

**GWMWater – expenditure review
for 2018 water price review**
Report for the Essential Services
Commission – FINAL REPORT

February 2018

Contents

Executive Summary	2
1 Introduction	4
1.1 Introduction	4
1.2 PREMO framework	4
1.3 Scope of review	4
1.4 Overview of approach	5
1.4.1 Operating expenditure	5
1.4.2 Capital expenditure	5
1.5 Process for review	6
1.6 Structure of this report	7
2 Summary of GWMWater’s forecast	8
2.1 PREMO rating	8
2.2 Key drivers of expenditure	8
2.2.1 Community expectations and service standards	8
2.2.2 Demand for services	8
2.2.3 New obligations	8
2.2.4 Other drivers	8
2.3 Operating expenditure	9
2.3.1 Overview	9
2.3.2 Controllable opex forecast	9
2.4 Capital expenditure	9
2.4.1 Overview	9
2.4.2 Capex forecast	10
3 Assessment of opex	11
3.1 Overview of approach	11
3.2 Errors and adjustments to the submitted template	13
3.3 Assessment of baseline expenditure	13
3.4 Benchmarking opex to other water businesses	13
3.5 Individual opex items	14
3.5.1 Labour	14
3.5.2 Electricity and carbon neutrality program	16
3.5.3 Additional maintenance activities	20
3.5.4 Opex from new capex	21
3.6 Recommended changes to forecast opex	22
4 Assessment of capex	23
4.1 Our approach to the assessment of capex	23

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4.2	Overall assessment of capital planning and asset management	24
4.2.1	Previous Review of Expenditure 2012-13	24
4.2.2	Improvements over 2012-13 to 2017-18	24
4.2.3	Comments	24
4.3	Major projects	24
4.4	Renewals expenditure	25
4.4.1	Analysis	26
4.4.2	Recommendation	27
4.5	Urban Remote Metering	28
4.5.1	Analysis	28
4.5.2	Recommendation	28
4.6	Decommission Redundant Assets (Rural/Urban)	28
4.6.1	Analysis	29
4.6.2	Recommendation	29
4.7	Summary of recommendations	29
	Limitation of our work	31
	General use restriction	31

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Figures

Figure 0-1 Change in controllable opex per connection – index	2
Figure 2-1 Controllable opex – GMMWater (\$2017-18).....	9
Figure 2-2 Capex forecast – GMMWater (\$2017-18)	10
Figure 3-1 Example of adjustments to baseline expenditure in ESC template	12
Figure 3-2 Change in controllable opex per connection – index	13
Figure 3-3 Annual change in expected revenue (smoothed, real \$2017-18)	18
Figure 3-4 Wholesale electricity prices and electricity futures in Victoria ...	19

Tables

Table 3-1 Comparison of controllable opex per connection for RP4 of the Victorian water businesses	14
Table 3-2 Comparison of labour forecasts for RP4 of the Victorian water businesses	15
Table 3-3 Comparison of energy forecast for RP4 of the Victorian water businesses	16
Table 3-4 GMMWater forecast controllable opex and recommended adjustments	22
Table 4-1 GMMWater forecast capex for Top 10 Projects	24
Table 4-2 Breakdown of Proposed Renewals by Asset Category	26
Table 4-3 Increases in Renewals Expenditure over RP3	26
Table 4-4 GMMWater's Redundant Assets	29
Table 4-5 GMMWater forecast capex	30

Executive Summary

The Essential Services Commission (ESC) is currently conducting a review of the proposed prices to be charged by Victoria’s water businesses for the period 1 July 2018 to 30 June 2023. Deloitte has been engaged by the ESC to review the expenditure forecasts made by the metropolitan businesses and regional urban water businesses. In undertaking this review, Deloitte’s key responsibilities are to:

- Assess the appropriateness of the expenditure forecasts in relation to the key objectives of the review
- Provide independent advice to the ESC regarding the appropriateness of the forecasts
- Where Deloitte’s advice indicates that a proposed expenditure level is not appropriate, propose to the ESC a revised expenditure level.

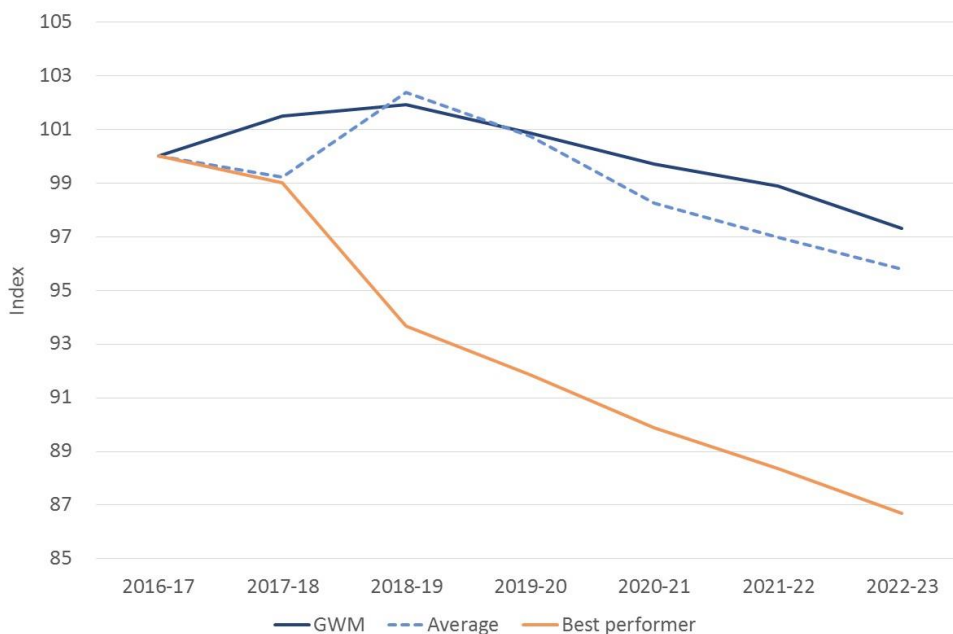
Operating expenditure (opex)

The key features of GMMWater’s opex forecast include:

- A baseline controllable opex in 2016-17 of \$31.50m (\$27.93m for urban and \$3.56m rural), which is roughly equal to the 2013 forecast for 2016-17 (\$31.79m)
- A forecast average customer growth rate of 0.5% per annum
- A cost efficiency improvement rate of 1.5% per annum
- \$9.82m of additional expenditure above the baseline (\$8.73m for urban and \$1.09m for rural)
- An average annual reduction in controllable opex of 0.8% for the urban water and sewerage components of the business, after factoring in the additional expenditure.

GMMWater benchmarks around the average for other regional water businesses for change in controllable opex per connection.

Figure 0-1 Change in controllable opex per connection – index



We have recommended a reduction of **\$3.61m** to GMMWater’s RP4 forecast controllable opex, with the cuts relating to additional maintenance activities (\$2.49m), labour (\$0.65m) and electricity (\$0.47m) The reasons for these recommendations are outlined in Chapter 3.

Capital expenditure (capex)

GWMWater’s proposed capex is decreasing by \$109m or 52.8% for the RP4 period compared to RP3. In RP3, large projects included the South West Loddon Rural Water Supply Project and Mallee Towns Treated Water Supply Project. Key aspects of the capex forecast include:

- Asset renewals for water and wastewater dominating the capital program (\$40.27m)
- Treated water supply upgrade for a number of towns (\$9.92m).

We recommend a reduction of **\$9.34m** in total for RP4 from GWMWater’s forecast, and that forecasts for:

- The Asset Renewals Water program be reduced by \$3.14m
- The Asset Renewals Wastewater program be reduced by \$3.05m
- General renewals program (excluding reductions above) be reduced by \$3.15m.

The reasons for these recommendations are outlined in Chapter 4.

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1 Introduction

1.1 Introduction

The Essential Services Commission (ESC) is currently conducting a review of the proposed prices to be charged by Victoria's water businesses for the period 1 July 2018 to 30 June 2023, referred to in this document as 'the next regulatory period' or fourth price submission period (RP4).

The businesses have submitted price submissions to the ESC for the RP4 period. The price submissions include forecasts of operating expenditure (opex), capital expenditure (capex) and demand, proposed service standards and prices.

1.2 PREMO framework

In RP4, the ESC is applying a new regulatory framework Performance, Risk, Engagement, Management and Outcomes (PREMO) for the first time. PREMO aims to put customer engagement at the centre of water corporation's proposals whereby service levels and expenditure must reflect outcomes that customers' value. The standard expectation here is that water corporations engage early and then re-test proposals in pricing submissions.

PREMO also provides a range of incentives on a number of levels to encourage businesses to:

- Reveal their efficient costs (and knowledge of efficiency opportunities), by rewarding businesses for both setting and achieving ambitious targets
- Avoid making ambit expenditure claims, as higher financial rewards are available for more ambitious proposals
- Prepare submissions of a high standard, to open the door for a fast-tracked regulatory process (and receive recognition for having done so).

The PREMO model incentivises businesses to self-select appropriate targets for operating parameters that make up the building block calculation. The ESC incentivises and rewards based on the relationship between the quality of the proposal and the return on equity – businesses have the flexibility to prepare their own combinations of service levels and expenditure, as long as these are fundamentally driven by delivering outcomes of value to customers.

The ESC's model also includes a fast-track process whereby the higher quality proposals are not subjected to a detailed review of expenditure (and other key items) but are instead fast-tracked to an early draft decision. In addition, of the businesses that were not fast-tracked, there is further differentiation on those businesses that only require a review on some elements of the proposal (e.g. specific items where expenditure is increasing) and those businesses that require a detailed review.

The expectations of water business proposals are further detailed in the ESC's guidance paper *2018 Water Price Review Guidance Paper November 2016* ('the Guidance Paper').

1.3 Scope of review

Deloitte has been engaged by the ESC to review the expenditure forecasts made by the metropolitan businesses and regional urban water businesses. In undertaking this review, Deloitte's key responsibilities are to:

- Assess the appropriateness of the expenditure forecasts in relation to the key objectives of the review
- Provide independent advice to the ESC regarding the appropriateness of the forecasts
- Where Deloitte's advice indicates that a proposed expenditure level is not appropriate, propose to the ESC a revised expenditure level.

In relation to opex, we have been asked to provide advice on whether the businesses are fulfilling their obligations and meeting customer service expectations as cost efficiently as possible and that forecast divergences can be readily explained. Although we have not been asked to review pricing outcomes,

which may be influenced by a number of factors in addition to expenditure, we have had regard to the factors outlined in the ESC's guidance for the level of PREMO rating that has been proposed by each business. Benchmarking has been mainly undertaken on the basis of changes from the baseline expenditure identified by businesses as prudent and efficient.

In reviewing capex, we have focussed on the major projects that comprise a significant proportion of the total capex.

1.4 Overview of approach

1.4.1 Operating expenditure

Our approach to assessing opex for each business can be summarised as follows:

1. Determine an appropriate baseline year (2016-17) by examining the actual expenditure incurred by water businesses in 2016-17 and considering: 1) how it compares to the benchmark established by the ESC in the 2013 price review and 2) removing any abnormal items (that are not already accounted for)
2. Benchmark the overall opex package against peers in particular opex changes from the baseline and opex per connection. This benchmarking has regard to the net effect of efficiency targets, growth rates and adjustments for new opex initiatives.
3. Identify any individual items that are resulting in an increase in forecast expenditure from the 2016-17 baseline and assess the prudence and efficiency of these items. Any proposed expenditure that is above the baseline needs to be fully explained and justified. The types of expenditure that could be considered reasonable in terms of being above the baseline include:
 - a. New obligations from regulators or government (such as changes to the Statement of Obligations, taxes, etc.)
 - b. Customer preferences – where customers are willing to pay more for improved outcomes
 - c. Significant increases in costs that cannot be managed by the business.In assessing prudence and efficiency for each business, we have also benchmarked individual expenditure items with other water businesses where possible.
4. Identify cuts consistent with prudent and efficient expenditure.

A more detailed explanation of our approach to opex is set out in Section 3.1.

1.4.2 Capital expenditure

In forming a view as to whether capex meets the requirements in the WIRO, and consistent with advice in the ESC's Guidance Paper, we have had regard to the following questions:

1. Does proposed capex reflect obligations imposed by Government (including technical regulators) or customers' service expectations?
2. Are proposed new major capital works consistent with efficient long-term expenditure on infrastructure services?
3. Does the business have appropriate asset planning procedures?
4. Does the business have appropriate asset management systems in place?
5. Does the business have appropriate project management procedures in place to enable effective delivery of capital works?
6. Has a risk-based approach been adopted to develop the capex program? Is there clear evidence that projects are prioritised?
7. Are major projects consistent with long-term strategies and planning?
8. Is the timing for the proposed new capex reasonable?
9. Are individual project cost forecasts reasonable and do not include undue contingencies or provisions, and reflect current efficient rates for undertaking capex in the Victorian water sector?
10. Is the capex program deliverable in the timeframes proposed?

With respect to individual capex projects or programs, the ESC has requested that there be a focus on two items in particular – renewals expenditure and digital metering.

- **Renewals expenditure.** There are significant increases in renewals expenditure for some businesses (these businesses have also proposed a price rise). In some cases, this is linked to customer consultation, but for the most part this increase suggests that there are potential issues in asset management and planning. For these specific businesses, the focus of the expenditure review will be on decision making and decision-making tools.
- **Digital metering.** There are a number of proposals to roll out digital meters. Each proposal was reviewed in detail, particularly where businesses have proposed to undertake full rollouts. Each business case should have a sound basis and have undertaken adequate pilots or trials (e.g. non-residential or new developments first) to better understand costs and benefits.

In arriving at recommendations for reductions for each individual business' capital program, we have had regard to the following:

- Comparison of overall historical capex with that proposed for RP4. Where proposed capex exceeds historical projections, justification for these increases should be provided, namely in a requirement to meet new or expanded obligations or customer requests/engagement which has resulted in new service standards.
- Review of four of the Top 10 project business cases to provide an overview of the business case and project development process. It is expected that the business cases should also link to customer outcomes and service levels to justify the decision-making process and selection of individual projects. Further, where individual projects are not able to demonstrate suitable business cases, reductions to those projects will be recommended.
- A review of particular capex programs where increases above historical expenditure is proposed. Where this is not based on meeting new obligations, customer expectations, or rectifying declining performance of assets (evidenced by increased events such as spills, bursts and leaks), renewals programs will be proposed to be reduced to historical levels. Further, benchmarking of renewals programs will be used to review underlying costs for these programs across the businesses.

1.5 Process for review

Our review of opex and capex has involved the following key steps.

- Initial planning and workshop with the ESC
- An initial review of price submissions, financial model templates and associated documentation
- Benchmarking of water business submissions in relation to overall opex and capex and individual expenditure items
- A further workshop with ESC staff to identify and discuss key issues for the focus of the review
- Preparation of queries/areas for discussion which was subsequently provided to each water business prior to site visits
- A site visit of each water business with the key objective to discuss queries and gather information as required. GWMWater's site visit was undertaken on 11 December 2017
- Detailed review and analysis of supporting information provided
- A Draft Report prepared and provided to GWMWater for comment.
- A Final Report (this report) provided to the ESC to inform the draft price determinations.

Through the process review, water businesses have been given some key opportunities to provide information to support their expenditure proposals. This included:

- Subsequent to final pricing submissions, and prior to our site visits, we wrote to each business identifying additional supporting information required
- During our site visits, businesses had the opportunity to present and provide information
- Following our site visits, there was the opportunity to provide further information on expenditure
- All businesses were provided with draft versions of our reports and recommendations and provided with 10 business days to provide further supporting information.

1.6 Structure of this report

This report describes our approach and sets out our findings from the review of GWMWater’s price submission. It is structured as follows:

- Chapter 2 briefly summarises GWMWater’s price submission with respect to expenditure forecasts and outlines key drivers of expenditure such as government obligations, service standards and demand forecasts
- Chapter 3 provides our analysis, conclusions and recommendations on key issues with respect to GWMWater’s opex forecast
- Chapter 4 provides our analysis, conclusions and recommendations on key issues with respect to GWMWater’s capex forecast.

Note that unless stated otherwise, all dollar figures shown in this report exclude the impact of inflation and are expressed in \$2017-18.

2 Summary of GMMWater's forecast

This chapter provides a summary of GMMWater's forecast expenditure including key underpinning assumptions such as efficiency, growth, service standards and demand.

2.1 PREMO rating

GMMWater has rated its submission as 'Advanced' under the ESC's PREMO framework.

2.2 Key drivers of expenditure

2.2.1 Community expectations and service standards

GMMWater is a vertically integrated water business providing water and wastewater services to rural and urban customers. Consultation with this customer base outlined support for the following programs and additional service standards:

- Introduction of urban remote metering accompanied by the customer portal
- Water quality upgrades
- Extension of the current collection of the recreation contribution charge (RCC) to watering school grounds
- Extension of the Rural Pipeline Intelligence Project to urban customers
- GMMWater's Carbon Pledge involving a 19% reduction in carbon emission by 2025
- New Guaranteed Service Levels (GSLs) for carting water to rural households when service is interrupted for more than 72 hours
- A water quality GSL providing a \$100 rebate when supplied water fails compliance with the Safe Drinking Water Act 2003.

2.2.2 Demand for services

Demand projections prepared for 'GMMWater Urban and Rural Water Strategy 2017' based on *Victoria in Future 2016* population forecasts show that consumptive demand in the region will be modest across the RP4. The Wimmera Southern Mallee region is expected to achieve modest growth over the next five years, whilst the rest of the region will be stable or in decline. Therefore, capital expenditure focused on improving water quality and new town sewer scheme projects are proposed.

Similarly, rural demand projections assume the intensity of water use and the mix of farming enterprises will remain at existing levels. GMMWater has stated that its expenditure program is free of any major influences of restricted supply and will therefore continue operating at the current rate of demand on the system.

2.2.3 New obligations

GMMWater has not identified any new obligations from regulators or government that require additional funding for this regulatory period.

2.2.4 Other drivers

In addition to the above, GMMWater has identified the following as drivers of increased opex:

- An increase in drought related projects in 2015-16 that have delayed the delivery of projects in the core GMMWater capital program
- Formal commitments to the South West Loddon Water Supply Scheme and Mallee Towns Treated Water Supply Project
- System commitments on the Eastern network as a result of the Landsborough Valley project
- Cumulative scheduled maintenance and operations
- Energy price increases

- Existing service standards be maintained (noting that current infrastructure performance is not meeting standards).

2.3 Operating expenditure

2.3.1 Overview

The key features of GMMWater’s opex forecast include:

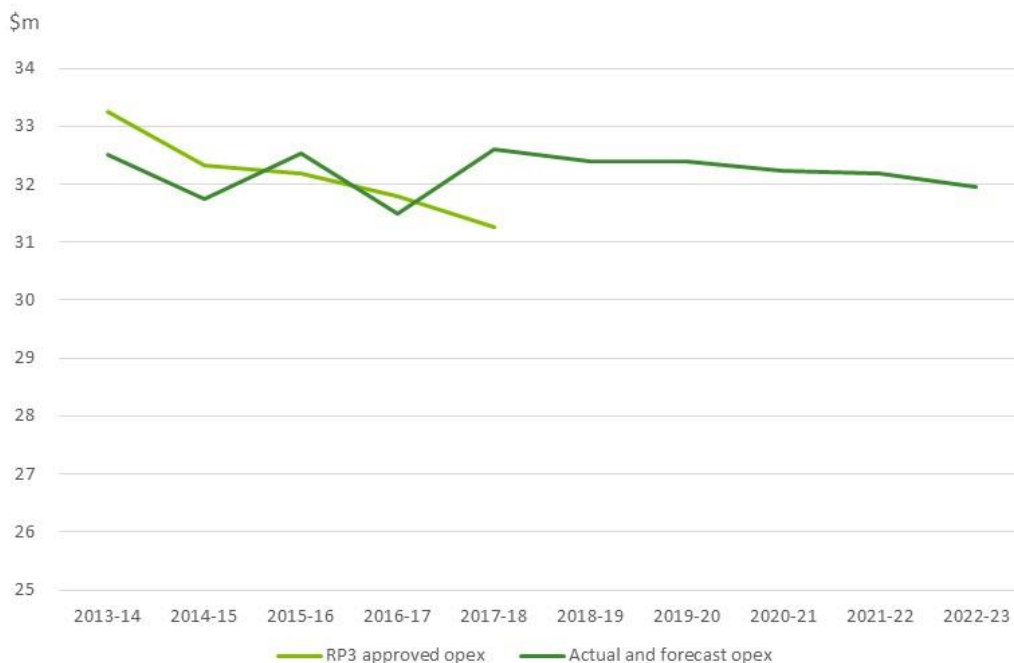
- Baseline controllable opex in 2016-17 of \$31.50m (\$27.93m for urban and \$3.56m rural), which is roughly equal to the 2013 forecast for 2016-17 (\$31.79m).
- A forecast average customer growth rate of 0.5% per annum
- A cost efficiency improvement rate of 1.5% per annum
- \$9.82m of additional expenditure above the baseline (\$8.73m for urban and \$1.09m for rural)
- An average annual improvement in controllable opex per connection of 0.8% for the urban water and sewerage components of the business, after factoring in the additional expenditure.

2.3.2 Controllable opex forecast

The chart below shows GMMWater’s total controllable opex across RP3 and RP4 (for both the urban and rural business). Recorded opex across RP3 was lower than approved figures, with the exception of 2015-16 and 2017-18. Opex in 2017-18 was significantly higher than approved opex, and remains relatively flat at this elevated level across RP4.

GMMWater’s opex forecast is the net effect of a combined cost efficiency improvement rate of 1.5%, customer growth rate of 0.5%, and \$9.82m of opex (\$8.73m for urban and \$1.09m for rural) above the baseline (total for the 5 years). This results in a reduction in controllable opex per connection for the urban water and sewerage business of 0.8% per annum over RP4.

Figure 2-1 Controllable opex – GMMWater (\$2017-18)



2.4 Capital expenditure

2.4.1 Overview

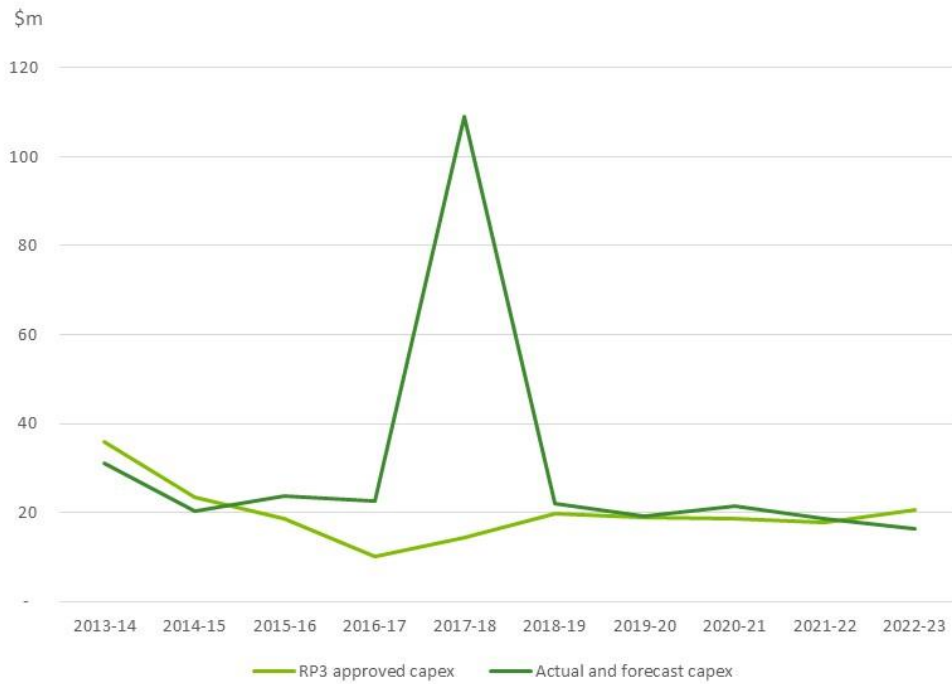
GMMWater’s proposed capex is decreasing by \$109m or 52.8% for the RP4 period over RP3. Key aspects of the capex forecast include:

- Asset renewals for water and wastewater dominating the capital program (\$40.27m)
- Treated water supply upgrade for a number of towns (\$9.92m)

2.4.2 Capex forecast

GMMWater’s actual and forecast water and sewerage capex is shown in Figure 2-2. Capex averages about \$19.5m per year, a slight decrease on RP3 which averaged \$24.4m, with the exception of 2017-18. The price submission notes that 2017-18 reflects an adjustment in 2017-18 for the South West Loddon Rural Water Supply Project and Mallee Towns Treated Water Supply Project.

Figure 2-2 Capex forecast – GMMWater (\$2017-18)



3 Assessment of opex

This chapter assesses GWMWater’s forecast opex.

3.1 Overview of approach

With respect to opex forecasts, the ESC’s Guidance Paper outlines that a prudent and efficient opex forecast would have the following characteristics:

- Baseline year expenditure is reflective of efficient operating costs and is used as a basis to forecast expenditure
- Forecast opex incorporates expectations for a reasonable rate of improvement in cost efficiency
- Expenditure requirements above the baseline year (adjusted for growth and efficiency improvements) are fully explained and justified.

Under the approach adopted by the ESC, opex is disaggregated into four separate elements. The elements are:

- **Baseline expenditure** – operating expenditure incurred in 2016-17, adjusted upwards or downwards to reflect any specific factors that mean that expenditure 2016-17 is not representative.
- An adjustment for **customer growth** – the ESC generally considers that increases in opex in line with customer growth are reasonable. This is a conservative assumption, and arguably generous to the water businesses, as many costs of operating water and sewerage systems are fixed or would be expected to grow at a lower rate than customer growth.
- An **efficiency improvement factor** – reflecting general productivity improvements across the economy, the ESC expects water businesses to achieve year-on-year productivity improvements. Businesses are free to propose their own individual improvements.
- **Cost increases** – for example those arising from new obligations imposed by regulators or government, major increases in costs which it is not reasonable to expect the business to absorb or manage within the ebb and flows of expenditure from year to year, or new initiatives that customers seek and are willing to pay for.

Our task is primarily to review both the baseline expenditure and the cost increases, and then to consider these in the context of the net impact of all the above factors. For example, we are more likely to consider an opex forecast to be reasonable for a business with a low efficiency improvement factor, but an intention to absorb additional expenditure items within its overall expenditure budget, rather than a business with a higher efficiency factor but cost increases for a large range of items that are not being required by regulators or sought by customers.

The concept of baseline expenditure is that it is the level of expenditure necessary to provide a defined level of service. Implicit is the assumption that the actual activities undertaken by a business from year to year to deliver services will change and there will be a number of once-off areas of expenditure in any one year that are not required every year. For example, a business may prepare a sewerage strategy in one year, prepare a water supply demand strategy in another, and do a number of once-off repairs in another year. That is, there will be a number of minor inclusions and exclusions from year to year associated with the normal ebb and flow of work requirements and changes in the industry and wider business environment. Given this, and the additional allowance provided for customer growth, it is therefore not the case that businesses should simply be able to recover increases in all opex line items. An efficient business would be expected to absorb many of these increases within their baseline and growth allowance.

The figure below provides a hypothetical and simplified example of the above. Data is only shown for a single year, but the same principle applies across all five years of the RP4 period. Under the example

below, and all other things being equal, we would be more likely to recommend reductions to Business A's expenditure, despite it having a nominally higher efficiency factor.

Figure 3-1 Example of adjustments to baseline expenditure in ESC template

	Business A	Business B
Customer growth (%)	2.0%	1.0%
Proposed efficiency factor (%)	3.0%	1.5%
Growth-efficiency factor (%)	-1.0%	-0.5%
Cost increases (\$m)	4	0.3

	Business A (\$m)	Business B (\$m)
2016-17 Expenditure	100.0	100.0
2016-17 Adjustments	1.0	-2.0
Baseline expenditure	<u>101.0</u>	<u>98.0</u>
Growth-efficiency adjustment	-1.0	-0.5
Growth adjusted expenditure	<u>100.0</u>	<u>97.5</u>
Cost increases	4.0	0.3
Proposed expenditure	<u>104.0</u>	<u>97.8</u>
Change compared to baseline	3.0	-0.2

The tools and approaches we have applied to consider each of the elements and the overall proposed opex package include:

- Benchmarking – of both the level of costs, and changes in costs, against historic and peer expenditure
- Comparing business forecasts to independent forecasts of changes in key expenditure items (for example labour and energy)
- Reflecting government and regulator policies and requirements
- Considering information on current service levels, customer preferences and willingness to pay
- Reviewing individual items of expenditure on a case-by-case basis.

Generally, we note that from an opex perspective, cost pressures on water businesses at this time are weak. Many cost increases that were anticipated at the commencement of RP3 largely did not eventuate. Increases to energy costs aside, inflation is currently weak, wages growth across the economy is at historically low levels, and there are few if any material changes in regulatory obligations that will increase costs. Only a small number of businesses have major capital works that will materially increase operating costs.

While we have examined the costs proposed by each business on its merits, we do hold the view that the current environment provides a strong opportunity for businesses to tightly control their costs and achieve (growth-adjusted) efficiencies. There are a range of systemic opex issues that are material for all businesses. Regardless of whether there are cost increases for these items, they have been reviewed for each business:

- **Labour costs.** Given labour costs are a significant component of opex, each businesses labour forecast has been reviewed, in particular how EBAs have been treated, Victorian Government wages policy, salary progressions, vacancy rates and other expectations from the government.
- **Energy costs.** Energy costs are expected to increase for all businesses particularly in the first year or two of RP4, however the magnitude of the increase is presently uncertain. Given this inherent uncertainty, our review provides indicative adjustments only. Final adjustments will be made by the ESC between its draft and final reports based on actual contract quotes.
- **Emission reduction programs.** Businesses have been asked by the Victorian government to reduce emissions from energy use via various means and most have proposed to do so. We have reviewed these proposals and checked that reductions in energy use are accounted for

(capex and opex must be aligned), appropriate feed in tariffs are used, and any Government funding support is reflected.

- **Savings in RP3.** A number of businesses appear to have made temporary savings in RP3, but have not maintained them through the end of RP3, and are not forecasting to maintain them for RP4. We have identified where this is the case.

3.2 Errors and adjustments to the submitted template

We note that GMMWater resubmitted the original excel template to the ESC. This resulted no material changes to proposed opex.

3.3 Assessment of baseline expenditure

As outlined in the Overview document, our approach to assessing baseline expenditure is to define efficient expenditure in the base year of 2016-17.

GMMWater’s actual total controllable expenditure was \$31.20m in 2016-17 (\$27.77m for urban and \$3.56m for rural). GMMWater has made an upward adjustment to its baseline of \$0.30m (combined urban and rural) to account for lower than usual energy costs due to a low consumption year.

In its 2013 price review, the ESC set a benchmark of \$31.79m for 2016-17 (\$2017-18). GMMWater’s baseline expenditure is roughly equivalent to this benchmark.

We have assessed GMMWater’s 2016-17 adjusted baseline and we believe that it reflects an efficient baseline and therefore consider no further adjustment is necessary.

3.4 Benchmarking opex to other water businesses

A key component of our methodology is to benchmark the opex outcomes of the water businesses. Figure 3-2 below compares the regional urban water businesses change in controllable opex per connection over RP4.

This figure shows that GMMWater’s urban business is forecasting changes in controllable opex per customer that are roughly in line with the average for regional businesses. Table 3-1 compares all of the Victorian water businesses and shows that GMMWater’s urban water and sewerage business is forecasting an annual reduction in controllable opex per connection of 0.8% per annum.

Figure 3-2 Change in controllable opex per connection – index

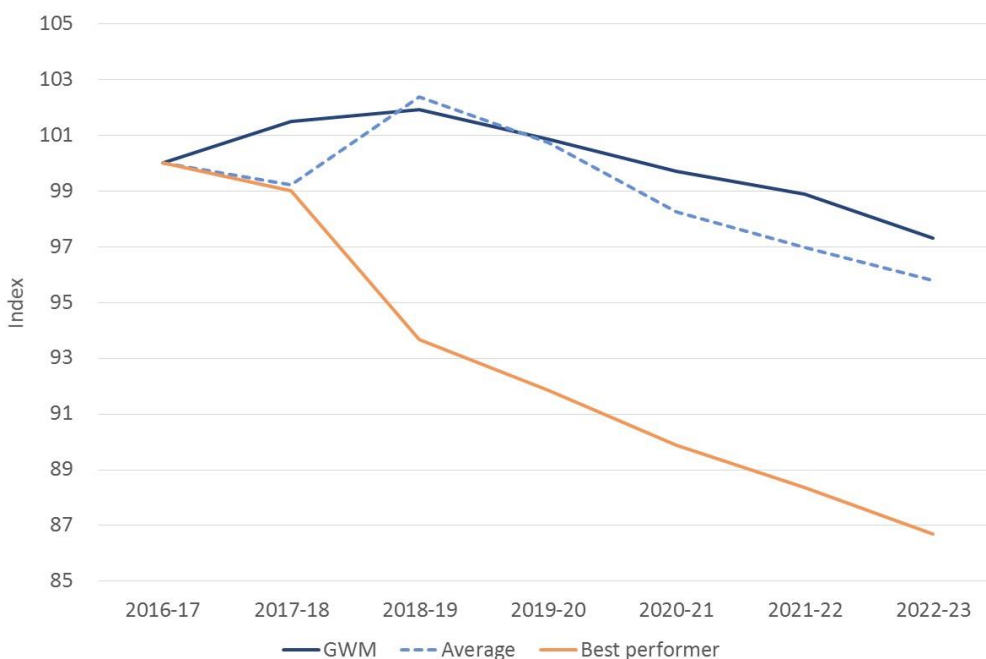


Table 3-1 Comparison of controllable opex per connection for RP4 of the Victorian water businesses

Water business	Efficiency target	Growth rate (% per annum)	Forecast variations to baseline	Reduction in controllable opex per connection
	(avg. % per annum)		(total RP4 \$m)	(avg. % per annum)
Westernport	2.7%	1.9%	0.00	2.6%
Yarra Valley	2.5%	1.7%	8.61	2.2%
South East	2.3%	2.3%	9.58	1.8%
Goulburn Valley	3.1%	1.3%	10.12	1.5%
Barwon	2.3%	1.6%	22.67	1.3%
Lower Murray – urban	1.0%	1.1%	0.26	1.2%
City West	2.0%	2.6%	20.66	1.1%
Coliban	1.5%	1.7%	8.55	1.0%
North East	1.2%	1.2%	6.24	0.9%
East Gippsland	1.2%	1.3%	1.91	0.9%
GWMWater – urban	1.5%	0.5%	8.73	0.8%
Central Highlands	1.6%	1.6%	12.71	0.6%
South Gippsland	1.5%	1.5%	7.03	0.0%
Gippsland	1.0%	1.2%	16.78	-0.2%
Wannon	1.0%	0.8%	25.41	-1.8%

Note: GVV forecast variations are adjusted for its \$2.3m p.a. efficiency dividend

3.5 Individual opex items

GWMWater has identified \$9.82m of forecast variations to baseline expenditure in total for RP4 (\$8.73m for urban and \$1.09m for rural). Key items to be reviewed with respect to the increase include:

- Additional labour costs (\$2.85m)
- Electricity price increases in 2017-18 (\$0.79m)
- Additional maintenance activities (\$4.12m)
- Opex from new capex (\$2.06m).

The first three items represent the breakdown of the 'Major Scheduled Maintenance and Operations (various)' (\$7.76m) opex variation item displayed in the ESC template.

These items will be explored further in this section.

3.5.1 Labour

GWMWater has forecast labour to be \$2.85m higher in total for RP4 relative to the growth-adjusted baseline. Key components of this increase are:

- \$0.65m over RP4 for wage increases. GMMWater has assumed wage increases of 2.5% per year (or 0.2% real). GMMWater stated in their pricing submission that labour costs beyond the current Enterprise Bargaining Agreement (EBA) (expiry 14 July 2018) are assumed to increase in line with the Victorian Government Wages Policy.
- \$2.20m over RP4 for an additional 4 FTEs for operating positions (this doesn't include staff increases for capital projects such as the South West Loddon and other major capital projects). These positions are to backfill an abnormally high number of vacancies and include 3 FTEs in scheduling and service delivery and 1 FTE for an OH&S Officer.

A comparison of GMMWater's labour forecast to other water businesses shows that GMMWater is forecasting the equal fourth highest proportional labour increase of all the water businesses for RP4. GMMWater's forecast variation is equivalent to 1.8% of its total controllable opex.

Table 3-2 Comparison of labour forecasts for RP4 of the Victorian water businesses

Water business	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Labour variations as a % of total controllable opex
Wannon	11.85	201.8	5.9%
Gippsland	10.59	364.2	2.9%
Goulburn Valley	5.90	220.2	2.7%
North East	3.62	196.6	1.8%
GMMWater	2.85	161.1	1.8%
Barwon	7.90	453.3	1.7%
Central Highlands	3.80	266.0	1.4%
East Gippsland	0.32	90.4	0.4%
South Gippsland	0.12	95.8	0.1%
City West	-	534.7	0.0%
South East	-	622.6	0.0%
Yarra Valley	-	674.4	0.0%
Coliban	-	301.3	0.0%
Westernport	-	66.5	0.0%
Lower Murray – urban	- 0.37	103.2	-0.4%

As outlined in our approach, proposed expenditure should only be added to the baseline where the water business can demonstrate that it is required (e.g. new obligation, customer preference or cost that cannot be managed). All Victorian water businesses are owned by the State Government and are subject to the same wages policy, which is overseen by DELWP and DTF. We would therefore expect to see a similar application of this wages policy across all water businesses.

We note that for most if not all water businesses, wage increases established under current EBAs (which are typically in the range of 2.5% to 3.25%) are well above inflation, and are also higher than average growth in wages across the economy. While commentators (including Deloitte Access Economics' own forecasts) expect wages growth to slowly increase over time, most businesses'

forecasts of wages growth are higher than those projected for the broader economy for the next few years.

We accept that water businesses are legally obliged to comply with wage increases set out in EBAs. At the same time, our view is that passing through to customer prices wage increases which, it appears, will for several years be well above wage increases in the broader economy, is unlikely to be prudent and efficient. We also consider that pass through of these costs to customers would be inconsistent with the PREMO framework, which requires businesses to demonstrate that they have actively sought to reprioritise expenditure to mitigate the cost and price impacts of any new obligations. There are a range of factors that we consider could mitigate EBA increases, for example:

- EBAs don't necessarily cover all staff in the business
- Businesses have options for delivering services that can reduce the cost impact of EBAs, such as contracting or outsourcing
- We understand that EBAs often have provisions that require increases above inflation to be accompanied by improvements in productivity.

We also note that most businesses have effectively 'absorbed' their above-CPI wage increases within their overall opex forecasts through productivity increases or other cost reductions, meaning that these increases are not passed on to customers. We believe this is a prudent and efficient approach and accordingly we have generally recommended reductions in opex forecasts for those businesses that have proposed wage-driven variations above their growth-adjusted baseline.

In assessing wage increases, we consider that given that most water businesses have been able to manage this cost component within the baseline, we are of the view that this labour expenditure should not be included as additional expenditure above the growth adjusted baseline. We therefore recommend that \$0.65m across RP4 be removed from forecast expenditure. This adjustment is outlined in Table 3-4.

In assessing GMMWater's \$2.20m of increased labour costs from its 4 new FTE positions, we note that:

- FTEs in 2016-17 (161.2 FTE) were around 5.7 FTEs lower than historical FTEs (166.8 FTE on average for 2012-13 to 2015-16)
- GMMWater advised that its vacancy rate was abnormally high in 2016-17 which is why the additional FTEs are required. GMMWater's FTE numbers have declined since 2012-13 with no significant changes to GMMWater's organisational structure.

Given 2016-17 FTEs were lower than historical FTEs due to an abnormally high vacancy rate we do not recommend any adjustment to forecast expenditure.

3.5.2 Electricity and carbon neutrality program

GMMWater has forecast expenditure for electricity to increase by \$0.79m in RP4 compared to the 2016-17 baseline. This reflects a constant increase of \$0.16m in every year.

Overall, this reflects an increase of 0.5% of total controllable opex. We note that electricity makes up a relatively large proportion of GMMWater's controllable opex. The table below presents a comparison of GMMWater's forecast energy variations relative to the baseline to the other water businesses over RP4.

Table 3-3 Comparison of energy forecast for RP4 of the Victorian water businesses

Water business	Energy costs as a % of 2016-17 controllable opex (\$m)	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Energy variations as a % of total controllable opex
Wannon	7.6%	5.1	201.8	2.5%

Water business	Energy costs as a % of 2016-17 controllable opex (\$m)	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Energy variations as a % of total controllable opex
Central Highlands	7.4%	5.5	266.0	2.1%
Coliban	6.6%	5.5	301.3	1.8%
Gippsland	4.7%	6.2	364.2	1.7%
Lower Murray – urban	8.3%	1.6	103.2	1.6%
Barwon	4.7%	5.0	453.3	1.1%
Goulburn Valley	9.6%	1.7	220.2	0.8%
North East	10.1%	1.3	196.6	0.7%
City West	1.5%	3.0	534.7	0.6%
GWMWater	7.9%	0.8	161.1	0.5%
South Gippsland	4.5%	0.2	95.8	0.2%
East Gippsland	5.1%	0.1	90.4	0.1%
South East	3.3%	-	622.6	0.0%
Yarra Valley	4.0%	-	674.4	0.0%
Westernport	4.2%	-	66.5	0.0%

Some key aspects the electricity forecast are outlined below.

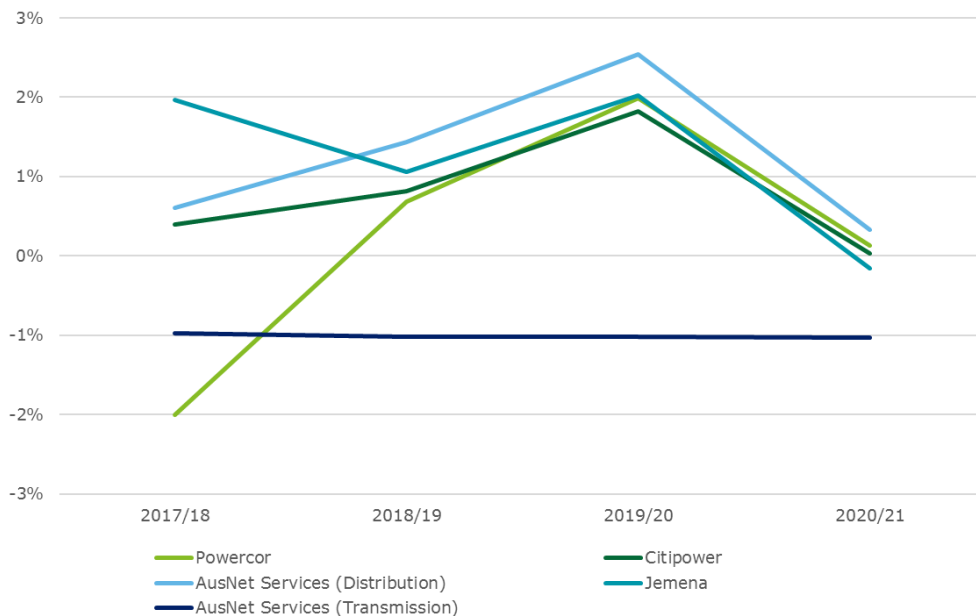
- GWMWater’s current contract for the purchase of electricity ends during 2017-18. Electricity prices for 2017-18 have been based on actual contract prices.
- GWMWater has advised that the increase in 2017-18 is based on current actual contracts it has in place. GWMWater’s strategy for energy procurement means it has not always procured under the Procurement Australia (PA) contract. It has instead joined part way through following its inability to achieve a better price outcome with the market directly. GWMWater’s large sites and small sites contracts are split between AGL (PA) and Energy Australia. From 2017-18 onwards, GWMWater has assumed a 0% real increase.
- Forecast retail prices are based on VicWater’s Supply Chain Excellence Program 5-Year Electricity Price Forecast Report June 2017 which provided retail electricity price forecasts for the Victorian Water Corporations. This report estimated a significant increase in retail electricity prices in 2017, followed by relatively flat prices in real terms under the base case scenario, and real decreases under policy change scenarios. GWMWater has given particular consideration to the base case, and a policy change scenario which involves the introduction of an emissions intensity scheme or similar policy.
- GWMWater estimates that it tends to face electricity prices 10% higher than the average Victorian water business due to a higher number sites, and resulting fixed charges. It has applied this relativity to the average price forecast from the VicWater scenarios outlined above.
- Although uncertainty around electricity prices present a risk, GWMWater has also identified it as an opportunity for renewable electricity generation to reduce electricity consumption and

contribute to its carbon emissions reduction pledge. The price submission does not identify specific planned sites or projects.

Electricity prices in Victoria have risen significantly over the last year, driven largely by increases in wholesale electricity prices. There is considerable uncertainty around how prices will change over RP4, due to a range of factors including policy uncertainty, fuel prices including coal and natural gas, and the potential entry and exit of generation capacity. This makes it difficult to accurately forecast electricity prices for the purposes of the price submission.

In Victoria, transmission network services are provided by AusNet Services, and distribution network services are provided by one of the five distribution network service providers (DNSPs, AusNet Services, CitiPower, Powercor, Jemena and United Energy) in different parts of the state. Network prices are determined by the Australian Energy Regulator (AER). The AER made final decisions on revenue allowances for the five DNSPs in May 2016 for the 2016-20 period¹, and made a final decision for AusNet Services (transmission) in April 2017 for the 2017-22 period. The annual change in smoothed revenue allowances for each of the network businesses is presented in Figure 3-3 below.

Figure 3-3 Annual change in expected revenue (smoothed, real \$2017-18)



Source: Deloitte analysis of AER decisions

Overall, the revenue allowances for the network business is relatively flat, with small real increases for most of the DNSPs, and a small real decrease for AusNet Services Transmission. GWMWater is in the Powercor network, which has small real revenue increases from 2018-19 onwards (less than 1% average). The change in price for particular customer types may differ from this overall trend, however this does not provide strong evidence of real price increases in the network component of prices.

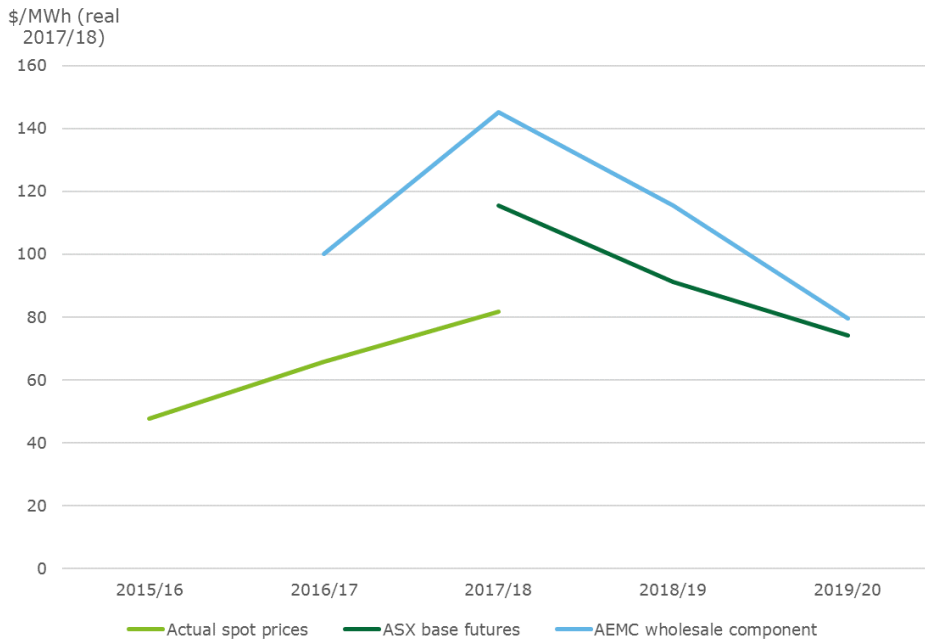
Wholesale prices are harder to forecast accurately, with a wide range of forecasts produced by different bodies over the past year. The Australian Energy Market Commission (AEMC) recently published a wholesale electricity price forecast (including spot prices, hedging, ancillary services and market fees) in its annual report on residential electricity price trends, based on analysis prepared by Frontier Economics.² It forecasts wholesale prices to peak in 2017-18, before decreasing, falling below

¹ The AER made a mathematical error in the inflation calculation in these decisions. It has proposed to revoke the decisions and substitute new determinations correcting the error by March 1 2018. We don't expect this to have a material impact on electricity prices.

² AEMC, 18 December 2017, *Final Report 2017 Residential Electricity Price Trends*

the real 2016-17 price by 2019-20. This forecast movement in wholesale electricity prices is broadly in line with the price of Victorian ASX base energy futures which are approximately \$115 for the remainder of 2017-18, decreasing to \$74.2 by 2019-20. These values are presented in Figure 3-4, along with actual average spot prices up to December 31 2018.

Figure 3-4 Wholesale electricity prices and electricity futures in Victoria



Source: Deloitte analysis of: AEMO data collected through NEOExpress, AEMC 2017 Residential Electricity Price Trends data, and ASX energy futures data accessed 17/01/2018

However, some publicly available reports provide quite different outlooks from the AEMC report. A September 2017 report prepared for the Australian Energy Market Operator (AEMO) by Jacobs forecast wholesale market prices to continue to increase to a peak in 2019-20, with retail prices following a similar trajectory.³ The divergence of views on wholesale costs reflects the overall uncertainty in the market, as well as quickly changing market conditions and expectations. In our analysis, we have placed more weight on the AEMC outlook as this is the more recent analysis.

In reviewing GMMWater’s proposal, we have considered the evidence provided by GMMWater, and recent forecasts of network and wholesale price movements. We consider that GMMWater’s proposed variations for electricity price increases for 2018-19 and 2019-20 are relatively modest and within a reasonable range, and our preliminary recommendation is that these be approved. However, we note that the VicWater forecasts were based on the sector as a whole and the adjustments made by GMMWater are unlikely to accurately capture all of the relevant information pertaining to its electricity expenditure requirements. We consider these should be updated for actual electricity contract prices before the final decision. However, we do not consider there is strong evidence to support a continued price increase beyond 2019-20, and recommend that additional expenditure should not be approved for the remainder of RP4. This results in a reduction of \$0.47m in total for RP4 from GMMWater’s proposal. This adjustment is outlined in Table 3-4. We note that the ESC intends to make a decision on allowable energy cost increases using updated contract offers post the finalisation of our reports. Therefore, our recommendations are indicative only.

³ Jacobs, 21 September 2017, *Retail electricity price history and projected trends*

3.5.3 Additional maintenance activities

GMMWater has forecast \$4.12m in total across RP4 in addition to baseline expenditure for various maintenance activities. GMMWater's pricing submission notes that key activities of the additional expenditure relate to:

- \$0.80m for Wastewater Lagoon Desludging Program which includes periodic sludge surveys and ongoing monitoring of the performance of the lagoons inform GMMWater's wastewater lagoon de-sludging program.
- \$0.19m for major maintenance on the SCADA system
- \$3.14m on undertaking condition assessments (through our review, however, we noted that GMMWater identified a duplicate expenditure line within this item equal to \$250,000 per year (or \$1.25m in total for RP4), which reduces the \$3.14m variation to \$1.89m over RP4). Of this remaining \$1.89m we note from the information supplied by GMMWater that:
 - 34% (\$0.65m) of this relates to condition assessments for sewer infrastructure (mainly sewer reticulation and rising mains)
 - 66% (\$1.24m) relates to water infrastructure (water reticulation mains and tanks).

With respect to desludging, given this is a lumpy item for all water businesses, we have assessed the level of desludging in the baseline year and whether this is a reasonable amount to cover the forecast desludging program. For GMMWater, we note that \$44,100 was spent on desludging activities in 2016-17 which is significantly lower than the average of the past 9 years of \$203,669. GMMWater's forecast for RP4 (\$0.8m) is based on the difference between the 9-year average and the 2016-17 year of \$0.16m. We consider this to be an appropriate methodology for calculating desludging costs above baseline expenditure. We therefore do not recommend any adjustments to expenditure for desludging.

For the additional maintenance on the SCADA system (\$0.19m) and the additional \$1.89m to undertake condition assessments, GMMWater has justified this on the basis it has made significant improvements during the last regulatory period in preparation of schedules for operations and maintenance to improve and maintain services to its customers. The process of review of life cycle outcomes and service performance is ongoing and continues to mature and inform the level of resources required. GMMWater has also stated that a key driver of increased maintenance expenditure is that customers (as represented by the Deliberative Panel) have recommended that GMMWater maintain current service standards. GMMWater has stated that given it is not currently meeting some service standards, there is a need to increase expenditure in order maintain current service standards. From GMMWater's price submission Appendix 7, we note the Deliberative Panel's preference to meet (rather than relax) the service standards, but we also note that there is no recorded consideration of the operating or capital cost implications of achieving this.

We have undertaken a brief analysis of GMMWater's network reliability performance in the 2015-16 ESC performance report against its service standards as set out in the ESC's Customer Service Code. We note that:

- GMMWater's agreed service standard in 2015-16 for sewer blockages (as set out in the ESC's Code) was 36 per 100km of sewer main. GMMWater's actual performance in 2015-16 was over 50 blockages per 100km and has been on the increase for the prior four years. We note further that GMMWater's service standard is higher from 2016-17 onwards (at 25).
- GMMWater's agreed service standard in 2015-16 for average duration of water interruptions was 83 minutes for unplanned and 180 minutes for planned. Both these targets were not met in 2015-16, however appear to be met for the four previous years (with the exception of planned in 2014-15).
- GMMWater's agreed service standard in 2015-16 for customer minutes off supply was 15.93 for unplanned and 30 for planned. It appears as though GMMWater has not achieved this target for two of the five years (to 2015-16).

Overall, we note that the preventative maintenance program does not relate to a new obligation and represents a cost that should be able to be reasonably managed by GMMWater. Furthermore, the assumptions underpinning forecast expenditure are based on an expected condition assessment schedule for 2017-18 and then projected forward for the five years of RP4. We would expect a more targeted program to justify additional expenditure (i.e. such as prioritising strategic assets).

However, on the basis of GMMWater not meeting current service standards for sewer, and that performance appears to be declining, we consider some additional expenditure may be necessary to arrest this trend and maintain agreed standards. Therefore, we consider that the expenditure variation in order to undertake condition assessments for sewer (\$0.65m over RP4) appears to be justified. Given that GMMWater is meeting its water reliability targets we consider that there is insufficient justification for an increase for water assets and therefore recommend the removal of this amount from the forecast (\$1.24m over RP4).

We therefore recommend that a total of \$2.49m (i.e. \$1.24m for water condition assessments and \$1.25 to correct the error) be removed from GMMWater's opex forecast. This adjustment is outlined in Table 3-4.

3.5.4 Opex from new capex

GMMWater has forecast an additional \$2.06m of opex in total for RP4 associated with four new major capex projects namely:

- 2017-18 Mallee Towns Treated Water Supply Project (\$0.68m)
- Treated Water Supply (Kaniva, Moyston, Ultima and Elmhurst) (\$0.23m)
- Goroke Sewerage (\$0.06m)
- 2017-18 South West Loddon Rural Water Supply (\$1.09m) – rural business

Each of these projects is discussed below.

2017-18 Mallee Towns Treated Water Supply Project

The additional \$0.68m of opex in total for RP4 relates to the additional operational and maintenance costs associated with water quality upgrades to five Mallee towns that were completed in 2017-18. These include Sea Lake, Woomelang, Berriwillcock, Beulah and Brim. Prior to 2017-18 these towns were receiving a regulated (non-drinking water) supply that did not meet potable water standards as defined by DHHS Water Quality Guidelines. These towns were prioritised as receiving an upgrade by applying the key criteria of population, source water quality, school locality, health service locality, transient population (major highway and/or tourist destination) and community expectations.

GMMWater advised that the forecast opex estimate for these upgrades is based on the delivery from nearby treatment plants via transfer pipelines or a new water treatment plant. The additional opex was also benchmarked to the operating costs of similar existing operations.

Given the community support for water quality upgrades for these towns and the quantum of costs is well reasoned, we do not recommend any adjustments to the variation in forecast expenditure.

Treated Water Supply (Kaniva, Moyston, Ultima and Elmhurst)

The additional \$0.23m of opex total for RP4 relates to the additional operational and maintenance costs associated with water quality upgrades for four towns – Kaniva, Moyston, Ultima and Elmhurst. Through GMMWater's consultation with customers, the Deliberative Panel supported water quality upgrades to Kaniva, Ultima, and Moyston irrespective of the tariff implications. The Deliberative Panel also provided qualified support for Elmhurst depending on adequate community support.

As per above for the Mallee towns, GMMWater advised that the forecast opex estimate for upgrades for these four towns is based on the delivery from nearby treatment plants via transfer pipelines or a new water treatment plant. Again, given the community support for water quality upgrades for these towns and the quantum of costs is well reasoned, we do not recommend any adjustments to the proposed variation in forecast expenditure.

Goroke Sewerage

GMMWater has forecast \$0.06m in addition to baseline expenditure in total for RP4 for a septic effluent drainage system at Goroke (draining of liquid waste to a central treatment point and then adequately disposed of). This project is to address sanitation issues associated with septic systems periodically not containing sewage and running off into drainage systems. The issues were first formally registered with GMMWater in 2014 when West Wimmera Shire lodged the Municipal Wastewater Management Plan. The cost for Goroke has been benchmarked on the cost of servicing a similar system at Natimuk.

Given the community support for this upgrade and the quantum of costs is well reasoned, we do not recommend any adjustments to the proposed variation in forecast expenditure.

2017-18 South West Loddon Rural Water Supply

GWMWater has forecast \$1.09m in addition to baseline for opex in total for RP4 associated with the South West Loddon Rural Water Supply which is a water pipeline to provide a secure water supply for the climate stressed region of south west Loddon in north west Victoria providing benefits mainly to rural water users – both agricultural and intensive livestock production. This project will be completed in 2017-18. Approximately half of the additional opex relates to labour (one additional FTE) and half relates to electricity. We note that there is a robust business case which highlighted a net benefit would be achieved from the preferred option. The capex for the project was also government funded. We have reviewed expenditure associated with this item and recommend no adjustment to proposed expenditure.

3.6 Recommended changes to forecast opex

The table below summarises the changes to opex above baseline expenditure. We have recommended a reduction of \$3.61m to GWMWater's RP4 forecast controllable opex as per the table below.

Table 3-4 GWMWater forecast controllable opex and recommended adjustments

Opex item	Actual	Price submission forecast					Total
	Baseline 2016-17	2018-19	2019-20	2020-21	2021-22	2022-23	RP4
Proposed controllable operating expenditure (\$m, original proposal)	31.79	32.39	32.39	32.23	32.18	31.95	161.14
Corrections to template	-0.29	-	-	-	-	-	-
Proposed controllable operating expenditure (\$m, revised template)	31.50	32.39	32.39	32.23	32.18	31.95	161.14
Recommended adjustments							
Labour		-0.13	-0.13	-0.13	-0.13	-0.13	-0.65
Electricity (prices above CPI)				-0.16	-0.16	-0.16	-0.47
Additional maintenance activities		-0.50	-0.50	-0.50	-0.50	-0.50	-2.49
<i>Total recommended adjustments</i>		<i>-0.63</i>	<i>-0.63</i>	<i>-0.79</i>	<i>-0.79</i>	<i>-0.79</i>	<i>-3.61</i>
Recommended operating expenditure		31.77	31.77	31.44	31.39	31.16	157.53

Notes: Controllable opex excludes licence fees, environmental contribution and bulk water costs.

4 Assessment of capex

This chapter of the report sets out our assessment of GWMWater’s capex proposal for RP4 including:

- Our approach to the assessment of capex
- An overall assessment of capital planning and asset management approach
- A summary of major projects with a significant impact on the capex proposal (top four by total expenditure) and assessment of each project
- A summary of our recommendations.

4.1 Our approach to the assessment of capex

Our approach to assessing capital expenditure is set out in Section 1.4.2., while this section provides some specific detail on the requirements of the ESC Guidance Paper. In relation to capital expenditure, the Guidance Paper includes the following instructions to businesses:

- Avoid including speculative capital expenditure. That is, where projects are not fully scoped, costed or internally approved (for example, though an approved business case) businesses should consider including only development costs, development costs with a notional allowance for construction, or not at all (relying instead on adjustments for uncertain and unforeseen events)
- Include only capital expenditure that that would be incurred by a prudent service provider acting efficiently to achieve the lowest cost of delivering service outcomes, taking into account a long-term planning horizon (**prudent and efficient forecast capital expenditure**). Prudent and efficient capital expenditure has the following characteristics:
 - is based on a P50 cost estimate
 - has an optimised contingency allowance
 - for renewals, is based on a reasonable rate of improvement in cost efficiency
 - has the risk of project delays and cost overruns managed through contractual arrangements
- Identify expenditure by major service category and by cost driver – renewals, growth and improvements/compliance – including current and forecast expenditure
- Identify expenditure by either major projects (top 10), capital programs (ongoing work) or other capital expenditure (smaller projects or programs)
- Provide supporting information for projects / programs including:
 - Project name, scope, and major service and asset category
 - Justification for project including cost driver
 - Start and completion dates (for projects)
 - Total capital cost itemising government and customer contributions by each year
 - Historical annual costs and explanations for increases / decreases in average annual expenditure (for programs)
 - Objectives of project as aligned with customer outcomes
 - Business case outlining options considered and approach to identifying optimal solution
 - Risk assessment approach
 - Incentive / penalty arrangements (for projects)
 - Tendering arrangement (for projects)
 - List of projects included in program for next regulatory period with business cases and options analyses (for programs)
- Justify the total forecast capital expenditure with reference to the characteristics of prudent expenditure identified above, taking into account forecast demand, benchmarking, and the substitution possibilities between capital expenditure and operating expenditure.

We have applied these specific requirements to our assessment of each business’s forecast capital expenditure.

4.2 Overall assessment of capital planning and asset management

4.2.1 Previous Review of Expenditure 2012-13

GWMWater’s key capital planning systems and processes were not reviewed as part of the assessment of expenditure forecasts for regional urban businesses in 2012-13 for RP3. Some details were provided for GWMWater’s organisation structure and proposed changes to service standards for the RP3 period however no substantive assessment or commentary was provided.

4.2.2 Improvements over 2012-13 to 2017-18

For this review, we requested GWMWater provide details on any improvements made to capital planning systems and processes since the 2012-13 review. In response, GWMWater identified the following improvements:

- Development of a new Strategic Asset Management Plan (SAMP) setting out reasoning for expenditure and proposed expenditure for coming period
- Collecting updated condition information on assets
- Improvement plan to align asset management systems with ISO55001 – current system maturity level is considered good
- Operational performance driven by the sewage system
- Maintenance plans are being developed to document current and desired practices
- Further development and improvements to Water Quality, and Wastewater Quality, Management Plans
- Further integration of Works Order Management System (implemented in 2013) with progressive shift from reactive to proactive maintenance
- Implementation of a customer centred Deliberative Panel to assess proposed works for RP4.

4.2.3 Comments

Overall, GWMWater’s capital planning approach and processes are generally in line with similar businesses and are as expected for a business of this size. Further work on asset condition data collection would provide good support to the capital planning approach and should assist in decision making around the shift from a reactive to proactive maintenance approach.

4.3 Major projects

Table 4-1 provides an overview of the top ten projects (as identified by GWMWater in its Price Review Template), showing the primary driver and forecast expenditure over RP4.

The table also identifies the proposed capital allocations for large programs of work (defined as being over \$1m in total expenditure over the five-year regulatory period) and minor programs of work (being under \$1m in expenditure over the five year period). The criteria for defining the major and minor programs of work have been developed by Deloitte based on GWMWater’s regulatory submission.

The highlighted projects were selected for more detailed review and commentary on these projects can be found in Sections 4.3 and 4.4.

Table 4-1 GWMWater forecast capex for Top 10 Projects

Capex item	Primary Driver	Water Plan forecast expenditure					Total RP4	% of total
		2018-19	2019-20	2020-21	2021-22	2022-23		
Decommission Redundant Assets (Rural and Urban)	Improvement / Compliance	1.07	1.01	0.86	1.01	0.86	4.81	6.8%
Dam Safety Works – Lake Fyans	Renewals	0.00	0.00	0.00	5.88	0.00	5.88	8.3%
Treated Water (Kaniva, Moyston, Ultima, Elmhurst)/	Improvement / Compliance	0.00	1.65	4.00	0.00	4.28	9.92	14.0%

Capex item	Primary Driver	Water Plan forecast expenditure						
		2018-19	2019-20	2020-21	2021-22	2022-23	Total RP4	% of total
Goroke Sewerage	Growth	1.40	0.00	0.00	0.00	0.00	1.40	2.0%
Urban Remote Metering	Improvement / Compliance	0.89	2.97	0.00	0.00	0.00	3.86	5.4%
Development Servicing - Pressure Improvements Commercial and Industrial - Fire Services	Improvement / Compliance	0.00	0.00	0.83	1.05	0.00	1.88	2.6%
Asset Renewal Water	Improvement / Compliance	5.19	4.45	4.16	3.49	3.96	21.25	29.9%
Asset Renewal Wastewater Renewals		5.63	3.42	2.59	2.44	3.02	17.10	24.0%
Donald Wastewater Treatment Plant	Improvement / Compliance	0.00	0.15	2.43	0.00	0.00	2.58	3.6%
Safe Drinking Water Act - Health Based Targets	Improvement / Compliance	1.13	0.00	1.31	0.00	0.00	2.44	3.4%
Subtotal - Top 10 Projects		15.31	13.65	16.17	13.86	12.11	71.11	72.9%
Other large projects/programs		1.46	0.88	0.62	0.67	0.68	4.32	4.4%
Other minor projects/programs		5.25	4.66	4.57	4.05	3.52	22.06	22.6%
Total		22.02	19.19	21.37	18.59	16.32	97.49	
Top 10 proportion of annual expenditure		69.5%	71.1%	75.7%	74.6%	74.2%	72.9%	

4.4 Renewals expenditure

Renewals is a significant program for GMMWater with net expenditure representing over 63% of the total capex for RP4. The renewals program is made up of:

- Water renewals – mains, treatment plants, domestic meters, bores, pump stations, storage tanks, urban water storages, and plant & equipment
- Wastewater renewals – mains, treatment plants, pump stations, major OH&S upgrades
- Domestic and stock – meters, pump stations
- Headworks – dam safety reviews, headworks structures
- Corporate – software, hardware, vehicles, plant & equipment, communications equipment.

Renewals are defined under the Strategic Asset Management Plan (SAMP) (approved August 2017) which outlines the investment levels required to manage assets in order to meet the required service obligations. Renewals programs have been developed to prioritise expenditure to optimise asset value as measured in relation to asset risk, service performance and minimising lifecycle costs. The SAMP is a relatively comprehensive document which covers:

- purpose
- strategic context
- asset scope
- lifecycle management
- asset planning for each asset category

- summary of assumptions, limitations and data confidence levels
- Asset management improvement measures.

GMMWater’s proposed renewals program for RP4 is presented in Table 4-2 below. The total renewals program is approximately \$61.5m which represents a 72.2% increase on the approved expenditure for RP3 of \$35.0m. The table shows that renewals expenditure for RP4 is dominated by water, wastewater and corporate renewals.

Table 4-2 Breakdown of Proposed Renewals by Asset Category

Category	RP4 forecast expenditure (\$000)					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total RP4
Water	5,271	4,500	4,213	3,489	3,956	21,429
Wastewater	5,634	3,424	2,584	2,437	3,018	17,097
Domestic & Stock	336	316	223	125	358	1,358
Headworks	426	1,329	340	341	388	2,824
Corporate	3,753	3,498	2,957	3,915	3,374	17,497
Total	15,420	13,067	10,317	10,307	11,094	60,205

Source: Adapted from GMMWater (Price Submission 2019-23 – Part 2 Appendix 2)

GMMWater has stated that renewals forecasts for linear assets in the first two years of RP4 are based on known failure history and asset condition rather than age profiles. The remaining three years of forecasts are based on asset age profiles with some smoothing of expenditure applied to spread the forecast failure year. GMMWater states that approximately \$134m of assets are considered past their expected life, with a portion of these expected to fail during RP4. GMMWater has forecast \$3m for facility assets that have a condition rating of 5 (worst condition / at failure) with a further \$15m of very high risk assets; a proportion of which are likely to require replacement during RP4.

GMMWater states that a key driver for asset renewals is asset performance and the results of service standards consultation with customers. GMMWater had the second worst performance in relation to unplanned water supply interruptions and sewer blockages as reported in the ESC 2015/16 Performance Report. GMMWater’s performance for 2016/17 as included in the draft 2016/17 Report indicates that it now has the state’s highest rate of sewer main blockages. GMMWater stated that consultation with customers (through their Deliberative Panel) identified support for investment to maintain current service levels, with the proposed expenditure for RP4 reflecting this investment.

4.4.1 Analysis

GMMWater is proposing a significantly increased renewals program in RP4 over what is being delivered in the current regulatory period and what has been delivered in previous regulatory periods. Table 4-3 below shows the increase in each asset category over the expenditure proposed in RP3.

Table 4-3 Increases in Renewals Expenditure over RP3

Category	% Increase over RP3	\$ Increase over RP3 (\$000)	% Contribution to Increase
Water	79.4%	9,482	37.5%
Wastewater	146.3%	10,156	40.2%

Category	% Increase over RP3	\$ Increase over RP3 (\$000)	% Contribution to Increase
Domestic & Stock	281.5%	1,002	4.0%
Headworks	183.0%	1,826	7.2%
Corporate	18.9%	2,785	11.0%
Total	72.2%	25,251	

Source: Deloitte

The increases in proposed expenditure are very large with a breakdown of expenditure and further details on focus areas contained within the SAMP however there is no specific explanation on why the renewals program is so much larger than that proposed in RP3. GMMWater has developed a 50 year renewals plan for each of the asset categories with expenditure defined as known (supported by asset inspection and condition assessments) and predicted (forecast based on asset age).

The focus of overall capital expenditure in the RP3 period was on larger projects, which, combined with mandated programs to reduce expenditure, would have put downward pressure on renewals expenditure during RP3. GMMWater has stated that the increase reflects both a catch up and re-focus on renewals from the RP3 period which represented a transition from completion of the WMP, and an outcome of the increasing maturity of asset management with GMMWater. This increasing maturity is reflected in better systems and processes (including the Asset Management Information System and the Assetic asset optimisation software) to predict asset failure, improve confidence in asset condition data, and to link actual asset performance with expectations of renewals.

GMMWater's supporting information states that \$134m of assets are past their expected life but also states that only \$89m of infrastructure assets have a remaining life of between 0-3 years (with an additional \$10m at 3-6 years, placing a proportion of these as possibly getting to zero remaining life within RP4), and only \$32m of infrastructure assets are rated as very high risk (with a proportion of this \$32m being addressed by renewals during RP4). No overall condition profiles for infrastructure assets were provided but information specifically on facility assets indicates that only 10% of these have an actual condition rating and only 0.22% of the total facility assets are rated as condition 5.

In our view, the supporting information provided by GMMWater does not reflect or adequately support the significant increase (72%) in proposed renewals expenditure. Taking into account, however, GMMWater's stated asset performance results, their overall sound approach to asset management, and the level of catch up renewals identified (given the previous focus on large capital projects), we accept that some proportion of the increase is required.

4.4.2 Recommendation

GMMWater's renewals program approach is relatively sound however there is some concern over the documented support for the magnitude of the increase in proposed expenditure for RP4. The significant increase in the renewals program is not adequately supported by the information submitted by GMMWater. We consider that the proposed increase in total renewals for RP4 is not been adequately justified as required by the Guidance Paper, and recommend the following adjustments:

- A reduction in the proposed total renewals expenditure increase of 72% to an increase of 45%. The 45% increase allows for some catch up of renewals and increasing age profiles. The reduced increase, however reflects the lack of supporting information adequately demonstrating the need for full increase in expenditure proposed over what has previously been spent.
- This reduction has been applied across the total proposed value of renewals but spread equally across the different renewals categories. This does not prevent GMMWater reallocating the

proposed reductions to specific categories of renewals only or excluding categories from a reduction.

4.5 Urban Remote Metering

GMMWater is proposing to introduce urban remote metering as an extension of the Rural Pipeline Intelligence Project which installed network hubs, remote telemetry meter reading, pressure sensors, flow meters and water quality sensors across the Wimmera Mallee and Northern Mallee Pipeline areas. The key objective of the urban remote metering project is to eliminate the inefficient collection of water meter data which is increasing operating costs. In particular, the project is expected to:

- Increase water availability through leak detection and system optimisation
- Reduce operational costs by avoiding manual meter reading
- Improve safety by removing travel associated with manual meter reading
- Improve customer satisfaction through timely consumption data, reducing billing errors and efficiencies in dealing with customer enquiries and complaints
- Reduced energy use and emissions through optimised operations and reduced vehicle use.

GMMWater state that the introduction of urban remote metering will be cost neutral and will likely produce a benefit that will enhance the prospect of achieving the 2.5% operating expenditure productivity target. The benefit cost analysis undertaken for this project identified a benefit cost ratio of 1:1.29 highlighting a net project position of (\$129k) at the end of the net present value analysis period. GMMWater has committed to ensuring that the project is revenue neutral for the next regulatory period.

4.5.1 Analysis

This project is somewhat different to the digital metering projects proposed by other water businesses assessed in our review. Primarily, the proposed urban metering project is building on a substantial backbone of existing infrastructure from the equivalent rural project delivered in the current regulatory period. As such, the costs of extending the existing network from rural to urban customers is much lower than a standalone urban system. The proposed expenditure of \$3.8m will replace in the order of 31,698 meters at an estimated unit cost of around \$120 per meter.

Secondly, the existing costs for GMMWater for meter reading are high with significant travel distances required to read the over 30,000 urban meters each quarter. GMMWater states that the current meter reading process takes over nine weeks to complete and has identified that the timeliness of customer bills and information on consumption patterns is a key benefit sought by customers.

We note also that while the project has a net cost to GMMWater, and therefore its customers, the net cost is relatively low and the overall project is expected to be revenue neutral.

4.5.2 Recommendation

Our review of this project has not highlighted any areas of concern with the capital cost. We note the strong support for this project from customers and the effective use of the existing digital network implemented for rural customers to keep the costs of the network significantly down from what might have been expected for a standalone system. Our assessment of the cost estimates for the project indicate that they are appropriate.

4.6 Decommission Redundant Assets (Rural/Urban)

The construction of the Wimmera Mallee Pipeline has resulted in a large number of GMMWater's existing assets becoming redundant. Although some of these assets were decommissioned and removed as part of the pipeline construction process, GMMWater assets remain on private property along with earthen storages and pump stations, road bridges and large channels and other structures. This project is an ongoing program to decommission and remove these redundant assets to lower the high risk that these assets present to GMMWater.

The types and quantities of redundant assets are shown in Table 4-4 below:

Table 4-4 GMMWater's Redundant Assets

Asset Type	Quantity	Details
Channel structures (on road reserves)	1,126	Bridges and culverts on road reserves.
Channel structures (on private property)	unknown	Occupational crossings (bridges and culverts) and regulators on private land. It is unknown how many structures and km of channel still exist as farmers have been removing and infilling.
Earthen storages	98	Town storages previously fed from channel system, channel system balancing storages and 'tanks'
Elevated and ground tanks		Remaining following water supply system upgrades
Pump stations and chlorinators	43	Channel system lift stations, old urban pump stations and chlorinators
Wastewater treatment plant assets	3	Major wastewater treatment plant upgrades in recent years have left a significant number of assets in place (Nhill, St Arnaud, Warracknabeal).
Water mains	26,742	Metres of pipes left in the ground following renewals - mostly asbestos cement pipe
Water treatment plant assets	3	Chemical dosing facilities made redundant as a result of changed source water from Wimmera Mallee Pipeline.
Other	8	Miralie Flume, old weirs and other assets left from previous authorities

Source: GMMWater – M2016 2237 Redundant Asset Decommissioning Plan

The removal of these redundant assets eliminates the ongoing costs of asset maintenance and asset condition inspections and eliminates the financial and reputational risks to GMMWater of these assets failing and the safety risk of customers.

4.6.1 Analysis

This project represents an important risk reduction to GMMWater in removing assets often located on private property that pose a risk to customers as they get older and fail, and which incur regular maintenance costs even though the assets are no longer in operational use.

4.6.2 Recommendation

We have no recommendations in relation to this project.

4.7 Summary of recommendations

Our recommendations for adjustments to GMMWater's capex forecast over RP4 are set out below. We recommend a reduction of \$9.34m in total for RP4 from GMMWater's forecast, and recommend that forecasts for:

- The Asset Renewals Water program be reduced by \$3.14m
- The Asset Renewals Wastewater program be reduced by \$3.05m
- General renewals program be reduced by \$3.15m.

Table 4-5 GWMWater forecast capex

Capex item		RP4 forecast					Total WP4
		2018-19	2019-20	2020-21	2021-22	2022-23	
Asset Renewal Water	Proposed	5.19	4.45	4.16	3.49	3.96	21.25
	Recommended	3.37	4.28	3.90	3.09	3.47	18.11
	Net change	-1.82	-0.17	-0.26	-0.40	-0.49	-3.14
Asset Renewal Wastewater	Proposed	5.63	3.42	2.59	2.44	3.02	17.10
	Recommended	3.60	3.26	2.39	2.16	2.65	14.05
	Net change	-2.04	-0.17	-0.19	-0.28	-0.37	-3.05
Urban Remote Metering	Proposed	0.89	2.97	0.00	0.00	0.00	3.86
	Recommended	0.89	2.97	0.00	0.00	0.00	3.86
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Other capital expenditure	Proposed	10.31	8.35	14.62	12.66	9.35	55.28
	Recommended	8.68	8.10	14.36	12.16	8.84	52.13
	Net change	-1.63	-0.25	-0.26	-0.50	-0.51	-3.15
Total proposed		22.02	19.19	21.37	18.59	16.32	97.49
Recommended capital expenditure		16.53	18.61	20.65	17.41	14.95	88.15
Recommended adjustments from proposed		-5.49	-0.59	-0.72	-1.18	-1.37	-9.34

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