



**Irrigation Infrastructure Renewal
Projections - 2013/14 to 2046/47**
Report - Central Brisbane Tariff Group

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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 Central Brisbane 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
Central Brisbane	Central Brisbane	Wivenhoe Dam, Somerset Dam	NA	NA	NA

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:

- ▶ Annual, 5 Year and Comprehensive Dam Safety Reviews and Assessments;
- ▶ 2009 Asset Valuation – Cardnos;
- ▶ 2010 Asset Valuation – Dams & Weirs – Cardnos;
- ▶ Somerset Dam Facilities Asset Management Plan (FAMP) 2010;
- ▶ Wivenhoe Dam Facilities Asset Management Plan (FAMP) 2010; 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 A.

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 is provided 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.*
Wivenhoe Dam – electrical winch	Replacement of baulk seals on No 1,2,4,5 & 6	2014/15	\$100k	HAV
Wivenhoe Dam – trash screens	Repainting	2015/16	\$80k	HAV
Wivenhoe Dam – cone valves	Refurbish and replace seals	2015/16	\$100k	HAV
Somerset Dam – spillway crest gates	Repainting	2013/14	\$75k	HAV
Somerset Dam – spillway crest gates	Repainting	2014/15	\$50k	HAV
Somerset Dam – spillway crest gates	Replace electric winch motor and brake	2016/17	\$60k	HAV

¹ The impact on annuity was assessed in April 2012 when version 2 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.

Asset	Description of Work	Timing of Work	Project Value	Signif.*
Somerset Dam – spillway sluice gates	Repainting	2013/14	\$75k	HAV
Somerset Dam – spillway sluice gates	Repainting	2014/15	\$50k	HAV
Somerset Dam – spillway sluice gates	Replace electric winch motor and brake	2016/17	\$60k	HAV
Somerset Dam – Gantry Crane – Steel Superstructure	Refurbishment of Structure	2025/26	\$3000k	IA
Somerset Dam – Outlet Works – Inlet Screen & Trash Racks	Refurbishment of Structural walls, columns and beams	2025/26	\$3250k	IA
Water Meters	Water Meter Renewal Program	Annually, commencing 2022/23	\$246k over 25 years	Ref. Footnote 1 on previous page

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 on previous page) as having 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
Wivenhoe Dam	-	120	195	35	-	-	45	427	42	-	-	-	3,570	-	172	-	1,815
Somerset Dam	170	120	60	140	120	105	180	60	-	-	326	-	13,011	889	-	-	-
Water Flowmeters	-	-	-	-	-	-	-	-	-	6	10	10	10	10	10	10	10
Total	170	240	255	175	120	105	225	487	42	6	336	10	16,591	899	182	10	1,825

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
Wivenhoe Dam	1,760	282	355	-	2,767	4,014	558	-	-	-	-	-	-	-	-	-	-
Somerset Dam	-	-	384	-	-	8,584	-	-	-	-	725	-	-	-	-	89	-
Water Flowmeters	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total	1,770	292	749	10	2,777	12,608	568	10	10	10	735	10	10	10	10	99	10

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 four years, the timing of the renewal was updated to occur beyond 2016/17 financial year. This was the case for the following assets:

- ▶ Wivenhoe Dam gate controls - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam bulkhead gate control panel - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam sample pump control panel - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam winch control panel intake - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam air compressor - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam hydraulic lines - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam hydraulic pack - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam oil transfer pump - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam pump - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam portable hydraulic power unit - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam spill equipment - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam mechanical spares - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam laboratory equipment - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam sampling equipment - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam gate control instrumentation - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam instrumentation - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam road pavement on saddle dam 1 and 2 - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam gantry crane structure - useful life was extended and refurbishment scheduled based on assessment in FAMP.

- ▶ Wivenhoe Dam gate hoisting mechanisms - useful life was extended based on assessment in FAMP.
- ▶ Wivenhoe Dam site power supply - useful life was extended based on assessment in FAMP.
- ▶ Somerset Dam gate hoisting mechanisms - useful life was extended and refurbishment planned based on assessment in FAMP.
- ▶ Somerset Dam gantry crane mechanisms - useful life was extended and refurbishment scheduled based on assessment in FAMP.
- ▶ Somerset Dam instrumentation - useful life was extended based on assessment in FAMP.

The following projects, that have a higher than average project value, have been identified as being required as a result of condition and criticality assessment completed as part of the FAMP development process:

- ▶ Replacement of baulk seals on No. 1,2,4,5 & 6 at Wivenhoe Dam;
- ▶ Repainting of trash screens at Wivenhoe Dam;
- ▶ Refurbish and replace seals in cone valves at Wivenhoe Dam;
- ▶ Repainting spillway crest gates at Somerset Dam;
- ▶ Replacement of electrical winch motor and brake for spillway crest gates at Somerset Dam;
- ▶ Repainting spillway sluice gates at Somerset Dam; and
- ▶ Replacement of electrical winch motor and brake for spillway sluice gates at Somerset Dam.

The following commentary is provided on the two projects listed in Table 2 as having an annuity of greater than 10%:

- ▶ The renewal work has been forecasted for when the assets are considered likely to reach the end of their useful life based on their age and typical useful asset life. The cost estimates shown are based on the replacement cost from the asset valuation data. The renewal work will most likely comprise of asset refurbishment, and be less than the replacement cost.

Appendix A
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	
Somerset Dam	Spillway Crest	Refurbish	Spillway Crest Gate - Gate O and P - Inspect condition on gates and paint as required.	FAMP	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Regulator	Refurbish	Regulator 3 - Outlet - Cone Valve - Replace seal	FAMP	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Spillway Sluice	Refurbish	Spillway Sluices - Sluice Gate O and P - Inspect condition on gate and paint as required.	FAMP	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Regulator	Refurbish	Regulator 2, 3, 12 and 13 - Sluice Gate - Structure - Inspect condition of paint on gate and paint as required.	FAMP	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Regulator	Refurbish	Regulator 12 - Outlet - Cone Valve - Replace seal	FAMP	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Spillway Crest	Refurbish	Spillway Crest Gate - Gate I, J, and K - Electric Winch - Replace Motor and brake	FAMP	-	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Spillway Sluice	Refurbish	Spillway Sluices - Sluice Gate L, J and K - Sluice Winch - Replace motor and brake	FAMP	-	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Hydro	Refurbish	Hydro - Intake - Sluice Gate - Winch - New motor and Brake system	FAMP	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Spillway Crest	Refurbish	Spillway Crest Gate - Gate L, M and N - Electric Winch - Replace Motor and brake	FAMP	-	-	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Spillway Sluice	Refurbish	Spillway Sluices - Sluice Gate L, M and P - Sluice Winch - Replace motor and brake	FAMP	-	-	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Spillway Crest	Refurbish	Spillway Crest Gate - Gate O and P - Electric Winch - Replace Motor and brake	FAMP	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Regulator	Refurbish	Regulator 2, 3, 12 and 13 - Sluice Gate - Winch	FAMP	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Sump Pump	Refurbish	Replace sump pump 1, 2, 3 and meter	FAMP	-	-	-	-	-	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Somerset Dam	Generator	Refurbish	Portable Generator (Trailer Mounted) - Load bank - Refurbish	FAMP	-	-	-	-	-	-	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Somerset Dam	Generator	Refurbish	Portable Petrol Motor - Replace	FAMP	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Somerset Dam	Regulator	Refurbish	Regulator 2, 3, 12 and 13 - Intake - Trash Racks - Paint	FAMP	-	-	-	-	-	-	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset Dam	Town Water	Refurbish	Local Water Supply - Town Water Pumps and Valves	FAMP	-	-	-	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Somerset Dam	Hydro	Refurbish	Hydro - Intake - Trash Rack	FAMP	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Water Flow Meters	Water Meters (Currently do not exist. Will be installed over next 9 years as part of NWI)	Replace	Water Meter Renewal Program	-	-	-	-	-	-	-	-	-	-	6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
Total					170	240	255	175	120	105	225	487	42	6	336	10	16591	899	182	10	1825	1770	292	749	10	2777	12608	568	10	10	10	735	10	10	10	10	10	99	10