

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

February 2018

Contents

Executive Summary	2
1 Introduction	4
1.1 Introduction	4
1.2 PREMO framework	4
1.3 Scope of review	4
1.4 Overview of approach	5
1.4.1 Operating expenditure	5
1.4.2 Capital expenditure	5
1.5 Process for review	6
1.6 Structure of this report	7
2 Summary of Wannon Water’s forecast	8
2.1 PREMO rating	8
2.2 Key drivers of expenditure	8
2.2.1 Community expectations and service standards	8
2.2.2 Demand for services	8
2.2.3 New obligations	8
2.2.4 Other drivers	8
2.3 Operating expenditure	8
2.3.1 Overview	8
2.3.2 Controllable opex forecast	9
2.4 Capital expenditure	9
2.4.1 Overview	9
2.4.2 Capex forecast	9
3 Assessment of opex	11
3.1 Overview of approach	11
3.2 Errors and adjustments to the submitted template	13
3.3 Assessment of baseline expenditure	13
3.4 Benchmarking opex to other water businesses	13
3.5 Individual opex items	15
3.5.1 Labour	15
3.5.2 Electricity and carbon neutrality program	17
3.5.3 Operating projects	21
3.5.4 Opex from new capex	21
3.5.5 IT Licence Costs	22
3.5.6 Water for Community Program	23
3.5.7 Other opex items	23
3.6 Recommended changes to forecast opex	24
4 Assessment of capex	25

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4.1	Our approach to the assessment of capex	25
4.2	Overall assessment of capital planning and asset management	26
4.2.1	Previous Review of Expenditure 2012/13	26
4.2.2	Improvements over 2012/13 to 2017/18	26
4.2.3	Comments	27
4.3	Major projects	28
4.4	Renewals expenditure	29
4.4.1	Analysis	31
4.4.2	Recommendation	34
4.5	Warrnambool WRP - Plant Augmentation	34
4.5.1	Analysis	36
4.5.2	Recommendation	36
4.6	Warrnambool – Wollaston Rd Water Tower and WPS	37
4.6.1	Analysis	38
4.6.2	Recommendation	39
4.7	Warrnambool – Wangoom Rd Water Tower and WPS	39
4.7.1	Analysis	40
4.7.2	Recommendation	41
4.8	Summary of recommendations	41
	Limitation of our work	43
	General use restriction	43

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Figures

Figure 0-1 Change in controllable opex per connection – index	2
Figure 2-1 Controllable opex – Wannon Water (\$2017-18).....	9
Figure 2-2 Capex forecast – Wannon Water	10
Figure 3-1 Example of adjustments to baseline expenditure in ESC template	12
Figure 3-2 Change in controllable opex per connection – index	14
Figure 3-3 Annual change in expected revenue (smoothed, real \$2017-18)	19
Figure 3-4 Wholesale electricity prices and electricity futures in Victoria ...	20
Figure 4-1 Proposed renewals program and comparison of current and future regulatory periods	30

Tables

Table 3-1 Comparison of Victorian water businesses’ change in controllable opex	14
Table 3-2 Comparison of labour forecast for RP4 of the Victorian water businesses	15
Table 3-3 Comparison of energy forecast for RP4 of the Victorian water businesses	18
Table 3-4 Wannon Water forecast controllable opex and recommended adjustments.....	24
Table 4-1 Wannon Water forecast capex for Top 10 Projects	28
Table 4-2 Breakdown of Proposed Renewals by Asset Category	31
Table 4-3 Proportion of Expenditure Allocated to Specified Vs Unspecified Renewals over 2018-19 to 2022-23	33
Table 4-4 Wannon Water forecast capex	41

Executive Summary

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

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

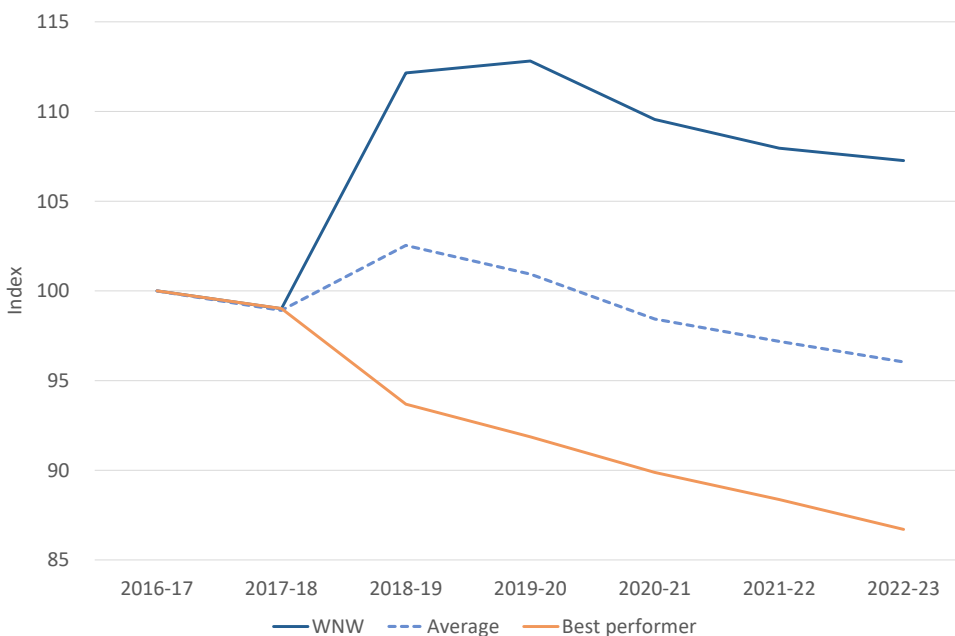
Operating expenditure (opex)

The key features of Wannon Water's opex forecast include:

- A baseline controllable opex in 2016-17 of \$35.61m, which is significantly less than the 2013 forecast for 2016-17 (\$43.62m)
- A forecast average customer growth rate of 0.8% per annum
- A cost efficiency improvement rate of 1% per annum
- \$25.41m of additional expenditure above the baseline, which is the highest of any other Victorian regional water business
- An increase in controllable opex per connection of 1.8% per annum over the RP4 period, after factoring in the additional expenditure. Wannon Water is one of only two businesses to forecast an increase in opex per connection by the end of RP4 relative to the baseline year.

The chart below shows that Wannon Water is forecasting opex increases that are well above the average for regional businesses.

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



We have recommended a reduction of **\$16.52m** to Wannon Water's RP4 forecast controllable opex, with the most significant cuts relating to labour (\$9.18m), electricity (\$3.21m), opex from new capex

(\$1.02m) and the Water for Community program (\$1.64m). The key reasons for these recommendations are outlined in Chapter 3.

Capital expenditure (capex)

Wannon Water's proposed net capex is increasing by 60.7% for the RP4 period over RP3. Key aspects of the capex forecast include:

- A large hump in 2019-20 and 2020-21 which is principally due to one major project, namely the Warrnambool WRP upgrade to service growth (residential and industrial) and to accommodate increases in trade waste volumes.
- A large increase (57.2%) in renewals expenditure with renewals representing 43.9% of total capital expenditure.

We have recommended a reduction of **\$18.23m** to Wannon Water's RP4 forecast capex program due to insufficient and unclear justifications provided for the increase. This includes:

- Removal of the Wollaston Road Water Tower and Pump Station project (\$2.55m) but leaving \$0.13m to develop a robust business case
- Removal of the Wangoom Road Water Tower and Pump Station project (\$4.33m) but leaving \$0.22m to develop a robust business case
- The total renewals program (excluding Corporate renewals) forecast is recommended to be reduced by \$11.69m as the proposed increases have not been sufficiently or clearly justified.

The key reasons for these recommendations are outlined in Chapter 4.

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1 Introduction

1.1 Introduction

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

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

1.2 PREMO framework

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

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

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

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

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

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

1.3 Scope of review

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

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

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

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

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

1.4 Overview of approach

1.4.1 Operating expenditure

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

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

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

1.4.2 Capital expenditure

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

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

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

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

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

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

1.5 Process for review

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

- Initial planning and workshop with the ESC
- An initial review of price submissions, financial model templates and associated documentation
- Benchmarking of water business submissions in relation to overall opex and capex and individual expenditure items
- A further workshop with ESC staff to identify and discuss key issues for the focus of the review
- Preparation of queries/areas for discussion which was subsequently provided to each water business prior to site visits
- A site visit of each water business with the key objective to discuss queries and gather information as required. Wannon Water's site visit was undertaken on 12 December 2017
- Detailed review and analysis of supporting information provided
- A Draft Report was prepared and provided to Wannon Water for comment.
- A Final Report (this report) was provided to the ESC to inform the draft price determinations.

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

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

1.6 Structure of this report

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

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

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

2 Summary of Wannon Water's forecast

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

2.1 PREMO rating

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

2.2 Key drivers of expenditure

2.2.1 Community expectations and service standards

Wannon Water has 42,766 customers and have advised that it had 3,000 instances of engagement with its customers and community with respect to its price submission. As a result of its customer consultation, Wannon Water is proposing to:

- Improve water quality taste, smell and/or hardness. It is intended in RP4 to consult further with communities and develop investment plans and plan and scope infrastructure solutions
- Implement a 'Water for Community' program
- Improve customer service options (more contemporary modes)
- Modify two GSLs and introduce a new GSL, however there is no additional opex associated with this change.
- Maintain current levels of service
- Maintain tariffs at with CPI only increases for all residential customers.

2.2.2 Demand for services

Demand for services is increasing. This is as a result of customer growth which is 0.8% per annum over RP4 (based on *Victoria in Future 2015* population forecasts) and accounting for expansion plans of major customers and a water use efficiency factor for new customers.

New capex is being proposed to meet increasing demand from customer growth and, as a result, there is new opex associated with this. A key example of this is the upgrade to the Warrnambool Water Reclamation Plant (WRP) where Wannon Water has forecast an additional \$0.91m in the last two years of RP4 to deal with this.

2.2.3 New obligations

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

2.2.4 Other drivers

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

- Market forces impacting electricity tariffs
- Rising software maintenance and licence costs
- The 2016 Enterprise Agreement, which includes wage increases above assumed CPI
- One-off project related expenditure (termed 'operating projects')
- Increasing insurance premiums following asset revaluation

2.3 Operating expenditure

2.3.1 Overview

The key features of Wannon Water's opex forecast include:

- Baseline controllable opex in 2016-17 of \$35.61m, which is significantly less than the 2013 forecast for 2016-17 (\$43.62m)
- A forecast average customer growth rate of 0.8% per annum

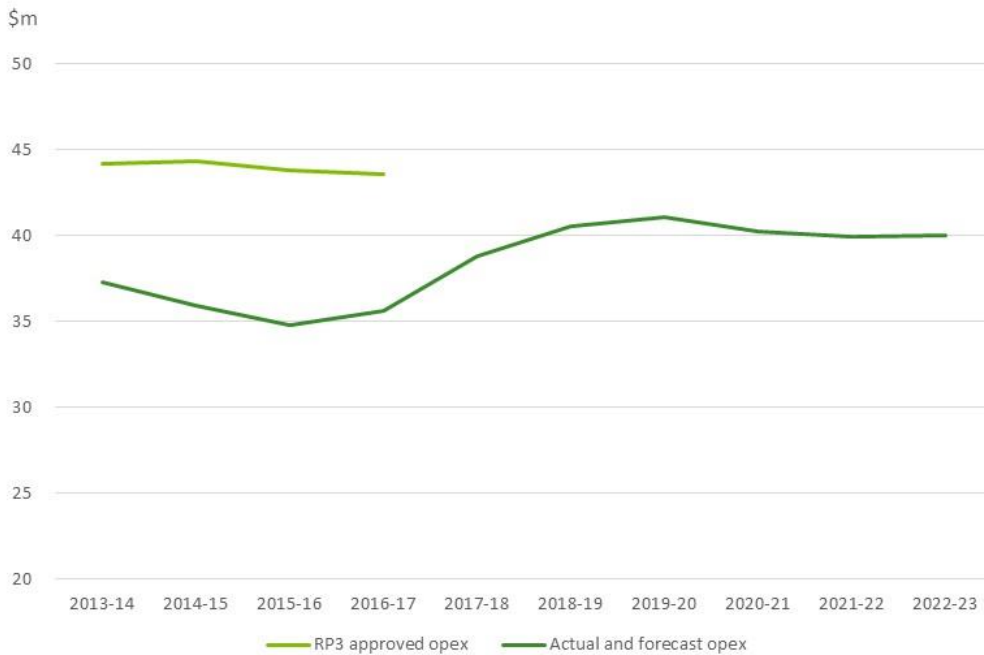
- A cost efficiency improvement rate of 1% per annum
 - \$25.41m of additional expenditure above the baseline (total for RP4)
 - An increase in controllable opex per connection of 1.8% per annum over the RP4 period.
- Wannon Water is one of only two businesses to forecast an increase opex per connection by the end of RP4 relative to the 2016-17 base year.

2.3.2 Controllable opex forecast

The chart below shows Wannon Water’s total controllable opex across RP3 and RP4. Wannon Water recorded a significant expenditure reduction in 2014-15 and 2015-16 resulting in opex that was well below forecast and was the largest of the regional businesses as a proportion of opex. Following this, there is a steady increase in opex from 2016-17 to 2019-20 before remaining relatively constant for the rest of RP4.

Wannon Water’s opex increase is the net effect of a cost efficiency improvement rate of 1.0%, a customer growth rate of 0.8%, and \$25.4m of opex above the baseline (total for the 5 years). This results in an average increase of 1.8% per annum in opex per connection for RP4.

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



2.4 Capital expenditure

2.4.1 Overview

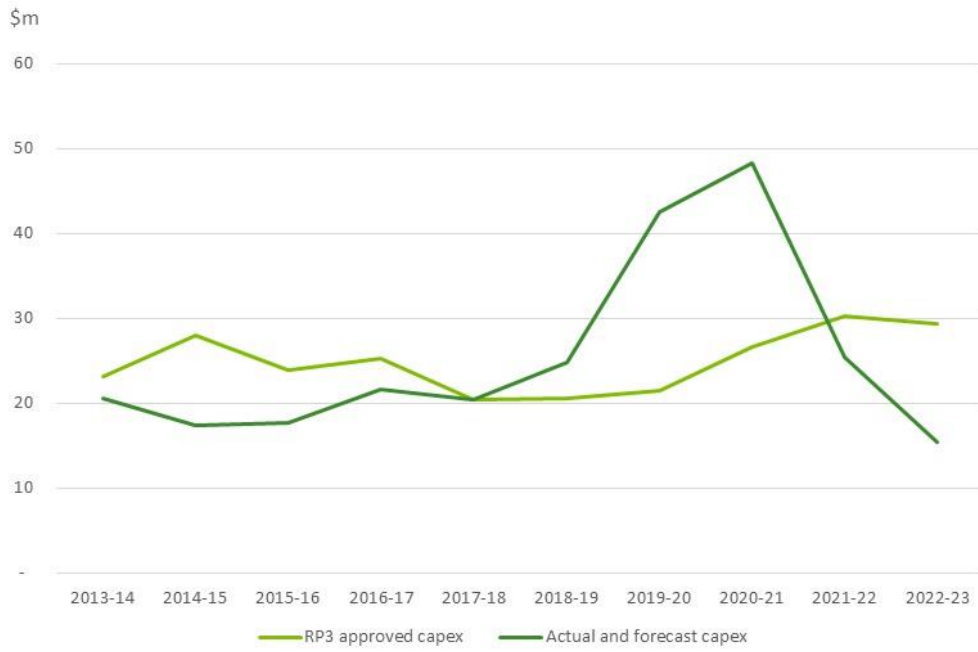
Wannon Water’s proposed net capex is increasing by 60.7% for the RP4 period over RP3. Key aspects of the capex forecast include:

- There is a large hump in 2019-20 and 2020-21 which is principally due to one major project namely the Warrnambool WRP upgrade to service growth (residential and industrial) and increases in trade waste volumes.
- Wannon Water has forecast a large increase (42.2%) in renewals (excluding corporate) expenditure with renewals representing 43.9% of the total capital expenditure.

2.4.2 Capex forecast

Wannon Water’s actual and forecast water and sewerage capex is shown in Figure 2-2. Total net capex for RP4 is forecast to be \$156.53m which represents a 60.7% change on RP3 actual net expenditure of \$92m. The key drivers of capex are the Warrnambool WRP project and an increase in renewals expenditure.

Figure 2-2 Capex forecast – Wannon Water



3 Assessment of opex

This chapter assesses Wannon Water's forecast opex.

3.1 Overview of approach

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3.2 Errors and adjustments to the submitted template

Wannon Water resubmitted its template to the ESC for the purpose of minor reconciliations to the 2016-17 Regulatory Accounts and to provide more detail in regards to tariffs. This did not result in any changes to proposed opex.

3.3 Assessment of baseline expenditure

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

Wannon Water's actual total controllable expenditure was \$36.31m in 2016-17. Wannon Water has made a net downward adjustment to its baseline of \$0.7m. This is due mostly to consultant expenditure on capital projects that had incurred in the years prior to 2016-17, but which was written off as an operating expense (i.e. not capitalised) as projects did not proceed.

In its 2013 price review, the ESC set a benchmark of \$43.62m for 2016-17 (\$2017-18). Wannon Water's baseline expenditure is significantly lower than this benchmark, and has been achieved by introducing efficiency measures as part of the Government's Fairer Water Bills initiative – which resulted in a \$70 rebate to residential customer bills from 2014-15 to 2017-18.

We have assessed Wannon Water's 2016-17 adjusted baseline and we believe that it reflects an efficient baseline and that no further adjustment is necessary.

3.4 Benchmarking opex to other water businesses

A key component of our methodology is to benchmark the opex outcomes of the water businesses. Figure 3-2 below compares the regional urban water businesses change in controllable opex per connection over RP4. This figure below shows that Wannon Water (WNW in the chart) is forecasting opex increases that are well above the average for regional businesses.

Table 3-1 compares all of the Victorian water businesses and shows that Wannon Water is forecasting an average 1.8% per annum increase in opex per connection for RP4. This results in opex per connection being 7% higher in 2022-23 than in 2016-17. Only one other regional business has forecast an increase in opex per connection in 2022-23 (compared to 2016-17).

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

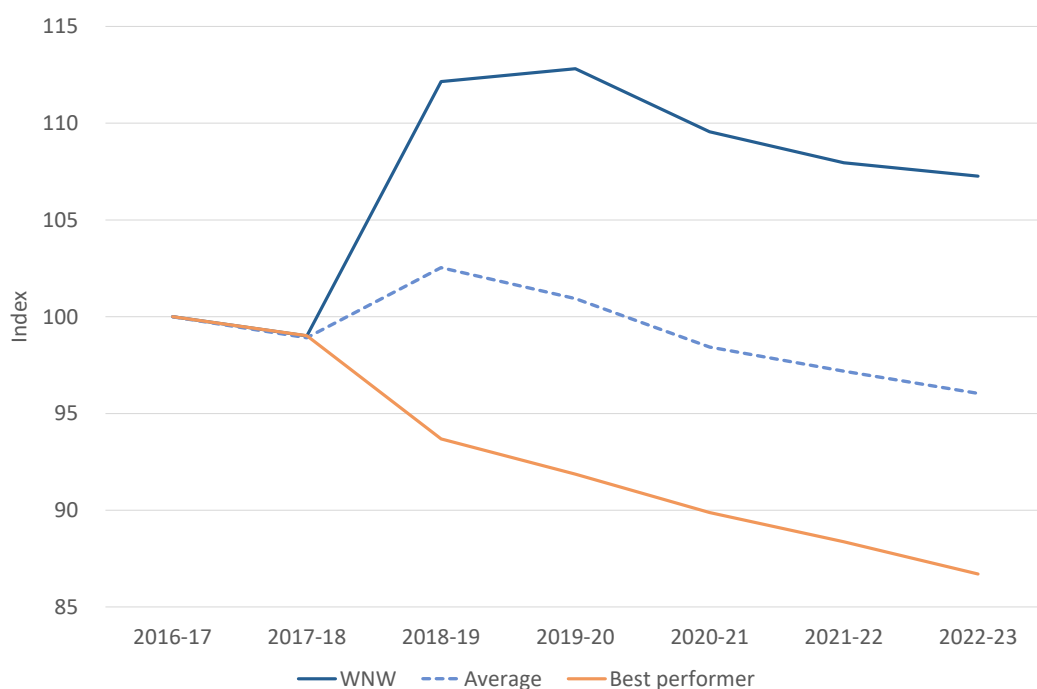


Table 3-1 Comparison of Victorian water businesses’ change in controllable opex

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

Water business	Efficiency target	Growth rate (% per annum)	Forecast variations to baseline	Reduction in controllable opex per connection
	(avg. % per annum)		(total RP4 \$m)	(avg. % per annum)
Gippsland	1.0%	1.2%	16.78	-0.2%
Wannon	1.0%	0.8%	25.41	-1.8%

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

3.5 Individual opex items

Wannon Water has identified \$25.41m of forecast variations to baseline expenditure in total for RP4. Key items to be reviewed as part of that increase include:

- Labour (\$11.85m)
- Electricity (\$4.73m net increase)
- Operating projects (\$2.42m)
- Opex from new capex projects (\$1.7m)
- IT Licence costs (\$1.66m)
- Water for community program (\$1.64m)
- Other opex items (\$1.41m)

These items are explored further below.

3.5.1 Labour

Wannon Water has forecast labour cost increases above the baseline of \$11.85m over RP4. This can be broken down into:

- \$9.18m as a result of its 2016 Enterprise Agreement (EA) which took effect in December 2016 and includes wage increases of 3.25% per year (nominal) until 2019-20 (when the EBA expires in September 2020). A 3% wage increase was assumed for the final two years of RP4.
- \$2.67m for filling vacant positions beginning in 2017-18. Filling these positions added \$500,000 to Wannon Water's labour costs in that year. There was a 3.5 FTE increase in 2017-18.

A comparison of Wannon Water's labour forecast to other water businesses shows that Wannon Water is forecasting the highest labour increase of all the water businesses for RP4. Wannon Water's forecast variation represents 5.9% of its total controllable opex.

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

Water business	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Labour variations as a % of total controllable opex
Wannon	11.85	201.8	5.9%
Gippsland	10.59	364.2	2.9%
Goulburn Valley	5.90	220.2	2.7%
North East	3.62	196.6	1.8%
GWMWater	2.85	161.1	1.8%
Barwon	7.90	453.3	1.7%

Water business	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Labour variations as a % of total controllable opex
Central Highlands	3.80	266.0	1.4%
East Gippsland	0.32	90.4	0.4%
South Gippsland	0.12	95.8	0.1%
City West	-	534.7	0.0%
South East	-	622.6	0.0%
Yarra Valley	-	674.4	0.0%
Coliban	-	301.3	0.0%
Westernport	-	66.5	0.0%
Lower Murray – urban	- 0.37	103.2	-0.4%

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

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

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

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

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

In assessing Wannon Water's \$9.18m labour cost increases as a result of its EA we note:

- Wannon Water has the equal highest wage rate increase (of all the water businesses) of 3.25% per annum (nominal) up to 30 September 2020. We note that across the economy

more broadly, average wage increases are currently at or below CPI. Wannon Water is well above CPI.

- Of the regional water businesses, Wannon Water has the third lowest labour costs per FTE in 2016-17. With Wannon Water's labour forecast, it will have the fifth lowest by 2022-23.
- Although all Victorian water businesses are experiencing an increase in labour costs as a result of wage increases above CPI, Wannon Water is one of seven water businesses to propose material labour cost increases above the baseline. Of the remaining eight businesses, two businesses have proposed relatively minor increases while six businesses have not proposed any increases.
- Wannon Water has identified a number of cost efficiencies and service delivery improvements in its overall proposal. However we also note that:
 - Wannon Water efficiency target of 1% per annum is the equal lowest of the water businesses
 - Wannon Water's increases in opex per connection across RP4 are the highest of all the water businesses.
- Wannon Water has not provided any information that would suggest that it is not able to manage its wage increases (either through direct productivity improvements or offsetting efficiencies elsewhere in the business) in the same way that most other businesses have.

Therefore, we are of the view that wage increases should not be included as additional expenditure in Wannon Water's forecast. These adjustments are outlined in Table 3-4.

In assessing Wannon Water's \$2.67m of increased labour costs from new FTEs, we note that:

- The 3.5 FTE increase occurs in 2017-18. There is no further FTE increase for RP4.
- These 3.5 FTEs were the net result of filling vacant positions and a business restructure with new positions created.
- In addition to the 3.5 FTEs in 2017-18, there was also an increase of 17 FTEs in 2016-17.
- Although Wannon Water experienced this large increase, we note that FTEs in 2015-16 were much lower than historical FTEs.
- Wannon Water's vacancy rate (i.e. number of vacancies to total positions outlined in the org structure) was abnormally high in 2015-16 at 6.7%. This reduced to 1.8% in 2016-17 and returned to 2.9% in 2017-18.

We have considered Wannon Water's labour expenditure as a result of the additional FTEs in 2017-18. Given FTEs are relatively consistent with historical FTEs, we do not recommend any adjustment to expenditure.

3.5.2 Electricity and carbon neutrality program

Wannon Water has forecast expenditure for electricity and its Carbon Neutrality Action Plan (CNAP) to increase by \$5.08m in RP4 compared to the 2016-17 baseline. This is made up of a number of components, including:

- **Price of electricity:** \$5.59m increase due to retail electricity price increases greater than CPI
- **Consumption increase:**
 - \$0.24m increase due to electricity consumption from Warrnambool WRP upgrade
 - \$0.09m increase due to small capital projects
- **Carbon Neutrality Action Plan**
 - \$1.05m decrease due to a reduction in electricity consumption from renewable energy projects including solar PV projects and a wind energy project at Portland
 - \$0.14m decrease due to a reduction in consumption from efficiency projects at the Warrnambool WRP as part of the carbon neutrality project
 - \$0.35m increase in new operating costs to implement the CNAP

A comparison of Wannon Water's energy forecast to other water businesses shows that Wannon Water is forecasting the highest proportional energy cost increase of all the water businesses for RP4 with its forecast variations representing 2.5% of its total controllable opex.

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

Water business	Energy costs as a % of 2016-17 controllable opex (\$m)	Forecast variations to baseline opex (total RP4 \$m)	Total controllable opex (total RP4 \$m)	Energy variations as a % of total controllable opex
Wannon	7.6%	5.1	201.8	2.5%
Central Highlands	7.4%	5.5	266.0	2.1%
Coliban	6.6%	5.5	301.3	1.8%
Gippsland	4.7%	6.2	364.2	1.7%
Lower Murray – urban	8.3%	1.6	103.2	1.6%
Barwon	4.7%	5.0	453.3	1.1%
Goulburn Valley	9.6%	1.7	220.2	0.8%
North East	10.1%	1.3	196.6	0.7%
City West	1.5%	3.0	534.7	0.6%
GWMWater	7.9%	0.8	161.1	0.5%
South Gippsland	4.5%	0.2	95.8	0.2%
East Gippsland	5.1%	0.1	90.4	0.1%
South East	3.3%	-	622.6	0.0%
Yarra Valley	4.0%	-	674.4	0.0%
Westernport	4.2%	-	66.5	0.0%

Each of the proposed energy expenditure items are addressed in turn below.

Price of electricity

With respect to price increases for the purchase of electricity:

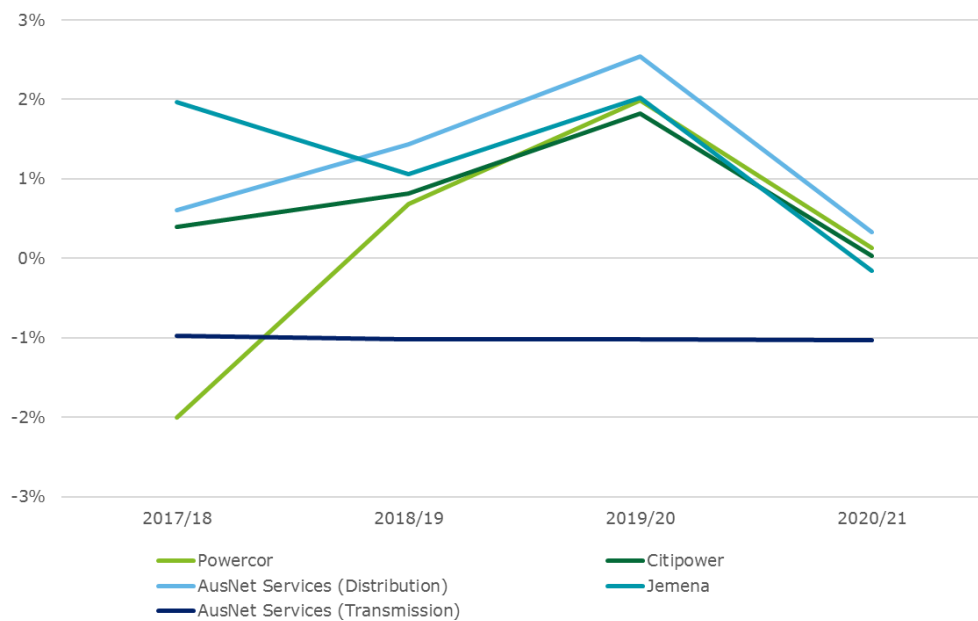
- Wannon Water’s current agreement for the sale of electricity ends on 30 June 2018. This agreement includes increases effective from 1 July 2017 for peak and off-peak charges of 6.58% and 3.41% respectively.
- Wannon Water’s retail electricity price forecast for RP4 is based on an indicative tariff for peak and off-peak electricity from Procurement Australia for 2018-19 and 2019-20 received in June 2017. The price from 2019-20 is assumed to continue for the remainder of RP4 with no real price changes. We note that Wannon Water received updated pricing in August 2017 (which was higher than June 2017 prices) however the lower indicative price for June 2017 has been used.
- Wannon Water also gave consideration to VicWater’s Supply Chain Excellence Program 5-Year Electricity Price Forecast Report June 2017 which provides retail electricity price forecasts for the Victorian Water Corporations. This report estimated a significant increase in retail electricity prices in 2017, followed by relatively flat prices in real terms under the base case scenario, and real decreases under policy change scenarios.
- In comparison to the other regional urban businesses we reviewed, Wannon Water’s proposed changes to energy costs (including the CNAP) from the 2016-17 baseline are the highest at around 2.5% of controllable opex.
- Six out of the 15 Victorian water businesses that provided submissions proposed either zero or negligible increases in energy costs above the baseline.

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

the potential entry and exit of generation capacity. This makes it difficult to accurately forecast electricity prices for the purposes of the price submission.

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

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



Source: Deloitte analysis of AER decisions

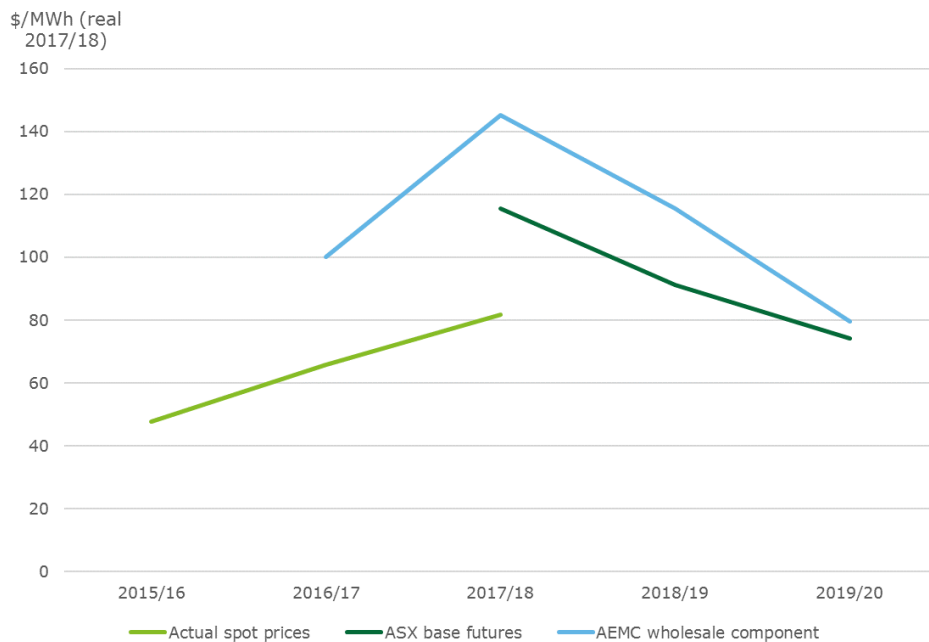
Overall, the revenue allowances for the network business is relatively flat, with small real increases for most of the DNSPs, and a small real decrease for AusNet Services Transmission. Wannon Water is in the Powercor network, which has small real revenue increases from 2018-19 onwards (less than 1%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

Wholesale prices are harder to forecast accurately, with a wide range of forecasts produced by different bodies over the past year. The Australian Energy Market Commission (AEMC) recently published a wholesale electricity price forecast (including spot prices, hedging, ancillary services and market fees) in its annual report on residential electricity price trends, based on analysis prepared by Frontier Economics.² It forecasts wholesale prices to peak in 2017-18, before decreasing, falling below the real 2016-17 price by 2019-20. This forecast movement in wholesale electricity prices is broadly in line with the price of Victorian ASX base energy futures which are approximately \$115 for the remainder of 2017-18, decreasing to \$74.2 by 2019-20. These values are presented in Figure 3-4, along with actual average spot prices up to December 31 2018.

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

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

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



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

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

In reviewing Wannon Water’s proposal, we have considered the evidence provided by Wannon Water, and recent forecasts of network and wholesale price movements. We consider that Wannon Water’s proposed electricity price increases for 2018-19 and 2019-20 (which reflect a price increase of approximately 40-45% on 2016-17 prices) are reasonable, and our preliminary recommendation is that these be approved, subject to updated contract offers before the final decision. However, we do not consider there is strong evidence that electricity prices will remain above 2016-17 prices in real terms beyond 2019-20. We recommend that the adjustment above the baseline from 2020-21 for the remainder of RP4 should not be approved. This results in a reduction of \$3.2m in total for RP4 from Wannon Water’s proposal. We note that the ESC intends to make a decision on allowable energy cost increases using updated contract offers post the finalisation of our reports. Therefore, our recommendations are indicative only.

Consumption increase due to new capex

Wannon Water has proposed two additions to the baseline for electricity from new capital projects, including the Warrnambool WRP and some smaller projects.

The Warrnambool WRP is a growth related project, however we consider that it presents a significant step change in electricity consumption requirements, which can reasonably be considered additional to the growth adjusted baseline. With respect to the electricity for other small projects, we consider that these should be managed within the growth-adjusted baseline. Wannon Water has not provided strong evidence that these costs reflect significant changes that exceed the growth allowance. We note that

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

other regional water businesses would face similar increases in electricity consumption from capex items but the majority have not sought this expenditure in addition to baseline expenditure. We therefore recommend a reduction in opex of \$0.09m to remove this expenditure.

Carbon Neutrality Action Plan

As outlined above, Wannon Water has proposed several adjustments to the baseline as part of the CNAP will have very limited impact on costs overall. We consider that these adjustments should be viewed collectively, along with the \$2.1m of capex that Wannon Water proposed for renewable energy generation that provides a significant proportion of the electricity savings.

Based on the costs and savings provided by Wannon Water, we estimate the CNAP will provide a small saving overall. Wannon Water appears to have community support to reduce emissions, as long as there is little to no cost passed on to customers. Therefore we consider these adjustments to be prudent and efficient. Wannon Water has argued that any recommended changes to opex based on electricity prices should be reflected consistently in the proposed negative variations to the baseline due to consumption reductions. We consider this reasonable, and recommend an upwards adjustment of \$0.36m to opex to account for this.

3.5.3 Operating projects

Operating projects are once-off opex items (they have a defined start and end date). Items are varied and include; desludging lagoons, CCTV sewer scans, condition assessments, strategy development and other maintenance projects. Wannon Water has forecast a total of \$9.63m in operating projects for RP4 (an average of \$1.93m per year). This represents a total increase for RP4 of \$2.42m over the baseline year (which was \$1.46m in 2016-17).

We note that additional expenditure of \$2.13 million is required to desludge sewer lagoons in RP4 (mostly incurred in the first three years). The majority of these desludging projects were deferred expenditure and were considered an efficiency gain as part of the Government's Fairer Water Bills initiative. We consider that desludging is a necessary activity that was not undertaken in the baseline year and that there is now a backlog of desludging activity due to the deferral of these projects. It therefore represents a prudent and efficient cost in addition to baseline expenditure.

With respect to the remaining \$0.29m above the baseline, Wannon Water has advised that the key programs that are driving the increase above the baseline are CCTV, non-revenue water leakage detection and repair and lagoon remediation works. As these key projects don't directly relate to a new obligation and represent a cost that can be reasonably be managed by the business, we don't consider there is sufficient justification for expenditure on operating projects above the baseline year. We consider Wannon Water should be able to manage these projects within the normal ebb and flow of opex spending.

We therefore recommend a \$0.29m reduction in forecast opex over RP4. This reduction has been spread equally over the first three years of RP4 (given operating projects in the last two years are forecast as below baseline expenditure). These adjustments are outlined in Table 3-4.

3.5.4 Opex from new capex

Wannon Water has forecast a total of \$1.7m in opex from new capex projects (excluding electricity which is discussed above). This expenditure is made up of two major projects and a range of smaller projects:

- \$0.68m is for additional maintenance activities, chemical use and transport for the Warrnambool Water Reclamation Plant (WRP).
- \$0.43m for biosolids management. This expense is made up of the additional costs in transporting current and additional volumes of Port Fairy's biosolids to the new facility in Hamilton as well as transporting Warrnambool's biosolids to Hamilton (for two years 2019 and 2020 while works are being completed at the Camperdown facility).
- \$0.59m for additional maintenance activities and chemical use for other projects.

All of the above opex projects are either in response to customer growth, changing customer waste types and volumes or are for compliance purposes. Although the Warrnambool WRP is growth related

expenditure, we consider that given the large step changes in costs it is reasonable that this be considered additional to the growth allowance. With respect to biosolids management and the additional maintenance and chemical use from smaller projects, we consider these to represent an expense that should be managed and absorbed by the business. We note that other regional water businesses would face similar small scale opex from capex items but the majority have not sought this expenditure in addition to baseline expenditure. We therefore recommend a downward adjustment to proposed opex of \$1.02m to remove these items. These adjustments are outlined in Table 3-4.

3.5.5 IT Licence Costs

Wannon Water has forecast a total of \$1.66m in opex above the baseline to account for increases in IT licence expenditure. Wannon Water has cited that much of the IT spend has been to increase the ability to improve the customer experience while simultaneously improving productivity and risk management. The \$1.66m addition to the baseline represents the net effect of:

- \$0.77m in total for RP4 as a result of a forced change in service provider for Microsoft licence fees.
- \$1.00m for RP4 for new systems, including works management system, LifeCycle modelling, Middleware tool, IT helpdesk and asset management tool, and PowerBI
- \$0.52m for RP4 for increased licence fees for Rubicon Systems, Thinking Windows, ProMapp and Perfekt systems, to reflect enhanced system functionality.
- Other minor increases in expenditure across software products
- Several reductions across software products

With respect to the \$0.77m in total for IT as a result of a change in service provider, this came about as a result of Wannon Water previously had access to Microsoft licenses as part of its membership of the South West Alliance of Rural Health (SWARH). While the membership continues, the access to the licensing through this mechanism was withdrawn by Microsoft, resulting in Wannon Water entering into a direct licence agreement with Microsoft. The new arrangement reflects the market rate for these products. We consider this cost increase to be outside of the control of Wannon Water and is a prudent and efficient business cost.

The \$1.00m increase for new systems refers to various enhancements to improve internal business processes and efficiency. For example:

- The Works Management System (\$0.5m for RP4) replaces two legacy systems to bring together planned and reactive maintenance works. It is effectively cost neutral, although we noted that expenditure for one legacy system was still being recorded in the forecast in error.
- PowerBI (\$0.2m) is a proposed reporting package that replaces Tableau.
- Lifecycle modelling (\$0.1m) provides a solution to extract and aggregate asset data on condition, risk, maintenance data from the asset management system to assist in asset planning.
- Middleware (\$0.1m) provides the point interfacing with other business systems enabling better support, consistency and enhancing integration of replacement systems.
- New IT helpdesk and asset management support (\$0.1m) replacing a legacy system.

With respect to the \$0.52m for RP4 for increased licence fees for Rubicon Systems, Thinking Windows, ProMapp and Perfekt systems, these reflect enhanced system functionality. In consultation, Wannon Water highlighted issues with the opex forecasts for Rubicon and Perfekt systems. Wannon Water acknowledged in its response to our draft report that a number of potential adjustments to the original submission were identified totalling \$0.61m. This would reduce the above baseline figure to \$0.28m.

In assessing other IT increases above the baseline, we note that many of the increases simply relate to improving internal business processes/efficiency rather than a new obligation on the business. We also note that the majority of other businesses have not included IT increases above the baseline. Given other businesses would be facing similar IT cost pressures to Wannon Water, this suggests that these businesses are generally able to manage cost changes within existing budgets, through reallocation or reprioritisation of resources. We therefore propose a downward adjustment of \$0.89m to remove the additional expenditure above the baseline for these items (i.e. \$0.61m in errors in the

IT forecast and \$0.28m of remaining IT expenditure above the baseline). These adjustments are outlined in Table 3-4.

3.5.6 Water for Community Program

Wannon Water has forecast a total of \$1.64m in opex above the baseline to run a Water for Community program. This program involves subsidising water for public spaces, including community, non-profit sports fields, swimming pools and drinking fountains. The total expenditure for this subsidy has been calculated to be 40% on 2017-18 water bills for specific sites for relevant customers (councils, sports clubs etc.). Wannon Water has proposed that this subsidy be reflected as a rebate on each customer's water bill and therefore is incurred as an operating cost.

Wannon Water stated in its price submission that customers are supportive of a 'Water for Community' program. The Water for Community program is linked to the 'customer insight' of customers valuing the support of local communities and that Wannon Water should do more. This program received support from Wannon Water's customer base with 83% either very satisfied or satisfied with Wannon Water's draft proposals on the theme of 'Strengthening our Communities' which included the Water for Community program. We don't, however, consider this to be a cost that is incurred by the business but rather represents a reduction in revenue collected. We therefore recommend that a reduction to opex for RP4 to remove this item. This adjustment is outlined in Table 3-4

3.5.7 Other opex items

Wannon Water has forecast a total of \$1.41m in opex above the baseline for various other opex items including:

- Community partnerships initiatives - \$0.30m
- CMA partnership investment - \$0.20m
- Government efficiency rebate - \$0.27m
- New proactive maintenance program - \$0.25m
- Insurance premiums following asset revaluation - \$0.04m

Deloitte has assessed each of these initiatives individually and notes the following:

- The community partnerships initiatives (\$0.30m) relates to ongoing community partnerships fund that will include support for community scale activities that enhance the natural environment.
- The CMA partnership investment (\$0.20m) is a \$40,000 per annum ongoing investment partnership through regional CMAs. Wannon Water's submission states that these relationships have provided significant leverage to historical investments and have demonstrated the ability to deliver activities at scale.

In relation to the above two opex items, we consider each of these have community support as evidenced by the 73% of customers surveyed that said they were satisfied or very satisfied with Wannon Water's Price Submission proposals relating to doing more for the environment and community. Therefore, we have not made any adjustments to the forecasts.

In relation to the remaining projects:

- The Government efficiency rebate (\$0.27m) is an upwards adjustment to opex to account for a two year phase out of the rebate for tenant customers (i.e. a \$35 rebate will still be in place for tenant customers in 2018-19). As this is rebate paid to customers, Wannon Water has considered this an operating cost. In RP3, this rebate was reflected as a reduction in revenue allowance. We do not consider it appropriate that there is an opex item to provide this rebate in 2018-19. This should be reflected in an adjustment to tariffs for tenant customers resulting in a reduction in revenue or an overall reduction in the revenue allowance. We therefore recommend that opex be reduced by \$0.27m to reflect this.
- New proactive maintenance program (\$0.25m) consists of \$25,000 per year for water and \$25,000 per year for sewerage maintenance. While we agree that proactive maintenance should be a key focus for water businesses, we don't consider there to be sufficient justification for an increase above the baseline year of 2016-17. Presumably any expenditure

in proactive maintenance could be offset by a reduction in reactive maintenance over time and therefore this is a cost that can be managed. Furthermore we note that the majority of other water businesses have not identified proactive maintenance as additional to the baseline. As such, we consider that this is a cost that can be reasonably managed by the business. Therefore we recommend a downward adjustment to forecast opex of \$0.25m to remove this item.

- Insurance premiums following asset revaluation (\$0.04m). This relates to the change in insurance as a result of asset being revalued. This expense is incurred in the last year of RP4. We consider that this is an expense that can be reasonably managed by the business. We note that the majority of other water businesses have not identified insurance premiums as additional to the baseline. Therefore we recommend a downward adjustment to forecast opex of \$0.04m to remove this item.

The above adjustments are outlined in Table 3-4.

3.6 Recommended changes to forecast opex

This table below summarises the changes to opex above baseline expenditure. We have recommended a reduction of \$16.52m to Wannon Water's RP4 forecast controllable opex as per the table below.

Table 3-4 Wannon Water forecast controllable opex and recommended adjustments

Opex item	Actual		Price submission forecast				Total
	Baseline 2016-17	2018-19	2019-20	2020-21	2021-22	2022-23	RP4
Proposed controllable operating expenditure (\$m, original proposal)	35.61	40.52	41.09	40.23	39.96	40.02	201.82
Corrections to template	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proposed controllable operating expenditure (\$m, revised template)	35.61	40.52	41.09	40.23	39.96	40.02	201.82
Recommended adjustments							
Labour		-1.27	-1.63	-1.85	-2.1	-2.33	-9.18
Electricity (prices above CPI)				-1.07	-1.07	-1.07	-3.21
Electricity (consumption increase)				-0.02	-0.03	-0.04	-0.09
Carbon neutrality program - adjustment for change in electricity prices				0.11	0.12	0.13	0.36
Operating projects		-0.1	-0.1	-0.1			-0.29
Opex from new capex		-0.04	-0.06	-0.2	-0.33	-0.39	-1.02
IT licence costs		-0.18	-0.18	-0.18	-0.18	-0.18	-0.89
Water for Community		-0.33	-0.33	-0.33	-0.33	-0.33	-1.64
Other opex items		-0.32	-0.05	-0.05	-0.05	-0.09	-0.56
Total recommended adjustments		-2.24	-2.35	-3.69	-3.97	-4.30	-16.52
Recommended operating expenditure		38.28	38.74	36.54	35.99	35.72	185.30

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

4 Assessment of capex

This chapter of the report sets out our assessment of Wannon Water's capex proposal for RP4 including:

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

4.1 Our approach to the assessment of capex

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

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

We have applied these specific requirements to our assessment approach to each businesses' forecast capital expenditure.

4.2 Overall assessment of capital planning and asset management

4.2.1 Previous Review of Expenditure 2012-13

Wannon Water's key capital planning systems and processes were reviewed as part of the assessment of expenditure forecasts for regional urban businesses in 2012-13 for RP3. This assessment looked at high level, generic issues that might have impacted on the prudence, efficiency and deliverability of proposed expenditure. The 2012-13 review highlighted:

- Focus on five year regulatory periods within Project Investment Plans but listing of anticipated 10 year program in submissions to ESC
- Long term planning done through Water Supply Demand Strategy 2012-2060 and Sewerage Systems Management Plan
- Asset Management Policy dated 18 December 2009 with proposed update by 30 November 2012
- Asset Management Strategy dated 16 March 2012 (updated from 2008 version)
- @Risk used to develop P5, P50 (used for submission) and P95 cost estimates based on concept / preliminary designs and a minimum and maximum contingency of -20% to +40-50%
- Wannon Water used preferred engineering consultants to undertake concept and detailed designs for projects and puts construction works to competitive tender.

4.2.2 Improvements over 2012-13 to 2017-18

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

1. Enhanced coordination between planning / implementation / operations teams with respect to project delivery and data sharing
2. Design of "Project Management Framework" in-house software for codifying / templating use of project management delivery procedures
 - a) Working towards creating a consistent project management framework across the organisation to ensure that the appropriate rigor is applied to all projects
3. Advances in statistical modelling of CCTV condition data for sewer mains
 - a) Approximately \$400k annually is allocated to undertake sewer CCTV inspections to increase site based condition assessment data and better inform renewals planning
4. Implementation of state of the art Life Cycle Assessment (LCA) modelling
 - a) Currently implementing LCA modelling to further mature asset management practices and to allow better optimisation of assets, particularly around decision making regarding ongoing maintenance works versus asset renewals
5. External third party review of business case for renewals
 - a) The renewals business case was prepared in-house. This business case was reviewed by an independent third party to verify appropriateness
6. Significant increase in the volume and capture of condition data for a range of asset classes using advance techniques such as Thermography, Vibration Analysis, Sewer CCTV, and SCADA Online Monitoring. Results form the basis of tactical planning for preventative, maintenance and short term renewals
7. Continual improvement in overall asset management practises throughout Wannon Water's participation in the Asset Management Customer Value (AMCV) project (i.e. asset management benchmarking project undertaken by the Water Services Association of Australia with national and international participants).

Wannon Water shared a presentation made to their Board on the outcomes of the latest AMCV project in 2016, which highlighted the following key points:

1. Wannon Water is one of the smallest participants in the AMCV project in terms of population served, total revenue and the total asset base
2. Wannon Water performs at, or just better than, the median Australian participant against the seven key functions assessed in the AMCV project

3. The two areas of performance at median were asset maintenance and asset renewal while the two areas of best performance were asset management applications and asset capability forward planning
4. Wannon Water performs best against other small organisations with the most area for improvement being asset maintenance and asset renewal
5. Performance over time (the 2008, 2012 and 2016 AMCV projects) has continued to improve with the best improvements made in the asset maintenance and asset renewals areas
6. Recommended areas for improvement were related to:
 - a) Asset risk, performance assessment and renewal planning
 - b) Identification of timing of asset renewal
 - c) Asset technical and maintenance knowledge
 - d) Business based maintenance strategy
 - e) Execution of the maintenance strategy
 - f) Renewal forecasting
 - g) Equipment / product / design standards
 - h) Functional governance
7. Areas for biggest improvement were related to:
 - a) Improving asset lifecycle management
 - b) Increased process mapping / documentation for succession planning
 - c) Improved data capture for maintenance and small capital works
8. Biggest areas for improvement are already being addressed

4.2.3 Comments

Wannon Water continue to make progress improving their capital planning systems and processes. This is evidenced in the incremental achievements made since the 2012-13 review process and in Wannon Water's improved performance in the AMCV benchmarking process. The focus on improving the volume of actual condition data for assets is good and will contribute to improving lifecycle assessment and optimising the renewals program. Whilst the use of state of the art lifecycle assessment modelling and advances in statistical modelling of CCTV condition data (as identified above) is good, without robust and comprehensive data on actual asset condition, these tools will not result in an optimal outcome.

An element of concern in Wannon Water's capital planning process is the categorisation of specified and unspecified projects and, related to this, the identification and categorisation of capital projects and capital allocations in the regulatory submission.

Wannon Water only identifies ten individual projects (the top 10 major projects) in their regulatory submission. The remainder of projects are categorised by the type of asset or facility the work is related to (for example, Bores, Computer Equipment, Distribution Network, Pumping Stations) and are allocated a quantum of expenditure. Whilst this is also done by other businesses, the other businesses identify a much greater number of specific projects to which expenditure is specifically allocated. The assigning of expenditure to specific projects is a clear indicator of detailed capital planning and provides a transparent measure of assessing performance in delivering projects and service levels.

In renewals planning, Wannon Water identifies specific renewals (individual projects) and unspecified renewals (an allocation of funds). Overall, there is a greater proportion of expenditure allocated to unspecified projects with over 55% of water supply renewals expenditure and almost 68% of wastewater renewals expenditure proposed in RP4 allocated to unspecified projects. Further details and analysis of renewals expenditure is provided in Section 4.4.1.

Overall, Wannon Water's capital planning approach and processes are generally in line with similar businesses and forward planning of assets is an area where Wannon Water has scored well in the AMCV benchmarking project. Further work on asset condition data collection would provide good support to the capital planning approach and should improve performance in the asset maintenance and asset renewals functional areas.

4.3 Major projects

Table 4-1 provides an overview of the top ten projects (as identified by Wannon Water in their Price Review Template), showing the primary driver and forecast expenditure over WP4.

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

The highlighted projects were selected for more detailed review and commentary on these projects can be found in Sections 4.5 and 4.6.

Table 4-1 Wannon Water forecast capex for Top 10 Projects

Capex item	Primary Driver	Water Plan forecast expenditure						
		2018-19	2019-20	2020-21	2021-22	2022-23	Total WP4	% of total
Warrnambool WRP - Plant Growth Augmentation		0.71	15.32	20.42	1.53	0.00	37.99	62.7%
Warrnambool - Wangoom Growth Rd Water Tower and WPS		0.22	0.54	1.66	1.91	0.00	4.33	7.1%
Hamilton - New Biosolids Drying Area	Growth	2.61	0.88	0.00	0.00	0.00	3.49	5.8%
Camperdown - Refurbish Camperdown Biosolids Facility	Renewals	0.00	2.10	0.70	0.00	0.00	2.81	4.6%
Warrnambool WTP - Install UV	Improvements / Compliance	0.00	0.20	2.58	0.00	0.00	2.79	4.6%
Warrnambool - Wollaston Growth Road Tower and WPS		0.00	0.41	2.14	0.00	0.00	2.55	4.2%
Port Campbell - Second Bore	Improvements / Compliance	0.00	0.00	0.15	1.79	0.00	1.94	3.2%
Gellibrand River - Substitution works to improve summer flows	Improvements / Compliance	0.15	0.82	0.06	0.82	0.00	1.85	3.0%
Hamilton WRP - Effluent Reuse Upgrade	Improvements / Compliance	0.00	0.15	1.38	0.00	0.00	1.53	2.5%
Hamilton WTP - Clear Water Storage	Improvements / Compliance	0.10	1.23	0.00	0.00	0.00	1.33	2.2%
Subtotal - Top 10 Projects		3.81	21.65	29.11	6.05	0.00	60.61	38.7%
Other large programs (>\$1m over 5 yrs)		13.90	15.04	15.69	16.03	12.19	72.85	46.5%
Other minor programs (<\$1m over 5 yrs)		7.09	5.85	3.56	3.33	3.22	23.06	14.7%
Total		24.80	42.54	48.36	25.42	15.41	156.53	
Top 10 Proportion of annual expenditure		15.4%	50.9%	60.2%	23.8%	0.0%	38.7%	

4.4 Renewals expenditure

Renewals is a significant program for Wannon Water with net expenditure representing almost 44% of the total capex for RP4 (58% of the total capex excluding the Warrnambool WRP project). The renewals program is made up of specified and unspecified renewals where:

- Specified renewals – individual assets that have been nominated for renewal based on the observed condition of the asset by field / operator staff
- Unspecified renewals – budget allocations for renewal of assets (as a group) that are reasonably expected to fail / reach the end of economic life within the planning horizon. They are estimated after known individual assets subject to specified renewal have been extracted from the asset group portfolio and then based on expected life and accounting for the uncertainty in asset life, the renewal requirements for this adjusted pool of assets is assessed.

Renewals programs are developed for all sub-categories of physical assets in the water supply and wastewater services which are:

- Sewers – rising mains
- Sewers – gravity
- Sewage Pumping Stations
- Water Reclamation Plant
- Reuse / Recycling
- Storages
- Headworks – bores
- Headworks – catchments & rivers
- Water Treatment Plant
- Water Pumping Stations
- Water – transfer
- Water – reticulation

Renewals are used, in conjunction with ongoing maintenance works, to ensure that Wannon Water is able to deliver continued water supply and wastewater services at agreed standards as set out in legislation, operational guidelines, corporate directions and by customer agreement / acceptance. Renewals also support Wannon Water's asset management vision, which is:

"To provide the best possible life cycle management of its assets that yields sustainable provision of water supply and sewerage services at optimal life cycle costs while protecting environmental and social values."

The key drivers for the renewals program are referred to as business as usual requirements under the ESC guidance for water plans and are:

- **Continue to meet agreed levels of service including water quality and security of supply** – Wannon Water has stated that those customers consulted agreed that the current levels of service were still appropriate and there was no need to either increase or decrease the levels applicable. Wannon Water has used this stated outcome as the basis for renewals timing and expenditure proposed for RP4.
- **Minimise risk to the business and the customers** – Wannon Water states that failure to provide an effective renewals program can lead to risks associated with inadequate levels of service, health impacts, inability to support urban development, unsafe work environments, environmental impacts, social impacts such as differentiation in service standards, deferred renewals expenditure, and increased maintenance costs.
- **Maintain capacity which will allow continued development and growth** – failure to undertake renewals will impact growth and development in areas adjacent to existing assets
- **Comply with all legislative and operating code requirements** – renewals contribute to Wannon Water's ability to meet legislative requirements, codes of practice and operational guidelines
- **Continue to meet OH&S requirements** – renewals are intended to ensure a safe working environment while delivering required services

Renewals programs have been developed to support the following objectives:

- Life cycle management through timely rehabilitation or replacement
- Sustainable service provision through use of best practice models for replacement or rehabilitation of assets

- Optimisation of life cycle costs through the effective timing of renewal programmes
- Meeting environmental requirements by renewing assets before service standards are degraded
- Meeting social requirements by ensuring all consumers or customers are given equal access to services and providing services to a consistent standard across the area of operations.

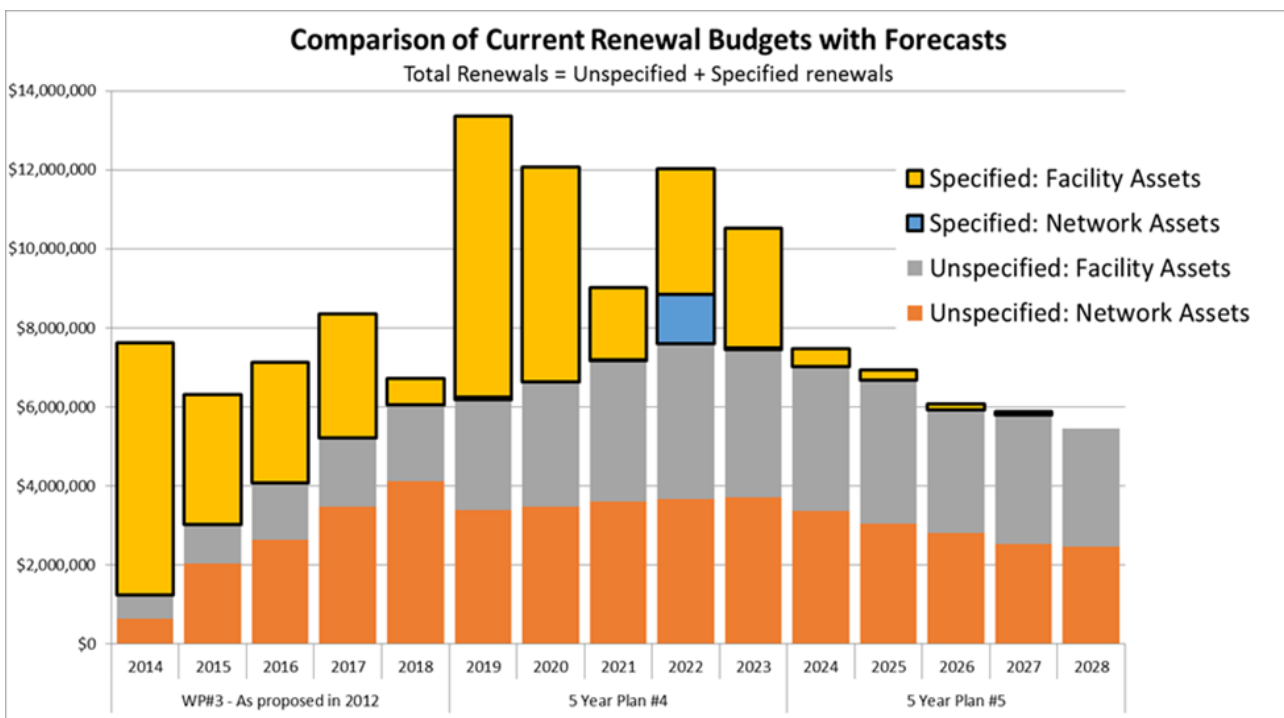
Renewals programs are undertaken in conjunction with ongoing maintenance programs. A lifecycle assessment of assets is used to optimise the approach to maintenance versus renewals which takes into account various financial, social, and environmental impacts incorporated into a risk based assessment to deliver an optimal expenditure program.

Wannon Water has some consideration of options available with respect to renewals funding with an assessment made of the impacts of adopting each option against achieving the required program objectives, as well as financial, social, environmental and risk based considerations. The options considered are:

- Base case – renewals program as proposed
- Option A – renewals at a reduced expenditure rate
- Option B – no renewal program (reliance entirely on maintenance program)

Wannon Water’s proposed renewals program for RP4 is presented in Figure 4-1 below. The total renewals program is approximately \$57m comprising \$22m for specified projects and \$35m in unspecified projects. Renewals expenditure for the current and next regulatory periods is dominated by facility assets as outlined in Table 4-2 below.

Figure 4-1 Proposed renewals program and comparison of current and future regulatory periods



Source: Wannon Water (Water Plan 2019-23 – Renewals Business Case for pricing submission, page ii)

Table 4-2 Breakdown of Proposed Renewals by Asset Category

Category	RP4 forecast expenditure					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total WP4
Headworks - Bores	\$91,998	\$60,220	\$69,741	\$72,052	\$74,437	\$368,448
Headworks - Catchments & River	\$52,199	\$66,207	\$92,537	\$225,415	\$159,237	\$595,596
Reuse / Recycling	\$599,766	\$92,781	\$340,040	\$361,623	\$599,743	\$1,993,955
Sewage Pumping Station (SPS)	\$702,299	\$844,994	\$1,002,514	\$497,575	\$1,148,591	\$4,195,973
Sewers - Gravity	\$2,136,227	\$2,198,933	\$2,280,125	\$3,365,411	\$2,296,565	\$12,277,261
Sewers - Rising Mains	\$118,914	\$60,425	\$68,813	\$77,341	\$79,393	\$404,886
Storages	\$2,654,112	\$1,617,729	\$594,638	\$1,572,478	\$1,387,045	\$7,826,002
Water - Reticulation	\$1,214,394	\$1,208,481	\$1,272,666	\$1,464,534	\$1,371,742	\$6,531,818
Water - Transfer	\$602,281	\$524,626	\$680,085	\$470,554	\$434,527	\$2,712,073
Water Pumping Stations (WPS)	\$489,449	\$997,819	\$357,834	\$597,461	\$454,931	\$2,897,494
Water Reclamation Plants (WRP)	\$2,456,866	\$2,498,918	\$1,227,981	\$1,360,648	\$1,195,916	\$8,740,330
Water Treatment Plant (WTP)	\$2,246,628	\$1,897,346	\$1,032,833	\$1,965,246	\$1,317,100	\$8,459,153
Total	\$13,365,135	\$12,068,479	\$9,019,807	\$12,030,339	\$10,519,228	\$57,002,987
Network Assets	\$4,071,816	\$3,992,465	\$4,301,689	\$5,377,840	\$4,182,227	\$21,926,038
Facility Assets	\$9,149,120	\$7,949,587	\$4,555,840	\$6,355,031	\$6,103,326	\$34,112,907
Headworks Assets	\$144,197	\$126,427	\$162,278	\$297,467	\$233,674	\$964,044

Source: Adapted from Wannon Water (Water Plan 2019-23 – Renewals Business Case for pricing submission, page ii)

4.4.1 Analysis

Wannon Water is proposing a significantly increased renewals program in RP4 over that delivered in RP3 and previous regulatory periods, which can be seen in Figure 4-1 above. Wannon Water advised that the figures provided in Figure 4-1 for RP3 are in fact in \$2012 whereas the figures for RP4 are in \$2017. Wannon Water provided an updated Figure 4-1 and updated five year plan totals, however the RP3 figures were adjusted using construction escalation indices which resulted in a greater than 33% increase in the figures for RP3. In addition, no yearly breakdown of the figures was provided to allow comparison with the existing figures in Figure 4-1.

Using construction related indices to escalate costs from previous years to the current year is not consistent with the price review template, and as such, we have applied inflation assumptions outlined in the Price Review Template which leads to an increase in the value from Figure 4-1 of just over 10%.

As outlined in Figure 4-1, noting the escalation of figures from \$2012 to \$2017, the average level of renewals expenditure in the current regulatory period is between \$6.9m to \$9.4m per year. Total net renewals expenditure for RP4, as presented in the price review template, varies between \$12m and \$15.6m per year, around 66-73% higher than the range of the annual expenditure in the current period. However, it is noted that the renewals expenditure in Figure 4-1 does not include renewals related to corporate assets, which are included in the price review template. Excluding corporate renewals, the annual expenditure for RP4 ranges between \$9m and \$13.4m per year, still an increase of between 30% to 42% on RP3. Comparing the average annual expenditure, the increase is over 42% from RP3 to RP4.

Wannon Water has stated that the main reason for the increase in expenditure is related to a significant increase in facility asset renewals resulting from the construction of a large number of similar assets over a relatively short period of time. These assets are reaching the end of their expected asset life around the same time and have therefore been scheduled for renewal. However little detail has been provided to support this statement with no overall asset age profile of facility assets provided apart from one example of pumps. The example provided appears to indicate that the replacement of pumps over RP4 from 2018-19 to 2022-23 totals no more than several hundred thousand dollars. This does not in any way cover the expected average annual expenditure of \$9m to \$13.4m per year.

Whilst it is understood that some age based peakiness in expenditure might be possible, it would be expected that some smoothing of asset renewals would be undertaken to reflect the fact that the expected or theoretical asset life does not always correspond to the actual end of life for an asset. Wannon Water does recognise this in their renewals business case, in the application of a spread of expected remaining life for each asset family ranging from a minimum of five years up to a maximum of 20 years. Despite this, there is still a very lumpy expenditure profile.

The age profile of assets would also be expected to have less of a direct impact on expenditure as renewals should be directly related to actual condition rather than theoretical condition based simply on age. While unspecified renewals are more predominantly based on asset age, it would be expected that Wannon Water would focus on increasing the proportion of actual asset condition ratings to improve the efficiency of the unspecified renewals expenditure.

It is recognised that the specified renewals are based more on observed condition data and therefore the renewals date is likely to be more accurate, however the opportunity still exists for spikes in expenditure to be smoothed by bringing forward or delaying renewals. This would be especially relevant to the current regulatory period which, as can be seen in Figure 4-1, has a significantly lower level of expenditure, particularly in 2017-18. Whilst this is somewhat difficult now given the 2017-18 year is half way over, an appropriate application of short to medium term planning undertaken at the commencement of the RP3 period would have identified the likely spike in renewals and allowed some opportunity to smooth this to reduce the impact on prices and any impacts on program delivery.

The lumpy nature of the renewals expenditure profile broadly fits into the five year regulatory periods, implying that renewals planning operates on distinct five yearly cycles rather than the longer term cycles over which renewals programs are typically intended to operate. This is exemplified by the significant difference in expenditure between 2017-18 and 2018-19. When questioned about this difference, Wannon Water's response essentially stated that renewals for the current regulatory period were developed at the commencement of the period and once 'locked in' are not subject to change. A longer term planning horizon would have identified the significant peak of expenditure in 2018-19 and would have sought to bring forward some expenditure from that year into 2017-18 given the comparatively low level of expenditure proposed for that year.

As identified in section 4.2.3 above, an element of concern in Wannon Water's capital planning process is the categorisation of specified and unspecified projects. In renewals planning, Wannon Water identifies specific renewals (individual projects) and unspecified renewals (an allocation of funds).

Overall, there is a much greater proportion of expenditure allocated to unspecified projects with over 55% of water supply renewals expenditure and almost 68% of wastewater renewals expenditure proposed in RP4 allocated to unspecified projects.

Table 4-3 below shows the proportions of specified and unspecified renewals expenditure in RP4 to 2022-23.

Table 4-3 Proportion of Expenditure Allocated to Specified Vs Unspecified Renewals over 2018-19 to 2022-23

Year	Water Supply					Wastewater					Total
	Specified	%	Unspecified	%	Total	Specified	%	Unspecified	%	Total	
2018-19	\$4,574,673	62.2%	\$2,776,389	37.8%	\$7,351,062	\$2,618,602	43.5%	\$3,395,471	56.5%	\$6,014,073	\$13,365,135
2019-20	\$3,316,808	52.0%	\$3,055,620	48.0%	\$6,372,428	\$2,127,301	37.3%	\$3,568,751	62.7%	\$5,696,052	\$12,068,480
2020-21	\$733,429	17.9%	\$3,366,905	82.1%	\$4,100,334	\$1,116,238	22.7%	\$3,803,235	77.3%	\$4,919,473	\$9,019,807
2021-22	\$2,761,851	43.4%	\$3,605,889	56.6%	\$6,367,740	\$1,663,015	29.4%	\$3,999,584	70.6%	\$5,662,599	\$12,030,339
2022-23	\$1,739,745	33.5%	\$3,459,275	66.5%	\$5,199,020	\$1,331,738	25.0%	\$3,988,470	75.0%	\$5,320,208	\$10,519,228
RP4	\$13,126,506	44.7%	\$16,264,078	55.3%	\$29,390,584	\$8,856,894	32.1%	\$18,755,511	67.9%	\$27,612,405	\$57,002,989

Source: Adapted from Wannon Water (Water Plan 2019-23 – Renewals Business Case for pricing submission, page iii)

The proportion of expenditure allocated to unspecified projects is relatively high overall, and particularly in the first year of the regulatory period, when it would be expected to be quite low based on an annual budgeting process. The high values in the first year, particularly in the wastewater assets, could be interpreted to represent a high level of uncertainty in renewals planning with this uncertainty based on a lack of actual site based condition data for assets and instead a higher reliance on theoretical remaining asset life.

Wannon Water has also stated that backlog renewals, that is, renewals that are not completed in the scheduled year, are added to the following year’s unspecified renewals. This practice further adds to the lumpiness of the renewals expenditure profile and increases the level of difficulty in delivering each year’s budgeted expenditure. The carryover of backlog renewals at the same time as underspending on the total capital program is also poor practice further exacerbating underperformance and affecting the delivery of future years’ programs.

Wannon Water has stated that customer engagement on service levels identified that customers were generally happy with service levels and by implication the levels of expenditure required to maintain these service levels. Significant increases in expenditure stated to be required to maintain service levels therefore need to be well supported by documentation outlining the direct correlation and impacts of not increasing expenditure. Apart from brief commentary on the facility renewals related to the age profile, no robust documentation or explanations have been provided to support the significant increase.

Wannon Water provided a third party independent review of their renewals business case which Wannon Water stated was highly supportive of the renewals approach and the proposed expenditure. Our assessment of the independent review indicated that it was positive but not strongly so. The conclusion of the review states “the general conclusion from our assessment is that the renewal program contained within Wannon Waters Business Case is generally suitable for inclusion in the

businesses next five (5) year Water Plan.” Although Wannon Water stated that the reviewer’s overall assessment was stronger, we have taken the written conclusion as the only documented outcome.

4.4.2 Recommendation

Wannon Water’s renewals program approach is relatively sound however there are a number of concerns around the proposed expenditure for RP4.

The significant and lumpy increase in the renewals program is not consistent with the normal expectations of a renewals program which is intended to smooth expenditure over time. The combined issues of high proportions of unspecified renewals (resulting from a lack of observed asset condition data), short term planning focussed on the five year regulatory period, the inclusion of backlog renewals, and a cohort of facility assets due for renewal at the same time, have led to a significant 40-60% increase in renewals expenditure for RP4.

The proposed increase in RP4 is not considered appropriate, as insufficient evidence has been provided to justify the increase over historical average annual expenditure, particularly given the suite of options available to reduce the impact of this proposed increase. We recommend that the following options be implemented:

- Smoothing of renewals expenditure across the current and future regulatory periods should be undertaken. This would include bringing forward some specified renewals to the current regulatory period and some deferral of renewals to the regulatory period beyond 2022-23. Smoothing could be achieved by adjusting specified renewals where possible, and by adjusting unspecified renewals allowances to bring the annual expenditure back more in line with levels in the current regulatory period. Smoothing should not just occur at the total capital plan level but also at the individual project/program level.
- A reduction in the proposed renewals expenditure increase of 42% to an increase of 25%. The 25% increase allows for some age profile related additional renewals particularly in the facility assets category which dominates the renewals expenditure in the first two years of RP4 and for some catch up of the backlog (overdue) renewals highlighted by Wannon Water. The reduced increase, however reflects the lack of robust supporting information supplied that demonstrates the need for a significant increase in the average annual expenditure.

4.5 Warrnambool WRP - Plant Augmentation

The Warrnambool Water Reclamation Plant (WRP) / Sewage Treatment Plant (STP) treats a combination of domestic and industrial wastewater from Warrnambool and surrounding areas in the Great South Coast region. The plant is approaching capacity with existing loads and future loads predicted to increase as a result of new urban developments, increased discharges from existing industry expansion, and potential new industrial customers connecting to the wastewater system.

Future loads were forecast over a 25 year period from 2015 to 2040 with the modelling outcomes indicating that a 50% increase in the capacity of the WRP is required to treat the future loads out to 2040. There is inherent uncertainty in estimating future flows and loads at the WRP as a large proportion of the total flows and loads are from industrial sources. These sources are often intermittent, seasonal, and are based on certain levels of production at the sources which may or may not be considered stable over time. Industrial loads are therefore quite volatile with production levels being affected by numerous external conditions. Industrial flows and loads are also subject to trade waste charges which creates incentives for customers to pre-treat wastewater leading to changes to wastewater influent quality that could affect operation of the WRP. Extensive consultation is required with industrial customers throughout the design process to ensure that design flows and loads remain relevant to current and anticipated conditions.

A previous upgrade to the Warrnambool WRP was initially considered and included in the ten year capital program developed as part of Wannon Water’s RP3 submission. Although few details have been provided, it is understood that the Brine Management project was intended to provide a small capacity increase to the existing WRP of around 25% (compared to the 50% increase from the now proposed WQRP augmentation) and was intended to include a brine receival facility to facilitate an increase in the percentage of effluent recycled from the WRP. The 25% augmentation of the WRP

included in the project was intended as a just in time option with the works originally scheduled in 2020-21 to 2022-23 for an estimated cost of around \$22.3m.

In 2015 the Warrnambool WRP Systems Capacity Strategy was developed which outlined the strategy for managing wastewater in Warrnambool over the 35 years from 2015 to 2050. A number of strategic approaches were assessed, including the provision of new treatment facilities, however the preferred approach was to upgrade the existing Warrnambool WRP. In May 2017, an Options Assessment Report was completed for the WRP upgrade which investigated a range of potential options for the upgrade of the WRP including:

- Base case – additional Intermittently Decanted Extended Aeration (IDEA) tanks similar to the current treatment arrangements
- Option 1 – Membrane bio reactor (MBR) plant using conventional activated sludge processes with membrane separation of sludge rather than settling to treat all flows which exceed the capacity of the existing IDEA tanks
- Option 2 – Continuous Activated Sludge (CAS) process allowing continuous operation with higher water levels and potentially tighter nutrient removals but requiring significant works to existing tanks and construction of significant additional treatment infrastructure
- Option 3 – Granular Activated Sludge (GAS) process but this would require de-rating of the normal process to integrate with existing IDEA tanks and a six month long transition to establish a working GAS process
- Option 4 – Anaerobic pre-treatment for key trade waste customers which is suitable for industrial loads with high organic content and produces cogeneration opportunities through biogas production. However the organic content of the current and likely future influent to the WRP is too low and would require supplementing direct from industrial sources through dedicated pipelines. The required land area for the anaerobic treatment process is also at least four times larger than the current WRP footprint.
- Option 5 – Integrated Fixed-film Activated Sludge (IFAS) which is a hybrid version of the conventional activated sludge process using suspended growth media to treat loads in the treatment process. This option requires significant new infrastructure connected to the existing IDEA tanks and is highly dependent on maintaining the integrity of the finely balanced process.

Four additional treatment options were identified but not taken forward for assessment as they were either similar processes to the options but without the same advantages, were not proven technologies in Australia, or would not integrate well with the existing IDEA tanks.

A multi criteria analysis was used to assess the six options above with Option 5 IFAS clearly identified, after initial assessment, as having a much lower score than all other options and it was removed from further consideration. Further assessment indicated that Option 2 CAS and Option 3 GAS processes were also clearly scoring lower than the base case IDEA tanks and these options were also removed from further consideration. During the MCA process, an additional option was identified, a variation of Option 1 MBR, which involved conversion of the existing IDEA process to MBR rather than having MBR in conjunction with the existing IDEA tanks. Whilst having an increased risk profile, the potentially large cost savings from this option meant it was included in the shortlist for further consideration and concept development. The shortlisted options were:

- Base case additional IDEA tanks (Capital cost \$37.2m, NPC \$36.0m)
- Option 1 MBR plus existing IDEA (Capital cost \$36.2m, NPC \$37.2m)
- Option 2 convert existing process to MBR (Capital cost \$37.4m, NPC \$42.7m)
- Option 3 Anaerobic pre-treatment process (Capital cost \$41.4m, NPC \$49.9m).

The shortlisted options underwent concept development and design suitable to compare options, along with development of common elements, assessment of siting requirements, nutrient removal requirements, ability to cater for variable growth, and the option's ability to assist in manage risks. The options were then passed through a second MCA process involving an internal workshop, stakeholder reference group (which development the MCA options assessment criteria and weightings).

Based on the outcomes of the weighted MCA process, the preferred option was identified as the base case option, that is, to construct additional IDEA tanks to cater for increased flows and loads arising from future residential and industrial growth. The option was recommended for progress to a functional design with additional works undertaken to:

- confirm forecast industrial flows and loads
- undertake preliminary assessment of the WRP outfall mixing zone
- commence discussions with the EPA on discharge effluent quality limits
- undertaken supporting studies and investigations to support the functional design
- commence discussions on site planning and required remediation works

4.5.1 Analysis

The Warrnambool WRP project is the largest individual project proposed by Wannon Water for RP4 at \$37.99m compared to the second largest individual project at \$4.33m. The project has a significant impact on the total capital program representing almost 63% of the top 10 major projects value and over 24% of the total capital program.

The work completed to date on this project appears to be relatively robust with reasonably clear explanations around the need for the project. It is also noted that the project appears to be at an early stage of development with functional design just commencing. This makes it difficult to fully assess the project as the full scope of works, the required timing and the total capital cost are still potentially subject to adjustment. However, Wannon Water has provided a P80 cost estimate for the preferred option indicating a high level of confidence in the expected capital cost. The cost estimate breakdown also provides a suitable level of detail for the preferred option.

It is noted that the project includes some large risks, predominantly around the future flows and loads into the plant however these potential risks were assessed in the May 2017 options assessment report where each shortlisted option was assessed against how it could respond to future growth variability.

A formal business case for the project is currently under development with Wannon Water's engineering consultant which is to be submitted to DTF as part of their gateway review process, however this business case was not available for this review. The May 2017 options assessment report appears to have been provided as a proxy business case, however there was no discussion provided around the required timing of the proposed works, the potential for staging works (based on detailed timing of growth), the total capital cost of the project, or the likely procurement approach to the future works. The proposed works appear to represent the ultimate growth scenario to 2040, however there is likely to be some opportunity for staging the installation of additional IDEA tanks to reflect the staged increases in flows and loads from residential and industrial growth. The May 2017 options assessment report does note the opportunity for some staging of works in some of the options, and includes a description of the MCA review process which included consideration of staging and Wannon Water has stated that staging of works will be considered in the functional design of the project.

We would expect, however, that the formal business case which is under development clearly outlines and discusses an overview of the project process including historical work and proposals, details of the required timing of the project (specifics on growth rates and trigger points), options for the staging of works and the likely procurement approach for the preferred option

4.5.2 Recommendation

The driver for this project is clear with increasing development, residential and industrial, requiring an upgrade to the existing plant. The project is supported by a broader wastewater strategy and an options assessment with a formal business case currently underway. Whilst this business case is not formally approved, Wannon Water consulted with DTF and DELWP in regards to this project in late 2017. The options assessment process identified a clear preferred option which is consistent with the existing treatment process and provides some opportunity for additional growth or for staged construction to reflect growth to 2040. A P80 cost estimate for the preferred option has been prepared indicating a high level of confidence in the likely costs. Given this, we have not made any recommendations for adjustments to the amount or timing of the expenditure for this project.

We would expect, however, that the formal business case clearly outlines and discusses an overview of the project process, details of the required timing of the project, options for the staging of works and the likely procurement approach for the preferred option.

4.6 Warrnambool – Wollaston Rd Water Tower and WPS

The Wollaston Road Water Tower project is required to provide for the water supply needs of the growth region north of the Merri River in Warrnambool. Urban growth in the Wollaston Road area was first identified in 2004 with draft structure plans completed for the site in October 2007. In December 2007, growth plans for the site were revised to allow for a total of 1,070 lots between 2009 and 2028 with an additional 550 lots likely to be developed beyond 2029.

In June 2010, an Options Analysis and Concept Design was developed which outlined options for water supply services to the Wollaston Road and Hopkins Point development areas. The report assessed the existing water supply system capacity to service the Wollaston Road development and determined that the system required augmentation (approximately 350kL of additional storage and pumping) and that the pressure available through the existing system was insufficient to meet minimum requirements. Preliminary assessments identified that a large ground level storage tank supplemented by a smaller elevated tank would provide the required storage and water pressure to service the ultimate demand (beyond 2029) from the Wollaston Road development site (1,620 lots).

Three options were assessed in the June 2010 report with *Option 1 – Supply from Liebig Basin* being selected as the preferred option for further assessment, design and costing. Option 1 includes the following components:

- Transfer pump station to supply the low level storage tank
- Rising main from pump station to low level storage tank
- Low level storage tank (1 ML)
- High lift pumps to supply elevated tank
- Elevated tank (400kL)
- Transfer mains from Liebig Basin via a dedicated connection from Wollaston Road development area to DN375 MSCL main in Jamieson Street
- Booster disinfection facility at either the low level or elevated tank

The total cost of this option was stated as \$10.7m (\$2010) with a 30 year NPV of \$6.5m (\$2010). This total cost includes all seven components of the work as outlined above. A breakdown of the components is provided below (\$2010):

- Transfer pump station = \$0.24m
- Rising main = \$0.44m
- Low level tank = \$0.40m
- High lift pumps = \$0.24m
- Elevated tank = \$0.55m
- Transfer mains = \$4.10m
- Booster disinfection = \$0.10m

The subtotal cost of the seven components is just over \$6.1m with a 25% allowance for project costs (overheads, profit margin, design costs, site management and insurance) and a 40% contingency (given the concept design stage of the project) which totals \$10.7m as identified above. The proposed works are divided into five stages (\$2010):

- Stage 1 – transfer pump station, rising main, elevated tank and supporting distribution main connections – subtotal capital cost of \$2.20m
- Stage 2 – additional distribution mains – subtotal capital cost of \$0.61m
- Stage 3 – additional distribution mains – subtotal capital cost of \$0.77m
- Stage 4 – additional distribution mains – subtotal capital cost of \$0.56m
- Stage 5 – low level tank, high level pump station, upgraded transfer pumps, booster disinfection and additional distribution mains – subtotal capital cost of \$1.95m

The proposed expenditure for Stage 1 of the works was included in Wannon Water's Water Plan 3 regulatory submission at a total of \$2.35m (\$2013).

In late September 2017, a business case for the Wollaston Road project was prepared however the document appears to be a brief update to a previous version of the business case with most sections referencing the June 2010 report attached to the business case. The September 2017 business case update provides few additional details on the project, stating merely that recent housing development, rezoned to allow an additional 500 lots exceeds the capacity of the existing supply main and results in the need to construct the water tower and pump station by 2021.

4.6.1 Analysis

Wannon Water advised that the full works proposed for the current regulatory period did not go ahead as planned, as urban growth was not sufficient to trigger the requirement for full investment due to planning delays. Wannon Water stated that a proportion of the originally allocated expenditure for this project was used to construct a rising main to the area with the remaining expenditure reallocated to the Hopkins Point tower and pump station project however this is to be formally confirmed as Wannon Water had indicated, in discussions for this review, that no budget allowance had been made for the Hopkins Point tower project.

As discussed above, there is little new information in the 2017 business case and most sections reference the June 2010 report discussed above. There is no detailed explanation as to why this project was not fully progressed in the current regulatory period and no information regarding how the growth conditions for this project have been reset after a period of lower growth in the current regulatory period (due to planning delays and growth occurring in other areas).

Wannon Water stated that the lack of detail in the September 2017 business case update was because the growth in Warrnambool and the outcomes of the 2010 business case are implied knowledge. While this may be the case, so long as the same staff remain involved with this project, the audience for the supporting documentation provided as part of this regulatory review is the ESC. It would not be implied knowledge that sufficient growth had occurred to trigger this investment, particularly when the growth conditions were sufficiently low enough in the current regulatory period to not trigger the full infrastructure option, but to allow for staged works to occur to defer the full investment.

Consultation with Wannon Water also identified that some distribution pipeline works were completed in the current regulatory period to ensure urban growth needs realised in the current regulatory period could be met until the full works are required. While there is a brief reference to this in the introduction of the 2017 business case, there is no substantive explanation to this effect. In addition, no indication was given in the 2017 business case of the specific adjustments made to the capital costs of the project given that a substantial component of the works has already been constructed, beyond a brief statement that costs had been updated. Wannon Water did, however, provide separate confirmation that the capital costs did exclude the works already completed.

Overall, there is a significant lack of information, particularly updated information, in the 2017 business case, including a failure to outline specifically how the trigger for investment has been reached (besides just stating that current forecast lots exceed capacity) and the failure to provide sufficient and clear updates to the project works and the capital costs. Wannon Water provided separate supporting information outlining, in more detail, what the updated cost estimates include, and how the growth triggers have been reached, however this basic information would be expected in the business case.

The supporting information supplied by Wannon Water in relation to the growth triggers does not provide a clear story. While the modelling data shows that the critical point at which water pressure goes below the minimum 20m occurs at 250 households, it is not clear how this relates to current housing numbers. The data provided commences in 2014 meaning that the actual number of houses developed at the site over 2014 to 2018 should be available to compare against the modelled number. This would presumably make very clear the required timing of the works.

The supporting information supplied by Wannon Water does not provide a clear justification to assess whether firstly this project is still required and if so, when it is required by. The 2017 business case

relies predominantly on information supplied in the June 2010 report which is well out of date, besides which, if the urban growth drivers for the project outlined in the June 2010 report were to be triggered, the project would have already been constructed.

The business case for this project needs to be a stand-alone document providing a robust justification for the project and while providing links to more detailed supporting documents, the business case should provide a summary of all relevant information to support the project.

4.6.2 Recommendation

In our opinion, the business case and additional information which has been provided by Wannon Water to support this project does not provide clear justification for this project. There is no clear driver, given that the original drivers from 2010 were not triggered, and the 2017 business case document does not provide sufficient, up-to-date information to assess the project. Additional supporting information provided by Wannon Water also does not provide a clear reasoning or justification for the timing of the project. In the absence of a robust and up-to-date business case which can function as a standalone justification for the project, we recommend that this project be removed from the capital program until such time as the required information is supplied.

We recommend that the 2017 Business Case be completely updated with all relevant supporting information included in the document, as would be expected to justify a project of this size. We have therefore allowed a small proportion (5%) of the proposed capital expenditure for this project to allow the development of this business case to progress.

4.7 Warrnambool – Wangoom Rd Water Tower and WPS

The Wangoom Road Water Tower project is required to provide for the water supply needs of the North East Growth Corridor in Warrnambool. The majority of the currently vacant land in the area is not yet zoned for urban development but is located in the urban growth boundary of Warrnambool. However, an area of around 500 lots is zoned residential with a larger area which is intended to be rezoned within two years. The overall growth corridor is a large area which is predicted to include up to 4,000 homes at ultimate development however the timeframe for this ultimate growth is over 40 years (from 2013).

In October 2012, North East Warrnambool Water Supply report was prepared to support proposed expenditure in the current regulatory period. The report outlined options for providing water supply services to the North East Growth Corridor development area. The 2012 report assessed the water supply system capacity and requirements over a period of 20-30 years and proposed staged works to construct a water supply network for the anticipated development.

The 2012 report assessment four primary options (a base case plus three alternative options) to service the development area:

1. Base case – continue supplying growth area through the existing network via the Dooley’s Hill High Level Tower
2. Option A – continue supply from Dooley’s Hill high level tower and construct a low level supply basin next to the Dooley’s Hill tower
3. Option B – Construct new high level tower on Wangoom Road and a low level basin at Dooley’s Hill tower
4. Option C – Construct new high level tower on Wangoom Road and a low level basin at or near the new Wangoom Road tower

The 2012 report identifies option C as the preferred option for further assessment, design and costing with a slight variation being the location of the high level tower on Aberline Road and the low level basin on Wangoom Road. Option C-1 was assessed with a total capex of \$5.0m (\$2013) and 50 year NPV of -\$4.8m.

The proposed works are divided into three stages:

- Stage 1 – supplies growth corridor properties on the west side of Aberline Road from the existing Dooley’s Hill High Level Tower with additional feeder mains constructed to connect this sub-area to the existing system. The capital cost for this stage was listed as \$0.40m (\$2013).
- Stage 2 – construction of a new high level water tower on the north side of Wangoom Road with a capacity of approximately 400 kL to supply the entire North East Growth Corridor area. New feeder mains will be constructed to supply the high level tower with the feeder main supplied with water via a new pump station at or near the existing East Warrnambool Water Pump Station. The capital cost for this stage as listed as \$2.99m (\$2013)
- Stage 3 – construction of a 3 ML low level tank near the new high level tower to provide reserve capacity. A new pump station will be constructed at the low level tank to pump water into the high level tower and the new pump station at / near East Warrnambool will be reconfigured to pump the supply to the low level tank instead of the high level tower. The capital cost for this stage was listed as \$1.64m (\$2013)

Proposed expenditure was included in Wannon Water’s Water Plan 3 regulatory submission at a total of \$2.76m (\$2013) however it is unclear exactly what capital works this allocation of expenditure included as the amount does not correlate with the staging costs identified above.

Wannon Water advised, as part of this review, that the works proposed in the current regulatory period did not go ahead as planned as development occurred in a different area than was expected. Wannon Water stated that the allocated expenditure for this project was reallocated to the Hopkins Point project.

In late September 2017, a business case for the Wangoom Road project was prepared however the document appears to be a brief update to a previous version of the business case with most sections referencing the October 2012 report which was attached to the business case.

4.7.1 Analysis

Wannon Water advised, as part of this review, that the works originally proposed for the current regulatory period did not go ahead as planned, as expected urban growth occurred in a different growth area. Wannon Water stated that the allocated expenditure for this project was reallocated to the Hopkins Point tower and pump station project to assist in deferring major capital expenditure out of the next regulatory period. Consultation with Wannon Water identified that only developer works have been completed to date at the site.

As discussed above, there is little new information in the 2017 business case with most sections referencing the attached October 2012 report discussed above. There is no explanation as to why this project was not fully progressed in the current regulatory period and no information regarding how the growth conditions for this project have been reset after growth in the current regulatory period occurred in a different growth area. Such a heavy reliance on a business case completed in 2012 is not appropriate for a project of this size.

The proposed capital costs for this project also vary. The expenditure originally scheduled in the current regulatory period was \$2.76m (\$2013). The 2017 business case recommends acceptance of the project at a capital cost of \$4.24m (assumed \$2017) while the price review template includes an allowance of \$4.33m (\$2018). The October 2012 report recommends the preferred option at \$4.3m (\$2013) while the options analysis and options staging sections both list the preferred option as just over \$5.0m (recognising this is an options comparison budget cost only). Wannon Water has stated that the expenditure allowance included in the current regulatory period did not include a number of key costs including the costs of purchasing land however the initial costs quoted for these components do not appear to make up the difference in figures.

Given the lack of new information in the 2017 business case, the failure to outline how the trigger for investment has been reached and the failure to provide sufficient updates to the project works and the capital costs, it is our opinion that insufficient information has been supplied to assess whether this project is still required and if so, when it is required by. The information supplied in the October 2012 report is out of date, and if the urban growth drivers for the project outlined in the October 2012 report were to be triggered, the project would have already been constructed or under construction.

4.7.2 Recommendation

In our opinion, the information provided by Wannon Water, being the 2017 business case and subsequent supporting information submitted, does not clearly demonstrate that this project, which was originally scheduled for completion in the current regulatory period, is still required (i.e. whether current growth is sufficient trigger for investment). In the absence of this information, along with updates to the scope of works and details of the changes in the capital costs, we recommend that this project be removed from the capital program until such time as the required analysis is undertaken.

We recommend that the 2017 Business Case be completely updated with all relevant supporting information included in the document, as would be expected to justify a project of this size. We have therefore allowed a small proportion (5%) of the proposed capital expenditure for this project to allow the development of this business case to progress.

4.8 Summary of recommendations

Our recommendations for adjustments to Wannon Water's capex forecast over WP4 are set out below. We have removed \$18.23m from Wannon Water's proposal and recommend that:

- The Wollaston Road Water Tower and Pump Station project (\$2.55m) be removed from the capital program but \$0.13m be included to support development of a robust business case to demonstrate the need for the project
- The Wangoom Road Water Tower and Pump Station project (\$4.33m) be removed from the capital program but \$0.22m be included to support development of a robust business case to demonstrate the need for the project
- The total renewals program (excluding Corporate renewals) be cut by \$11.69m as the proposed increases have not been sufficiently or clearly justified

Table 4-4 Wannon Water forecast capex

Capex item		RP4 forecast					Total WP4
		2018-19	2019-20	2020-21	2021-22	2022-23	
Warrnambool WRP Plant Augmentation	Proposed	0.71	15.32	20.42	1.53	0.00	37.99
	Recommended	0.71	15.32	20.42	1.53	0.00	37.99
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Warrnambool – Wollaston Road Water Tower	Proposed	0.00	0.41	2.14	0.00	0.00	2.55
	Recommended	0.13	0.00	0.00	0.00	0.00	0.13
	Net change	0.13	-0.41	-2.14	0.00	0.00	-2.43
Warrnambool – Wangoom Road Water Tower	Proposed	0.22	0.54	1.66	1.91	0.00	4.33
	Recommended	0.22	0.00	0.00	0.00	0.00	0.22
	Net change	-0.01	-0.54	-1.66	-1.91	0.00	-4.12
Renewals programs (exc. Corporate renewals)	Proposed	13.37	12.07	9.02	12.03	10.52	57.00
	Recommended	9.38	7.81	9.06	10.63	8.44	45.31
	Net change	-3.99	-4.26	0.04	-1.41	-2.08	-11.69
Other capex	Proposed	10.49	14.20	15.11	9.94	4.89	54.65

Capex item	RP4 forecast					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total WP4
Recommended	10.49	14.20	15.11	9.94	4.89	54.65
Net change	0.00	0.00	0.00	0.00	0.00	0.00
Total proposed	24.80	42.54	48.36	25.42	15.41	156.53
Recommended capex	20.93	37.34	44.60	22.09	13.33	138.29
Recommended adjustments from proposed	-3.87	-5.20	-3.76	-3.32	-2.08	-18.23

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