WATER COMMITTEE MEETING

AGENDA

7 OCTOBER 2015

Your attendance is required at a meeting of the Water Committee to be held in the Council Chambers, 232 Bolsover Street, Rockhampton on 7 October 2015 commencing at 12.30pm for transaction of the enclosed business.

CHIEF EXECUTIVE OFFICER
29 September 2015

Next Meeting Date: 04.11.15

Please note:

In accordance with the *Local Government Regulation 2012*, please be advised that all discussion held during the meeting is recorded for the purpose of verifying the minutes. This will include any discussion involving a Councillor, staff member or a member of the public.

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1 OPENING

2 PRESENT

Members Present:

Councillor G A Belz (Chairperson)
The Mayor, Councillor M F Strelow
Councillor C R Rutherford
Councillor A P Williams
Councillor N K Fisher

In Attendance:

Mr R Holmes – General Manager Regional Services (Executive Officer)
Mr E Pardon – Chief Executive Officer

3 APOLOGIES AND LEAVE OF ABSENCE

4 CONFIRMATION OF MINUTES

Minutes of the Water Committee held 2 September 2015

5 DECLARATIONS OF INTEREST IN MATTERS ON THE AGENDA

6 BUSINESS OUTSTANDING

6.1 BUSINESS OUTSTANDING TABLE FOR WATER COMMITTEE

File No:	**10097**
Attachments:	**1. Business Outstanding Table for Water Committee**
Authorising Officer:	**Evan Pardon - Chief Executive Officer**
Author:	**Evan Pardon - Chief Executive Officer**

SUMMARY

The Business Outstanding table is used as a tool to monitor outstanding items resolved at previous Council or Committee Meetings. The current Business Outstanding table for the Water Committee is presented for Councillors' information.

OFFICER'S RECOMMENDATION

THAT the Business Outstanding Table for the Water Committee be received.

BUSINESS OUTSTANDING TABLE FOR WATER COMMITTEE

Business Outstanding Table for Water Committee

Meeting Date: 7 October 2015

Attachment No: 1

Date	Report Title	Resolution	Responsible Officer	Due Date	Notes
4 June 2014	Rockhampton Regional Council High Priority Water Allocation Use	THAT the Council receive the report and adopt the following recommendations to optimise the sustainable usage of Council's high priority water allocation being that: • Information is disseminated to irrigators regarding the removal of the requirement for Land and Water Management Plans; • FRW's 'water market' is promoted more; • The Drought Management Plan (DMP) trigger levels for implementing restrictions are reviewed and changed; • Methods to increase efficient industrial water use are examined; and • A formal approach be made to the regulator to retain flexibility in future Resource Operations Plan (ROP).	Jason Plumb	31/08/2015	Brief information notice to be sent to irrigators with billing mail-out at the end of July. Regional Water Supply Security Analysis discussions continuing with DEWS. Water source security modelling and demand management planning using new Barrage storage volume data currently in progress with completion expected within the next two months. Council workshop to be scheduled for August or September to present outcomes. Report on Rockhampton Water Supply Security Assessment to be submitted to this meeting.
2 September 2015	Report on Leakage in the Rockhampton Network	THAT a report on leakages in the Rockhampton Water Supply Scheme including defining those areas in the Supply Scheme experiencing the greatest level of leakage and a comparison with the National Standard and other Local Governments be provided to the Committee.	Jason Plumb	16/09/2015	

7 PUBLIC FORUMS/DEPUTATIONS

Nil

8 OFFICERS' REPORTS

8.1 DEPARTMENT OF ENERGY AND WATER SUPPLY (DEWS) ROCKHAMPTON WATER SUPPLY SECURITY ASSESSMENT (RWSSA) REPORT

File No:	**2830**
Attachments:	**1. Regional Water Supply Security Assessment Report**
Authorising Officer:	**Robert Holmes - General Manager Regional Services**
Author:	**Bill Ricks - Coordinator Network Services**

SUMMARY

Department of Energy and Water Supply (DEWS) have been working with FRW since June 2014 to undertake an assessment of the water supply security of the Fitzroy River Barrage and Eden Bann Weir supply. The Rockhampton Water Supply Security Assessment (RWSSA) report highlights potential shortfalls in supply as water demand increases in the future. A number of actions by Council to examine and potentially undertake to help improve water supply security are included in the report.

OFFICER'S RECOMMENDATION

THAT the Rockhampton Water Supply Security Assessment report prepared by Department of Energy and Water Supply be received and endorsed.

COMMENTARY

Since February 2014, DEWS have been working with a number of local governments to provide an assessment of those local government's water supply security. DEWS have been working with FRW since June 2014 to undertake an assessment of the water supply security of the Fitzroy River Barrage and Eden Bann Weir supply. DEWS have undertaken the assessment of the Fitzroy River Barrage and Eden Bann Weir combined due to the interoperation of the two systems.

DEWS have so far completed water security assessments for the Townsville, Cairns, Hervey Bay, and Maryborough regions. Mt Isa, Mackay, and Bundaberg assessments are currently in progress. In September 2014 FRW commissioned hydrographic surveyors to undertake a survey of the barrage pondage to update the last survey performed in 1998. The new survey identified a reduction in the total volume and commandable volume of the Fitzroy River Barrage Storage. The current storage volumes were used in the DEWS RWSSA modelling.

Report Outline

The RWSSA report examines population expansion, water use levels, and combines these with water supply storage volumes, expected input volumes, and other losses and uses to assess the water supply security. No water restrictions were used in the assessment modelling.

The attached RWSSA report from DEWS explains the methods, processes, and assumptions used in the assessment process. Crucial to these is the historic and stochastic modelling used to produce expected input volumes and losses. DEWS representatives will attend the meeting to discuss the Rockhampton Water Supply Security Assessment report. Those representatives will be Craig Gordon, Linda Dobe and Craig Johansen.

The report shows that at full water allocation usage by FRW and Stanwell Power Station, water supply shortfalls could be a common occurrence, occurring on average approximately every 26 years. At current water usage levels, a water supply shortfall could occur on average every 108 years.

Moving forward

The RWSSA modelling has been conducted without any water restrictions put in place. FRW have developed a model to assess the impact of different water restriction scenarios. The assessment and development of appropriate water restriction actions and triggers is likely the first action FRW will undertake following the assessment.

Additional actions may include promotion of water use efficiency in the community, increased measures to reduce reticulation network water losses, discussing demand management with Stanwell power station, involvement in future water supply storages, and the investigation of alternative water sources including desalination.

Report assessment

The historic modelling undertaken by DEWS fits very closely with the historical modelling undertaken by FRW. There are some differences in the assumptions and methods used. The main difference being that DEWS use an evaporation rate approximately 50% greater than actual, but balance this by including a ground water storage calibration component. The difference in method between the DEWS and FRW modelling process may produce some differences when modelled stochastically. But the difference, although unknown, is likely to be slight and significantly less than the error incorporated by general water demand assumptions.

Publishing the report

Once finalised and approved by the participants, DEWS place finalised versions of the water supply security assessment reports on the DEWS website and provide copies to the Council managing the water supply. DEWS are looking to finalise this report, and have this report approved by Council in order to finalise it.

DEPARTMENT OF ENERGY AND WATER SUPPLY (DEWS) ROCKHAMPTON WATER SUPPLY SECURITY ASSESSMENT (RWSSA) REPORT

Regional Water Supply Security Assessment Report

Meeting Date: 7 October 2015

Attachment No: 1

Department of Energy and Water Supply

Rockhampton

Regional Water Supply Security Assessment

Draft

Rockhampton Regional Council

Queensland Government

CS4682 09/15

September 2015

Images courtesy of Rockhampton Regional Council and Tourism and Events Queensland

This publication has been compiled by the Department of Energy and Water Supply.

Introduction

Rockhampton is located in Central Queensland approximately 600 km north of Brisbane and has a population of about 84 000 people. While traditionally identified as the beef capital of Australia, Rockhampton has a diverse economy and provides a significant services base for the Central Queensland mining, industrial, and agricultural sectors.

Along with other regional centres in Queensland, Rockhampton and the surrounding urban communities are expected to experience economic and population growth over the coming decades.

Safe, secure and reliable water supplies are an essential resource for supporting this growth, not only providing for the health and wellbeing of the community, but also providing opportunities for economic and community development. Accordingly, the Department of Energy and Water Supply and Rockhampton Regional Council (Council) through Fitzroy River Water have committed to a partnership to investigate and establish a shared understanding of the capabilities of the existing raw water supply and its capability to provide for future growth.

Arising from this partnership, this Regional Water Supply Security Assessment for Rockhampton provides valuable information to the community and water supply planners about the water supply security for Rockhampton and provides a foundation for future water supply planning.

This assessment considers various growth scenarios to determine the timing and magnitude of potential water supply shortfalls under the existing water supply arrangements.

Rockhampton's water supply sources

Rockhampton's primary source of water is the Fitzroy Barrage storage which is located on the Fitzroy River close to the city centre as shown in Figure 1. It is owned by Council and is the sole storage in the Fitzroy Barrage Water Supply Scheme (WSS).

The Fitzroy Barrage WSS is operated in conjunction with the Lower Fitzroy WSS. Eden Bann Weir is the sole storage in the Lower Fitzroy WSS, and is located on the Fitzroy River upstream of the barrage. Eden Bann Weir is owned and operated by SunWater.

Stanwell power station is the primary user of water from the Lower Fitzroy WSS, and takes its water from the scheme via an intake located within the Fitzroy Barrage storage.

Together these two schemes have a combined total storage capacity of about 110 300 Megalitres (ML) (74 400 ML for the Fitzroy Barrage and 35 900 ML for Eden Bann Weir) and a combined total useable storage volume of about 76 100 ML (49 850 ML for the Fitzroy Barrage and 26 250 ML for Eden Bann Weir). These storage volumes incorporate the results of a new survey of the Fitzroy Barrage's storage which was undertaken by Council in 2014. The new volumes are lower than the volumes previously measured and that were used for the Fitzroy Basin Resource Operations Plan (Fitzroy ROP).

Water allocations from the two schemes (established through the *Water Resource (Fitzroy Basin) Plan* (Fitzroy WRP) and Fitzroy ROP) currently total 90 714 ML (76 003 ML of high priority (HP) water allocations and 14 711 ML of medium priority (MP) water allocations). The performance capabilities of the water supply is discussed later in this assessment.

The Fitzroy ROP includes provisions establishing a minimum operating level for the Fitzroy Barrage below which water must not be supplied (unless otherwise authorised by the Department of Natural Resources and Mines (DNRM)). This minimum operating level, EL -1.2 m Australian Height Datum (AHD), was set given the degree of uncertainty relating to potential impacts of operating at lower levels on the quality of water stored in the barrage.

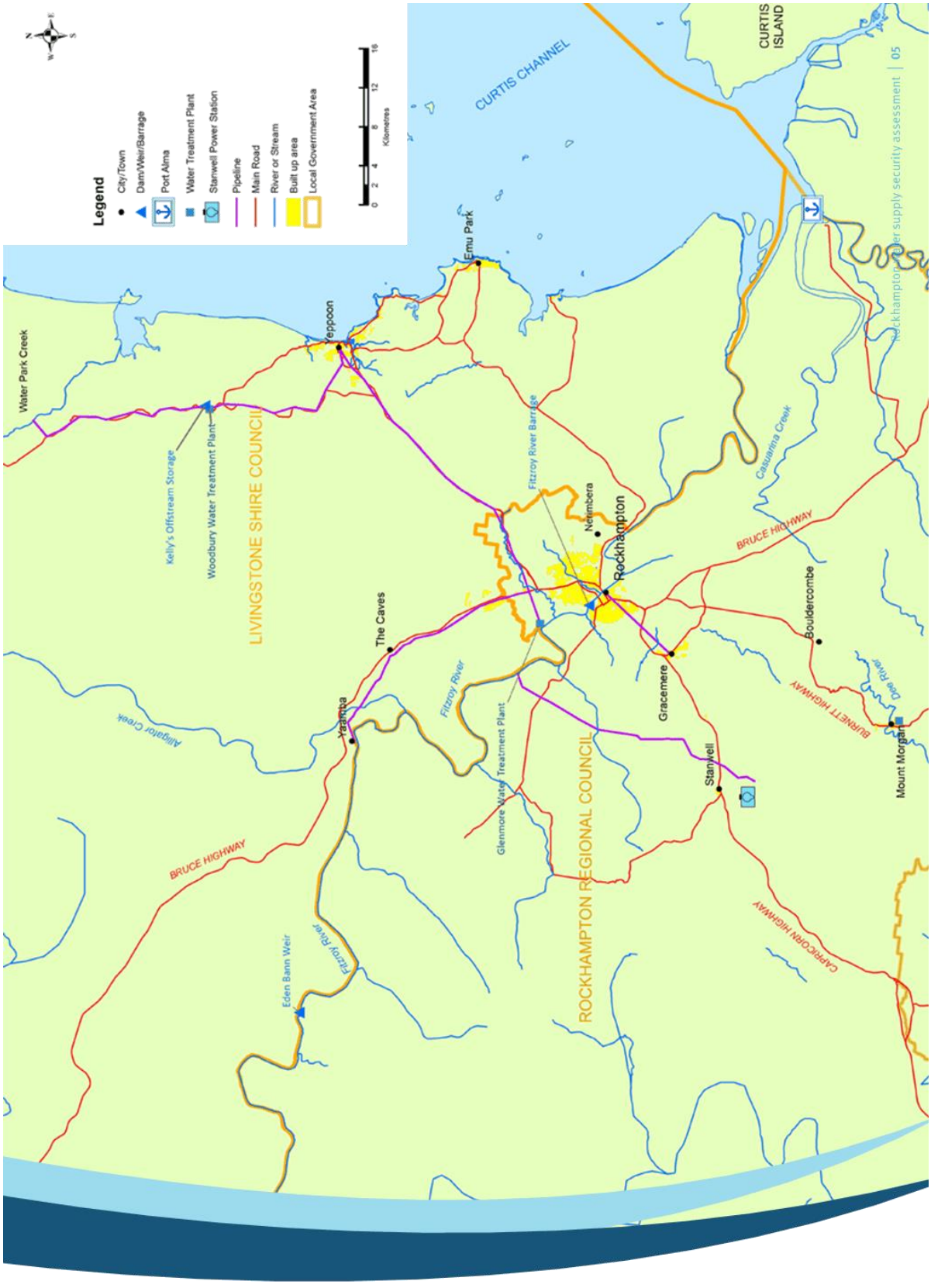
It should be noted that Council's existing intake works are equipped to take water at levels below EL -1.2 m AHD, should DNRM give such authorisation. The volume of water stored below the minimum operating level is currently estimated to be about 20 500 ML. In addition to the water stored below the minimum operating level, some of the water stored within the Fitzroy Barrage storage is also stranded in upstream waterholes and is unable to be accessed at Rockhampton's water supply intake point.

Council currently holds 50 383 ML per annum (ML/a) of the 50 483 ML/a of HP water allocations from the Fitzroy Barrage WSS and the Stanwell Corporation holds a HP water allocation of 24 000 ML/a from the Lower Fitzroy WSS for the Stanwell power station.

SunWater also holds 1503 ML/a of HP water allocations in the Lower Fitzroy WSS, 1275 ML/a of which caters for losses associated with supplying water via the pipeline to Stanwell power station.

The 14 711 ML/a of MP water allocations supplied from the schemes are principally used for irrigation. The bulk of this, 11 610 ML/a, is associated with the Fitzroy Barrage WSS. Access to MP water is cut off when the water level in the barrage falls below EL 0.75 m AHD as specified in the Fitzroy ROP to ensure security for HP water allocations. The Fitzroy ROP also provides for conversion of MP water allocations to HP water allocations and HP water allocations to MP water allocations subject to maximum and minimum volumes of HP water allocation volumes in each scheme being maintained.

Figure 1 Rockhampton region water supply system


Legend
City/Town
Dam/Weir/Barrage
Port Alma
Water Treatment Plant
Stanwell Power Station
Pipeline
Main Road
River or Stream
Built up area
Local Government Area
Kilometres
CURTIS CHANNEL
CURTIS ISLAND
Emu Park
Yeppoon
Water Park Creek
Kelly's Offstream Storage
Woodbury Water Treatment Plant
LIVINGSTONE SHIRE COUNCIL
Fitzroy River Barrage
Casuarina Creek
Nerimbera
Rockhampton
BRUCE HIGHWAY
The Caves
Bouldercombe
Yaamba
Fitzroy River
Gracemere
Alligator Creek
Glenmore Water Treatment Plant
ROCKHAMPTON REGIONAL COUNCIL
Stanwell
BURNETT HIGHWAY
Mount Morgan
Dee River
BRUCE HIGHWAY
Eden Bann Weir
Fitzroy River
CAPRICORN HIGHWAY
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Existing water use

Rockhampton's reticulation network

The Rockhampton reticulation network currently provides drinking water supply services to Rockhampton city and a number of adjacent communities. These include in the Council area, Gracemere, and in the adjacent Livingstone Shire, the Capricorn Coast and The Caves. The supply to the Capricorn Coast occurs via the Rockhampton to Yeppoon pipeline which supplements the coast's local Water Park Creek supply source.

In total approximately 108 000 people, including around 24 000 on the Capricorn Coast, access drinking water supplies sourced from the Fitzroy Barrage via the Rockhampton reticulation network.

Figure 2 shows the total annual water extractions from the Fitzroy Barrage for the period 2008–09 to 2013–14 as well as the volume of water extracted for supply to the Capricorn Coast (including the volume supplied via the Rockhampton to Yeppoon pipeline).

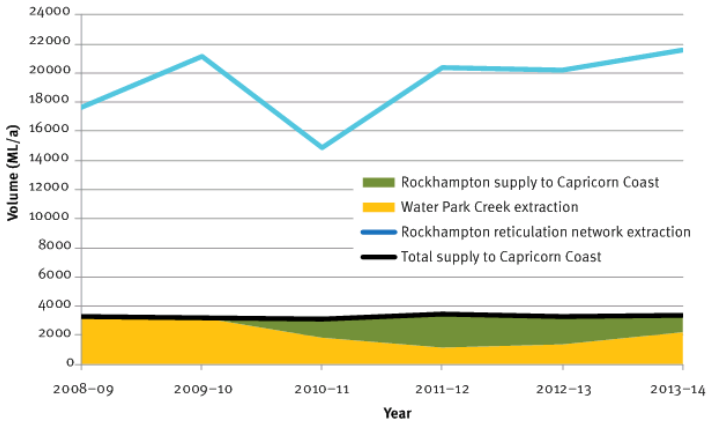

Figure 2 Total volume of water extracted from the Fitzroy Barrage storage (2008–09 to 2013–14)

The total annual volume of water sourced from the Fitzroy Barrage for the Rockhampton reticulation network between 2008–09 and 2013–14 averaged about 19 300 ML/a, ranging between a high of 21 600 ML in 2013–14, and a low of 14 917 ML in 2010–11.

For the Rockhampton WSS (that is, the area serviced by the Rockhampton reticulation network excluding the Capricorn Coast), the total annual volume of water sourced from the Fitzroy Barrage between 2008–09 and 2013–14 averaged about 18 200 ML/a, or in per capita terms about 625 Litres per capita per day (L/c/d[1]). This included a high of about 750 L/c/d in 2009–10). Between 2008–09 and 2013–14 the volume of water extracted from the Fitzroy Barrage for residential uses averaged about 330 Litres per person per day (L/p/d).

For the Capricorn Coast, the combined total annual volume of water sourced from Water Park Creek and the Rockhampton reticulation network between 2008–09 and 2013–14 averaged about 3280 ML/a, or in per capita terms about 410 L/c/d. During this period the volume of water supplied via the Rockhampton to Yeppoon pipeline averaged about 1670 ML/a, or about 200 L/c/d, including a high of 2317 ML in 2011–12. The estimated volume of water extracted for residential uses on the Capricorn Coast averaged about 350 L/p/d.

While residential water use in Rockhampton and on the Capricorn Coast is comparable, the higher per capita use in Rockhampton reflects its larger industrial and other non-residential uses.

The National Water Commission's *National Performance Report 2013–14 Urban Water Utilities* reports, Fitzroy River Water recorded the second highest annual consumption per connected property out of 18 water service providers in the same size category across Australia. Annual water consumption per connected property was also greater for Fitzroy River Water than four out of five other regional Queensland centres included in this report.

[1] L/c/d water use is the mean daily volume of water sourced divided by the serviced population. The volume of water sourced includes residential, commercial, industrial and municipal uses along with any system losses. For clarity, the volume of water used includes water use associated with transient populations such as tourists and temporary workforces, however the serviced population figure used in the calculation does not include the transient population.

Similarly, the L/p/d residential water use figures are calculated by taking the mean daily residential water use divided by the serviced population. For clarity, the residential water use volume does does not include water use by the transient population, and similar to the L/c/d calculation, the serviced population figure used in the calculation does not include the transient population.

Other existing uses of the bulk water supply sources

Urban

No other urban communities access water directly from the Fitzroy Barrage WSS or Lower Fitzroy.

Industry

In recent years Stanwell power station has typically used between 18 000 ML/a and 20 000 ML/a of its 24 000 ML/a HP water allocation from the Lower Fitzroy WSS.

Apart from industrial users accessing water via the Rockhampton reticulation network, there are no other industrial users of water from the Lower Fitzroy WSS or Fitzroy Barrage WSS.

Agriculture

Agricultural water use from the Lower Fitzroy and Fitzroy Barrage WSSs between 2006–07 and 2013–14 has averaged about 5000 ML/a, including a high of 8300 ML/a in 2006–07.


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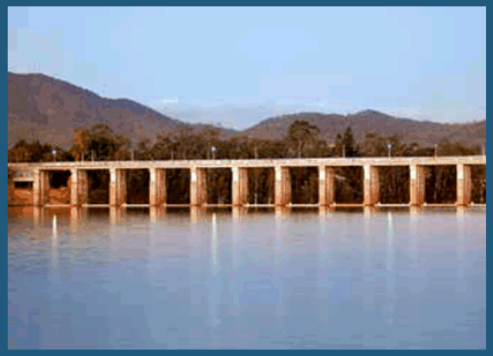
Future water use

Well-founded water supply planning requires an understanding of the likely and possible changes in water demand into the future. Because Eden Bann Weir and the Fitzroy Barrage are operated in conjunction, it is important to understand how water use by the agricultural and industrial sectors, in particular Stanwell power station, may impact on water availability during critical dry periods.



Rockhampton's reticulation network

The population serviced by the Rockhampton reticulation network, including the Capricorn Coast, is projected to grow from the current population of about 108 000 people to about 164 000 by 2036. For the Rockhampton WSS, it is projected that the serviced population will increase from the current 84 000 people to about 116 000 by 2036, while for the Capricorn Coast, the serviced population of about 24 000 people is projected to increase to about 48 000 people by 2036.

Figure 3 shows a dry condition water demand projection for the Rockhampton reticulation network, which includes demand for water within the Rockhampton WSS (including The Caves and Gracemere) and water demands within the Capricorn Coast WSS. This demand projection considers, among other things, the population projections for each centre, assumptions regarding per capita water consumption, and the supplies available to the Capricorn Coast from Water Park Creek.

Water demands that might occur in drier years, rather than just the water demands that might occur in average rainfall or even wetter years is an important planning consideration for Rockhampton's supply. During drier years, water demands will typically be higher, such as for outdoor residential use. On some occasions this could coincide with occurances of low inflow to the Fitzroy Barrage and Eden Bann Weir, which require regular seasonal inflows in order for water supplies to the Rockhampton reticulation network to be maintained.

The dry condition water demand projection shown in Figure 3 includes the application of an assumed per capita rate of consumption of 700 L/c/d for the serviced population associated with Rockhampton and 455 L/c/d for the serviced population associated with the Capricorn Coast. These consumption rates are based on the recent levels of annual water use, with adjustments to account for higher water demands during drier years.

Figure 3 also shows demand projections with average water use for the Rockhampton and Capricorn Coast WSSs. These projections are based on maintaining the recent levels of average annual water use; 625 L/c/d for the Rockhampton WSS and 410 L/c/d for the Capricorn Coast WSS.

Figure 3 Rockhampton reticulation network — proposed demand projections

As indicated previously, the Rockhampton reticulation network supplements the water supply for the Capricorn Coast depending on the volume that can be supplied to the Capricorn Coast from Water Park Creek. Livingstone Shire Council has a 4400 ML/a water entitlement from Water Park Creek which is subject to a 17 ML/day extraction limit. Previous analysis undertaken for Livingstone Shire Council suggests that Water Park Creek may have been able to yield at least 2400 ML/a in all years over the period of the historical records.

Given the Rockhampton reticulation network's dependence on regular seasonal inflows to the Fitzroy Barrage and Eden Bann Weir in order to maintain supplies, the dry condition demand projection for the Rockhampton reticulation network gives consideration to the potential demands which might occur from the Capricorn Coast on the network during critical periods. For this purpose, it has been assumed that the Water Park Creek supply could be limited to 2400 ML/a in critical periods, and as such the Capricorn Coast is highly likely to be dependent on supply from the Rockhampton reticulation network at these times.

Growth in demand for water for industrial development and commercial business throughout the Rockhampton and the Capricorn Coast regions is expected to remain proportional to respective residential growths. The dry condition and average water use demand projections will of course be subject to ongoing monitoring of actual growth and any variations in water use trends.

Other future uses of the bulk water supply sources

Industry

It is expected that Stanwell Corporation will continue to operate Stanwell power station within its existing 24 000 ML/a water allocation.

The Gladstone Area Water Board (GAWB) currently has contracted commitments for supply of around 60 000 ML/a of water from Awoonga Dam to regionally significant heavy industry located around Gladstone, to the Callide power stations, and to Gladstone and surrounding communities. As part of its strategic plan, GAWB has identified the Fitzroy River as its next preferred water supply source. Immediate pressures for GAWB to access water supplies from the Fitzroy River have been alleviated in recent years by, among other things, deferral of major new industrial developments and the filling of Awoonga Dam after its recent major raising. However, investigations have continued to be progressed to ensure the necessary infrastructure can be developed in a timely manner when needed.

The Fitzroy ROP includes a process for granting to GAWB up to 30 000 ML of the 76 000 ML strategic water infrastructure reserve for the Fitzroy River identified in the Fitzroy WRP. Under the GAWB proposal, access to supplemented water allocation in the lower Fitzroy River is dependent on development of supporting water supply infrastructure on the Fitzroy River. However, the Fitzroy ROP also provides for granting to GAWB (in advance of the development of the supporting infrastructure) a water licence subject to, among other things, a flow condition equivalent to at least 432 ML per day passing the Fitzroy Barrage.

Agriculture

There is an identified potential for agricultural expansion to occur along the Fitzroy River and in adjacent areas. This includes potential development within the Fitzroy Agricultural Corridor, such as intensive livestock and horticultural enterprises, as well as the potential expansion of existing enterprises. It is expected that water needs will be met through improvements in water use efficiency, trading of water allocations, increased utilisation of water entitlements and development of additional water supply infrastructure.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Water supply system capability

Hydrologic assessments have been undertaken to ascertain the capability of Rockhampton's existing water supply system to meet current and projected future water demands. Both historical and stochastic modelling were used.

Historical modelling enables a water supply system's performance to be simulated for periods in the historical record before particular elements of its infrastructure had been constructed, for example, simulating what the storage level of the Fitzroy Barrage would have been during years prior to its completion in 1970. Historical modelling also enables assessment of the effect factors such as different operating arrangements or water demands would have had on the past performance of a water supply system.

Stochastic modelling involves generating sequences of river flow and other data using key statistical properties of the historical data. Stochastic modelling can account for a wider variation of potential climatic scenarios than the historical record. Using this method, one hundred sequences of 10 000 years of stochastic data were generated for the Fitzroy River catchments supplying water to the network.

The results of the stochastic modelling were aggregated and the median output used to identify, among other things, the likelihood of water supply shortfalls occurring from the Fitzroy Barrage. Using the median output means that half of the sequences had a lower likelihood and half had a higher likelihood of an event occurring.

The hydrologic assessments undertaken assumed that all existing water entitlements in the Fitzroy Basin were fully developed and operational, with the exception of those used to supply the Rockhampton reticulation network and Stanwell power station. The entitlements used to supply the Rockhampton reticulation network and the power station were represented at various demand levels up to full entitlement to enable the performance of the water supplies at each demand level to be assessed.

Supply of water to all entitlements was modelled in accordance with the arrangements specified in the Fitzroy WRP and Fitzroy ROP and or any other applicable licence conditions.

As indicated earlier, Rockhampton obtains its water supply from the Fitzroy Barrage WSS which is operated in conjunction with the Lower Fitzroy WSS from which Stanwell power station sources its supply. The modelling approach treats both Rockhampton and Stanwell's water allocations equally.

In addition, the new Fitzroy Barrage storage curve generated by Council has been used for this assessment, and the hydrologic outputs presented in this assessment are based on scenarios without any water restrictions being applied. The new storage curve is being used by Council as part of a review of Rockhampton's *Drought Management Plan*, which includes consideration of potential water restriction measures and/or other demand management measures.

Historical performance of the Fitzroy Barrage and Eden Bann Weir

Figure 4 shows the simulated storage behaviour of the Fitzroy Barrage over the historical period from 1889 to 2007, with Figure 5 showing in more detail how the barrage may have performed in the critical period between 1901 and 1903. The modelling results shown in Figure 4 and in Figure 5 assume, among other things, that the storages are operated in accordance with the current operating arrangements and water demands of 25 000 ML/a by the Rockhampton reticulation network and 20 000 ML/a by Stanwell power station. The Fitzroy Barrage's minimum operating volume (24 570 ML) comprises the water stored in the barrage below the minimum operating level (EL -1.2 metres AHD) and the water stranded in the barrage's upstream waterholes which are unable to be accessed at Rockhampton's water supply intake point.

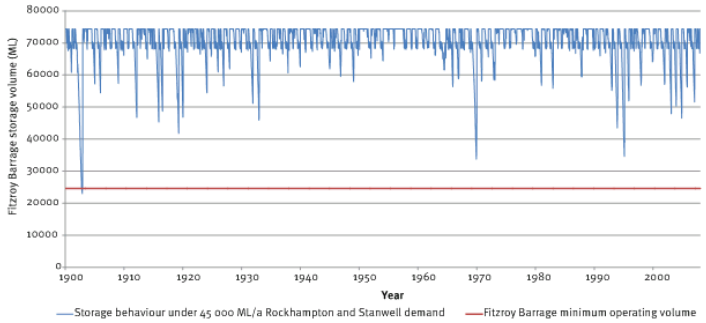

Figure 4 Fitzroy Barrage — Simulated historical storage behavior at current water demand (1889–2007)

In most years, flows in the Fitzroy River far exceed that required to fill both the Eden Bann Weir and Fitzroy Barrage storages. However, as can be seen from the simulated storage behaviour shown in Figure 4, water levels in the Fitzroy Barrage would have fallen to relatively low levels on a number of occasions over the last 100 years.

It can also be seen from both Figure 4 and Figure 5 that the water levels in the barrage can fall quite rapidly. Eden Bann Weir and the Fitzroy Barrage are heavily reliant on seasonal inflows from the Fitzroy River — in particular the occurance of annual wet season events — to maintain continuity of supply. It is estimated that at current levels of demand the storages could fall from full to empty in about 16 months (this assumes no further inflows to the storages during this period and minimal groundwater contributions from the surrounding area to the storage). Given the potentially short duration of available supplies, careful consideration of triggers for the implementation of restrictions and also the time required to plan and implement contingency supply arrangements is required.

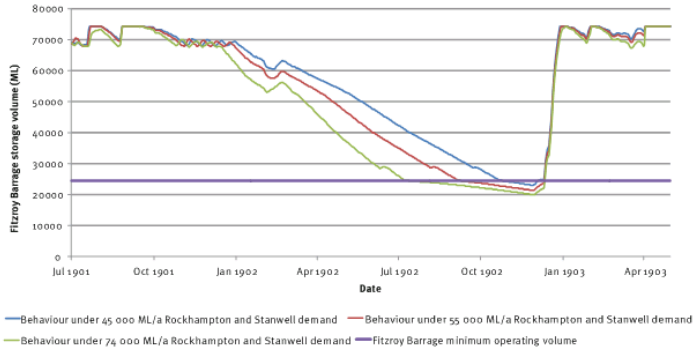

Figure 5 Fitzroy Barrage — Simulated historical storage behaviour for range of water demands (1901–1904)

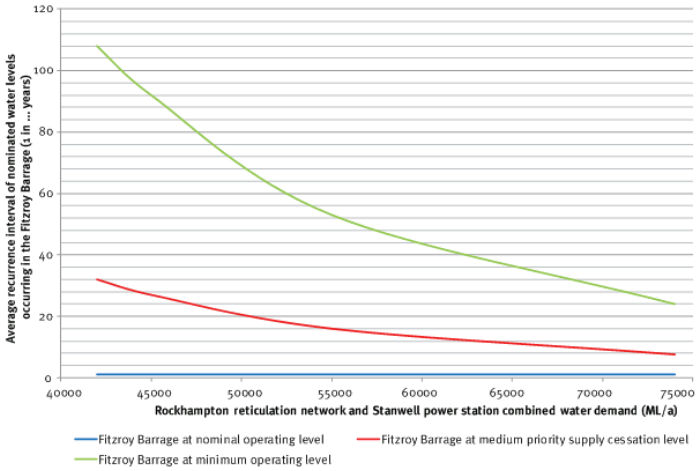

Figure 6 Frequency of Fitzroy Barrage storage falling below nominated water levels for a range of total water demands

Frequency of low water levels occurring in the Fitzroy Barrage and supply failure

Figure 6 shows, for a range of water demands and with no water restrictions applied, the frequency that water levels in the Fitzroy Barrage could be expected to fall below the following levels if all other water allocations in the Fitzroy Basin are fully utilised:

- the minimum operating level EL -1.2 metres (minimum level above which water is authorised to be taken (unless otherwise authorised by DNRM))
- the MP supply cessation level EL 0.75 metres (the trigger for cessation of supplies for MP water allocations). Depending on groundwater contributions to the barrage, this represents at current levels of demand about four to five months supply remaining for Rockhampton and Stanwell power station without further inflows, and
- the nominal operating level EL 3.38 metres, (the barrage will fall below the nominal operating level, which is 0.4 metres below the full supply level of the barrage, when supplies in Eden Bann Weir have fallen to low levels and releases to the barrage from Eden Bann Weir have ceased). Depending on groundwater contributions to the barrage, this represents at current levels of demand potentially about nine months supply remaining without further inflows.

The Rockhampton reticulation network currently takes up to about 22 000 ML/a from the Fitzroy Barrage, while Stanwell power station currently takes up to about 20 000 ML/a. From Figure 6, it can be seen that at this combined level of use, that is 42 000 ML/a, it is anticipated that the barrage storage could be below the MP supply cessation level on average about once in 32 years, and be below the minimum operating level on average about once in 108 years.

However, as water demand increases, the frequency at which these levels are reached will also increase. For example, if the combined Rockhampton reticulation network and Stanwell power station demand increases to about 55 000 ML/a, it is anticipated that the barrage storage could on average be below the MP supply cessation level about once in 16 years, and below the minimum operating level about once in 53 years.

This level of water demand is currently projected to occur in about 2035 if Stanwell power station water usage is maintained at the current 20 000 ML/a, however could occur by about 2027 if the power station's usage was to increase to the level of its water allocation of 24 000 ML/a.

Should both the Council's and Stanwell power station's existing water allocations be fully used, the barrage storage could on average be below its minimum operating level about once in 26 years.

In all cases, the implementation of restrictions or other measures to reduce the water demand on the Fitzroy Barrage would reduce the likelihood of the storage falling to its minimum operating level. The effect of any restriction regime will be dependent on, among other things, the level or levels in the barrage at which restrictions are applied and their severity.

Considerations such as determining acceptable frequency of falling below certain levels in the barrage, and any associated actions, and the underlying likelihood of not being able to meet demand are critical and fundamental parts of the water supply planning currently being undertaken by Council, and generally by councils across Queensland.

Duration that the Fitzroy Barrage may be below specified levels

Figure 7 indicates, for a range of water demand levels, the likelihood of the water level in the barrage being below the mimimum operating level for continuous durations of longer than one month, longer than six months and longer than twelve months.

Similarly, Figure 8 indicate the likelihood of the water level in the barrage being below the MP supply cessation level for more than one, six and twelve months continuous durations, and Figure 9 indicate the likelihood of the water level in the barrage being below its nominal operating level for these same continuous durations.

Figures 7, 8 and 9 show that a significant proportion of the occasions that the water level in the barrage could fall below the minimum operating level, the medium priority supply cessation level and the nominal operating level for more than one month may be for periods of less than six months. However, it is also evident that at times the barrage could potentially be below these levels for extended periods.

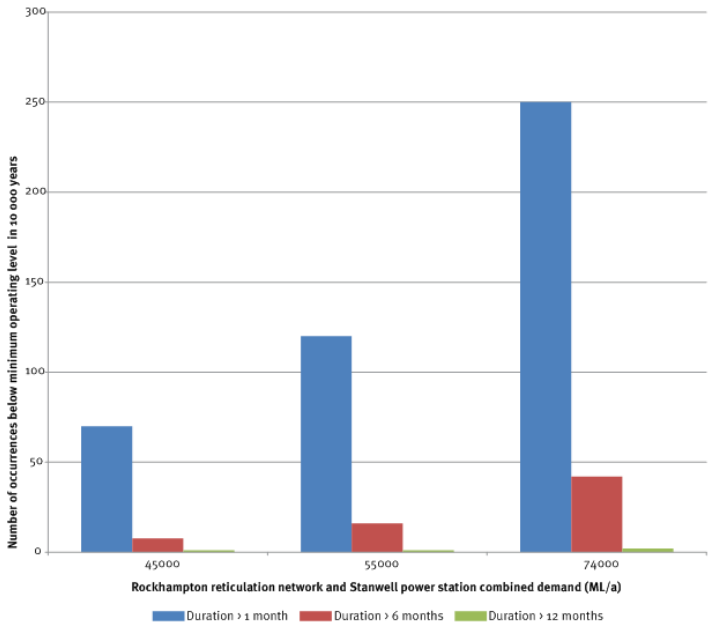

Figure 7 Simulated number and duration of occurrences Fitzroy Barrage storage below minimum operating level at various annual water demands

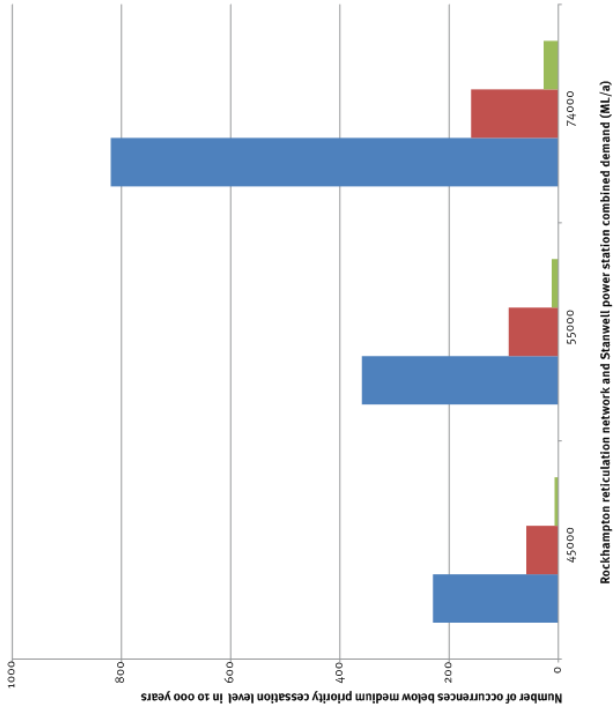

Figure 8 Simulated number and duration of occurrences Fitzroy Barrage storage below medium priority supply cessation level at various annual water demands

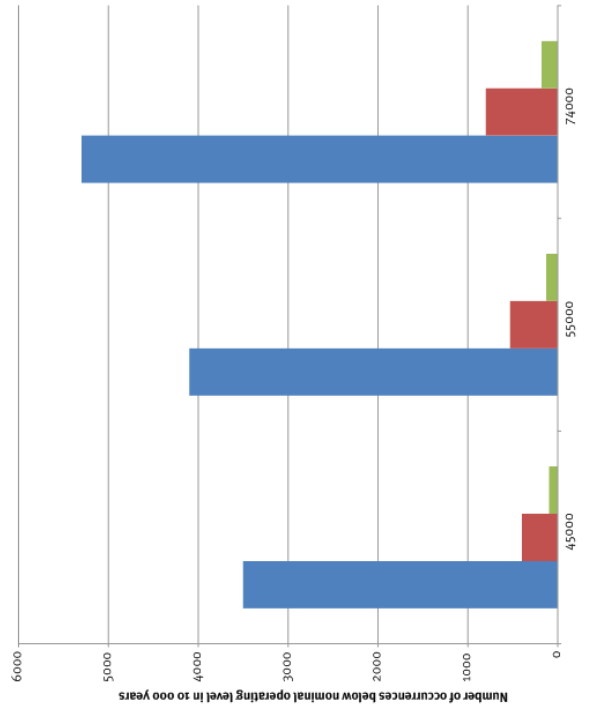

Figure 9 Simulated number and duration of occurrences Fitzroy Barrage storage below nominal operating level at various annual water demands

Moving forward

Rockhampton has a proud history of having an abundant and affordable water supply to meet the needs of the community. As the Rockhampton and surrounding community continues to develop and grow, it is important to ensure that this abundant and affordable water supply is sustained.

Council is committed to undertaking a range of activities towards achieving long-term water security for this growing region. The types of activities underway include, the continued promotion of waterwise behaviours and water efficiency within the community to reduce per capita consumption to a long-term sustainable level, further reduction in water losses associated with the operation of the water reticulation systems, and replacing the use of potable water with the use of recycled water where this represents a feasible and appropriate use. Council continues to carefully monitor water demand patterns across the community to help ensure demand management strategies can meet the seasonal and other changes to water usage.

A number of other significant opportunities for increasing water security are currently being assessed by Council. These opportunities include:

- changes to the way in which the Fitzroy Barrage is operated to increase water security
- improved relationships with key large-scale water users towards a shared demand management strategy for the Fitzroy Barrage storage
- interacting with key agencies and proponents involved in identifying and constructing future water storages in the Fitzroy Basin that have the potential to improve Rockhampton's water security
- ongoing development and refinement of modelling tools/techniques to enable water supply decisions for the Lower Fitzroy to be informed with the best available information.
- investigation of alternative water supply sources including desalination.

With this measured approach to managing water security, the significant potential for further population growth as well as the growth and development of key industries including agriculture, can be realised. In this way, ensuring water security will underpin the future growth and prosperity of this great region.


For more information on the
Rockhampton regional water supply
security assessment please visit
www.dews.qld.gov.au
Queensland
Government

9 STRATEGIC REPORTS

9.1 FRW MONTHLY OPERATIONS REPORT - AUGUST 2015

File No:	**1466**
Attachments:	**1. FRW Monthly Operations Report for August 2015**
Authorising Officer:	**Robert Holmes - General Manager Regional Services**
Author:	**Jason Plumb - Acting Manager Fitzroy River Water**

SUMMARY

This report details Fitzroy River Water's financial position and other operational matters for the Council's information as at 31 August 2015.

OFFICER'S RECOMMENDATION

THAT the FRW Monthly Operations Report for August 2015 be received.

FRW MONTHLY OPERATIONS REPORT - AUGUST 2015

FRW Monthly Operations Report for August 2015

Meeting Date: 7 October 2015

Attachment No: 1

MONTHLY OPERATIONS REPORT

FITZROY RIVER WATER

Period Ended 31 August 2015

VARIATIONS, ISSUES AND INNOVATIONS

Innovations

Fitzroy River Water has recently been working with the Department of Environment and Heritage to obtain a permit for the beneficial use of the biosolids produced by the five sewage treatment plants currently in operation. The biosolids produced during the sewage treatment process are mostly made up of the bugs and associated biomass that grows up during the activated sludge treatment process used to remove nutrients from the raw sewage. Biosolids are a rich source of the trace elements and other nutrients required for plant growth and have the potential to significantly increase crop yields when applied to soils correctly. This innovative development of biosolids reuse will help to provide a long term sustainable, low cost disposal option for the biosolids produced by FRW while providing benefit to local crop farmers.

Improvements / Deterioration in Levels of Services or Cost Drivers

The North St Reservoir in Mount Morgan has recently been returned to service following the renewal of the roof purlins, roof sheeting and ladders used to access the reservoir. This project also included the removal and safe disposal of the old asbestos roof sheeting and roof-top air vents, with new whirly-bird style air vents installed to minimise chlorine-associated corrosion. This project will help to ensure that the reservoir continues to meet the needs of the community for many years to come. The project was completed by local company Queensland Steel Products at a total cost of approximately $180,000.

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LINKAGES TO OPERATIONAL PLAN

1. COMPLIANCE WITH CUSTOMER SERVICE REQUESTS

The response times for completing the predominant customer requests in the reporting period for 31 August 2015 are as below:

	Balance B/F	Completed in Current Mth	Current Month NEW Requests		TOTAL INCOMPLETE REQUESTS BALANCE	Work Orders Issued	Under Long Term Investigation	Avg W/O Issue Time (days) 12 months	Completion Standard (days)	Avg Completion Time (days) Current Mth	Avg Completion Time (days) 6 Months	Avg Completion Time (days) 12 Months	Avg Duration (days) 12 Months (complete and
			Received	Completed									
Asset Enq/Jump up location/Wat/ Sew Invert Levels	0	0	2	2	0	0	0	0.00	2	3.33	2.53	8.26	15.14
Network Construction - Reworks (Reinstatement Proj	1	0	0	0	1	0	0	0.00	1	0.00	2.00	1.74	12.30
Network Construction - Planned Works (Scheduled Re	0	0	0	0	0	0	0	0.33	1	0.00	3.17	4.80	3.64
Customer Service - Rebate Residential	0	0	14	14	0	0	0	0.00	30	0.43	1.51	4.49	2.71
Customer Service - Rebate Undetected Leaks	24	9	10	2	23	0	0	0.00	120	3.00	17.32	22.19	23.48
Customer Service - Standpipe Enquiry/Read (Asset)	1	1	0	0	0	0	0	0.00	2	0.00	10.25	8.67	0.75
Customer Service - Water Exemption Request	0	0	0	0	0	0	0	0.00	5	0.00	0.00	0.00	0.00
Development - Applications	0	0	1	1	0	0	0	0.00	10	1.00	3.00	1.75	1.75
Development - Building Over Sewerline	1	1	3	2	1	0	0	0.00	7	2.00	1.80	2.24	1.38
Network Systems (Network Analysis Water or Sewer)	0	0	0	0	0	0	0	0.00	7	0.00	1.67	1.60	1.60
Development - Strategic Sewer	0	0	0	0	0	0	0	0.00	10	0.00	2.80	2.83	2.83
Development - Strategic Water	1	0	0	0	1	0	0	9.33	10	0.00	8.67	15.00	6.14
Environment and Water Conservation Enquiry	0	0	0	0	0	0	0	0.00	5	0.00	0.00	5.00	0.00
Finance - Irrigators/Water Allocations (Asset)	0	0	3	2	1	0	0	196.12	7	1.50	3.14	3.70	1.82
Network Services - No Water (Asset)	0	0	7	7	0	0	0	0.84	1	0.11	0.47	0.94	0.16
Network Services - Reactive Sewerage Block (Asset)	13	12	38	35	4	2	0	-12.34	1	1.03	4.94	12.94	17.83
Network Services - Sewer Reimbursements	1	1	2	1	1	0	0	5.07	7	5.00	7.00	4.14	3.81
Network Services - Sewer Inflow Inspection/Enquiry	2	0	3	3	2	0	0	26.95	7	1.33	5.27	3.72	16.32
Network Services - Water Leaks (Asset)	1	1	64	54	10	1	0	0.55	1	0.42	0.60	0.84	0.73
Network Services- Poor Water Pressure (Asset)	0	0	7	6	1	0	0	16.27	1	1.18	1.43	1.52	0.48
Process - Tradewaste	0	0	3	2	1	0	0	145.26	7	6.75	2.90	2.74	1.59
Network Services - Lids/Cover (Asset)	1	1	6	5	1	0	0	7.21	1	1.06	1.01	1.70	1.73
Network Services - Meter Maintenance (Asset)	60	37	69	11	81	58	0	1.05	1	0.53	2.76	3.49	4.89
Network Services Private Works/Standard Connection	0	0	2	2	0	0	0	0.00	5	2.00	1.88	2.54	1.51
Network Services - Reinstatements	2	0	4	0	6	2	0	3.52	1	4.80	5.70	6.99	7.13
Network Services Special Water Meter Read Enquiry	0	0	1	1	0	0	0	0.00	10	0.00	3.57	3.90	1.88
Network Services - Water Meter Reading Enquiry	2	2	6	6	0	0	0	0.00	10	3.17	3.08	4.57	3.60
Process - Odour (Sewer Only) (Asset)	1	1	1	0	1	0	0	0.56	1	0.00	0.78	1.80	2.08
Process - River Quality	0	0	0	0	0	0	0	0.00	2	0.00	0.00	0.00	0.00
Process - Drinking Water Quality (Asset)	0	0	5	5	0	0	0	20.37	1	0.00	0.75	0.80	0.17
Water Meter Read Search - "NOT FOR CSO"	13	13	100	75	25	0	0	0.00	90	3.20	4.46	4.70	4.69

Comments and Additional Information

FRW uses Pathway escalations to monitor service performance compliance to the Customer Service Standards. The last column is the best indicator of average completion times for standard jobs.

2. COMPLIANCE WITH STATUTORY AND REGULATORY REQUIREMENTS INCLUDING SAFETY, RISK AND OTHER LEGISLATIVE MATTERS

Safety Statistics

The safety statistics for the reporting period are:

	FIRST QUARTER 2015/16		
	July	**August**	**September**
Number of Lost Time Injuries	1	0	
Number of Days Lost Due to Injury	6	0	
Total Number of Incidents Reported	5	2	
Number of Incomplete Hazard Inspections	4	4	

Hazard inspections are being competed however FRW processing of any rectification actions can delay meeting the end of month cut-off date for HR reporting.

Treatment and Supply

- No lost time injuries for the month.
- No employees are currently on long term lost time injuries.
- Four safety incidents were reported for the month.

Network Services

- No lost time injuries for the month.
- No employees are currently on long term lost time injuries.
- No safety incidents were reported for the month.

Operations and Planning

- No lost time injuries for the month.
- No employees are currently on long term lost time injuries.
- No safety incidents were reported for the month.

Risk Management Summary

Potential Risk	Current Risk Rating	Future Control & Risk Treatment Plans	Due Date	% Completed	Comments
Inadequate physical security resulting in disruption or loss of critical services and supply, serious injury or death, damage to assets, theft; and damage to reputation.	Moderate 5	1. Conduct security audit of all sites and update as necessary. 2. Finalise and implement FRW Maintenance Strategy.	27/3/15	70%	Draft maintenance strategy completed. Queensland Police Service have increased patrols of FRW sites. New security consultant engaged due to non-performance of the first consultant. Site inspections completed 19 June 2015. Security audit report received and FRW will commence security improvement projects in order of priority.

Legislative Compliance and Standards
All services were provided in accordance with the relevant standards as required by legislation and licence conditions for both water and sewerage activities.

3. ACHIEVEMENT OF CAPITAL PROJECTS WITHIN ADOPTED BUDGET AND APPROVED TIMEFRAME

The following abbreviations have been used within the table below:

R	*Rockhampton*
G	*Gracemere*
M	*Mount Morgan*
WPS	*Water Pump Station*
SPS	*Sewage Pump Station*
STP	*Sewage Treatment Plant*
S	*Sewerage*
W	*Water*

Project	Start Date	Expected Completion Date	Completion Status	Budget Estimate	YTD actual/committals
NETWORK SERVICES CAPITAL WORKS PROGRAM					
Rockhampton Water (water main replacement)					
Snelling Street 100mm water main replacement	June 2015	August 2015	100%	$170,544	$127,124
Comments: Construction Completed					
Gracemere Duplication (Athelstane) 300mm water main	July 2015	June 2016	20%	$1,000,000	$280,414
Comments: On schedule. Stage 4					
Pennycuick and Caxton	July 2015	September 2015	95%	$157,472	$132,958
Comments: On schedule					
Denham Street 150mm water main replacement	May 2015	August 2015	100%	$138,631	$251,811
Comments: Construction Completed. Brosnan contractors undertaking the construction of the new water main. (Quoted cost = $199,000). FRW maintains the Superintendence role during the construction phase. FRW provided pipes and fittings for the project. The project could have come in cheaper if all the unmarked service clashes weren't encountered. Our crew would have encountered the same issues if they were doing the work.					
Arnold Street (Archer and Fitzroy) 100mm water main upgrade	August 2015	August 2015	100%	$70,118	$46,760
Comments: Construction Completed.					

Rockhampton Sewer					
Sewer rehabilitation program (including Building over Sewer)	July 2015	June 2016	46%	$700,000	$324,979
Comments: Rehabilitation and renewals annual program of works.					
Ramsay Creek, construct new 225mm gravity sewer main	April 2015	August 2015	100%	$200,000	$345,724
Comments: Construction Completed. Extra cost due to the water table this has impacted on the job by having to dewater, slower excavating and using 20mm stone for the base. Late August finish. Overall the Ramsay Creek project will be within budget when combined with the wet well project.					
Ramsay Creek, sewer wet well duplication	April 2015	September 2015	90%	$500,000	$359,162
Comments: On Schedule.					
Sewer Main Relining 2014/15 Stage 1 (Carry over)	August 2014	September 2015	100%	$527,505	$1,522
Comments: On schedule and on budget. Program of works completed, awaiting issue of final invoice.					
NRFM Access Chamber Refurbishment (Carry over)	January 2015	September 2015	98%	$70,000	$43,364
Comments: On schedule. Refurbishment of one access chamber remaining.					
Gracemere Sewer					
Gracemere Sewer Effluent Capricorn Highway	July 2015	June 2016	50%	$700,000	$21,043
Comments: On Schedule. Stage 4					
Mount Morgan (water mains replacement)					
Pattison Street (Black & Norton) 100mm water main	August 2015	September 2015	70%	$66,945	$49,928
Comments: On Schedule					
Mount Morgan Sewer					
Railway Avenue New 225mm Gravity Sewer	July 2015	June 2016	58%	$700,000	$200,870
Comments: On Schedule					

TREATMENT AND SUPPLY CAPITAL WORKS PROGRAM					
Pipeline from West to South STP – Design Phase	July 2014	September 2015	60%	$100,000	$25,236
Comments: Survey completed and detailed design underway.					
R SRSTP Primary Valve Pit Replacement	July 2014	November 2015	15%	$90,000	$3000
Comments: Delayed slightly due to complexity of design, with procurement now underway.					
R S Gracemere STP Augmentation Inlet Works Upgrade (Stage 1)	July 2014	December 2015	20%	$1,500,000	$62,538
Comments: Detailed design and equipment procurement underway.					
N Water Rogar Ave Reservoir Rechlorination Facility	September 2014	December 2015	10%	$70,000	$0
Comments: Delayed due to TC Marcia. Tendered prices significantly greater than allocated budget. FRW reviewing alternative delivery methods.					
N Water Mt Archer Reservoir Online Chlorine Analysis	July 2014	October 2015	95%	$20,000	$17,237
Comments: Delayed due to TC Marcia, final commissioning expected in October.					
R Water Barrage Gates Maintenance	September 2014	Septemebr 2015	100%	$120,000	$56,493
Comments: Completed.					
R Water Barrage Gate Seal Rehabilitation	November 2014	June 2016	2%	$300,000	$0
Comments: Deferred until completion of crane rail restoration.					
R WTP Glenmore Concrete Refurbishment	August 2014	March 2016	10%	$25,000	$0
Comments: Delayed slightly due to change in schedule of contractor, with work now planned for period of lower consumption in early 2016.					
M W Dam No 7 CCTV Installation	July 2014	October 2015	10%	$30,000	$1500
Comments: Delayed slightly due to TC Marcia. Currently working through site access agreement with Optus for access to their communications tower.					
M WTP CCTV Installation	July 2014	October 2015	10%	$15,000	$0
Comments: Delayed slightly due to TC Marcia. Currently working through site access agreement with Optus for access to their communications tower.					
M W Dam No 7 Raw Lift Pump Upgrade	July 2014	October 2015	60%	$25,000	$5,000

Comments: On schedule with new impellers being procured prior to completion.					
M W North Reservoir Roof Replacement	July 2014	September 2015	100%	$180,000	$122,000
Comments: Completed. Final invoices currently being processed.					
M STP Chlorination Upgrade	April 2013	October 2015	80%	$15,716	$8,250
Comments: On schedule. Final installation and commissioning expected in October.					
R – S NRSTP Aerator Replacement	July 2013	October 2015	70%	$91,071	$54,228
Comments: Awaiting completion of procurement activities for aerator bridge renewal by external contractor with award of project expected in early October.					
Barrage Crane and Rail Restoration	December 2013	November 2015	30%	$333,247	$120,202
Comments: Project awarded to successful tenderer and design underway. Contractor to commence on-site work to re-grout crane rails in early October.					
GWTP Highlift Pump Station Upgrade (Stage 1)	July 2013	October 2015	98%	$3,366,922	$3,208,854
Comments: Stage 1 nearing completion with new high voltage switchboards currently being installed and commissioned. The contractor has been delayed by wet weather and is working through some design complications previously unforeseen.					
GWTP Highlift Pump Station Upgrade (Stage 2)	August 2014	March 2016	60%	$3,510,000	$1,178,906
Comments: Three old pumps now decommissioned and two new pumps fully installed with commissioning to commence in early October.					
Arthur Street SPS Electrical Upgrade	July 2014	Dece,ber 2015	40%	$700,000	$338,302
Comments: On schedule. Design completed with on-site work commencing in October.					
MMWTP Coagulant Dosing Upgrade	January 2014	October 2015	60%	$70,000	$49,968
Comments: On schedule with increased budget due to new requirement for chemical tank bunding. Final installation and commissioning work expected in October.					
R Reaney St Recycled WPS Renewal	July 2014	October 2015	80%	$40,000	$63,248
Comments: New electrical switchboard installed and connected to mains power with commissioning expected in late September and early October.					
G Lucas St WPS pump and electrical switchboard upgrade	January 2014	November 2015	40%	$500,000	$17,202
Comments: Delay in progress during completion of design. Design nearing completion with site works now underway.					
R – North Rockhampton SPS No. 1 and 2 electrical upgrade	July 2015	April 2016	5%	$500,000	$0

Comments: Tender documents being reviewed prior to advertising.					
R – STP replace handrails at South Rockhampton STP	August 2015	November 2015	10%	$25,000	$0
Comments: Quotes received and currently being evaluated prior to awarding in early October.					
MM – STP construct additional drying bed storage	August 2015	November 2015	20%	$40,000	$0
Comments: Three existing drying beds extended with design for the construction of the fourth underway.					

4. ACHIEVEMENT OF OPERATIONAL PROJECTS WITHIN ADOPTED BUDGET AND APPROVED TIMEFRAME

As at period ended 31 August 2015.

Project	Revised Budget	Actual (incl. committals)	% budget expended	Explanation
Nil				

5. DELIVERY OF SERVICES AND ACTIVITIES IN ACCORDANCE WITH COUNCIL'S ADOPTED SERVICE LEVELS

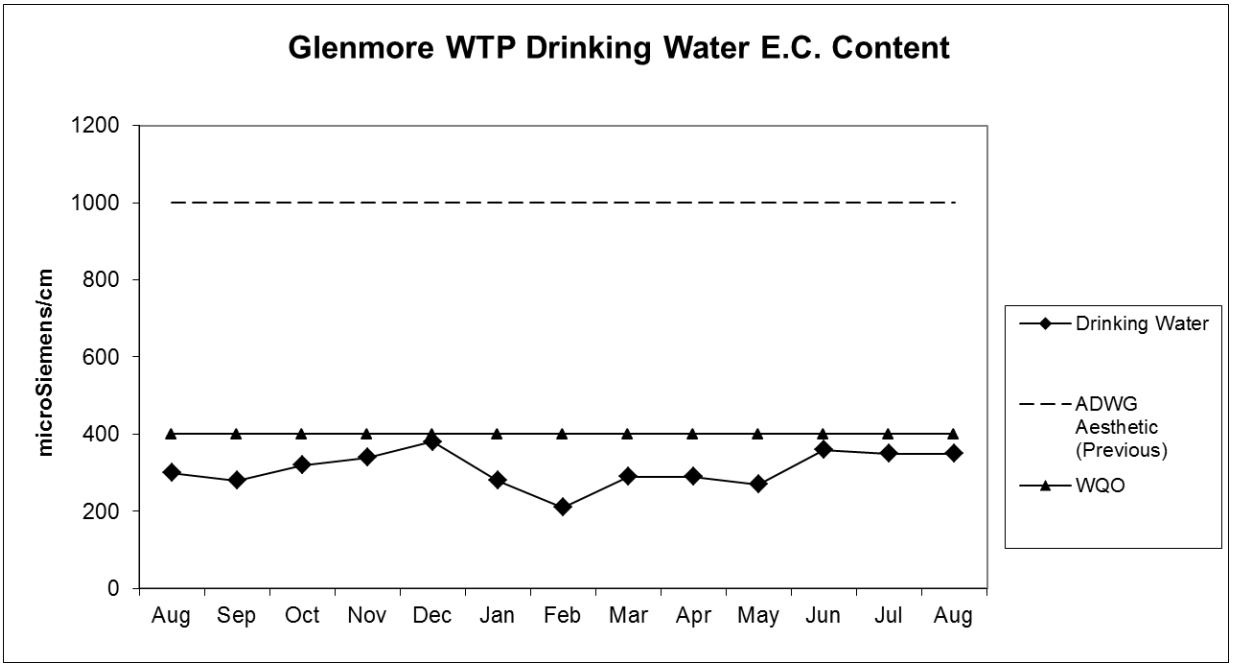
Service Delivery Standard	Target	Current Performance
Drinking Water Samples Compliant with ADWG	>99%	100%
Drinking water quality complaints	<5 per 1000 connections	0.25
Total water and sewerage complaints	N/A	200
Glenmore WTP drinking water E.C Content	<500 µS/cm	350 µS/cm
Glenmore WTP drinking water sodium content	<50 mg/L	32 mg/L
Average daily water consumption – Rockhampton	N/A	45.24 ML
Average daily water consumption – Gracemere	N/A	5.52 ML
Average daily water consumption – Mount Morgan	N/A	1.08 ML
Average daily bulk supply to LSC	N/A	7.74 ML
Drinking water quality incidents	0	0
Sewer odour complaints	<1 per 1000 connections	0.01
Service Leaks and Breaks	80	65
Total water main breaks	15	12
Total sewerage main breaks and chokes	32	16
Incidence of unplanned interruptions – water	N/A	52.2
Average response time for water incidents (burst and leaks)	N/A	142.1
Average response time for sewerage incidents (including main breaks and chokes)	N/A	43.13
Rockhampton regional sewer connect blockages	42	23

**Where there are no targets identified they will be set as part of the revised FRW Customer Service Standards.

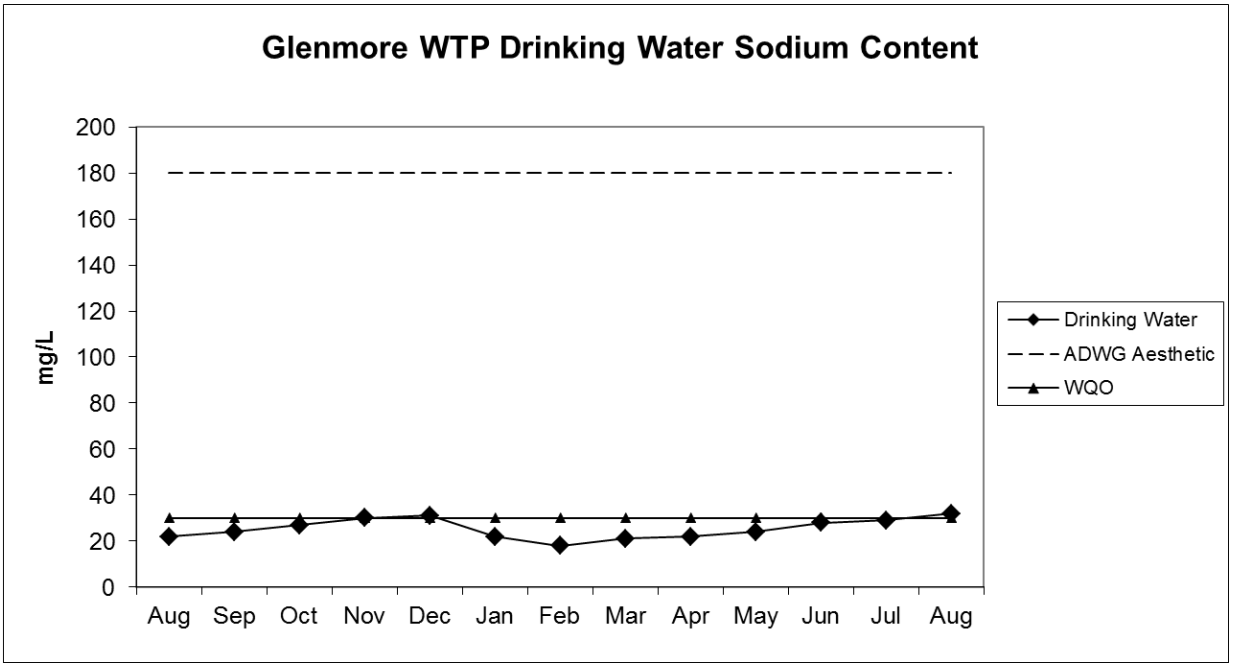
Refer to the individual graphs and information below.

TREATMENT AND SUPPLY

Drinking Water E.C. and Sodium Content



The level of E.C. in drinking water supplied from the Glenmore Water Treatment Plant (GWTP) during August remained unchanged to be 350 µS/cm. The relatively low E.C. value continues from previous months following the earlier river flows caused by summer rainfall. The level of E.C. is below the Water Quality Objective of 400 µS/cm and well beneath the previously used aesthetic guideline value of 1000 µS/cm. The E.C. reading is not expected to increase significantly within the next few months.



The concentration of sodium in drinking water supplied from the GWTP during August increased slightly to be 32 mg/L. The relatively low sodium concentration continues from previous months following the earlier river flows caused by summer rainfall. The current level of sodium is beneath the Water Quality Objective value of 30 mg/L and is well beneath the aesthetic guideline of 180 mg/L for sodium in the Australian Drinking Water Guidelines. The sodium concentration is not expected to increase significantly within the coming months.

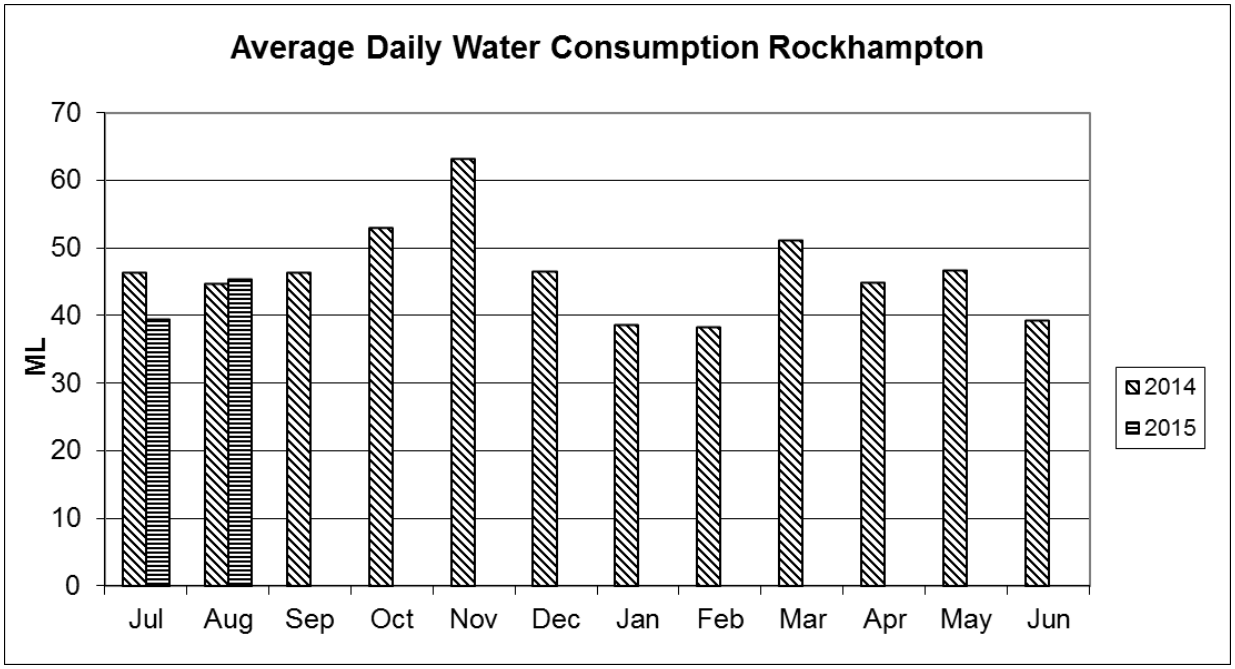
Drinking Water Quality		
Parameter	Rockhampton	Mount Morgan
Total Dissolved Solids (mg/L)	220	210
Sodium (mg/L)	32	43
Electrical Conductivity (uS/cm)	350	280
Hardness (mg/L)	103	53
pH	7.83	6.83

The table above shows the results of drinking water testing in Rockhampton and Mount Morgan for selected water quality parameters.

Drinking Water Supplied

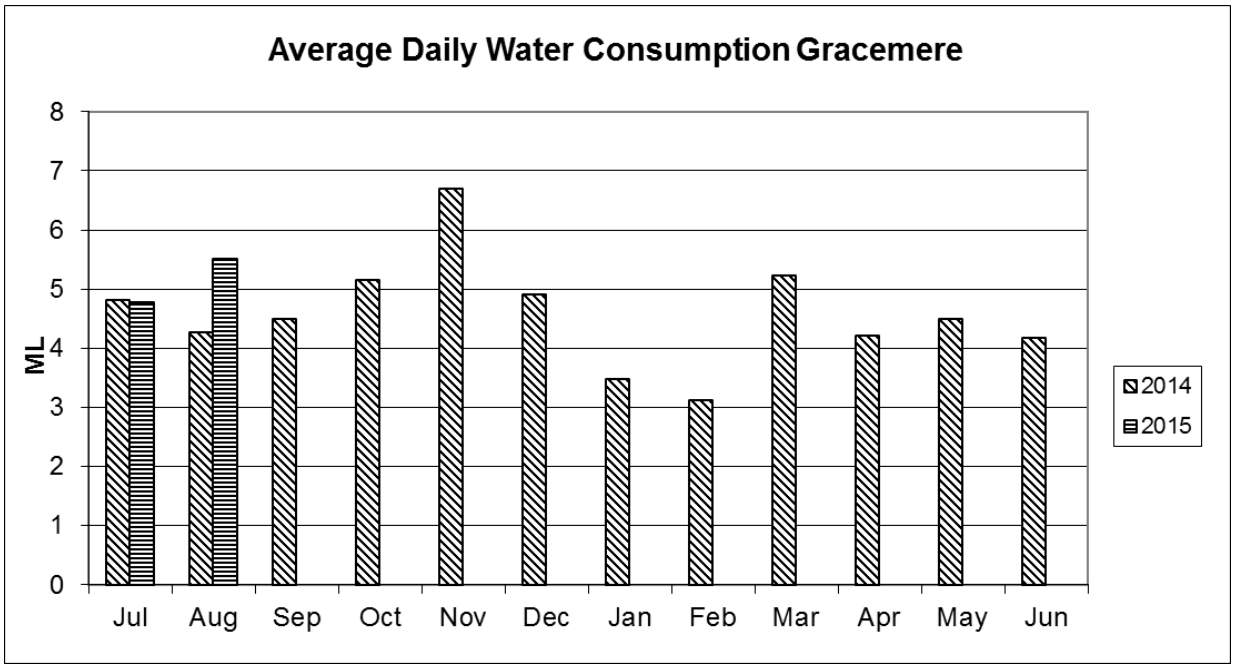
Data is presented in graphs for each water year (e.g. 2014 is the period from July 2014 to June 2015).

Rockhampton



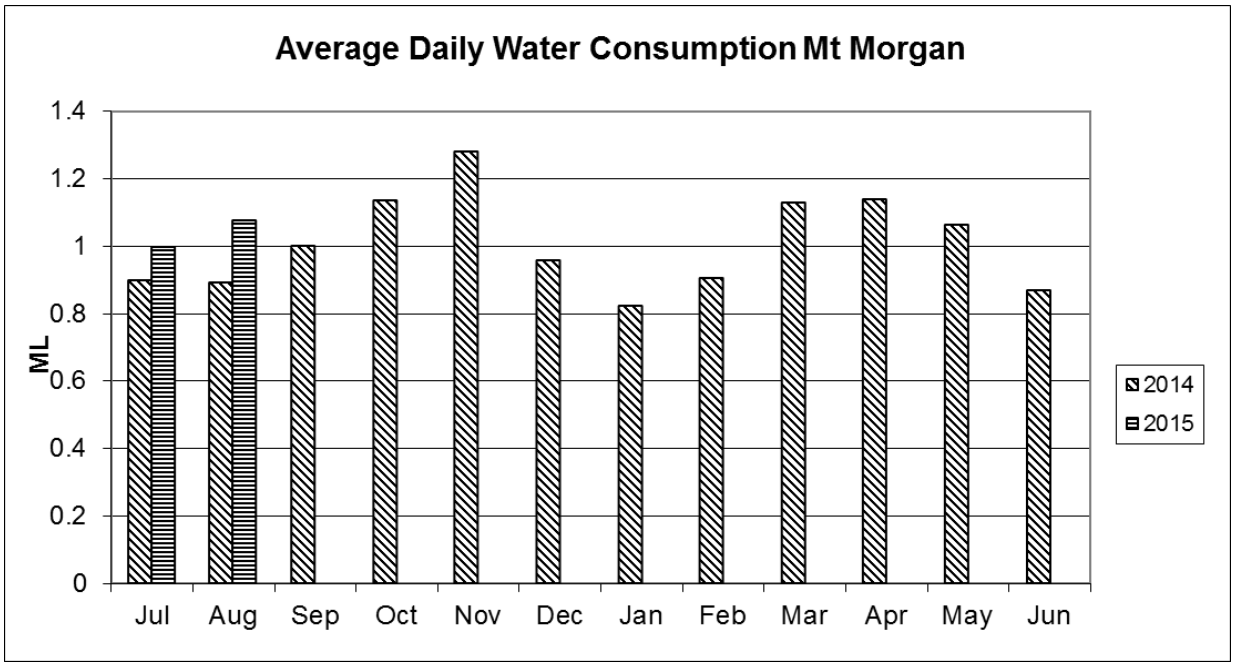
Average daily water consumption in Rockhampton during August (45.24 ML/d) was higher than that reported in July and was slightly higher than that reported in the same period last year. The increased consumption was due to the warmer weather and limited amount of rainfall received during the month. The Fitzroy Barrage Storage is currently at 95% of full storage level and is therefore well above the threshold in the Drought Management Plan used to trigger the implementation of water restrictions.

Gracemere



Average daily water consumption in Gracemere during August (5.52 ML/d) increased compared to that reported in July and was much greater than that reported in the same period last year. The increased consumption was due to the warmer weather and limited amount of rainfall received during the month. The Fitzroy Barrage Storage is currently at 95% of full storage level and is therefore well above the threshold in the Drought Management Plan used to trigger the implementation of water restrictions.

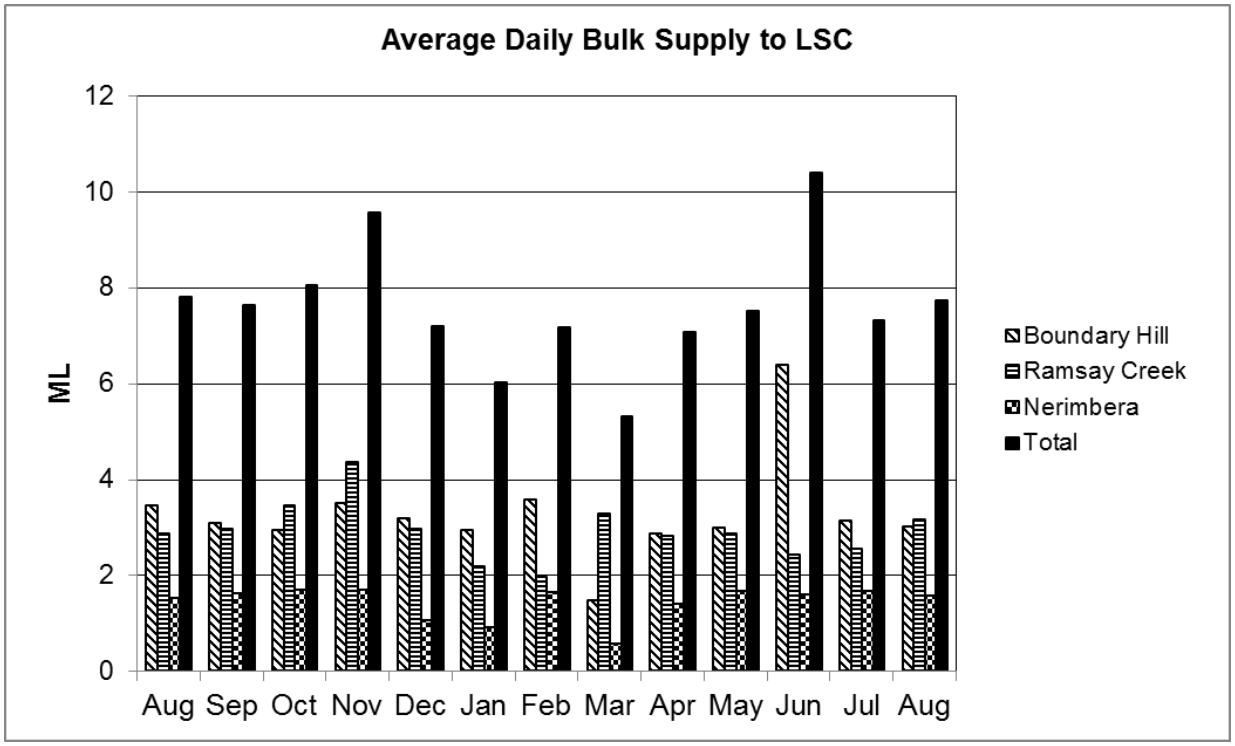
Mount Morgan



Average daily water consumption in Mount Morgan during August (1.08 ML/d) was greater than that reported in July and was greater than that reported for the same period last year. The increased consumption was due to the warmer weather and limited amount of rainfall received during the month. The No. 7 Dam is currently at 83% of full storage level, well

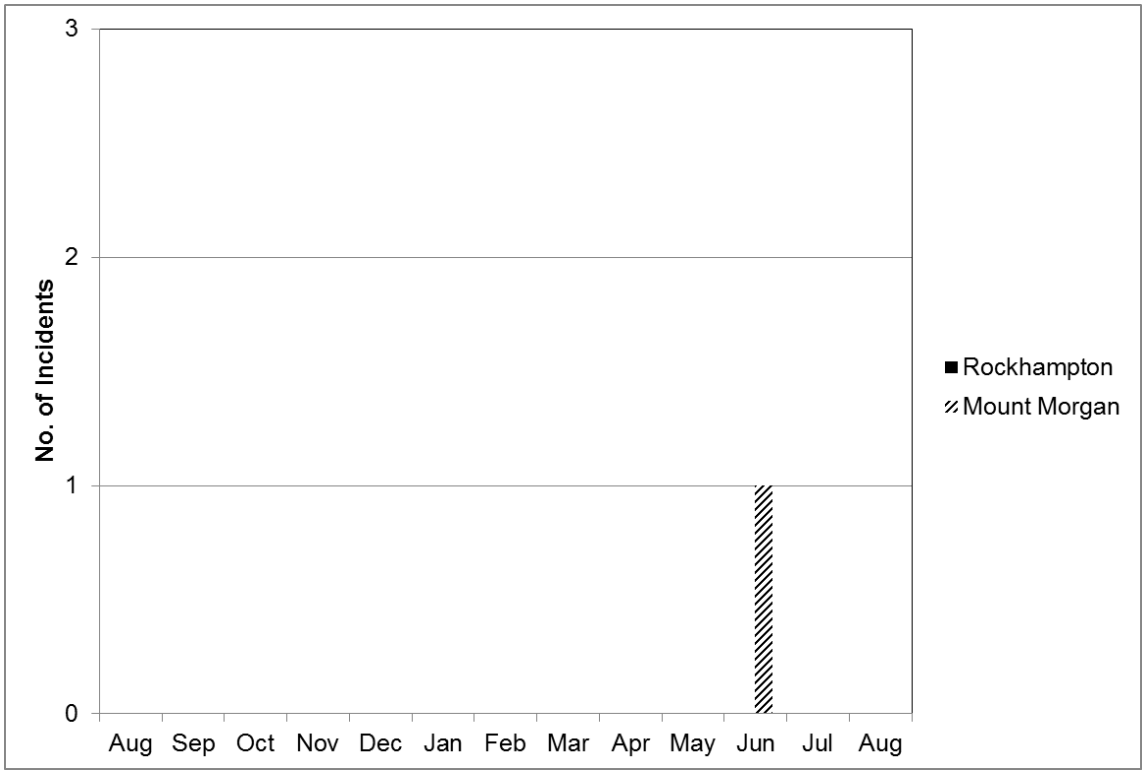
above the 50% storage threshold value in the Drought Management Plan that is used to trigger the implementation of water restrictions in Mount Morgan.

Bulk Supply to Livingstone Shire Council



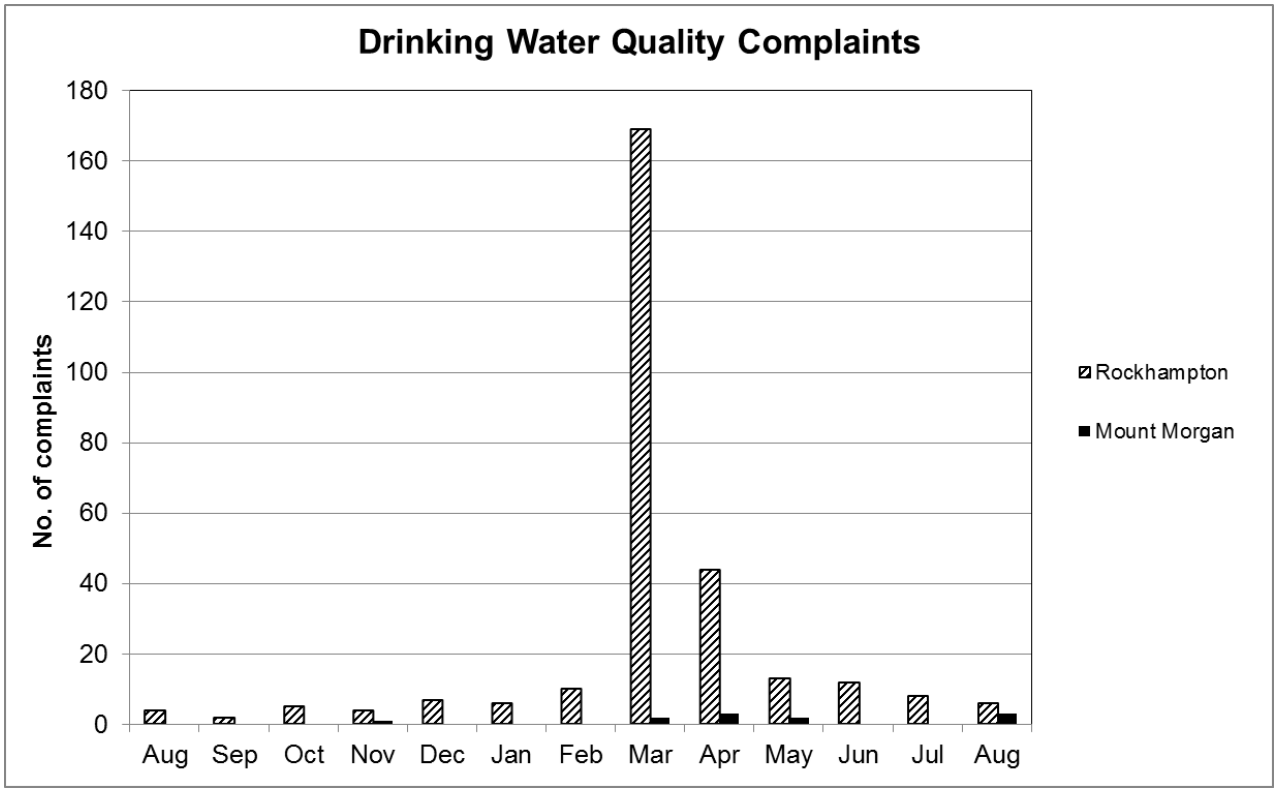
The average daily volume of water supplied to LSC increased slightly during August compared to that recorded in July to be 7.74 ML/d. This increase was primarily due to an increase in the volume of water supplied from the Ramsay Creek site during this period.

Drinking Water Quality Incidents



No water quality incidents occurred during the month of August. Only one water quality incident has occurred in the last three years.

Drinking Water Quality Complaints

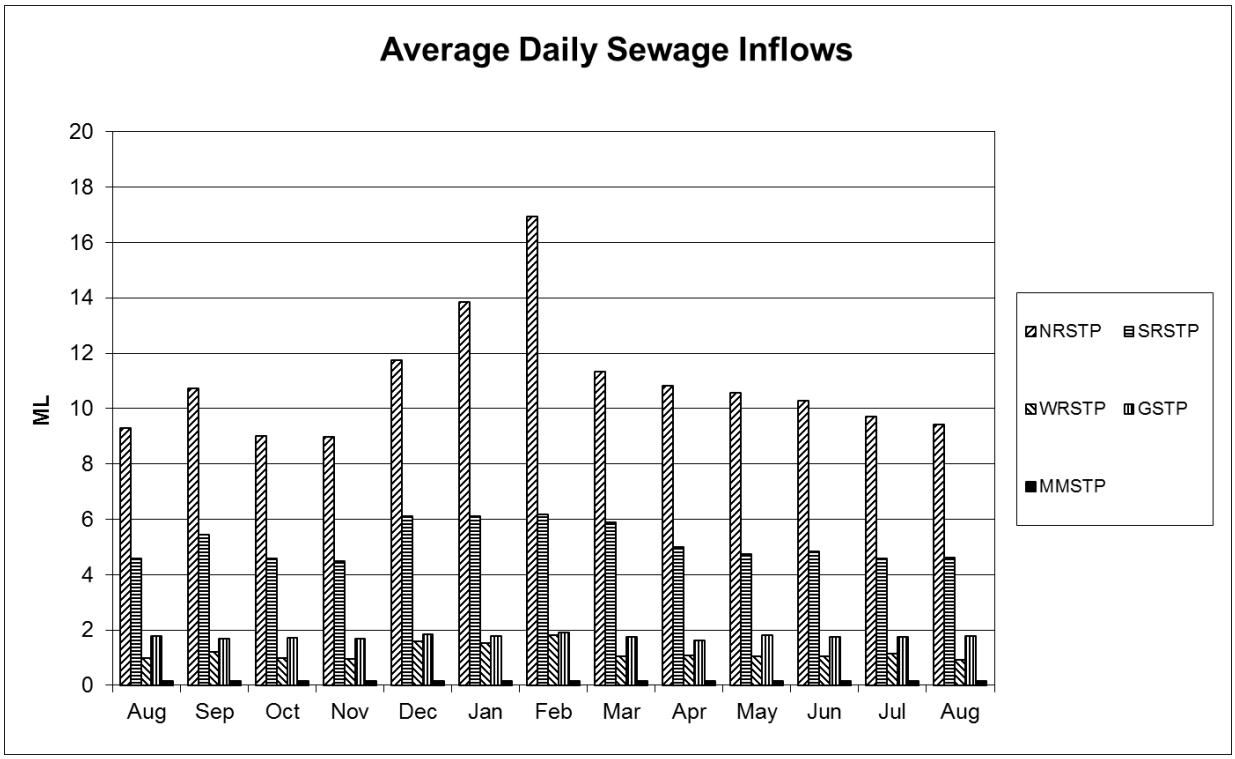


	Elevated Chlorine	Taste/Odour/Quality	Discoloured Water	Physical Appearance (e.g. residue or air)
No. Complaints	1	0	6	2

The total number of drinking water quality complaints (9 complaints) received during August increased slightly from the 8 complaints received in July.

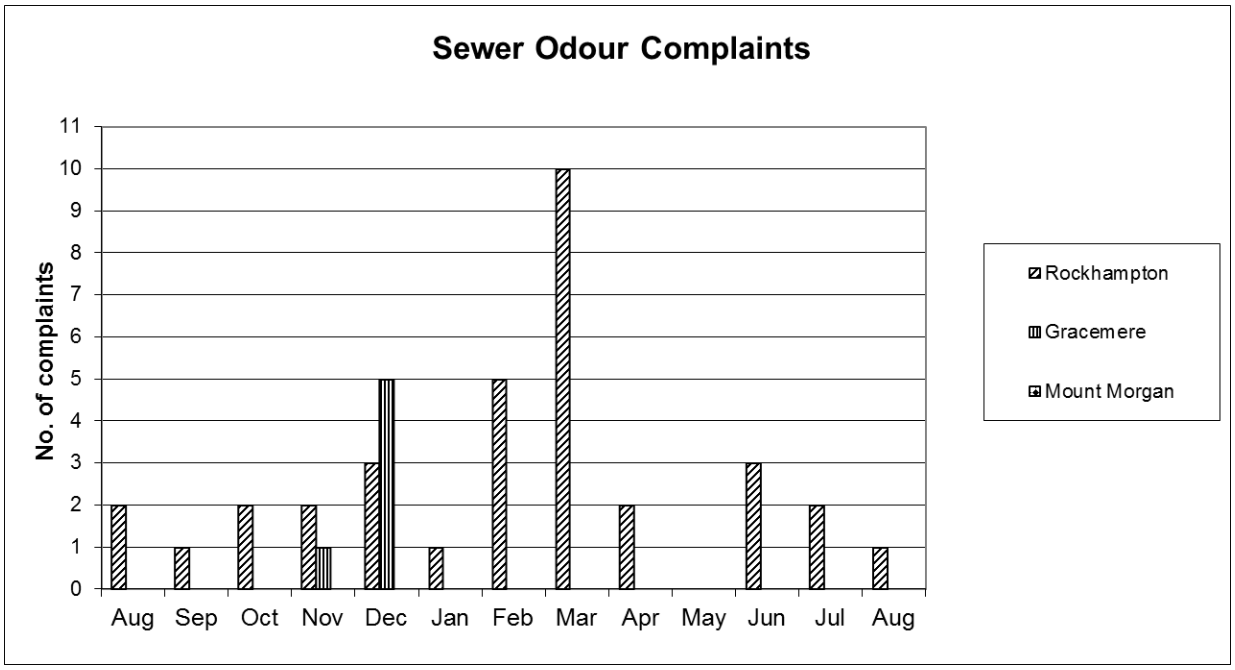
Six of the complaints were received from Rockhampton and three from Mount Morgan. Six of the complaints were associated with discoloured water and two were due to a milky appearance attributed to the presence of air in the water. The other complaint was associated with an elevated chlorine taste in the drinking water. Two of the three complaints received from Mount Morgan were found to be due to the temporary changes to the distribution system during the period that the Mount Morgan North Reservoir was off-line while its roof was being renewed. In each of these cases, the cause of the complaint was attributed to construction work being undertaken on the water network. FRW took a range of actions to address the complaints including flushing mains, performing additional testing or providing information about the nature and cause of the water quality complaints.

Sewage Inflows to Treatment Plants



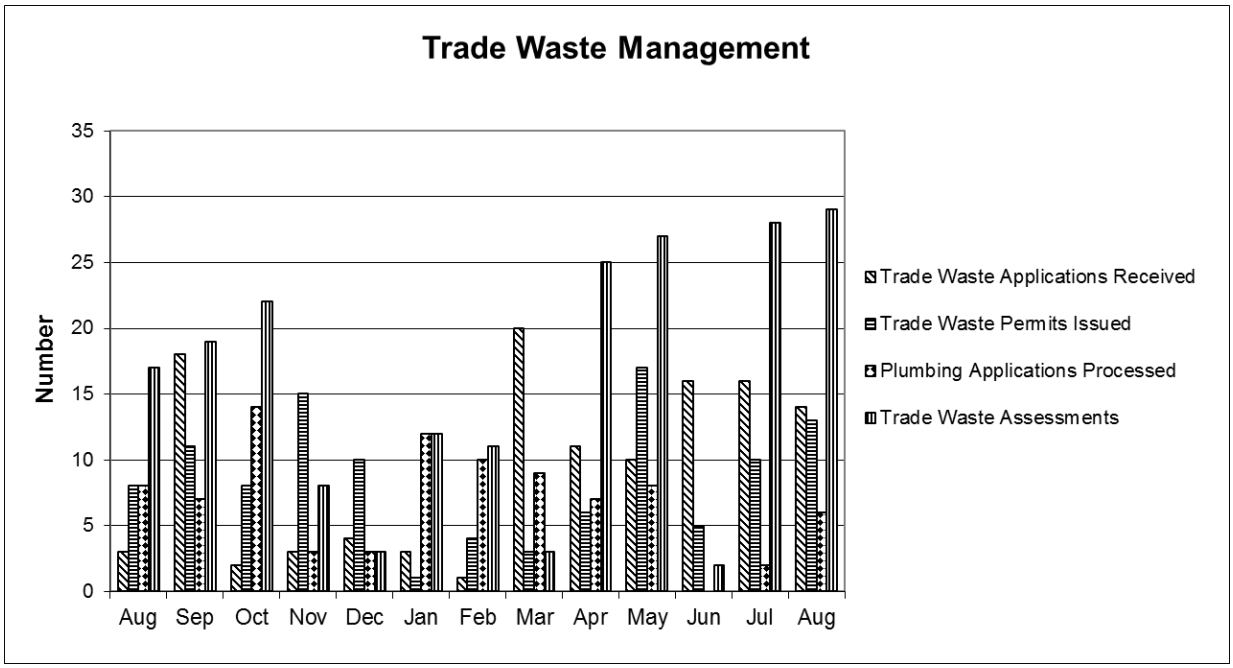
Average daily sewage inflows during August were similar or slightly lower at STPs compared to that reported in July due to the relatively low amount of rainfall received during the month. The overall level of inflow is now very close to long term dry weather inflows with groundwater infiltration reduced due to the recent dry weather.

Sewer Odour Complaints



One sewer odour complaint was received during the month of August, a decrease from the two complaints received in July. This complaint was received from Rockhampton and was associated with a blockage in the sewer network.

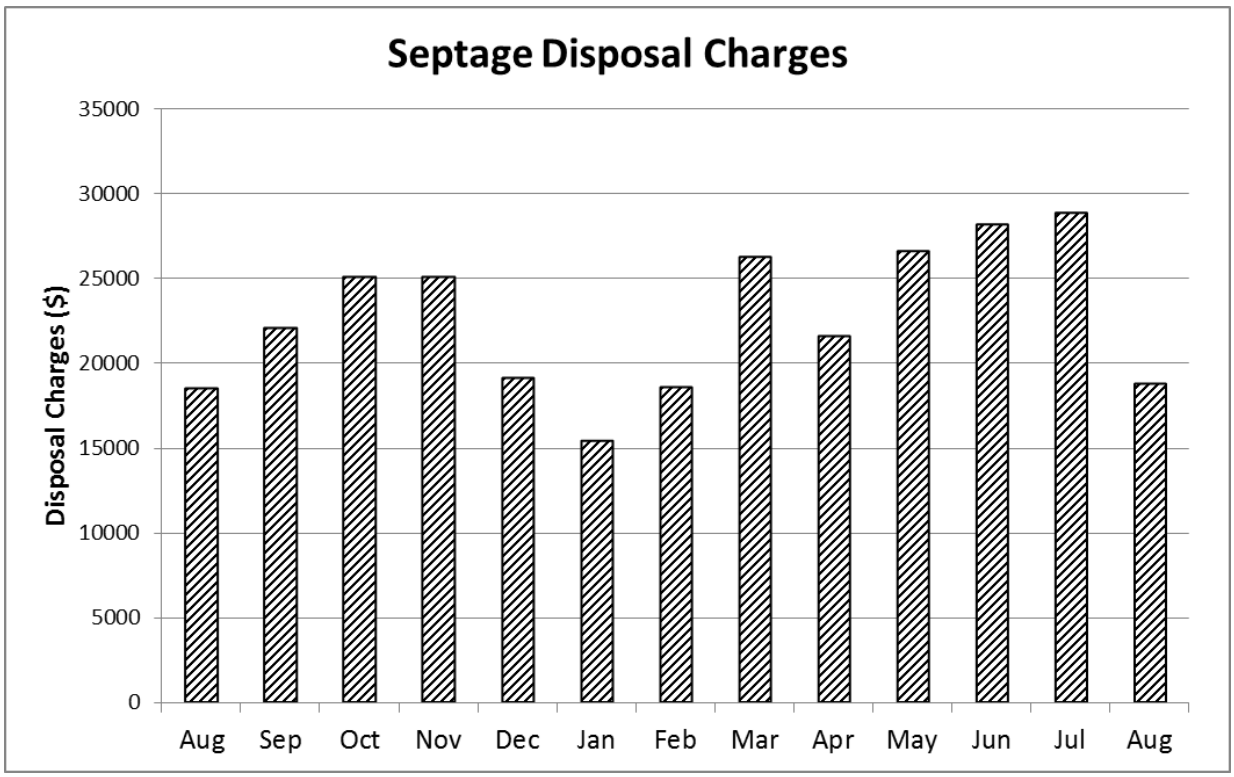
Trade Waste and Septage Management Activities



Fourteen Trade Waste applications were received and 13 Trade Waste Permits were issued during August. Six Plumbing Applications were processed and 29 Trade Waste Assessments were completed by the team.

The table below shows those Permits which contained a significant change either to their Category rating or due to the inclusion of a Special Condition in order to comply with Council's Trade Waste Environmental Management Plan.

Industry/Trade	New or Renewal	Permit Category	Special Condition	Comments
Technical School	Renewal	From 1 to 2	Install a grease trap for the canteen/cafeteria	Average TW discharge is 4649 kL/a
Supermarket	Renewal	1	Rehabilitate & repair grease trap; Install TW flow measurement	
Bakery	Renewal	1	Rehabilitate & repair grease trap	
Hospital	Renewal	From 1 to 2	Nil	Average TW discharge is 4644 kL/a
Tavern	Renewal	From 1 to 2	Nil	Average TW discharge is 809 kL/a
Army Barracks	Renewal	From 1 to 2	Nil	Average TW discharge is 5551 kL/a

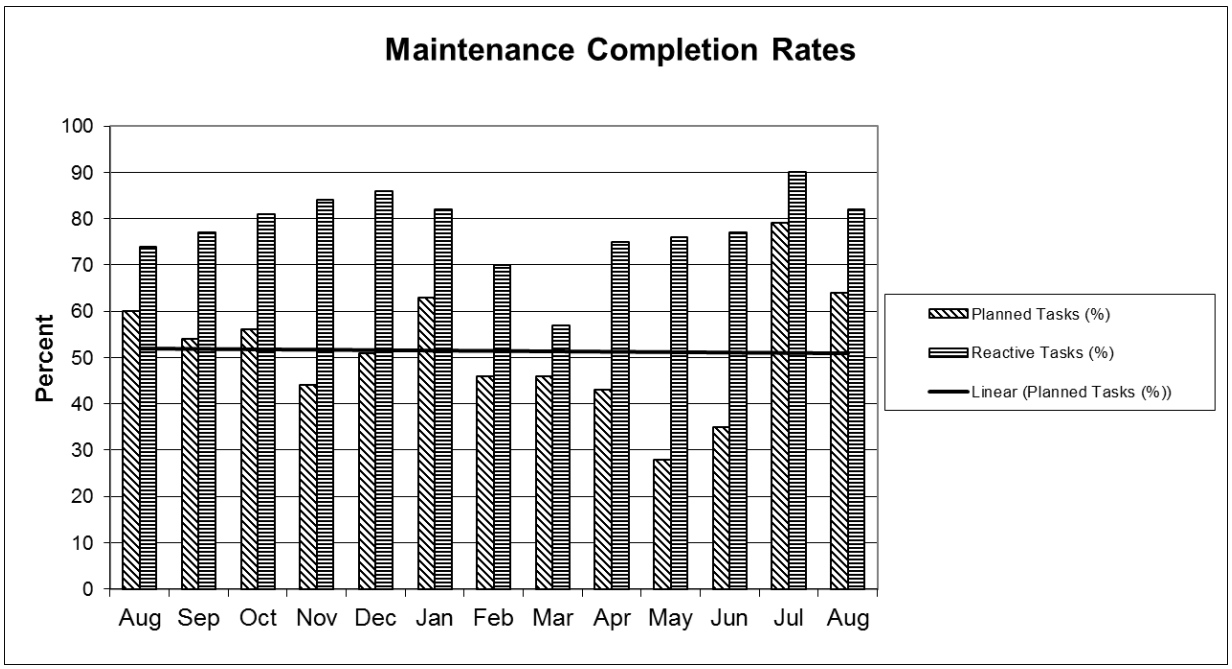


The above graph shows the income received each month for the last 13 months for the disposal of septage liquid waste at the North Rockhampton STP. The reduction in charges received in August reflects the end of the military training exercises at Shoalwater Bay.

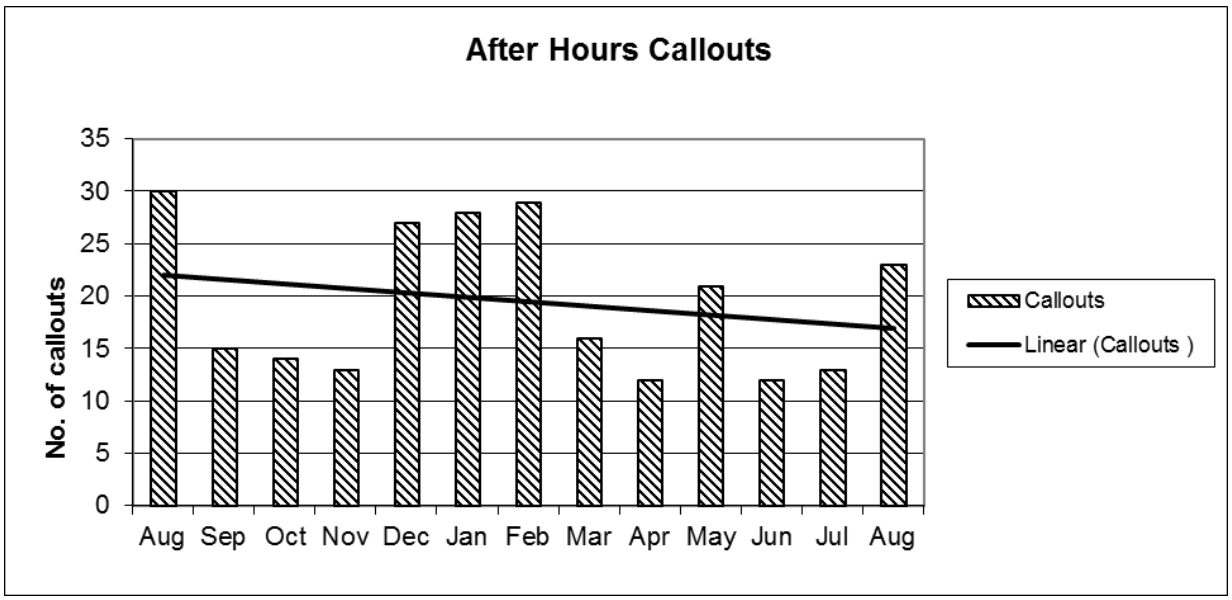
Treatment and Supply Maintenance Activities

The table below shows the breakdown of work completed based on the category of the work activity.

Maintenance Type	Work Category			
	Electrical	Mechanical	General	Operator
Planned	71	41	54	0
Reactive	53	35	0	2
After hours callouts	15	6	0	0
Capital	1	0	0	6
Safety and Compliance	2	18	1	0



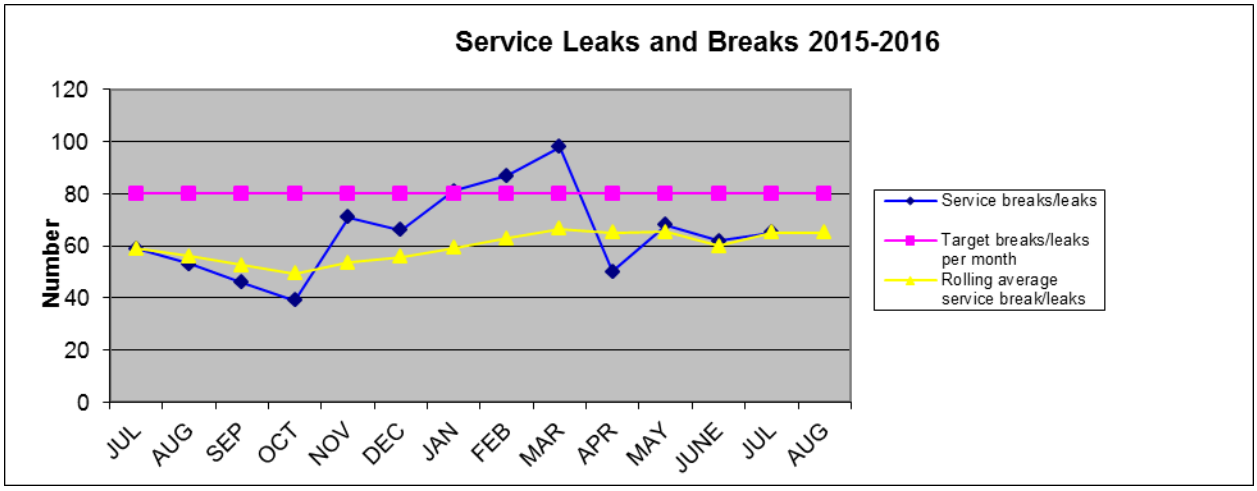
A total of 259 preventative maintenance activities were scheduled and 132 reactive maintenance activities were requested during the month of August. Completion rates for each type of maintenance activity by the end of the month were 64% and 82% respectively. The relatively high completion rate continues to reverse the decreasing trend reported in previous months.



The number of after-hours call-outs for electrical and mechanical reactive maintenance (13 call-outs) increased during August compared to July. The number of callouts was higher than the 12 month rolling average of 20 call-outs. The trend line in the graph indicates a gradual decrease in call-outs following the elevated numbers over the summer months. In the majority of cases, the faults were rectified within the targeted rectification time according to the Priority Ratings used to rank reactive maintenance events.

NETWORK SERVICES

Regional Service Leaks and Breaks



Performance

Target achieved.

Issues and Status

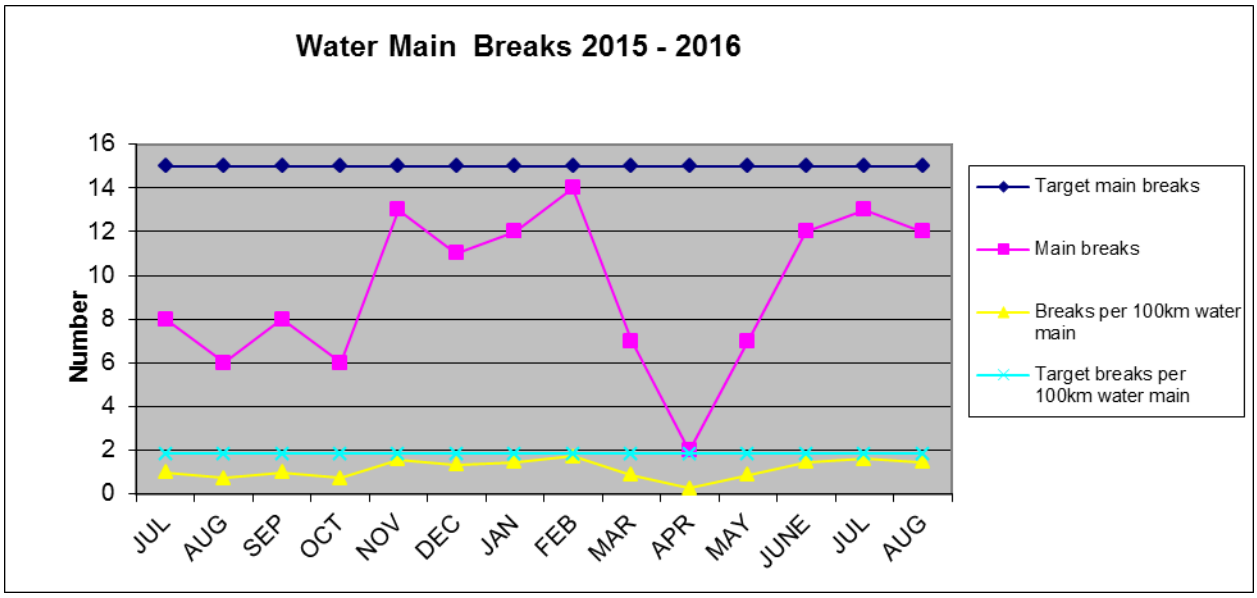
Maintenance records indicate a high percentage of service breaks and joint failures consistently occurring on poly services.

Response to Issues

Water services subject to two failures are being replaced under the capital replacement programme to minimise the risk of failure.

Locality	Service Leaks / Breaks
Rockhampton	62
Mount Morgan	3
Regional Total	**65**

Regional Water Main Breaks



Performance

Target achieved.

Issues and Status

Nil.

The following table shows the number of breaks per month.

Water main type	June 2015	July 2015	August 2015
Cast Iron	2	3	2
A C	6	6	6
PVC	4	4	1
Mild Steel	0	0	0
Poly	0	0	3
TOTAL	**12**	**13**	**12**

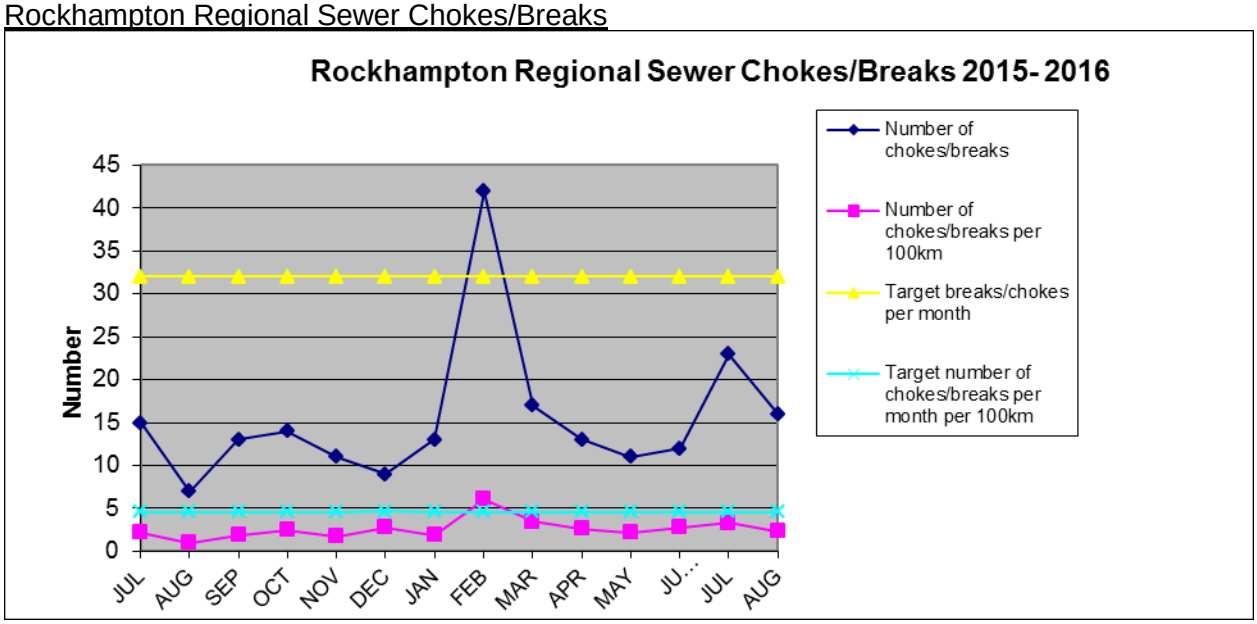
Response to Issues

Continued defect logging and rectification will reduce failure occurrences.

	Number of Main Breaks	Target Main Breaks	Breaks per 100 km	Target Breaks per 100 km	Rolling average per 100 km
August	12	**15**	1.47	**1.84**	0.74

Locality	Main Breaks
Rockhampton	10
Mount Morgan	2
Regional Total	**12**

Rockhampton Regional Sewer Chokes/Breaks



Performance

Target achieved.

Issues and Status

Data indicates that blockages / overflows have been caused by tree root intrusion.

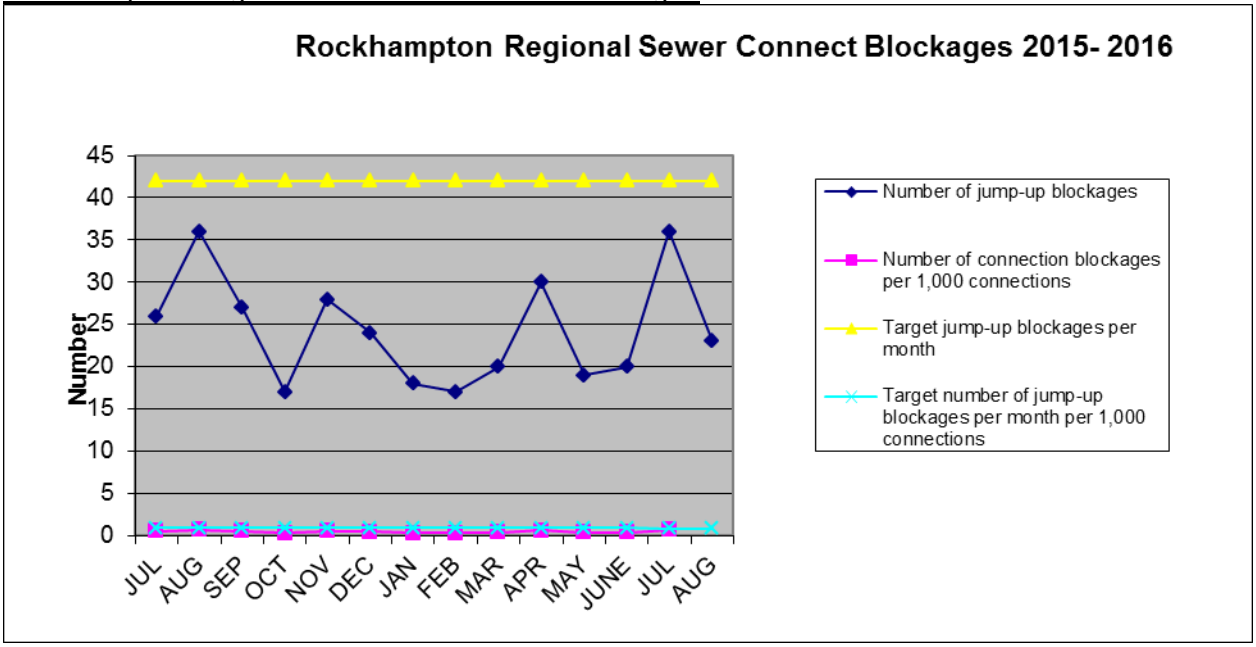
Response to Issues

Continue to log defects and monitor outcomes to ensure inclusion in the Capital Relining rehabilitation program.

	Number of chokes/ breaks	Target chokes/breaks per month	Number of chokes/ breaks per 100 km	Target number of chokes / breaks per month per 100km	Rolling 12 month average per 100 km chokes / breaks
August	16	**32**	2.3	**4.58**	2.76

Locality	Surcharges	Blockages
Rockhampton	14	16
Mount Morgan	0	0
Regional Total	**14**	**16**

Rockhampton Regional Sewer Connection Blockages



Performance

Target achieved

Issues and Status

Data indicates that blockages have been caused by broken pipes due to age, and tree root intrusion.

Response to Issues

Continue to assess properties with repeat breaks and chokes for inclusion in the capital sewer refurbishment programme.

	Number of connection blockages	Target connection blockages per month	Number of connection blockages per 1,000 connections	Target number of connection blockages per 1,000 connections	12 month average per 1,000 connections
August	23	**42**	0.46	**0.84**	0.59

Locality	Connection Blockages
Rockhampton	23
Mount Morgan	0
Regional Total	**23**

Sewer Rehabilitation Program

Work Location	Number completed for the month	Year to date totals
Access Chambers raised	6	**20**
Sewers repaired	11	**21**

Private Works

Table 1: New Water Connections:

Region	August	FY to Date 2015	FY to Date 2014	FY to Date 2013	FY to Date 2012
Gracemere	6	9	5	16	79
Rockhampton	10	20	23	11	21
Mount Morgan	N/A	N/A	N/A	N/A	N/A
Regional Total	**16**	**29**	**28**	**27**	**100**

This table and graph shows the water connection data, for August, for the past four years.

Region	August 2015	August 2014	August 2013	August 2012
Gracemere	6	5	12	54
Rockhampton	10	28	8	18
Mount Morgan	N/A	N/A	N/A	N/A
Total	**16**	**33**	**20**	**72**

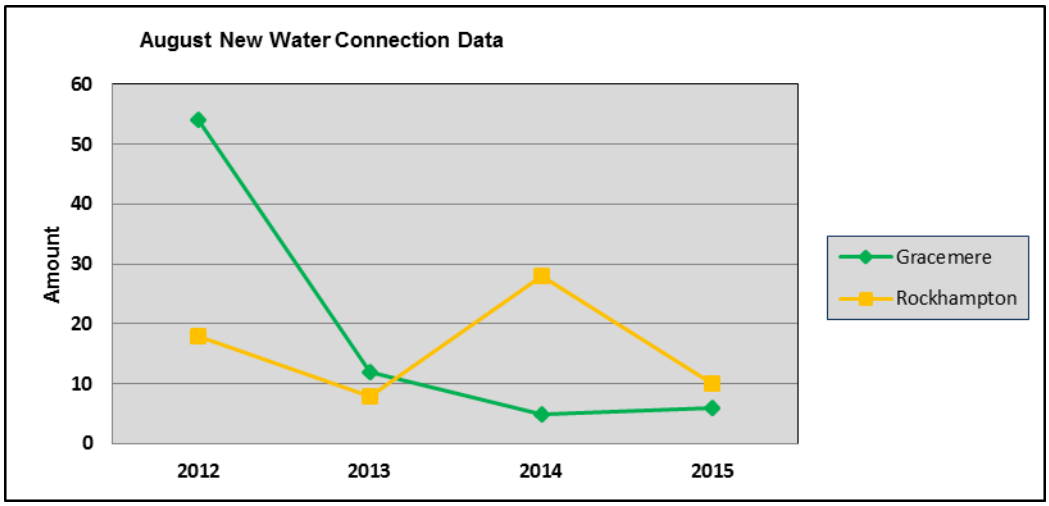


Table 2: Details on Private Works Jobs

Table 2 shows the quantity of private works jobs quoted and accepted during the reporting period and year to date. Jobs include both water and sewerage.

	August	Amount	YTD	Amount
Quotes Prepared	10	$74,386.90	21	$134,322.67
Quotes Accepted	8	$68,603.16	20	$135,021.42
Jobs Completed	8	$91,071.00	24	$152,413.20

Customer Enquiries - Pathways

Request Type	No. of Requests	Requests Outstanding
NSPWSC - Network Services – Private Works/Standard Connection Enquiry	3	0

Table 3: Undetected Leaks (Residential)

	August	FYTD
New requests	6	19
Number declined	0	1
Number approved	7	10
Require more info	1	4
Total Kl rebated	2607	7823
Total value approved	**$4878.00**	**$14564.17**

Table 4: Undetected Leaks (Commercial)

	August	FYTD
New requests	1	0
Number declined	0	1
Number approved	0	0
Require more info	0	0
Total Kl rebated	0	0
Total value approved	**0**	**$0**

Table 5: Residential Rebates

	August	Total FYTD Applications	Total FYTD $
Washing machines	10	16	$1,600
Stand Alone tank	0	0	$0
Integrated tank	0	0	$0
Dual flush toilet	0	0	$0
Shower rose	0	0	$0
Total	**10**	**16**	**$1,600**

Currently there is one unapproved application pending further advice from the applicant as the receipt does not show their name and residential address details.

There was one declined application relating to the washing machine not being four stars.

Water Meters

1st quarter 2015/16 meter reads were completed at the end of August 2015. 17869 water meters were read during the month of August and approximately 8,200 accounts being in sectors 4, 5 and 6 were issued to customers. The remainder of the sectors should be billed during September.

Sectors Read for August	6	7	8	9	10	17	18	Total
No. of meters in Sector	2607	2768	2204	2806	2000	4012	1472	17869
No-Reads	11	11	5	11	22	29	10	99
% Of No-Reads	0.4%	0.4%	0.2%	0.4%	1.1%	0.7%	0.6%	0.5%

Special Water Meter Reads

Reading Type	No. of Reads	$ Value
Water Account Search - Averaged Readings $29 per read	60	$1,740.00
Water Account Search - On-Site Readings $152.00 per read	33	$5,016.00
Total $ Value for August		$6,756.00
Total $ Value Financial Year to Date		$13,584.00

Customer Enquiries - Pathways

Request Type	No. of Requests	Requests Outstanding
NSWMRE - Network Services - Water Meter Reading Enquiry	7	0
NSSWMR - Network Services Special Water Meter Read Enquiry	1	0
FINIRR - Finance - Irrigators (Asset)	3	0

Building Over Sewers

The following summary is an overview of the core business activity that requires ongoing negotiations with the respective stakeholders and detailed investigations to determine location and condition assessments of the associated infrastructure.

Activity Summary

	August	FYTD
General enquiries	27	57
Site investigations	10	17
Approval Permits issued	1	3
Permits closed	0	0
Total	**38**	**77**

Building Over Sewer Permits in Progress

There are no permits in progress.

There is one letter issued regarding unauthorised construction over the sewer.

OPERATIONS AND PLANNING

North Rockhampton Flood Mitigation Project

The 2015/16 program of access chamber refurbishment works related to the North Rockhampton Flood Mitigation Project is currently being compiled. This program will effectively be an extension of the 2015/16 program of works and will focus on the refurbishment of access chambers located on the outside of the proposed future levee up to and including the 8.5m flood level. This $300,000 project will be funded from the 2015/16 Sewer Main Relining budget.

Sewer Main Relining Program

The 2015/16 sewer main relining program is currently being compiled. With a budget allocation of $300,000, this program of works will target segments of sewer main which have experienced blockages in recent times, along with main lines identified through FRW's building over sewer assessments and ongoing CCTV inspection program. Unlined segments of sewer main associated with the North Rockhampton Flood Mitigation project will also be assessed for inclusion in the program of works.

Water Loss Tracking

A method of monitoring all metered, as well as quantifying all of FRW's unmetered water usage is currently being developed. This will allow for the correction of assumptions currently used in the calculation of FRW's reported water loss.

System Leakage Management

The 2015/16 financial year will see the commissioning of a number of key flow monitoring sites within the network. With the flow meter installations being completed in previous financial years, the focus will now be on the installation of telemetry required in order to receive information back through SCADA to the GWTP. There is also sufficient budget allocation to allow for the installation of a number of flow meters within the Athelstane gravity supply zone. Key projects for inclusion may also be identified by Infrastructure Planning's ongoing review of the 2010 System Leakage Management Plan.

ADMINISTRATION MATTERS

Dial Before You Dig (DBYD)

The average number of requests received per day for August was 7.32.

	July 2015	August 2015	FY Total
Requests Processed	196	227	423

Site Tours

There were two site tours of the Glenmore Water Treatment Plant (GWTP) held in August and one tour of the North Rockhampton Sewerage Treatment Plant (NRSTP), these groups being:

- 35 Scouts from the Gracemere and Mount Archer Scout Groups visited the GWTP on 22 August 2015;
- 20 students from the CQU visited the GWTP on 4 August 2015; and
- 20 students from the CQU visited the NRSTP on 11 August 2015.

Communication and Education

News in Education advertisement:

The monthly News in Education for August featured information on keeping sinks "fat free" – providing tips and alternatives.

New Website Content and Navigation Review:

Content for FRW website has been finalised and added to the website draft in preparation for its launch on September 21st. The updated navigation is aimed at making the website more user-friendly and more customer focused. It now also features banners across each main page, including relevant images.

Community Notices:

Two public notices were included in the Morning Bulletin during August:

- 1 August – Water pressure fluctuations in Parkhurst
- 15 August – Water supply interruptions for Gracemere.

Media releases:

The Regional Communications team has recently started attending the Management Team meetings; in aim of learning of FRW projects and being proactive with positive media opportunities. Proactive schedule being developed for media releases in conjunction with operational works program and planned campaigns.

A media release was distributed to all Regional media in August, promoting the positive changes following the upgrade of the South Rockhampton STP.

Other promotions:

A new publication is being collated by the Morning Bulletin – celebrating their 155th anniversary next year. This will be a keepsake booklet, featuring a range of histories for the Rockhampton Region. FRW have signed up as gold sponsors for this publication and will see four pages of the booklet dedicated to FRW, its history in the community and milestones during this time.

INFRASTRUCTURE PLANNING

Sewer Network Investigations

Sewer Area Maps

Draft maps are in the process of being further enhanced to bring the maps into unison with the release of the new planning scheme. The Planning scheme makes several references to the water area and sewer area maps.

The revised maps will define that water and sewer areas that meet the requirements as defined in the Planning Scheme Development Codes.

Gracemere Effluent Main Link

With Civil Design team.

North Rockhampton Flood Mitigation Investigation

Design contractor compiling final document.

Mt Morgan Sewerage Strategy

No further development.

West to South STP Transfer

With Civil Design team.

Parkhurst Sewerage Pump Station Implementation Strategy

No further development.

Gracemere – Fisher Street Sewerage Pump Station

The existing pump model details have still not been confirmed.

Water Network Investigations

Water Area Maps

Draft maps are in the process of being further enhanced to bring the maps into unison with the release of the new planning scheme. The Planning scheme makes several references to the water area and sewer area maps.

The revised maps will define that water and sewer areas that meet the requirements as defined in the Planning Scheme Development Codes.

Mt Archer – Fire Hydrant Installation

Private works quotation is being prepared.

Gracemere – Lucas Street Pump Station Augmentation

Concept designs have been reviewed and design has been further optimised to include construction staging.

Mt Morgan – Future Water Supply

Awaiting feedback from FRW.

Water Meter – Thematic Mapping of Consumption

No further development.

System Leakage Management Plan

Work has commenced on updating the 2010 System Leakage Management Plan.

A detailed assessment of independent supply zones is being conducted to identify any particular areas that may be prioritised for extensive leakage investigations. Supply zones are being updated and mapped. Metered consumption within these areas is being analysed and compared to production SCADA data where available.

New demand management zones are in the process of being defined that will ultimately separate the pumped supply from the Glenmore Water Treatment Plan from the Yaamba and Thozet Road reservoir gravity supplies.

FINANCIAL MATTERS

Operational

Revenue is currently 37.4% of the Adopted budget. Most revenue streams are on target, however this is early into the new financial year and no trends have started to establish.

Gross water consumption revenue is 11.00% of adopted budget with 60% of Rockhampton sectors billed. At this juncture billed consumption is 4% below that of last financial year for the corresponding sectors. The commercial sector has decreased consumption by 12% compared to the same time in 2014/2015. Gross water and sewerage access charges are marginally below target. General private works income is below target. Bulk water sales are above target due to the impact of the advanced access charge.

Expenditure year to date is 13.2% of the Adopted Budget. Most expenditure streams are on target with the exception of contractors and consultants, other expenses & materials and plant. Overall Network Services is slightly above target mainly due to contractors cost exceeding the percentage of year elapsed.

Other expenses exceeds budget due to Qld water directorate membership. Contractors and consultants are above percentage of year elapsed due to project management costs to be reallocated to capital, quarterly & biannual safety and compliance costs, maintenance at Forbes Ave Reservoir and GWTP highlift, reactive maintenance Rockhampton water mains and Gracemere property services. These areas will continue to be monitored.

There are no material exceptions to report.

Capital

Capital expenditure is below the percentage of year elapsed at 12.02% in comparison to the Adopted including carry forward budget. Expenditure during August has almost tripled compared to July. This large increase in expenditure is attributed to contractual payments for the Glenmore water treatment plant highlift pump station upgrades.

Water YTD 18.00% and Sewer YTD 5.12%.

Networks YTD 14.73% and Treatment YTD 10.74%.

The areas of prominent activity are the Sewerage refurbishment program, Mt Morgan sewerage scheme Stage 2, Ramsay Creek gravity main and wetwell duplication, Water trunk main duplication to Gracemere, GWTP highlift pump station upgrade, Mt Morgan North Reservoir roof replacement and Water Main Replacement programs.

There are no material exceptions to report.

Sundry Debtors

Below is a summary of aged sundry debtor balances at the end of August 2015. The 90+ day balances are either on payment plans, the business is in administration or the debt is with Collection House.

	Balance	**0-30 Days**	**30-60 Days**	**60-90 Days**	**90+ Days**
No. of Customers	90	28	40	19	27
Total Value	$141,547.57	$44,185.86	$28,244.12	$27,556.66	$41,560.93

Below is an explanation of the debtor types, being a mixture of standpipes, irrigators, emergency works and effluent usage.

90+ days	**Comments**
$3,607.68	Trade Waste debts - Collection attempts unsuccessful, other avenues to be investigated
$664.72	Trade Waste debts to be written off
$3,537.01	Irrigators – been to collection
$5,146.96	Long Term Payment Plans - Mt Morgan Sewerage Connections - Recovery will occur
$6,457.00	Other Payment Plans – Private Works
$2,347.71	Debtors currently at collection
$19,799.85	Other Overdue Debt with no fixed arrangements – Trade Waste, Irrigators, Standpipes, Emergency works – Overdue letter issued
60-90 Days	**Comments**
$10,420.54	Standpipe (includes $1,517.83 from 2 debtors with 90+)
$13,833.48	Trade Waste (includes $10,965.45 from 2 debtors with 90+)
$3,302.64	Septic disposal
30-60 Days	**Comments**
$13,529.41	LSC - SES coordinator role
$10,926.10	Irrigators (includes $1,706.90 from 8 debtors that have 90+ days
$2,088.68	Septic disposal
$1,699.93	Trade Waste

A summary of financial performance against budget is presented below:

	Adopted Budget $	Revised Budget $	EOM Commitments $	YTD Actual $	Commit + Actual $	Variance %	On target 100% of Year Gone
FITZROY RIVER WATER							
Treatment & Supply							
Revenues	0	0	0	(305)	(305)	0%	✓
Expenses	9,326,060	0	715,576	1,212,770	1,928,346	21%	✓
Transfer / Overhead Allocation	309,767	0	0	73,723	73,723	24%	✓
Total Unit: Treatment & Supply	***9,635,827***	***0***	***715,576***	***1,286,188***	***2,001,764***	**21%**	✓
Network Services							
Revenues	(591,400)	0	0	(57,882)	(57,882)	10%	x
Expenses	3,429,892	0	1,586,170	616,352	2,202,522	64%	✓
Transfer / Overhead Allocation	599,977	0	0	95,105	95,105	16%	✓
Total Unit: Network Services	***3,438,469***	***0***	***1,586,170***	***653,575***	***2,239,745***	**65%**	✓
FRW Management							
Revenues	(473,043)	0	0	(55,134)	(55,134)	12%	x
Expenses	16,149,522	0	93,682	2,224,321	2,318,003	14%	✓
Transfer / Overhead Allocation	25,710,445	0	0	3,098,540	3,098,540	12%	✓
Total Unit: FRW Management	***41,386,924***	***0***	***93,682***	***5,267,728***	***5,361,409***	**13%**	✓
FRW Admin							
Revenues	(58,692,677)	0	0	(22,217,046)	(22,217,046)	38%	x
Expenses	349,473	0	34,141	39,087	73,229	21%	✓
Transfer / Overhead Allocation	36,814	0	0	5,172	5,172	14%	✓
Total Unit: FRW Admin	***(58,306,390)***	***0***	***34,141***	***(22,172,787)***	***(22,138,646)***	**38%**	x
Operations & Planning							
Expenses	322,185	0	0	50,169	50,169	16%	✓
Total Unit: Operations & Planning	***322,185***	***0***	***0***	***50,169***	***50,169***	**16%**	✓
Total Section: FITZROY RIVER WATER	***(3,522,985)***	***0***	***2,429,568***	***(14,915,127)***	***(12,485,558)***	**354%**	✓

10 NOTICES OF MOTION

Nil

11 URGENT BUSINESS/QUESTIONS

Urgent Business is a provision in the Agenda for members to raise questions or matters of a genuinely urgent or emergent nature, that are not a change to Council Policy and can not be delayed until the next scheduled Council or Committee Meeting.

12 CLOSURE OF MEETING