

BY FACSIMILE AND POST



Level 38, Riverside Centre  
123 Eagle Street  
Brisbane QLD 4000  
Australia

# Blake Dawson

Mr Nick Bailey  
Queensland Floods Commission of Inquiry  
GPO Box 1738  
BRISBANE QLD 4001

T 61 7 3259 7000  
F 61 7 3259 7111  
DX 226 Brisbane

PO Box 7074  
Riverside Centre  
Brisbane QLD 4001  
Australia

[www.blakedawson.com](http://www.blakedawson.com)

Dear Mr Bailey

**11 March 2011**

## Queensland Urban Utilities

As you are aware, we act on behalf of the Central SEQ Distributor – Retailer Authority trading as Queensland Urban Utilities (**QUU**).

**Our reference**  
JKC EMGR

We refer to the Commission's correspondence dated 8 March 2011.

**Partner**  
Jonathan King-Christopher  
T 07 3259 7052  
[jkc@blakedawson.com](mailto:jkc@blakedawson.com)

Please find **enclosed** the following:

**Contact**  
Emmelene Gray  
T 07 3259 7187  
[emmelene.gray@blakedawson.com](mailto:emmelene.gray@blakedawson.com)

1. QUU's preliminary submission.
2. Annexures:
  - (a) QUU Locality Plan – Figure A1 – QUU Water Supply Network.
  - (b) QUU Locality Plan – Figure A2 – QUU Wastewater Network.

If you have any queries or concerns, please do not hesitate to contact us.

Yours faithfully

## QUEENSLAND URBAN UTILITIES

### Submission to the Queensland Floods Commission of Inquiry

#### INTRODUCTION

This submission is made to the Queensland Floods Commission of Inquiry (**Commission**) in response to the Commission's correspondence of 8 March 2011 and the Commission's Terms of Reference.

The submission endeavours to address each of the matters raised in the Commission's correspondence as well as some other relevant matters. Further detailed work is ongoing in relation to a number of these issues and Queensland Urban Utilities will provide further details on those matters once that work is completed.

#### BACKGROUND

1. Up until 30 June 2010 South East Queensland (**SEQ**) Councils owned and operated the water and wastewater distribution and retail businesses that corresponded with their respective local government boundaries.
2. Pursuant to the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009* (**Distributor-Retailer Act**), the SEQ Councils were divested of their water and wastewater businesses, and these businesses were merged and transferred to three distribution and retail entities (**Distributor-Retailers**) as part of the reform of water supply arrangements in SEQ initiated by the Queensland Government in May 2007.
3. Materially, the water and wastewater businesses of Brisbane City Council, Ipswich City Council, Lockyer Valley Regional Council, Somerset Regional Council and Scenic Rim Regional Council (**Participating Councils**) were merged and transferred to the Central SEQ Distributor-Retailer Authority trading as Queensland Urban Utilities (**Queensland Urban Utilities**).
4. Pursuant to the Distributor-Retailer Act, Queensland Urban Utilities' Participating Councils have the right to participate in the profits of Queensland Urban Utilities. The Central SEQ Distributor-Retailer Authority Participation Agreement (**Participation Agreement**) sets out the following participation rights for each Participating Council as at the operative date, being 25 June 2010:

o Brisbane City Council	85.050%
o Ipswich City Council	12.213%
o Lockyer Valley Regional Council	0.854%
o Scenic Rim Regional Council	1.052%
o Somerset Regional Council	0.831%

## Regulatory framework relating to water services

5. Queensland Urban Utilities supplies its water services within the SEQ Water Grid (**Water Grid**).
6. The Water Grid is a network of pipelines that connects major water sources, water treatment plants and bulk water transport networks, and coordinates the delivery of urban and industrial water supplies across the SEQ region.
7. A State-owned entity, the SEQ Water Grid Manager (**Water Grid Manager**) operates the grid and ensures water is delivered to the Distributor-Retailers by the State-owned bulk water entities, Seqwater and WaterSecure. Bulk water is transferred throughout the Water Grid by a third State-owned entity, LinkWater.
8. Together, the Distributor-Retailers, Seqwater, WaterSecure and LinkWater are defined as Grid Participants pursuant to the SEQ Market Rules (**Market Rules**), which are issued under the *Water Act 2000* (**Water Act**).
9. The System Operating Plan provides the hydrological principles to be applied by the Water Grid Manager to ensure the optimum conjunctive use of water storages and manufactured water resources.
10. The Market Rules govern operational and commercial aspects of the Market as they apply to all entities operating within the Market. The Market Rules only apply to the acquisition of bulk water by the Distributor-Retailers including Queensland Urban Utilities from the Water Grid Manager and the transportation of bulk water to other grid participants. The Market Rules do not apply to the distribution and retail functions of the Distributor-Retailers.
11. Grid Contract Documents govern the specific commercial transactions between Grid Participants and the Water Grid Manager.
12. Operating Protocols govern the specific operational interactions between the Grid Participants that interact with one another in the management of the physical flow of water in the Water Grid.

## Hierarchy of regulatory instruments

13. The hierarchy of regulatory instruments applicable to the operation of the Water Grid are as follows:

- The *Water Supply (Safety and Reliability) Act 2008 (Water Supply Act)* and the Water Act and any instrument operative pursuant to the Water Supply Act or the Water Act including:
  - i. The Water Supply Regulation and Water Regulation;
  - ii. Water Resource Plans
  - iii. Resource Operations Plans;
  - iv. Resource Operations Licences and Interim Resource Operations Licences;
- The Regional Water Security Program;
- The System Operating Plan;
- The Market Rules including any Grid Instructions pursuant to the Market Rules;
- Grid Contract Documents; and
- Operating Protocols made under the Market Rules including any Operating Instructions issued pursuant to the Market Rules.

#### **Regulatory framework relating to wastewater services**

14. The Water Supply Act provides a regulatory framework for providing water and sewerage services in Queensland, including the functions and powers of service providers (including Queensland Urban Utilities).

#### **An overview of the water and wastewater services provided by Queensland Urban Utilities**

15. Each of the Distributor-Retailers is a registered service provider of water and wastewater services under the Water Supply Act.
16. Pursuant to the Distributor-Retailer Act, Queensland Urban Utilities provides water and wastewater services within the Brisbane, Ipswich, Lockyer Valley, Somerset and Scenic Rim local government areas. Under the Distributor-Retailer Act these local government areas define the geographical area in which Queensland Urban Utilities may operate. Queensland Urban Utilities' actual service area is a subset of this greater geographical area and is based on customer connections existing on 1 July 2010.
17. Within its service area, Queensland Urban Utilities:
  - services a population of 1,243,467;
  - services approximately 433,000 water connections and 483,000 sewerage connections;
  - employs approximately 1200 employees; and
  - has a regulatory asset base of \$4.2 billion.

18. Water services provided by Queensland Urban Utilities comprise the distribution and retail of:
- o Potable water;
  - o Recycled water.
19. Wastewater services provided by Queensland Urban Utilities comprise the collection and treatment of sewage and trade waste.

### **An overview Queensland Urban Utilities water and wastewater networks**

20. Queensland Urban Utilities provides water and wastewater services through its extensive distribution networks within its geographic area, which consists of the local government area of its Participating Councils.
21. Queensland Urban Utilities water and wastewater networks consist primarily of the following:
- o wastewater treatment plants;
  - o water treatment plants;
  - o pumping stations;
  - o reservoirs;
  - o trunk sewers and collection sewers; and
  - o associated pipelines and infrastructure.
22. The geographic area of Queensland Urban Utilities water and waste water network is set out in the annexed diagrams:
- o Figure A1 – QUU Water Supply Network; and
  - o Figure A2 – QUU Water Water Network.
23. Queensland Urban Utilities' network includes the following assets:
- o Sewerage pump stations – 333;
  - o Water pump stations – 51;
  - o Treatment plants – 28;
  - o Depot – 7; and
  - o Network (civic) - various.

### **How long have services and systems been provided by Queensland Urban Utilities?**

24. In preparation for the transition of the Participating Councils' water and wastewater businesses to an integrated and separate statutory authority, Brisbane Water (Brisbane City Council's water and wastewater business) changed its trading name to Queensland Urban Utilities on 3 November 2009.

25. Queensland Urban Utilities as a separate legal entity commenced operations on 1 July 2010. At this date:
  - o the water and wastewater assets, liabilities and employees of the Participating Councils were transferred to Queensland Urban Utilities;
  - o Queensland Urban Utilities became a service provider under the Water Supply Act.
  
26. Due to the only recent establishment of Queensland Urban Utilities, a number of Queensland Urban Utilities' back office functions and services (for example desktop support services, telecommunications management, mobile services) continue to be undertaken by the respective Participating Councils (particularly Brisbane City Council) pursuant to transitional arrangements.

### **An overview of emergency measures that were in place prior to the 2010/2011 flood event**

#### **Overview**

27. Queensland Urban Utilities has a well established emergency management framework (**EMF**), which has been transitioned from the water and wastewater businesses of its Participating Councils. The core of the EMF was developed in 2005 within Brisbane Water, a former administrative unit of Brisbane City Council. While the EMF has been adjusted to suit the new business, the core elements remain the same.
  
28. Queensland Urban Utilities' EMF, which is set out in Queensland Urban Utilities' Emergency Response Plan (**ERP**), aligns with:
  - o The State's water reforms;
  - o The Market Rules;
  - o The Water Grid Emergency Response Plan (**WGERP**) issued under the Market Rules by the Water Grid Manager;
  - o Queensland Urban Utilities' Business Continuity Management Program (**BCM Program**); and
  - o The Queensland Disaster Management Framework.
  
29. Queensland Urban Utilities Emergency Response Plan not only deals with emergency response relating to incidents affecting the businesses' ability to provide water services but extends to incidents affecting our functions as a wastewater service provider.

#### **Emergency Response Regulatory Framework**

30. The Water Grid is largely governed by the Market Rules.
  
31. Section 4.24 of the Market Rules requires the Water Grid Manager to prepare, implement and maintain a Water Grid Emergency

Response Plan (**WGERP**). Essentially, the WGERP is an overarching plan that provides all Grid Participants with guidance in responding to emergencies affecting the Water Grid including:

- o Incidents which must be reported to the Water Grid Manager;
- o Response levels for types of incidents reported to the Water Grid Manager; and
- o Escalation and notification paths for each response level.

32. In Level 3 and above incidents affecting water supply, the Water Grid Manager is responsible for a range of coordination activities to facilitate the total emergency response and to ensure the maintenance of supply or rectification of whole of Grid operations (as distinct from managing the incident at the entity or asset level).

33. Section 4.27 of the Market Rules requires each Grid Participant (including Queensland Urban Utilities) to have an ERP that aligns with the WGERP to ensure consistent approaches and a hierarchy of controls for emergency management across the Water Grid. The ERP is reviewed and updated annually to ensure continued alignment with the WGERP.

34. Section 4.29 of the Market Rules provides that Queensland Urban Utilities' ERP must specify:

- o Response levels;
- o Operational procedures required for each response level;
- o Escalation and notification paths for each response level;
- o In the case of infrastructure constituting isolated supply schemes, contingencies for seeking alternate water supply;
- o Reporting and monitoring requirements; and
- o Any other matters as required by the relevant Operating Protocols.

35. Queensland Urban Utilities' ERP aligns to the WGERP to ensure consistent approaches and a hierarchy of controls for emergency management across the Water Grid. It was developed in consultation with a series of internal and external plans and requirements (including those of the Water Grid Manager) to ensure a coordinated approach to emergency management where necessary and appropriate. These internal and external plans and requirements are:

- o External Plans:
  - i. Australian Government Critical Infrastructure Resilience Strategy;
  - ii. Queensland State Disaster Management Plan; and
  - iii. SEQ Water Grid Emergency Response Plan.

- o Internal Plans:
    - i. QUU BCP – Sewage Transportation and Treatment (Eastern Service Area);
    - ii. QUU BCP – Loss of Supply or Transportation of Potable Water;
    - iii. QUU Influenza Pandemic Contingency Plan;
    - iv. QUU BCP - Loss of Facility – (Doc Id 00573) currently under review;
    - v. QUU Flood Response Plan; and
    - vi. QUU Site specific Emergency Procedures and Business Continuity Plans.
36. Queensland Urban Utilities' ERP has been approved by the Water Grid Manager in accordance with Section 4.30 of the Market Rules.
37. Section 4.34 of the Market Rules requires the Water Grid Manager to prepare a draft Water Grid Risk Management Plan (**WGRMP**). Essentially, the WGRMP provides a framework for identifying, analysing, evaluating the likelihood of and mitigating certain key risks (defined in Section 4.34(b)) relating to the operation of the Water Grid. The Water Grid Manager must consider any comments on the draft WGRMP by Grid Participants, before it prepares a final WGRMP for approval by the Rules Administrator.
38. Section 4.37 of the Market Rules requires each Grid Participant (including Queensland Urban Utilities) to comply with the WGRMP once it has been approved by the Rules Administrator.
39. Queensland Urban Utilities understands that a final WGRMP has not yet been submitted to the Rules Administrator.
40. Section 4.36 of the Market Rules requires each Grid Participant (including Queensland Urban Utilities) to implement a Grid Participant Risk Management Strategy (**RMS**) that addresses risks identified in, and is consistent with, the WGRMP.
41. Because a final WGRMP has not yet been submitted to the Rules Administrator, Queensland Urban Utilities has not yet prepared and implemented a RMS that has been approved by the Water Grid Manager in accordance with Section 4.36. However, to the extent possible, it has commenced preparation of a RMS in anticipation of the issue of an approved WGRMP.

### **Water Grid OCA Information Protocol**

42. Queensland Urban Utilities is a party to the OCA Information Protocol, a software platform for the exchange and communication of information between the Water Grid Manager,



Grid Participants and other parties for managing and responding to emergencies affecting the Water Grid under the WGERP.

### **Business Continuity Management Program**

43. Queensland Urban Utilities has a developed BCM Program.
44. The BCM Program includes a series of plans that assist Queensland Urban Utilities in the recovery of assets or services following a disruption.
45. The plans, which accord with ISO AS/NZ 5050 Business Continuity – Managing disruption – related risk, were developed through a series of business impact analyses to identify critical business functions and recovery time objectives following an emergency or disaster event. They include the following plans:
  - o Potable Water Continuity Plan- Brisbane;
  - o Sewage Transportation and Treatment Continuity Plan- Brisbane; and
  - o Storm and Flood/ Inundation Response and Recovery Plan.

### **Review of ERP and Training**

46. Queensland Urban Utilities' ERP is reviewed every six months and tested annually through a dedicated whole of Water Grid exercise. Queensland Urban Utilities also takes part in any emergency management planning activities with the Water Grid Manager.
47. Queensland Urban Utilities provides annual refresher training to staff that have a role within Queensland Urban Utilities' Emergency Response Teams. The training covers any changes to Queensland Urban Utilities' ERP and related documents, provides role specific training (including competency assessments) and involves training exercises.

### **Emergency response teams**

48. Queensland Urban Utilities' EMF is based on the AIIMS model for its core emergency response teams.
49. Queensland Urban Utilities' EMF encompasses three levels of emergency response teams, depending on the level of escalation required. These teams are:
  - o Site Management Team/s (**SMT**);
  - o Incident Management Team/s (**IMT**); and
  - o Emergency Management Team (**EMT**)
50. To support those teams and the business, Queensland Urban Utilities also has a series of dedicated Duty Officers/Managers to act as first

respondents and points of escalation and team activation as required.

51. All staff and teams within Queensland Urban Utilities' EMF are on a dedicated 24/7 duty roster across both the Eastern and Western Service Areas. All staff and teams carry out annual competency-based refresher training which is supported and reinforced through dedicated training exercises.
52. The SMT provides the first response at the incident site when an incident has occurred, or it is evident that it is about to occur. SMTs report to the Site Manager or relevant Duty Manager. If an incident escalates to a Level 2 or above emergency the SMT will report to the IMT. The SMT's role is to respond to and rectify the incident where possible, maintaining the safety of site, staff and public.
53. Queensland Urban Utilities has two rostered IMTs, covering geographical areas designated as East and West. The IMT's role is to provide tactical and logistic assistance, planning, communications and additional resources to the SMTs for incidents at Level 2 or above, where off-site coordination is required. IMTs are led by the Incident Manager
54. The EMT is activated when an incident escalates to a Level 3 or greater and therefore the management and strategic response requires an executive management direction. The EMT is led by the Emergency Manager who reports directly to the Chief Operations Officer and the Queensland Urban Utilities Executive Management Team.

### **Queensland State Disaster Management Framework**

55. The Queensland State Disaster Management Framework provides for the formation of disaster management groups at local, district and State levels. Each disaster management group manages emergency response requirements at its respective level, for a particular geographical area, with disaster management groups at higher levels within the framework having successively greater responsibility and ability to draw on greater resources.
56. Local Disaster Management Groups (**LDMGs**) are managed by local government, and are the initial contact point on the ground for identifying and managing emergency-related issues as they arise and necessary resource requirements within their local government area.
57. District Disaster Management Groups (**DDMGs**) provide additional support to local governments and ensure that disaster management and disaster operations in the district are consistent with the State's disaster management framework.

58. Queensland Urban Utilities' EMF takes account of the above framework through direct engagement and interaction with LDMGs and DDMGs to ensure issues affecting Queensland Urban Utilities' ability to provide water and wastewater services to its customers are managed in a timely way.
59. By way of recent example, prior to the flood event Queensland Urban Utilities staff were involved with the functional emergency management exercise "Orko" involving the Southern Downs (Toowoomba) District Disaster Management Group and the Lockyer Valley Local Disaster Management Group. This exercise was based on a large flood scenario.

### **Early Warning Systems**

60. Queensland Urban Utilities relies on publically available weather and flood information.
61. The principal source of weather data and warnings is the Bureau of Meteorology (**BOM**) website, although other national and international weather tracking websites may also be utilised.
62. Queensland Urban Utilities also utilises Brisbane City Council's Floodwise website for rainfall information, stream levels and road closures. This website has detailed data for the Brisbane local government area but has limited data for the Lockyer Valley, Somerset, Scenic Rim and Ipswich local government areas.
63. During the wet season, Queensland Urban Utilities' Business Resilience Group monitors the BOM website and as weather warnings occur, distributes links by email to duty emergency management staff containing both weather updates and internal planning information to assist decision making and escalation processes in response to potential events.
64. With respect to real-time weather and flood data at specific locations within its service area, Queensland Urban Utilities can only access such data through LDMGs. This information is critical for understanding real-time impacts of weather on assets and customers.

### **Other initiatives**

65. Prior to the flood event, Queensland Urban Utilities established an emergency planning team to address turbidity issues in the Brisbane River that potentially affected Seqwater's Mt Crosby Water Treatment Plant and more broadly, the distribution of drinking water from that plant through the Water Grid.

66. Ultimately, the emergency planning team became the initial Queensland Urban Utilities Emergency Management Team as part of Queensland Urban Utilities' emergency response following the flooding through Toowoomba and the Lockyer Valley.

### **Event overview of what happened to services and systems due to 2010/2011 flood events**

#### **Event overview**

67. The flood event caused widespread damage to sewerage infrastructure and some damage to water supply facilities as detailed below. A third of all sewerage pumping stations and treatment plants were affected.
68. More than 120 pumping stations were damaged or destroyed when inundated including:
- o Brisbane – 76;
  - o Ipswich – 35; and
  - o Lockyer Valley and Somerset – 11.

### **Management Response to Issues**

69. Queensland Urban Utilities' responded to the flood event in accordance with its ERP and Water Grid Manager instructions.
70. Materially, so far as the flood event was concerned, Queensland Urban Utilities:
- o Established direct contact with the LDMGs and DDMGs in the Brisbane, Ipswich, Lockyer Valley, Somerset and Scenic Rim Council local government areas (that is, within the local government area of Queensland Urban Utilities' Participating Councils) prior to the flood event; and
  - o Provided a liaison officer to each LDMG as required.
71. Queensland Urban Utilities' Business Resilience Group and emergency planning team also liaised with LDMGs across Queensland Urban Utilities' service area, to ensure they had all the relevant contact information for Queensland Urban Utilities' emergency response staff.
72. Queensland Urban Utilities provided information to its customers concerning:
- o where water supplies remained unaffected;
  - o areas where customers should boil water as a precaution;
  - o where to obtain bottled water in areas where water supply was affected;

- o the need to avoid entering flood waters due to the risk of contamination;
- o what to do when returning to flood affected property to ensure health and safety and the safe return of water supply; and
- o the cause of odours from sewerage networks and steps to be taken to eliminate such odours.

**Deployment of personnel and equipment and an assessment of the adequacy of these operations**

73. The issue relating to deployment of personnel is addressed above together with the management response.
74. The question of assessment of the adequacy of response is addressed below when dealing with the question of the post-event assessment.

**The timeframe (where applicable) for the restoration of disrupted water and wastewater services**

Water supply:

75. On 11 January 2011, Queensland Urban Utilities lost water supply to various townships within the Lockyer Valley local government area. Supply was returned to these townships on or about 15 -16 of January, 2011.
76. In the Brisbane local government area, water supply was lost to a few suburbs (including Bellbowrie, Pinjarra Hills and Mt Ommaney) on or about the 11 January, 2011 and was progressively recovered by approximately 20-21 January, 2011. During this time, Queensland Urban Utilities provided alternative water supplies, including bottled water.
77. In the Somerset local government area, Queensland Urban Utilities lost water supply to townships including Linville, Jimna, Kilcoy and Esk. With the exception of Esk, the loss of water to the aforementioned townships was the result of Seqwater supply issues.

Wastewater supply:

78. Wastewater services were disrupted in the Lockyer Valley and Somerset local government areas on 10 January, 2011; in the Ipswich local government area on or about 11-12 January, 2011 and in the Brisbane local government area on or about 13-14 January, 2011.
79. Services were restored to all areas by 25 January, 2011, however some services are under alternative arrangements (ie. diesel pumps).

80. It is anticipated at this stage that all water and wastewater services will be restored to pre-flooding operational levels by April/May 2011.

81. All sewerage pumping stations were returned to interim operation within one week of flood waters receding.

82. Within two weeks of flood waters receding, 50% of the affected pumping stations were back to normal operations. A number of sewerage treatment plants sustained major damage. Of 28 plants, nine were impacted, with severe damage to the following sewerage treatment plants:

- o Brisbane – Fairfield and Oxley Creek.
- o Ipswich – Bundamba, Karana Downs and Goodna.
- o Somerset – Fernvale.

83. Most assets are now operational.

84. The status of the restoration of assets is under ongoing review. As at 3 March 2011, the position was as follows:

#### Assets Recovery

The following table shows:

- o the total number of assets that were damaged either at the initiation of the Recovery Program or that Queensland Urban Utilities has found to be damaged; and
- o the recovery progress to date of those assets.

Asset type	Total assets in network	Total assets with operational issues (Inc Power Loss)	Changes (add) 03/03/11	Recovered* (minus) Note (1) 03/03/11	Total outstanding 03/03/11	Operating on Contingency* Note (2) 03/03/11	Closing 03/03/11
Sewerage Pump Stations	333	122 (37%)	0	42 (12%)	80 (25%)	80 (25%)	0
Water Pump Stations	51	2 (3.92%)	0	0	2 (3.92%)	2 (3.92%)	0
Treatment Plants	28	11	0	2	9	0	9

		(39%)		(7%)	(32%)		(32%)
<b>Network (Civil)</b>	-	77	0	23	54	54	0
<b>Depot</b>	7	1	-	0	1	1	0

**\*Note:**

(1) Recovered defined as pre-flood condition

(2) Contingency operation includes tankering, manual operations, bypass.

### Catchments

Plant	Catchment	Treatment
<b>Oxley</b>	All pumping stations operational	Establishing stable performance. All flow passing through secondary treatment. Manual disinfection working.
<b>Fairfield</b>	All pumping stations operational	Establishing stable performance. Tertiary treatment (disinfection) working. Lab results show progression to compliance.
<b>Karana Downs</b>	All pumping stations operational	Secondary treatment established. Manual disinfection working Effluent Lagoon Improving. Lab results show progression to compliance.
<b>Goodna</b>	All pumping stations operational	Secondary treatment established. Manual disinfection. Lab results show progression to compliance.
<b>Bundamba</b>	All pumping stations operational	Manual disinfection. Lab results show progression to compliance.
<b>Lowood</b>	All pumping stations operational	Secondary treatment. Manual disinfection. Lab results show progression to compliance.
<b>Fernvale</b>	All pumping stations operational	Secondary treatment established. Manual disinfection. Lab results show progression to compliance.

### Water Reclamation Plants (WRP's)

Process Area	Oxley Creek	Fairfield	Karana Downs	Bundamba	Goodna	Rosewood	Esk	Lowood	Fernvale
<b>Power</b>									
<b>Primary Process</b>									
<b>Biological Treatment</b>									

Clarification									
Dewatering			n/a						
Disinfection									
Manual Licence Compliance									
Cambi		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Services								n/a	
Recycled Water									n/a
Automation (Scada & Control)									



Recovery activities continue. Biosolid removal has returned to pre-flood conditions.

All plants now treating 100% dry weather flow with disinfection.

Oxley Creek

- Generator on-site for emergency.
- Chlorine Dosing Plant in manual.
- Secondary treatment established.
- Dewatering – Manual Operation. Limited capacity available, repairs ongoing.
- Inlet works pump limited.

Fairfield

- In full manual operation with disinfection.
- System continues to establish with results showing compliance.
- Lab results show progression to compliance.

Karana Downs

- In full manual operation with disinfection.
- System continues to establish with results showing compliance.

Bundamba

- Secondary treatment established.
- Manual disinfection established.
- Portable centrifuge on site for biosolid issue.

Goodna

- All bioreactors online, stable operation being established.
- Dewatering recovering, sub boards currently being commissioned.



- Manual disinfection working.
- Lab results show progression to compliance.

#### Rosewood

- Manual disinfection in place.
- Damage to disinfection and service water currently under repair.

#### Esk

- Plant operational, manual disinfection in place.
- Lab results show progression to compliance.

#### Lowood

- Plant in manual operation, manual disinfection in place.
- Humus tank repaired; disinfection improvement achieved.
- Lab results show progression to compliance.

#### Fernvale

- Plant now receiving normal inflow – tankering ceased.
- Seeded, Biological Treatment being established.
- Manual disinfection in place.
- Lab results show progression to compliance.

### Sewerage Pump Stations

- All sewer pump stations temporarily recovered with contingent average dry weather flow capacity.

	Sites Requiring Recovery (Total)	No Redundancy + No Telemetry	No Telemetry + Redundancy	Telemetry + No Redundancy	Redundancy + Telemetry	Operational / Recovered*
Brisbane	48	1	14	3	30	33
Ipswich	28	0	3	7	18	8
Somerset	4	0	4	0	0	1
Total	80	1	21	10	48	42

**Note** – Estimated delivery time – three months.

#### **No Redundancy + No Telemetry**

- Brisbane – SP263 - Brumby Cct rising main damaged by landslip, currently tankering 24/7. CCTV of Rising Main to determine extent of damage.

#### **Redundancy + Telemetry**

- Six (6) SDE SPS' gained redundancy during week ending 3/3/11

### Network/Civil Repairs

- Network inspection still under way, with repairs and clean up occurring as identified through normal operating channels.

	WATER SUPPLY ISSUES			WASTE WATER ISSUES		Total
	Under Repair	Under Investigation	Road Access (Reservoirs)	Under Repair	Under Investigation	
Brisbane	0	20	0	0	10	30
Ipswich	0	4	3	0	2	9
Lockyer	0	8	2	0	1	11
Somerset	0	2	0	0	1	3
Scenic Rim	0	0	0	0	1	1
<b>Total</b>	<b>0</b>	<b>34</b>	<b>5</b>	<b>0</b>	<b>15</b>	<b>54</b>

**A post-event assessment of how QUU's emergency measures, response and restoration processes worked**

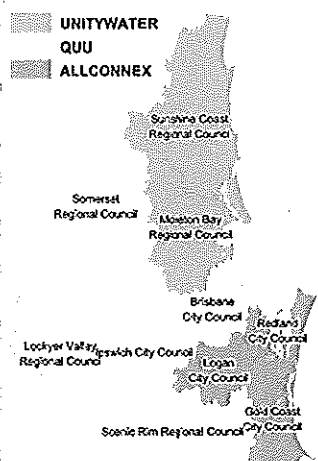
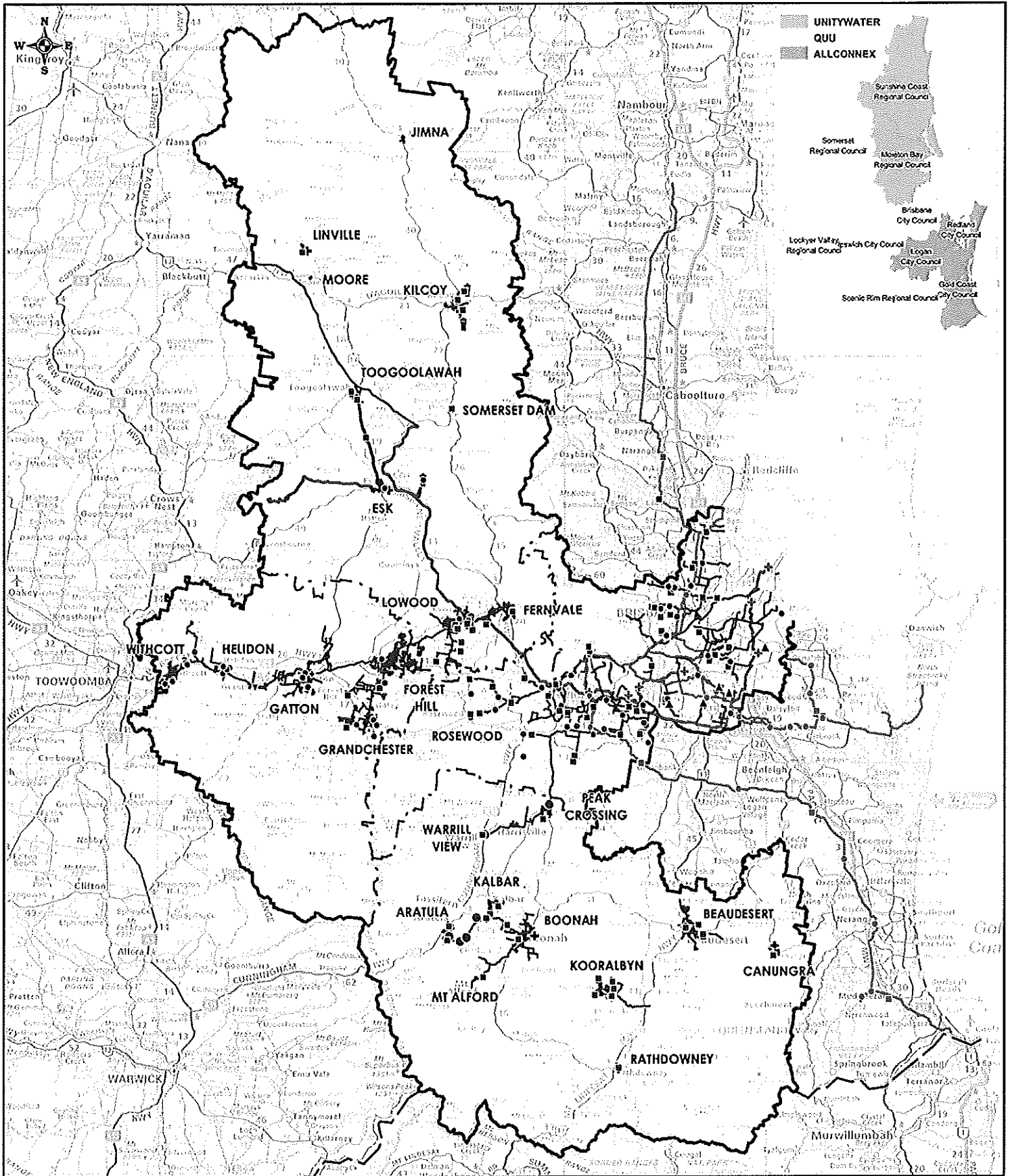
85. Queensland Urban Utilities has commissioned Montgomery Watson Harza to undertake a risk management assessment of the Lockyer Valley Water Supply Scheme. Preliminary results of this assessment include the proposal of identified short, medium and long term actions. An example of a short term action is the implementation of further valving which enables Queensland Urban Utilities to change the direction of the water flow and isolate zones if required to better respond to incidents affecting sections of the pipelines.
86. Another action proposed is the placement of pipes at water/creek crossing under the creek bed where applicable (and where not already the case) as opposed to attached to bridges. Within budgetary constraints this cost has been include in the 2011-2012 capital program financial budget.
87. An assessment is currently being undertaken of the business resilience of Queensland Urban Utilities' wastewater treatment plants. One consideration is the building of a dyke around the Oxley Creek Wastewater Treatment Plant.
88. Queensland Urban Utilities has also commissioned BCC City Design to undertake a reassessment of flood levels for the purpose of ascertaining the new level at which assets should be constructed. Queensland Urban Utilities has deferred for a three month period the construction of Goodna, Fernvale and Lockyer Valley Treatment Plant upgrades in order for this assessment to occur so that any applicable flood mitigation actions can be inserted into the construction process.

89. At this stage, however, the following preliminary comments can be made:

- Queensland Urban Utilities' ERP and EMF were effectively utilised during the flood event and all employees rallied to deliver on Queensland Urban Utilities' objectives to maintain supply and continuity of water and wastewater services;
- The development and implementation of Queensland Urban Utilities' Business Resilience Framework enabled the business to be proactive, take preventative measures and respond efficiently in the lead up to, during and in the aftermath of the flood event. Specifically, this was done through the:
  - Coordination of planning and relationship building across agencies and sectors
  - development and implementation of responsive, flexible and timely emergency response measures
  - the development of an organisational culture that has the ability to provide a minimum level of normal operational services during disruptions, emergencies and disasters while utilising maximum resources to ensure a rapid return to full operations.
- Queensland Urban Utilities showed attributes of resilience in its response and transition to recovery by:
  - facing challenges with enthusiasm and identifying opportunities throughout the event for change and growth through agility and innovation
  - Establishing communication networks and relationships of mutual aid
  - Promoting open internal communications across the various business areas with Queensland Urban Utilities.
- Mutual aid assistance within the Australian water industry was and remains extremely important in enabling Queensland Urban Utilities to recover quickly from the flood event.

**Any changes that have been implemented as a result of the 2010/2011 flood events relating to Queensland Urban Utilities' provision of water and waste water services and any recommendations Queensland Urban Utilities has for the future**

90. Queensland Urban Utilities' focus has been upon restoring the water and wastewater systems. Any changes to be implemented will follow the post-event analysis referred to above. Further details of these matters will be provided as that process is completed.



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QUEENSLAND UTILITIES  
 GPO BOX 2745  
 BRISBANE QLD 4001

GOLD COAST UTILITIES  
 GPO BOX 2745  
 BRISBANE QLD 4001

For more information contact:  
 Queensland Utilities  
 13 23 23

0 15 30  
 Kilometers

ORIGINAL PRODUCTION SCALE 1:650,000 1 CM EQUALS 6,500 METERS

LEGEND	
	Water Main - QUU
	Water Main - LinkWater
	Raw Water Main
	Western Corridor Recycled Water
	Water Purification Plant - SEQ Water
	Raw Water Intake - SEQ Water
	QUU Boundary
	Reservoir - QUU
	Pump Station - QUU
	Reservoir - LinkWater
	Pump Station - LinkWater
	Reservoir - SEQ Water
	Pump Station - SEQ Water
	Aquifer Plant - SEQ Water

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REV	DATE	DESCRIPTION	APP

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 HORIZONTAL DATUM: GEOCENTRIC DATUM OF AUSTR 1994

**PROJECT**  
**QUEENSLAND URBAN UTILITIES LOCALITY PLAN**

**TITLE**  
**FIGURE A1- QUU WATER SUPPLY NETWORK**

QUEENSLAND URBAN UTILITIES

