



**Irrigation Infrastructure Renewal
Projections - 2013/14 to 2046/47**
Report - Warrill Valley Tariff Group

September 2012

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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 Warrill Valley 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
Warrill Valley	Warrill Valley	Moogerah Dam	Aratula Weir, Chruchbank Weir, Kents Lagoon Diversion Weir, Railway Weir, Warrill Creek Diversion Weir, West Branch Warrill Diversion Weir	NA	Black Gully Diversion, Normanby Gully Diversion, Upper Warrill Diversion, West Branch Warrill Diversion, Warroolaba Creek Diversion, Gauging Stations, 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;
- ▶ 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;
- ▶ Moogerah Dam Facilities Asset Management Plan (FAMP) -2012; and
- ▶ Business Case - Irrigation Customer Meters Renewal (SM 12/13 02).

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%¹.

Table 2 Significant Projects

Asset	Description of Work	Timing of Work	Project Value	Signif.*
Moogerah Dam	Replacement of dam wall access ladder (FAMP)	2013/14	\$100k	IA/HAV
Upper Warrill Diversion	Scour valve refurbishment – Siphon 4	2014/15	\$36k	HAV
Upper Warrill Diversion	Scour valve refurbishment – Siphon 7	2015/16	\$24k	HAV
Water Meters	Water Meter Renewal Program	Annually, commencing 2013/14	\$1436k over 33 years	HAV Ref. Footnote 1

Notes: *Significance: HAV – Higher than Average Value (for period from 2013/14 to 2016/17) IA – Project was assessed in April 2012 (refer Footnote 1 below) as having an impact on the annuity of greater than 10% (refer Section 3.3 for commentary).

¹ The impact on annuity was assessed in April 2012 when version 1 of this report was produced. At that time, the water meter renewal program had not been fully developed and included in the assessment. An updated assessment of impact has not been undertaken in updating this current version 3 of the report.

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
Moogerah Dam	120	-	-	-	-	-	15	145	-	18	-	-	-	-	-	-	-
Warrill Valley Distribution	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aratula Weir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Black Gully Diversion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Churchbank Weir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gauging Station-Warril Creek	-	-	-	-	-	-	-	-	-	70	-	-	-	-	-	-	-
Kents Lagoon Diversion Weir	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	21
Normanby Gully Diversion	-	6	-	10	-	-	-	-	-	-	-	-	-	10	21	-	-
Railway Weir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reynolds Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upper Warrill Diversion	-	75	78	-	22	-	21	-	-	-	-	326	14	-	-	-	-
Warrill Creek Diversion Weir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	-
West Branch Warrill Diversion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Warroolaba Creek Diversion Weir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Warrill Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Warroolaba Creek Diversion	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-
Water Flowmeters	145	145	78	78	78	78	78	78	78	24	24	24	24	24	24	24	24
Total	265	226	156	88	110	78	114	223	78	112	24	350	59	34	45	93	45

Table 3 (cont'd) Summary of Renewal Projections

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
Moogerah Dam	-	-	251	-	-	-	21	-	-	-	-	731	18	-	-	-	-
Warrill Valley Distribution	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aratula Weir	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	606	-
Black Gully Diversion	-	-	-	-	7	-	-	-	-	-	-	-	-	-	19	-	-
Churchbank Weir	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Gauging Station-Warril Creek	-	-	70	-	-	-	-	-	-	-	-	-	70	-	-	-	-
Kents Lagoon Diversion Weir	-	-	1	-	5	-	-	-	-	-	-	-	-	-	1,358	21	-
Normanby Gully Diversion	-	-	-	-	-	-	10	-	-	14	-	-	-	-	309	-	10
Railway Weir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reynolds Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upper Warrill Diversion	-	-	-	-	47	-	-	-	-	-	-	-	-	-	64	-	-
Warrill Creek Diversion Weir	-	-	-	114	-	-	-	-	-	-	-	-	-	-	-	-	-
West Branch Warrill Diversion	-	-	-	47	-	-	-	-	-	-	-	-	-	305	-	-	-
Warroolaba Creek Diversion Weir	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Warrill Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Warroolaba Creek Diversion	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-
Water Flowmeters	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Total	45	24	346	185	87	24	55	29	24	38	24	755	112	329	1,774	651	51

3.3 Additional Commentary

For some assets, the available asset data indicated the theoretical asset life was either expired or due to expire within the first four years. Where a site assessment was not able to verify the need to renew an asset within the first 5 years, the timing of the renewal was updated to occur beyond 2017/18 financial year. This was the case for the following assets:

- ▶ Moogerah Dam valve actuators - useful life was extended based on assessment in FAMP.
- ▶ Moogerah Dam low flow valves and butterfly valve - useful life was extended based on assessment in FAMP.
- ▶ Upper Warrill Diversion fencing - useful life was extended based on site assessment.

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

- ▶ Refurbishment of scour valve at Siphon 4 in Upper Warrill Diversion as assessed in Draft WSS 20 Year Programme of Work 2008/09 – 2028/29 and site inspection.
- ▶ Refurbishment of scour valve at Siphon 7 in Upper Warrill Diversion as assessed in Draft WSS 20 Year Programme of Work 2008/09 – 2028/29 and site inspection.

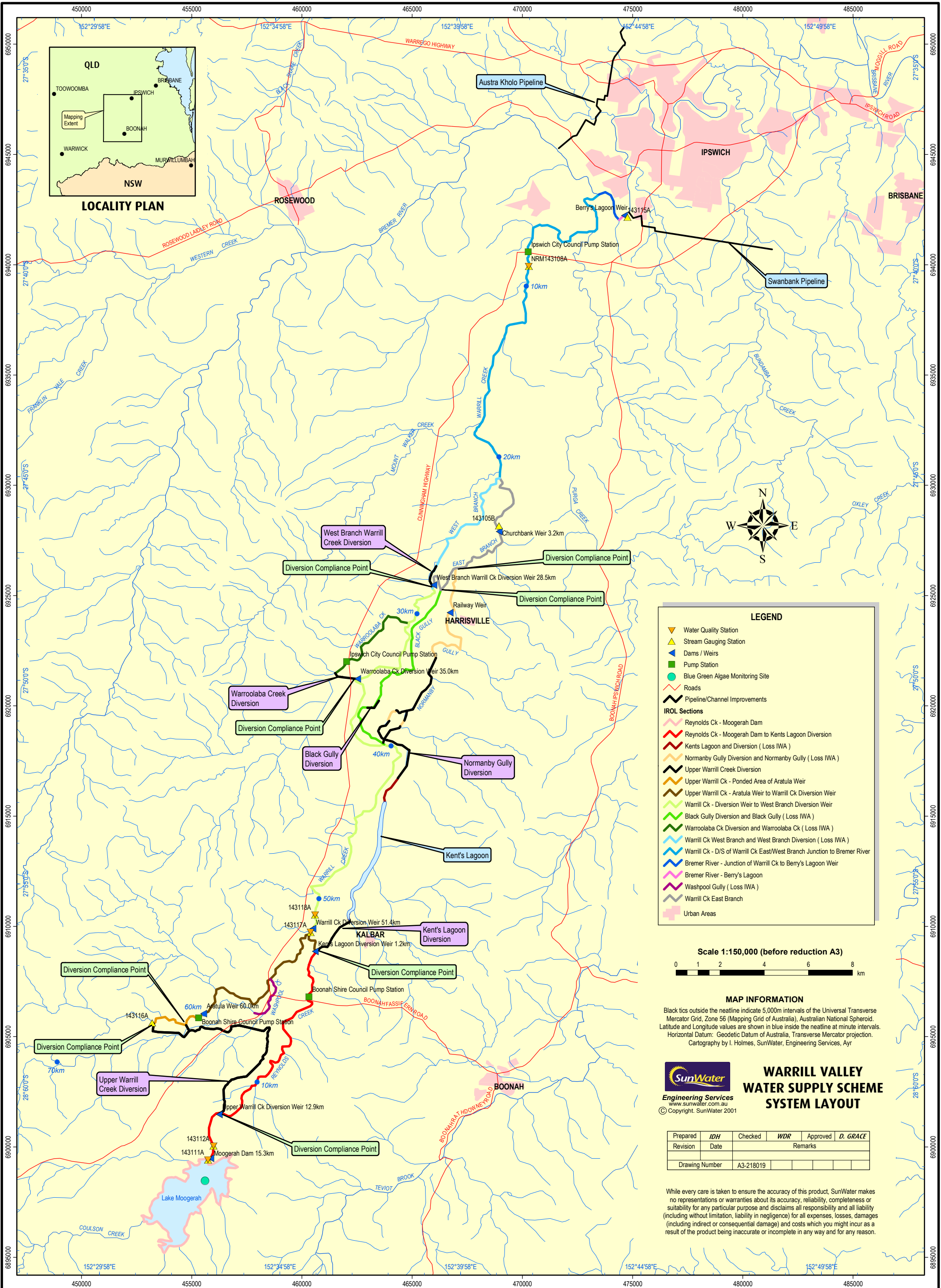
Commentary on projects that have an impact on the annuity of greater than 10% and has a higher than average value is provided as follows:

- ▶ Replacement of access ladder on Moogerah Dam wall as detailed in FAMP.

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 111% of Sunwaters. The difference is believed to be primarily due to:

- ▶ Seqwater projections being based on more up-to-date information.
- ▶ Seqwater projections including higher expenditure on Moogerah Dam in 2013/14.

Appendix A
Water Supply Scheme Schematic



Appendix B

Renewal Projections

Asset Details		Renewal Details			Expenditure Forecast Each Year (\$k)																																		
Parent Asset	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	
Upper Warrill Diversion	Scour Valve At 6122M, 5860M	Refurbish	Breakdown maintenance only - no planned inspections - Denso wrapped	20yr PW	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upper Warrill Diversion	Trash Screen At Siphon Inlet	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	
Upper Warrill Diversion	Scour Valve At 6850M	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Upper Warrill Diversion	Scour Valve At 6850M	Refurbish	Breakdown maintenance only - no planned inspections - Denso wrapped	20yr PW	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Upper Warrill Diversion	Trash Screen At Siphon Inlet	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-		
Upper Warrill Diversion	Trash Screen At Siphon Inlet	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-		
Upper Warrill Diversion	Double Air Valve At 10911.60M	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Pumpwell At 10647M-Moffatt	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Pumpwell At 11215M-Mcgrath	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Pumpwell At 11376M-Shellbach	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Trash Screen At Siphon Inlet	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-		
Upper Warrill Diversion	Scour Valve At 9961M	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Scour Valve At 9961M	Refurbish	Breakdown maintenance only - no planned inspections - Denso wrapped	20yr PW	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Butterfly Valve Off Pumpwell	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-		
Upper Warrill Diversion	Double Air Valve At 273M	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Trash Screen At Siphon Inlet	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-		
Upper Warrill Diversion	Scour Valve At 122M(OM 399FT)	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Scour Valve At 122M(OM 399FT)	Refurbish	Breakdown maintenance only - no planned inspections - Denso wrapped	20yr PW	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Upper Warrill Diversion	Butterfly Valve	Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Warrill Creek Diversion \ Cable		Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	-		
Warrill Creek Diversion \ Control Equipment		Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	-	-	-	-	-	-	-	-	-	-	-	-		
Warrill Creek Diversion \ Access Road & Hardstanding		Rehabilitate	-	DCE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
West Branch Warrill Div Diversion Pipeline-00M To 600M		Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	267	-		
West Branch Warrill Div Inlet To Diversion Pipe-1.22M		Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-			
West Branch Warrill Div Outlet-Divn Pipeline-600M		Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-			
West Branch Warrill Div Structure - Pipes & Concrete		Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-			
West Branch Warrill Div Sluice Valve		Replace	-	Static Asset Data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Warroolaba Creek Diver:Ladder		Replace	-	Site visit est	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Warroolaba Creek Diver:Trash Screen		Replace	-	Site visit est	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Water Supply Flowmete:Water Meters		Replace	Water Meter Renewal Program	-	145	145	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	
Total					265	226	156	88	110	78	114	223	78	112	24	350	59	34	45	93	45	24	346	185	87	24	55	29	24	38	24	755	112	329	1774	651	51		