delivery Date
• Develop a flood risk management strategy for Brisbane	June 2013
• Develop a prioritised schedule for the delivery of creek floodplain management plans	June 2013
• Complete top priority creek floodplain management plans	June 2016
• Complete all other floodplain management plans for Brisbane's creek catchments	Post June 2016

2.13 For urban areas or areas where development is expected to occur:

a) councils with the requisite resources should develop a flood map which shows 'zones of risk' (at least three) derived from information about the likelihood and behaviour of flooding

b) councils without the requisite resources to produce a flood behaviour map should develop a flood map which shows the extent of floods of a range of likelihoods (at least three).

Council's Plan	Delivery Date
• Develop an approach to flood risk mapping to provide information which supports both planning and development and public awareness of flooding	October 2012
• Develop a program of flood risk mapping to support both planning and development and public awareness of flooding. The flood risk mapping program will consider zones of risk, likelihood and behaviour.	June 2013

2.14 For non-urban areas or areas where limited development is expected to occur councils should consider, on a risk basis, what level of information about flood risk is required for the area, and undertake the highest ranked of the following options which is appropriate to that need and within the capacities (financial and technical) of the council:

- a) a map showing 'zones of risk' (at least three) derived from information about the likelihood and behaviour of flooding
- b) a map showing the extent of floods of a range of likelihoods (at least three)
- c) a flood map based on historic flood levels that have been subjected to a flood frequency analysis to estimate the annual exceedance probability of the selected historical flood
- d) a historic flood map without flood frequency analysis
- e) the Queensland Reconstruction Authority Interim Floodplain Assessment Overlay as a way to determine those areas for which further flood studies are required, or
- f) the Queensland Reconstruction Authority Interim Floodplain Assessment Overlay (preferably refined using local flood information) as a trigger for development assessment.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Develop an approach to flood risk mapping to provide information which supports both planning and development and public awareness of flooding 	October 2012
<ul style="list-style-type: none"> • Develop a program of flood risk mapping to support both planning and development and public awareness of flooding. The flood risk mapping program will consider zones of risk, likelihood and behaviour. 	June 2013

2.15 Councils should ensure that areas for which there has been no assessment of the likelihood of flooding are indicated on a map and that, as part of the development assessment process for these, there is at least some enquiry into whether a site proposed for development could be subject to flooding.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Review existing flood maps (including, but not limited to, Brisbane River and Creeks, Local Stormwater Management Plans, Stormwater Management Plans, maps provided through a Development Application, Flood Flag and Overland Flow Maps) to identify where no assessment of flood risk has occurred 	Completed
<ul style="list-style-type: none"> • Implement approved changes to Council's assessment processes, where necessary 	August 2012

2.17 Flood maps, and property specific flooding information intended for use by the general public, should be readily interpretable and should, when necessary, be accompanied by a comprehensible explanatory note.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Develop an approach to flood risk mapping to provide information which supports both planning and development and public awareness of flooding 	October 2012
<ul style="list-style-type: none"> • Develop a program of flood risk mapping to support both planning and development and public awareness of flooding. The flood risk mapping program will consider zones of risk, likelihood and behaviour. 	June 2013
<ul style="list-style-type: none"> • Develop and update supporting material to accompany all flood risk mapping products 	June 2014

4.6 Councils should consider using limited development (constrained land) zone in their planning schemes for areas that have a very high flood risk.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Develop an approach to zoning and flood risk 	September 2012
<ul style="list-style-type: none"> • Commence industry engagement on the flood code approach 	October 2012
<ul style="list-style-type: none"> • Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i> 	June 2014

5.3 If the Queensland Government does not include a requirement for such an overlay map in the model flood planning controls, councils should include a flood overlay map in their planning schemes. The map should identify the areas of a council region:

- that are known not to be affected by flood
- that are affected by flood and on which councils impose planning controls (there may be subsets in each area to which different planning controls attach)
- for which there is no flood information available to council.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Develop an approach to flood planning controls 	September 2012
<ul style="list-style-type: none"> • Develop an approach for flood overlay mapping 	September 2012
<ul style="list-style-type: none"> • Commence industry engagement on the flood code approach 	October 2012
<ul style="list-style-type: none"> • Adopt a new flood code, including a flood overlay map, into the planning scheme as part of Council's <i>New City Plan</i> 	June 2014

5.5 If the Queensland Government does not include such a code in the model flood planning controls, councils should include in their planning schemes a flood overlay code that consolidates assessment criteria relating to flood.

Council's Plan

Delivery Date

- Adopt a new flood code, that consolidates assessment criteria relating to flood into the planning scheme as part of Council's *New City Plan*

June 2014

5.7 If the Queensland Government does not include such a policy in the model flood planning controls, councils should include in their planning schemes a planning scheme policy that:

- for development proposed on land susceptible to flooding, outlines what additional information an applicant should provide to the assessment manager as part of the development application or:
- for development proposed on land where potential for flooding is unknown requires an applicant to provide:
 - as part of the development application, information to enable an assessment of whether the subject land is susceptible to flooding, and
 - upon a determination the subject land is susceptible to flooding, more detailed information to allow an assessment of the flood risk.

Council's Plan

Delivery Date

- Set out information requirements for development applications

December 2012

- Adopt a new flood code into the planning scheme as part of Council's *New City Plan*

June 2014

7.3 If the Queensland Government does not include such assessment criteria in model flood planning controls, councils should include assessment criteria in their planning schemes that require community infrastructure (including the types of community infrastructure which are identified in the Sustainable Planning Regulation 2009 and which the community needs to continue functioning, notwithstanding flood) to be located and designed to function effectively during and immediately after a flood of a specified level of risk.

Council's Plan

Delivery Date

- Identify specific flood planning levels for community infrastructure

August 2012

- Commence industry engagement on the flood code approach

October 2012

- Adopt a new flood code into the planning scheme as part of Council's *New City Plan*

June 2014

7.5 If the Queensland Government does not include such assessment criteria in the model flood planning controls, councils should include assessment criteria in their planning schemes that require the impact of flood on commercial property to be minimised.

Council's Plan	Delivery Date
• Tailor specific flood planning principles and controls for commercial property	August 2012
• Commence industry engagement on the flood code approach	October 2012
• Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i>	June 2014

7.10 Councils should ensure that, when applications for environmentally relevant activities are approved by a council, the details of those activities, including their nature and location, are provided to the Department of Environment and Resource Management.

Council's Plan	Delivery Date
• Develop and implement a process for Council to inform the Department of Environment and Heritage (previously the Department of Environment and Resource Management) about applications for Environmentally Relevant Activities	October 2012
• Collate all existing applications for devolved Environmentally Relevant Activities and notify Department of Environment and Heritage	October 2012

7.12 If the Queensland Government does not include such assessment criteria in the model flood planning controls, councils should include assessment criteria in their planning schemes that require that:

a) the manufacture or storage of bulk hazardous materials (as defined in State Planning Policy 1/03) take place above a certain flood level, determined following an appropriate risk based assessment, or

b) structures on land susceptible to flooding and used for the manufacture or storage of bulk hazardous materials (as defined in State Planning Policy 1/03) be designed to prevent the intrusion of floodwaters.

Council's Plan	Delivery Date
• Identify an approach for land use provisions to deal with locational and design criteria for new potentially hazardous uses	August 2012
• Commence industry engagement on the flood code approach	October 2012
• Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i>	June 2014

7.13 When approving applications for development which involve the manufacture or storage of hazardous materials, councils should not restrict the conditions imposed to ones which are solely reliant on human intervention to remove the materials in the event of flood.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Review and update current approval processes 	Completed
<ul style="list-style-type: none"> • Implement revised processes, including training of staff 	October 2012

7.15 Councils (particularly Brisbane City Council) should consider including in their planning schemes more stringent standards for the design and construction of prescribed tidal work than those in the code for development applications for prescribed tidal work in the Coastal Protection and Management Regulation 2003.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Approve the Prescribed Tidal Works planning scheme policy for public release 	February 2013

7.17 If the Queensland Government does not include such assessment criteria in the model flood planning controls, councils should consider including assessment criteria in their planning schemes which require that works in a floodplain:

- do not reduce on-site flood storage capacity
- counteract any changes the works will cause to flood behaviour of all floods up to and including the acceptable defined flood event by measures taken within the subject site (for example, use of compensatory works, detention basins or other engineering mechanisms), and
- do not change the flood characteristics outside the subject site in ways that result in:
 - loss of flood storage
 - loss of/changes to flow paths
 - acceleration or retardation of flows, or
 - any reduction in flood warning times elsewhere on the floodplain.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Identify a planning approach that balances filling and critical flood storage for incorporation into the flood code 	August 2012
<ul style="list-style-type: none"> • Commence industry engagement on the flood code approach 	October 2012
<ul style="list-style-type: none"> • Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i> 	June 2014

7.25 If the Queensland Government does not include such assessment criteria in the model flood planning controls, councils should consider including assessment criteria in their planning schemes that address:

- the prospect of isolation or hindered evacuation
- the impact of isolation or hindered evacuation.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Identify an approach to deal with new land uses in areas isolated during flood events for incorporation into a flood code 	August 2012
<ul style="list-style-type: none"> • Commence industry engagement on the flood code approach 	October 2012
<ul style="list-style-type: none"> • Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i> 	June 2014

8.1 Councils should, resources allowing, maintain flood maps and overland flow path maps for use in development assessment. For urban areas these maps should be based on hydraulic modelling; the model should be designed to allow it to be easily updated as new information (such as information about further development), becomes available.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Undertake a review of current high risk overland flow path areas 	June 2013
<ul style="list-style-type: none"> • Determine areas in need of update 	December 2013
<ul style="list-style-type: none"> • Update existing overland flow path mapping as required 	June 2015

8.4 If the Queensland Government does not include such a policy in the model flood planning controls, councils should include a planning scheme policy in their planning schemes that sets out the information to be provided in development applications in relation to stormwater and flooding. The policy should specify:

- the type of models and maps to be provided
- the substantive information required to be shown in the development application
- how the assumptions and methodologies used in preparing the models and maps should be presented
- the form in which the information on storm water and flooding is to be presented in the application.

Council's Plan	Delivery Date
<ul style="list-style-type: none"> • Set out information requirements for development applications in a planning scheme policy 	December 2012
<ul style="list-style-type: none"> • Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i> 	June 2014

8.5 Councils should review their assessment processes to ensure that:

- the person with primary responsibility for the assessment of the development application considers what expert input is required
- where a development application is subject to comment by a number of professionals, the responsibilities and accountability of each contributor are clear
- where flood-related information is referred to an expert for advice, the expert is required to comment on the extent of compliance by reference to each relevant assessment criteria and identify and explain any inability to comment.

Council's Plan

- Review and update assessment processes
- Implement revised processes, including training of staff

Delivery Date

Completed
October 2012

8.6 Councils should take care when imposing conditions to ensure that each condition has purpose; standardised conditions should not be included where they have no application to the development in question.

Council's Plan

- Review and update existing processes
- Implement revised processes, including training of staff

Delivery Date

Completed
August 2012

8.7 Councils should not rely on a condition requiring an evacuation plan as the sole basis for approving a development susceptible to flooding.

Council's Plan

- Review and update existing processes to ensure Council does not rely on a condition requiring an evacuation plan as the sole basis for approving a development susceptible to flooding
- Implement revised processes, including training of staff

Delivery Date

Completed
August 2012

8.8 Councils should consider providing advice to development applicants during pre-lodgement meetings, and at the time of receiving a development application, about the way in which the development will be assessed for flood risk and what flood information council will be relying on to make this assessment.

Council's Plan

- Review and update existing processes
- Amend pre-lodgement advice and information request templates to align with new processes
- Implement revised processes, including training of staff

Delivery Date

Completed
October 2012
October 2012

10.6 Queensland Urban Utilities, and other distributor-retailers and councils, that have identified a practice of stormwater drains being connected to sewerage infrastructure, should conduct a program of education to raise public awareness that this practice is illegal and impedes the operation of the sewerage infrastructure.

Council's Plan	Delivery Date
• Conduct plumbing forum	Completed
• Develop a communication strategy to raise public awareness that stormwater connections to sewerage infrastructure is illegal	Completed
• Implement communication strategy	August 2012 and ongoing

10.7 Councils and distributor-retailers should agree to protocols for the exchange of information about suspected illegal connections, the steps being taken to investigate them or the basis for concluding that no investigation is required, and the results of any investigations or enforcement actions.

Council's Plan	Delivery Date
• Liaise with Queensland Urban Utilities to understand their scheduled infrastructure maintenance programs for 2012/13	Completed
• Develop and formalise processes for information sharing with Queensland Urban Utilities to identify non-compliant properties	July 2012
• Implement enforcement processes that rectify illegal stormwater to sewerage connections	August 2012 and ongoing
• Report quarterly on this work	Ongoing

10.10 Councils should consider amending their planning schemes to include provisions directed to consideration of the flood resilience of basements as a factor in determining the appropriateness of a material change of use.

Council's Plan	Delivery Date
• Include interim provisions in the new Temporary Local Planning Instrument that specify appropriate flood protections for basements	Completed
• Commence industry engagement on the flood code approach	October 2012
• Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i>	June 2014

10.11 In assessing and determining development applications for material change of use in areas susceptible to flood, councils should consider whether the new developments locate essential services infrastructure above basement level, or, alternatively, whether essential services infrastructure located at basement level can be constructed so that it can continue to function during a flood.

Council's Plan	Delivery Date
• Include interim provisions in the new Temporary Local Planning Instrument	Completed
• Commence industry engagement on the flood code approach	October 2012
• Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i>	June 2014

10.14 All councils should periodically conduct risk assessments to identify areas at risk of backflow flooding. In respect of such areas, councils should consider how such risks can be lessened, including in that process consideration of the installation of backflow prevention devices. Backflow devices should not, however, be installed unless and until a full risk based assessment has been undertaken.

Council's Plan	Delivery Date
• Complete investigations into backflow reduction measures for priority areas affected by January 2011 flood	Completed
• Develop an approach to periodically undertake risk assessments to identify backflow flooding	December 2013

10.17 If the Queensland Government does not include such assessment criteria in the model flood planning controls, councils should include assessment criteria in their planning schemes that require critical infrastructure in assessable substation developments is built to remain operational during and immediately after a flood of a particular magnitude. That magnitude should be determined by an appropriate risk assessment.

Council's Plan	Delivery Date
• Specify appropriate flood protection approaches for substations	August 2012
• Commence industry engagement on the flood code approach	October 2012
• Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i>	June 2014

10.22 Carriers, councils and the Australian Communications and Media Authority should take into account the risk of flooding when considering the placement of telecommunications facilities.

Council's Plan	Delivery Date
• Specify appropriate flood protection levels for assessable telecommunications facilities in a flood code	August 2012
• Commence industry engagement on the flood code approach	October 2012
• Adopt a new flood code into the planning scheme as part of Council's <i>New City Plan</i>	June 2014

11.1 Councils should consider implementing a property buy-back program in areas that are particularly vulnerable to regular flooding, as part of a broader floodplain management strategy, where possible obtaining funding from the Natural Disaster Resilience Program for this purpose.

Council's Plan	Delivery Date
• Continue with the Voluntary Home Purchase Scheme	Completed and ongoing
• Investigate opportunities for additional funding for the scheme from the State and Federal Governments	June 2013

15.11 Emergency Management Queensland should pursue the execution of the 'Local Arrangements' with councils where a Memorandum of Agreement is in place. The contents of the arrangements should be reviewed and updated regularly.

Council's Plan	Delivery Date
• Review current draft Memorandum of Understanding with Emergency Management Queensland and amend as required	June 2013

17.31 The Queensland Government should legislate to oblige each owner of a referable dam to have emergency action plans approved by the appropriate Queensland Government agency. Such plans should be reviewed periodically.

Council's Plan	Delivery Date
• Amend the draft Emergency Action Plan for the Forest Lake Dam (Council's referable dam)	December 2012
• Investigate options for a local warning system	June 2013
• Redesign and replace outlets to improve the function of the Forest Lake Dam	December 2013
• Undertake periodical review of Emergency Action Plans	Ongoing

Glossary of acronyms

ADF	Australian Defence Force
ALERT	Automated Local Evaluation in RealTime
BCLDMG	Brisbane City Local Disaster Management Group
BCP	Business Continuity Plan
BoM	Bureau of Meteorology
C2C	Council to Council
CBD	Central Business District
COP	Common Operating Picture
CWS	City Waste Services
DERM	Department of Environment and Resource Management
DFL	Defined Flood Level
EWAS	Early Warning Alert Service
FIC	Flood Information Centre
GIS	Geographic Information System
LDCC	Local Disaster Coordination Centre
NFRAG	National Flood Risk Advisory Group
QPS	Queensland Police Service
RIMT	Regional Incident Management Team
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SES	State Emergency Service
SOP	Standard Operating Procedures