

**Lower Murray Water (Urban) –
expenditure review for 2018 water
price review**

Report for the Essential Services
Commission – FINAL REPORT

February 2018

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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.

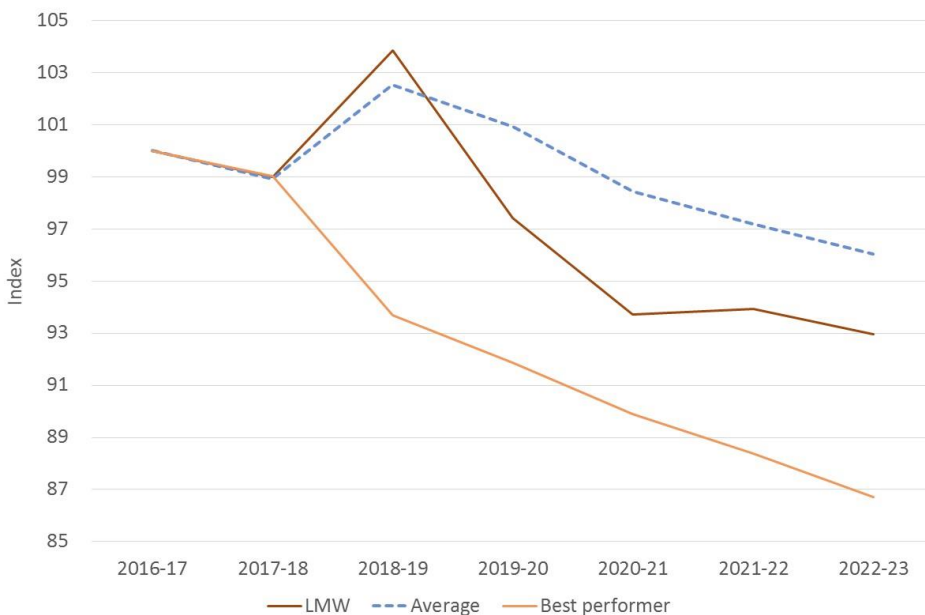
Operating expenditure (opex)

The key features of Lower Murray Water’s opex forecast include:

- A baseline 2016-17 controllable opex of \$20.52m, which is more than the 2013 forecast for 2016-17 (\$19.17m)
- A forecast average customer growth rate of 1.06% per annum
- A cost efficiency improvement rate of 1% per annum
- An increase of \$0.26m from the growth and productivity adjusted baseline
- An improvement in controllable opex per connection of 1.18% per annum for RP4, after factoring in the additional expenditure. This is the second highest improvement rate for controllable opex per connection of the regional businesses.

The chart below shows that Lower Murray Water is forecasting opex increases in controllable opex per connection for RP4 that are well below the average for regional urban businesses.

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



On the basis of the total opex package put forward by Lower Murray Water, and after reviewing key items of expenditure (i.e. labour and energy), we have not recommended any reductions to Lower Murray Water’s RP4 forecast controllable opex.

Capital expenditure (capex)

Lower Murray Water’s proposed capex is increasing by \$22.3m or 44.4% for the RP4 period over RP3.

Key aspects of the capex forecast include:

- Investment in UV disinfection facilities – which represents over half the increase at \$11.4m
- A modest increase in average annual renewals expenditure of 8%. Renewals represent 53.4% of the capex program.

We have assessed Lower Murray Water’s proposed capital expenditure forecast and find it to be relatively sound and generally supported by customers. As such we have not recommended any adjustments to Lower Murray Water’s RP4 forecast capex program.

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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. We have not been asked to review pricing outcomes, which may

be influenced by a number of factors in addition to expenditure. 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. Lower Murray Water's site visit was undertaken on 12 December 2017
- Detailed review and analysis of supporting information provided
- A Draft Report was prepared and provided to Lower Murray Water 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 key aspects of 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 Lower Murray Water’s price submission. It is structured as follows:

- Chapter 2 briefly summarises Lower Murray Water’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 Lower Murray Water’s opex forecast
- Chapter 4 provides our analysis, conclusions and recommendations on key issues with respect to Lower Murray Water’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 Lower Murray Water's forecast

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

2.1 PREMO rating

Lower Murray Water has rated its submission as 'Standard' under the ESC's PREMO framework.

2.2 Key drivers of expenditure

2.2.1 Community expectations and service standards

Lower Murray Water operates as the urban business of Lower Murray Urban and Rural Water Cooperation. As a part of its customer consultation for its pricing submission, Lower Murray Water customers provided support for the following projects and additional service standards in line with four customer outcomes:

- Business transformation to increase labour productivity
- Asset optimisation
- Service levels to be maintained largely at current levels, with Lower Murray Water accepting more risk with proposed tighter service performance targets
- Improving unplanned supply interruptions to better than 25 per 100 km per year
- Maintain payments for three of its Guaranteed Service Levels (GSL), and increase to \$1,500 the payment made to affected customers when it does not meet the GSL relating to sewer spills.

2.2.2 Demand for services

Lower Murray Water has projected demand for its services to increase in line with customer growth at 1.1% for the first three years of RP4 and 1.0% for the last two years of RP4.

2.2.3 New obligations

Lower Murray Water has identified that it will incur new costs in RP4 due to the following compliance requirements, mainly in response to the Minister for Water's 2016 Standing Directions and additional requirements:

- Victorian Protective Data Security Standards (VPDSS) – establish 18 high level mandatory requirements to protect public sector data and provide for governance across the four domains of information, personnel, ICT and physical security. This will be an additional cost of \$0.45m for RP4.
- Asset optimisation and AMAF attestation – The Asset Management Accountability Framework (AMAF) was issued in February 2016 under the Financial Management Act, Section 8 - Standing Direction 3.4.9 – 'Managing Assets' and closely aligns with the International Standard ISO55000 series for Asset Management. This is an additional cost of \$0.29m for RP4.

2.2.4 Other drivers

In addition to the above, Lower Murray Water has identified the following as drivers of increased opex:

- Increase in electricity costs from increases in electricity prices
- Labour cost increases arising from an initial investment in resources to drive efficiency and improvements in business processes, energy efficiency and procurement, and asset management
- Investment in IT network security
- Generation of opportunities for diverse people to join the business including indigenous Australians (\$0.25m)

- The employment of an Energy Engineer to implement its carbon pledge (\$0.4m)
- Increase in air scouring work, with additional operating expenditure in 2018-19 (totalling \$0.92 million) to ensure maintenance of water quality throughout the various urban serviced cities and towns.

2.3 Operating expenditure

2.3.1 Overview

The key points or features of Lower Murray Water’s opex forecast include:

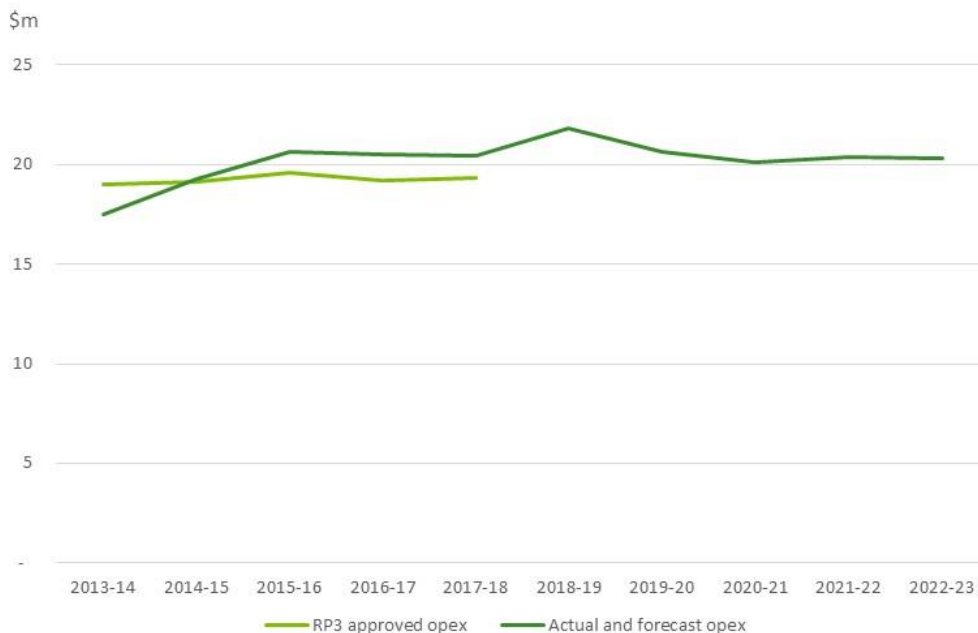
- Baseline controllable operating expenditure in 2016-17 of \$20.52m, which is more than the 2013 forecast for 2016-17 (\$19.17m)
- A forecast average customer growth rate of 1.06% per annum
- A cost efficiency improvement rate of 1% per annum
- An increase of \$0.26m above the growth and productivity adjusted baseline (total for RP4)
- An improvement in controllable opex per connection of 1.18% per annum for RP4, after factoring in the additional expenditure. This is the second highest improvement rate for controllable opex per connection of the regional businesses.

2.3.2 Controllable opex forecast

The figure below shows Lower Murray Water’s total controllable opex across RP3 and RP4. Actual opex during RP3 was higher than the approved levels with the exception of 2013-14. Lower Murray Water have made a downward adjustment to the baseline of \$1.54m, due mostly to a black water event occurred in 2016-17. Even with this adjustment, however, the 2016-17 baseline opex remains above the benchmark.

Lower Murray Water was only a handful of businesses to spend more than was forecast for RP3. Through RP4 forecast opex is at a relatively constant level with a small increase projected during 2018-19.

Figure 2-1 Controllable opex – Lower Murray Water (\$2017-18)



2.4 Capital expenditure

2.4.1 Overview

Lower Murray Water’s proposed capex is increasing by \$22.3m or 44.4% for the RP4 period over RP3. Key aspects of the capex forecast include:

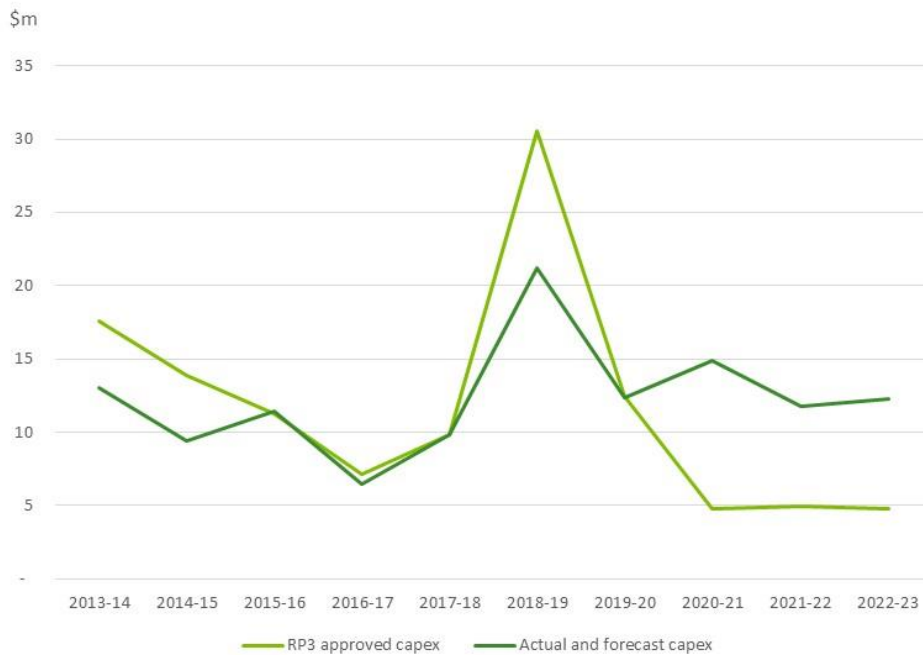
- 53% attributed to renewals and replacement investment with a modest increase in average annual renewals expenditure. Specific major programs are the Pipeline Renewals (for water mains) and Rehabilitation of Sewers, both of which are included as Major Projects.
- 19% for investment in growth, predominantly to maintain treatment and network capacity service population and connection growth in the major centres of Mildura/Red Cliffs and Swan Hill.
- 27% for other improvements, compliance and customer contributions.

2.4.2 Capex forecast

Lower Murray Water’s actual and forecast water and sewerage capital expenditure is shown in Figure 2-2. Total net capital expenditure for RP4 is forecast to be \$72.4m which represents a 44% change on RP3 actual net expenditure of \$50.1m (as reported in the Price Review template).

The key drivers of capital expenditure are renewals, asset modernisation and IT improvements. The increased capex in RP4 is partly due to the deferral of major projects from the RP3 period to focus on Sunraysia Modernisation Program during RP3.

Figure 2-2 Capex forecast – Lower Murray Water



3 Assessment of opex

This chapter assesses Lower Murray Water’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.

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 Lower Murray Water resubmitted the original excel template to the ESC. This resulted in immaterial changes to proposed opex.

3.3 Assessment of baseline expenditure

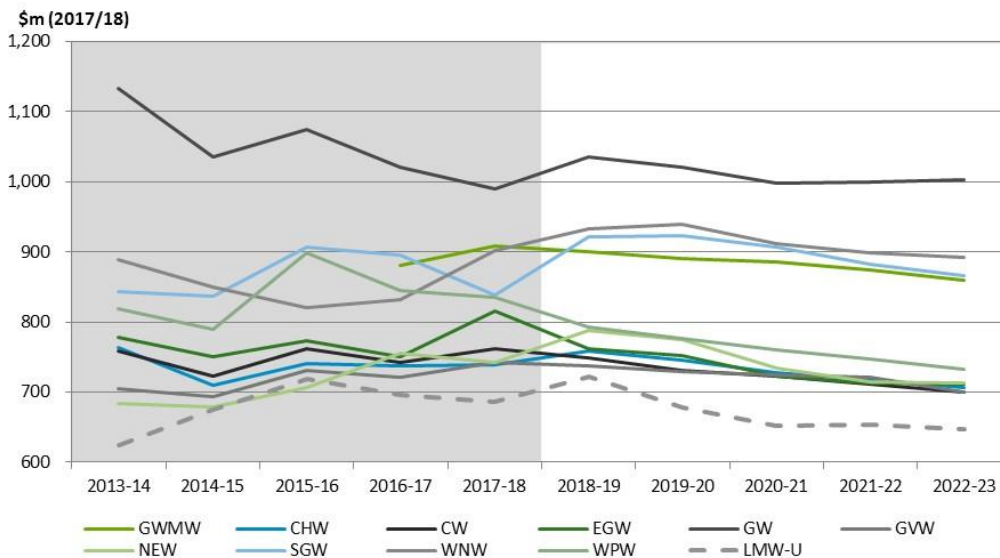
As outlined above, the first step in our approach to assessing baseline expenditure is to define efficient expenditure in the base year of 2016-17.

Lower Murray Water’s actual total controllable expenditure was \$22.05m in 2016-17. Lower Murray Water has made a net downward adjustment to this baseline of \$1.54m resulting in an adjusted baseline of \$20.52m. This downward adjustment is due to additional treatment costs incurred in the baseline year associated with water quality issues resulting from two natural events affecting Lower Murray’s source water. The first event was a blue green algae outbreak, and following this, a prolonged black water event.

In its 2013 price review, the ESC set a benchmark of \$19.17m for 2016-17 (\$2017-18). Lower Murray Water’s adjusted baseline expenditure of \$20.52m is \$1.35m higher than this benchmark. A key reason for the increase was the organisational restructure in 2016-17. Within the restructure, two new executive manager positions were created: Chief Information Officer and Executive People & Culture. There was no adjustment to the baseline as these were considered business-as-usual labour costs. The restructure is intended to enable Lower Murray Water to achieve labour force efficiencies and other efficiencies in RP4.

Although Lower Murray Water is above the ESC benchmark, we also note that Lower Murray Water has the lowest opex per connection of all the regional businesses as per the figure below.

Figure 3-2 Total controllable opex per water connection



We have assessed Lower Murray Water’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 3-3 below compares the regional urban water businesses’ change in controllable opex per connection over RP4. This chart shows that Lower Murray Water is forecasting opex adjustments that are below the average of regional businesses.

Table 3-1 below compares the efficiency all of the Victorian water businesses and shows that Lower Murray Water is forecasting an improvement in controllable opex per connection of 1.2% per annum for RP4, which results in costs per connection being 7% lower in 2022-23 than in 2016-17. This is the second highest improvement in controllable opex per connection of the regional businesses.

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

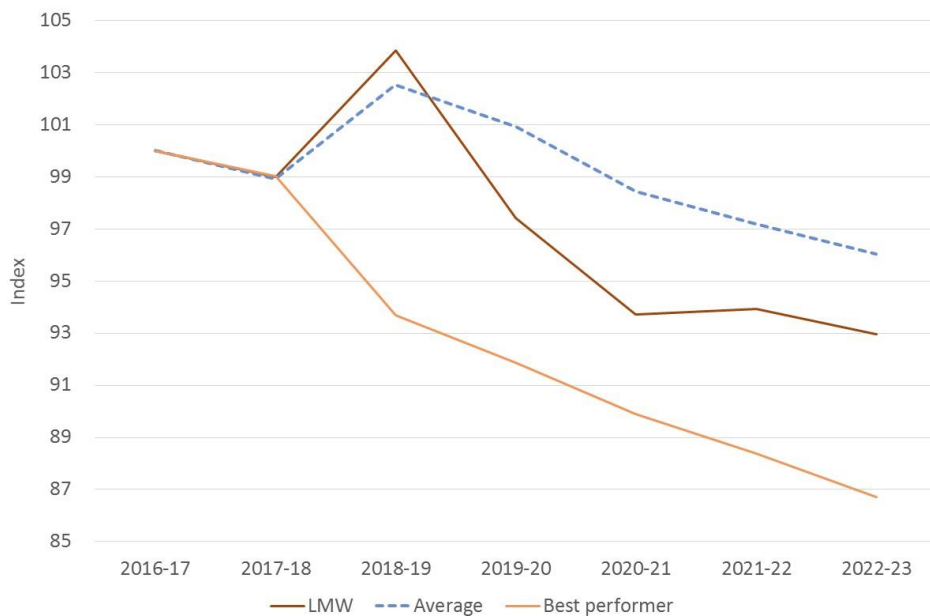


Table 3-1 Comparison of Victorian water businesses change in controllable opex

| 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% |

| 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) |
| Wannon | 1.0% | 0.8% | 25.41 | -1.8% |

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

3.5 Individual opex items

Lower Murray Water has identified a net increase of \$0.26m in forecast variations to baseline expenditure in total for RP4. Given the very small increase in forecast variations from the baseline, we have note reviewed each expenditure item in detail for Lower Murray Water under the ESC’s PREMO framework. However, as per our approach for all businesses, we have assessed Lower Murray Water’s labour and energy costs. These items are set out below.

3.5.1 Labour

Lower Murray Water’s total labour costs are forecast to be \$0.92m higher in total for RP4 over the baseline year. However, with respect to annual variations to baseline expenditure, Lower Murray has identified a reduction on labour costs of \$0.37m and a reduction in contractor expenditure of \$0.90m. Lower Murray Water is therefore effectively proposing to offset the increased labour expenditure through a business transformation program and other efficiency measures.

Key elements of Lower Murray Water’s labour include:

- A 0.7% (real) annual increase in wages with the negotiation of an Enterprise Bargaining Agreement (EBA) from the start of RP4 (i.e. the new EBA begins 1 July 2018).
- A total reduction of 5.8 FTEs by the end of the RP4 (2022-23) compared to 2016-17. This is the net effect of an increase of 0.6 FTE from 2016-17 to 2017-18 and a decrease of 6.4 FTE during RP4.

Lower Murray Water undertook an organisational restructure throughout 2016-17 which aligned its labour resources with its corporate goals and objectives. The restructure provided for two new executive manager positions complementing the business transformation project and are intended to enable Lower Murray Water to achieve the labour force efficiencies for RP4.

A comparison of Lower Murray Water’s labour forecast to other water businesses shows that Lower Murray Water is forecasting the only net reduction in labour costs of all the water businesses for RP4. Lower Murray Water’s forecast variation represents 0.37% of its total controllable opex.

Table 3-2 Comparison of labour forecast 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% |

| Water business | Forecast variations to baseline opex (total RP4 \$m) | Total controllable opex (total RP4 \$m) | Labour variations as a % of total controllable opex |
|-----------------------|---|--|--|
| 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 above, 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. Where there are deviations from this policy, such as high wage increases factored into enterprise agreements, we would also expect this to be justified by the water business if this is resulting in higher forecast labour costs.

Given Lower Murray Water is forecasting a reduction in labour costs from the baseline, we do not recommend any adjustment to expenditure.

3.5.2 Electricity and carbon neutrality program

Lower Murray Water has forecast expenditure for electricity to increase by \$1.61m in RP4 compared to the 2016-17 baseline. This is made up of increases throughout the period, which are partially offset by reduced consumption from renewable energy projects.

Overall, this reflects an increase of 1.6% of total proposed controllable opex. We note that electricity makes up a relatively large proportion of Lower Murray Water’s controllable opex. The table below presents a comparison of Lower Murray Water forecast urban 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% |
| 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% |

| 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 |
|-----------------------|---|---|--|--|
| 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% |
| GMMWater | 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.

- Lower Murray Water’s current contract for the purchase of electricity for its regional and urban activities expires on 30 June 2018 and it is in the process of finding procurement options for 2018-19 onwards.
- As part of its research for the price submission, Lower Murray Water developed six electricity price scenarios based on a range of scenarios. In addition to these scenarios it engaged EY to undertake retail price forecasting based on factors including its energy demand profile, forecast water demand, and contemporary electricity market conditions, the results of which were outlined in a report by EY.¹ This forecast covered both urban and rural electricity.
- EY forecast wholesale electricity prices to decrease from \$76/MWh in 2018-19 to \$58 (real \$2017) by 2020-21, before steadily increasing from 2021-22 onwards, due in part to the assumed introduction of carbon pricing. Forecast retail prices for large and small sites broadly follow the same trend.
- Lower Murray Water has proposed to update the energy values in the price submission in March 2018 to reflect latest market conditions and knowledge.
- A number of pilot solar PV installations have been planned to reduce electricity consumption and contribute towards reducing greenhouse gas emissions. This includes a total of \$1.65m of capital expenditure, all forecast to occur in 2018-19, which reduces electricity consumption by 810 MWh per annum.

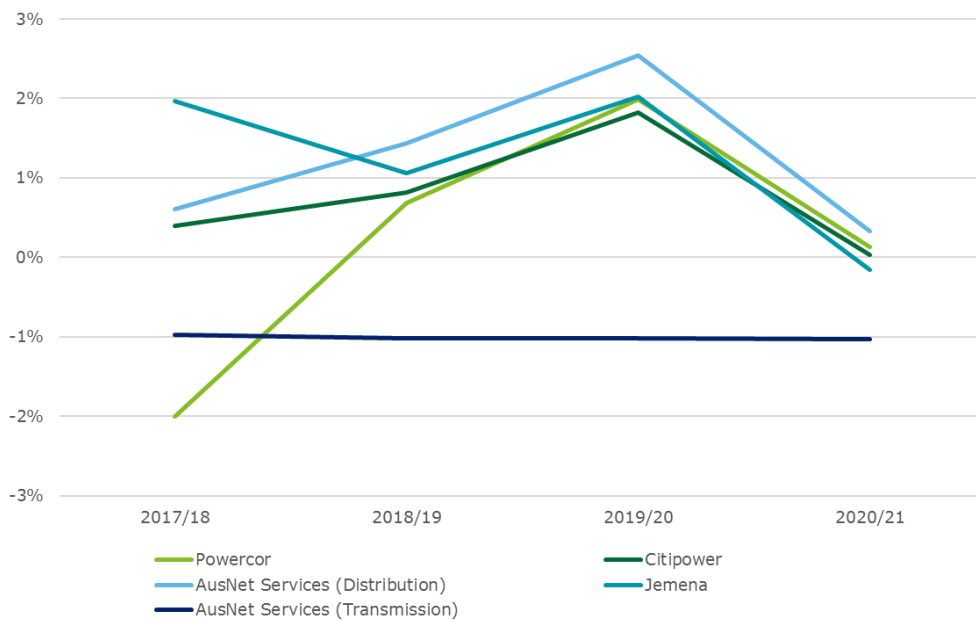
Electricity prices in Victoria have risen significantly over the last year, driven largely by increases in wholesale electricity prices. There is considerable uncertainty around how prices will change over RP4, due to a range of factors including policy uncertainty, fuel prices including coal and natural 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

¹ EY, *Lower Murray Urban and Rural Water Authority Price Forecasts*, August 2017

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 period², 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 3-4 below.

Figure 3-4 Annual change in expected revenue (smoothed, real \$2017/18)



Source: Deloitte analysis of AER decisions

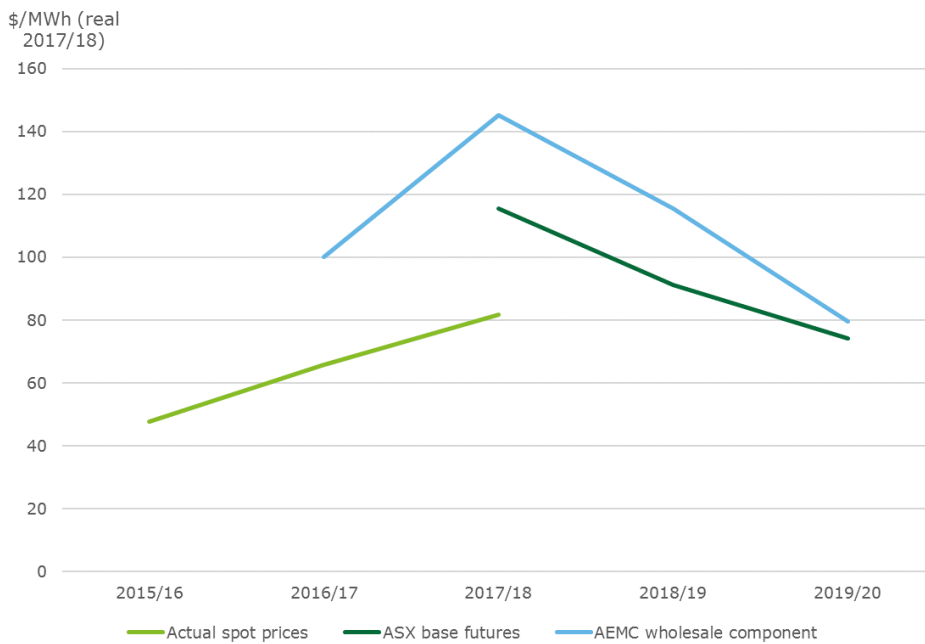
Overall, the revenue allowances for the network business is relatively flat, with small real increases for most of the DNSPs, and a small real decrease for AusNet Services Transmission. Lower Murray Water is in the Powercor network, which has small real revenue increases from 2018-19 onwards (less than 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.³ It forecasts wholesale prices to peak in 2017-18, before decreasing, falling below 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 3-5, along with actual average spot prices up to 31 December 2018.

² 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.

³ AEMC, 18 December 2017, *Final Report 2017 Residential Electricity Price Trends*

Figure 3-5 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.⁴ 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. For 2018-19 and 2019-20, the AEMC outlook and ASX price forecast are broadly in line with price movements the EY report used by Lower Murray Water, noting that each captures wholesale prices in a different manner.

In considering Lower Murray Water’s proposal we have considered the evidence provided Lower Murray Water, and recent forecasts of network and wholesale price movements. We consider that Lower Murray Water proposed electricity variations for 2018-19 and 2019-20 are reasonable, and our preliminary recommendation is that these be approved, subject to updated contract offers before the final decision as proposed by Lower Murray Water.

In general, we do not consider there is strong evidence to support a continued electricity price increase beyond 2019-20. However, considering the efficiencies proposed by Lower Murray Water through its net negative variations from the baseline (excluding electricity), in our view this reflects an efficient management of expenditure overall. Therefore, we do not recommend adjustments to Lower Murray Water’s proposal in these years. 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.

3.6 Recommended changes to forecast opex

In summary, we have not recommended any adjustments Lower Murray Water’s RP4 forecast controllable opex as per the table below.

⁴ Jacobs, 21 September 2017, *Retail electricity price history and projected trends*

Table 3-4 Lower Murray Water 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 opex (\$m, original proposal) | 20.59 | 21.78 | 20.66 | 20.09 | 20.34 | 20.33 | 103.19 |
| Corrections to template | - 0.07 | - | - | - | - | - | - |
| Proposed controllable opex (\$m, revised template) | 20.52 | 21.78 | 20.66 | 20.09 | 20.34 | 20.33 | 103.19 |
| Recommended adjustments | | | | | | | - |
| Labour | | | | | | | - |
| Electricity | | | | | | | - |
| Total recommended adjustments | | - | - | - | - | - | - |
| Recommended opex | | 21.78 | 20.66 | 20.09 | 20.34 | 20.33 | 103.19 |

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 Lower Murray Water’s capex proposal for RP4, including:

- 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 overall approach to assessing capex is briefly 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 prudent and efficient capital expenditure that 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 businesses’ forecast capital expenditure.

4.2 Overall assessment of capital planning and asset management

4.2.1 Previous Review of Expenditure 2012-13

Lower Murray Water’s key capital planning systems and processes were reviewed as part of the assessment of expenditure forecasts for regional urban businesses in 2012-13 for RP3. This

assessment looked at high level, generic issues that might have impacted on the prudence, efficiency and deliverability of proposed expenditure. The 2012-13 review highlighted:

- The use of GIS as an asset register
- The upgrade of the Hansen Asset Management System in 2013
- Use of the Technology One Projects module for project management
- Progress in meeting the outcomes of the 2011 asset management regulatory audit including development of an asset management strategy, a comprehensive asset maintenance strategy, documented risk assessments for maintenance programs
- Need to develop a standard documented process for approval of capital works and develop a standard template document for business case type documents
- Need for better attention to project scoping and cost estimations in the planning stage to reduce cost over runs in delivered projects

4.2.2 Improvements over 2012-13 to 2017-18

For this current review, we requested Lower Murray Water provide details on any improvements made to capital planning systems and processes since the 2012-13 review and these included:

1. Application of capital planning and asset management systems developed for the Sunraysia Modernisation Project into the broader business to help deliver future capital programs
2. Responding to Cardno recommendations from the review of RP3
3. Work on reviewing / assessing the practice of renewals versus maintenance
4. Responding to customer outcomes of minimising costs while service levels remain the same
5. Development of implementation plan for compliance with Asset Management Accountability Framework (AMAF) and the principles of the ISO55000 asset management series.

4.2.3 Comments

Lower Murray Water continue to make progress improving their capital planning systems and processes as evidenced in the incremental achievements made since the 2012-13 review process. Further work on assessing renewals versus maintenance will assist in optimising the asset maintenance and asset renewals functional areas.

4.3 Major projects

Table 4-1 provides an overview of the top ten projects (as identified by Lower Murray Water 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 were developed by Deloitte based on Lower Murray Water’s regulatory submission. The projects selected for detailed review and commentary can be found in Sections 4.4 to 4.6.

Table 4-1 Lower Murray Water forecast capex for Top 10 Projects

| Capex item | Primary Driver | Water Plan forecast expenditure | | | | | | |
|---|-------------------------|---------------------------------|---------|---------|---------|---------|-----------|------------|
| | | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | Total WP4 | % of total |
| Purchase of Water | Improvement/ Compliance | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 5.40 | 17.9% |
| ALL SITES - UV Treatment Plants | Improvement/ Compliance | 3.40 | 0.00 | 0.00 | 3.28 | 3.32 | 10.00 | 33.2% |
| KER - Kerang Replace Treated Water Pump Station | Renewals | 0.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.75 | 2.5% |
| S/H DN450 Trunk Main Arnoldt / Stratbroke | Growth | 0.00 | 0.00 | 0.80 | 0.00 | 0.00 | 0.80 | 2.7% |

| Capex item | Primary Driver | Water Plan forecast expenditure | | | | | | |
|--|----------------|---------------------------------|--------------|--------------|--------------|--------------|--------------|------------|
| | | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | Total WP4 | % of total |
| SH North WTP 6 ML Ground Level Storage | Growth | 0.00 | 0.00 | 3.10 | 0.00 | 0.00 | 3.10 | 10.3% |
| SH - North WTP Water Pump Station (Stage 1) | Growth | 0.00 | 0.00 | 1.60 | 0.00 | 0.00 | 1.60 | 5.3% |
| KLG - WWTP Construct 400 ML Wet Weather Storage No 1 | Growth | 2.00 | 2.50 | 0.00 | 0.00 | 0.00 | 4.50 | 15.0% |
| KLG - WWTP Upgrade to ClearSCADA | Renewals | 0.00 | 0.10 | 0.40 | 0.70 | 0.00 | 1.20 | 4.0% |
| MER WWTP Divert to Koorlong | Growth | 0.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.95 | 3.2% |
| S/H - Replace WWTP Rising Main Stage 2 | Renewals | 1.80 | 0.00 | 0.00 | 0.00 | 0.00 | 1.80 | 6.0% |
| Subtotal - Top 10 Projects | | 9.98 | 3.68 | 6.98 | 5.06 | 4.40 | 30.10 | 41.6% |
| Other large projects/ programs (>\$1m) | | 1.71 | 1.76 | 1.35 | 1.49 | 2.21 | 8.52 | 11.8% |
| Other minor projects/ programs (<\$1m) | | 9.49 | 6.90 | 6.55 | 5.23 | 5.64 | 33.82 | 46.7% |
| Total | | 21.18 | 12.34 | 14.88 | 11.78 | 12.26 | 72.44 | |
| Top 10 proportion of annual expenditure | | 47.1% | 29.8% | 46.9% | 43.0% | 35.9% | 41.6% | |

4.4 Renewals expenditure

Renewals is a significant program for Lower Murray Water with expenditure of \$38.7m representing 53.4% of the total capex for RP4. The renewals program is made up of:

- Pipeline renewals (water) (\$5.0m) – including All Sites Mains Replacement
- Rehabilitation of sewers (\$5.3m) – including Northern and Southern Sewer Rehab programs
- Other renewals for water, sewer and corporate asset categories.

Lower Murray Water’s focus on asset optimisation is looking to improve efficiency by targeting renewals towards higher risk ‘critical’ assets and optimising preventative maintenance and condition based inspections. The decision to renew critical assets is made on the basis of assessed condition and the age of the main, while non-critical mains are assessed based on actual failure history with regard to service performance targets.

The current and historical levels of renewals have resulted in continued high performance against service performance targets. Lower Murray Water intend to maintain these high performance levels by focussing on critical assets and incrementally increasing expenditure to reflect an aging asset profile.

4.4.1 Analysis

The proposed renewals program for RP4 represents a modest increase in renewals and replacement investment from RP3 which reflects an aging asset profile, network performance, failure history and an increasing focus on critical water mains for Lower Murray Water. The average annual expenditure on renewals for the 2011-12 to 2017-18 period was \$7.2m while the proposed average annual expenditure for RP4 is \$7.7m (representing an 8% increase). Total proposed expenditure for renewals in RP4 of \$38.7m represents a 16.4% increase on the renewals total for RP3 of \$33.3m.

The proposed increase is stated by Lower Murray Water to be essential to maintain service levels but with continuous improvements while also containing costs. This approach is well supported by customers with Lower Murray Water stating that the approach was the overall outcome of the customer engagement process undertaken for RP4. In particular, section 2.2 of Lower Murray Water's pricing submission highlights that the "*continued investment in water main renewals allows LMW to maintain and incrementally improve service levels while keeping price increase to a minimum as requested by customers.*" In addition, LMW's customer engagement process, in the *LMW Urban Customer Needs and Priorities* report prepared in June 2017, highlighted that renewals of water mains and sewers should be maintained or additional investment 'built in' to maintain reliable services.

Each of the key components of the renewals program (over \$5m in expenditure for RP4) is supported by a business case consistent with DTF's Investment Evaluation requirements.

4.4.2 Recommendation

The proposed renewals program is relatively consistent with that of RP3 and only a modest increase (8%) in average annual expenditure is proposed. The approach undertaken by Lower Murray Water is generally supported by the outcomes of the customer engagement process which identified the objective to maintain and incrementally improve service levels while keeping price increases to a minimum. Given the modest increase in renewals and customer support, we have made no recommendations in relation to this renewals program.

4.5 All Sites – UV Treatment Plants

Lower Murray Water is proposing to install UV treatment at all water treatment plants as a secondary barrier to ensure safe drinking water and to ensure that the water supplied meets the relevant health based targets. The UV disinfection process is able to reliably provide the required log-removal of protozoan inactivation that typical filtration methods (as used by Lower Murray Water) cannot, particularly under conditions where the raw water quality source or the normal treatment processes are not optimal.

The scope of work for this project includes the installation of UV facilities at nine treatment plants and the upgrade of power supplies at two of the sites to enable the use of UV treatment. The total proposed cost of \$11.7m represents the P50 cost estimate developed by independent consultants resulting in an average cost per installation of just over \$1.25m. The costs for all nine sites have been individually estimated with all sites UV upgrades costing \$10m plus \$1.7m for upgrading the power supply at Mildura 7th Street WTP.

4.5.1 Analysis

Lower Murray Water's investment in UV is required to provide the appropriate multi barrier level of security for their drinking water supplies and ensure compliance with the relevant health based targets for drinking water. UV disinfection remains one of the more cost effective options for ensuring the removal or inactivation of protozoa. Project justification for this approach was developed within an independent consultant's report which outlined the likely costs, cost benefit analysis and risk assessment.

4.5.2 Recommendation

This project is well justified and represents good business practice. We therefore have no recommendations to make in regards to this project.

4.6 Purchase of water

The Lower Murray Water region is one of the drier regions in Victoria with an average rainfall well below the average for the state leading to higher pressure on available water supplies, particularly in times of drought. Lower Murray Water sources the majority of its raw water (97%) from the Murray River with the remaining supply from the Loddon River and Goulburn Murray Channel System. In recent years low allocations in these sources have led to Lower Murray Water being required to purchase additional water entitlements, at an often high cost, to ensure it can supply customers adequately.

Lower Murray Water is seeking to purchase a quantity of water entitlements on the open market in order to maintain a buffer of 50% between expected annual usage and the amount of entitlements held such that Lower Murray Water can secure an appropriate level of supply throughout the RP4 period.

The capital cost allowed for this arrangement is based on the price of Zone 7 permanent water shares of \$2,900 / ML with the purchase arrangements resulting in a total annual cost of \$1.08m.

4.6.1 Analysis

Lower Murray Water’s approach to pre-purchasing additional water entitlements seeks to ensure that supply is immediately available to them in times of drought and also has the effect of smoothing the price paid for water. This is done by distributing the cost over a longer period of time and avoiding large purchases during times when availability is more scarce, and therefore prices are significantly higher.

The option of purchasing additional entitlements also avoids the need to identify an alternative source of supply, potentially deferring significant capital investment.

Lower Murray Water engaged with customers on this issue as part of the development of the 2017-2066 Urban Water Strategy, with customers supporting the proposed arrangement.

4.6.2 Recommendation

The approach of pre-purchasing water entitlements is considered sound and is supported by customers. We therefore have no recommendations to make on this project.

4.7 Summary of recommendations

We have reviewed Lower Murray Water’s proposed capital program and assessed a number of projects in detail. We have found no reason to suggest adjustments to the proposed expenditure. Our recommendations for Lower Murray Water’s capex forecast over RP4 are set out below.

Table 4-2 Lower Murray Water forecast capex

| Capex item | | RP4 forecast | | | | | Total WP4 |
|--|-------------|--------------|---------|---------|---------|---------|-----------|
| | | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | |
| Renewals (Water and Sewer Mains + Other) | Proposed | 11.77 | 7.24 | 7.37 | 5.97 | 6.35 | 38.70 |
| | Recommended | 11.77 | 7.24 | 7.37 | 5.97 | 6.35 | 38.70 |
| | Net change | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ALL SITES - UV Treatment Plants | Proposed | 3.40 | 0.00 | 0.00 | 3.28 | 3.32 | 10.00 |
| | Recommended | 3.40 | 0.00 | 0.00 | 3.28 | 3.32 | 10.00 |
| | Net change | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Purchase of Water | Proposed | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 5.40 |
| | Recommended | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 5.40 |
| | Net change | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Other capital expenditure | Proposed | 4.93 | 4.02 | 6.43 | 1.45 | 1.51 | 18.34 |
| | Recommended | 4.93 | 4.02 | 6.43 | 1.45 | 1.51 | 18.34 |

| Capex item | RP4 forecast | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | Total WP4 |
| Net change | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total proposed | 21.18 | 12.34 | 14.88 | 11.78 | 12.26 | 72.44 |
| Recommended adjustments from proposed | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Recommended capital expenditure | 21.18 | 12.34 | 14.88 | 11.78 | 12.26 | 72.44 |

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