Deloitte Access Economics

Melbourne Water expenditure review – supplementary report

Essential Services Commission

30 May 2016

Deloitte.

Contents

1 Introduction

Deloitte Access Economics has been commissioned by the Essential Services Commission (ESC) to review the operating and capital expenditure components of Melbourne Water's response to the ESC's draft decision.

In early 2016, we prepared a detailed analysis of Melbourne Water's proposed expenditure for the 2016-17 to 2020-21 regulatory period, Melbourne Water Expenditure Review – Final Report (referred to as our "Final Report" in this report), which informed the ESC's draft decision, released in March. Our Final Report contained analysis of capex and opex categories against criteria in the *Water Industry Regulatory Order* (WIRO).

This report (referred to as our "Supplementary Report") is supplementary to our Final Report and focusses on areas where sufficient new evidence or information has been provided for us to recommend that the ESC change its position from its draft decision. In reviewing Melbourne Water's revised proposal, as with our original work, we have worked with Arup in respect of capital projects. This Supplementary Report should be read in conjunction with our Final Report.

2 Operating Expenditure

2.1 Energy costs

2.1.1 Network costs

In response to the ESC's draft decision, Melbourne Water has provided a revised proposal for its network cost allowance, comprised of the following updates:

- With regard to the transmission component of network costs Melbourne Water has proposed to adopt AusNet Services' preliminary submission to the AER and calculated an average real increase of 3.00% per year over the regulatory period based on AusNet Service's proposed Maximum Allowable Revenue
- For distribution network costs, Melbourne Water has proposed an average annual real increase of 3.02% (the average of the distributor's revised proposals) on the basis that this is consistent with the approach taken to transmission.

Melbourne Water's revised proposal results in a total network cost allowance for the next regulatory period of $62.2 million. This is $9.1 million lower than its original proposal and $9.7 million higher than the ESC's draft decision.

We have reviewed our recommendations in light of the ESC's draft decision and Melbourne Water's revised proposal. We agree with the ESC's proposal to use the final AER decision for establishing the network cost allowance. It is worth noting that there remains some uncertainty regarding electricity network pricing as a result of legal challenges to various AER determinations.

With respect to distribution costs, we have taken the average of the Victorian distributors' smoothed annual revenue paths from the AER final decision, which results in an average annual decrease of 0.57%.

With respect to transmission costs, based on previous AER determinations, we expect that the AER will make reductions to AusNet Services' proposed revenue requirement in its draft and final determinations. However, given the early stage of the process, it is difficult to estimate what the final outcome might be. We consider that an average annual change of 0% provides an appropriate balance between the AusNet Services proposal and the reductions likely to be made by the AER in its determinations.

To apply these figures to Melbourne Water's network costs we have apportioned the distribution and transmission revenue paths using the typical share of network costs faced by large customers (around 22% transmission and 78% distribution), based on information from the RBA[1], to achieve an average annual change across network costs of -0.44%.

[1] RBA (2011), How are electricity prices set in Australia?, http://www.rba.gov.au/information/foi/disclosure-log/pdf/101115.pdf

We also note that in using revenue paths (x-factors based on the annual change in Maximum Allowable Revenue) rather than price paths (which take demand and usage into account) our calculations provide a more favourable outcome to Melbourne Water. This is because the forecast growth in electricity consumption for transmission and distribution businesses over the period results in the price paths being lower than the revenue paths.

Our recommended network cost allowance is slightly above the ESC draft decision, and $6.99 million below the Melbourne Water Revised proposal (Table 2.1 below).

Table 2.1: Network charges ($m, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Total
ESC Draft Decision	10.13	10.48	10.96	10.52	10.16	52.25
Melbourne Water revised proposal	11.71	12.06	12.42	12.79	13.18	62.16
Deloitte revised recommendation	10.46	10.95	11.56	11.23	10.97	55.17
Recommended adjustment to Melbourne Water's revised proposal	**-1.25**	**-1.11**	**-0.86**	**-1.57**	**-2.21**	**-6.99**

Source: Deloitte Access Economics, ESC draft decision, MW response to ESC draft decision.
Note: figures may not sum due to rounding.

2.1.2 Renewable energy certificate prices

In its draft decision, the ESC adopted a Renewable Energy Certificate (REC) price of $70 per REC (i.e. per MWh).

In response to the ESC's draft decision, Melbourne Water has proposed an alternative REC price forecast, ranging from $80.3/REC in 2016-17 trending downward to $76.7/REC in 2020-21, based on:

- Melbourne Water's view that increased demand for Large Scale Generation Certificates (LGCs) out to 2021 (given the targets under the Renewable Energy Target scheme, or RET) would put upward pressure on the market price
- REC price forecasts as per the forward market quotes sources from the Australian Financial Markets Association (AFMA).[2]

Melbourne Water's revised proposal results in a cost allowance for renewable energy of $16.8 million. This is $1.9 million higher than the ESC's draft decision.

In our view, while the AFMA forward market provides a useful mechanism for market participants to manage their exposure to price risks, the AFMA forward curve has some limitations. The AFMA REC market is thin and dominated by a few major players, meaning that any substantial activity from one of the three major retailers can change market dynamics and prices dramatically.

We have used the Deloitte Electricity Market Model (DEMM) to produce an REC price forecast for the next regulatory period. The DEMM simulates generator and retailer behaviour in the NEM using a Cournot-Nash Equilibrium model. The model generates

[2] Melbourne Water (2016), *2016 Price Submission – Response to ESC Draft Decision*, p.6

forecasts of time-weighted pool prices, market entrants, state and national generation mix, and REC price. The DEMM generates an LGC price to ensure that the LGC and pool bundle price is sufficient to induce the entry of renewable generation to meet the LRET.

Our REC price forecast out to 2020-21 is set out in the table below.

Table 2.2: REC price forecast ($ per REC, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21
ESC Draft Decision	70.00	70.00	70.00	70.00	70.00
Melbourne Water revised proposal	80.29	79.38	78.48	77.59	76.72
Deloitte revised recommendation	76.60	72.18	74.32	72.52	72.51

Source: Deloitte Access Economics, ESC draft decision, MW response to ESC draft decision.

The following table sets out our revised recommendation for Melbourne Water's allowance for renewable energy costs for the next regulatory period based on the above REC prices.

Table 2.3: Renewable energy cost allowance ($m, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Total
ESC Draft Decision	3.08	3.01	3.03	2.93	2.89	14.94
Melbourne Water revised proposal	3.53	3.41	3.39	3.25	3.17	16.75
Deloitte revised recommendation	3.37	3.10	3.21	3.04	3.00	15.72
Recommended adjustment to Melbourne Water's revised proposal	**-0.16**	**-0.31**	**-0.18**	**-0.21**	**-0.17**	**-1.04**

Source: Deloitte Access Economics, ESC draft decision, MW response to ESC draft decision.
Note: figures may not sum due to rounding.

2.2 Efficiency of controllable BAU expenditure

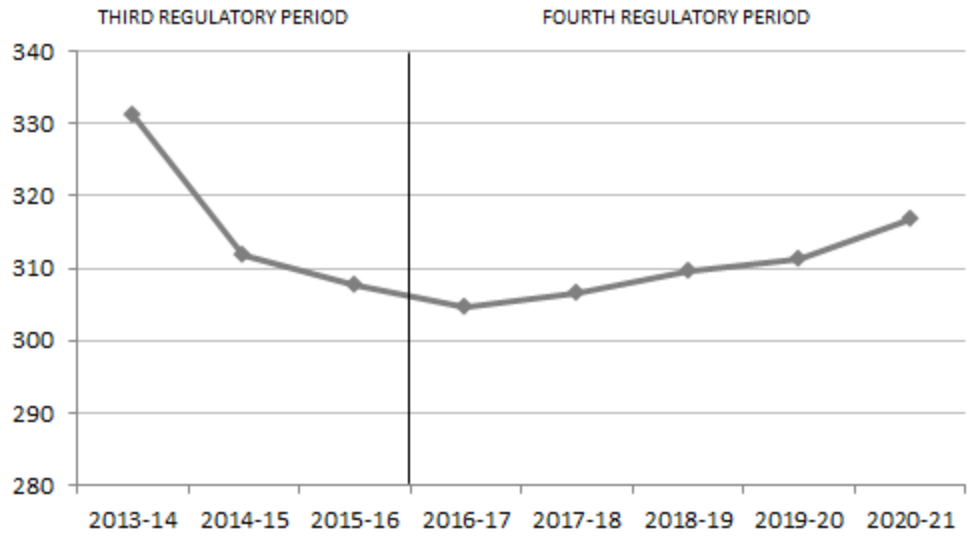
2.2.1 Increases in controllable BAU expenditure

In our Final Report, we noted that while Melbourne Water's opex proposal passes the efficiency hurdle overall, it is fails the hurdle in the final two years of the period.

In its draft decision, the ESC recognised the significant opex reduction achieved by Melbourne Water to-date, and that costs are forecast to fall further in 2015-16 and 2016-17. However, the ESC noted that MW is forecasting controllable opex to increase steadily from 2016-17, and quite steeply in the final year of the period (as demonstrated in the ESC's figure, shown below).[3]

[3] ESC (2016), *Melbourne Water Price Review 2016 – draft decision*, p.32

Figure 2.1: Controllable BAU operating expenditure profile ($m, 2015-16)



Source: ESC draft decision, p.33
Note: The ESC has adjusted 2013-14 and 2014-15 actual expenditure and 2015-16 forecast expenditure to reflect the equivalent basis as the draft decision BAU expenditure.

The ESC also noted that the retailers had expressed concerns about the increase in MW's BAU operating expenditure,[4] and further that:

> *Given these observations, we seek to better understand the interplay between efficiency savings and the justified increases in operating expenditure, and the implications for future prices moving into the next period. Whilst Melbourne Water's submission and the Deloitte review address some of these cost increases, we are seeking to better understand the drivers for these cost increases and what mitigation steps are being implemented by Melbourne Water.*[5]

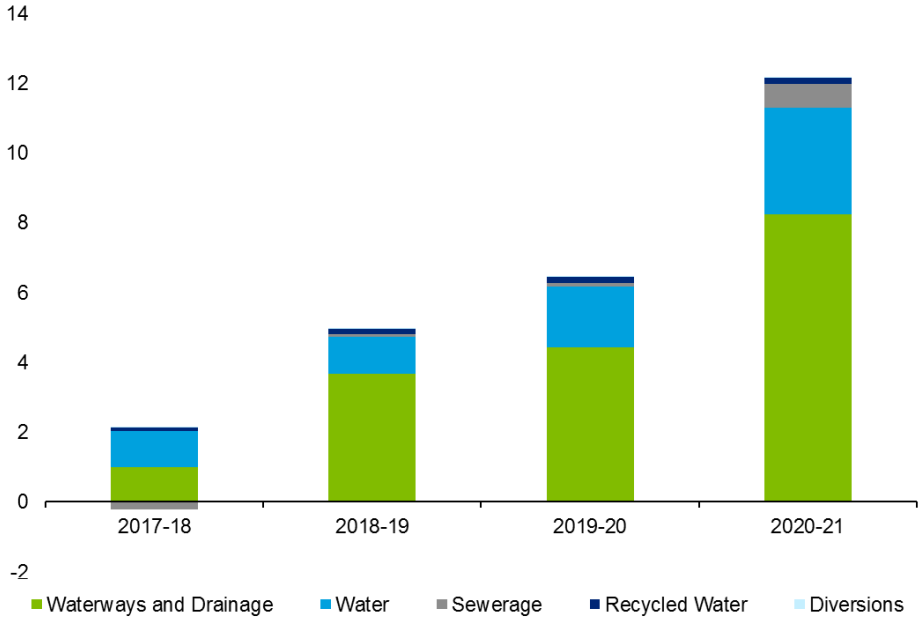
Given the concerns raised by the ESC, we requested further information from Melbourne Water about what is driving BAU opex increases during the next regulatory period. Our investigations focussed mainly on waterways and drainage opex, following discussions with the ESC and based on our understanding that this area shows the most growth after the first year of the next regulatory period (2016-17).

The following figure provides a breakdown of increases in controllable BAU above the 2016-17 level. As shown in the figure, controllable BAU opex is expected to be $12.2 million above the 2016-17 level by 2020-21, of which $8.2m (or 68%) is attributable to waterways and drainage.

[4] ESC (2016), *Melbourne Water Price Review 2016 – draft decision*, p.33

[5] ESC (2016), *Melbourne Water Price Review 2016 – draft decision*, p.33

Figure 2.2: Controllable BAU opex by service, change relative to 2016-17 ($m 01/01/2015)



Source: Deloitte Access Economics analysis based on MW Price Review Template - Response to ESC Draft Decision
Note: Controllable BAU opex excludes new obligations, desalination payments, electricity costs, land tax and fire services levy. We have also excluded waterways maintenance identified by MW as a new obligation.

We sought additional information from Melbourne Water and undertook further analysis to determine the key components of these cost increases. Our findings indicate that the majority of the controllable BAU opex increases shown in Figure 2.2 can be explained by:

- Increases in sediment management opex
- Increases in labour costs.

Summary and breakdown of increases in controllable BAU opex

Table 2.4 below provides an annual breakdown of the increase in total controllable BAU opex from 2016-17 for the business as a whole.

Table 2.4: Breakdown of annual increases in total controllable BAU opex from 2016-17 ($m 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Cumulative total
Controllable BAU opex	304.7	306.6	309.6	311.1	316.9	
Increase in BAU opex over 2016-17		1.9	4.9	6.4	12.2	25.4
Breakdown of increases						
Sediment management		0.0	2.5	2.5	5.3	10.3
Labour costs		1.1	2.0	3.0	4.1	10.3
Other costs		0.8	0.4	0.9	2.8	4.8

Source: Deloitte Access Economics analysis of Melbourne Water data

As shown in the table, costs of sediment management and labour account for the majority of the increase in costs (81%). The prudency and efficiency of Melbourne Water's labour costs was discussed in our Final Report. The prudency and efficiency of Melbourne Water's sediment management opex growth is discussed in section 2.2.2 below. We have not been able to identify the precise reasons for the remaining $4.8m in other costs making up the increase. However, based on Melbourne Water's submission, it is likely that this is due, at least in part, growth in customer numbers and escalation in accommodation costs.

Given the significant share of the increase in total controllable BAU opex from 2016-17 made up by waterways and drainage (see Figure 2.2 above), we provide further details of the breakdown of annual increases in waterways and drainage controllable BAU opex from 2016-17 in Table 2.5 below.

Table 2.5: Breakdown of annual increases in waterways and drainage controllable BAU opex from 2016-17 ($m 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Cumulative total
Controllable BAU opex	121.5	122.5	125.2	125.9	129.7	0.0
Increase in BAU opex over 2016-17		1.0	3.7	4.4	8.2	17.3
Breakdown of increases						
Sediment management		0.0	2.5	2.5	5.3	10.3
Labour costs		0.5	0.9	1.3	1.7	4.3
Other costs		0.5	0.3	0.7	1.2	2.7

Source: Deloitte Access Economics analysis of Melbourne Water data
Notes: Labour cost increases are apportioned to waterways and drainage on the basis of the share of total labour costs across the next regulatory attributable to waterways and drainage, as set out on page 71 of Melbourne Water's 2016 Price Submission (42%).
Excludes waterways maintenance costs identified by Melbourne Water as a new obligation – these costs are assessed separately in section 2.3.1.

As shown in the table, the majority of the increase in controllable BAU opex above 2016-17 are attributable to sediment management and labour (84%). We also note that $2.7m of the $4.8 million in other cost increases for the business as a whole (in Table 2.4 above) are attributable to waterways and drainage.

While Melbourne Water has explicitly identified the growth component of waterways and drainage opex (which it defined as a new obligation), we believe it is not unlikely that the remaining $2.7 million in other cost increases could also be due to growth in customer numbers and assets for waterways and drainage, on the basis that:

- The forecast level of growth in waterways and drainage assets is significant (see section 2.3.1 below)
- It would be difficult to explicitly identify and separate increasing waterways maintenance costs due to growth in assets from other cost drivers, and as such, Melbourne Water could be understating (or overstating) the increase in opex attributable to waterways maintenance.

Summary of findings

The majority of increases in Melbourne Water's controllable BAU opex can be explained by increases in labour and sediment management costs, which we consider to be prudent and efficient.

For the remaining $4.8m in increases in controllable BAU opex above 2016-17 levels, we consider it likely that this could be attributed to:

- Growth in customer numbers
- Escalation in accommodation costs
- Growth related increases in waterways and drainage maintenance costs.

However, we also share the concerns of the retailers and the ESC about the trajectory of Melbourne Water's controllable BAU opex. While this growth appears to be broadly justified, we also note that reductions of waterways and drainage maintenance, while reducing costs in the short-term, come at a risk of increasing costs in the future as asset functionality deteriorates.

2.2.2 Sediment management opex growth

Melbourne Water has advised that one of the drivers of increased waterways and drainage BAU opex is increased costs of sediment management. Table 2.6 below, sets out Melbourne Water's current and forecast costs of sediment management. As shown in the table, Melbourne Water expects sediment management opex to increase by $10.3 million in total over the next regulatory period (relative to 2016-17 costs), and we note that 2016-17 and 2017-18 costs are similar to the baseline 2014-15 costs.

Table 2.6: BAU opex – sediment management ($m 01/01/2015)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Historical and forecast opex (Melbourne Water)	1.58	1.73	1.60	1.60	4.10	4.10	6.90
Increase over year 1 of regulatory period				**-**	**2.50**	**2.50**	**5.30**

Source: Melbourne Water
Note: 2014-15 costs are actual, 2015-16 costs are forecasts based on 3 quarters of actual data.

Melbourne Water has identified two main drivers behind the forecast increasing sedimentation costs in the next regulatory period:

- An increase in treatment volumes from 10,000m^3 per annum 50,000m^3 per annum, to meet the current volume of sediment inflow
- Increasing unit costs for disposing of sediment in the next regulatory period.

These drivers are discussed in further detail below.

In our discussions with Melbourne Water, the business explained that the increasing cost of sediment management was treated as BAU opex (rather than a new obligation) because the regulatory obligations to manage sediment and meet targets for nitrogen load discharged into Port Phillip Bay predate the current regulatory period. These obligations were summarised in the EPA's submission to the ESC's draft decision:

> *Melbourne Water has obligations under SEPP WoV to maintain and renew their constructed sediment ponds and wetlands (or replace or substitute with assets that meet equivalent environmental standards to those required to meet SEPP outcomes) as a critical water treatment asset to ensure they function for the purpose they were built… Additionally, maintaining functional constructed wetlands is needed for Melbourne Water to continue to meet nitrogen targets assigned to Melbourne Water in the Port Phillip Bay Environmental Management Plan.*[6]

Melbourne Water has advised that it is not currently achieving its nitrogen reduction target.

Increasing volume of sediment managed

We requested further information from Melbourne Water to better understand the requirement to increase treatment volumes. Melbourne Water has advised that:

- Current capacity of Melbourne Water's 553 sediment ponds and 475 wetland cells is 350,000m^3 with a designed inflow of 50,000 m^3 per annum
- More sediment (50,000 m^3) is entering the system than is currently being removed (10,000 m^3), resulting in a loss of functionality of sediment ponds – it is estimated that currently 55% of the 553 sediment ponds are full of sediment
- Continued management of 10,000 m^3 per annum (current approach) will result in 90% of sediment ponds losing functionality across the network
- If sediment ponds protecting constructed wetlands are not maintained regularly, the coarse material they capture reduces asset life from an estimated 25 years to 7 to 10 years and introduces the risk of flooding and poor water quality.[7]

Melbourne Water also advised that even with its plan to significantly increase the volume of sediment treated each year, it will not begin addressing its sediment backlog until after the next regulatory period, which it has noted would require treatment of 60,000m^3 p.a. Furthermore, under the proposed treatment volumes, Melbourne Water does not expect to meet its nitrogen reduction obligations over the period.

We note that the proposed increase in sediment management relates to the existing sediment ponds and wetlands, and therefore is a separate issue to the increased maintenance costs due to asset growth discussed in section 2.3.1 below.

[6] EPA Victoria (2015), *Submission to the ESC Water Price Review Draft Decision*, October, p.3

[7] Melbourne Water (2016), *Pricing Submission Period 2016/17 to 2020/21 – Waterways and Drainage sediment management operational expenditure requirement*

Increasing unit costs

We requested further information from Melbourne Water to better understand its increasing costs for treatment and disposal of sediment.

Melbourne Water has advised that it expects the cost of landfill and disposal of prescribed waste to increase further in the next regulatory period as a direct result of increased regulation of registered landfill by the EPA, and provided the information on unit costs in Table 2.7 below. Melbourne Water advised that the projected waste disposal unit costs are based on guidance from the waste management industry.

Table 2.7: Increasing unit costs for sediment disposal, $ per tonne

Disposal type	2014-15	Current (2015-16)	Projected (2016-17 onwards)
Land fill – clean fill	$40-$80	$60 - $100	$130
Land fill – Category C contamination	$90 to $120	$150 to $184	$240
High risk – Category B contamination	~ $330	$430 - $600	$500-$600

Source: Melbourne Water.
Note: Costs vary by facility.

Melbourne water has advised that it will achieve the increased sediment volume by implementing a new sediment extraction and separation technology and constructing a sediment treatment facility ($8.5m capex). In addition to increasing treatment volumes, these initiatives are also anticipated to bring down costs:

- The proposed separation technology will result in a 50% reduction in Category C volumes disposed to landfill
- The proposed sediment treatment facility will result in 95% of source material volume being classified as clean fill, and allow up to 90% reuse.

Melbourne Water has stated that these initiatives will result in savings of $23.3 million relative to treating the same volume (50,000m^3) under the current approach. Table 2.8 below sets out Melbourne Water's expected sediment management unit costs, along with treatment volumes and the impact of the new treatment approach and facility.

Table 2.8: Melbourne Water's proposed approach to managing sediment

Estimated per tonne unit costs for sediment management	2016-17 Current approach	2017-18 Sediment extraction & separation technology (DSSS)	2018-19 DSSS and Facility 50% operational	2019-20 DSSS and Facility 50% operational	2020-21 DSSS and Facility 100% operational
Sediment volume managed	**10,000m^3**	**10,000m^3**	**25,000m^3**	**25,000m^3**	**50,000m^3**
Sediment management - excavation and transport[1]	$90/tonne	$85/tonne	$85/tonne	$85/tonne	$85 tonne

Estimated per tonne unit costs for sediment management	2016-17 Current approach	2017-18 Sediment extraction & separation technology (DSSS)	2018-19 DSSS and Facility 50% operational	2019-20 DSSS and Facility 50% operational	2020-21 DSSS and Facility 100% operational
Local disposal - onsite reuse or clean fill disposal[2]	$0/tonne	$0/tonne	$0/tonne	$0/tonne	$0/tonne
Sediment treatment facility processing cost[3]	N/A	N/A	$40/tonne	$40/tonne	$40/tonne
Landfill clean fill[4]	$130/tonne	$130/tonne	$130/tonne	$130/tonne	$130/tonne
Landfill low risk contamination (Cat C)	$240/tonne*	$240/tonne #	$240/tonne ^	$240/tonne^	$240/tonne ^
High risk contamination[5]	$500/tonne	$500/tonne	$500/tonne	$500/tonne	$500/tonne

Source: Melbourne Water
Notes:
[1] Site management costs (excavation and transport) vary depending on the specific condition of individual sites.
[2] Approximately 30% of all sediment material is reused onsite or disposed of as clean fill at no cost.
[3] Fixed cost of sediment treatment facility operation.
[4] Approximately 30% of all sediment material is disposed of as clean fill to landfill, currently and into the future – the unit costs of which are variable between facilities.
[5] Estimated 5% residual of sediment volume to the facility will have high level contamination
* 40% of the total sediment volume extracted is low level contaminated (Cat C) material disposed of to landfill under the current approach - – the unit costs of which are variable between facilities.
# Sediment separation under the DSSS results in a 50% reduction Cat C volume disposed to landfill
^ Sediment facility operation results in 95% of source material volume being classified as clean fill.

Prudency and efficiency of cost increases

We recognise the importance of proper maintenance of sediment ponds, and understand that the cost of running sediment pond assets to fail and simply replacing those assets at the end of their reduced useful life far exceeds the ongoing cost of managing the ponds. Therefore, we consider Melbourne Water's proposal to increase treatment volumes is prudent.

However, our analysis suggests that the Melbourne Water's claimed $23.3 million in savings relates to a counterfactual case where Melbourne Water assumed treatment 50,000m^3 in each year of the regulatory period (i.e. from 2016-17 onwards), relative to a situation where the 50,000m^3 volume is only achieved in the last year (i.e. a gradual increase, in line with the figures in Table 2.8 above).

Nevertheless, based on the information provided by Melbourne Water, we note that the new treatment technology and facility are likely to result in lower treatment costs (for higher volumes of sediment treatment) than if Melbourne Water was to increase its treatment volumes and continue to use its current treatment approach. On a like-for-like comparison (i.e. assuming the same volumes are treated under each method), our analysis suggests that the new approach results in savings of around $0.98 million per year if 50,000m^3 is treated. The following table illustrates the potential savings.

Table 2.9: Savings from proposed approach to managing sediment ($m 01/01/2015)

Sediment volume managed	50,000m^3
Costs under existing approach	7.89
Costs under new approach & with facility	6.90
Potential savings	**0.98**

Source: Melbourne Water
Notes: High-level estimate only, based on pro-rata of current and historical costs to increased volumes

In relation to Melbourne Water's forecast increases in unit costs, while we concede that it is possible that landfill prices may increase in future we were unable to find any clear evidence that this is highly likely to be the case. Nevertheless, we note that despite these claimed unit cost increases, Melbourne Water is not proposing any increases in total costs for managing the same volume of sediment following the price rise. As shown in Table 2.10 below, despite claiming price increases from 2016-17 onwards, Melbourne Water's total sediment management costs in 2016-17 and 2017-18 are lower than expected 2015-16 costs, and comparable to 2014-15 costs.

Table 2.10: Average cost of sediment treatment ($ 01/01/2015)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Sediment volume managed	10,000m^3	10,000m^3	10,000m^3	10,000m^3	25,000m^3	25,000m^3	50,000m^3
Historical and forecast opex ($m)	1.58	1.73	1.60	1.60	4.10	4.10	6.90
Average costs ($/m^3)	158	173	160	160	164	164	138

Source: Deloitte Access Economics analysis of MW data
Note: 2014-15 costs are actual, 2015-16 costs are forecasts based on 3 quarters of actual data.

We understand that Melbourne Water is adopting a strategy of cost containment, by focussing on sediment with lower levels of contamination in the early years of the next regulatory period, and targeting sediment ponds with relatively higher levels of contamination in the later years when the new treatment approach and facility will be operational.

We also note that investment in sediment extraction equipment and a treatment facility will significantly reduce the average cost per cubic metre of sediment treated when operational in the final year of the period.

Recommendation

We do not recommend any adjustments to Melbourne Water's proposed sediment management operating expenditure, on the basis that increasing treatment volumes appears to be based on a prudent asset management strategy and the least-cost approach to managing costs over the long term. We also note that despite claiming that unit costs will increase, Melbourne Water is taking steps to manage cost increases such that the total

treatment costs do not increase following the unit cost increase, and the average cost per cubic meter of sediment is falling over the period.

However, we remain concerned that Melbourne Water's treatment costs may increase in the future due to a lack of proper maintenance of the assets in the past, and that planned capital expenditure to reduce treatment costs during the last regulatory period appeared not to proceed.

We suggest the ESC might consider requiring Melbourne Water to report on its progress and performance in this area as part of its Annual Performance Reporting. Further, given Melbourne Water's past deferrals of maintenance requirements and capital expenditure in this area, the ESC should carefully consider whether any future increases are justified.

2.3 Waterways and drainage

2.3.1 Waterways maintenance

In its original submission, Melbourne Water proposed $9.7 million in new obligations opex for waterways maintenance to address growth in waterways and drainage assets.

In our Final Report, we stated that this expenditure was not a new obligation as it is growth driven. Nevertheless, we accepted that the growth on Melbourne Water's waterways maintenance is better correlated with asset growth than growth in customer numbers. While the growth in Melbourne Water's waterways and drainage opex was above the ESC's growth allowance, it was lower than the growth in the asset base over the period, and therefore we accepted Melbourne water's forecast waterways and drainage expenditure without adjustment.

In its draft decision, the ESC accepted Melbourne Water's proposed $9.7 million in opex on waterways maintenance to address growth in waterways and drainage assets.

The ESC has asked us to provide additional detail on the drivers of Melbourne Water's proposed opex to maintain new assets.

Physical asset growth forecasts and drivers

Key drivers for asset growth identified by Melbourne Water include the requirement to provide infrastructure for development significantly ahead of actual use of the land, and policy-driven targets:

- Developer Service Scheme principles require the provision of infrastructure as a condition of subdivision approval, and as a result, high maintenance assets such as retarding basins and wetlands are built during the early stages of a multi-stage subdivision (i.e. pre-dating population growth). Developer Service Schemes typically have a 20 to 25 year implementation period prior to the estate being fully developed and all allotments being available for sale. Throughout this period, maintenance of the assets is required.

- Targets in the Healthy Waterways Strategy are key drivers for asset growth for waterway condition assets (length of waterways), for example with targets to 2015-16 including establishment of 802km of vegetation and management of 7,579 km.

Melbourne Water advised that the major classes of waterways and drainage assets are expected to grow by between 0.5% and 20% p.a. (in physical terms, such as area, number or length) over the next regulatory period as set out in Table 2.11 below. In particular, Melbourne Water advised that major asset classes that are key cost drivers for maintenance are projected to grow at a rate significantly higher than the 1.8% customer growth rate, including:

- Waterways vegetation assets to grow at 3.8% annually
- Wetlands at 4.1% annually
- Sediment ponds at 4.8% annually.

Table 2.11: Forecast growth in major asset classes and opex, 2016-17 to 2020-21

Opex category	Major asset classes	Total asset growth (2016-17 to 2020-21)	Average annual asset growth (2016-17 to 2020-21)	Average annual opex growth (2016-17 to 2020-21)
Waterways condition	Waterways – vegetation management	224 km	3.8%	1.8%
Drainage & flood protection	Drains	28 km	0.5%	0.6%
	Retarding basins	16 basins	1.6%	
Stormwater treatment	Wetlands	40 wetlands	4.1%	7.1%
	Sediment ponds	120 sediment ponds	4.5%	
Land (waterways)	Waterways land subject to management	90 ha	20%	1.2%
	Assets subject to land management	40 assets	2.6%	

Source: Deloitte Access Economics analysis of Melbourne Water data

As shown in Table 2.11 above, with the exception of stormwater treatment opex, the average annual growth in opex for the categories under which major asset classes were identified by Melbourne Water typically fall well under the average annual asset growth rates.

In relation to stormwater treatment, we note that a significant driver of costs (separate from growth), is Melbourne Water's strategy to increase treatment volumes to maintain existing assets (discussed in section 2.2.2 above). Removing these costs from the total stormwater treatment costs results in an average annual growth rate of 0%.

More generally, we also note that Melbourne Water's proposed total waterways and drainage opex (including growth-driven maintenance but excluding sediment management opex and pollution response) grows by an average of 1.2% p.a. over the regulatory period (from 2016-17). This growth is slower than the projected physical growth in waterways and drainage assets for all major asset classes identified by Melbourne Water other than drains.

Table 2.12: Growth-driven waterways maintenance ($ 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21
Controllable BAU opex	121.5	122.5	125.2	125.9	129.7
Less Sediment management (BAU)	-1.6	-1.6	-4.1	-4.1	-6.9
Plus Waterways maintenance (growth-driven)	0.6	1.3	1.9	2.6	3.3
Controllable BAU opex less sediment management, plus waterways maintenance	**120.5**	**122.2**	**123.0**	**124.5**	**126.1**
Average annual growth rate (2016-17 to 2020-21) = 1.2% p.a.					

Source: MW Template

Recommendation

Based on the information provided by Melbourne Water, and in particular the significant growth rates for major asset classes driving waterways and drainage maintenance opex, we consider that Melbourne Water's proposed waterways maintenance opex is reasonable. Therefore, we have not recommended any adjustments to Melbourne Water's proposal.

2.3.2 New obligations – pollution response

In its draft decision the ESC accepted our recommendation to not allow additional expenditure for Melbourne Water's new obligation relating to pollution response on the basis that the business has for some time provided this service and has historically absorbed the cost internally. In its decision, the ESC noted that Melbourne Water could use the pass through mechanism for unforeseen events to recover large expenditure outlays associated with a particular pollution clean-up event.

In response to the ESC draft decision:

- Melbourne Water stated its support for using the uncertain and unforeseen events clauses for very large pollution events but noted that in emergency events it would seek government assistance before seeking to reopen prices (similar to the approach for managing fire and flood emergencies)
- Melbourne Water provided a revised, lower proposal for additional expenditure of between $0.8 million and $0.7 million per year, or $3.7 million over the regulatory period.

Melbourne Water clarified in its written response to the ESC's draft decision that:

> *…the 2014/15 baseline expenditure [for pollution response] was $0.32M or by extension, $1.6M for the 2016 regulatory period in the baseline expenditure when the ESC's productivity hurdle requirement is applied (2% efficiency requirement with 1.8% customer growth). The 2016 Price Submission sought $5.3M or an additional $3.7M over the regulatory period*.[8]

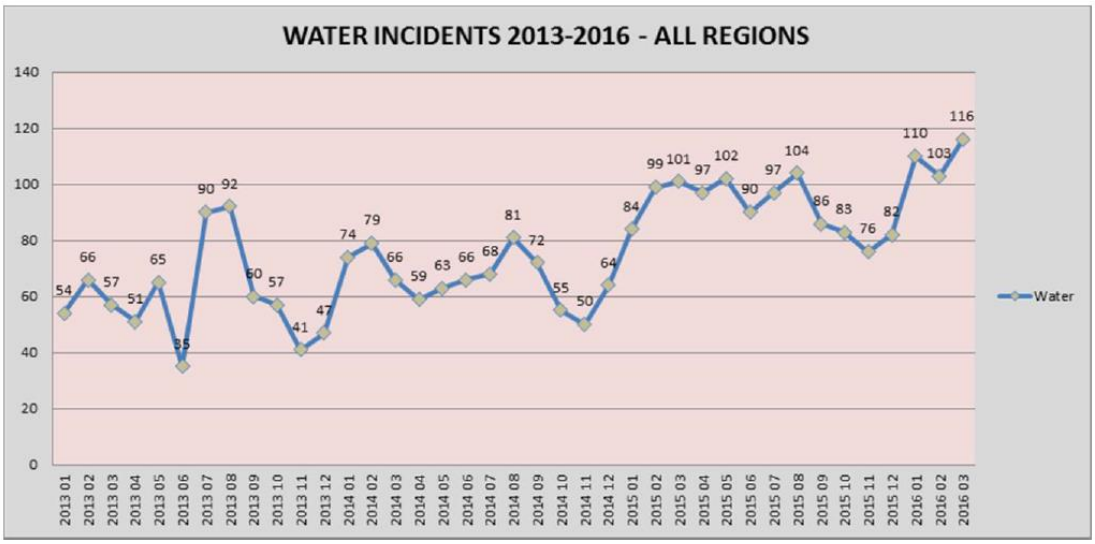
[8] Melbourne Water (2016), *2016 Price Submission – Response to ESC Draft Decision*, p.10

We requested further information from Melbourne Water to better understand its proposed new obligations expenditure, and to understand how the business forecast the increasing costs associated with the increased extent of response (as a distinct cost driver from volume).

Number of incidents

Melbourne Water advised that it expects the number of incidents to grow to approximately 160 events by the end of the period. In its submission to the ESC's draft decision, EPA Victoria confirmed that it expects the upward trend to continue due to increasing urbanisation. The figure below, provided by both Melbourne Water and the EPA, demonstrates and increasing number of water-related incidents in Victoria over the last three years.

Figure 2.3: Number of water-related incidents per month logged by EPA Victoria 2013-2016, State-wide



Source: Melbourne Water and EPA Victoria

While we note that the data on water-related incidents provided by Melbourne Water and the EPA refers to all of Victoria, not just Melbourne Water's area of responsibility, we also consider that it is reasonable to expect that the trend in incidents in Melbourne will be similar to (if not greater than) the rest of Victoria.

Melbourne Water has advised that in 2014-15 the business responded to around 80 incidents. Our analysis suggests that Melbourne Water has based its proposed expenditure for the next regulatory period on around 130-140 incidents a year, which appears high, given the current incident rate.

Cost of responding to incidents

Melbourne Water advised that in 2014-15 the business responded to around 80 incidents at an average cost of $4,600, but that in 2015-16, the average cost of events is $7,900 due to both an increase in the base cost of smaller events as well as the increased response cost of some more significant events where an enhanced pollution response was undertaken.

Melbourne Water noted that it is difficult to forecast costs for pollution events as they are unpredictable both in scale and intensity. Table 2.13 below details Melbourne Water's projections of the costs underpinning its proposed expenditure for pollution response, and provides the basis for the business's expectations for enhanced extent of response.

Table 2.13: Assumed unit costs for BAU pollution response

Pollution response unit costs	Average unit cost ($/hour)	
Business as usual (BAU) activities		
Educting polluted material from waterway or drain	$268	2 operator, 1 ute and 1 truck - does not include disposal costs
Installing absorbent booms on the waterway at the immediate event site to limit downstream pollution	$105	2 man crew - boom costs not included
Liaison and co-ordination with emergency services and EPA	$50	
Erection of signage regarding pollution event and any public health or environmental risk	$105	2 man crew
Safety assessment and response (e.g. erection of barrier fencing)	$210	4 man crew (does not include fence cost)
Development of basic key communication messages	$60	
Higher level of service activities		
Installing absorbent booms downstream of event suite and within receiving waters	$105	2 man crew - boom costs not included
Formation of incident team and 24 hours recovery and rehabilitation of event site and downstream	$800	Incident controller, planning, operations, logistics, EMLO, site manager, Administration, communications
Undertake water quality monitoring as required	$960	
Flushing of polluted waterway or drain using recycled or potable water	$297	4 man crew and pump (does not include cost of water)
Pumping polluted water in waterway or drain to sewer	$297	4 man crew and pump (does not include cost of disposal to sewer)
Aeration of polluted water in waterway or drain	$297	4 man crew and aeration pumps
Undertake assessment of wildlife impacts and undertake rescue and recovery where required	$210	4 man crew
Development of communications strategy and plan where required	$100	
Sewer treatment costs	$36.75	
Potable water scour costs	$73.19	
Underpinning unit costs		
2 man crew cost: $650 per day	$105	$400 for pump, $250 for 6in lay flat hose / day
4 man crew cost: $1300 per day (	$210	per float
Pump and hose costs ($/hour) exc delivery cost	$87	includes 2 operators + ute
Delivery cost	$300	Assume $5k a truck for 10,000L
Eduction truck costs	$268	
Eduction disposal costs - not clean	23c/l - $2.00/l	6m boom - AVERAGE 10-20 Booms per incident
Temporary fence cost	5/m	
Pollution Booms	$150	
Trailer mounted Light tower	$23	

Source: Melbourne Water

These costs appear reasonable and line up with Melbourne Water's estimate of the average cost of responding to pollution events of $7,900.

Recommendation

In light of additional cost information provided by Melbourne Water, we are satisfied that the estimated average costs of responding to pollution events are reasonable, and note that Melbourne Water has reduced its proposed additional opex allowance in recognition of the costs for pollution response ($1.6 million over the next regulatory period) already built into the baseline BAU expenditure.

However, we consider that the anticipated increase in the number of incidents from 2014-15 in the order of around 70% appears high given the information on current trends provided by Melbourne Water and the EPA. We consider a more moderate increase in event numbers of around 25% (meaning around 100 events per year, in comparison to the current 80) is more reasonable. This results in the following changes:

- Total costs of $4.0 million over the regulatory period, in comparison to Melbourne Water's proposed $5.3 million
- Taking the $1.8 million of costs relating to existing activity into account (calculated based on 80 incidents at $4,600 per incident), a revised total additional opex requirement of $2.1 million.

We recommend that the ESC adjust Melbourne Water's revised proposal for pollution events opex down to $2.1 million over the period as per Table 2.14 below.

Table 2.14: Pollution response costs ($m, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Total
ESC Draft Decision	0.0	0.0	0.0	0.0	0.0	0.0
Melbourne Water revised proposal	0.8	0.8	0.8	0.7	0.7	3.7
Deloitte revised recommendation	0.4	0.4	0.4	0.4	0.4	2.1
Recommended adjustment to Melbourne Water's revised proposal	**-0.4**	**-0.4**	**-0.4**	**-0.3**	**-0.3**	**-1.7**

Source: Deloitte Access Economics, ESC draft decision, MW response to ESC draft decision.
Note: figures may not sum due to rounding.

3 Capital expenditure

3.1 Allocations programs

The ESC's draft decision adopted our recommended 20% reductions across Melbourne Water's allocations for its water, wastewater and waterways and drainage service delivery allocation programs, on the basis that Melbourne Water had historically recorded large amounts of underspend in these areas. We also raised concerns that the business cases provided to us did not appear to have been updated since 2011-12 (the date on the business cases).

In response to the ESC's draft decision, Melbourne Water provided some basic information regarding these allocations identifying reasons for historical performance and outlining the approaches used to determine the expenditure for allocations. In addition, Melbourne Water proposed a 5% efficiency reduction on expenditure for all water, wastewater, and waterways and drainage allocations apart from Land Development, for which it has proposed no reduction from its original submission. Melbourne Water noted that it considers that this target would encourage innovation without posing high risks to service levels and meeting obligations.[9]

We have reviewed Melbourne Water's additional information and consider that it does provide additional justification for expenditure levels in some cases. However our concerns remain on the process by which allocations are updated, and the lack of the evidence available to demonstrate that allocations have been adequately updated since the original 2011-12 business cases were developed. In particular, we are not convinced that the allocations expenditures have been updated to account for current and expected unit rates. However, we also note that current panel rates are at the low end and may increase in future with additional construction activity in the Victorian economy (particularly on transport projects) placing upwards pressure on costs.

Accordingly, we have revised our previously recommended 20% reduction to 12.5% and have generally applied this reduction across the allocations programs. We have, however, removed any reductions from the Land Development program and maintained our 10% reduction to retarding basin spillway/embankment upgrades. The results of these adjustments are shown in the table below.

Table 3.1: Melbourne Water's forecast capital expenditure (allocations) and recommended adjustments ($m, 01/01/2015)

	Sewerage allocations	Water allocations	Waterways and Drainage allocations	Total
MW's original proposal	216.00	118.70	718.50	1053.20
ESC draft decision	172.80	94.96	637.07	904.83

[9] Melbourne Water (2016), *2016 Price Submission – Response to ESC Draft Decision*, p.15

	Sewerage allocations	Water allocations	Waterways and Drainage allocations	Total
Deloitte revised recommendation	189.00	103.86	641.87	934.73
Difference (revised recommendation vs. original MW proposal)	**-27.00**	**-14.84**	**-76.63**	**-118.47**
% adjustment	-12.50%	-12.50%	-10.67%	-11.25%

Source: Melbourne Water Plan, ARUP

3.2 Water projects

3.2.1 Winneke UV System upgrade

The ESC's draft decision recommended a reduction in capital expenditure of $4.4 million and a deferral of the majority of capital expenditure from 2019-20 to 2020-21 for the Winneke Treatment Plant UV upgrade. This was in line with our assessment of Melbourne Water's forecasts, in which we suggested a number of adjustments to the project:

- Removal of expenditure for pilot plant
- Reduction in expenditure to account for non-infrastructure options
- Re-phasing of expenditure to reflect realistic construction timelines
- Consideration of deferral of construction costs past 2021 reflecting a lack of urgency.

In response to the ESC's draft decision, Melbourne Water submitted a revised proposal for this project with a 5% reduction from the original cost estimate with the reasoning that:

- The timeframes allowed have sufficient contingency
- Non-infrastructure options have already been investigated and dismissed
- Current cost estimates are higher that the budget allowed.

We recognise that Melbourne Water must take a risk-based approach, particularly around drinking water projects, and therefore (in line with our previous recommendations) we accept that this project should go ahead. However, minimal evidence has been provided of non-infrastructure options investigated as part of this project and we consider that further work should be done in this area.

We recommend that the expenditure in Melbourne Water's original price submission be allowed (with the exception of the $1.4 million pilot plant); however we maintain our recommendation that the capital expenditure be re-profiled as per the ESC draft decision. We have not adopted Melbourne Water's proposed 5% reduction in expenditure.

Table 3.2: Melbourne Water's forecast capital expenditure (water) and recommended adjustments for Winneke UV System Upgrade ($m, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Total WP4
Proposed capital expenditure		0.50	1.20	22.72	7.25	31.67
ESC Draft Decision		0.00	0.30	6.53	20.45	27.27
Revised recommendation		0.00	0.30	7.25	22.72	30.27

	2016-17	2017-18	2018-19	2019-20	2020-21	Total WP4
Difference (revised recommendation vs. original MW proposal)		**-0.50**	**-0.90**	**-15.47**	**15.47**	**-1.40**

Source: Melbourne 2016 Price Submission, ARUP

3.2.2 Merri Creek to MCG Main Renewal

The ESC's draft decision recommended that the entire expenditure for this project be removed. This was in line with our assessment that insufficient evidence was provided to justify the proposed expenditure for this project.

In response to the ESC's draft decision, Melbourne Water indicated that this project is to renew a critical asset supplying water to Melbourne CBD and surrounding inner suburbs. Further it submitted that while other major water mains are able to provide alternative supply, on peak demand days, the immediate network is required to operate at 100% capacity to ensure supply. The Merri Creek to MCG Main is not able to operate at 100% and therefore supply is potentially limited. Melbourne Water noted that it believes this to be an unacceptable risk to supply.[10]

Melbourne Water proposed reinstating the capital expenditure with a 5% reduction consistent with its wider suggested efficiency reduction, as discussed above.

We remain of the view that the evidence provided by Melbourne Water on current leaks and risks to supply and current asset condition (50% chance of significant failure in a year), set against the likelihood of failures occurring specifically on the peak demand day, is not entirely compelling. However, we recognise that the new information suggests an increasing risk of significant failure in this water main leading to a potential loss of supply to the CBD. We also note that Melbourne Water has taken a risk based approach and believes the risk to be unacceptable.

We accept Melbourne Water's risk-based approach and recommend reinstating the expenditure for this project as outlined in Melbourne Water's revised proposal. However, given that the level of design currently completed for the project is to a feasibility study level only, we recommend a small reduction of 10% in the expenditure allowance to capture potential efficiencies identified in the design development process. We have not accepted the proposed 5% reduction suggested by Melbourne Water.

Table 3.3: Melbourne Water's forecast capital expenditure (water) and recommended adjustments for Merri Creek to MCG Main Renewal ($m, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Total WP4
Proposed capital expenditure	3.62	19.66	11.99	0.35	-	35.62
ESC Draft Decision	0.00	0.00	0.00	0.00	-	0.00
Revised recommendation	3.26	17.69	10.79	0.32	-	32.06
Difference (revised recommendation vs. original MW proposal)	**-0.36**	**-1.97**	**-1.20**	**-0.03**	**0.00**	**-3.56**

[10] Melbourne Water (2016), *2016 Price Submission – Response to ESC Draft Decision*, p.21

Source: Melbourne 2016 Price Submission, ARUP

3.2.3 Maroondah Aqueduct Renewal

The ESC's draft decision recommended spreading the capex for the Maroondah Aqueduct Renewal project evenly across two years, rather than a single year as proposed by Melbourne Water. This was consistent with our assessment of Melbourne Water's submission where we identified a number of issues including the lack of an updated business case fully considering the sixth option identified during the community consultation process. We accepted Melbourne Water's assertions that the selected option (Option 6) would be more acceptable to the community however we considered it unlikely that the entire project would be delivered in 2016-17 as proposed.

In response to the ESC's draft decision, Melbourne Water has noted that the project is scheduled for construction in 2016-17 and provided an updated project proposal timeline from April 2016. However, Melbourne Water has not yet provided an updated business case, which we understand is in the process of being approved by the Board. Melbourne Water further applied the general 5% efficiency reduction to the expenditure in the original submission bringing the total proposed expenditure to $33.3 million.

In response to our queries, Melbourne Water also provided some further clarification around Option 6 and submitted an updated project timeline. Our assessment of the timeline indicates that while the majority of work is scheduled for 2016-17, there are a number of tasks scheduled for 2017-18 including aqueduct abandonment with project completion for stage 2 scheduled for November 2017 and completion for stage 3 scheduled for completion in October 2019. We recognise that the planning for this project is well advanced; however, we expect that some additional project work may overflow into 2017-18. We therefore propose adjusting the 50-50 split recommended in the ESC draft decision to an 80-20 split of total expenditure. We have not included the 5% reduction suggested by Melbourne Water.

Table 3.4: Melbourne Water's forecast capital expenditure (water) and recommended adjustments for Maroondah Aqueduct Renewal ($m, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Total WP4
Proposed capital expenditure	35.03	0.01	-	-	-	35.04
ESC Draft Decision	17.51	17.51	-	-	-	35.04
Revised recommendation	28.03	7.01	-	-	-	35.04
Difference (revised recommendation vs. original MW proposal)	**-7.00**	**7.00**	**0.00**	**0.00**	**0.00**	**0.00**

Source: Melbourne 2016 Price Submission, ARUP

3.3 Sewer projects

3.3.1 Western Treatment Plant 55E Renewal

The ESC's draft decision recommended that the expenditure for this project be deferred, with only Stage 2 works to occur in the next period. This was in line with our assessment that the 55E ASP Renewal project was not likely to be required to be constructed in the

fourth regulatory period and construction could be delayed until the following period. This was based on our understanding that a number of capital projects are to be undertaken at the Western Treatment Plant (WTP) that will impact on the ammonia discharge concentration. Therefore, forecasts of the discharge ammonia concentrations over the next three to five years were subject to significant variability. As such, we recommended a reduction in the proposed capital expenditure of $66.87 million while allowing for the development of design works to enable construction to occur within the next regulatory period.

In response to the ESC's draft decision, Melbourne Water submitted additional information relating to the forecast effluent ammonia concentrations and assessment of the risk of licence failure should the construction project not proceed as originally submitted. Further detail was provided regarding the impact of the planned works at WTP (including WTP Stage 2, sludge drying pan upgrades and de-sludging works) would have on the effluent ammonia concentrations. Further, Melbourne Water provided a programme of works for the delivery of the WTP Stage 2 and 55E Renewal projects. Melbourne Water proposed reinstating the full expenditure allowance for this project, less a 5% efficiency amount.

Based on the additional information provided by Melbourne Water, we accept that there remains a risk to exceeding the licence requirements for ammonia following the completion of the planned works at WTP. This is in line with our original recommendation that the project is required to be undertaken. However, given the size and complexity of works planned to occur at WTP which directly influent the commencement and completion of the WTP 55E Renewal project, we are not convinced that this project will incur the capital expenditure proposed by Melbourne Water in the next regulatory period. Further, the program does not appear to include the additional works associated with the decommissioning the existing 55E plant.

Therefore, we recommend no change from the ESC's draft decision. We have not adopted Melbourne Water's proposed 5% reduction to the overall expenditure.

Table 3.5: Melbourne Water's forecast capital expenditure (water) and recommended adjustments for WTP 55E Renewal ($m, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Total WP4
Proposed capital expenditure	0.34	0.42	2.04	5.04	66.87	74.71
ESC Draft Decision	0.34	0.42	2.04	5.04	0.00	7.84
Revised recommendation	0.34	0.42	2.04	5.04	0.00	7.84
Difference (revised recommendation vs. original MW proposal)	**0.00**	**0.00**	**0.00**	**0.00**	**-66.87**	**-66.87**

Source: Melbourne 2016 Price Submission, ARUP

3.3.2 Hobsons Bay sewer

The ESC's draft decision recommended that the majority of the expenditure for this project be removed, with an allowance for Melbourne Water to continue with the design development works. This was in line with our assessment that insufficient evidence was provided to justify the proposed expenditure for this project given the long history of investigations and little deterioration in the sewer since first identified.

In response to the ESC's draft decision, Melbourne Water supplied a further structural assessment being provided indicating that approximately one-third of the sewer required rehabilitation. Melbourne Water also provided further supporting documentation indicating the preferred repair option which had been developed since the publication of the draft decision.

We note the additional information provided by Melbourne Water and accept that the recent structural inspections have recommended rehabilitation of the sewer in the next one to five years to reduce the risk of further deterioration and sewer spill. However, based on the current rate of the delivery of the project and the further requirements for design and trial of the preferred option, we recommend the deferral of capital over three years of the regulatory period. We have not accepted the proposed 5% reduction in total capital expenditure proposed by Melbourne Water.

Table 3.6: Melbourne Water's forecast capital expenditure (water) and recommended adjustments for Hobson's Bay ($m, 01/01/2015)

	2016-17	2017-18	2018-19	2019-20	2020-21	Total WP4
Proposed capital expenditure	1.95	20.47	19.97	-	-	42.39
ESC Draft Decision	1.95	0.00	0.00	-	-	1.95
Revised recommendation	1.95	13.7	13.39	13.35	-	42.39
Difference (revised recommendation vs. original MW proposal)	**0.00**	**-6.77**	**-6.58**	**13.35**	**0.00**	**0.00**

Source: Melbourne 2016 Price Submission, ARUP

3.4 Waterways projects

3.4.1 Alexandra Parade Main Drain Redecking

The ESC's draft decision recommended a reduction in the capital expenditure for this project from Melbourne Water's original proposal of $29.1 million to $14.8 million to upgrade the damaged or debilitated sections of the drain. This was in line with our assessment that repair of the damaged sections only rather than the full drain appeared reasonable, and that cost estimates should reflect efficiencies from framework agreements.

In response to the ESC's draft decision, Melbourne Water advised that further work had been undertaken that confirmed the project could be undertaken within the reduced budget provided for in the draft decision. Nevertheless, Melbourne Water provided a revised proposal for a total allowance of $27.6 million.

In our view, no changes to the ESC's draft decision are warranted based on the additional information provided by Melbourne Water, and the capital expenditure included for this project as set out in the draft decision should be maintained.

3.4.2 Regan St Retarding Basin

The ESC's draft decision recommended a reduction in the capital expenditure for this project from Melbourne Water's original proposal of $9.3 million to $8.4 million, consistent

with our assessment that Melbourne Water should be capable of achieving efficiencies in delivery.

In response to the ESC's draft decision Melbourne Water advised that a significant project risk for delivery at the adjusted budget is the cost of land, which is market driven and was suggested to be likely to increase until the purchase is completed. It was also advised that the developer has already rezoned the land for Melbourne Water's retarding basin as an Urban Floodway Zone (UFZ).

The rezoning of the land to Urban Floodway Zone limits the valuable uses of this land and therefore limits the potential increase in land prices as a result. As such, we do not agree that the land is subject to significant price variation and do not recommend any changes to the draft decision expenditure allowance.

3.5 Waterways programs – planting of greenery and urban cooling

Advice from Melbourne Water is that there are as yet no specific sites identified for its tree planting program, and that plantings would not necessarily be confined to its own land but may also be in adjoining areas.

Melbourne Water advised that the program would operate in a similar way to the Living Rivers program, where the business would operate and co-fund in partnership with other organisations, community groups and volunteers to improve amenities and re-naturalise channels and other waterway assets.

Limitation of our work

General use restriction

This report is prepared solely for the internal use of the Essential Services Commission. This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose of assisting the Essential Services Commission in formulating its response to Melbourne Water's revised submission. You should not refer to or use our name or the advice for any other purpose.

Contact us

Deloitte Access Economics
ACN: 149 633 116

550 Bourke Street
Melbourne VIC 3000
GPO Box 78
Melbourne VIC 3001 Australia

Tel: +61 3 9671 7000
www.deloitte.com.au

www.deloitteaccesseconomics.com.au

Deloitte Access Economics is Australia's pre-eminent economics advisory practice and a member of Deloitte's global economics group. For more information, please visit our website www.deloitteaccesseconomics.com.au

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/au/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms.

Deloitte provides audit, tax, consulting, and financial advisory services to public and private clients spanning multiple industries. With a globally connected network of member firms in more than 150 countries, Deloitte brings world-class capabilities and deep local expertise to help clients succeed wherever they operate. Deloitte's approximately 200,000 professionals are committed to becoming the standard of excellence.

About Deloitte Australia

In Australia, the member firm is the Australian partnership of Deloitte Touche Tohmatsu. As one of Australia's leading professional services firms. Deloitte Touche Tohmatsu and its affiliates provide audit, tax, consulting, and financial advisory services through approximately 6,000 people across the country. Focused on the creation of value and growth, and known as an employer of choice for innovative human resources programs, we are dedicated to helping our clients and our people excel. For more information, please visit our web site at www.deloitte.com.au.