



**Irrigation Infrastructure Renewal
Projections - 2013/14 to 2046/47**
Report - Lower Lockyer Tariff Group

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Document Status

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1. Introduction

Seqwater owns and operates the following seven irrigation schemes:

- ▶ Central Lockyer WSS;
- ▶ Lower Lockyer WSS;
- ▶ Logan River WSS;
- ▶ Mary River WSS;
- ▶ Cedar Pocket WSS;
- ▶ Warrill Valley WSS; and
- ▶ Central-Brisbane WSS.

Seqwater also owns and operates a distribution system, the Morton Vale Pipeline.

There are nine tariff groups associated with these schemes.

To assist with the determination of price paths, a forecast of future renewal expenditure is required at the individual tariff group level.

The renewal projections have been developed, in accordance with the scope and methodology separately documented in the Methodology report. The projections have been developed in separate reports, one for each tariff group.

This report outlines the projections for the Lower Lockyer Tariff group. It should be read in conjunction with the Methodology report.

2. Asset Information

2.1 Irrigation Infrastructure

A summary of Seqwater’s irrigation infrastructure facilities and assets is provided in **Table 1** below.

Table 1 Summary of Irrigation Infrastructure

| WSS Scheme | Tariff Group | Dams | Weirs | Off-Stream Storage | Other Key Assets |
|-------------------|---------------------|-------------|--|---------------------------|--|
| Lower Lockyer | Lower Lockyer | NA | Brightview Weir, Buaraba Creek Weir, O’Reilly Weir, Potters Weir, Sippels Weir | Atkinson Dam | Buaraba Creek Channel, Brightview Channel Rising Main, Buaraba Creek Supply Pipeline, Brightview Channel, Buaraba Creek Diversion Channel, Gauging Stations, Observation Bores, Atkinson Pump Station, Seven Mile Lagoon Diversion Channel, Flowmeters |

A schematic drawing of the scheme is provided in Appendix A.

2.2 Relevant Asset Information

The following existing information was reviewed and where relevant, utilised to develop the renewal projections:

- ▶ Asset Register
- ▶ Annual, 5 Year and Comprehensive Dam Safety Reviews and Assessments
- ▶ Dams Weirs Valuations 2010
- ▶ Water Meter Upgrade Plan
- ▶ Draft WSS 20 Year Programme of Work 2008/09 – 2028/29
- ▶ 2011 Site Safety Assessments

- ▶ Extracts from Financial Asset Register
- ▶ 2009 Asset Valuation – Cardnos
- ▶ 2010 Asset Valuation – Dams & Weirs – Cardnos
- ▶ Atkinson Dam Facilities Asset Management Plan (FAMP) 2012

3. Projections

3.1 Summary

A summary of the renewal and refurbishment projections for the period 2013/14 – 2046/47 is provided in Table 3.

Further details are provided in Appendix B.

It should be noted that all values are in \$2012-13.

3.2 Significant Projects

A list of projects that come under one of the following categories are outlined in Table 2 below:

- ▶ Scheduled between 2013/14 and 2016/17 financial years and having a project value greater than the average project value for that period; and
- ▶ A project that has an impact on the annuity of greater than 10%.

Table 2 Significant Projects

| Asset | Description of Work | Timing of Work | Project Value | Signif.* |
|--------------------|--|----------------|---------------|----------|
| Potters Weir | Rehabilitation to repair scour bypass of weir | 2013/14 | \$60k | HAV |
| Sippels Weir | Rehabilitation to repair scour bypass of weir | 2013/14 | \$72k | HAV |
| Brightview Weir | Rehabilitation of embankment | 2043/44 | \$2070 | IA |
| Brightview Channel | Desilting | 2016/17 | \$66k | HAV |
| Brightview Channel | Replacement of fencing (50% shared with adjacent landowners) | 2013/14 | \$47k | HAV |

Notes: *Significance: HAV – Higher than Average Value (for period from 2013/14 to 2016/17) IA – Project has an impact on the annuity of greater than 10% (refer Section 3.3 for commentary)

Table 3 Summary of Renewal Projections

| Parent Asset | Expenditure Forecast Each Year (\$k) | | | | | | | | | | | | | | | | |
|----------------------------|--------------------------------------|-----------|----------|-----------|------------|------------|-----------|------------|------------|------------|------------|----------|-----------|------------|------------|------------|-----------|
| | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 |
| Atkinson Dam | 40 | 20 | - | - | 60 | 15 | 30 | 125 | 22 | 21 | 21 | - | - | - | 45 | - | 45 |
| Lower Lockyer Distribution | 206 | - | - | 66 | 43 | 141 | - | 10 | 78 | 349 | 106 | - | - | 93 | 77 | 141 | - |
| Water Flowmeters | - | - | - | - | - | - | - | - | - | - | - | - | 32 | 32 | 32 | 32 | 32 |
| Total | 246 | 20 | - | 66 | 103 | 156 | 30 | 135 | 100 | 370 | 127 | - | 32 | 125 | 154 | 173 | 77 |

| Parent Asset | Expenditure Forecast Each Year (\$k) | | | | | | | | | | | | | | | | |
|----------------------------|--------------------------------------|------------|------------|------------|-----------|-----------|-----------|------------|------------|-----------|------------|------------|------------|--------------|-----------|-----------|-----------|
| | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | 2035/36 | 2036/37 | 2037/38 | 2038/39 | 2039/40 | 2040/41 | 2041/42 | 2042/43 | 2043/44 | 2044/45 | 2045/46 | 2046/47 |
| Atkinson Dam | 112 | 217 | 5 | - | - | 10 | - | 66 | - | - | 154 | - | 21 | 31 | - | - | - |
| Lower Lockyer Distribution | 59 | 66 | 94 | 139 | - | - | 66 | 83 | 187 | 15 | 2 | 210 | 82 | 3,137 | 28 | 46 | 66 |
| Water Flowmeters | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| Total | 203 | 315 | 131 | 171 | 32 | 42 | 98 | 181 | 219 | 47 | 188 | 242 | 135 | 3,200 | 60 | 78 | 98 |

3.3 Additional Commentary

Commentary on projects that have a higher than average project value includes:

- ▶ Repair of scour bypass of Potters Weir by installing sheet pile wall to stop significant leaking.
- ▶ Repair of scour bypass of Sippels Weir by installing sheet pile wall to stop significant leaking.
- ▶ De-silting of Brightview Channel including repair of drainage benches to ensure efficient transfer of water.
- ▶ Replacement of 4km of boundary fencing along Brightview Channel. Cost is 50% of total cost due to cost sharing with adjacent landowners.

The following commentary is provided on the Brightview Weir embankment rehabilitation project listed in Table 2 as having an annuity of greater than 10%:

- ▶ The renewal work has been forecasted for when the embankment is considered likely to reach the end of its useful life based on its age and typical useful asset life. The cost estimate shown is based on the replacement cost from the asset valuation data. The renewal work will most likely comprise of rehabilitation of the embankment and be less than the cost of replacement.

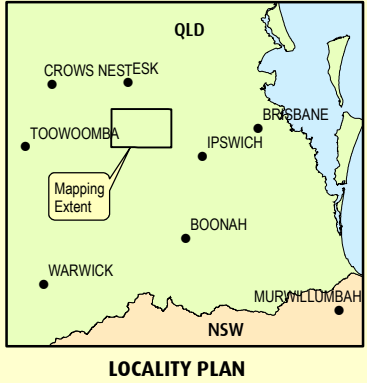
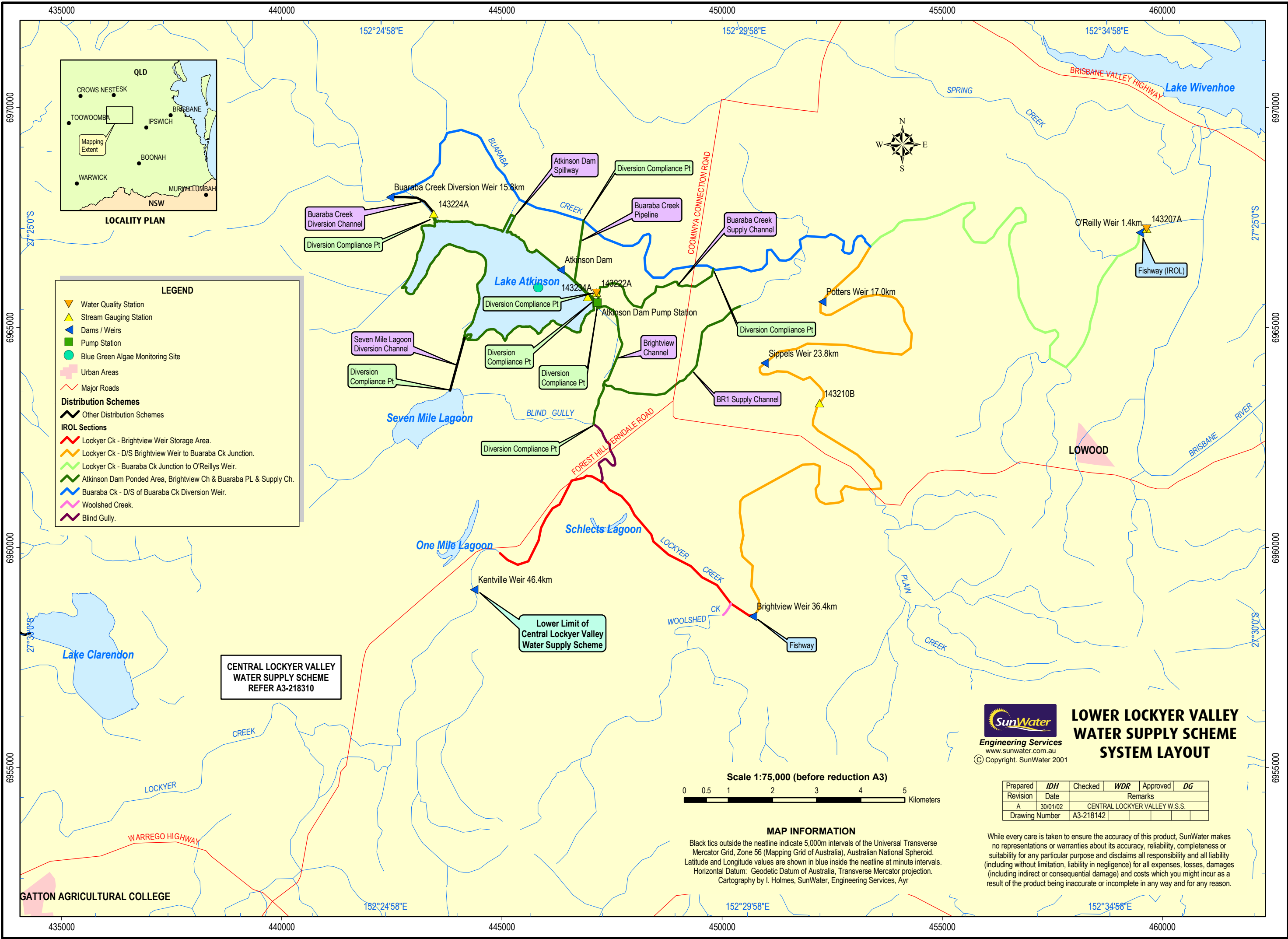
For the forecasted renewal expenditure between 2013/14 and 2016/17, values were compared with Sunwater's renewals projections which were the basis of the SunWater irrigation prices for 2006/07 to 2010/11. When excluding the water meter upgrade costs which will be excluded from the annuity, it was noted the total value of Seqwater's renewal forecast was approximately 130% of Sunwaters. The difference is believed to be primarily due to:

- ▶ Seqwater projections being based on more up-to-date information.
- ▶ Seqwater projections include more expenditure on distribution infrastructure including the repair of Potters and Sippels Weirs.

Appendix A

Water Supply Scheme Schematic

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 Printed: Wednesday, January 30 2002 01:56:37 PM
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LEGEND

- ▼ Water Quality Station
- ▲ Stream Gauging Station
- ▲ Dams / Weirs
- Pump Station
- Blue Green Algae Monitoring Site
- Urban Areas
- Major Roads

Distribution Schemes

- Other Distribution Schemes

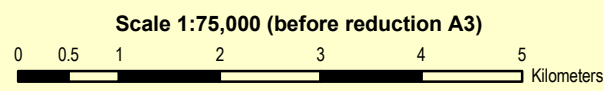
IROL Sections

- Lockyer Ck - Brightview Weir Storage Area.
- Lockyer Ck - D/S Brightview Weir to Buaraba Ck Junction.
- Lockyer Ck - Buaraba Ck Junction to O'Reillys Weir.
- Atkinson Dam Poned Area, Brightview Ch & Buaraba PL & Supply Ch.
- Buaraba Ck - D/S of Buaraba Ck Diversion Weir.
- Woolshed Creek.
- Blind Gully.

CENTRAL LOCKYER VALLEY WATER SUPPLY SCHEME REFER A3-218310



LOWER LOCKYER VALLEY WATER SUPPLY SCHEME SYSTEM LAYOUT



MAP INFORMATION

Black ticks outside the neatline indicate 5,000m intervals of the Universal Transverse Mercator Grid, Zone 56 (Mapping Grid of Australia), Australian National Spheroid. Latitude and Longitude values are shown in blue inside the neatline at minute intervals. Horizontal Datum: Geodetic Datum of Australia, Transverse Mercator projection. Cartography by I. Holmes, SunWater, Engineering Services, Ayr

| Prepared | IDH | Checked | WDR | Approved | DG |
|----------------|-----------|-------------------------------|-----|----------|----|
| Revision | Date | Remarks | | | |
| A | 30/01/02 | CENTRAL LOCKYER VALLEY W.S.S. | | | |
| Drawing Number | A3-218142 | | | | |

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Appendix B

Renewal Projections

| Parent Asset | Asset Details | | Renewal Details | | Expenditure Forecast Each Year (\$k) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--|-------------------|--|------------------------|--------------------------------------|-----------|----------|-----------|------------|------------|-----------|------------|------------|------------|------------|----------|-----------|------------|------------|------------|-----------|------------|------------|------------|------------|-----------|-----------|-----------|------------|------------|-----------|------------|------------|------------|-------------|-----------|-----------|-----------|---|
| | Asset Description | Works Description | Comments | Costing Source | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | 2035/36 | 2036/37 | 2037/38 | 2038/39 | 2039/40 | 2040/41 | 2041/42 | 2042/43 | 2043/44 | 2044/45 | 2045/46 | 2046/47 | |
| U Distribution | Buaraba Ck Diversion Channel Earthworks | Refurbish | Refurbish: Channel side slope erosion/piping in fill areas - stabilisation with road base - Costs (\$5.5K & \$15.9K incorrect) - work put off from 03 for Atkinson | Bus Case | - | - | - | - | 30 | - | - | - | - | - | - | - | - | - | 30 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| U Distribution | Buaraba Ck Diversion Channel Gate Control Equipment | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 12 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| U Distribution | Buaraba Ck Diversion Channel Solar Panel | Replace | - | WORKSHOP | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| U Distribution | Buaraba Creek Weir Valve, 400Mm Gate Keystone | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 20 | |
| U Distribution | Observation Bores | Refurbish | Bore replacement program - Replace 40% of bores, every 10 years | Workshop - 31 Jan 2012 | - | - | - | - | 86 | - | - | - | - | - | 86 | - | - | - | - | 86 | - | - | - | - | - | - | - | - | 86 | - | - | - | - | - | - | - | - | - | |
| U Distribution | Gauging Stations-Lower Lockyer | Replace | - | Workshop - 31 Jan 2012 | - | - | - | - | - | - | - | - | - | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 40 | |
| U Distribution | O'Reilly Weir R/Bank Access Road | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 30 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| U Distribution | Potters Weir Structure | Refurbish | Repair scour bypass | DCE | 60 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| U Distribution | Atkinson Pump Station Control Building | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 36 | |
| U Distribution | Atkinson Pump Station Control System | Replace | - | Est | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 30 | | |
| U Distribution | Atkinson Pump Station Autodialler | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 16 | | |
| U Distribution | Atkinson Pump Station Flowmeter | Replace | - | workshop | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 15 | | |
| U Distribution | Atkinson Pump Station Switchboard, Ralcrest | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 53 | - | - | - | - | - | - | - | - | | | |
| U Distribution | Atkinson Pump Station Pump, 25Mm Sump | Replace | - | workshop | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2 | | | |
| U Distribution | Atkinson Pump Station Pump Unit 1 | Refurbish | - | workshop | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 30 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| U Distribution | Atkinson Pump Station Actuator, Elec Rotork | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 12 | | |
| U Distribution | Atkinson Pump Station Motor, 75Kw Elec Tyco | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| U Distribution | Atkinson Pump Station Pump, Tyco | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 54 | | |
| U Distribution | Atkinson Pump Station Pump Unit 2 | Refurbish | - | workshop | - | - | - | - | 30 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 30 | | |
| U Distribution | Atkinson Pump Station Valve | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 26 | | |
| U Distribution | Atkinson Pump Station Motor | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 15 | | |
| U Distribution | Atkinson Pump Station Valve | Replace | - | Static Asset Data | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 13 | | |
| U Distribution | Sippels Weir - 23.8Km | Refurbish | Repair scour bypass | DCE | 72 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| U Distribution | Sippels Weir Outlet Valve | Refurbish | Butterfly - 200mm - replace @ 10 years interval- actual cost | 20yr PW | - | - | - | - | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | | |
| U Distribution | Seven Mile Lagoon Diversion Channel 1568M | Refurbish | Refurbish: Desilt Channel including Desilt of Reg Structure | Bus Case 2012 | 20 | - | - | - | - | 20 | - | - | - | - | 20 | - | - | - | - | 20 | - | - | - | - | - | - | - | - | 20 | - | - | - | - | - | - | - | 20 | | |
| U Distribution | Seven Mile Lagoon Diversion Channel Fencing | Refurbish | 50% of Total Cost (shared with adjacent landowners) | Bus Case 2012 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 7 | | |
| U Distribution | Seven Mile Lagoon Diversion Channel Grids And Gates | Replace | - | Static Asset Data | - | - | - | - | - | - | - | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| U Distribution | Seven Mile Lagoon Diversion Channel Regulating Structure | Replace | - | 20yr PW | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 27 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Water Flow Meters | Water Meters | Replace | Replace batch of 9 meters each year | Est | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 32 | | |
| Total | | | | | 246 | 20 | 0 | 66 | 103 | 156 | 30 | 135 | 100 | 370 | 127 | 0 | 32 | 125 | 154 | 173 | 77 | 203 | 315 | 131 | 171 | 32 | 42 | 98 | 181 | 219 | 47 | 188 | 242 | 135 | 3200 | 60 | 78 | 98 | |