

**Statement of**  
**Mr Robin Lewis**

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**Blake Dawson**

Level 38, Riverside Centre  
123 Eagle Street  
Brisbane QLD 4000  
Australia  
T 61 7 3259 7000  
F 61 7 3259 7111

Reference  
JKC EMGR 07 2029 6139  
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**QFCI**

Date: 25/10/11 Jm

Exhibit Number: 865

I, **ROBIN LEWIS**, Chief Operating Officer of Queensland Urban Utilities, state:

1. In this statement, I endeavour to address the matters outlined in the submissions made to the Queensland Floods Commission of Inquiry by Queensland Urban Utilities (**QUU**), dated 11 March 2011 and 4 April 2011.
2. The matters contained in this statement are within my personal knowledge, except where indicated otherwise.

#### **Background Information**

3. 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.
4. 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.
5. As part of the reforms, 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.
6. Pursuant to the Distributor-Retailer Act, QUU's Participating Councils have the right to participate in the profits of QUU. 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:

• Brisbane City Council	85.050%
• Ipswich City Council	12.213%
• Lockyer Valley Regional Council	0.854%
• Scenic Rim Regional Council	1.052%
• Somerset Regional Council	0.831%
7. 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.

8. QUU commenced operations as a separate legal entity on 1 July 2010. At this date:
- The water and wastewater assets, liabilities and employees of the Participating Councils were transferred to QUU;
  - QUU became a service provider under the *Water Supply (Safety and Reliability) Act 2008 (Water Supply Act)*.
9. Due to the only recent establishment of QUU, a number of QUU's 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.

#### **Regulatory framework**

10. QUU supplies its water services within the SEQ Water Grid (**Water Grid**).
11. 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.
12. 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.
13. 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)*.
14. 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.
15. 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 QUU, 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.
16. Grid Contract Documents govern the specific commercial transactions between Grid Participants and the Water Grid Manager.
17. 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. I understand that QUU's operating protocol (and those of the other Grid

Participants) is currently in draft form and it is anticipated that final protocols will be approved by December 2012.

#### **An overview of the water and wastewater services provided by QUU**

18. Each of the Distributor-Retailers is a registered service provider of water and wastewater services under the Water Supply Act.
19. Pursuant to the Distributor-Retailer Act, QUU 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 QUU may operate. QUU's actual service area is a subset of this greater geographical area and is based on customer connections existing on 1 July 2010.
20. Within its service area, QUU:
  - 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.

I acknowledge that these figures are subject to change.

21. Water services provided by QUU comprise the distribution and retail of:
  - Potable water; and
  - Recycled water.
22. Wastewater services provided by QUU comprise the collection and treatment of sewerage and trade waste.

#### **An overview of QUU water and waste water networks**

23. QUU provides water and wastewater services through its extensive distribution networks within its geographic area.
24. QUU's water and wastewater networks consist primarily of the following:
  - wastewater treatment plants;
  - trunk and reticulation water mains;
  - water and sewerage pumping stations;

- water reservoirs;
- trunk sewers and collection sewers;
- water reclamation plants;
- service connections; and
- recycled water infrastructure.

25. QUU's networks include the following assets:

- 8744 km of water reticulation;
- 8923 km of sewerage reticulation;
- Sewerage pump stations – 333;
- Water pump and booster stations – 157;
- Water Reclamation plants – 28;
- Depots – 7.

#### **Emergency Response Regulatory Framework relating to Water Supply**

26. As mentioned above, the Water Grid is largely governed by the Market Rules.

27. Section 4.24 of the Market Rules requires the Water Grid Manager to prepare, implement and maintain a Water Grid Emergency Response Plan (**Grid Emergency Plan**). Essentially, the Grid Emergency Plan is an overarching plan that provides all Grid Participants with guidance in responding to emergencies affecting the Water Grid including:

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

28. In incidents of Level 3 and above 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). In Level 3 and above incidents the Water Grid Manager has primary responsibility for communication.

29. Section 4.27 of the Market Rules requires each Grid Participant (including QUU) to have an Emergency Response Plan (**Emergency Plan**) that aligns with the Grid Emergency Plan to ensure consistent approaches and a hierarchy of controls for emergency

management across the Water Grid. The Emergency Plan is reviewed and updated annually to ensure continued alignment with the Grid Emergency Plan.

30. Section 4.29 of the Market Rules provides that QUU's Emergency Plan must specify:

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

31. QUU's Emergency Plan aligns to the Grid Emergency Plan 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:

- External Plans:
  - Australian Government Critical Infrastructure Resilience Strategy;
  - Queensland State Disaster Management Plan;
  - SEQ Water Grid Emergency Response Plan.
- Internal Plans:
  - QUU Business Continuity Plan (BCP) – Sewage Transportation and Treatment (Eastern Service Area);
  - QUU BCP – Loss of Supply or Transportation of Potable Water;
  - QUU Influenza Pandemic Contingency Plan;
  - QUU BCP – Loss of Facility (Doc Id 00573) currently under review;
  - QUU Flood Response Plan; and
  - QUU Site Specific Emergency Procedures and business continuity plans.

32. QUU submitted its Emergency Plan for review to the Water Grid Manager on 25 October 2010 in compliance with the Section 4.30 of Market Rules.
33. The Water Grid Manager notified QUU in writing of the approval of QUU's Emergency Plan on 17 November 2010.
34. Section 4.34 of the Market Rules requires the Water Grid Manager to prepare a draft Water Grid Risk Management Plan (**Grid Risk Plan**). Essentially, the Grid Risk Plan 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 Grid Risk Plan by Grid Participants, before it prepares a final Grid Risk Plan for approval by the Rules Administrator.
35. I understand that section 4.37 of the Market Rules requires each Grid Participant (including QUU) to comply with the Grid Risk Plan once it has been approved by the Rules Administrator.
36. The Grid Risk Plan was submitted to the Rules Administrator on 14 May 2010. The Rules Administrator submitted a change request on 21 January 2011. The Water Grid Manager is currently negotiating these changes prior to resubmission.
37. Section 4.36 of the Market Rules requires each Grid Participant (including QUU) to implement a Grid Participant Risk Management Strategy (**Risk Strategy**) that addresses risks identified in, and is consistent with, the Grid Risk Plan.
38. Because a final Grid Risk Plan has not yet been submitted to the Rules Administrator, QUU has not yet prepared and implemented a Risk Strategy 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 Risk Strategy in anticipation of the issue of an approved Grid Risk Plan.

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

39. QUU is a party to the OCA Information Protocol (**OCA**), 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 Grid Emergency Plan.

#### **Business Continuity Management Program**

40. QUU has a developed Business Continuity Management Program (**Business Continuity Program**).
41. The Business Continuity Program includes a series of business continuity plans that assist QUU in the recovery of assets or services following a disruption.

42. 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:

- Potable Water Continuity Plan- Brisbane;
- Sewage Transportation and Treatment Continuity Plan- Brisbane; and
- Storm and Flood/ Inundation Response and Recovery Plan.

#### **Review of Emergency Plan and Training**

43. QUU's Emergency Plan is reviewed every six months and tested annually through a dedicated whole of Water Grid exercise. QUU also takes part in any emergency management planning activities with the Water Grid Manager.

44. QUU provides annual refresher training to staff that have a role within QUU's Emergency Response Teams. The training covers any changes to QUU's Emergency Plan and related documents, provides role specific training (including competency assessments) and involves training exercises.

45. The Emergency Management training program was conducted in June 2010 to refresh the knowledge and capabilities of current emergency response staff and to incorporate new staff team members into the QUU emergency management program. The training covered QUU's Emergency Response Framework for all current emergency response roles, including role responsibilities and checklists and the two new roles of Media Duty Manager & Retail Duty Manager and defining of other roles. The program reached over 130 staff in a two week period and the training was well received by all participants.

#### **Emergency Response Teams**

46. QUU's Emergency Management Framework is based on the AIMS model for its core emergency response teams.

47. QUU's Emergency Management Framework encompasses three levels of emergency response teams, depending on the level of escalation required. These teams are:

- Site Management Team/s (Site Team);
- Incident Management Team/s (Incident Team); and
- Emergency Management Team (Emergency Team)

48. To support those teams and the business, QUU also has a series of dedicated duty officers/emergency managers to act as first respondents and points of escalation and team activation as required.



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

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

53. 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.
54. Local Disaster Management Groups (**Local DMGs**) 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.
55. District Disaster Management Groups (**District DMGs**) are intended to 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.
56. QUU's Emergency Management Framework takes account of the above framework through direct engagement and interaction with Local DMGs and District DMGs to ensure issues affecting QUU's ability to provide water and wastewater services to its customers are managed in a timely way.

57. By way of recent example, prior to the flood event QUU 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 hypothetical extreme wet weather event affecting disaster districts and local governments of the South West Region. The exercise was conducted between 2 and 4 November 2011 and was coordinated by Emergency Management Queensland. QUU participated as a "visitor" on Days 2 and 3 of the exercise (on 3 and 4 November 2011).
58. Participation by QUU enhanced networking of communication channels and contact details with the Lockyer Valley/LDCC. Participation in the recovery component in Toowoomba also enhanced relationships and contacts regarding the Toowoomba District DMG and other participating agencies. It is my view that participation in the exercise enabled timely contact with the Local DMGs during the flood event.

#### **Early Warning Systems**

59. QUU relies on publically available weather and flood information.
60. 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.
61. QUU 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.
62. During the wet season, QUU's 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.
63. With respect to real-time weather and flood data at specific locations within its service area, QUU can only access such data through Local DMGs. This information is critical for understanding real-time impacts of weather on assets and customers.
64. QUU was receiving information through the Local DMGs at 9am briefings, rather than through a direct link to BOM or its river modelling. At times, QUU was also using information sources from public news broadcasts to assist in identifying assets that were or may have been affected by the flood event.
65. The major issue that QUU faced was that it was dealing with three separate lots of information – information from Brisbane provided by the Brisbane Local DMG, limited information from Gatton provided by the Lockyer Valley DMG and then information from

the Water Grid Manager. QUU then had to coordinate all of the Information. A clear picture probably existed at the State level, but QUU had no direct access to this information.

66. QUU had difficulties with getting consistent, clear information for the whole of its service area. The level of information QUU received with respect to the Brisbane area was not reflected across the whole of QUU's service area.

#### **Other initiatives**

67. Prior to the flood event, QUU 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 Brisbane and Ipswich local government areas.
68. Ultimately, the emergency planning team became the initial QUU Emergency Management Team as part of QUU's emergency response following the flooding through Toowoomba and the Lockyer Valley.

#### **Flood event overview**

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

#### **Water Reclamation Plants**

72. Ipswich and Brisbane water reclamation plants adjacent to upper river reaches were severely impacted by flood waters:
- Inundation caused physical and electrical damage;
  - Treatment processes were disrupted. Micro-organisms that played a key role in the breakdown of incoming sewage were lost and new batches needed to be grown.

### *Wastewater Pump Stations*

73. Wastewater transfer pump stations are located in the lowest parts of the local catchments. These generally have a degree of flood-proofing built into the designs, such as water-proof mechanical equipment and the placement of electrical switchboards above design flood levels. However:

- Sustained power outages caused quite a number to cease functioning;
- Flooding caused widespread electrical damage to, and contamination of, nearby pump stations.

74. After flood levels receded, some pump stations remained offline for a period of up to one week. Prior to being put back in service, wastewater from the local collection catchment was diverted to local water courses via in-built network overflow structures that prevent spillage onto land.

### *Wastewater Network*

75. Network infrastructure and mains were damaged:

- Washouts, which generally occurred in the Lockyer Valley;
- Land slippage from sodden ground, which displaced and fractured in-ground sewers;
- One of the Brisbane river sewer siphon crossings was heavily damaged, causing salt water to enter the sewer network and impacting treatment capability;
- Some low-lying network corrosion protection electrical equipment sustained damage.

76. Generally these were addressed by implementing temporary diversions.

### *Water Reservoirs*

77. Water reservoirs make up the primary local water sources for customers. These were impacted as follows:

- Flood damage to the Seqwater treatment plant at Lowood cut off the supply of treated water to all storage reservoirs in the Lockyer Valley. Reservoir storage levels gradually diminished to critical levels due to customer consumption and some water main breaches. However, only two reservoirs ran out of water, due to water conservation public notices, tankering of water to key reservoirs, isolation and/or repair of broken mains and a high priority given to effecting temporary repairs to the Lowood water treatment plant;

- Electricity outages prevented some key pump stations from lifting water to reservoirs they supplied. Alternate arrangements were put in place;
- Sustained electricity outages, primarily in the Lockyer Valley, disabled equipment that monitored reservoir levels. Consequently, reservoir storage levels needed to be visually ascertained on-site, however this was difficult due to disruption of the road networks;
- The turbid water in the Brisbane River prevented the main SE Qld regional treatment plants at Mt Crosby, operated by Seqwater, from delivering a high quality water supply. For a period of time these treatment plants were shut down and Brisbane and Ipswich's water supply was met by a combination of other water sources and drawing from water already stored in the network water reservoirs.

#### *Water Pumping Stations*

78. Aside from the aforementioned Lockyer Valley pump stations, overall the fleet of water pumping stations were generally unaffected. Sustained power outages in the western suburbs of Brisbane impacted on some high level zones that contained elevated properties. These locations rely on pressure pumps to boost pressures to suitable levels. However, for the most part these customers continued to receive water supply, albeit at lower pressures. Some properties also operate their own private pressure pumps that similarly would have been affected by power outages.

#### *Water Supply Network*

79. River crossings and low-lying trunk mains sustained damage:
- Some key Lockyer Valley transfer mains were washed out, preventing replenishment of reservoirs in the Lockyer Valley and Somerset area. As the breaches may have allowed possible ingress of contaminants into the mains, boil water notices were issued as a precaution for some areas of the Lockyer Valley and Somerset.
  - Two large trunk mains that crossed the Brisbane River at Jindalee were damaged from foreign object impacts. Despite being pipes of welded steel construction, subsequent inspections showed that large and heavy objects must have run at both high velocities and at the bottom of the river. The loss of the middle sections of these mains resulted in widespread loss of water pressure until the local area could be rezoned.
80. Please refer to the maps contained in Appendix A, which show the location of damage to QUU's infrastructure and water supply facilities in Brisbane, Ipswich, Lockyer Valley and Somerset local government areas.

### Management response to Issues

81. QUU responded to the flood event in accordance with its Emergency Plan and Water Grid Manager instructions.
82. Materially, so far as the flood event was concerned, QUU:
- Established direct contact with the Local DMGs and District DMGs in the Brisbane, Ipswich, Lockyer Valley, Somerset and Scenic Rim Council local government areas (that is, within the local government area of QUU's Participating Councils) prior to the flood event; and
  - Provided a liaison officer to each Local DMG as required.
83. Sources from which QUU received information regarding disruption to sewerage infrastructure and water supply facilities were:

Source of Information	Timing and Information
Local Disaster Co-ordination Centre (LDCC) BCC	Daily Sitreps and Liaison Officer
LDCC Ipswich	Daily Sitreps and Liaison Officer
LDCC Lockyer Valley	Daily Sitreps and Liaison Officer, teleconference
LDCC Somerset	Daily Sitreps and Liaison Officer
LDCC Scenic Rim	Daily Sitreps
State Disaster Co-ordination Centre (SDCC)	Phone contact, approval for road transport
District Disaster Management Group (DDMG)	Direct phone, water supply, bottled water
Queensland Health	Boiled water alert, water quality status
Water Grid Manager	Daily Teleconferences, Sitreps, OCA
Seqwater	OCA, teleconferences
Linkwater	Water supply requirements, OCA & teleconference
Department of Education and Training	Teleconference, direct phone contact, bottled water to schools
OCA	Water Grid Manager provided information around timings, tasks and status reports (sitreps) and other documents regarding the flood event, on a 24/7 ongoing basis

The above information was received on a continual basis.

84. QUU provided information to its customers concerning:

- where water supplies remained unaffected;
- areas where customers should boil water as a precaution;
- where to obtain bottled water in areas where water supply was affected;
- the need to avoid entering flood waters due to the risk of contamination;
- what to do when returning to flood affected property to ensure health and safety and the safe return of water supply; and
- the cause of odours from sewerage networks and steps to be taken to eliminate such odours.

**Table 1 – Schedule of Media Communications to QUU Customers During Severe Weather Incidents**

Information provided to customers	Method of communication	Timing
Where water supplies remained unaffected	1. <b>Media Release</b> – “Flood waters potentially contaminated but tap water supply is safe to drink”.	12 January 2011
	2. <b>Media Release</b> – “Brisbane tap water remains safe to drink”.	14 January 2011
Areas where customers should boil water as a precaution	1. <b>Boil Water Alert</b> – listed locations affected within the Lowood supply scheme.	13 January
	2. <b>Community Service Announcement - Boil Water Reminder.</b>	14 January
		15 January, 2011
		16 January 2011
		17 January 2011
25 January 2011		
3. <b>Community Service Announcement - Boil Water Alert Lifted.</b>		
Where to obtain bottled water in areas where water supply was affected	1. <b>Community Service Announcement</b> – Information for Lockyer Valley Residents: Bottled water on the way.	13 January 2011
	2. <b>QUU website</b> - Updated list of locations to collect bottled water included in Boil Water Alert distributed to SEQ media and .	13 January 2011
	3. <b>Community Service Announcement</b> – Lockyer Valley and Somerset Water Conservation	14 January 2011
	4. <b>Community Service Announcement</b> – Water Supply and Quality Update,	15 January 2011
	5. <b>Community Service Announcement</b> – Water Supply and Quality Update.	16 January 2011
	6. <b>Community Service Announcement</b> – Water Supply and Quality Update, released via email to SEQ media	17 January 2011

The need to avoid entering flood water due to the risk of contamination	<ol style="list-style-type: none"> <li>1. <b>Community Service Announcement</b> "Information for Residents: Flood Waters potentially contaminated but tap water supply is safe to drink.</li> <li>2. <b>Press and Radio adverts</b> – "Important Flood Recovery Information – Repairs continue to damaged infrastructure - waterways will contain debris, chemical waste and sewage – reminder to stay away from waterways"</li> <li>3. <b>Press</b> (Courier Mail, QLD Times, Ipswich Satellite, Ipswich Advertiser, Gatton, Lockyer and Brisbane Valley Star, Brisbane Valley Sun, Moreton Border News</li> <li>4. <b>Radio</b> (Nova, MMM, 97.3, River 94.9, 4KQ).</li> </ol>	<p>12 January 2011</p> <p>13 January 2011</p> <p>19 January 2011 to 25 February 2011</p> <p>6 February, 2011 to 8 April 2011</p>
What to do when returning to flood affected property.	<ol style="list-style-type: none"> <li>1. <b>Community Service Announcement</b> -"Boil Water Alert Lifted", distributed to SEQ media via email</li> </ol>	25 January, 2011
The cause of odours from sewerage works and steps to be taken to eliminate such odours	<ol style="list-style-type: none"> <li>1. <b>Media release</b> – "Wastewater Flood Recovery Efforts Progressing"</li> <li>2. <b>Media briefing</b> - Oxley Sewage Treatment Plant + media release "Ten weeks to restore full sewage treatment capacity" (Courier Mail, Quest, ABC TV)</li> </ol>	<p>17 February, 2011</p> <p>1 February 2011</p>

Note: All Community Service Announcements and Media releases were posted on the QUU website.

85. Significant work was done to ensure customers were kept advised of the evolving events and impacts.

#### Timeframe for the restoration of disrupted water services

86. In the Ipswich, Lockyer Valley and Somerset local government areas, water supply was lost to areas as per the following table:

**Table 1 - Impacted Water Supplies - QUU Area**

Local Government Area	Local Community	Impact
Ipswich	Marburg	Supply network damaged
Lockyer Valley	Laidley	SEQWater Lowood WTP disabled
	Kensington Grove	SEQWater Lowood WTP disabled
	Regency Downs	SEQWater Lowood WTP disabled
	Hatton Vale	SEQWater Lowood WTP disabled
	Plainlands	SEQWater Lowood WTP disabled



	Gatton	SEQWater Lowood WTP disabled
	Forest Hill	SEQWater Lowood WTP disabled
	Glenore Grove	SEQWater Lowood WTP disabled
	Withcott	SEQWater Lowood WTP disabled Reservoir supply network damaged Local reservoir ran dry
	Murphys Creek	SEQWater Lowood WTP disabled Reservoir supply network damaged
	Lockyer	SEQWater Lowood WTP disabled
	Tabletop	SEQWater Lowood WTP disabled Reservoir supply network damaged
	Postmans Ridge	SEQWater Lowood WTP disabled Reservoir supply network damaged
	Helldon	SEQWater Lowood WTP disabled
	Grantham	SEQWater Lowood WTP disabled
	Lockrose	SEQWater Lowood WTP disabled
	Placid Hills	SEQWater Lowood WTP disabled
Somerset	Minden	SEQWater Lowood WTP disabled
	Fernvale	SEQWater Lowood WTP disabled
	Lowood	SEQWater Lowood WTP disabled
	Brightview	SEQWater Lowood WTP disabled
	Coolana	SEQWater Lowood WTP disabled
	Helenvale Estate	SEQWater Lowood WTP disabled
	Tarampa	SEQWater Lowood WTP disabled
	Vernor	SEQWater Lowood WTP disabled

87. Regarding the Brisbane local government area (Bellbowrie, Moggill and Pullenvale); water supply was not lost. However, there was a loss of water pressure whilst power supply was reinstated. In relation to Jindalee and Pinjarra Hills, the network was rezoned and damaged infrastructure isolated, to enable water pressure to be restored.

**Table 2 – Schedule of Supply restoration Lockyer Valley**

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 January, 2011.

Date	Towns
11/1/11	<ul style="list-style-type: none"> <li>• Lowood has been evacuated</li> </ul>
12/1/11	<ul style="list-style-type: none"> <li>• Jimna &amp; Linville have no water supply.</li> <li>• Minden and Lockyer Valley reservoirs are now empty</li> </ul>
13/1/11	<ul style="list-style-type: none"> <li>• Esk Toogoolawah power supply/water supply- reconnected and tested</li> <li>• Minden, Gatton, Fernvale, Lowood and Helldon -Helicopter delivery of bottled water</li> </ul>
14/1/11	<ul style="list-style-type: none"> <li>• Linville 2 day's supply of water. Bottled water flown in and tankers are on standby as access becomes available</li> <li>• Gatton reservoir has 200kl stored to supply town – tankers on standby</li> <li>• Lowood -- Vehicle and pump onsite. Installation of pump has commenced.</li> <li>• Minden, Gatton, Fernvale &amp; Hatton vale - significant amount of bottled water delivered</li> <li>• Gatton reservoir has 200kl stored to supply town – tankering water into reservoir</li> <li>• Gatton, Cochran reservoir - 60kl tanker supply</li> <li>• Minden and Lockyer Valley reservoirs are now empty and reliant on tankers.</li> </ul>
15/1/11	<ul style="list-style-type: none"> <li>• Kilcoy water supply system is operational</li> <li>• Minden, Fernvale, Gatton &amp; Helldon - 25½ Pallets of water delivered by helicopter &amp; trucks</li> <li>• Somerset - Two water pumping stations offline - Helldon (damaged).</li> <li>• Laidley and Forest Hill have two days supply.</li> <li>• Regency Downs/Kensington Grove reliant on water tankers to provide supply.</li> <li>• Lowood WTP operational and filling clear water tank, supply restored, filling QUU Reservoirs.</li> </ul>
16/1/11	<ul style="list-style-type: none"> <li>• Lowood and Gatton Reservoirs tanker deliveries continuing during the night.</li> <li>• Postman's Ridge Pump Station operational. Repairs to supply main (Withcott) completed.</li> <li>• Minden customers reliant on bottled water.</li> <li>• Glamorgan Vale Water Board Reservoir - A 20,000 litre tanker has been organised to provide an aged care home with water.</li> <li>• Lockyer Valley - All reservoirs at 20-80% and filling</li> </ul>
17/1/11	<ul style="list-style-type: none"> <li>• Lockyer Valley-All reservoirs intact and with water stored.</li> </ul>

### **Timeframe for the restoration of wastewater services**

88. 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.
89. All sewerage pumping stations (numbering in excess of 120) were returned to Interim operation within one week of flood waters receding. Services were restored to all areas by 25 January 2011. However, some services are under alternative arrangements (ie. diesel pumps).

### **Full restoration of water and wastewater services**

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

### **Actions taken to minimise service disruption**

91. The actions taken by QUU Emergency staff to minimise disruption and restore services were:

(a) Activation of Plans

- QUU Emergency Response Plan / QUU Flood Response Plan / Relevant Business Continuity Plan's (BCP) and contingencies.

(b) IMT's & EMT Stood Up from 10 January 2011

- Established coordination cell;
- Situation Reports to internal and external stakeholders;
- Coordination of Media & Communications;
  - Community service announcements;
  - Update on bottled water drops; and
  - Boll water notices.
- Focus on information collation to enable decision making.

(c) Strategies and Objectives

The following strategies and objectives were implemented over the course of the event within the timeframe of 10 January 2011 up to and including 25 January 2011.

- Staff concern:
  - Safety alerts during the event;

- Family/home considerations;
- Disaster leave.

- Tankering:

- Water tankers trucking water to Helidon, Lowood & Gatton;
- 17 tankers operating 24hrs a day;
- Capacity varying from 8000lts to 28000lts;
- Over 150 tanker trips.

- Bottled Watering:

- 120,000lts on 109 pallets;
- Delivered via three helicopters & trucks;
- 50 Emergency/Recovery centres;
- 52 Schools.

- Water and Wastewater Assets Recovery:

- Aerial survey of isolated assets and checking reservoir water levels;
- Numerous generators/ diesel pumps;
- Public Notification;
- WSAAWSSG Mutual Aid Guidelines - Alconnex, Unilywater Staff;
- QUU and Sydney Water provision of large pumps to Lowood WTP to enable re-commissioning;
- Mechanical and Electrical Contractors engaged early for recovery effort;
- QUU assisted WaterSecure in the establishment of tanker loading points off the Western Corridor Recycled Water Scheme, for flood cleanup activities;
- Over 350 permanent and contract staff were deployed through the event to recover the assets.

- The transition from Emergency Management to Recovery Team occurred over a period of 10 days. The Recovery Team was established on 13 January 2011 and the Emergency Management Team deescalated on the 25 January 2011.

92. QUU noted an excellent response from industry and the private sector in assisting with the recovery effort, all of which mobilised in a timely, efficient and safe manner.

93. 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:

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

94. Most assets are now operational. Please see the table below in this regard.

Asset type	Total assets in network	Total assets with operational issues (Inc Power Loss)	Changes (add) 28/04/11	Recovered* (minus) Note (1) 28/04/11	Total outstanding 28/04/11	Operating on Contingency Note (2) 28/04/11	Closing 28/04/11
Sewerage Pump Stations	333	122 (37%)	0	99 (30%)	23 (7%)	0	0
Water Pump Stations	51	2 (3.92%)	0	1	1	0	0
Treatment Plants	28	11 (39%)	0	7 (7%)	4 (32%)	0	0
Network (Civil)	-	76	0	24	52	52	0
Depot	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
Oxley	All pumping stations operational for dry weather flows	Draft Transitional Environmental Program (TEP) completed, awaiting Internal approval prior to sending to DERM.  Flow paced disinfection with hypochlorite operational.  Laboratory results show compliance.  Odour treatment system is scheduled to be repaired (Commissioning est. end August 2011).
Fairfield	All pumping stations operational for dry weather flows	TEP submitted to DERM to end program notice. Laboratory results show compliance.  Recycled water system re-commissioned.
Karana Downs	All pumping stations operational for dry weather flows	TEP submitted to DERM to end program notice. Laboratory results show compliance.
Goodna	All pumping stations operational for wet weather flows	TEP submitted to DERM to end program notice. Laboratory results show compliance with one non-compliant sample recorded.
Bundamba	All pumping stations operational for dry weather flows	Draft TEP completed, awaiting Internal approval prior to sending to DERM.  Laboratory results show compliance with one non-compliant sample recorded.
Rosewood	All pumping stations operational for wet weather flows	TEP submitted to DERM to end program notice. Laboratory results show compliance.  Plant operating similar to pre-flood conditions.
Lowood	All pumping stations operational for wet weather flows	Draft TEP completed, awaiting Internal approval prior to sending to DERM.  Continue to establish stable performance, with manual disinfection working. Flow pacing to be installed.  Lab results showing closer to compliance as biological system stabilises.
Fernvale	All pumping stations operational for wet weather flows	Draft TEP completed, awaiting Internal approval prior to sending to DERM.  Continue to establish stable performance, with manual disinfection working. Flow pacing to be installed. Laboratory results showing progression to compliance. Intermittent non-compliance from limitations of manual disinfection system and manual wasting system occurring.

<b>Esk</b>	All pumping stations operational for wet weather flows	TEP submitted to DERM to end program notice. Laboratory results show compliance.
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**Water Reclamation Plants (WRP's)**

Process Area	Oxley Creek	Fairfield	Karana Downs	Bundamba	Goodna	Rosewood	Esk	Lowwood	Fernvale
Power									
Primary Process									
Biological Treatment									
Clarification									
Dewatering	Manual Operation		Manual Operation						Manual Operation
Disinfection									
Manual Licence Compliance									
Camb		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Services								n/a	
Recycled Water <sup>#1</sup>								n/a	n/a
Automation (Scada &		No Remote Access	Basic Monitoring	Basic Monitoring	Basic Monitoring				

Control )								
		No / Minimal Operation		Partial Operation			Operational	

Note - Recycled water will not be supplied until Program Notices are withdrawn.

Recovery activities continue. All plants now treating 100% dry weather flow with disinfection and establishing stable performance.

#### Oxley Creek

- Draft TEP completed, awaiting internal approval prior to sending to DERM.
- Flow paced chlorine dosing system is operational. Sample results are showing compliance.
- Dewatering in manual operation mode, auto mode is scheduled for commissioning early May '11.
- Contractor approved for Cambi recovery. Awaiting final commercial clarification prior to contract signing and commencement of works (expected to begin 3 May 2011).
- Blowers running in auto mode.
- Odour Control System is scheduled for repair by Contractors.

#### Fairfield

- TEP submitted to DERM.
- In full automatic operation with disinfection.
- System results show compliance.
- Recycled water system re-commissioned.

#### Karana Downs

- TEP submitted to DERM.
- System running in automatic mode with remote access.
- Minor works to enable full functionality continuing.
- System results show compliance.

#### Bundamba

- Draft TEP completed, awaiting internal approval prior to sending to DERM.
- System running in automatic operation, excluding the temporary disinfection system which is running in local flow paced disinfection. Works to fine tune automatic control system continuing.
- Repairs to recycled water for tanker filling stations continue. Service water repaired.
- Dewatering operational, with one on-site belt filter press (50% capacity). Second belt press sent for pre-flood scheduled maintenance.
- Laboratory results show compliance with one non-compliant sample recorded.

#### Goodna

- TEP submitted to DERM.
- System running in automatic operation, excluding the temporary disinfection system which is running in local flow paced disinfection. Works to fine tune automatic control system continuing.
- Laboratory results show compliance with one non-compliant sample recorded.

#### Rosewood

- TEP submitted to DERM.
- Plant is operating similar to pre-flood conditions.



Esk

- TEP submitted to DERM.
- Plant operational in manual mode. Basic control of Inlet pump station available. Automation to be installed.
- Manual disinfection installed. Flow paced dosing system to be installed.
- Recycled water ozone disinfection system flood damaged. Project to include recycled water into main chlorine disinfection system.
- Laboratory results show compliance.

Lowood

- Draft TEP completed, awaiting Internal approval prior to sending to DERM.
- Plant in manual operation, with manual disinfection in place. Work continuing to install flow paced disinfection system.
- Automation to be installed for pump flow control on-site.
- Laboratory results showing improved progression to compliance.
- Biological system still stabilising for reliable performance.

Fernvale

- Draft TEP completed, awaiting Internal approval prior to sending to DERM.
- Plant in manual operation, with automation of dosing and blowers to be installed. Blower automation contract is being arranged.
- Separate non-flood project to automate wasting system and RAS recirculation.
- Manual disinfection operational. Work continuing to install flow paced disinfection system.
- Laboratory results show non-compliance from limitations of manual disinfection system and manual wasting system.

**Sewer Pump Stations**

- All sewer pump stations temporarily recovered with contingent average dry weather flow capacity.
- Service Delivery East (SDE) – 2 sites recovered during week ending 28 April 2011.
- Awaiting delivery of switchboards and generators for SDE and Service Delivery West (SDW).

	Sites Requiring Recovery (Total)	No Redundancy + No Telemetry	No Telemetry + Redundancy	Telemetry + No Redundancy	Redundancy + Telemetry	Operational / Recovered*
Brisbane	21	0	1	2	18	(30)
Ipswich	2	0	0	0	2	(30)
Somerset	0	0	0	0	0	(5)
Total	23	0	1	2	20	(30)

\*Recovered - defined as pre-flood condition.

**Network/Civil Repairs**

- Three (3) civil sites recovered (Brumby Cct, St Lucia Golf Course & Neatta St).
- Major Projects & Commercial Services coordinating delivery of all projects as programs of work – see tables for breakdown.
- All rehabilitation submissions completed, except for Mt. Ommaney River Crossing which requires further scoping.

- Engineers engaged to scope works for civil issues commence Tues. 3 May 2011 and Mon. 9 May 2011.
- Quotes are being accepted for works where possible.

	WATER SUPPLY ISSUES							Total Remaining
	Cathodic Protection	Pump Station Building	Pressure Gauge	Pressure Reducing Valve	Reservoirs Road Access	Trunk Main	Retic Main	
Brisbane	4	0	1	9	0	1	2	17
Ipswich	1	0	0	2	5	0	1	9
Lockyer	0	1	0	0	2	0	3	6
Somerset	0	0	0	0	0	0	2	2
Scenic Rim	0	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>11</b>	<b>7</b>	<b>1</b>	<b>8</b>	<b>34</b>

	WASTEWATER ISSUES							Total Remaining
	Cathodic Protection	WRP	Overflow	Pump Station (Building)	Trunk Sewer	Sewer Main	Rising Main	
Brisbane	4	0	1	2	2	3	1	13
Ipswich	0	2	0	0	0	0	0	2
Lockyer	0	0	0	0	0	0	1	1
Somerset	0	0	0	0	0	1	0	1
Scenic Rim	0	0	0	0	0	0	1	1
<b>Total</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>18</b>

#### Post-event assessment of QUU's emergency measures, response and restoration process

95. QUU commissioned Montgomery Watson Harza to undertake a risk management assessment of the Lockyer Valley Water Supply Scheme. The 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 QUU to change the direction of the water flow and isolate zones if required to better respond to incidents affecting sections of the pipelines.

96. Another action proposed is the placement of pipes at water/creek crossings under the creek beds where appropriate (and where not already the case), as distinct from attachment to bridges. Within budgetary constraints this cost has been included in the 2011-2012 capital program financial budget.
97. QUU intends to engage external consultants to assess the business resilience of QUU's wastewater treatment plants. Tenders from prospective consultants have not yet closed, and for that reason QUU is unable to advise on the anticipated completion date for the assessment.
98. QUU 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. The BCC City Design study is in progress at the moment. QUU has deferred for a three month period the construction of 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.
99. In addition to this, QUU has engaged Marsh Pty Ltd to assist with an executive leadership team debrief. A draft document has been circulated to the executive team for comment to ensure its factual accuracy. It is anticipated that this will be completed by June 2011.
100. The protracted and multiple incidents of the January severe weather event tested our capacity and plans beyond the normal single incident events to extreme levels of response and recovery.
101. Observations made by QUU of the incident include:
- The emergency response plan and structure was implemented successfully;
  - Existing continuity and contingency plans were effective and useful;
  - Staff had the capacity to adapt and successfully contend with multiple and severe incidents over a protracted timeline;
  - Key suppliers provided good support; and
  - Disaster Management Liaison - managing multiple disaster management groups added significant complexity to the disaster response.
102. Areas that have been identified for possible improvement are to enhance the capabilities and experience of our emergency management team in:
- Fatigue management;
  - Communication protocols internal/external;

- Continual development and improvement of Continuity and Contingency plans;
  - Procurement and recovery process.
103. During the event QUU employed several communication channels via phone, email teleconference & OCA to inform, notify, complete requests for Information and Issue media statements for all internal and external contacts.
104. The OCA provided a transparent repository of Information on Water Grid water supply matters. All Grid Participants were able to access and or provide data/information on a 24/7 ongoing basis.
105. The following preliminary comments can also be made at this stage:
- QUU's Emergency Plan and Emergency Management Framework were effectively utilised during the flood event and all employees rallied to deliver on QUU's objectives to maintain supply and continuity of water and wastewater services;
  - The development and implementation of QUU's 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;
    - effective communication utilising the OCA system;
    - development and implementation of responsive, flexible and timely emergency response measures; and
    - 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.
  - QUU 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; and

- promoting open internal communications across the various business areas with QUU.

106. Mutual aid assistance within the Australian water sector was and remains extremely important in enabling QUU to recover quickly from the flood event.
107. The Australian Water Sector Mutual Aid Guidelines (Mutual Aid Guidelines)<sup>1</sup> have been developed to ensure that during disasters or emergencies, essential water and wastewater services such as those provided by QUU can be restored more effectively by drawing on available resources of water entities and agencies in unaffected areas throughout Australia. The Guidelines ensure that the process of requesting, coordinating and deploying resources is streamlined, saving time in planning and administration and in locating specialist personnel and equipment.
108. The key stakeholders involved in the development, implementation and approval of the Mutual Aid Guidelines are:
- Trusted Information Sharing Network - Attorney General's Department and Water Sector Security Group.
  - Water Services Association of Australia and Water Sector Security Group (formally WSIAAG).
109. QUU received significant mutual aid and assistance from agencies including Allconnex, Unitywater and Sydney Water. See further details at paragraph 91, under the heading Water and Wastewater Assets Recovery.

#### **Issues around stormwater management**

110. Stormwater management remains the responsibility of local government.
111. Stormwater systems and wastewater systems are separate and very different systems. Stormwater systems are designed to manage rainfall that falls in urban environments, typically by transferring it from developed properties to gutters and stormwater drains, and then into natural watercourses. Wastewater systems collect and transfer human waste via sewers to wastewater treatment plants.
- During wet weather events, stormwater can infiltrate into the sewer system causing overloading of the system. This can result in overflow at manholes and into private property.
112. QUU considers that effective ways to reduce stormwater flows within sewers include:

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<sup>1</sup> The Australian Water Sector Mutual Aid Guidelines (Mutual Aid Guidelines), Water Services Infrastructure Assurance Advisory Group, August 2010.

- Increasing community and industry education on not connecting stormwater systems to the sewerage system; and
  - local government and Distributor-Retailers working cooperatively to investigate whether there are illegal stormwater connections on private properties and local government enforcing the correction of these defects
  - Instituting some method of statutory point of sale inspection whereby homeowners must submit to an inspection of their stormwater connections prior to selling their property.
113. If these initiatives do not significantly mitigate the problem, then enhanced sewer planning in areas prone to flooding or stormwater flow, may need to be considered.

#### **Development in flood plains**

114. Development in flood plains and potential flood inundation areas pose a number of local impediments to the provision of wastewater services through:
- Increased incidents of inundation of wastewater systems by stormwater in both flood and rainfall events; and
  - an increased likelihood of overflows from such systems into the environment.
115. Consequently it is important that the type of development and its location is carefully considered and, where possible is minimised, in flood plains and potential flood inundation areas.
116. Where practicable and subject to the availability of appropriate funding, measures that may mitigate the risks of overflow include:
- sewerage with sealed and pressure wastewater systems; and
  - locating new critical infrastructure above peak maximum flood levels, recognising however that most wastewater systems operate by gravity flow and therefore are generally situated at the lowest points in the catchment.

#### **Illegal connection of private stormwater systems to the sewerage system**

117. Wastewater systems are not designed to convey significant volumes of stormwater or floodwater. They are designed to be separate from stormwater management systems.
118. Gravity sewers are sized for peak wet weather flow which is 5 times the average dry weather flow. In QUU's network, it is common during wet weather events for stormwater inflow to increase flows to 10 to 12 times the average dry weather flow. During exceptional weather events, stormwater flows can increase to 20 to 30 times the average dry weather

flow. Because of system capacity constraints, these additional flows are managed through built-in overflow points, which direct excess stormwater diluted flows into waterways.

119. A significant source of stormwater infiltration into QUU's wastewater system is believed to be from illegal stormwater connections to private sewers that are in turn connected to QUU's wastewater systems. For example, it is quite common for a property owner to direct the downpipe from a building's roof into the sewer overflow grate, rather than into the stormwater drain. These connections increase the likelihood of wastewater systems becoming overloaded and/or overflowing during wet weather and/or flood events, and are illegal under s193 of the Water Supply Act.
120. Local governments previously had statutory responsibility for water, wastewater and stormwater management. Whilst the water and wastewater functions were transferred to QUU on 1 July 2010, stormwater management remains with the local governments and therefore QUU has only limited statutory powers under the Water Supply Act to address the problem of illegal stormwater connections to its wastewater system.
121. Both the *City of Brisbane Act 2010 (Qld) (COB Act)* and the *Local Government Act 2009 (Qld) (LGA)* provide significant powers to local government to:
- require the connection of a stormwater installation for a property to council stormwater drains (section 77 of LGA and section 84 COB Act); and
  - prohibit the owner of a property from connecting the sewerage installation of the property, or to allow the sewerage installation of the property to be connected, to any part of the stormwater installation for the property or a council stormwater drain (section 78 of LGA and section 85 COB Act).
  - Non-compliance with these provisions gives rise to a penalty.
122. Additionally the statutory powers given to local governments to enforce these requirements are strong and include:
- a right to require the owner to disconnect the offending system;
  - a right to require the owner to perform works in relation to the systems; and
  - a right for authorised persons to enter property (other than a home on the property) without the permission of the occupier of the property, at any reasonable time of the day or night, under an approved inspection program. An approved inspection program is a program, approved by the local government, under which an authorised person may enter and inspect properties in the local government area to ensure compliance with local government related laws. An approved inspection program could include a

program for identifying illegal stormwater connections by a process of smoke testing.

123. The powers in section 85 of the COB Act and section 78 of the LGA are, however, more directed to the prevention of sewage entering the stormwater system than the reverse case.
124. Therefore, whilst local governments have powers in relation to illegal stormwater connections on private land, those powers do not address the question of illegal connection of stormwater into the wastewater system.
125. The Water Supply Act provides that:
  - a person must not without the written consent of a service provider, connect to, or disconnect from the service provider's infrastructure (Water Supply Act section 191); and
  - a person must not discharge a prohibited substance, surface water, soil, sand or rock into a service provider's infrastructure (Water Supply Act section 193(2)).
126. For the purposes of the Water Supply Act section 193 'prohibited substance' includes floodwater, rainwater, roof water, seepage water, stormwater, subsoil water and surface water.
127. To prosecute under section 193(2) may require direct evidence that the person concerned has "discharged" the prohibited substance "into the service provider's infrastructure". There is no definition of "discharge" for this purpose and no deeming provisions to facilitate proof.
128. Prosecution is one tool that may be utilised. Arguably, a more effective tool would be the power to direct disconnection of illegal stormwater connections or in default to undertake such disconnection.
129. The Water Supply Act section 33(1) provides some power to QUU to disconnect unauthorised connections and to recover the cost of the disconnection and to enter places for restricted purposes such as the repair or replacement of QUU's infrastructure.
130. The difficulty however is that:
  - in most cases the offending stormwater connection point is not directly into QUU's infrastructure but rather first connects into the private sewerage infrastructure on the occupier's premises and then enters QUU infrastructure at the property boundary;
  - while QUU is able to enter *places* to disconnect unauthorised connections to its infrastructure, it is unable to enter a part of a *place* used for residential purposes (Water Supply Act section 31);



- QUU has no right to enter a place and interfere with private infrastructure (as opposed to entering a place to maintain, repair or replace its own networks); and
  - while local governments have certain rights to enter private property under an approved inspection program those rights are restricted to monitoring compliance with the local government legislation.
131. While it is arguable that an illegal stormwater connection that is wholly upon residential land is nonetheless a connection to a service provider's infrastructure for the purposes of section 33(1) of the Water Supply Act, the limitations upon entry to residential land, even where the connection is causing damage to infrastructure (section 33(5)), effectively means that such connections are unable to be properly policed by service providers such as QUU. The inability to carry out inspections of residential properties reduces the likelihood of the existence or location of illegal stormwater connections or discharges being detected.
132. An analysis of the COB Act, LGA and Water Supply Act suggests that the impacts of illegal connections into QUU's wastewater networks, particularly indirect connections on residential premises, are not adequately addressed under the current regulatory framework.

#### **Supply and delivery of wastewater services during emergency events**

133. The Water Grid Manager does not have regulatory responsibility for the management of wastewater services provided by Distributor-Retailers. QUU, as a registered wastewater service provider, is the agency with overall responsibility for the provision of wastewater services within its service area.
134. During the January 2011 flood events, QUU managed all wastewater-related issues directly with local and district disaster coordination centres. Unlike the SEQ water network, which is designed to operate on a region wide basis covering multiple catchments, wastewater networks are managed on a catchment by catchment basis. Consequently QUU's direct communication with local and district disaster coordination committees enabled the effective local and district coordination of information and priorities for all parties during the flood event.
135. While the Water Grid Manager properly has lead agency status in relation to coordination of the emergency response for water management it is important to note that:
- the Water Grid Manager, because of the legislative constraints of its role, has no direct interface with the end water-user. It is the Distributor-Retailers who have the direct interface with the end user;
  - the Water Grid Manager has no responsibility for wastewater management. This is the role of the Distributor-Retailers;

- while QUU has direct engagement and interaction with local disaster management committees and district disaster management committees, it has no direct interaction with the State Disaster Management Group; and
- the State Disaster Management Group currently has no avenue for direct input on issues relating to wastewater, an essential service as important as water.

136. While QUU may not need to have direct interaction with the State Disaster Management Committee for local or district specific events, in relation to events (such as the recent 2011 flood events) that extend across a number of disaster management districts, it would be advantageous for QUU to have direct engagement with the State Disaster Management Committee, rather than engagement through the Water Grid Manager. This would enable QUU to be quickly and directly provided with appropriate information, from all relevant participants, during disaster events. This in turn would enable QUU to have greater input into the management of disasters affecting its water and wastewater services (particularly where there is an impact upon the end user) and in future State-managed disaster preparation exercises.

137. Additionally, QUU recognises that the provision of water and wastewater service is highly dependent upon the provision of power and considers that a more formal relationship between QUU and Energex and a coordinated approach to emergency planning would be helpful during disaster events. Further, a joint recovery exercise between QUU and Energex would be advantageous.

138. QUU has proposed the following initiatives:

- the critical role of QUU in the provision of wastewater services and as the interface with the end users of these services be integrated into emergency services and State disaster management planning and exercising; and
- the role of the Distributor-Retailers in water and wastewater delivery and management (particularly to the end user) be clarified with all stakeholders during emergency events.

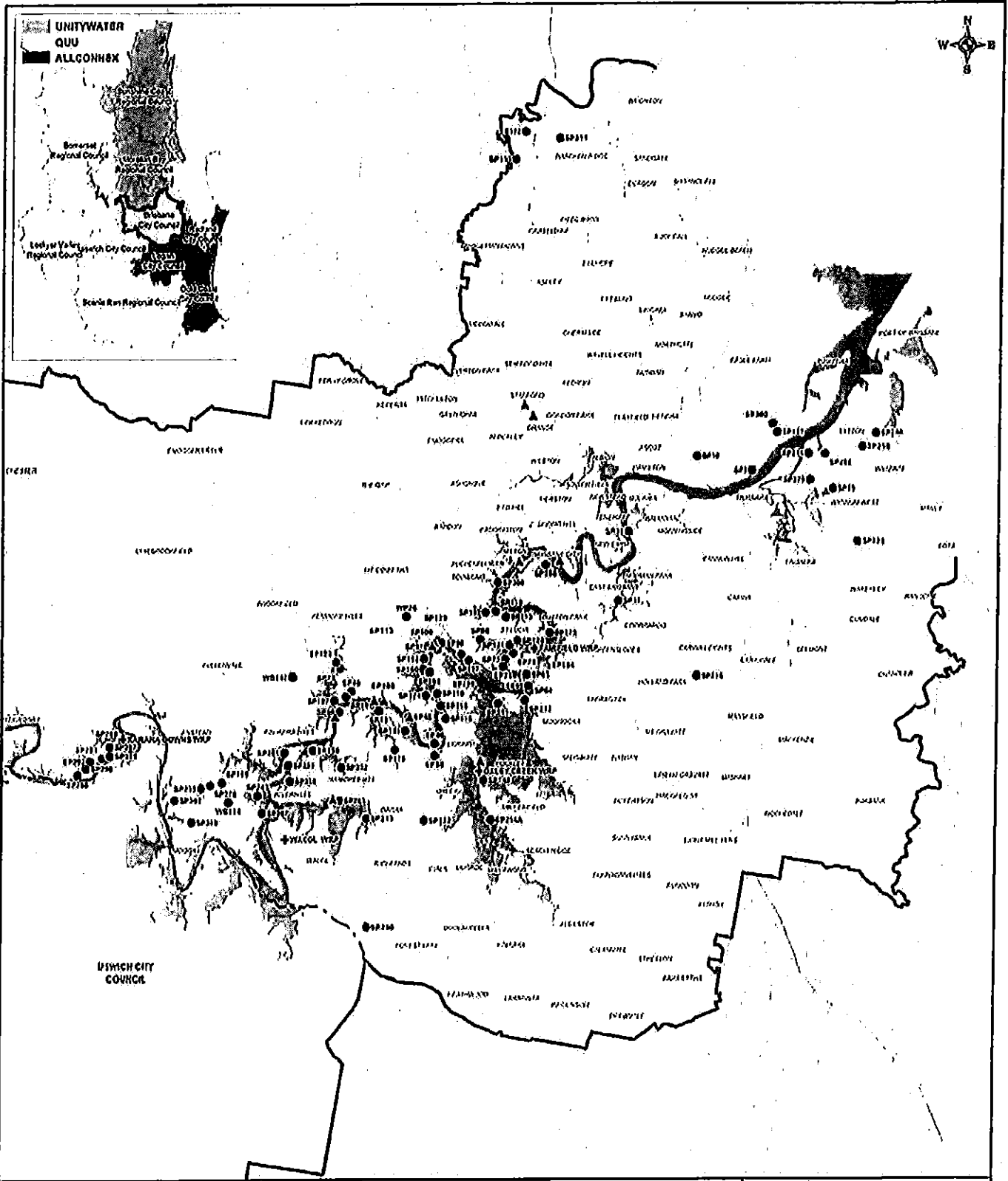
.....  
Robln Lewis

.....  
Date

4 May 2011

.....  
Witness

# APPENDIX A



**DATA INFORMATION**  
 Audit / Survey Imagery  
 Imagery source: Copyright DigitalGlobe, Copyright GNSC  
**DISCLAIMER**  
 This plan is for guidance and information only and provided without warranty of any kind, express or implied including its accuracy, completeness, correctness, currency or timeliness. The user assumes all liability and responsibility for any damage, cost or liability that may be incurred by any person acting in reliance on the information provided on this plan.  
 This plan should be used as a guide only. Any dimensions should be confirmed on site by the local land authority.

DATE: 03/05/11  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]

0 25 50  
 METRES

**LEGEND**

**FLOOD AFFECTED ASSETS**

- ▲ Water Mains
- Sewer Mains
- Water Pump Station
- Sewer Pump Station
- ⊕ Water Reclamation Plant

— — — — — Jan 2011 flood line  
 - - - - - Council Boundary  
 ———— QUU Boundary

THIS DRAWING IS CONFIDENTIAL AND SHALL BE USED FOR THE PURPOSES OF THIS PROJECT

**PLANNING ASSISTANCE UNIT**  
 PLAN DATE: 03/05/2011  
 REFERENCE: GNSC/11/01/01/01/01/01  
 PROJECT: FLOOD AFFECTED WATER AND SEWERAGE ASSETS  
 PROJECT MANAGER: GUY MURPHY  
 PROJECT NUMBER: 104435  
 PROJECT LOCATION: BRISBANE CITY COUNCIL REGION

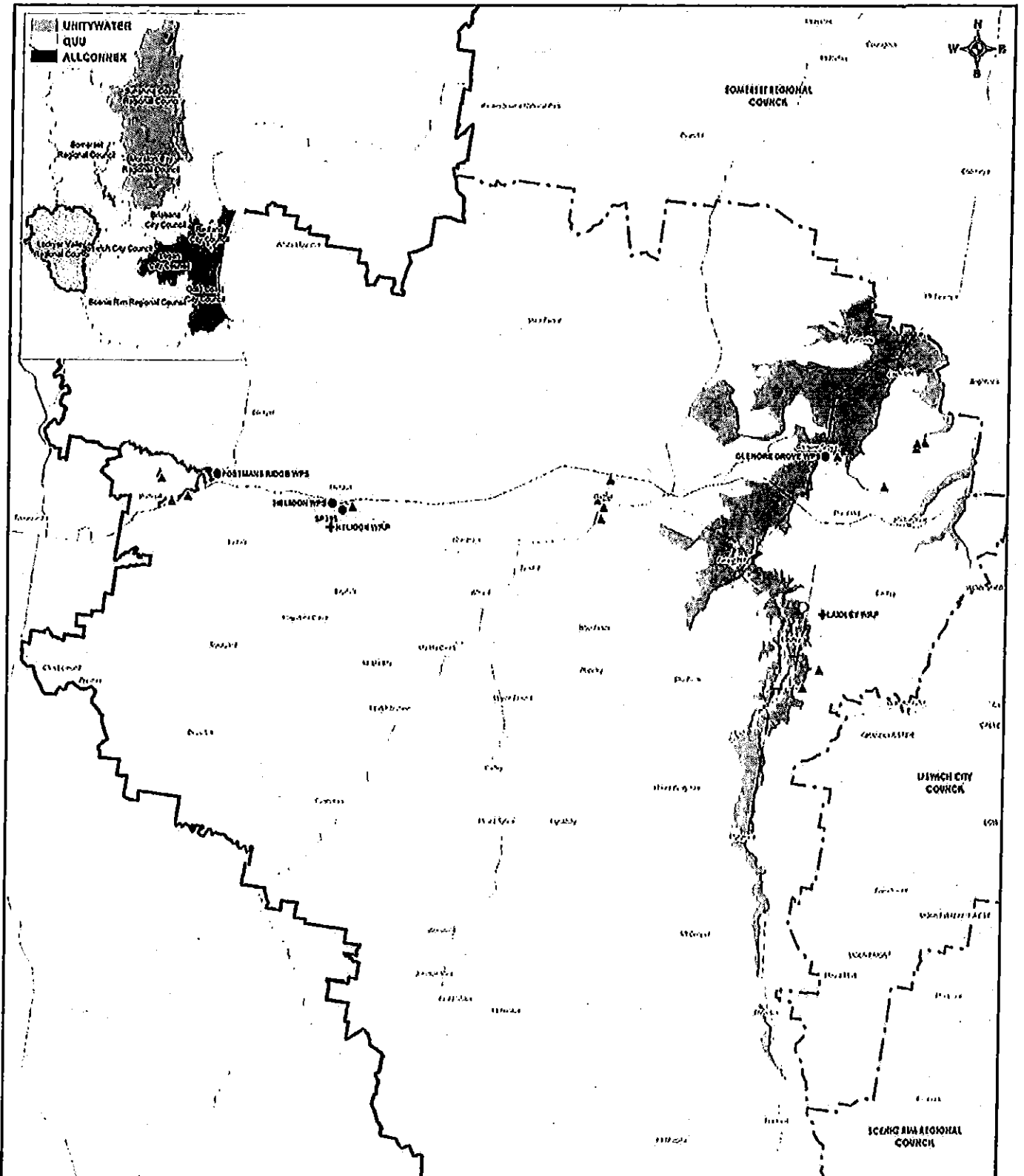
**FLOOD AFFECTED WATER AND SEWERAGE ASSETS**

**BRISBANE CITY COUNCIL REGION**

QUEENSLAND URBAN UTILITIES







**DATA INFORMATION**  
 Aerial / Satellite Imagery  
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 ORIGINATOR  
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**INDUSTRY STANDARDS**  
 AS/NZS 1546:2011  
 ISO 9001:2015  
 ISO 14001:2015

Qld  
 Lockyer Valley Council  
 2011

Engineering  
 Lockyer Valley Council  
 2011

Scale: 1:2000

**LEGEND**

**FLOOD AFFECTED ASSETS**

- ▲ Water Mains
- ▲ Sewer Mains
- Water Pump Station
- Sewer Pump Station
- + Water Reclamation Plant

--- 1 in 100 yr Flood Line  
 - - - Council Boundary  
 ——— QUU Boundary

THIS DRAWING IS CONFIDENTIAL AND SHALL BE RETURNED TO THE EMPLOYER UPON THE COMPLETION OF THIS PROJECT

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REVISION INFORMATION

DATE: 11/02/2011

**PROJECT**  
**FLOOD AFFECTED WATER AND SEWERAGE ASSETS**

**LOCKYER VALLEY COUNCIL REGION**

**QUEENSLAND UTILITY UTILITIES**