

Expenditure review - Western Water

Essential Services Commission

25 February 2020

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Executive summary

About this report

The Essential Services Commission (ESC) is currently reviewing the proposed maximum prices to be charged by Western Water (WW) for the three year period, 1 July 2020 to 30 June 2023 (referred to in this report as regulatory period 4B (RP4B)).

We (Deloitte Access Economics, assisted by Arup) have been engaged by the ESC to review WW's operating and capital expenditure forecasts for RP4B. In undertaking this review, our key responsibilities are to:

- assess the appropriateness of the expenditure forecasts in a manner consistent with the ESC's Guidance Paper for WW's 2020 water price review¹
- provide independent advice to the ESC regarding the appropriateness of the forecast expenditure
- where our advice indicates that a proposed expenditure level is not appropriate, propose to the ESC a revised expenditure level.

This report includes reference to materials provided by WW up to, and including, 24 February 2020. At this time, we were awaiting further information from WW, particularly in relation to IT and corporate costs.

Operating expenditure

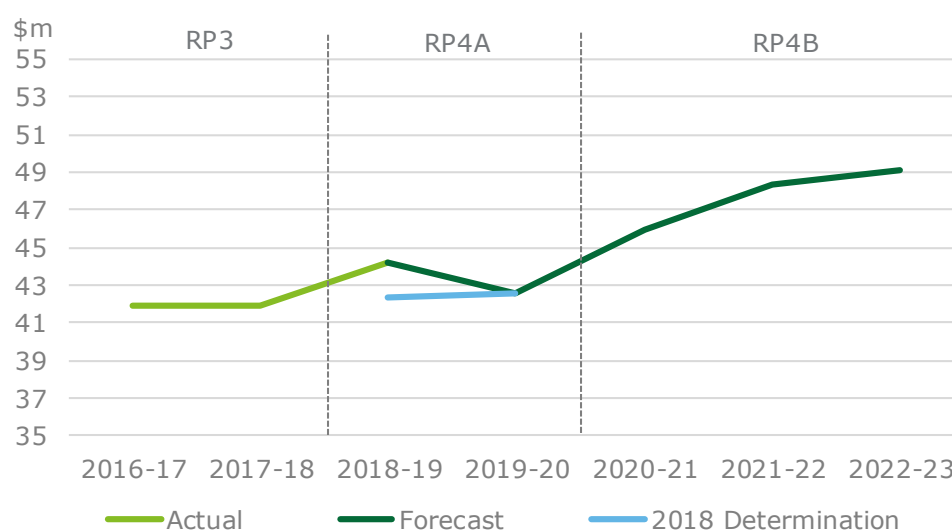
The key features of WW's operating expenditure forecast include:

- baseline controllable operating expenditure in 2018-19 of \$44.19m (before adjustments), which is higher than that forecast in the 2018 price submission (\$42.23m) and the 2018 price determination (\$42.34m)
- a forecast average customer growth rate of 4.8% per annum
- a cost efficiency improvement rate of 2.0% per annum, which is lower than that forecast in the 2018 submission for 2018-19 and 2019-20 (4.0%), however is in the upper-range of Victorian regional water businesses (see section 3.2)
- \$4.25m of forecast additional expenditure over RP4B above the baseline
- a slight decline in controllable operating expenditure per connection over RP4B, after factoring in the additional expenditure.

Chart i shows WW's total controllable operating expenditure from 2016-17 to 2022-23.

¹ ESC, *Western Water 2020 water price review: Guidance paper* (December 2018).

Chart i: Controllable operating expenditure – WW (\$2019-20)



Source: Actual and forecast is based on WW 2020 Price Review Model (2 December 2019), 2018 Determination is based on the ESC's Western Water 2018 water price review: Final decision (19 June 2018).

We have recommended adjustments to forecast expenditure where we have considered that insufficient information had been provided to support the proposed expenditure or where the expenditure was inefficient. In total, we have recommended adjustments of **\$5.63m** to WW's RP4B forecast controllable operating expenditure as outlined in Table i. The reasons for these recommendations are outlined in Chapter 3.

Table i: WW forecast controllable operating expenditure and recommended adjustments (\$2019-20, \$m)

| Operating expenditure item | Actual | Price submission forecast | | | Total |
|--|------------------|---------------------------|--------------|--------------|---------------|
| | Baseline 2018-19 | 2020-21 | 2021-22 | 2022-23 | RP4B |
| Proposed controllable operating expenditure (\$m, original proposal) | 44.19 | 45.97 | 48.30 | 49.13 | 143.40 |
| Other recommended adjustments | | | | | |
| Price submission | - | 0.12 | -0.15 | -0.07 | -0.10 |
| Integrated Water Management Planning activities | - | -0.04 | -0.08 | -0.08 | -0.20 |
| Energy costs | - | 0.00 | -0.09 | -0.28 | -0.37 |
| IT costs | - | -0.60 | -0.71 | -0.71 | -2.03 |
| Labour costs | - | 0.00 | -0.18 | -0.35 | -0.53 |
| Remaining corporate cost adjustment | - | -1.02 | -0.75 | -0.62 | -2.40 |
| Total recommended adjustments | - | -1.54 | -1.97 | -2.12 | -5.63 |
| Recommended operating expenditure | 44.19 | 44.43 | 46.33 | 47.01 | 137.77 |

Source: Deloitte Access Economics.

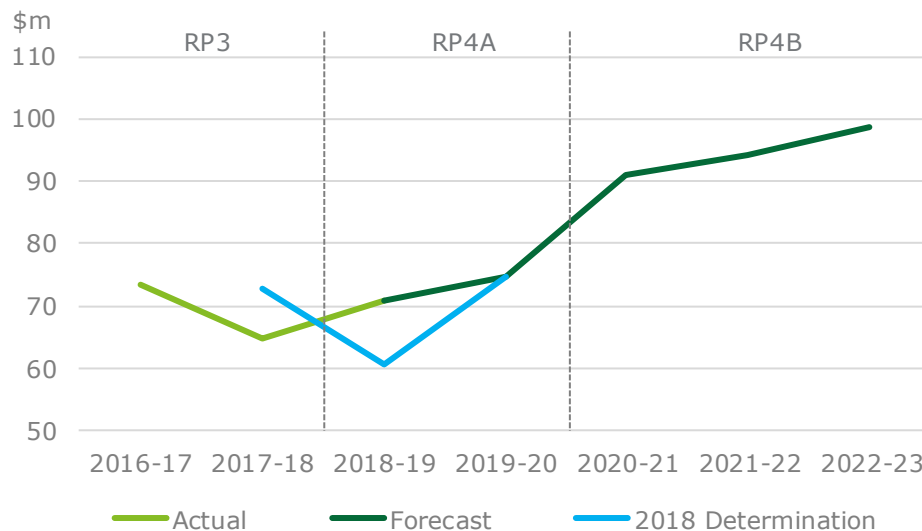
Capital expenditure

The key features of WW’s capital expenditure forecast include:

- gross capital expenditure of \$283.8m over RP4B
- actual capital expenditure over RP4A of \$145.6m compared to approved gross capital expenditure in the 2018 price determination of \$135.4m (inflated to \$2019-20 prices)
- increasing expenditure in each year of RP4B.

Chart ii shows WW’s total capital expenditure from 2016-17 to 2022-23.

Chart ii: Capital expenditure – WW (\$2019-20)



Source: Actual and forecast is based on WW 2020 Price Review Model (2 December 2019), 2018 Determination is based on the ESC’s Western Water 2018 water price review: Final decision (19 June 2018).

Five of WW’s major projects have been reviewed for prudence and efficiency. Overall, the approach to reviewing capital expenditure was limited by a lack of sound project information. In conducting our review, we have observed that:

- business cases for the selected major projects were documents used in the 2018 capital submission with outdated costs and timing
- business cases included few details demonstrating the need for (prudence of) the investment
- costs identified in the business cases (nominated P50 costs) supplied were typically significantly higher than what is included in the RP4B submission
- limited information on actual expenditure to date was provided for the existing projects, in particular the Sewer Spill Prevention Strategy (SSPS) program of works where the use of historical expenditure is an important factor in assessing the need for significant increases in expenditure
- specifically identified documents requested were provided; however, general requests for supporting information were not fulfilled leading to multiple information requests
- three key projects (M1, M2 and M3) are based on delivery before July 2022 when a temporary Environmental Protection Authority (EPA) licence expires, however despite updated schedules indicating delivery of key infrastructure prior to this date, the cost profiles within the RP4B submission template are not consistent with these schedules.

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Following our analysis, we have made a total reduction of **\$4.99m** to WW's proposed capital program:

- proposed expenditure for the Melton Recycled Water Plant (RWP) additional storage is reduced to \$11.6m (a reduction of \$3.54m) reflecting the average unit rate for the similar size storages for the Western Irrigation Network (WIN) Stage 1 works, from which this project was excluded for consideration
- proposed expenditure for the SSPS program is reduced from the RP4B submission template allowance of \$7.3m to \$5.85m, a reduction of \$1.45m, given the lack of robust justification for the proposed 79% increase in average annual expenditure.

Table ii: WW forecast capital expenditure and recommended adjustments (\$m)

| Project/program Name | | 2020-21 | 2021-22 | 2022-23 | Total |
|---|-------------|--------------|--------------|--------------|---------------|
| | | \$m | \$m | \$m | \$m |
| M1 Parwan-Balliang Irrigation District Network | Proposed | 2.53 | 6.82 | 8.38 | 17.73 |
| | Recommended | 2.53 | 6.82 | 8.38 | 17.73 |
| | Net Change | 0.00 | 0.00 | 0.00 | 0.00 |
| M2 Melton RWP Additional on-site recycled water storage Stage 1 | Proposed | 4.18 | 5.86 | 5.10 | 15.14 |
| | Recommended | 3.00 | 4.68 | 3.92 | 11.60 |
| | Net Change | -1.18 | -1.18 | -1.18 | -3.54 |
| M3 Melton RWP and Bacchus Marsh RWP Interconnection | Proposed | 4.81 | 6.73 | 2.88 | 14.42 |
| | Recommended | 4.81 | 6.73 | 2.88 | 14.42 |
| | Net Change | 0.00 | 0.00 | 0.00 | 0.00 |
| M5 Gisborne RWP - Stage 1 Bioreactor | Proposed | 0.84 | 4.81 | 4.85 | 10.51 |
| | Recommended | 0.84 | 4.81 | 4.85 | 10.51 |
| | Net Change | 0.00 | 0.00 | 0.00 | 0.00 |
| M7 SSPS - Sewer Relining Program | Proposed | 2.62 | 2.43 | 2.25 | 7.30 |
| | Recommended | 2.10 | 1.95 | 1.80 | 5.85 |
| | Net Change | -0.52 | -0.48 | -0.45 | -1.45 |
| Total proposed (reviewed) | | 14.98 | 26.65 | 23.46 | 65.1 |
| Recommended capex (reviewed) | | 13.28 | 24.99 | 21.83 | 60.11 |
| Recommended adjustments from proposed | | 1.7 | 1.66 | 1.63 | 4.99 |
| Total proposed | | 90.84 | 94.19 | 98.75 | 283.78 |
| Recommended capital expenditure | | 89.14 | 92.53 | 97.12 | 278.79 |

Source: Arup and Deloitte Access Economics.

1 Introduction

1.1 Background

The Essential Services Commission (ESC) is currently reviewing the proposed maximum prices to be charged by Western Water (WW) for the three year period, 1 July 2020 to 30 June 2023. This period is referred to in this document as 'the next regulatory period' or the 'fourth regulatory period B' (RP4B). The ESC last approved WW's maximum charges in June 2018 for the two year period from 1 July 2018 to 30 June 2020 (referred to as the 'fourth regulatory period A' (RP4A)).

Most Victorian water businesses are currently in the fourth regulatory period (RP4), which runs over five years from 1 July 2018 to 30 June 2023. In 2018, WW requested a two year pricing period 'to address challenges associated with servicing unprecedented levels of growth in its region, while providing affordable and value adding services to customers, before committing to longer term prices'.² As a result, the ESC approved prices over a two year regulatory period (2018-19 to 2019-20).

In November 2019, WW submitted its price submission to the ESC for RP4B. The price submission includes forecasts of operating expenditure, capital expenditure and demand, proposed service standards and prices.

1.2 Scope of review

We (Deloitte Access Economics and Arup) have been engaged by the ESC to review WW's operating and capital expenditure forecasts for RP4B. In undertaking this review, our key responsibilities are to:

- assess the appropriateness of the expenditure forecasts in a manner consistent with the ESC's Guidance Paper for WW's 2020 water price review³
- provide advice to the ESC regarding the appropriateness of the forecast expenditure
- where our advice indicates that a proposed expenditure level is not appropriate, propose to the ESC a revised expenditure level.

1.3 Approach to review

The review process has involved the following key steps. Throughout the review process, WW has been provided with opportunities to provide further information to support its expenditure proposal.

1. An initial review of price submissions, financial model templates and associated documentation, including benchmarking WW's pricing submission to past determinations.
2. Initial planning and a workshop with ESC staff including identifying and discussing key issues for the focus of the review.
3. Preparation of queries/areas for discussion, which was subsequently provided to WW prior to a site visit.
4. A site visit to WW's offices on 9 December 2019. Further information requests were sent following the site visit.
5. A detailed review and analysis of supporting information provided.
6. A workshop with ESC staff to discuss preliminary findings.
7. A Draft Report prepared and provided to WW for comment.
8. A response from WW and subsequent discussion with WW regarding its response.
9. This Final Report.

The methodology applied in assessing WW's operating and capital expenditure is set out in sections 3.1 and 4.1 respectively.

² ESC, *Western Water 2018 water price review: Final decision* (19 June 2018).

³ ESC, *Western Water 2020 water price review: Guidance paper* (December 2018).

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We acknowledge that no water business will be able to provide supporting justification for every expenditure item that a reviewer might wish to sight. However we do note that, relative to other water businesses we have reviewed, a comparatively high proportion of the capital expenditure project information and operating expenditure information we sought either did not exist, was out of date, or did not support or match the price submission and/or template. This made the review more time consuming (both for us and WW's regulatory team) than it might otherwise have been.

1.4 Structure of this report

This report is structured as follows.

- **Chapter 2** briefly summarises WW's price submission with respect to expenditure forecasts and outlines key expenditure drivers.
- **Chapter 3** provides analysis, conclusions and recommendations on key issues with respect to WW's operating expenditure.
- **Chapter 4** provides analysis, conclusions and recommendations on key issues with respect to WW's capital expenditure.

Unless stated otherwise, all dollar figures shown in this report exclude the impact of inflation and are expressed in \$2019-20.

2 Summary of forecast expenditure

This Chapter provides a summary of Western Water's (WW's) forecast expenditure including key underpinning assumptions.

2.1 Key expenditure drivers

2.1.1 Demand for services

WW has forecast customer growth of 4.8% per annum over RP4B.⁴ According to WW, much of this growth is residential and associated with the fast-growing outer-region of Melbourne in towns such as Gisborne and Melton.⁵

WW has also experienced increased demand due to higher than anticipated average per person consumption in 2018-19. In 2018-19, actual demand was 3.7% higher than that forecast for the 2018 price review (195 litres per person per day (l/p/d) versus 188 l/p/d).⁶ Further, WW has noted that its customers' average water usage is much higher than in Melbourne, primarily due to customers with a larger block size, and less dual occupancy and high-rise apartments.⁷

2.1.2 Community expectations and service standards

WW has almost 70,000 customers. In the 2018 price review, WW conducted stakeholder engagement activities, including surveys and town events.⁸ WW has indicated that rather than repeating the engagement program after two years, for the current price review, WW focused its community engagement on four core areas, addressing critical topics and gaps identified in the 2018 engagement program. WW indicated that customers showed support for, among other things:

- maintaining current service standards
- introducing a new guaranteed service level regarding the number of water supply interruptions a customer experiences each year
- promoting more customer information about saving water and hardship programs to assist customers in controlling their bills
- developing technology solutions for better access to usage and billing information.⁹

2.1.3 Other drivers

WW has indicated that other drivers of increased expenditure are due to environmental obligations, including:

- increasing emissions reductions required to meet a 15% emissions reduction by 2025 from 2016 baseline levels
- increasing recycled water deposited in creeks, which has resulted in WW crossing Environmental Protection Authority (EPA) water quality thresholds, requiring increased expenditure to recycle or otherwise manage a greater volume of recycled water.¹⁰

⁴ WW, *Price submission 2020-23* (15 November 2019).

⁵ Based on consultation with WW on 9 December 2019.

⁶ WW, *Price submission 2020-23* (15 November 2019) 23.

⁷ WW, *Price submission 2020-23* (15 November 2019) 42.

⁸ WW, *Price submission 2020-23* (15 November 2019).

⁹ WW, *Price submission 2020-23* (15 November 2019) 11.

¹⁰ WW response to Deloitte during consultation (9 December 2019).

2.2 Operating expenditure

The key features of WW’s operating expenditure forecast include:

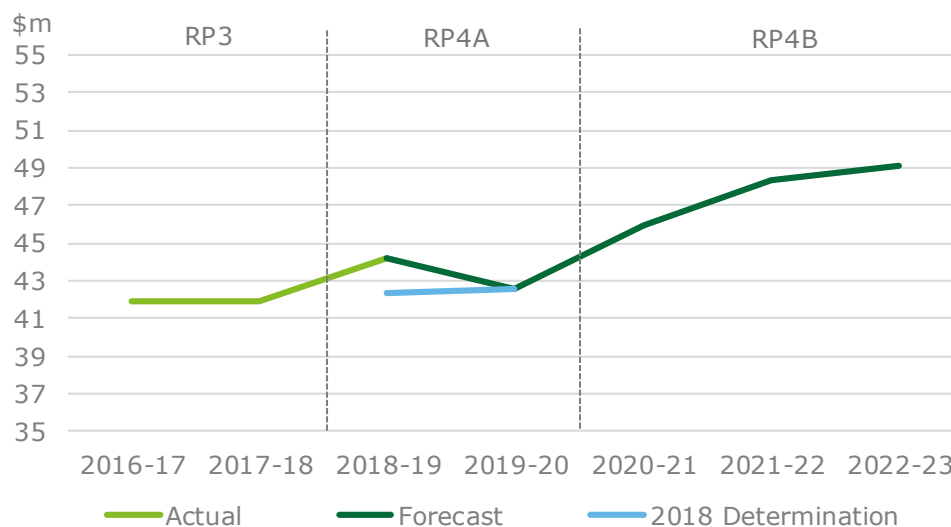
- baseline controllable operating expenditure in 2018-19 of \$44.19m (before adjustments), which is higher than that forecast in the 2018 price submission (\$42.23m) and the 2018 price determination (\$42.34m)
- a forecast average customer growth rate of 4.8% per annum
- a cost efficiency improvement rate of 2.0% per annum, which is lower than that forecast in the 2018 submission for 2018-19 and 2019-20 (4.0%), however is in the upper-range of Victorian regional water businesses (see section 3.2)
- \$4.25m of forecast additional expenditure over RP4B above the baseline
- a slight decline in controllable operating expenditure per connection over RP4B, after factoring in the additional expenditure.

Chart 2.1 shows WW’s total controllable operating expenditure from 2016-17 to 2022-23.

In 2018-19, WW’s actual operating expenditure was above the expenditure approved in the 2018 price determination and shows a 5.6% increase from actual controllable operating expenditure in 2017-18 (see Chart 2.1).

WW has forecast controllable operating expenditure will drop below the amount set in the 2018 price determination in 2019-20 (which WW attributes to delivering against the 4% efficiency target)¹¹ and then continue to increase above 2018-19 baseline levels from 2020-21 onwards.

Chart 2.1: Controllable operating expenditure – WW (\$2019-20)

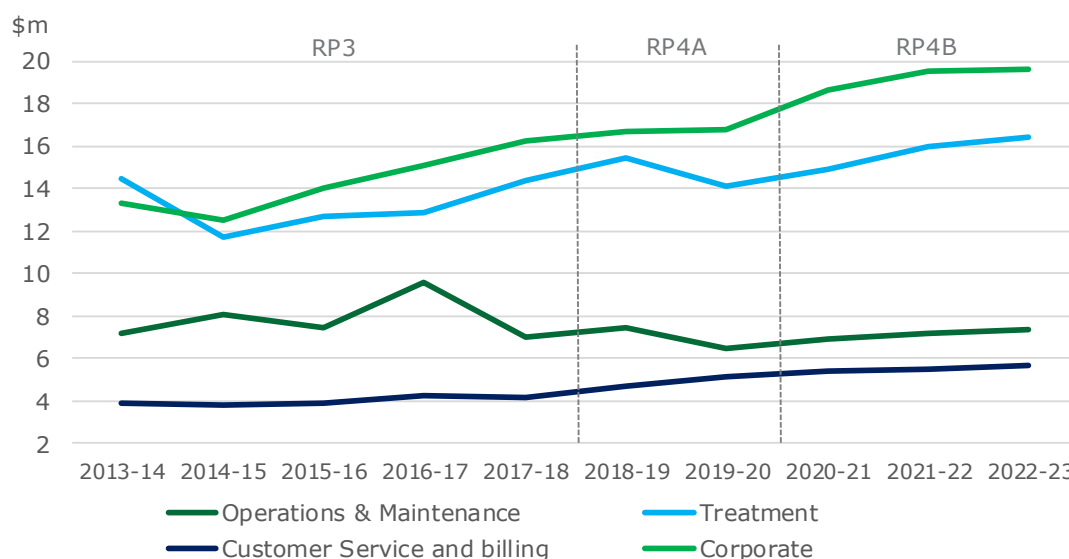


Source: Actual and forecast is based on WW 2020 Price Review Model – ESC Reviewed (provided 24 February 2020), 2018 Determination is based on the ESC’s Western Water 2018 water price review: Final decision (19 June 2018).

Chart 2.2 shows that forecast increasing controllable operating expenditure over RP4B is due to higher corporate costs and higher treatment costs. WW has advised that forecast increasing treatment costs is primarily driven by higher electricity costs (averaging in excess of 76% of the increases). Higher corporate costs are driven by a range of factors, particularly increased information technology (IT) costs and labour costs.

¹¹ WW response to Deloitte Access Economics draft report (23 February 2020).

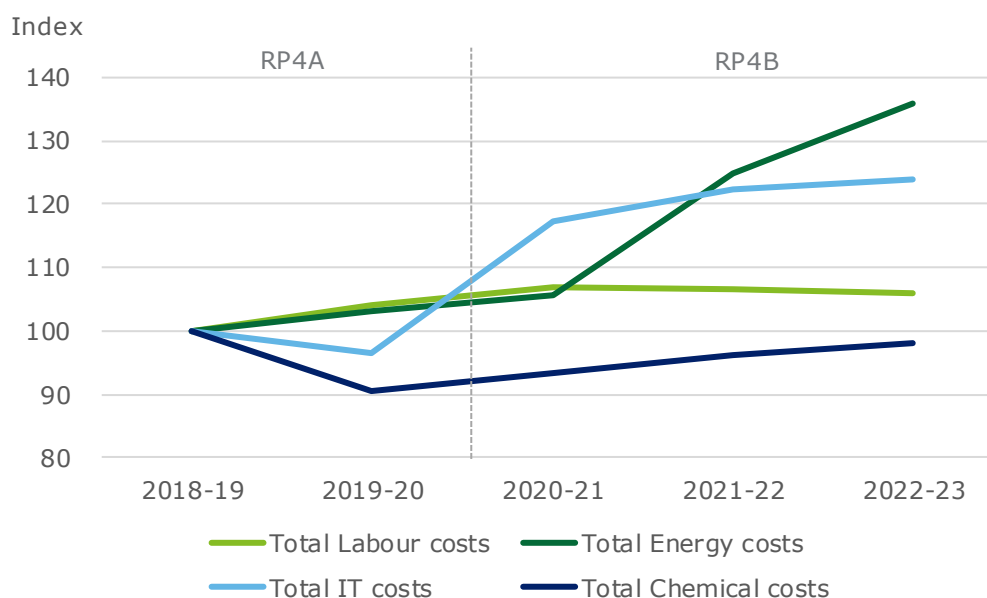
Chart 2.2: Operating cost breakdown, WW, \$2019-20



Source: Actual and forecast is based on WW 2020 Price Review Model – ESC Reviewed (provided 24 February 2020).

WW has forecast a significant increase in energy and IT costs, followed by a slight increase in labour costs and an overall decrease in chemical costs (see Chart 2.3). By 2022-23, energy costs are forecast to be 36% higher than 2018-19 actuals and IT costs are forecast to be 24% higher than 2018-19 actuals. Individual operating expenditure items are assessed in section 3.5.

Chart 2.3: Change in operating expenditure by key cost area - indexed



Source: Deloitte Access Economics analysis based on WW 2020 Price Review Model - ESC Reviewed (provided 24 February 2020).

2.3 Capital expenditure

The key features of WW’s capital expenditure forecast include:

- gross capital expenditure of \$283.8m over RP4B
- actual capital expenditure over RP4A of \$145.6m compared to approved gross capital expenditure in the 2018 price determination of \$135.4m (inflated to \$2019-20 prices)
- increasing expenditure in each year of RP4B (see Chart 2.4).

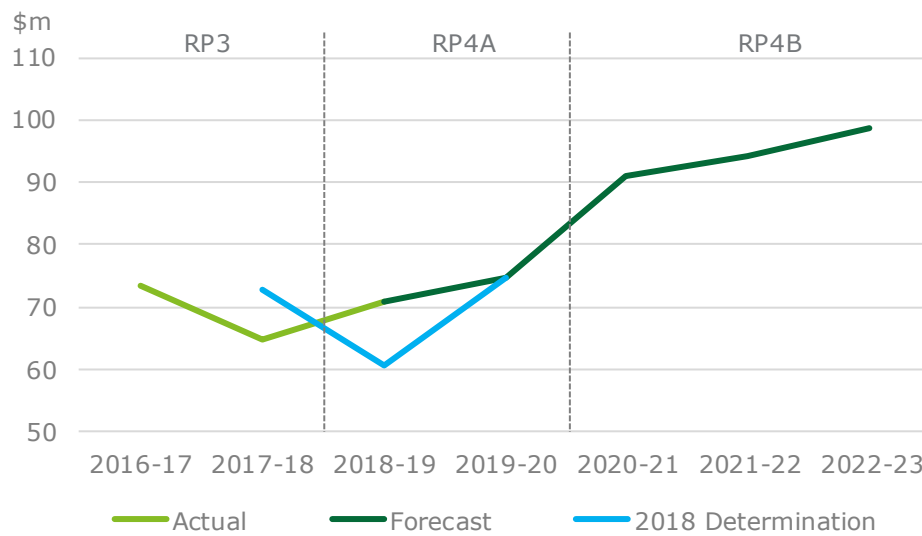
The key drivers of capital expenditure for RP4B are growth, customer contributions and renewals.

The total growth budget of \$164.1m represents 58% of the total capital expenditure budget. The notable major projects include:

- Parwan-Balliang Irrigation District Network (\$17.73m)
- Melton Recycled Water Plant (RWP) - Additional on-site recycled water storage (\$15.14m)
- Melton RWP and Bacchus Marsh RWP Interconnection (\$14.43m)
- Derrimut Diversion Sewer Pump Station/Rising Main (\$10.88m)
- Gisborne RWP - Stage 1 Bioreactor (\$10.51m).

All except the Melton RWP are new capital expenditure projects (i.e. projects that were not proposed in the top 10 in the 2018 price submission).

Chart 2.4: Prescribed capital expenditure – WW (\$2019-20)



Source: Actual and forecast is based on WW 2020 Price Review Model (2 December 2019), 2018 Determination is based on the ESC's Western Water 2018 water price review: Final decision (19 June 2018).

3 Operating expenditure assessment

This Chapter provides analysis, conclusions and recommendations on key issues with respect to Western Water's (WW's) operating expenditure.

3.1 Overview of approach

With respect to operating expenditure forecasts, the Essential Services Commission's (ESC's) Guidance Paper outlines that a prudent and efficient operating expenditure 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 operating expenditure 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, this includes how such expenditure is reflected in proposed customer outcomes and how they represent improved customer value.

Accordingly, operating expenditure is disaggregated into four separate elements.

1. **Baseline expenditure**, which refers to operating expenditure incurred in 2018-19, adjusted upwards or downwards to reflect any specific factors that mean that expenditure in 2018-19 is not representative.
2. An adjustment for **customer growth**. The ESC generally considers that increases in operating expenditure 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.
3. An **efficiency improvement factor** reflecting general productivity improvements across the economy. Acknowledging that the customer growth allowance is generous, the ESC expects water businesses to achieve year-on-year productivity improvements. Businesses are able to propose their own individual improvements.
4. **Cost increases** such as those arising from new obligations imposed by regulators or government, major increases in costs that are not reasonable to expect the business to absorb or manage within the 'ebbs 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 forecast 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 operating expenditure 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 several one-off expenditures from year-to-year associated with the normal ebb and flow of work requirements and changes in the industry and wider business environment. For example, a business may prepare a sewerage strategy in one year, prepare a water supply demand strategy in another, or do several one-off repairs in another year. 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

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all operating expenditure line items. An efficient business would be expected to absorb many of these increases within their baseline and growth allowance.

Figure 3.1 provides a hypothetical and simplified example of the above. Data is only shown for a single year, but the same principle applies across all three years of RP4B. 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

| | 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) |
|------------------------------|-------------------------|-------------------------|
| 2018-19 Expenditure | 100.0 | 100.0 |
| 2018-19 Adjustments | <u>1.0</u> | <u>1.0</u> |
| Baseline expenditure | <u>101.0</u> | <u>101.0</u> |
| Growth-efficiency adjustment | <u>-1.0</u> | <u>-0.5</u> |
| Growth adjusted expenditure | <u>100.0</u> | <u>97.5</u> |
| Cost increases | <u>4.0</u> | <u>0.3</u> |
| Proposed expenditure | <u>104.0</u> | <u>97.8</u> |
| Change compared to baseline | 3.0 | -0.2 |

Source: Deloitte Access Economics.

The tools and approaches we have applied to consider each of the elements and the overall proposed operating expenditure package includes:

- benchmarking against historic and peer expenditure
- comparing WW's forecasts to independent forecasts of changes in key expenditure items (for example, labour and energy)
- an assessment of the extent to which the expenditure reflects government and regulator policies and requirements.

3.2 Baseline controllable operating expenditure (2018-19)

The first step in the approach to assessing expenditure is to define efficient expenditure in the baseline year of 2018-19. As set out in the ESC's Guidance Paper, the baseline should comprise 'efficient recurring controllable costs from the last full year of actual data (2018-19) for those activities and services that are expected to be incurred throughout the next regulatory period'.¹² Accordingly, the baseline expenditure should be adjusted to remove:

- non-controllable expenditure
- one-off or non-recurring expenditure items or add any normally occurring items that did not occur in 2018-19
- ongoing costs savings or efficiency commitments that will be realised in the final year of the current regulatory period (2019-20).

In 2018-19, WW's actual total controllable expenditure was \$44.19m. In its 2018 price review, the ESC approved \$42.34m for 2018-19 (\$2019-20). WW's actual expenditure (before removal of adjustments) was approximately 4% (\$1.86m) above the ESC's determination and actual controllable operating expenditure in 2018-19 was 5.6% higher than 2017-18.¹³

¹² ESC, *Western Water 2020 water price review: Guidance paper* (December 2018) 22.

¹³ Deloitte analysis based on WW, *2020 Price Review Model – ESC Reviewed* (provided 24 February 2020).

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Table 3.1 shows the breakdown of WW's controllable operating expenditure performance in 2018-19 compared to the ESC's determination. It shows that the majority of the over-expenditure in treatment and corporate costs is offset by under-expenditure in other areas, particularly operations and maintenance.¹⁴ WW has stated that the net discrepancy is driven by:

- electricity costs
- Integrated Water Management Planning
- asset repair due to third parties
- environmental compliance
- decommissioning of water tank
- two-way radio communications
- insurance
- incidents comprehensive clinical reports (CCR)
- recruitment expenses
- additional legal expenses.¹⁵

Table 3.1: 2018-19 controllable operating expenditure performance (\$m 2019-20)

| | WW's 2018 price submission | ESC Determination | Actual | Difference (ESC Determination - actual) |
|---|----------------------------|-------------------|--------------|---|
| Operations & Maintenance | 14.32 | 14.32 | 7.42 | - 6.90 |
| Treatment | 11.96 | 11.96 | 15.43 | 3.47 |
| Customer Service and billing | 6.33 | 6.33 | 4.69 | - 1.64 |
| GSL Payments | - | - | - | - |
| Corporate | 9.41 | 9.41 | 16.65 | 7.24 |
| Other operating expenditure | 0.21 | 0.21 | - | - 0.21 |
| ESC baseline correction ¹ | | 0.11 | - | - 0.11 |
| Total controllable operating expenditure | 42.23 | 42.34 | 44.19 | 1.86 |

Source: Deloitte analysis based on WW 2020 Price Review Model – ESC Reviewed (provided 24 February 2020) and WW 2018 price submission financial model (9 March 2018). 2018 Determination is based on the ESC's Western Water 2018 water price review: Final decision (19 June 2018).

Note: 1) To correct for errors in the baseline year (2016-17), the ESC increased WW's final controllable operating expenditure allowance. This means that the difference for some individual expenditure items may be overstated because we have not been able to allocate this baseline correction to one or more individual expenditure items against the ESC Determination column.

WW has made a **net downward adjustment to its baseline of \$0.98m** for the following items:

- Integrated Water Management Planning (\$0.47m)
- decommissioning of assets and bridge repair (\$0.13m)
- price submission (\$0.21m)
- desludging (\$0.17m).

This results in a total controllable baseline expenditure of \$43.21m, which is \$0.87m above the ESC's determination for 2018-19. WW's proposed adjustments to the baseline are illustrated in Chart 3.1.

We have not undertaken a review of individual items that WW has left in the baseline expenditure. However, we are satisfied that the baseline expenditure is efficient. Although, after adjustments

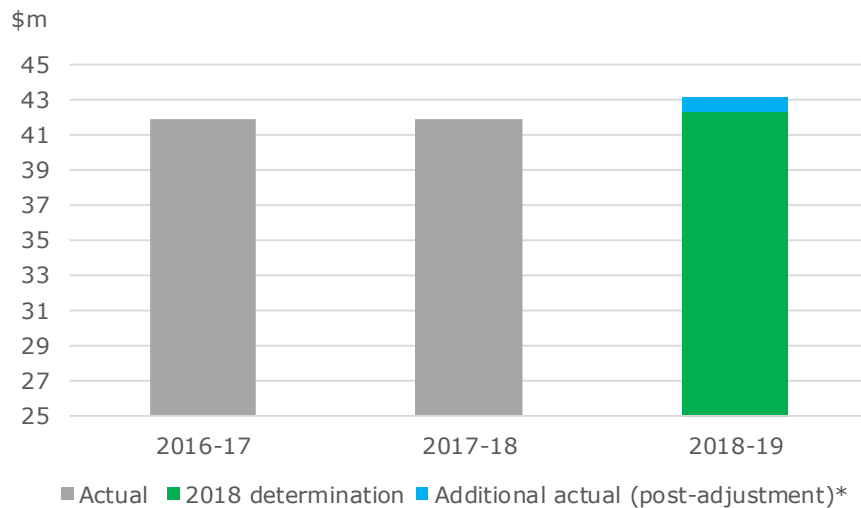
¹⁴ Deloitte analysis based on WW, *2020 Price Review Model* (2 December 2019) and WW, *2018 Price submission template* (9 March 2018).

¹⁵ WW, *Price submission 2020-23* (15 November 2019) 23, and WW response to Deloitte queries (18 December 2019).

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baseline expenditure is 2% above the ESC determination, in 2018-19, customer growth was higher than forecast for the 2019 price review (4.7% actual growth compared to 4.1% forecast)¹⁶ and actual water demand was 3.7% higher.¹⁷ This led to increased operating costs, particularly for pumping water in what was a relatively dry period.

Chart 3.1: Comparison of adjusted baseline expenditure to actual expenditure and previous determinations, 2016-17 to 2018-19 (\$2019-20)



Source: Deloitte Access Economics analysis of data provided in WW 2020 Price Review Model – ESC Reviewed (provided 24 February 2020).

*Post-adjustment means controllable actual operating expenditure after removal of downward adjustments.

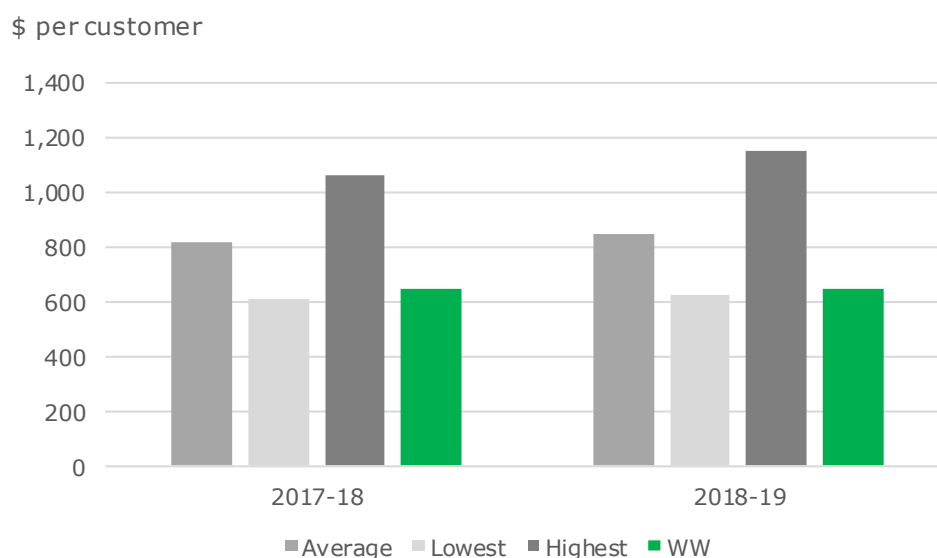
3.2.2 Controllable operating expenditure per water customer

Despite the increases in costs noted above, in 2018-19, WW’s controllable operating expenditure was \$650 per water customer, well below the average for regional water businesses (\$843 per water customer in 2018-19) and among the lowest across regional water businesses (see Chart 3.2). Controllable operating expenditure per water customer increased 0.9% from 2017-18 (\$644 per water customer).

¹⁶ WW, 2020 Price Review Model (2 December 2019).

¹⁷ WW, Price submission 2020-23 (15 November 2019) 23.

Chart 3.2: Controllable operating expenditure per water customer, regional water businesses (\$2019-20)



Note: Analysis based on water businesses 2018-19 regulatory accounts. Average excludes City West Water, South East Water and Yarra Valley Water. Average includes Western Water.

3.3 Cost efficiency improvement rate and growth rate

WW has proposed a cost efficiency improvement rate of 2.0% per annum over RP4B. This is 2.0% lower than the proposed improvement rate over RP4A, and (according to WW) 1.2% lower than the efficiency improvement rate achieved in 2018-19.¹⁸ A comparison to other Victorian regional water businesses in Table 3.2 shows that:

- WW has forecast an average growth rate of 4.8% over RP4B (which is slightly higher than that proposed for RP4A (4.5%)) and is by far the highest of all Victorian regional water businesses
- WW's proposed efficiency improvement of 2% is the second highest of Victorian regional water businesses
- WW is proposing to increase baseline costs by 2.8% per annum, which is significantly higher than any other regional water business
- WW's efficiency factor divided by the growth rate, which represents the extent to which WW has absorbed customer growth through economies of scale and productivity improvements, is the lowest of the businesses.

¹⁸ Adjusted for 'higher than assumed PS18 growth in connections, the demand-driven electricity and fuel variance, the revenue funded IWM expense, and the repairs required due to third party impacts'. WW, *Price submission 2020-23* (15 November 2019) 23.

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Table 3.2: Efficiency factor and customer growth rate of Victorian regional water businesses, 2020-21 to 2022-23

| Water business | Average efficiency improvement rate 2020-21 to 2022-23 (a) | Average growth rate 2020-21 to 2022-23 (b) | Growth minus efficiency factor (a)-(b) | Efficiency improvement as a % of growth (a)/(b) |
|-----------------------|---|---|---|--|
| South Gippsland | 1.00% | 1.64% | 0.64% | 60.98% |
| Western Water | 2.00% | 4.80% | 2.80% | 41.67% |
| Barwon | 1.36% | 1.62% | 0.27% | 83.95% |
| Central Highlands | 1.67% | 1.67% | 0.00% | 100.00% |
| Coliban | 1.50% | 1.70% | 0.20% | 88.24% |
| East Gippsland | 1.00% | 1.24% | 0.24% | 80.65% |
| Gippsland | 1.03% | 1.21% | 0.18% | 85.12% |
| Goulburn Valley | 3.10% | 1.32% | -1.78% | 234.85% |
| GWM | 1.50% | 0.50% | -1.00% | 300.00% |
| Lower Murray urban | 1.00% | 1.03% | 0.03% | 97.09% |
| North East | 1.20% | 1.24% | 0.04% | 96.77% |
| Wannon | 1.00% | 0.81% | -0.19% | 123.46% |
| Westernport | 1.94% | 1.80% | -0.15% | 107.78% |

Source: Deloitte Access Economics analysis based on water businesses' 2018 price submissions with exception to South Gippsland Water and Western Water which are based on 2020 price submission models.

During consultation, WW indicated that the lower efficiency factor for RP4B compared to the current regulatory period is justified on the basis that:

- the business has absorbed a significant amount of growth and that it cannot absorb too much further without some growth in controllable costs
- it is facing more governance and reporting requirements
- there have been recent amendments to the Environmental Protection Act and Regulations, which come into effect on 1 July 2020, and WW is unsure of the impact of these amendments on its business.

In respect of each of these three points:

- controllable operating expenditure increased significantly in 2018-19 over 2017-18
- all Victorian water businesses face the same governance and reporting requirements. WW has not provided evidence to indicate that the governance and reporting requirements it faces are greater than other businesses
- WW has not identified any specific areas of the amended Environmental Protection Act or proposed Regulations where there is the potential for significant impacts on its business. Our team has a strong level of familiarity with the amendments to the Act and proposed Regulations and our understanding is that there is unlikely to be a material impact on Victorian water businesses.

While taking these factors into account, we also note that the proposed efficiency factor is higher than other Victorian water businesses and its operating costs per customer are well below average. While WW is absorbing a lesser proportion of the customer growth through economies of scale and other efficiency improvements, we accept that relatively higher variable costs (including pumping from Melbourne Water storages) is in part responsible for this. On balance, although we consider the efficiency factor of 2% is at the lower end of what might be reasonable, we propose no change.

3.4 Forecast variations to baseline expenditure

In addition to the net increase to baseline costs due to forecast growth and productivity improvement rates, WW has proposed an overall increase of \$4.25m to forecast baseline expenditure over RP4B. Table 3.3 shows that this is driven by a range of items but roughly half is due to proposed increased expenditure for information technology (IT) software fees.

Table 3.3: Forecast adjustments to baseline operating expenditure (\$2019-20m)

| Forecast adjustments | RP4A | | | RP4B | | | Total |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2018-19 | 2019-20 | Total | 2020-21 | 2021-22 | 2022-23 | |
| IT software licence fee increases | 0.61 | 0.72 | 1.33 | 0.60 | 0.71 | 0.71 | 2.03 |
| Price submission | 0.15 | 0.15 | 0.31 | 0.03 | 0.30 | 0.22 | 0.55 |
| Desludging Program | | | | 0.20 | 0.22 | 0.08 | 0.50 |
| Emissions Reduction Pledge | | | | 0.13 | 0.16 | 0.13 | 0.41 |
| Integrated Water Management Planning | | | | 0.10 | 0.10 | 0.10 | 0.30 |
| Corporate - General (Director's fees) | | | | 0.06 | 0.08 | 0.08 | 0.22 |
| Central Region South Sustainable Water Strategy | | | | 0.00 | 0.15 | 0.00 | 0.15 |
| Waterborne gypsum trial | | | | 0.10 | 0.00 | 0.00 | 0.10 |
| Electricity adjustment | | | | -0.44 | 0.12 | 0.32 | 0.00 |
| Corporate general (vehicle GPS, additional asset security, new office space, rent increases) | 0.26 | 0.30 | 0.56 | | | | |
| Total | 1.03 | 1.17 | 2.20 | 0.76 | 1.84 | 1.65 | 4.25 |

Source: WW, Price submission 2020-23 (15 November 2019) 26.

The assessment of IT software licence fee increases, the emissions reduction pledge, the electricity adjustment and director fees are considered in detail in section 3.5 alongside broader considerations of expenditure assumptions relating to IT, electricity and labour costs.

3.4.2 Desludging

WW has proposed a total variation to controllable operating expenditure of \$500,000 for desludging at sewer treatment plants over RP4B, while removing \$170,000 in the baseline year 2018-19. In effect, the two adjustments largely cancel each other out. The difference between this approach and leaving the desludging expenditure in the baseline is that, if it is in the baseline, it is increased by the growth rate each year.

WW has provided a 'Business Needs' document from June 2019 to support the underlying expenditure. The expenditure outlined in this document totals \$505,877¹⁹ for desludging to occur at four recycled water plants (RWPs): Gisborne (\$168,083), Woodend (\$207,794), Riddells Creek (\$80,000) and Bacchus Marsh (\$50,000).

For desludging at the Gisborne RWP, Woodend RWP and Riddells Creek RWP, the Business Needs document sets out:

- the volume of sludge (m³) to be dredged
- an assumed dredging cost [REDACTED]
- an assumed transport cost [REDACTED]

¹⁹ Nominal value, as reported in the Business Needs document.

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- a biosolids management cost [REDACTED].

Less information has been supplied for the cost estimate at Bacchus Marsh, with WW stating that it is based on an estimate of costs from the Melton RWP.

We have not undertaken a review of the efficiency of the unit cost estimates or the volumes it has proposed for desludging, noting that the proposed expenditure per annum on average over RP4B is similar to the baseline year.

The Business Needs document indicates that de-sludging will occur at the Riddells Creek and Bacchus Marsh plants during RP4B. The document does not indicate any timing for the Gisborne and Woodend RWPs, and so it is not clear that WW intends to undertake desludging at these plants during RP4B. Desludging at these plants accounts for 75% of the forecast variation.

Nevertheless, our recommendation is to allow the forecast variation to baseline expenditure over the period 2020-21 to 2022-23, noting that the expenditure is similar to the baseline year on a per annum basis. We recommend accepting WW's proposal for de-sludging to be a variation to baseline expenditure, rather than just leaving expenditure from 2018-19 in the baseline as the expenditure is 'lumpy' (with significantly less expenditure proposed for 2022-23 compared to the two earlier years) and of a material amount (\$500,000).

3.4.3 Price submission

WW has proposed an additional \$550,000 to prepare its next pricing submission for the 2023-24 to 2027-28 regulatory period. WW has reported that this forecast expenditure relates to fees for hiring external consultants and is based on historical expenditure (we note WW removed \$210,000 from the baseline for expenditure relating to the price submission).²⁰ This forecast results in an allocation of approximately \$183,000 per annum smoothed over RP4B.

WW's per annum forecast expenditure on the pricing submission for RP4B is higher than that allowed in WW's RP4A allocation (\$150,000 per annum). In this regard, it is noted that the RP4A allocation was for a shorter regulatory period than that under RP5 (three years as opposed to five) and in preparing the current pricing submission, WW undertook less community engagement as compared to that undertaken in preparing the previous pricing submission.²¹ Further, it is recognised that as water businesses adapt to the PREMO framework, there are increased requirements and the need to change processes, which are likely to result in increased expenditure. However, WW has now prepared two price submissions under the PREMO framework. As such, we consider that WW should be able to achieve some efficiencies in the preparation of its pricing submission.

WW has indicated that the upcoming RP5 period will be the first using the full methodology of PREMO, noting that past submissions were not fully assessed against the PREMO criteria and it is the first time it has had to meet the 'performance' element. WW also stated that it has made commitments to deliver several engagement activities for RP5, including a business tariff review.²² We note that the performance element of the PREMO framework requires WW to review the degree to which performance outcomes the business committed to in its price submission have been met or exceeded.²³ We do not consider this requirement to be a significant additional regulatory burden, and to some degree, would be expected to be part of a typical businesses' usual practices.

WW also suggested the price submission expenditure over RP4A was relatively low compared to other water businesses, particularly Yarra Valley Water and Barwon Water.²⁴ We note that Yarra Valley Water and Barwon Water are significantly larger than WW, and therefore it is reasonable to expect the two businesses have a much larger price submission expenditure.

²⁰ WW as reported to Deloitte Access Economics at the site visit.

²¹ WW, *Price submission 2020-23* (15 November 2019) 9.

²² WW response to Deloitte Access Economics draft report (23 February 2020).

²³ ESC, *Water pricing framework and approach* (October 2016) 10.

²⁴ WW response in meeting with Deloitte Access Economics (24 February 2020).

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Our recommendation is to maintain an allowance of \$150,000 per annum for the total expenditure allocation for the price submission, which is consistent with that allowed in WW's RP4A allocation. This results in a reduction to the total proposed expenditure by \$100,000 over RP4B.

3.4.4 Central Region South Sustainable Water Strategy

WW has allocated \$150,000 over RP4B to contribute to the development of the Central Region South Sustainable Water Strategy. WW has reported that this forecast expenditure relates to an estimate of the fees required for external consultants and contractors.²⁵ WW has indicated that consultants and contractors will supplement internal resourcing for specific activities in the renewal process, particularly for technical and project management support.²⁶ We have not been provided with the underlying data to support the calculation of this forecast expenditure.

The Central Region Sustainable Water Strategy is a government initiative that includes a series of actions and augmentations to meet the Victorian central region's water needs from 2006 to 2055.²⁷ While we note that implementation of the Strategy is part of WW's business as usual operations, it is acknowledged that a review of the Strategy it is a reasonably infrequent requirement and outside business as usual requirements. Therefore, our recommendation is to allow the \$150,000 variation from forecast controllable operating expenditure with no adjustments.

3.4.5 Integrated Water Management Planning activities

WW has allocated \$300,000 for Integrated Water Management Planning activities over RP4B while removing \$474,108 in the baseline year (2018-19). WW has indicated (in a response to an information request) the forecast expenditure relates to costs for contractors and consultants and does not include costs of internal full time equivalent (FTE) time, which is covered in the labour costs budget.

The specific projects that WW has referenced as forming part of its forecast expenditure for Integrated Water Management Planning and the forecast expenditure and relevant government commitments are summarised in Table 3.4.

Table 3.4: Projects for Integrated Water Management Planning activities expenditure

| Project name | Forecast expenditure over RP4B | Government commitment? |
|---|--------------------------------|---|
| Environmental flows for Werribee River – Stage 2 (cost-benefit analysis and stakeholder engagement) | \$20,000 per annum | Yes – 'Environmental flows for Werribee River' is listed as a co-funded project for 2018-19 under the Victorian Government's Integrated Water Management Projects, ²⁸ and is listed as a priority opportunity under the 'Werribee Strategic Directions Statement'. ²⁹ |

²⁵ WW response to Deloitte Access Economics' information request (18 December 2019).

²⁶ WW response to Deloitte Access Economics draft report (23 February 2020).

²⁷ Central Region includes the urban centres of Geelong, Ballarat, Greater Melbourne, Melton, Sunbury, Warragul and Traralgon. Source: Department of Energy Land Water and Planning, *Water and catchments* <<https://www.water.vic.gov.au/planning/long-term-assessments-and-strategies/sws/central-region-sustainable-water-strategy>>

²⁸ Department of Energy Land Water and Planning, *Water and catchments: Liveable cities and towns* <<https://www.water.vic.gov.au/liveable/integrated-water-management-program/forums/iwm-projects>>.

²⁹ Department of Energy Land Water and Planning, *Werribee Strategic Directions Statement* (September 2018) <https://www.water.vic.gov.au/__data/assets/pdf_file/0017/412415/10696_DEL_IWMF_Werribee_SDS_web_UPDATED-FEB-2019.pdf>.

| Project name | Forecast expenditure over RP4B | Government commitment? |
|--|---------------------------------------|---|
| Toolern stormwater harvesting – implementation pilot and explore stage 2 | \$40,000 per annum | <p>Under Stage 2 of this project, WW is planning to complete a feasibility assessment to build on the pilot Toolern Stormwater Harvesting Scheme.³⁰</p> <p>WW has applied to DELWP for funding to support this feasibility study, with a response expected in March 2020.³¹ Melbourne Water has committed in principle funding of \$20,000.</p> <p>WW’s application to DELWP includes the following breakdown of expenditure (excluding in kind commitments) with the following estimated dates of completion:</p> <ul style="list-style-type: none"> • identify optimal size of scheme; \$30,000; 30 June 2020 • scheme cost estimate; \$20,000; 1 August 2020 • multi-criteria and cost-benefit analyses; \$20,000; 1 October 2020.³² <p>Based on this documentation, WW will incur \$40,000 (excluding in-kind support) for activities that will be completed during RP4B.</p> <p>WW has not provided documentation to support the \$40,000 expenditure it has forecast for the remaining two years of RP4B.</p> |
| Integrated Water Management forums and options project | \$40,000 per annum | WW has not identified any projects that will be undertaken under this project over RP4B. ³³ |

Source: WW response to information request (19 December 2019) and other sources as indicated in the table.

In relation to expenditure for environmental flows for the Werribee River (Stage 2), our recommendation is to accept a variation to baseline for these activities, given that it relates to commitments made to the Victorian Government. We have not undertaken a review of the underlying estimated costs but note that \$60,000 in total appears reasonable to prepare a cost-benefit analysis and undertake stakeholder engagement.

In relation to Stage 2 of the Toolern Stormwater Harvesting project, as outlined in Table 3.4 the evidence provided by WW in relation to this project only supports \$40,000 of expenditure in 2020. Therefore, our recommendation is to remove \$40,000 of expenditure on this activity in years 2021-22 and 2022-23, respectively.

In relation to the Integrated Water Management forums and options project, as outlined in Table 3.4, WW has not provided a list of any projects for which it will incur expenditure for such activities

³⁰ WW application to DELWP Expression of Interest for Strategic Project Funding: Resilient Cities and Towns – Feasibility Component (20 December 2019).

³¹ WW response to Deloitte Access Economics draft report (23 February 2020).

³² WW application to DELWP Expression of Interest for Strategic Project Funding: Resilient Cities and Towns – Feasibility Component (20 December 2019).

³³ WW response to Deloitte Access Economics draft report (23 February 2020).

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over RP4B. Therefore, our recommendation is to remove the \$40,000 forecast expenditure per annum from the forecast operating expenditure.

3.4.6 Waterborne gypsum trial

WW has forecast \$100,000 over RP4B for a waterborne gypsum trial.³⁴ WW has indicated that it is undertaking this project with the Victorian Government under the contract, 'DELWP: Waterborne Gypsum – Managing Sodidity Impacts'.³⁵

In response to our draft report, WW stated that it expects to incur expenditure related to the waterborne gypsum trial in the period between 31 March 2019 and 31 August 2022 – these being the milestone dates for completion of the baseline soil characterisation and the final evaluation report, respectively, under the DELWP Funding Agreement.³⁶ WW states that it has 'conservatively' assumed the expenditure would cease at 30 June 2021 due to uncertainty around the timing for the final dosing for assessment and use in the completion of the evaluation report. However, the operating expenditure profile (set out below) that WW subsequently provided in this same response had no dates that are within RP4B and expenditure that is significantly less than \$100,000. We have not verified with WW the relevance of these amounts to the price submission – for example, whether it is expenditure made to date.

- 19 August 2019: \$3,584.33
- 16 October 2019: \$13,005.63
- 1 November 2019: \$6,658.52
- 17 February 2020: \$17,167.28.

WW has supplied the following documents which provide some support for WW's assumed level of operating expenditure. While these documents do not precisely document the assumed level of expenditure forecast by WW during RP4B (\$100,000), they do indicate that it is within a reasonable range of previous estimates.

- [REDACTED]
- The Project Definition Document from September 2016 states that there will be approximately \$60,000 per annum (nominal dollars) in gypsum purchase and operating costs and a further \$30,000 (nominal dollars) in a monitoring program to demonstrate the benefits of the waterborne gypsum. The document further states that there will be no operating costs after the three-year trial unless it is decided that the program should be permanent.
- The draft Project Business Case from November 2017 indicates that operating expenditure is expected to vary annually with the gypsum dose rate, and the annual operating costs anticipated was approximately \$120,000 (nominal).
- [REDACTED]

As a general rule, we consider any small variations to baseline (perhaps \$100,000 or less in the case of WW) should form part of the usual ups and downs of business operations and therefore should be absorbed by the overall expenditure allowance (i.e. not be included as variations to the baseline). However, given this is a project that WW has committed to delivering with DELWP, and

³⁴ In an internal spreadsheet provided in response to an information request, WW reported \$100,000 as being required for this project in 2020-21 and 2021-22, respectively. It is unclear whether this a typographical error or if WW has decided to claim less than the expected amount of expenditure.

³⁵ Based on consultation with WW (9 December 2019).

³⁶ WW response to Deloitte Access Economics draft report (23 February 2020).

³⁷ [REDACTED]

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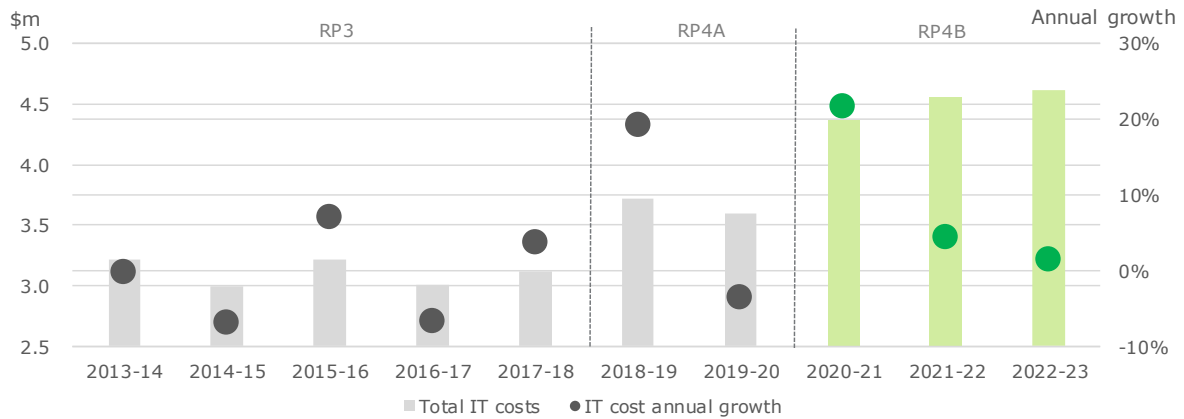
despite the lack of clear documentation for the expenditure, we have not recommended removing this expenditure.

3.5 Individual controllable operating expenditure items

3.5.1 IT costs

IT costs make up approximately 9% of WW’s total controllable expenditure forecast for RP4B. WW has proposed \$13.55m in total IT expenditure over RP4B, which is approximately \$4.53m per annum. As noted in section 3.4, in addition to baseline growth, WW has proposed a variation of \$2.03m in IT expenditure over RP4B. Proposed forecast operating expenditure on IT over RP4B represents a significant increase on historical expenditure (see Chart 3.3).

Chart 3.3: Historical and forecast expenditure on IT, WW, 2013-14 to 2022-23



| | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Total IT costs | 3.22 | 3.00 | 3.21 | 3.00 | 3.12 | 3.72 | 3.60 | 4.37 | 4.56 | 4.62 |
| IT cost annual growth | | -7% | 7% | -7% | 4% | 19% | -3% | 22% | 4% | 1% |

Source: Deloitte Access Economics analysis of data provided in WW 2020 Price Review Model (2 December 2019).



WW has supplied an internal spreadsheet setting out its calculations of how it has estimated forecast IT operating expenditure for maintenance, support and licence fees for RP4B (as summarised in Table 3.5). In this spreadsheet, there are three categories of forecast expenditure on IT programs.

1. IT programs with forecast increases in expenditure from 2019-20
2. IT programs where expenditure has been escalated (by WW) by the proposed net growth rate (2.8% on average)
3. IT programs with no change in operating expenditure from 2019-20.

38 [Redacted]

Table 3.5: Operating expenditure on IT programs (maintenance, support and licence fees), WW, 2019-20 to 2022-23

| Category | 2019-20 | 2020-21 | 2021-22 | 2022-23 |
|---|------------------|------------------|------------------|------------------|
| Operating expenditure on IT programs maintenance, support and licence fees for which there are forecast increases in expenditure from 2019-20 | 641,394 | 786,616 | 919,636 | 932,113 |
| Operating expenditure on IT programs maintenance, support and licence fees that WW has escalated by the proposed net growth rate | 572,850 | 592,578 | 608,907 | 622,345 |
| Operating expenditure on IT programs maintenance, support and licence fees with no change to operating expenditure | 1,265,572 | 1,265,572 | 1,265,572 | 1,265,572 |
| Total IT operating expenditure (maintenance, support and licence fees) | 2,479,816 | 2,644,766 | 2,794,115 | 2,820,030 |

Source: Based on data provided by WW in response to information request (19 December 2019).

To assess IT programs where **WW has forecast increases in expenditure from 2019-20**, we sought justification and/or businesses cases to support the increased expenditure for maintenance, support and licence fees. At the time of this report, WW had provided the following reasoning for expenditure on the key programs identified in the spreadsheet:

- Microsoft Office licences (\$0.73m over RP4B). This covers the annual charge for the Microsoft agreement with an increase in pricing in 2022-23 coinciding with a contract renewal.
- Aquarate yearly licence cost (\$0.48m over RP4B). This covers the annual Aquarate fee and an increase driven by the number of billing properties. Costs are forecast to decrease in 2022-23 as WW is seeking to renegotiate the agreement.
- Microsoft Azure Costs (\$0.36m over RP4B). This covers the costs of Microsoft Azure online storage and is forecast to increase annually in line with more services and data forecasted to move to Azure. WW has indicated that current tracking of Azure usage supports its forecasts.
- Technology One – Finance One (\$0.21m over RP4B). WW will migrate its Technology One infrastructure to the cloud, which will incur cloud hosting fees with incremental increases annually. WW has suggested this will support ageing infrastructure, a legacy application and improve 'Disaster Recover posture'.
- CCR, WW (\$0.29m over RP4B). This covers the increased costs for customer relationship management (CRM) and SMS licences and support fees to support the Microsoft Dynamics CRM system. Increased costs are driven by the increase in the overall customer base, requiring additional records to be created, storage requirements and user licences.
- CAMMs Incident Management (\$0.05m over RP4B). A new Incident Management application is being introduced and implemented during 2019-20, which incurs an ongoing software maintenance fee.

We note that for each of these programs, WW has not identified the additional expenditure over RP4B as compared to previous years or provided documentation (e.g. advice from suppliers) to support the price increases. It has also not clearly justified what the additional expenditure (above and beyond historical expenditure) will be used for.

In relation to **IT programs that have been escalated (by WW) by the proposed growth rate (net of the efficiency factor)**, we note that to the extent that these costs form part of the baseline expenditure (as opposed to a proposed variation to baseline) then these costs will be escalated by the growth factor net of the efficiency rate. It is not clear how this calculation has been taken into account and whether these costs have been escalated twice. WW noted during consultation that the expenditure associated with these programs generally does not vary with customer growth. Where these costs do form part of the variation to baseline, it would not be prudent and efficient to escalate by growth.

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Included within the expenditure items that have been escalated by the growth rate is expenditure totalling \$165,504 over RP4B for discretionary IT items – that is, costs that might arise during the regulatory period such as minor asset replacements/repairs, software licences and so forth.

It is noted that the spreadsheet provided by WW only covers around two-thirds of total IT operating expenditure proposed by WW in its price submission. There is an additional \$5.2m in residual IT operating expenditure that contributes to the total IT operating expenditure proposed over RP4B (see Table 3.6). WW has advised that these other IT related costs include:

- telephony
- printer
- IT consultancy
- minor Assets
- training, salaries and on-costs for 'SCADA' and IT operations
- vehicles for SCADA and IT operations
- repairs and maintenance SCADA and IT operations.

Table 3.6: Total operating expenditure on IT programs WW, 2019-20 to 2022-23

| Category | 2019-20 | 2020-21 | 2021-22 | 2022-23 |
|---|------------------|------------------|------------------|------------------|
| IT operating expenditure for maintenance, support and licence fees | 2,479,816 | 2,644,766 | 2,794,115 | 2,820,030 |
| IT operating expenditure for other IT costs* | 1,116,772 | 1,728,846 | 1,764,718 | 1,797,917 |
| Total IT operating expenditure | 3,596,588 | 4,373,611 | 4,558,833 | 4,617,948 |

Source: Based on data provided by WW in response to information request (19 December 2019).

*Other IT costs include telephony, printer, IT consultancy, minor assets, training, salaries and oncosts for SCADA, vehicles for SCADA and IT operations and repairs and maintenance of SCADA.

In making a recommendation on WW's IT expenditure, we note the following.

- WW's IT expenditure has been increasing significantly in recent years. The net increase in IT expenditure from the baseline to RP4B is 17%.³⁹
- [REDACTED]
- WW has proposed a \$2.03m variation to baseline expenditure for IT costs but has not clearly identified what items should be included in the variation as opposed to being absorbed within baseline expenditure.⁴⁰
- Further, for items that have been marked as requiring increased expenditure over RP4B, WW has not clearly identified how much of the expenditure on those items is additional and the need for that additional expenditure.
- In the price submission, WW does identify from its engagement with customers that there was acceptance for developing technology solutions for better access to usage and billing information. However, WW has not linked this preference to the increased IT expenditure being proposed.⁴¹

At the time of preparing this report we were awaiting further information from WW to support its increased IT spending. In the absence of this information we cannot reach a conclusion that WW's proposed variation to baseline expenditure for IT is prudent and efficient. Our final recommendation is to only allow baseline expenditure for IT. Therefore, we have removed the forecast variation to baseline related to IT programs (\$2.03m over RP4B).

³⁹ WW, *2020 Price Review Model* (2 December 2019).

⁴⁰ WW, *Price submission 2020-23* (15 November 2019).

⁴¹ WW, *Price submission 2020-23* (15 November 2019) 11.

3.5.2 Energy costs

Energy costs account for around 13% of WW's total controllable expenditure over RP4B. WW has forecast electricity costs will increase by 10% per annum on average over RP4B.

WW has proposed in its pricing submission that an electricity expenditure adjustment/variation (net \$0 over RP4B) is required (see Table 3.7). WW has indicated that it was concerned that the total controllable operating expenditure excluding this adjustment did not reflect the profile of total forecast expenditure due to the uneven profile of electricity expenditure.⁴² WW submitted that it targets the price submission forecasts within each period and sets budgets accordingly. Therefore, if the total controllable operating expenditure profile is not close to its actual forecast expenditure, it has to shift budgets between years.

Table 3.7: Forecast adjustments to baseline operating expenditure for electricity (\$2019-20, \$m)

| Forecast adjustments | 2020-21 | 2021-22 | 2022-23 | Total |
|-----------------------------|----------------|----------------|----------------|--------------|
| Electricity adjustment | -0.44 | 0.12 | 0.32 | 0.00 |

Source: WW, *Price submission 2020-23* (15 November 2019) 26.

Our recommendation is to allow the adjustment over RP4B to be made to baseline expenditure. Further analysis has been undertaken on the overall electricity expenditure assumptions. There are three main elements that feed into WW's proposed increase in energy costs:

- forecast increases in electricity consumption (section 3.5.2.2) and
- forecast increases in electricity charges (section 3.5.2.3)
- increased greenhouse gas (GHG) emissions reduction requirement (section 3.5.2.4).

3.5.2.2 Electricity consumption

WW has forecast gross annual electricity consumption will increase by 7.7% per annum on average over RP4B, resulting in a 25% (5,940 MWh) increase by 2022-23 from 2019-20 levels. Approximately 2% to 3% of gross annual electricity consumption is to be met by electricity generated from behind-the-meter projects (see Chart 3.4).

WW has indicated that the increasing energy requirement is a result of:

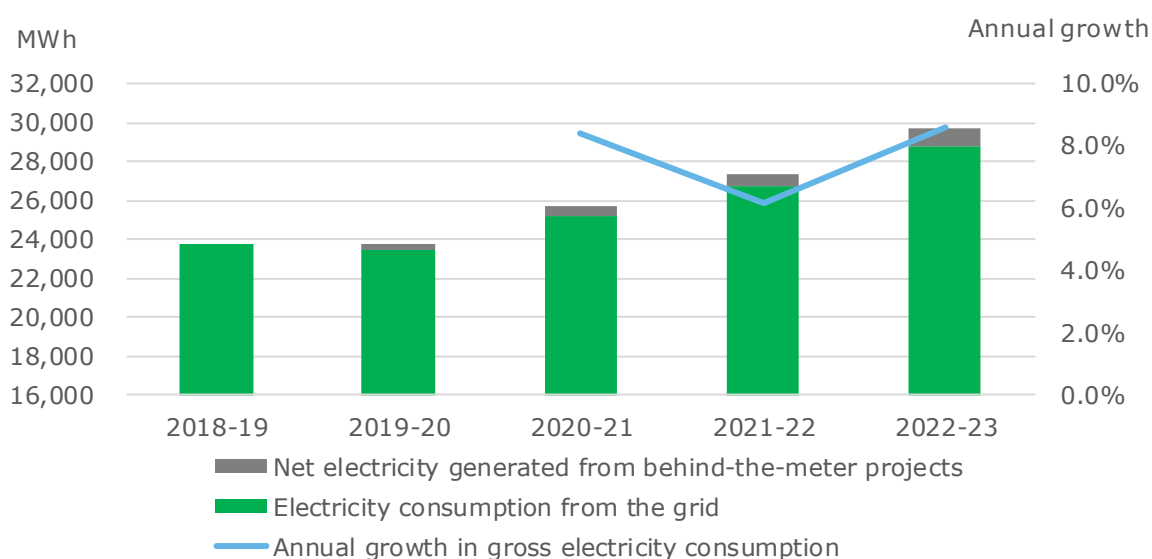
- a growing number of connections
- increasing water consumption per connection
- climate impacts on reduced water flows into local reservoirs resulting in increased electricity required to treat and manage water quality and a higher reliance on water pumped from the Melbourne system.⁴³

Of the three, the impact of pumping from Melbourne Water is likely to be greatest, but also the most difficult to predict.

⁴² Based on WW response to information request (19 December 2019).

⁴³ WW, *Price submission 2020-23* (15 November 2019) 29.

Chart 3.4: Gross electricity consumption by electricity source – WW



Source: Analysis based on data provided by WW in response to information request (19 December 2019).

3.5.2.3 Electricity prices

WW has adopted the VicWater Supply Chain Excellence Program – Electricity Price Forecasts (“SCEP” May 2018) to forecast future electricity prices. WW has adopted the mid-price scenario of the SCEP forecasts. We note that these prices are broadly in line with WW’s current electricity prices, and that the VicWater SCEP Electricity Price Forecasts mid-scenario has been accepted by ESC for past price reviews of other water businesses.⁴⁴

The VicWater SCEP projects a slight decrease in prices in 2020-21, followed by an 11% increase in 2021-22 and almost 2% increase in 2022-23. This results in WW’s forecast electricity prices in 2022-23 being 9.7% higher than WW’s actual electricity price in 2018-19 and leads to an annual compounding average growth rate of 2.3% per annum from 2018-19.

In reviewing WW’s electricity prices, we have considered the electricity prices proposed by South Gippsland Water (over the same regulatory period), an industry benchmark published by the Australian Energy Market Commission (AEMC) and recent submissions made by distribution businesses to the Australian Energy Regulator (AER). There is considerable uncertainty around how Victorian electricity prices will change over RP4B due to a range of factors including:

- the AER’s current reset of AusNet Services’ (AusNet’s) transmission network and Powercor’s and Jemena’s distribution network revenues for the 2022-27 and 2021-26 periods, respectively
- fuel prices (coal and natural gas)
- the potential entry and exit of generation capacity.

⁴⁴ The VicWater SCEP Electricity Price Forecast was adopted in the North East 2018 Water Price Review. ESC, *North East Water final decision: 2018 Water Price Review* (19 June 2018) 13.

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The AEMC recently published an electricity price forecast in its annual report on residential electricity price trends. It forecasts electricity prices will increase slightly in 2019-20, falling significantly in 2020-21, followed by a minor increase in 2020-21. This results in electricity prices over RP4B that are lower than 2018-19 real prices.⁴⁵ These changes are driven by a range of factors including:

- a decline in wholesale prices, particularly between 2019-20 and 2020-21, followed by a slight increase from 2020-21. We note that AEMC's wholesale prices are driven by range of costs, including scheduled entry and exits of generators, ancillary services, network losses, market fees and various hedging mechanisms
- increasing network charges, particularly from 2018-19 to 2019-20
- decreasing costs associated with environmental policies.

WW's forecast electricity prices are lower than the AEMC forecast, which is to be expected as they are a large commercial user and generally face lower prices than residential consumers. However, while WW's prices are lower, it forecasts a relatively higher price growth rate over the RP4B period.

On 31 January 2020, Powercor submitted its regulatory proposal for distribution network services to the AER. Powercor proposed a 4% reduction in small business customer charges (excluding inflation) over 2021-22 to 2025-26 or approximately a 0.8% reduction in tariffs per annum.⁴⁶ We note that the price reduction for small business customers is likely to be similar for larger customers. According to WW, 54.1% of its electricity usage is from the Powercor distribution zone. We have used small business charges for Powercor as we have been unable to locate large business charges.

Jemena has proposed a 9% reduction in large business customer charges (excluding inflation) over 2021-22 to 2025-26. That is, approximately a 1.8% reduction in tariffs per annum.⁴⁷ According to WW, 45.9% of its electricity usage is from the Jemena distribution zone.

AusNet Services also submitted its regulatory proposal for distribution network services to the AER, proposing an average 13% reduction in distribution network tariffs (excluding inflation) for non-residential customers in 2021, followed by no change in real terms over the rest of the network regulatory period.⁴⁸ Given that most of this reduction is related to tax and the weighted average cost of capital (WACC), we expect that the similar reductions will apply to transmission prices when they are re-set from 1 July 2022.

We consider the submissions from Powercor, Jemena and AusNet to provide the most reliable estimate of how network tariffs are likely to evolve over RP4, noting that it is likely that these estimates are conservative, as based on previous price reviews the AER is likely to approve price increases that are lower than proposed by businesses.

Based on the above, our recommendation is to reduce distribution charges by 1.26% in 2021-22 and 2022-23 (based on 45.9% of distribution charges reduced by 1.8% and 54.1% of distribution charges reduced by 0.8%), and a 13% downward adjustment on WW's transmission charges in 2022-23. This results in a total reduction of \$373,598 in WW's electricity costs over RP4B, as shown in Chart 3.5.

⁴⁵ The AEMC's forecast movement in wholesale electricity prices is broadly in line with the price of Victorian Australian Securities Exchange (ASX) base and peak energy futures. The ASX energy futures indicate a decrease in wholesale prices in 2022-23. However, it is noted that ASX energy futures prices tend to understate future price expectations to account for increased risk associated with projecting further into the future.

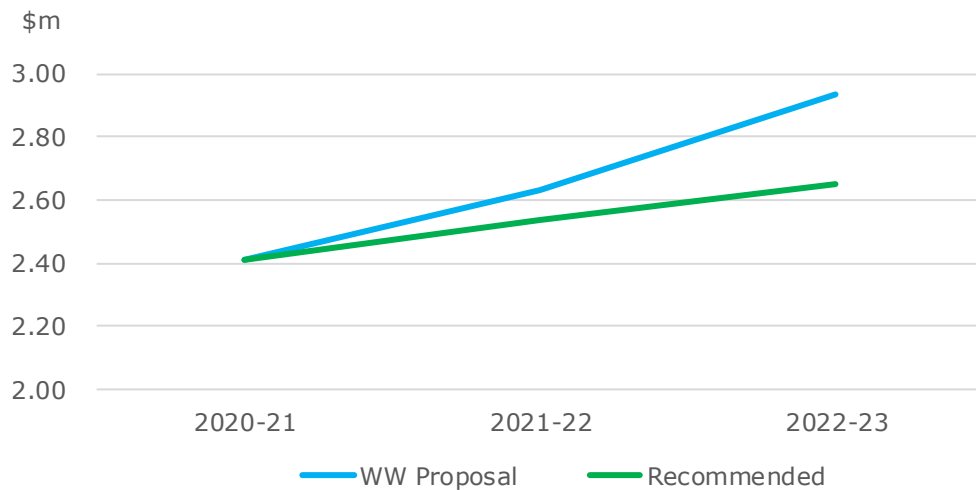
⁴⁶ Powercor, *Overview paper: Powercor Regulatory Reset Proposal* (January 2020) 2 <

https://talkingelectricity.com.au/wp/wp-content/uploads/2020/01/CP126_Overview-Paper_10.0_PAL_2.pdf.

⁴⁷ Jemena, *2021-26 Regulatory Proposal – Short on Time* (31 January 2020) iii.

⁴⁸ AusNet, *Overview of our Electricity Distribution Regulatory Proposal 2022-2026* (31 January 2020) 20.

Chart 3.5: Forecast network charges – WW (\$2019-20)



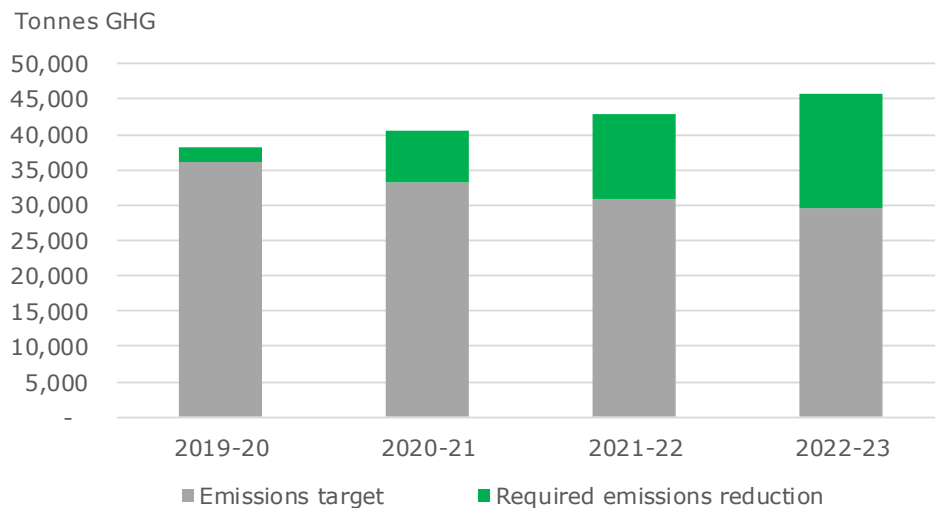
Source: Deloitte analysis based on data provided by WW to information request (19 December 2019) and *VicWater SCEP: 5 Electricity Price forecast* (May 2018).

3.5.2.4 Increased GHG emissions reduction requirement

WW has pledged to DELWP to achieve a GHG emissions target of 10% below baseline emissions (in 2016) by 2025. That is, 25,115 tonnes of emissions by 2024-25.⁴⁹

WW emissions in 2019-20 are forecast to be 38,117 tonnes. In line with increasing customer numbers and electricity consumption, WW has forecast GHG emissions to increase by approximately 6.3% per annum over RP4B. WW has indicated that 7,418 tonnes of emissions will need to be reduced in 2020-21, growing to 16,287 tonnes by 2022-23 (see Chart 3.6). To reach this target, WW has proposed \$0.41m for emissions reductions over RP4B.

Chart 3.6: Total emissions and required reduction - WW



Source: Analysis based on data provided by WW on 19 December 2019.

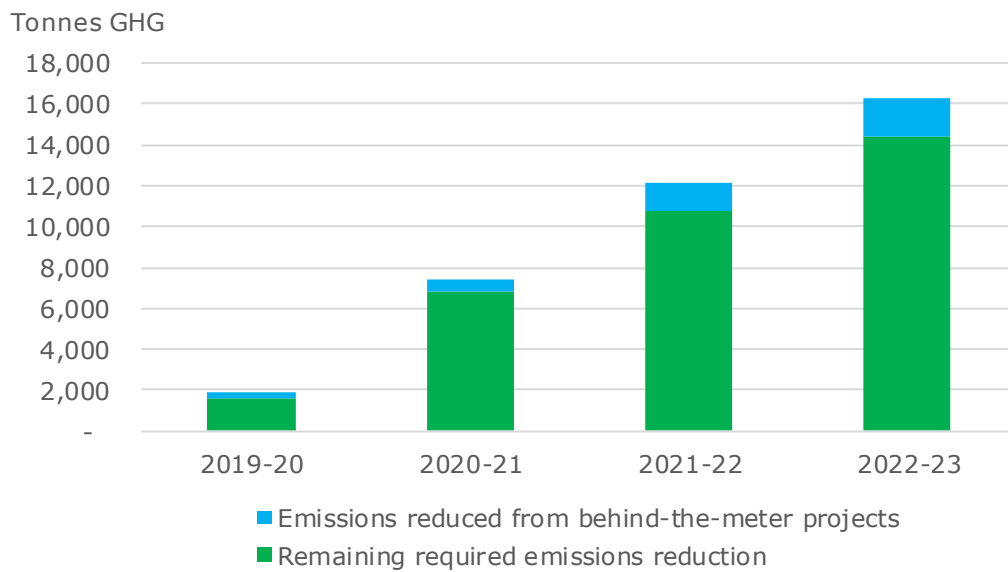
WW has proposed that 10% of emissions reductions will be met by behind-the-meter renewable energy and electricity demand management projects over RP4B. The remaining emissions

⁴⁹ WW, *Statement of obligations (emission reduction)* (signed 14 March 2018) 5.

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reductions will be achieved through the purchase of emissions offsets via large-scale renewable generation certificates (LGCs) (see Chart 3.7).

Chart 3.7: Required emissions reduction - WW



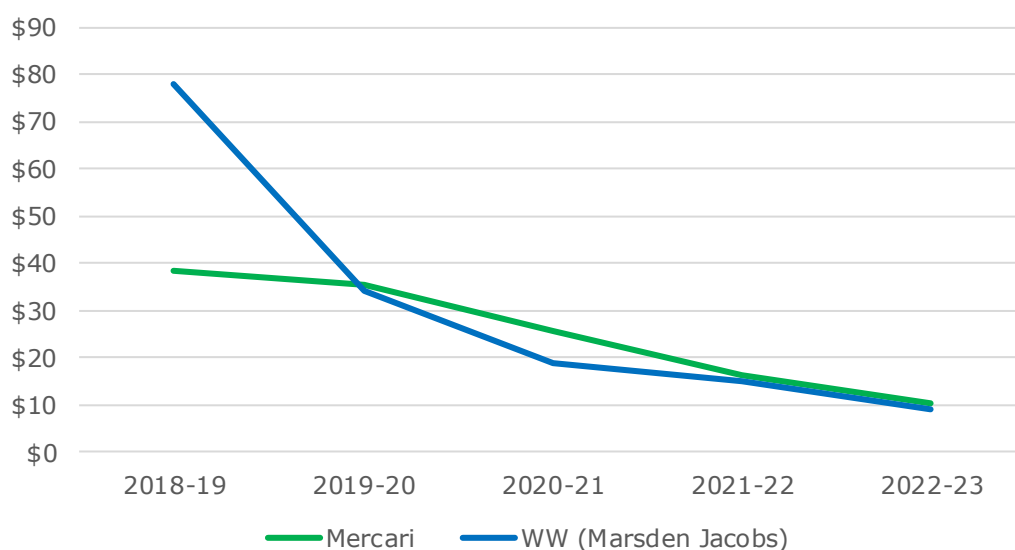
Source: Analysis based on data provided by WW on 19 December 2019. Note behind-the-meter projects include demand management projects.

To determine the cost of purchasing LGCs for the remaining emissions reduction, WW has adopted base case LGC price forecasts developed by Marsden Jacobs in late 2017.⁵⁰ Under the base case scenario, LGC prices are forecast to drop from \$70.00 in 2020 (calendar year) to \$9.22 in 2023. This forecast is broadly in line with current LGC forwards prices (from Mercari futures) as at 31 December 2019 (see Chart 3.8).⁵¹ Based on this, WW’s proposed emissions reduction costs appear reasonable. Therefore, our recommendation is to accept the expenditure forecasts for emissions reduction expenditure.

⁵⁰ Based on emails and data provided by WW on 11 and 19 December 2019.

⁵¹ Based on Mercari spot prices as at 31 December 2019. Mercari is an e-commerce business that operates a trading platform for large-scale Renewable Energy Certificates (LGC).

Chart 3.8: LGC price forecast



Note: Mercari futures are as at 31 December 2019; WW data provided 11 December 2019.

3.5.3 Labour costs

Labour costs make up 37% of WW's total forecast controllable expenditure in RP4B. In 2018-19, actual labour costs were \$16.77m, WW has forecast that this will increase to \$17.45m in 2019-20.

3.5.3.1 Director fees

WW has forecast a variation to baseline operating expenditure of \$0.22m over RP4B to account for higher fees for its directors for the Board and committees. WW has indicated that due to the growing size of the business, revenue has crossed the threshold for a step increase in director wages from 1 October 2019. WW has reported that it has been reclassified from a Group A, Band 3 organisation to a Group A, Band 2 organisation. As shown below, Victorian Government documents state the pay ranges that should be followed for each group/band.

In relation to the Board, under the supplied Premier and Cabinet Appointment and Remuneration Guidelines, the threshold for remuneration (exclusive of any superannuation obligations) should increase as follows.

- For the Chair – from \$37,844-\$79,865 to \$56,765-\$106,490.
- For members – from \$20,182-\$37,323 to \$25,229-\$53,254.

This is supported by a Ministerial direction (the Instrument of Remuneration) stating that fees for the chair should be \$58,452 per annum, and for directors, \$26,208 per annum. These are the fees that have been used in WW's calculation of director fees.

In relation to committees, the Ministerial direction states that each director and chair should be paid \$2,705 per annum for each committee that they are appointed to up to a cap of \$5,803 per annum. In an internal spreadsheet supplied by WW, the Ministerial directed fee has been applied, with an assumption that each director and the chair sit on two committees. WW provided an extract of a board paper from 18 October 2019 as evidence of the membership of each committee and that each director is a member of two committees.

On the basis that the increases in director fees are consistent with the Ministerial direction our recommendation is to accept WW's proposed variation to operating expenditure for director fees.

3.5.3.2 Wage increases

WW's Enterprise Bargaining Agreement (EBA), which provided a 3% annual wage increment, expires in June 2021.

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The Victorian Government's Wages Policy states that increases in wages and conditions should be capped at a growth rate of 2% per annum over the life of the agreement.⁵² WW has proposed to continue to adopt a wage increase of 3%, upon expiry of the current EBA, on the basis that it anticipates bargaining will likely lead to this higher amount. WW has also indicated it expects to pay a further 1% increase in the form of bonus and band movements, taking actual total wage increases to 4% per annum. However, WW has indicated a portion of its 2% efficiency factor are assumed to offset the wages increases.

As discussed below, WW proposes a 1.3% increase in staff numbers across RP4B, which we consider is reasonable, and largely reflects economies of scale when it comes to labour.

However, and irrespective of the efficiencies and economies of scale that WW has incorporated in its forecasts (which as discussed in section 3.3 we consider are at the lower end of a reasonable range), we consider that WW's expectation of 4% nominal growth in unit labour costs is excessive.

The most recently available data from the Australian Bureau of Statistics (ABS) shows average wages (as measured by the wage price index) increasing by 2.2% in nominal terms in the year to December 2019. This is a slight increase from previous quarters, highlighting that at 3% EBA wage growth at WW has been above the national average.

WW is forecasting a 1.7% increase in real wages – a level which has not been achieved in Australia since 2012. While forecasts of future wages growth vary, Deloitte Access Economics' own forecasts of nominal wage price index growth across RP4B are approximately 2.6%.

We therefore consider the Victorian Government's benchmark (of 2%) as the most prudent and efficient view as to the increase in wages upon conclusion of the existing EBA in June 2021.

We have therefore:

- reduced WW's forecast 2021-22 wages bill by 1%
- reduced WW's forecast 2022-23 wages bill by 1.98% (i.e. 1% for 2021-22 and 1% for 2022-23).

This results in a reduction of \$530,660 to labour costs over RP4B (see Table 3.8).

Table 3.8: Recommended labour cost reduction – WW (\$m, \$2019-20)

| | 2020-21 | 2021-22 | 2022-23 | Total RP4B |
|-------------------------------|---------|--------------|--------------|---------------|
| Proposed total labour cost | 17.93 | 17.89 | 17.77 | 53.59 |
| Labour cost reduction rate | 0.0% | -1.00% | -1.98% | |
| Recommended total labour cost | 17.93 | 17.71 | 17.42 | 53.06 |
| Labour cost reduction | - | -0.18 | -0.35 | - 0.53 |

Source: Deloitte Access Economics.

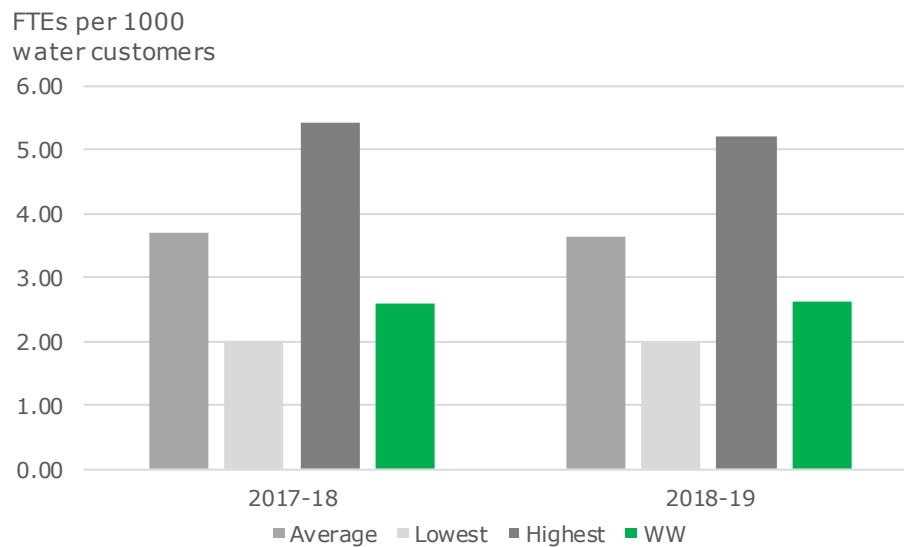
3.5.3.3 Number of staff

WW currently has 179.3 FTE staff, amounting to approximately 2.6 FTEs per 1,000 water customers. This is significantly (1 FTE per 1,000 customers) lower than the average across other Victorian regional water businesses (3.6 FTEs per 1,000 water customers) reflecting its economies of scale (see Chart 3.9).

⁵² Victorian Government, *Wages Policy and the Enterprise Bargaining Framework* (20 November 2019) <<https://www.vic.gov.au/wages-policy-and-enterprise-bargaining-framework#enterprise-bargaining-framework>>.

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Chart 3.9: FTEs per 1,000 water customers across Victorian regional water businesses



Source: Based on water businesses' 2018 price submissions, excludes South East Water, City West Water and Yarra Valley Water. Average includes Western Water.

WW has forecast an increase of 7 FTEs over RP4B, resulting in an average growth in staff around 1.3% per annum. WW has indicated that forecast FTEs has considered efficiencies derived from the ongoing digitisation of projects, including:⁵³

- the development of a digital online systems for developers and customers
- enhancement of geographic information system (GIS) and asset information data and systems
- customer communication via 'push' and interactive approaches
- field data capture via mobile technology.

We consider the forecast increase in FTEs is reasonable given customer growth of 4.8%.

3.5.4 Chemical costs

Chemical costs are forecast to be around \$1m per annum and account for approximately 2% of WW's total forecast controllable costs over RP4B.



WW has forecast an overall decline in chemical costs relative to the baseline. In its price submission, WW notes that its current chemical industry procurement contracts expire in 2020, and that for the RP4B regulatory period, it has assumed replacement chemicals will be at current prices.⁵⁵ WW has further noted that the overall cost of water treatment is dictated by the quality of the source water and the ultimate destination of that water.⁵⁶

Given chemical costs are forecast to decline and account for a small proportion of WW's forecast controllable costs over RP4B, we have not carried out an in-depth assessment of these costs.

3.5.5 Corporate costs

Corporate costs make up approximately 40% of WW's forecast controllable expenditure over RP4B. WW has forecast corporate costs will increase significantly in RP4B, with an 11.4% increase in

⁵³ WW, *Price submission 2020-23* (15 November 2019) 28.

⁵⁴ The study included all energy, fuel and electricity costs purchased for water treatment plants.

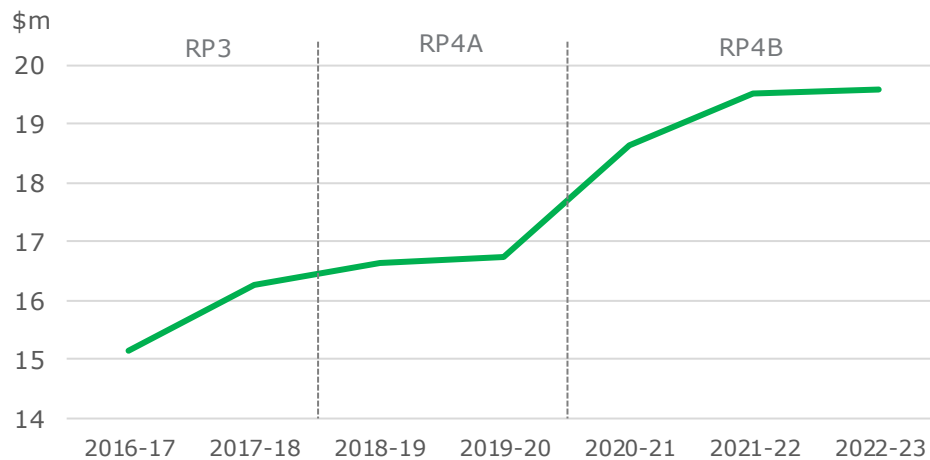
⁵⁵ WW, *Price submission 2020-23* (15 November 2019) 28.

⁵⁶ Based on consultation with WW on 9 December 2019.

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2020-21 from 2019-20, as shown in Chart 3.10. WW has not provided justification for a large portion of this increase in corporate costs.

Chart 3.10: Actual and forecast corporate costs – WW (\$2019-20)



Source: Actual and forecast is based on WW 2020 Price Review Model – ESC Reviewed (provided 24 February 2020).

Given the lack of justification for the forecast increase, our draft recommendation was to only allow corporate costs to increase in line with the cost efficiency growth rate (2.8%). We note that some corporate costs have been accounted for in IT costs and director fees, which are considered separately above.

In response to the draft report, WW identified other adjustments to the baseline year and forecast variations reviewed above that need to be excluded from the reduction of corporate costs. However, at the time of finalising this report, WW had not provided any information to support much of the increase in corporate costs. Given this, we are unable to form a view that the corporate cost forecast is reasonable and hence we have removed a portion of the increase.

In doing so, we acknowledge that some of the identified variations (shown in Table 3.9) are considered elsewhere and therefore we have removed them from the reduction. We note that IT costs may also relate to operating and maintenance costs, therefore by including the full IT cost adjustment we have been conservative in our reduction to corporate costs. We have also removed 50% of the labour cost reduction that we have accounted for in section 3.5.3, based on the assumption that only 50% of labour costs relate to corporate activities. Ultimately, we have made a reduction of \$2.40m in corporate costs over RP4B.

Table 3.9: Proposed and recommended corporate costs – WW (\$m, \$2019-20)

| | 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | Total over RP4B |
|--|---------|---------|-------------|-------------|-------------|--------------------|
| WW proposed corporate cost | 16.65 | 16.74 | 18.64 | 19.51 | 19.59 | 57.74 |
| Integrated Water Management Planning | 0.47 | - | - | - | - | - |
| Price submission | 0.21 | - | - | - | - | - |
| Adjusted baseline corporate costs | 15.97 | - | - | - | - | - |
| Cost growth-efficiency escalation | - | 1.15% | 3.44% | 2.76% | 2.21% | - |
| Adjusted corporate cost | | 16.15 | 16.71 | 17.17 | 17.55 | 51.43 |
| Total corporate cost reduction | - | - | 1.93 | 2.34 | 2.04 | 6.31 |
| Less director fee adjustment | - | - | 0.06 | 0.08 | 0.08 | 0.22 |
| Less IT cost adjustment | - | - | 0.60 | 0.71 | 0.71 | 2.03 |
| Less price submission | - | - | 0.03 | 0.30 | 0.22 | 0.55 |
| Less Integrated Water Management Planning | - | - | 0.10 | 0.10 | 0.10 | 0.30 |
| Less Central Regional South Sustainable Water Strategy | - | - | 0.00 | 0.15 | 0.00 | 0.15 |
| Less emissions reduction pledge | - | - | 0.13 | 0.16 | 0.13 | 0.41 |
| Less labour cost adjustment ¹ | - | - | - | 0.09 | 0.18 | 0.27 |
| Remaining corporate cost adjustment | - | - | 1.02 | 0.75 | 0.62 | 2.40 |

Source: Deloitte Access Economics analysis based on WW 2020 Price Review Model (2 December 2019) and WW response to draft report (23 February 2020).

Note: 1) We have only removed 50% of the labour cost adjustment based on an assumption that 50% of the labour cost is related to corporate costs.

3.6 Recommendations

Table 3.10 summarises the recommended changes to operating expenditure. We have recommended a reduction of \$5.63m to WW's RP4B forecast controllable operating expenditure.

Table 3.10: WW forecast controllable operating expenditure and recommended adjustments (\$2019-20, \$m)

| Operating expenditure item | Actual | Price submission forecast | | | Total |
|--|------------------|---------------------------|--------------|--------------|---------------|
| | Baseline 2018-19 | 2020-21 | 2021-22 | 2022-23 | RP4B |
| Proposed controllable operating expenditure (\$m, original proposal) | 44.19 | 45.97 | 48.30 | 49.13 | 143.40 |
| Other recommended adjustments | | | | | |
| Price submission | - | 0.12 | -0.15 | -0.07 | -0.10 |
| Integrated Water Management Planning activities | - | -0.04 | -0.08 | -0.08 | -0.20 |
| Energy costs | - | 0.00 | -0.09 | -0.28 | -0.37 |
| IT costs | - | -0.60 | -0.71 | -0.71 | -2.03 |
| Labour costs | - | 0.00 | -0.18 | -0.35 | -0.53 |
| Remaining corporate cost adjustment | - | -1.02 | -0.75 | -0.62 | -2.40 |
| Total recommended adjustments | - | -1.54 | -1.97 | -2.12 | -5.63 |
| Recommended operating expenditure | 44.19 | 44.43 | 46.33 | 47.01 | 137.77 |

4 Capital expenditure assessment

This Chapter provides analysis, conclusions and recommendations on key issues with respect to Western Water's (WW's) capital expenditure. Expenditure is typically quoted from WW's submission template in real \$2019-20. Other cost bases are identified where they differ.

4.1 Overview of approach

The approach taken to review WW's capital expenditure is the standard approach expected in a regulatory review process, involving the following key tasks:

- reviewing WW's price submission 2020-23 document and price submission template
- selecting of a list of major projects for review (from the list identified in the template). The projects selected for review were:
 - M1. Parwan-Balliang Irrigation District network (Western Irrigation Network (WIN) Stage 1), \$17.73m (Recycled Water Growth – Pipelines/network)
 - M2. Melton Recycled Water Plant (RWP) - Additional on-site recycled water storage – Stage 1, \$15.14m (Sewerage Growth - Treatment)
 - M3. Melton RWP and Bacchus Marsh RWP Interconnection, \$14.42m (Sewerage Growth - Treatment)
 - M5. Gisborne RWP - Stage 1 Bioreactor, \$10.51m (Sewerage Growth – treatment)
 - M7. Sewer Spill Prevention Strategy (SSPS) - Sewer Relining Program, \$7.3m (Sewerage Renewals – pipelines / network)
- submitting a request for information on these projects covering, for example:
 - business cases supporting the proposed expenditure
 - strategic level management plans providing context for the overall programs within which the projects are categorised
 - details outlining the need for the project, for example, Environment Protection Authority (EPA) licence conditions or directions
 - for continuing projects, details outlining the progress and actual expenditure to date.
- undertaking interviews to discuss the projects in more detail and identify further supporting documentation
- reviewing the supporting documentation and forming a view as to the prudence and efficiency of the project for inclusion in RP4B. For ongoing projects, the review focuses on the efficiency of actual expenditure and expectations on any revised expenditure and timelines.

Overall, the approach to reviewing capital expenditure has been hampered by a lack of sound project information from WW, particularly in relation to the following matters.

- Business cases were supplied for the selected major projects to be reviewed; however, it was apparent that these were predominately documents used in the RP4A capital submission.
 - One key section of the documents had been updated to include a table of expenditure proposed for the RP4B submission period, however this expenditure was often in conflict with the remainder of the document and the RP4B submission template itself.
 - The remainder of the documents were typically not updated including timelines for completion of the projects. In a number of examples, the expenditure allowances for the RP4B submission included significant (>50%) expenditure in the years beyond the stated completion date. It is noted that there is a similar inconsistency of completion dates (year asset operational) and capital expenditure profiles in the RP4B submission template.
- The business cases included few specific details, apart from generic statements, on establishing the need for the works, and hence demonstrating the prudence of the investment.
- Costs identified in the business cases (nominated P50 costs) supplied were typically significantly higher than what was proposed in the RP4B submission. This might be due to the

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fact that they are existing projects and the amounts included in the RP4B submission are amounts required to complete the project. Alternatively, the expenditure allowances for projects could be a result of an optimisation process whereby the optimised expenditure has not been taken back into the business case to assess the impact of lower expenditure on the project. The first issue could be resolved by providing information on actual expenditure while the second issue raises the potential for expenditure to simply be spent now and recovered later in the review process for the next pricing submission. Further information supplied by WW would resolve this.

- No information on actual expenditure to date was provided for existing projects. WW provided commentary indicating that it had recently updated its financial systems and had difficulty extracting actual expenditure for projects. Further the commentary suggested that given historical actual spends have been typically close to budgeted amounts, that we could assume similar for the current projects. However, in our view this needs to be established and not just assumed.
- Specifically identified documents requested were provided, however our more general requests for supporting information were sometimes not fulfilled leading to multiple information requests.

4.2 Overall assessment of capital planning and asset management

Limited information was provided to outline specific improvements to WW's broader capital planning and asset management approach, and we have therefore assumed limited changes have been made to the systems in place for the RP4A submission.

WW notes in its RP4B submission, that a rigorous, business-wide process was followed to develop the capital program for the RP4B pricing period and that the development of the investment for each category of work aligns with the WW capital delivery process for new assets and maintaining and renewing the existing asset base.

A focus is provided on the capital optimisation process used to develop the capital expenditure programs, which is founded by the development of capital expenditure portfolios (33 portfolios have been identified). Each portfolio is allocated to a senior manager who develops a portfolio justification expenditure and manages the optimisation, review and update of the expenditure. The portfolio justification document demonstrates and justifies the expenditure in accordance with ESC guidelines.

Portfolio optimisation occurs in a two-stage approach.

1. Development of a requirements driven estimate, which takes into account:
 - a) meeting agreed levels of service
 - b) delivering customer outcomes
 - c) key drivers
 - d) identifies capital investment and delivery timing to eliminate any additional risk to WW
 - e) assumes all capital investment can be delivered in the desired timeframes
 - f) includes P50 level cost estimates.
2. Development of a resource balanced estimate, which takes into account:
 - a) capacity to deliver – resourcing, process allowance
 - b) internal and external dependencies including interrelated projects
 - c) confidence in cost estimates particularly in later years of the program
 - d) risk assessment considering all factors.

The final recommended expenditure for the portfolio is based on the outcomes of the risk assessment.

While this assessment process is sound, it is unclear how the optimisation process, and specifically the risk adjusted expenditure profile, is applied to individual projects in the portfolio. It is also not clear how the adjusted expenditure is reflected in the supporting documents for each project, particularly in the business cases. All of the business cases provided in support of the selected major projects had sufficiently different expenditure profiles than what is included in the RP4B submission template for us to confirm this.

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The business cases provided for each project allocate a section in the template for consideration of prioritisation options. However, all these sections were blank, implying either an external prioritisation process or the lack of a prioritisation process specific to each business case.

4.3 Major projects and programs

WW identified the top 10 major projects in its submission template. These are:

1. Parwan-Balliang Irrigation District network (WIN Stage 1), \$17.73m (Recycled Water Growth – Pipelines/network)
2. Melton RWP - Additional on-site recycled water storage - Stage 1, \$15.14m (Sewerage Growth - Treatment)
3. Melton RWP and Bacchus Marsh RWP Interconnection, \$14.42m (Sewerage Growth - Treatment)
4. Derrimut Diversion SPS/RM, \$10.88m (Sewerage Renewals – pipelines / network)
5. Gisborne RWP - Stage 1 Bioreactor, \$10.51m (Sewerage Growth – treatment)
6. Beattys Rd East Trunk Water Main, \$8.10m (Water Growth – treatment)
7. SSPS - Sewer Relining Program, \$7.3m (Sewerage Renewals – pipelines / network)
8. Grant Street SPS Upgrade, \$6.16m (Sewerage Growth – pipelines / network)
9. Sunbury Outfall Sewer Duplication, \$5.72m (Sewerage Growth – pipelines / network)
10. Melton RWP - Convert Aeration tank 5 & 6 to IFAS, \$5.58m (Sewerage Growth - Treatment).

This list is predominantly major projects with only item 7 (the SSPS – Sewer Relining Program) identified as an ongoing program of work. All other items identified in the submission template are considered capital programs with some of these programs allocated significant expenditure, including:

- water infrastructure – Growth (\$40.18m)
- sewer infrastructure – Growth (\$63.36m)
- recycled infrastructure – Growth (\$7.78m).

The expenditure allowances for these programs are in addition to the major projects identified above and have not been individually reviewed as part of this process.

4.4 M1 Parwan-Balliang Irrigation District network

4.4.1 Project description

WW's preferred strategic response to the increase in volumes at Melton, Bacchus Marsh and Sunbury RWPs is the WIN project, which involves developing the Parwan/Balliang irrigation district (PBID) supplied with recycled water from the three RWPs.

A storage basin is planned in the Parwan area, with a pump station. A header tank will also be constructed to maintain pressure in the delivery pipe and the delivery pipeline is required from the Parwan area to the eight proposed customers in the recycled water district.

The pipeline will extend primarily through private land owned by the customers. Sections will also run through road reserves. WW stated that construction of the infrastructure is required by June 2022 so that the irrigation scheme is operational in time to maintain EPA compliance, particularly at Melton RWP.

The WW Board approved the business case for WIN, including its staging, in June 2019, with Stage 1 of the project proceeding to the development phase in readiness for procurement.

4.4.2 Analysis

- The project, also referred to as WIN Stage 1 project, is covered by the Recycled Class B/C Expansion portfolio (RNCA) (15 Nov 2019) – total portfolio expenditure of \$54m (resource balanced).
- The project has a stated benefit-cost ratio (BCR) of 2.03 – generating \$101m from an investment of \$104.4m and lifecycle costs of \$79m.
- A business case⁵⁷ has been prepared for the overall WIN project.

⁵⁷ "WIN Business Case - Final 120819 Master.pdf" (document un-dated).

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- Compared to other response options assessed in the business case, this project results in the smallest increase in bills.
- Benefits of project split equally between:
 - minimising discharges to waterways
 - discharges kept within regulatory limits
 - providing fit-for-purpose recycled water.
- Options assessment process involved:
 - strategic responses assessment (irrigation, disposal to wastewater treatment plant (WTP), urban waterways environmental flows, potable substitution, indirect potable reuse)
 - 12 options assessed based on responses above including combinations
 - 3 short list options
 - multi-criteria analysis (MCA) covered cost, risk, adaptability, economic contribution and social wellbeing
 - adaptive pathway assessment.
- WIN project identified as preferred solution:
 - lowest present value (PV) cost – due to revenue offsetting cost
 - confirmed demand for recycled water
 - can be delivered in timeframe
 - does not require land purchase (limits reputational risk)
 - scored lowest of the three against risk criteria, that is, it had the highest risk profile.
- Capital costs – total budget unclear
 - 2020 price submission - \$17.73m allocated 2020-21 to 2022-23 (\$25.3m total) with \$7.6m proposed 2023-24
 - business case – P50 cost \$25m which represents the total project budget
 - business case RP4B allowance \$17.5m
 - 2018-19 to 2019-20 spend was provided as \$1.24m and \$1.4m respectively. This results in a total projected spend (actuals plus RP4B plus 2023-24) of \$27.97m.
- Timing
 - EPA licence expires in July 2022, business case states planned commissioning by December 2021, and RP4B submission template states assets operational in 2021-22. However, the cost profile in submission template and business case has \$15.98m (64%) post-July 2022 implying it is unlikely to be completed in time.
 - High risk that discharges post-July 2022 will attract EPA enforcement actions, however no mitigation actions have been identified to manage this.
 - WW has stated that works have been prioritised across the WIN Stage 1 portfolio and related projects (Melton RWP Additional Storage) to ensure that flows are managed post-July 2022. A program schedule supplied by WW indicates completion of construction for the Melton and Bacchus Marsh pump stations in early to mid 2022, while the irrigation network is scheduled for first customer connection in early 2021 and completion in early 2024.

4.4.3 Recommendation

The project is a good example of a regional strategic solution and is supported by broader business case justification. However:

- the project business case has not been updated since the RP4A submission
- while WW has provided a detailed schedule, we still have concerns over consistency of the timing of infrastructure with the cost profile in the submission template which is spread over a longer period.

Despite this, we are supportive of this regionally focussed project and the response to discharge licence issues and do not propose to amend the capital expenditure proposed.

4.5 M2 Melton RWP - Additional on-site recycled water storage - Stage 1

4.5.1 Project description

The Melton RWP catchment is experiencing rapid growth. The current irrigation and storage system is at capacity so it must be increased to maintain compliance.

WW stated that failure to contain the 90th percentile recycled water volume will result in WW breaching the *Environment Protection Act 1970* (Victoria) beyond 2022. Construction of a winter

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storage was identified as the best option to achieve compliance when the current EPA licence expires.

The Board approved the business case in December 2017. WW states its detailed design has commenced with construction expected to commence later in 2019-20.

4.5.2 Analysis

- The project is covered by the RNCA (15 November 2019) – total portfolio expenditure of \$54m (resource balanced).
- The project is nominally part of the wider WIN Stage 1 project – although the WIN business case specifically excludes this project as it was already approved at the time the WIN business case was developed. This is a key concern as it is much harder to demonstrate that the most cost-effective solution was chosen.
- While the original project funding was approved in RP4A, the project itself had not progressed far (historical expenditure shows a total of approximately \$2.1m (11%) spent in the RP4A period) and was significantly delayed (outlined in the price submission for RP4B). This should have been a further opportunity to consider the project within the wider context of the WIN regional solution, however it was still not assessed within the WIN Business Case.
- The project is required to meet a shortfall in storage (growth related) at Melton RWP to meet 90th percentile conditions – at least 1 gigalitre (GL) of additional storage is required by 2025.
- The project was originally proposed in the price submission for RP4A with completion by 2020-21.
- Progress was delayed by cultural heritage artefacts at proposed storage site at Melton RWP – construction was expected to commence in 2019/20, however no progress updates have been provided. It is noted that the business case talks about the importance of the Cultural Heritage Management Plan (CHMP) and that design would engage early with CHMP issues to manage and minimise risk of delays due to these issues.
- Combined with the proposed interconnector to Bacchus Marsh (project M3 below), WW states that this project helps to offset the need for storage at Bacchus Marsh.
- Options assessment process
 - strategic considerations – reuse, storage or disposal – reuse and storage combination required. Disposal is a short-term option only to July 2022 under the expiring EPA licence.
 - 12 long list storage options developed close to the Melton RWP site (noting there was no consideration of how this storage could be integrated into the WIN project).
 - 3 options shortlisted and assessed using MCA.
 - preferred option was a new iteration of short list options.
 - preferred option has higher capital cost but lower storage cost per megalitre (ML).
- Capital costs
 - business case P50 cost estimate is \$18.5m (November 2017 estimate).
 - business case RP4B allowance is \$14.9m (un-dated amount).
 - RP4B template proposed \$15.14m (\$15.99m total including spending in 2023-24).
 - the 2018 price submission proposed \$17m total.
 - current actual costs were provided by WW as \$0.91m in 2018-19 and \$1.15m in 2019-20 which suggests a total project cost of just over \$18m.
 - the estimated unit rate for the proposed storage volume is \$18.5m for 1,000ML or \$18,500/ML (based on the P50 estimate). WW has provided unconfirmed figures indicating that the volume of the storage can be increased on 1.1GL leading to an adjusted unit rate of \$16,818/ML.
 - based on estimates from the WIN Business Case, the unit rate for future storages at Melton RWP is \$16.6m for 1,000ML or \$16,600/ML.
 - unit rate assumptions for WIN Stage 1 site based storages are \$4.5m for 200ML or \$22,500/ML and \$7.1m for 800ML or \$8,875/ML, giving an average of \$11,600/ML.
 - this could be read to suggest that had the Melton additional storage been incorporated as part of the WIN Stage 1 works, the unit rate for the storage might have been significantly (31-37%) lower.
- Timing
 - EPA licence expires in July 2022, business case states planned commissioning by November 2021, and RP4B submission template states assets operational in 2021-22. However, cost

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profile in submission template and business case has \$5.95m (40%) post-July 2022 implying it is unlikely to be completed in time.

- High risk that discharges post-July 2022 will attract EPA enforcement actions, however no mitigation actions have been identified to manage this.
- WW has stated that works have been prioritised within the Melton RWP Additional Storage project to ensure that flows are managed post-Jul 2022. A program schedule supplied by WW indicates completion of construction in October 2021. This is generally inconsistent with the cost profile in the submission template which indicates that by around October 2021 there would be in excess of 62% of the project budget remaining. In our view it is doubtful that substantial completion of the project (to facilitate the storage of volumes of water) can be achieved with this proportion of the capital expenditure remaining.

4.5.3 Recommendation

A summary of our findings is as follows.

- The original Business Case has not been updated to take account of WIN Stage 1 project – this is considered a lost potential opportunity for an optimal regional solution and in our view should have been considered.
- The WIN Stage 1 works include a proposed onsite storage (1GL in total). No evidence has been provided as to whether this storage (or an augmented version given the significantly lower unit rates) could offset need for the current Melton RWP additional storage or any future storage requirements at the Melton RWP.
- Further work should have been done to investigate the above options. It is noted that work had already commenced on this project so this may not have been feasible, however the current work was significantly delayed so there should have been opportunities for an optimal solution.
- The unit rate for this storage is significantly higher (around 31-37%) than the average unit rate for the similar sized proposed storage associated with WIN Stage 1 project. It is not clear why this is the case.

It is difficult to demonstrate that the most cost-efficient solution has been selected for this project. It is therefore recommended that the proposed expenditure for the Melton RWP additional storage be adjusted to \$11.6m (a reduction of \$3.54m) reflecting the average unit rate for the similar size storages for the WIN Stage 1 works.

4.6 M3 Melton RWP and Bacchus Marsh RWP Interconnection

4.6.1 Project description

With the projected growth in WW's southern region in the catchments of both Melton and Bacchus RWPs, WW has been investigating options for reuse of the additional volumes of recycled water that are becoming available. Given their proximity to each other and the locations of potential recycled water customers, both plants and their reuse schemes have been considered as a single system.

All strategic options that were under consideration relied on an interconnecting pipeline between Bacchus Marsh and Melton RWPs. Under the preferred adaptive pathway – the WIN project – the pipeline will be two-way, with normal operation to deliver water from Melton RWP in a westerly direction towards Parwan/Balliang.

The Board approved the business case in February 2018. Detailed design and approvals have progressed during 2018-19 and construction is expected to commence later in 2019-20.

4.6.2 Analysis

- The project is covered by the RNCA (15 November 2019) – total portfolio expenditure of \$54m (resource balanced).
- The project is part of the WIN Stage 1 project as noted in the business case.
- The project is also identified in Bacchus Marsh Integrated Water Management Plan (IWMP) (undated).
- Bacchus Marsh has no waterway discharge point and must recycle all flows.

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- Current wet weather response involves temporary storage of flows in depressions at RWP site, however this not sustainable in the short or long term.
- Additional demands of 5,500ML and storage of 2,500ML needed by 2038 to maintain compliance.
- The WIN project has potential demands of greater than 5,000ML and potentially up to 12,500 ML per annum, while Bacchus Marsh Irrigation District has potential for additional 2,000ML demand (offsetting river entitlements).
- These demands require a cross-connection between Bacchus Marsh and Melton RWPs and subsequently to WIN Stage 1 area.
- The project was originally proposed in the 2018 price submission but was delayed due to substantial approval requirements.
- Options assessment process:
 - strategic options assessed in Bacchus Marsh IWMP
 - long list options were assessed in the IWMP with four short listed options
 - the preferred option was to set up Parwan/Balliang Irrigation Scheme – led to development of the WIN project and preferred options require an interconnector pipeline between Melton and Bacchus Marsh RWPs
 - six pipeline route options considered with preferred option representing a more expensive option but at a lower risk profile for timely and cost effective delivery as well as lower social impacts (impact on landowners).
- Capital costs:
 - the RP4A price submission proposed \$12.2m.
 - the RP4B price submission proposes \$14.42m.
 - business case proposed P50 of \$19m.
 - actual costs to date were provided by WW with \$0.77m expended in 2018-19 and \$5.22m expended in 2019-20. Combined with the RP4B submission proposal of \$14.42m, this leads to a total cost of \$20.41m.
 - it is noted that the WIN project requires an incremental update to the size of this interconnector with an additional \$7.5m allocated in the WIN Stage 1 project to accommodate this.
- Timing:
 - originally proposed in the RP4A price submission for completion by 2021-22.
 - the current EPA licence expires in July 2022, business case states planned commissioning by November 2021, and RP4B submission template states assets operational in 2022-23. However, the cost profile in the RP4B submission template and business case has \$2.88m (20%) post-July 2022 implying it may not be completed in time.
 - high risk that discharges post-July 2022 will attract EPA enforcement actions, however no mitigation actions have been identified to manage this.
 - WW has stated that works have been prioritised within the project to ensure that flows are managed post-Jul 2022. A program schedule supplied by WW indicates completion of construction in August 2021. This is a little inconsistent with the cost profile in the submission template, which indicates that by around August 2021 there would be in excess of 41% of the project budget remaining.

4.6.3 Recommendation

The project is a critical part of the WIN Stage 1 project and is important in the management of discharges at Bacchus Marsh and Melton RWPs. It requires an additional storage at Melton (or a suitable alternative within the WIN project site).

While we have some remaining concerns over the timing of the work, we are generally supportive of the WIN Stage 1 project and recognise this project's importance in the regional solution. We therefore do not recommend any adjustments to expenditure for this project.

4.7 M5 Gisborne RWP - Stage 1 Bioreactor

4.7.1 Project description

Growth in Gisborne is increasing sewage loads on the existing RWP. Interim works on the existing bioreactor and better flow balancing into the treatment plant have created extra capacity from the existing assets. However, given the ongoing growth in Gisborne, the treatment plant requires a substantial upgrade. The master plan, completed in 2015, recommended a new bioreactor, along with some other new process units.

To support the business case, a concept design for the upgrade is currently underway. The bioreactor will be one component of the upgrade included in the business case.

4.7.2 Analysis

- The project is covered by the Sewage Treatment Augmentation portfolio (SRC) (15 November 2019) – total portfolio expenditure of \$46m (resource balanced). This portfolio covers upgrades to RWPs to treat incoming sewer flows through predominantly growth scenarios (74% of projects).
- This project was identified in the 2016 RWP Master Plan (not received for this review) for Gisborne, which was then reviewed and updated in November 2017 to identify the works required to maintain compliance and levels of service for the preferred option from 2016. It is noted that this project is identified as a growth project in the RP4B submission template but a compliance project in the business case and other documentation.
- The business case states that the 2016 Master Plan identified two stages of work with the first covering works to provide for compliance to 2035 and the second stage to provide for compliance to 2065.
- While two options were identified in the 2016 Master Plan, option 1 is identified as the base case leaving only one additional option for consideration. Given the base case scores zero against all of the criteria in the MCA process, the choice of option 2 is self-evident. This is not generally reflective of a robust options assessment process.
- The capital costs for this project vary across the sources:
 - the 2020 price submission and template \$10.51m (noting a total of \$12.74m)
 - M5 project business case P50 cost of \$12.57m and a RP4B allocation of \$10.37m
 - 2017 Master Plan identifies a total stage 1 cost of \$31.17m (noting these are \$2017 costs)
 - no actual costs to date have been provided.
- Timing:
 - the project business case states that the works are required for completion by June 2024, which is consistent with the proposed capital expenditure profile.
 - the 2017 Master Plan does not clearly suggest the required timing for the works; however, it is suggested that interim works proposed in the 2016 Master Plan would likely delay the Stage 1 works to 2023.

4.7.3 Recommendation

WW has identified the need for this project was clear from the 2016 Master Plan, however this document was not supplied by WW in response to our request for information and the 2017 Master Plan review has an entirely technical focus. However, noting this, the region is experiencing significant growth and it is expected that existing infrastructure requires augmentation to deal with the growth. What is not clear is the required timing of investment; however, we note that the proposed capital expenditure profile identified in the business case is consistent with the RP4B submission and template.

The reasons for differences in capital costs requested between the business case and the 2017 Master Plan is unclear, however the proposed capital costs in the RP4B submission and template appear to be reasonable. We note that interim works were identified to delay the commencement of the major capital works, although the interim works do represent \$7.68m (25%) of the proposed stage 1 total of \$31.17m.

We have not made any adjustment to proposed expenditure for this project.

4.8 M7 SSPS - Sewer Relining Program

4.8.1 Project description

As sewers age they become increasingly susceptible to blockages from tree roots, cracks, infiltration and general debris. Rehabilitation of the sewer extends the life of the asset and increases its capacity.

WW developed a program in 2010 called the SSPS. This program targets actions to prevent sewage spills to minimise unacceptable effects to the environment.

WW has stated that without this program, the capacity and condition of WW's sewers would gradually reduce, the likelihood of spills to the environment would increase and the need for expensive repairs and replacements would rise. An effective sewer management plan optimises investment by reducing the need for complete rehabilitations, instead targeting areas most in need of repair. This program is annual and ongoing - it is constantly reviewed and optimised to enable significant sewer rehabilitation within budget limits.

4.8.2 Analysis

- This program of works is not included in a capital portfolio justification document although it might be expected to appear in such a portfolio given its importance. A preliminary business case dated November 2019 and a business case for SSPS relining and civil works dated February 2019 have been submitted as the primary justification document for this ongoing program of works (the SSPS program has been in place since August 2010).
- The program was commenced as a result of three significant uncontained spills which occurred in the 15 month period between 2009 and March 2010. The third sewer spill in March 2010 resulted in the EPA setting an Enforceable Undertaking to deliver a strategy to minimise sewage spills.
- Further evidence is provided in the preliminary business case of an increasing trend of sewer blockages from 2003 to 2010. While this evidence has some use in demonstrating the link between weather and blockages, the information is more than a decade old and does not reflect the need for the current program of works.
- WW provided some additional information on more recent discharges with evidence showing discharges over the 2010-11 and 2011-12 summer periods, 2012-13 winter period and the 2017-18 first quarter. No discharges were recorded for the 2018-19 year.
- A limited options analysis is outlined in the preliminary business case, however the options assessed are simply the proposed program of works and stopping the entire program, so this analysis provides limited analysis of the program. In this case we would expect the base case to be the most recent historical spend with a concise explanation of why increases are required.
- There is no assessment of the potential impacts of maintaining the historical level of spend on the SSPS program, suggesting that WW does not have a good understanding of the incremental effects of the program. Such analysis would be very useful in optimising the program and demonstrating that the efficiency of the program has been tested.
- WW engaged a consultant to develop a risk prioritisation matrix to guide the identification of proposed expenditure. The matrix lists assets (pipe sections) which are ranked by the reviewed asset structural condition (condition grades 5 or 4) and service condition (rankings 5 to 1) to develop a combined score combination. All pipe sections which have a score combination of 5 and 5 (55), 5 and 4 (54) or 4 and 5 (45) for structural condition and service condition respectively, have been ranked first as critical upgrades.
- For the remaining pipe sections, the risk matrix further identifies a range of assessment criteria based on the consequence (of failure) of a sewer spill which contribute to a total risk score. The consequences scored include sewer flow, proximity to waterways, number of previous blockages and the number of connected properties. The consequence scores for these criteria are combined to give a total score which determines the priority ranking of the pipe section. All of the pipe sections in the risk matrix have a structural condition of 5 or 4 (representing a high likelihood of failure).
- The risk matrix provides an asset ranking based on the total score for each pipe section from 1 to 1227 representing the total number of pipe sections assessed. All pipe sections are scheduled for renewal within RP4A and RP4B. The lowest ranked pipe sections scheduled have a total score of 0 while the highest ranked sections have a total score of 27.

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- Expenditure in 2018-19 and 2019-20 focussed on the critical upgrades and the highest consequence items with subsequent years (the RP4B submission period) progressively responding to the high, medium and lower consequence pipe sections (noting again that all pipe sections have a high likelihood of failure (structural condition 5 or 4)).
- Capital costs:
 - RP4B submission suggests \$8.11m. However, the template indicates \$7.3m (it is understood that this differential may be related to errors in the submission template).
 - preliminary business case (November 2019) seeks \$7.2m for the period 2021-2023.
 - the business case (February 2019) identifies a P50 estimate of \$15.8m for period July 2018 to June 2023 including \$8.6m for the RP4B period.
 - these capital costs only include the relining of pipes that have been identified from previous CCTV work. Works that appear to be excluded from the RP4B submission request include:
 - inflow and infiltration related works.
 - transfer sewage pipeline renewals.
 - renewals identified from ongoing CCTV works – this has been stated as being up to \$1.3m per year (over 50% of the proposed annual expenditure on the program and almost as much as the historical average annual expenditure).
 - WW clarified that the works identified for renewal from CCTV would be assessed and ranked within the current risk matrix to determine if their scoring is sufficient to become part of the renewal program. Using the risk matrix as a rolling priority matrix is a robust method however we are concerned that the volume of work from the CCTV program would overwhelm the risk matrix given its value is around 50% of the average annual proposed expenditure.
 - we are therefore concerned that WW is asking for a lower amount now, but may end up significantly exceeding the budget and seeking to recover this additional expenditure on reconciliation of actual expenditure for the next price review. Nevertheless, this scenario is not offered as evidence of the need for an increased program of works.
- Historical capital expenditure details for the program were not provided by WW, although commentary on the historical performance of achieving close to budget in other programs was used as evidence to suggest that actual expenditure would be close to budget. In this case the historical budgets are not a good indicator for proposed expenditure as WW appears to be proposing a 79% increase in average annual spend from around \$1.4m per year (from the RP4B submission template) to \$2.5m per year.

4.8.3 Recommendation

The development of a risk matrix prioritising identified pipe sections is a good process; however, the separation of likelihood and consequence is less so.

Risk is always a combination of the two components and a true risk prioritisation matrix should reflect this. An efficient program will focus not just on the highest likelihood. This is exemplified by the risk matrix where the pipe sections identified for critical upgrade have significantly variant asset rankings, from a rank of 12, which is high to a rank of 1,207 (out of a total of 1,227 items). The non-critical pipe sections which rank either side of the critical upgrade, that is, ranks 1,206 and 1,208 have total scores of 3 and 2 respectively. Pipe sections which score this low should probably be considered as discretionary items which might be replaced using a cost benefit analysis rather than on a low risk ranking.

Overall, WW has not presented a compelling argument for a 79% increase in average annual expenditure. While it is noted that a prioritised list of actual pipe sections has been developed, we have some concerns over the application of this matrix and ignoring the scoring system to prioritise pipe sections based on one component of risk. The lack of historical actual expenditure also provides little comfort that proposed expenditure can be delivered.

Given our concerns with the lack of justification for the increase, a reduction in the proposed increase in expenditure is appropriate. We have included only half the requested increase in expenditure over the historical expenditure levels:

- RP4A budget average annual expenditure was \$1.4m
- RP4B proposed average annual expenditure is \$2.5m

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- the recommended average annual expenditure is therefore \$1.95m.

This recommended average expenditure results in a RP4B allocation of \$5.85m, a reduction of \$1.45m from the proposed total expenditure identified in the RP4B submission template of \$7.3m.

4.9 Recommendation summary

Five of WW's major projects were reviewed for prudence and efficiency. In conducting our review, we have observed that:

- business cases for the selected major projects were documents used in the 2018 capital submission with outdated costs and timing
- business cases included few details demonstrating the need for (prudence of) the investment
- costs identified in the business cases (nominated P50 costs) supplied were typically significantly higher than what is included in the RP4B submission
- limited information on actual expenditure to date was provided for the existing projects, in particular the SSPS program of works where the use of historical expenditure is an important factor in assessing the need for significant increases in expenditure
- specifically identified documents requested were provided; however, general requests for supporting information were not fulfilled leading to multiple information requests
- three key projects (M1, M2 and M3) are based on delivery before July 2022 when a temporary EPA licence expires, however despite updated schedules indicating delivery of key infrastructure prior to this date, the cost profiles within the RP4B submission template are not consistent with these schedules.

We have made the following adjustments to WW's proposed capital program:

- proposed expenditure for the Melton RWP additional storage is reduced to \$11.6m (a reduction of \$3.54m) reflecting the average unit rate for the similar size storages for the WIN Stage 1 works, from which this project was excluded for consideration
- proposed expenditure for the SSPS program is reduced from the RP4B submission template allowance of \$7.3m to \$5.85m, a reduction of \$1.45m, given the lack of robust justification for the proposed 79% increase in average annual expenditure.

Table 4.1: WW forecast capital expenditure and recommended adjustments (\$m)

| Project/program Name | 2020-21 | 2021-22 | 2022-23 | Total | |
|---|--------------|--------------|--------------|---------------|-------|
| | \$m | \$m | \$m | \$m | |
| M1 Parwan-Balliang Irrigation District Network | Proposed | 2.53 | 6.82 | 8.38 | 17.73 |
| | Recommended | 2.53 | 6.82 | 8.38 | 17.73 |
| | Net Change | 0.00 | 0.00 | 0.00 | 0.00 |
| M2 Melton RWP Additional on-site recycled water storage Stage 1 | Proposed | 4.18 | 5.86 | 5.10 | 15.14 |
| | Recommended | 3.00 | 4.68 | 3.92 | 11.60 |
| | Net Change | -1.18 | -1.18 | -1.18 | -3.54 |
| M3 Melton RWP and Bacchus Marsh RWP Interconnection | Proposed | 4.81 | 6.73 | 2.88 | 14.42 |
| | Recommended | 4.81 | 6.73 | 2.88 | 14.42 |
| | Net Change | 0.00 | 0.00 | 0.00 | 0.00 |
| M5 Gisborne RWP - Stage 1 Bioreactor | Proposed | 0.84 | 4.81 | 4.85 | 10.51 |
| | Recommended | 0.84 | 4.81 | 4.85 | 10.51 |
| | Net Change | 0.00 | 0.00 | 0.00 | 0.00 |
| M7 SSPS - Sewer Relining Program | Proposed | 2.62 | 2.43 | 2.25 | 7.30 |
| | Recommended | 2.10 | 1.95 | 1.80 | 5.85 |
| | Net Change | -0.52 | -0.48 | -0.45 | -1.45 |
| Total proposed (Reviewed) | 14.98 | 26.65 | 23.46 | 65.1 | |
| Recommended capex (Reviewed) | 13.28 | 24.99 | 21.83 | 60.11 | |
| Recommended adjustments from proposed | 1.7 | 1.66 | 1.63 | 4.99 | |
| Total proposed | 90.84 | 94.19 | 98.75 | 283.78 | |
| Recommended capex | 89.14 | 92.53 | 97.12 | 278.79 | |

Source: Arup and Deloitte Access Economics.

Limitation of our work

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