

FINAL REPORT

2016-20 Review of Water Prices for Goulburn-Murray Water

Productivity and Capex Proposals

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Ref: Q0410
January 2016

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DOCUMENT CONTROL

CONTROL SHEET

Version/ revision No.	Path/File name	Prepared by (author)	Reviewed by	Approved by	Version date	Security Classification
Draft Report 1	Q0410 ESC Review of GMW Prices – Productivity & Capex – Draft Report 1	S Ham S Marin	S Marin	P Shepherd	02/12/2015	Draft for review
Draft Report 2	Q0410 ESC Review of GMW Prices – Productivity & Capex – Draft Report 2	S Ham S Marin	S Marin	P Shepherd	08/12/2015	Draft for review
Final	Q0410 ESC Review of GMW Prices – Productivity & Capex – Final	S Ham S Marin	S Marin	P Shepherd	20/01/2016	Public

DISTRIBUTION HISTORY

Name	Location	Issued date
Carmine Piantedosi, Manager Regulation and Pricing, Finance Goulburn-Murray Water	40 Casey St Tatura VIC 3616 carmine.piantedosi@gmwater.com.au	Draft Report 1 - 02/12/2015 Draft Report 2 - 08/12/2015 Final Report - 20/01/2016
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EXECUTIVE SUMMARY

Background

The Essential Services Commission (Commission) has engaged Indec to provide it with advice on Goulburn-Murray Water's (G-MW) proposed productivity improvements and capital expenditure proposals submitted in its 2016 Price Submission.

The Commission is responsible for the economic regulation of the services provided by G-MW under the accreditation from the Australian Competition and Consumer Commission (ACCC). The Commission's role is to assess the price arrangements proposed by G-MW and approve them if it is satisfied the prices comply with the *Water Charge (Infrastructure) Rules 2010 (Commonwealth)* (WCIR) and the ACCC's pricing principles.

Scope of consultancy

Productivity forecasts

Our high-level analysis of G-MW's productivity forecasts focused on answering the following questions:

- Are the productivity improvements reasonable?
- Does scope exist for further productivity improvements beyond those proposed?
- Have non-recurrent expenditure items been removed from the expenditure base?

Capital expenditure

The assessment of G-MW's capital expenditure forecasts was a high-level analysis based on a sampling approach. After discussions with the Commission, Indec identified three projects in total for review.

The high-level analysis of the selected capital expenditure projects was focussed on answering the following questions:

- Has the need for the project been justified?
- Is the project cost estimation process based on reasonable assumptions of the efficient costs likely to be incurred?
- Is the proposed project timing delivery reasonable?

Productivity forecasts

2014-15 baseline year operating costs

The baseline year for the 2016-20 regulatory period is the 2014-15 financial year, which is the last full year of actual expenditure data.

Indec's analysis included a high level review of G-MW's justification of its 2014-15 baseline operating expenditure. Given that G-MW's 2014-15 actual result was \$13.9 million, or 13 per cent less than the approved expenditure from the 2013-15 regulatory period, our review focused on the adjustments that G-MW proposed to its actual 2014-15 result in order to derive the baseline operating expenditure.

Non-recurrent expenditure items

G-MW provided adequate assurances and reconciliations demonstrating that non-cash and material non-recurring expenditure items have been identified and excluded from the 2014-15 actual expenditure data.

Net increase in 2014-15 baseline year operating costs

G-MW is seeking to include an \$8.6 million net increase in operating costs to its 2014-15 actual result. Figure A below shows G-MW's proposed increases and decreases to the 2014-15 actual result used to derive its 2014-15 baseline year operating costs of \$102.5 million.

The most significant adjustment relates to the 70 staff vacancies. Further details regarding the other adjustments are outlined in the body of this report (see Section 2.4.3).

Figure A compares the 2014-15 baseline operating expenditure of \$102.5 million proposed by G-MW to the analysis prepared by Indec showing \$102.1 million. The \$0.4 million difference arises from the estimated cost to fill the 70 staff vacancies.

G-MW presented to Indec a total cost of \$7.5 million to fill the 70 vacancies, whereas a position based analysis prepared by G-MW estimated \$7.1 million. Indec views that the most reliable data source to estimate the number of vacancies and the labour cost is the position based analysis. The position based estimate included details on each vacancy, its level in the organisation and salary level.

Figure A – 2014-15 baseline operating expenditure

Description	\$ millions	
	G-MW's proposal	Indec's analysis
Actual operating expenditure (2014-15)	93.9	93.9
<i>Increases to operating expenditure</i>		
MDBA contribution	3.7	3.7
Vacancies	7.5	7.1
<i>Decreases to operating expenditure</i>		
Legal	0.5	0.5
Materials	0.7	0.7
Plant hire	1.4	1.4
Baseline operating expenditure (2014-15)	102.5	102.1

Source: Indec

Indec's scope did not involve a detailed analysis of G-MW's organisational structure to identify whether the 70 staff vacancies should be filled to establish an efficient organisational structure.

G-MW advised that during the period 2013-14 and 2014-15 it was in a period of business transformation and structural realignment. G-MW stated that although this was not planned prior to the transformation and structural realignment, the intent was to carry some vacancies until the realignment to a regional operational and central maintenance structure was fully implemented. During this period G-MW was gaining an understanding of what efficiencies were permanently realisable to determine which positions should be filled.

Our review of the vacancies focused on G-MW's assumptions in relation to when the positions will be filled and what assumptions have been applied to estimate the cost of filling the vacancies. We wanted to substantiate that G-MW will be filling these vacancies and incurring the labour costs in 2015-16 and beyond. Data provided by G-MW in December 2015 indicated that of the 70 vacancies, 80 per cent or 56 positions have been filled. Recruitment has commenced to fill a further 3 positions and recruitment is yet to commence for the remaining 11 positions.

Impact of the infrastructure modernisation program

The 2014-15 baseline operating costs exclude any explicit quantification of the impacts to date arising from the infrastructure modernisation program. If any cost changes have occurred, the actual results would capture those impacts and these would be embedded within the 2014-15 actuals.

Controllable 2014-15 baseline operating expenditure

Following consultation with G-MW, Indec suggests that the following costs are excluded from the 2014-15 baseline operating costs to establish a controllable 2014-15 baseline operating expenditure:

- MDBA contribution;
- ESC licence fee; and
- Environmental contribution.

These costs are statutory charges and the management of G-MW does not have any direct influence on these charges. Indec suggests that the establishment of the 2014-15 baseline operating expenditure be based on controllable costs to provide management focus on the costs directly under their control. This approach neither commends nor penalises management performance when a statutory charge decreases or increases respectively, and impacts on G-MW's financial outcomes.

Figure B below shows the calculation of the 2014-15 controllable baseline operating expenditure based on Indec's suggestion of the 2014-15 baseline operating expenditure.

Figure B – 2014-15 controllable baseline operating expenditure

Description	\$ millions
Baseline operating expenditure (2014-15)	102.1
<i>Exclusion of non-controllable costs</i>	
MDBA contribution	14.2
ESC licence fee	0.1
Environmental contribution	1.7
Controllable baseline operating expenditure (2014-15)	86.1

Source: Indec

G-MW's proposed productivity improvements

Figure C below shows G-MW's proposed productivity improvements based on the controllable baseline operating costs rolled forward each year. The productivity improvements include the total of the annual change in labour costs and the annual efficiency target.

G-MW's proposal includes an average efficiency target of 1.2 per cent over the regulatory period with annual targets ranging from 0.2 per cent to 2.8 per cent.

G-MW has proposed productivity improvements averaging \$1 million per year, or totalling \$4 million over the next regulatory period.

Indec notes that G-MW's proposed efficiency targets, which average 1.2 per cent per annum, are below those set by the Commission in the current regulatory period, which averaged 2.4 per cent per annum (see Section 2.4.9). G-MW has indicated that it will deliver total forecast operating costs \$24.1 million below those approved by the Commission for the current three year regulatory period.

On this basis of comparison, Indec is of the view that the efficiency targets proposed by G-MW may not be reasonable and scope exists for G-MW to deliver further productivity improvements.

Figure C – G-MW’s proposed productivity improvements

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	Average
Controllable baseline operating expenditure	86.1	83.7	83.5	83.4	84.2
<i>Annual productivity improvements</i>					
Labour cost	-2.4	0.4	0.5	-0.8	-0.6
Productivity target	0.0	-0.6	-0.6	-0.5	-0.4
Total annual productivity improvements	-2.4	-0.2	-0.1	-1.3	-1.0
Controllable operating expense	83.7	83.5	83.4	82.1	83.2
Annual productivity target as a % of controllable baseline operating expense	2.8%	0.2%	0.2%	1.6%	1.2%

Source: Indec

Scope for further productivity improvements

G-MW has scope to further reduce costs as the remainder of the savings associated with the \$20 million cost reduction program is delivered over the next regulatory period. G-MW announced in its 2013 Blueprint that it aims to deliver \$20 million (nominal dollars) in annual operating costs savings by 2018. The \$20 million in nominal dollars is equivalent to \$20 million in real 2015-16 dollars.

G-MW expects that by the end of the current regulatory period (2015-16) it will achieve \$8.4 million (nominal) of the \$20 million in annual savings. The prescribed services share of the expected savings is \$7.1 million (nominal), or about 85 per cent of the expected savings to be achieved. G-MW has included the \$7.1 million of expected savings up until 2015-16 into its future expenditure forecasts. The \$7.1 million in nominal dollars converts to \$6.6 million in 2015-16 real dollars.

The expenditure forecasts, however, do not include the prescribed services share of the full savings target of \$20 million expected to be achieved by 2018. G-MW advised that it would be reasonable to expect that 85 per cent of the \$20 million target, or \$17 million, would relate to prescribed services.

Therefore, with the expected delivery of \$6.6 million (real 2015-16 dollars) in operating costs reductions by 2015-16, there is scope for a further \$10.4 million reduction in operating costs to achieve the \$17 million of savings attributable to prescribed services. As G-MW has included savings of \$4.0 million over the next regulatory period, an additional \$6.4 million in savings is expected on the full delivery of the 2013 Blueprint savings initiative.

Figure D below shows the scope for G-MW to deliver further productivity improvements.

Figure D – Scope for further productivity improvements

Description	\$ millions
2013 Blueprint savings initiative	20
Prescribed services share of savings – 85 per cent	17
Achieved savings included in 2016 Price Submission	6.6
Potential further savings	10.4
Savings included in 2016 Price Submission	4.0
Scope for further productivity improvements	6.4

Source: Indec

G-MW has indicated that it has not included the \$6.4 million of savings yet to be achieved due to the risks associated with delivering the savings.

Indec suggests that the risks that G-MW faces in delivering the savings can be mitigated by extending the timeframe for the delivery of the savings. G-MW's 2013 Blueprint has set a target delivery date of 2018 and Indec suggests that the target be extended to 2020 for price setting purposes. This approach reaches a reasonable balance between the risks faced by G-MW in delivering the savings and protecting the interest of customers by ensuring that the benefits from cost reductions flows through to price reductions in the 2016-20 regulatory period.

The suggested approach also acknowledges G-MW's revenue risk under the building blocks approach, where about 80 per cent of its revenue is derived from operating costs due to its relatively low regulatory asset base. Extending the timeframe to deliver the savings from two to four years for price setting purposes helps reduce this risk to G-MW. This risk is also mitigated as G-MW delivered cost reductions of \$21.1 million below the targets set in the current regulatory period (2013-14 to 2015-16), generating surplus cash flows for G-MW (see Section 2.4.1).

The suggested approach does not remove the incentive for G-MW to deliver the full program of savings by 2018. G-MW would benefit financially from delivering the savings earlier than the assumptions made for price setting. The financial benefit to G-MW is actual operating costs less than those assumed for price setting, which generates surplus cash flows.

Figure E below outlines the controllable baseline operating expenditure for the next regulatory period including the scope for further productivity improvements. The delivery of the additional productivity improvement has been averaged over the four year period at \$1.6 million per annum, or \$6.4 million in total.

With the additional productivity improvement of \$6.4 million included, the annual productivity target as a percentage of controllable operating expenses averages 3.2 per cent over the regulatory period and ranges from 4.6 per cent to 2.1 per cent per annum.

Figure E – Scope of further productivity improvements

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	Average
Controllable baseline operating expenditure	86.1	82.1	80.4	78.6	81.8
<i>Annual productivity improvements</i>					
Labour cost	-2.4	0.4	0.5	-0.8	-0.6
G-MW Productivity target	0.0	-0.6	-0.6	-0.5	-0.4
Scope for further productivity improvements	-1.6	-1.6	-1.6	-1.6	-1.6
Total potential productivity improvements	-4.0	-1.8	-1.7	-2.9	-2.6
Controllable operating expenditure after productivity improvements	82.1	80.4	78.6	75.8	79.2
Annual productivity target as a % of controllable operating expense	4.6%	2.2%	2.1%	3.7%	3.2%

Source: Indec

Capital expenditure

The focus of the review was to select three projects for specific assessment. In consultation with the Commission, Indec selected the following three projects as samples for the review of G-MW's capital expenditure forecasts:

1. Cohuna Weir Fishway (\$2.5 million)
2. Network Infrastructure (\$1.9 million)
3. Data Centre Infrastructure (\$1.8 million)

These projects were selected as they represented the larger capital projects by value commencing in the next regulatory period.

Any systemic findings from the assessment of the selected projects will be considered by the Commission to determine if these apply to all capital expenditure forecasts. The Commission will assess if a blanket adjustment is made across all or part of the capital expenditure forecasts.

Project 1 - Cohuna Weir Fishway

Background

G-MW's proposed a capital expenditure of \$2.5 million for the Cohuna Weir Fishway project in its 2016 Pricing Submission. The purpose of this project is to construct a fish passage on an existing G-MW owned and managed structure.

G-MW has completed detailed design cost estimates with the assistance of an independent consultant. G-MW advised that based on a probabilistic risk based cost estimate the detailed design construction cost estimate for the total construction cost is \$2.54 million (P50), as shown in Figure F below.

Figure F – Summary of Cohuna Weir Fishway construction cost estimate

Description	\$ millions
Construction - including civil, mechanical and electrical	1.51
Statutory proposal, Project supervision and management costs	0.39
Base Estimate	1.90
Contingency – Inherent risk	0.38
Contingency – Contingent risk	0.26
Total Cost (P50 Risk Base Costing)	2.54

Source: G-MW's Cohuna Weir Fishway detailed design construction cost estimate

Key findings

Although G-MW has not completed a business case, it has provided sufficient information required under the Commission's guidelines to demonstrate that the Cohuna Weir Fishway Project is prudent, efficient and deliverable within the timeframes specified.

Project 2 – Network Infrastructure Project

Background

The purpose of G-MW's proposed Network Infrastructure Program of works is to renew the major microwave links in the radio network infrastructure supporting the connectivity within and between business sites.

G-MW has included \$1.85 million in its corporate capital expenditure proposal to replace four major microwave links over the next regulatory period.

Figure G below includes the financial information made available by G-MW.

Figure G – Network Infrastructure Program capital expenditure

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	TOTAL
Microwave link	0.20	0.10	0.10	0.10	0.50
Data Centre Firewall	0.45				0.45
Remote Office Server	0.15				0.15
Remote UPS		0.10			0.10
Internet Perimeter Infrastructure		0.15			0.15
Remote Office Access Layer Switch		0.10			0.10
Core Routing & Remote Air-conditioning & Power			0.40		0.40
Total	0.80	0.45	0.50	0.10	1.85

Source: G-MW

Key findings

G-MW has justified the need for the Network Infrastructure Program based on its renewal driver when the ICT asset reaches the end of its useful life. No evidence was provided by G-MW to demonstrate that it completed an analysis which identified if the asset lives could be extended, and if so, what the related risks and costs involved.

As G-MW has not identified the least cost solution of ICT projects there is some risk that the final scope and cost of the project may change. G-MW advised that it is yet to complete this analysis and consider the related business operations risks. This step will assess the available options and the selection of the solution which balances cost and risk to provide a cost effective outcome.

G-MW has included a contingency allowance of 15 per cent for this project. Indec views that a contingency allowance of around 10 per cent would be more appropriate given G-MW's recent experience in delivering ICT projects and its low expectation that the contingency will be required

Our review did not identify any abnormal delivery risks associated with such a project.

Project 3 – Data Centre Infrastructure Project

Background

The Data Centre Infrastructure Program of Works involves the renewal of G-MW's data centre and disaster recovery capability.

Figure H includes the financial forecasts provided by G-MW for the Data Centre Infrastructure Program. G-MW indicated that the capital expenditure for the project would involve \$1.75 million for hardware replacement, of which \$1 million would be required for the primary data centre, \$0.50 million for the secondary data centre and \$0.25 million for the test/training environment.

Figure H – Data Centre Infrastructure Program capital expenditure

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	TOTAL
Primary Data Centre Infrastructure Programme			1.00		1.00
Secondary Data Centre Infrastructure Programme				0.50	0.50
Test Data Centre Infrastructure Programme	0.25				0.25
Total	0.25	0.00	1.00	0.50	1.75

Source: G-MW

Key findings

The justification for the need for the Data Centre Infrastructure Program of works is based on its renewal driver. G-MW did not present any evidence that it has completed an analysis which identified if the asset lives could be extended and considered the related risks and cost involved.

G-MW is yet to complete the analysis to identify the least-cost solution and its consideration of business operations risks to assess the available options. This analysis will inform the selection of the solution which balances cost and risk to provide a cost effective outcome. As the least cost solution has not been identified by G-MW, there is some risk that the final scope and cost of the project may change.

G-MW has included a 15 per cent contingency allowance for this project. Indec views that a contingency allowance of around 10 per cent would be more appropriate given G-MW's recent experience in delivering ICT projects and its low expectation that the contingency will be required.

Our review did not identify any abnormal delivery risks associated with such a project.

1 BACKGROUND

The Essential Services Commission (Commission) has engaged Indec to provide it with advice on Goulburn-Murray Water's (G-MW) proposed productivity improvements and capital expenditure proposals submitted in its 2016 Price Submission.

G-MW submitted its 2016 Price Submission to the Commission in September 2015. This price submission encompassed a four year pricing period commencing on 1 July 2016.

1.1 ECONOMIC REGULATORY FRAMEWORK

The Commission is the primary economic regulator of essential utility infrastructure services in Victoria. The Commission is responsible for the economic regulation of the services provided by G-MW under accreditation from the Australian Competition and Consumer Commission (ACCC).

The Commonwealth is responsible for the regulation of G-MW's water charges following agreement among states in the Murray-Darling Basin to manage the shared water uniformly across jurisdictions. In Victoria, the referral of powers is achieved by the *Water (Commonwealth Powers) Act 2008 (Victoria)*.

The ACCC is responsible under the *Water Charge (Infrastructure) Rules 2010 (Commonwealth)* (WCIR) for approving or determining the regulated charges of water entities in the Murray-Darling Basin. Accreditation of arrangements are made under Part 9 of the WCIR to transfer responsibility to a State agency from the ACCC for approving regulated charges under the WCIR.

The Commission received accreditation to regulate G-MW's and Lower Murray Water's (rural) charges in 2012 for a ten year period from 17 February 2012. A condition of the accreditation requires the Commission to apply pricing principles developed by the ACCC when approving regulated charges under the WCIR.

The majority of G-MW's infrastructure-related services are regulated under the WCIR and ACCC pricing principles. G-MW's infrastructure services covered by the WCIR account for the majority of G-MW's total regulated costs.

1.1.1 Productivity improvements

In the Guidance Paper issued in August 2014, the Commission outlined its approach for assessing G-MW's operating expenditure in its 2016 Price Submission as follows:

- establish a baseline operating expenditure by reviewing the actual operating costs from the last full year of actual expenditure data, and adjusting to remove any one-off or non-recurring expenditure items and any inefficient costs;
- assess G-MW's proposed changes to annual operating expenditure for each year, including the itemised new costs and new savings arising from the modernisation program, and assess whether identified adjustments are consistent with efficient expenditure; and
- adjust the baseline forecast operating expenditure to reflect the recommended adjustments.

Under the ACCC's pricing principles, the Commission must assess whether G-MW's forecast operating costs include reasonable productivity improvements in providing services from 1 July 2016 to 30 June 2020. The Commission stated that it expected G-MW to present a case in its 2016 Price Submission regarding productivity improvements which G-MW expects will arise from the infrastructure network and business transformation programs over 1 July 2016 to 30 June 2020.

1.1.2 Capital expenditure

The Commission's approach for assessing G-MW's capital expenditure proposals is to assess whether the proposed expenditure is prudent, efficient and deliverable. The Commission must regulate G-MW's capital expenditure proposals according to the ACCC's principles for assessing capital expenditure.

The assessment of G-MW's capital expenditure forecasts was a high-level analysis based on a sampling approach.

1.2 ROLE OF THE ESSENTIAL SERVICES COMMISSION

The Commission's role is to assess the price arrangements proposed by G-MW and approve them if it is satisfied the prices comply with the WCIR and the ACCC's pricing principles.

The Commission must be satisfied the expenditure forecasts contained in the price submission reflect the efficient delivery of the proposed outcomes and account for a planning horizon that extends beyond the term of the price submission.

The Commission's role includes considering the interests of customers of the regulated entity, including low income and vulnerable customers.

1.3 SCOPE OF THE CONSULTANCY

The Commission has engaged Indec to provide it with high level advice in relation to G-MW's proposals made in its 2016 Price Submission in relation to:

- productivity forecasts; and
- capital expenditure forecasts.

In providing advice on the above, the Commission has asked Indec to have regard to:

- the two guidance papers issued by the Commission on how it will assess G-MW's price submission;
- the information in the G-MW's price submission (and accompanying information templates) and any explanations it provides on how it derived the forecasts; and
- any data and information the consultants have available to assess expenditure forecasts.

In assessing these proposals the Commission is required to have regard to its objectives under the *Essential Services Commission Act 2001*, including the main objective to "promote the long term interests of Victorian consumers".

1.3.1 Productivity forecasts

Our high-level analysis of G-MW's productivity forecasts focused on answering the following questions:

- Are the productivity improvements reasonable?
- Does scope exist for further productivity improvements beyond those proposed?
- Have non-recurrent expenditure items been removed from the expenditure base?

Our methodology focused on the following:

- Justification of the operating cost estimate for the baseline year and identifying any adjustments for non-recurring expenditure;
- Quantification and justification of the operating cost impact of the infrastructure modernisation program, itemising any cost increases or decreases from the baseline year; and
- Specification and justification of expected efficiency savings to apply to baseline operating expenditure.

1.3.2 Capital expenditure forecasts

The assessment of G-MW's capital expenditure forecasts was a high-level analysis based on a sampling approach. After discussions with the Commission, Indec identified three projects in total for review.

The high-level analysis of the selected capital expenditure projects was focussed on answering the following questions:

- Has the need for the project been justified?
- Is the project cost estimation process based on reasonable assumptions of the efficient costs likely to be incurred?
- Is the proposed project timing delivery reasonable?

1.4 RELIANCE ON G-MW DATA AND INFORMATION

Indec has relied on the data and information provided by G-MW in completing this report. As part of its analysis Indec conducted high level reasonableness checks to complete its high-level analysis. Indec has not completed detailed checking and verification of the data provided by G-MW.

1.5 REPORT STRUCTURE

The report considers G-MW's productivity forecasts in Section 2.

The reviews of the sample projects for the assessment of capital expenditure forecasts are outlined in Section 3.

1.6 FINANCIAL VALUES

All financial values in this report are based in 2015-16 real dollars unless otherwise stated.

Some data in tables may not sum to the total due to rounding.

2 PRODUCTIVITY FORECASTS

2.1 BACKGROUND

The Commission is required to assess whether G-MW's forecast operating costs include reasonable productivity improvements in providing services for the period 1 July 2016 to 30 June 2020. The Commission regulates G-MW's infrastructure related services according to the ACCC's pricing principles for price approvals and determinations made under the WCIR.

The Commission stated that it expected G-MW to present a case in its 2016 Price Submission regarding the productivity improvements which G-MW expects will arise from the infrastructure network and business transformation programs over 1 July 2016 to 30 June 2020.

2.2 METHODOLOGY

Our analysis of G-MW's productivity forecasts focused on answering the following questions:

- Are the productivity improvements reasonable?
- Does scope exist for further productivity improvements beyond those proposed?
- Have non-recurrent expenditure items been removed from the expenditure base?

Our assessment was based on a high-level analysis of the proposal put forward by G-MW in its 2016 Price Submission. The analysis considered the past performance of G-MW in delivering productivity improvements.

Key considerations were the implementation of the modernisation project and the business reorganisation and the productivity improvements achieved to date. The potential for future productivity gains was also considered.

2.2.1 Commission's guideline on Price Submission

Our methodology has been guided by the Commission's Guideline which stated that its approach for assessing operating expenditure will be based on:

- establishing a baseline operating expenditure by reviewing the actual operating costs from the last full year of actual expenditure data, and adjusting to remove any one-off or non-recurring expenditure items and any inefficient costs;
- assessing G-MW's proposed changes to annual operating expenditure for each year, including the itemised new costs and new savings arising from modernisation program, and assessing whether identified adjustments are consistent with efficient expenditure; and
- adjusting the baseline forecast operating expenditure to reflect the recommended adjustments.

The Commission outlined the information requirement for G-MW's price submission which included:

- justification of the operating cost estimate for the baseline year (2014-15) and identifying any adjustments for non-recurring expenditure;
- quantification and justification of the operating cost impact of the infrastructure modernisation program, itemising any cost increases or decreases from the baseline year; and
- specification and justification of the expected efficiency savings to apply to baseline operating expenditure.

Our high-level analysis was based on G-MW's 2016 Price Submission and accompanying information templates.

Indec's approach included spending about a week in G-MW's offices to gain a deeper understanding of the proposed productivity forecasts to identify the relevant data required to complete our analysis. We interviewed key G-MW personnel to obtain a better understanding of the key issues, such as the collection and recording of cost data and the assumptions underpinning the productivity forecasts.

We sought an overview of the Connections Project to understand how the G-MW business will change. In particular, we wanted to understand how new and existing assets will be utilised, operated and maintained. This information would also assist our understanding of the productivity opportunities available to G-MW.

We requested business cases supporting the modernisation and reorganisation initiatives to obtain a better understanding of the expected benefits of these investments and the assumed productivity improvements.

We assessed whether the assumptions made by G-MW in relation to productivity improvements were reasonable and determined if further savings are possible.

Our advice considered G-MW's recent achievement of productivity improvements, the drivers of these improvements and what further improvements are possible and reasonable, given the initiatives being implemented by G-MW.

2.3 G-MW'S BUSINESS TRANSFORMATION

G-MW is undertaking a significant business transformation with major changes to its gravity irrigation delivery infrastructure, which will significantly impact on how the business is operated. These changes involve new automated assets delivering services and the modification or retirement of existing assets, resulting in organisational restructuring and alterations in operating practices.

Indec has considered the two major areas of change which have impacted on G-MW's operations and cost structures:

- Modernisation and automation of the delivery infrastructure; and
- \$20 million business wide savings initiative (2013 Blueprint).

2.3.1 Connections Project

The modernisation of the delivery infrastructure is currently being implemented through the Connections Project, a \$2 billion investment funded by the State and Commonwealth governments and the Melbourne water businesses to modernise, upgrade and improve the irrigation water delivery network.

The Connections Project involves three major components:

- Upgrading backbone channels and reducing the length of the network by 44 per cent from 6,300 kilometres of channels to 3,500 kilometres;
- Reconnecting customers to the upgraded backbone channel and in many cases creating individual pipeline connections rather than the local spur channel; and
- Several projects including the East Loddon Pipeline and Shepparton East projects.

The Connections Project is expected to be completed in 2018. On completion, a fully automated backbone of major channels and modernised customer service points will be in place. G-MW stated that the modernisation of its retail assets through the Connections Project is changing the nature of the asset base from traditional long life passive assets to ones which include a substantial proportion of active, relatively short life technology based assets. G-MW stated that the Connections Project will deliver all of the automation and the majority of metering of the backbone channel network by the end of the current regulatory period.

G-MW stated in its 2016 Price Submission that the commencement of the asset modernisation benefits will result in the reduction of the workforce required for manual operations and maintenance activities. The larger manual workforce will be replaced with a smaller workforce responsible for the operations and maintenance of the automated aspects of the network. G-MW has indicated that the average cost per employee will increase as this workforce adjustment occurs.

G-MW also indicated that some costs will increase, such as metering and planned and reactive maintenance associated with the automated network, for example the replacement of batteries and sensors.

G-MW is yet to determine the full impact of the Connections Project on its operating environment and has excluded any financial impacts from its forecasts. The full benefits of the project will materialise on its completion in 2018.

2.3.2 2013 Blueprint

G-MW has committed to a business wide initiative to deliver a reduction in total operating expenditure of \$20 million per year by 2018. This commitment is expected to deliver savings to both prescribed and non-prescribed services. The initiatives to deliver the targeted savings includes an organisational restructure to refocus labour resources on meeting the changing needs of customers, particularly in light of a changing asset base and the increasing use of automated systems. This restructure has involved the pooling of resources across the entire business rather than having dedicated teams to serve particular customer groups. An example of this is the removal of the Diversions Support Team with their activities newly undertaken by the business wide Customer Support Team. Cost reduction initiatives include changes to procurement, such as the review of contracts and services.

G-MW expects that by the end of the current regulatory period (2015-16) it will achieve \$8.4 million of the \$20 million in annual savings, of which \$7.1 million is related to prescribed services. G-MW had included the \$7.1 million of expected savings up until 2015-16 in its future expenditure forecasts. The expenditure forecasts, however, do not include the prescribed services share of the full savings target of \$20 million, which is expected to be achieved by 2018.

2.4 PAST PERFORMANCE IN DELIVERING PRODUCTIVITY IMPROVEMENTS

2.4.1 Operating expenditure 2013-14 to 2015-16

Figure 2-1 shows G-MW's forecast operating expenditure for the current regulatory period, as approved by the Commission, against the actuals and 2015-16 forecasts. G-MW has delivered significant productivity improvements and has exceeded the targets determined by the Commission for the current regulatory period.

The productivity improvement set by the Commission over the 2013-14 to 2015-16 period was \$1 million per annum, or a cumulative amount of \$3 million. G-MW has indicated that it will deliver total forecast operating costs \$24.1 million below those approved by the Commission for the current three year regulatory period.

Figure 2-1 – Operating expenditure 2013-14 to 2015-16

Description	\$ millions			
	2013-14 actual	2014-15 actual	2015-16 forecast	Total
Approved	104.4	107.8	105.9	318.1
Actual/forecast	97.6	93.9	102.5	294.0
Variance	-6.8	-13.9	-3.4	-24.1

Source: G-MW 2016 Price Submission

The actual result for 2014-15 has been shown in Figure 2-1 as \$93.9 million based on detailed 2014-15 actual data provided by G-MW. G-MW's 2016 Price Submission included an actual result of \$93.8 million for 2014-15, with the difference being likely a rounding adjustment.

G-MW explained that the result shown in Figure 2-1 over the current regulatory period was largely driven by the Business Transformation Program and the increased focus on efficiency. The key outcomes from the Business Transformation Program have contributed to the following annual productivity improvements:

- \$3.7 million savings from the organisational restructure and reduction in full time staff;
- \$1.6 million reduction in costs resulting from a review of contracts and services; and
- \$1.8 million of other savings.

G-MW's 2016 Price Submission provided the following examples of savings achievements:

- during 2013-14 and 2014-15 G-MW operated with significant staff vacancies which reduced labour costs in those years;
- contracted services costs were lower than budgeted, including a Strategic Partnership with Rubicon, which enabled efficient provision of operations and maintenance services for the automated backbone network;
- utilisation of remote system monitoring and alarm management;
- utilisation of the automated backbone network to assist in targeting maintenance requirements and correcting performance issues with the channels;
- annual proactive maintenance programs associated with electronic meters and automated regulators;
- introduction of 'field computing' for operational staff to assist in the capture of data and the reduction of manual data entry processes;
- rationalisation in the Shepparton Irrigation Region of surplus service points, with 44 outlets removed; and
- \$0.5 million reduction in total Murray Darling Basin Authority (MDBA) contributions over the current regulatory period. G-MW advised that a further proposed change is expected to be confirmed in January 2016 arising from the scope of the Dartmouth upgrade project being removed from the forward look. This will potentially decrease the contribution by a further \$350,000, resulting in an \$850,000 saving from reduced MDBA contributions.

G-MW did not provide an annual breakdown of the savings achieved across the current regulatory period for each of the saving initiatives.

2.4.2 2014-15 baseline year operating costs

The baseline year for the 2016-20 regulatory period is the last full year of actual expenditure data, which is the 2014-15 financial year.

In relation to operating expenditure, the Commission's guidance paper required G-MW to provide amongst other things:

- justification for the operating costs for the baseline year, identifying any adjustments for non-recurring expenditure;
- quantification and justification of the operating cost impact of the infrastructure modernisation program, itemising any cost increases or decreases from the baseline year;
- specification and justification of the expected efficiency savings to apply to baseline operating expenditure;
- explanation of the trend in operating expenditure, having regard to the scope for efficiency improvement; and
- any other relevant factors outlining key assumptions underlying the operating expenditure forecasts, any risks to the forecast and how these uncertainties have been addressed.

As G-MW's 2016 Price Submission did not comprehensively address all these requirements, Indec sought additional information from G-MW.

Figure 2-2 shows the reconciliation prepared by Indec to arrive at G-MW's baseline operating expenditure of \$102.5 million from the actual 2014-15 result of \$93.9 million.

Figure 2-2 – 2014-15 baseline operating expenditure

Description	\$ millions
Actual operating expenditure (2014-15)	93.9
<i>Increases to operating expenditure</i>	
MDBA contribution	3.7
Vacancies	7.5
<i>Decreases to operating expenditure</i>	
Legal	0.5
Materials	0.7
Plant hire	1.4
Baseline operating expenditure (2014-15)	102.5

Source: Indec

2.4.3 Increases to the 2014-15 baseline operating expenditure

G-MW indicated in its 2016 Price Submission that the proposed changes to the customer service standards during the 2016-20 regulatory period will not impact on expenditure and that it has not anticipated any new external obligations which impact on operating costs.

Furthermore, G-MW indicated that the actual expenditure in 2014-15 reflects several one off events that are not expected to continue in 2015-16 and the next regulatory period, including:

- Lower contributions of \$3.6 million made to the Murray Darling Basin Assets. This reflects a decision in 2014-15 to lower the contributions with all states while negotiations are ongoing with the New South Wales government about the magnitude of their contributions. G-MW advised that it expects that contributions will return to forecast levels in the future years. Other data provided by G-MW indicated that the lower contributions were \$3.7 million rather than \$3.6 million;
- Lower labour costs of around \$8.7 million due to staff vacancies. Other data provided by G-MW indicated that the cost was \$7.5 million; and
- Lower contracted services costs, including for irrigation services. G-MW did not provide further details or include this is an adjustment to its baseline operating expenditure.

The increases in costs added to the 2014-15 operating expenditure baseline shown in Figure 2-2 are further explained below.

MDBA contribution

The additional MDBA contribution of \$3.65 million represents the difference between the payment made in 2014-15 and the expected payment in the next regulatory period. G-MW paid contributions of \$10.6 million in 2014-15. The expected ongoing annual payment in the next regulatory period is \$14.2 million.

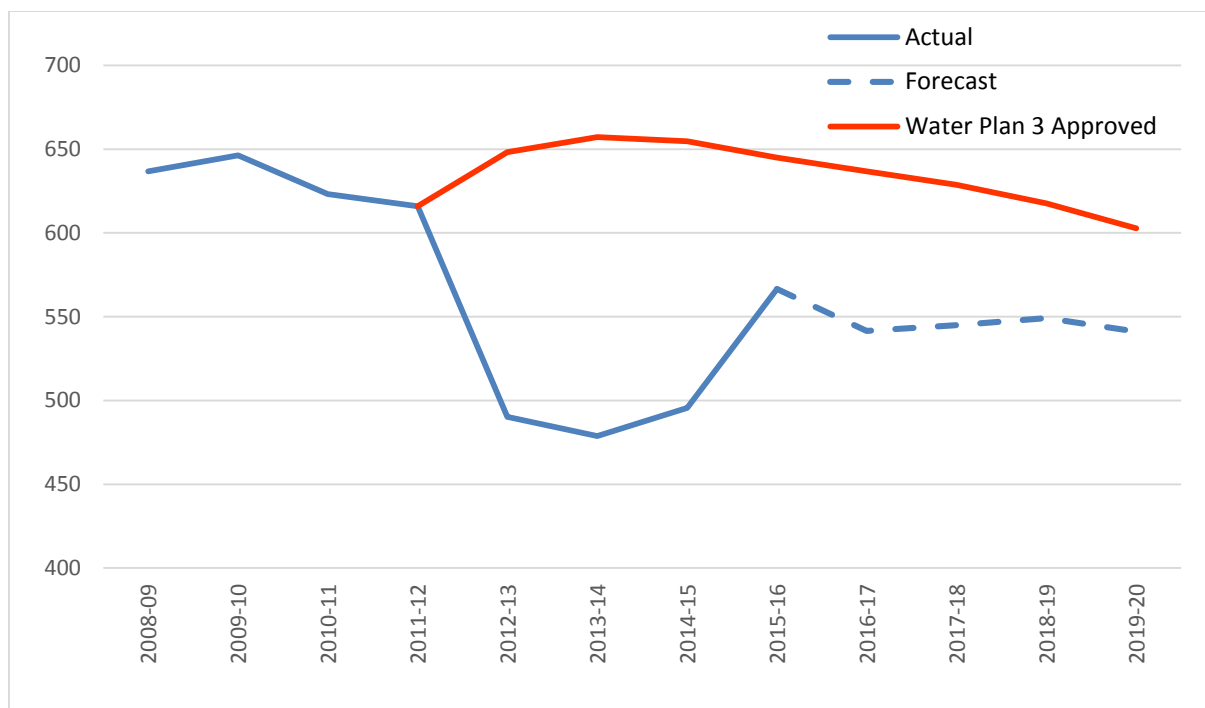
The MDBA contribution will be excluded from the baseline operating expenditure as it is a cost not controllable by G-MW. See Section 2.4.8 for further details.

Vacancies

As outlined above, G-MW indicated in its 2016 Price Submission that the 2014-15 baseline year operating costs exclude annual labour costs of \$8.7 million as 83 vacancies in the baseline year are to be filled in 2015-16 and the next regulatory period. G-MW did not explicitly indicate the expected timeframes in relation to the filling of these vacant positions.

Figure 2-3 below includes a graph showing G-MW's staff count on a Full Time Equivalents (FTEs) basis from 2008-09 to 2019-20. G-MW experienced a significant reduction in its FTE count in 2012-13, followed by a two year period of relatively unchanged FTEs. The graph shows a significant rise in the FTEs during 2015-16 followed by a small decline the following year, and the FTEs thereafter remain relatively unchanged until 2019-20.

Figure 2-3 – G-MW Staff Count (FTEs)



Source: G-MW

G-MW has not included the anticipated cost impacts associated with the Connections Project over the next regulatory period and it has not indicated how and when the workforce adjustment associated with this project will occur. Consequently, G-MW's FTE projections in Figure 2-3 may not represent how the business will be structured as the Connections Project is commissioned.

Indec's scope did not involve a detailed analysis of G-MW's organisational structure to identify if these vacancies should be filled to establish an efficient organisational structure. G-MW's 2016 Price Submission did not explain why these positions remained vacant for this length of time nor clarify why these positions should now be filled.

G-MW advised that during the period 2013-14 and 2014-15 it was in a period of business transformation and structural realignment. G-MW stated that although this was not planned prior to the transformation and structural realignment, the intent was to carry some vacancies until the realignment to a regional operational and central maintenance structure was fully implemented. During this period G-MW was gaining an understanding of what efficiencies were permanently realisable to determine which positions should be filled.

G-MW indicated that although the vacancies did not generally compromise service delivery, some service standards were not realised and certain planned maintenance activities were not undertaken. G-MW provided the following examples of impacts on service delivery:

- Only 85 per cent of the meter inspection and test plan was completed in 2014-15; and
- Certain service standard did not meet their targets in 2014-15 including processing water share applications, processing licence transfers, telephone call answered within 30 seconds and maintenance requests responded to within targets.

G-MW is of the view that had these vacancies not been filled in 2015-16, a greater negative impact on service delivery may have occurred in 2015-16 and beyond.

Our review of the vacancies focused on G-MW's assumptions in relation to when the positions will be filled and what assumptions have been applied to estimate the cost of filling the vacancies. We wanted to substantiate that G-MW will be filling these vacancies and incurring the labour costs in 2015-16 and over the next regulatory period.

Indec requested G-MW to provide a reconciliation of how many of these vacant positions have been currently filled and the current status of the recruitment progress for the remaining positions.

Various G-MW data sources provided differing information on the number of vacancies and the estimated cost to fill the vacancies.

- 2016 Price Submission - identified 83 vacancies at an estimated total cost of \$8.7 million. G-MW explained that this comparison was to the data from the 2013 Price Submission;
- Explanation of baseline operating costs – 71 vacancies at an estimated cost of \$7.5 million; and
- Position based analysis – 70 vacancies at an estimated cost of \$7.1 million.

Indec views that the most reliable data source to estimate the number of vacancies and the labour cost is the position based analysis provided by G-MW. This included details on each vacancy, its level in the organisation and salary level. This estimate included 70 vacancies at an estimated total cost of \$7.1 million.

Figure 2-4 shows that of the 70 vacancies, 80 per cent or 56 positions have been filled. Recruitment has commenced to fill a further 3 positions and recruitment is yet to commence for the remaining 11 positions. This analysis is based on information provided by G-MW in January 2016.

Figure 2-4 – Vacant position status as at December 2015

Description	Number of FTEs	% FTEs
Vacant positions filled	56	80%
Recruitment commenced	3	4%
Recruitment yet to commence	11	16%
Total vacancies	70	100%

Source: G-MW vacancy audit request regarding Water Plan

Figure 2-5 includes Indec's analysis of the business location of the vacancies. The majority of the vacancies are associated with corporate and management overhead activities totalling 47 positions or 68 per cent of the total vacant positions. Vacant positions defined as district involve 22 positions, or 31 per cent of the total vacancies.

Figure 2-5 – Business location of vacant positions

Business Location	Number of FTEs	% FTEs
Corporate	27	39%
Management overhead	20	29%
District	22	31%
Capital	1	1%
Total vacancies	70	100%

Source: G-MW vacancy audit request regarding Water Plan 4 Sept 2015

Figure 2-6 includes an analysis of the business activity associated with the vacant positions. Customer operations is the dominant business activity associated with the vacancies representing 74 per cent of the total or 52 positions. Information technology includes 7 vacancies or 10 per cent of the total with corporate related activities representing the remaining 10 positions or 16 per cent of the total vacancies.

Figure 2-6 – Business activity of vacant positions

Business Activity	Number of FTEs	% FTEs
Customer Operations	52	74%
Information Technology	7	10%
Corporate, Planning, People and Performance	5	7%
Finance	3	4%
Marketing and Communication	2	3%
Managing Director's Office	1	1%
Total vacancies	70	100%

Source: G-MW vacancy audit request regarding Water Plan 4 Sept 2015

The position based salary estimate sets an average cost of \$101,643 for each vacant FTE. This average cost per FTE is reasonable when compared with the average FTE cost of \$103,767 during 2013-14 (actual) and \$106,815 during 2014-15 (forecast).

2.4.4 Decreases to the 2014-15 baseline operating expenditure

Legal

G-MW has identified an ongoing saving associated with reduced legal expenses arising from the resolution of legal claims and cases associated with flooding events. This has resulted in an annual reduction of the 2014-15 baseline operating expenditure of \$0.5 million.

Materials

G-MW incorporated an ongoing annual saving of \$0.7 million due to undertaking an increased number of root cause analyses on asset failures. G-MW anticipates this outcome after the installation of new assets such as sensors.

Plant hire

G-MW has included a permanent annual saving of \$1.5 million associated with reduced expenses associated with plant hire. This reduction in costs arises from a change in how maintenance activities are managed to enable plant hire to be pooled across districts.

2.4.5 Non-cash and non-recurring expenditure

Indec sought assurances and evidence from G-MW that it has removed non-cash and non-recurring operating expenditure items from the 2014-15 baseline operating expenditure.

G-MW provided adequate evidence that non-cash operating expenditure such as depreciation, doubtful debts and expenses associated with asset disposals were excluded.

Figure 2-7 below shows the non-cash expenditure items excluded from the 2015-15 actual results.

Indec sought assurances from G-MW that one-off transactions were excluded such as consultancies and extra-ordinary events associated with floods, droughts and projects. G-MW indicated that it has excluded the relevant material items of non-recurring expenditure. As shown in Figure 2-2 and discussed in Section 2.4.4, G-MW identified a reduction in ongoing legal expenses of \$0.5 million per annum due to the resolution of legal claims and cases associated with flooding events.

Figure 2-7 – Non-cash items excluded from 2014-15 baseline expenditure

Description	\$ millions
Total operating expenditure	213.04
Income tax expense	12.17
<i>Expenditure items excluded</i>	
Written down value of asset disposals	9.18
Statutory depreciation	70.62
Regulatory depreciation	10.39
Finance charges	8.05
Doubtful debts	0.09
Non-prescribed	29.98
Prescribed externally funded	0.34
Corporate allocated to non-prescribed	2.63
Total 2014-15 baseline expenditure	93.94

Source: G-MW 201415 actual reconciliation

2.4.6 Impact of the infrastructure modernisation program

The 2014-15 baseline operating costs exclude any explicit quantification of the impacts to date arising from the infrastructure modernisation program. If any cost changes have occurred, the actual results would capture those impacts and these would be embedded within the 2014-15 actuals.

G-MW stated in its 2016 Price Submission that contracted services costs were lower, including the Strategic Partnership with Rubicon, which enabled efficient provisions of operations and maintenance services for the automated backbone network.

As outlined in Section 2.4.1, G-MW provided the following examples of where savings have been achieved however, without estimating the cost impacts:

- labour savings associated with the vacancies;
- utilisation of remote system monitoring and alarm management;
- utilisation of the automated backbone network to assist in targeting maintenance requirements and correcting performance issues with the channels, improving customer service outcomes;
- annual proactive maintenance programs associated with electronic meters and automated regulators;
- introduction of 'field computing' for operational staff to assist in the capture of data and the reduction of manual data entry processes, and;

- rationalisation in the Shepparton Irrigation Region of surplus service points, with 44 outlets removed.

G-MW stated in its 2016 Price Submission on page 39 that:

‘During the current regulatory period GMW has operated and maintained sections of the gravity backbone network which have been modernised and automated as well as sections of the non-backbone network which are still non-automated. This is a transition period that will continue in the Price Review 2016 period. While operating expenditure savings have been realised, operating a hybrid network means the full extent of savings will not be realised until after the next regulatory period. Further, while modernisation will drive efficiencies and cost savings, it also introduces new costs that need to be taken into account. For example, planned and reactive maintenance associated with the automated network including replacement of batteries and sensors.’

G-MW’s response to Indec’s request for additional information in relation to the estimated impacts of the modernisation program did not include any cost estimates. G-MW provided a general response on the expected outcomes. Figure 2-8 below includes the response received from G-MW.

Figure 2-8 – G-MW response on infrastructure modernisation program impacts

GMW is yet to undertake this analysis as it will be influenced by the outcome of the Mid-Term Review. See below for some general comments/assumptions.

We expect labour savings in field operations and the planning function as we move more of the delivery system to automatic control, remote meter reading, etc.

- **Lower costs due to reduction in service points?**

On average, the cost of new service points will be higher and this is likely to be fully offset by the reduction in service point numbers. In theory, early life costs should be lower than WOL average (around which prices are based).

- **Lower costs due to reductions in delivery shares?**

Fewer delivery shares, per se, do not lead to cost reductions. Rather, delivery share reduction may be a proxy for reductions in assets (e.g. channels, bridges, regulators, etc). This reduction in assets will result in changes to the cost structure (see below).

- **Reductions in maintenance and renewals activities?**

Renewals savings from civil assets decommissioned will not accrue until those assets would have otherwise been due for replacement. There will be more electrical / mechanical assets, generally with shorter lives, offsetting this gain.

Maintenance will be a similar story, with higher unit maintenance costs for the electrical/mechanical assets than those that they replaced offset by fewer number of them and less civil assets.

Source: G-MW

2.4.7 Justification of 2014-15 baseline operating expenditure

Indec's analysis included a high level review of G-MW's justification of its 2014-15 baseline operating expenditure. Given that G-MW's 2014-15 actual result was \$13.9 million, or 13 per cent less than the approved expenditure from the 2013-15 regulatory period, our review focused on the adjustments that G-MW proposed to its actual 2014-15 result in order to derive the baseline operating expenditure.

As outlined earlier in Section 2.4.5, Indec received adequate assurances from G-MW that non-cash and non-recurring expenditure items have been identified and excluded from the 2014-15 actual expenditure data.

Our analysis focused on the FTE vacancies and the estimated cost of filling these positions. As outlined in Section 2.4.3, the data and explanations provided by G-MW on vacancies conflicted with the number of vacancies to be filled and the estimated cost to do so.

Indec has based its analysis on 70 vacancies being filled at an estimated total cost of \$7.1 million using G-MW's position based salary estimate rather than the \$7.5 million provided by G-MW in its baseline operating expenditure estimate.

Figure 2-9 below compares the 2014-15 baseline operating expenditure proposed by G-MW against that recommended by Indec.

Indec's analysis for the 2014-15 baseline operating expenditure is \$102.1 million or \$0.4 million lower than proposed by G-MW due to the adjustment made to the cost to fill the 70 vacant positions.

Figure 2-9 – 2014-15 baseline operating expenditure

Description	\$ millions	
	G-MW's proposal	Indec's analysis
Actual operating expenditure (2014-15)	93.9	93.9
<i>Increases to operating expenditure</i>		
MDBA contribution	3.7	3.7
Vacancies	7.5	7.1
<i>Decreases to operating expenditure</i>		
Legal	0.5	0.5
Materials	0.7	0.7
Plant hire	1.4	1.4
Baseline operating expenditure (2014-15)	102.5	102.1

Source: Indec

2.4.8 Controllable 2014-15 baseline operating expenditure

The determination of the 2014-15 baseline operating expenditure has included all operating costs, including those costs that G-MW does not have direct control over.

Indec consulted with G-MW to identify which costs are not directly controllable by management. Indec suggests that the following costs are excluded from the 2014-15 baseline operating costs to establish a controllable 2014-15 baseline operating expenditure:

- MDBA contribution;
- ESC licence fee; and
- Environmental contribution.

These costs are statutory charges and the management of G-MW does not have any direct influence on these charges. Indec recommends that the establishment of the 2014-15 baseline operating expenditure be based on controllable costs to provide management focus on the costs directly under their control. This approach neither commends nor penalises management performance when a statutory charge decreases or increases respectively, and impacts on G-MW's financial outcomes.

Figure 2-10 below shows the calculation of the 2014-15 controllable baseline operating expenditure based on Indec's analysis of 2014-15 baseline operating expenditure.

Figure 2-10 – 2014-15 controllable baseline operating expenditure

Description	\$ millions
Baseline operating expenditure (2014-15)	102.1
<i>Exclusion of non-controllable costs</i>	
MDBA contribution	14.2
ESC licence fee	0.1
Environmental contribution	1.7
Controllable baseline operating expenditure (2014-15)	86.1

Source: Indec

2.4.9 G-MW's proposed productivity improvements

Figure 2-11 below shows G-MW's proposed productivity improvements based on the controllable baseline operating costs rolled forward each year. The productivity improvements include the total of the annual change in labour costs and the annual efficiency target.

G-MW's proposal includes an average efficiency target of 1.2 per cent over the regulatory period with annual targets ranging from 0.2 per cent to 2.8 per cent.

Figure 2-11 below shows that G-MW has proposed productivity improvements averaging \$1 million per year or totalling \$4 million over the next regulatory period.

Figure 2-11 – G-MW's proposed productivity improvements

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	Average
Controllable baseline operating expenditure	86.1	83.7	83.5	83.4	84.2
<i>Annual productivity improvements</i>					
Labour cost	-2.4	0.4	0.5	-0.8	-0.6
Productivity target	0.0	-0.6	-0.6	-0.5	-0.4
Total annual productivity improvements	-2.4	-0.2	-0.1	-1.3	-1.0
Controllable operating expenditure after productivity improvements	83.7	83.5	83.4	82.1	83.2
Annual productivity target as a % of controllable baseline operating expense	2.8%	0.2%	0.2%	1.6%	1.2%

Source: Indec

Indec notes that G-MW's proposed efficiency targets, which average 1.2 per cent per annum, are below those set by the Commission in the current regulatory period, which averaged 2.4 per cent per annum.

Figure 2-12 shows the efficiency targets set by the Commission in the current regulatory period based on controllable operating costs, involved annual targets of 1.2 per cent, 2.3 per cent and 3.6 per cent of controllable operating expenditure for 2013-14, 2014-15 and 2015-16 respectively.

Figure 2-12 – Productivity targets 2013-14 to 2015-16

Description	2013-14	2014-15	2015-16	Average
Approved operating expenditure	104.40	107.80	105.90	106.03
<i>Exclusion of non-controllable costs</i>				
MDBA contributions	11.00	14.20	14.20	13.13
ESC licence fee	0.19	-0.02	0.08	0.08
Environmental contribution	1.65	1.71	1.71	1.69
Controllable operating expenditure	91.56	91.91	89.91	91.13
Productivity target	-1.07	-2.14	-3.21	-2.14
Annual productivity target as a % of controllable operating expenditure	1.2%	2.3%	3.6%	2.4%

Source: Indec

On this basis of comparison, Indec is of the view that the efficiency targets proposed by G-MW may not be reasonable. Furthermore, we believe scope exists for G-MW to deliver productivity improvements beyond those it has put forward in its 2016 Price Submission.

2.4.10 Scope for further productivity improvements

G-MW has scope to further reduce costs as the remainder of the savings associated with the \$20 million cost reduction program is delivered over the next regulatory period. G-MW announced in its 2013 Blueprint that it aims to deliver \$20 million in annual operating costs savings by 2018.

G-MW expects that by the end of the current regulatory period (2015-16) it will achieve \$8.4 million of the \$20 million in annual savings. G-MW advised that this was based on controllable costs and excludes any savings associated with MDBA contributions, Government Service Contracts and fully funded works. The prescribed services share of the expected savings is \$7.1 million, or about 85 per cent of the expected savings to be achieved.

G-MW advised Indec that the \$20 million savings program is based in nominal dollars. We have converted the \$20 million based in nominal dollars to 2015-16 real dollars to enable direct comparison with G-MW's financial forecasts in its 2016 Price Submission, which are based in 2015-16 real dollars. We have assumed that the savings are targeted to be achieved equally over the 5 year program.

Figure 2-13 shows that the \$20 million savings program in nominal dollars is equivalent to \$20 million in 2015/16 real dollars.

Figure 2-13 – \$20 million savings program – 2015/16 real dollars

Description	\$ millions					
	2013-14	2014-15	2015-16	2016-17	2017-18	TOTAL
Nominal	4.0	4.0	4.0	4.0	4.0	20.0
Inflation factor	0.959	0.987	1	1.022	1.044	n/a
Real – 2015/16 dollars	3.84	3.95	4	4.09	4.18	20.0

Source: Indec

G-MW has included \$7.1 million (nominal dollars) of expected savings up until 2015-16 into its future expenditure forecasts.

Figure 2-14 shows that the savings achieved to date of \$7.1 million in nominal dollars is equivalent to \$6.6 million in real 2015-16 dollars. G-MW advised that the 2014-15 and 2015-16 years involved a reduction in the productivity gains achieved as a review of the savings showed that not all were permanent in nature.

Figure 2-14 – 2013 Blueprint savings achieved to date – prescribed services

Description	\$ millions					
	2013-14	2014-15	2015-16	2016-17	2017-18	TOTAL
Nominal	11.6	-0.8	-3.7	0.0	0.0	7.1
Inflation factor	0.959	0.987	1.000	1.022	1.044	n/a
Real – 2015/16 dollars	11.1	-0.8	-3.7	0.0	0.0	6.6

Source: Indec

The expenditure forecasts, however, do not include the prescribed services share of the full savings target of \$20 million expected to be achieved by 2018. G-MW advised that it would be reasonable to expect that 85 per cent of the \$20 million target, or \$17 million, would relate to prescribed services.

Therefore, with the expenditure forecasts including the delivery of \$6.6 million in operating costs reductions, there is scope for a further \$10.4 million reduction in operating costs to achieve the \$17 million of savings attributable to prescribed services. As G-MW has included savings of \$4.0 million over the next regulatory period, an additional \$6.4 million in savings is expected on the full delivery of the 2013 Blueprint savings initiative.

Figure 2-15 below shows the scope for G-MW to deliver further productivity improvements.

Figure 2-15 – Scope for further productivity improvements

Description	\$ millions
2013 Blueprint savings initiative	20.0
Prescribed services share of savings – 85 per cent	17.0
Achieved savings included in 2016 Price Submission	6.6
Potential further savings	10.4
Savings included in 2016 Price Submission	4.0
Scope for further productivity improvements	6.4

Source: Indec

G-MW has indicated that it has not included the \$6.4 million of savings yet to be achieved due to the risks associated with delivering the savings. Indec acknowledges that G-MW is exposed to risks in delivering the savings.

Indec suggests that the risks that G-MW faces in delivering the savings can be mitigated by extending the timeframe for the delivery of the savings. G-MW's 2013 Blueprint has set a target delivery date of 2018 and Indec recommends that the target is extended to 2020 for price setting purposes.

This approach strikes a reasonable balance between the risks faced by G-MW in delivering the savings and protecting the interest of customers by ensuring that the benefits from cost reductions flows through to price reductions in the 2016-20 regulatory period.

The recommended approach also acknowledges G-MW's revenue risk under the building blocks approach, where about 80 per cent of its revenue is derived from operating costs due to its relatively low Regulatory Asset Base. Extending the timeframe to deliver the savings from two to four years for price setting purposes helps reduce this risk to G-MW. This risk is also mitigated as G-MW will deliver a forecast operating cost reduction of \$21.1 million below the targets set in the current regulatory period (2013-14 to 2015-16) generating surplus cash flows for G-MW (see Section 2.4.1).

The recommended approach does not remove the incentive for G-MW to deliver the full program of savings by 2018. G-MW would benefit financially from delivering the savings earlier than the assumptions made for price setting. The financial benefit to G-MW is actual operating costs less than those assumed for price setting which generates surplus cash flows.

Figure 2-16 outlines the controllable baseline operating expenditure for the next regulatory period with the scope for further productivity improvements included. The delivery of the additional productivity improvement of \$6.4 million has been averaged over the four year period or \$1.6 million per annum.

With the additional productivity improvement of \$6.4 million included, the annual productivity target as a percentage of controllable operating expenses averages 3.2 per cent over the regulatory period and ranges from 4.6 per cent to 2.1 per cent per annum.

Figure 2-16 – Scope of further productivity improvements

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	Average
Controllable baseline operating expenditure	86.1	82.1	80.4	78.6	81.8
<i>Annual productivity improvements</i>					
Labour cost	-2.4	0.4	0.5	-0.8	-0.6
G-MW Productivity target	0.0	-0.6	-0.6	-0.5	-0.4
Scope for further productivity improvements	-1.6	-1.6	-1.6	-1.6	-1.6
Total potential productivity improvements	-4.0	-1.8	-1.7	-2.9	-2.6
Controllable operating expenditure	82.1	80.4	78.6	75.8	79.2
Annual productivity target as a % of controllable baseline operating expenditure	4.6%	2.2%	2.1%	3.7%	3.2%

Source: Indec

The delivery of the Connections Project may also provide G-MW with additional productivity improvements beyond those incorporated in the \$20 million program. We have not included these potential productivity improvement as these are likely to be materialised after the modernisation of retail assets is completed, which is currently expected to be 2018.

3 CAPITAL EXPENDITURE FORECASTS

3.1 BACKGROUND

The Commission's approach for assessing G-MW's capital expenditure proposals is to assess whether the proposed expenditure is prudent, efficient and deliverable. The Commission must regulate G-MW's capital expenditure proposals according to the ACCC's principles for assessing capital expenditure.

Under the WCIR the Commission must approve prices that reflect no more than prudent and efficient expenditure.

3.2 METHODOLOGY

The assessment of G-MW's capital expenditure forecasts was a high-level analysis based on a sampling approach. Indec's scope includes the assessment of three projects rather than the entire capital expenditure program over the four year price path.

The Commission outlined in its Guidance paper that systemic findings from the assessment of the selected projects will be considered in its review of the forecast capital expenditure program over the next regulatory period. The Commission will determine if it will apply a blanket adjustment across all or part of the capital expenditure forecasts.

3.2.1 Projects selected for review

The majority of G-MW's capital expenditure is managed as five major program of works:

- Linear works program – channels and drains;
- Structural works program – road culverts/bridges, occupational crossings, subways, syphons;
- Electrical and mechanical works program – pump stations;
- Other work program – meters, facilities and spray equipment; and
- Corporate – ICT.

The focus of the review was to select three projects for specific assessment. Indec, in consultation with the Commission, identified that the following three projects as samples for the review of G-MW's capital expenditure forecasts:

1. Cohuna Weir Fishway (\$2.5 million);
2. Network Infrastructure (\$1.9 million); and
3. Data Centre Infrastructure (\$1.8 million).

These projects were selected as they represented the larger capital projects by value commencing in the next regulatory period.

3.2.2 Commission's Guideline on Price Submission

Our methodology has been guided by the Commission's Guideline, which stated that its approach for assessing new capital expenditure will include consideration of:

- reflecting obligations imposed by government (including technical regulators) or customer service expectations;
- proposed new major capital works are consistent with efficient long-term expenditure on infrastructure services (based on a best practice asset management framework which considers risk and system-wide needs);

- changes to operating costs are consistent with the timing of major capital projects;
- the timeframes for delivering the proposed new capital expenditure is reasonable, considering G-MW's delivery of major projects in the past.

The WCIR defines a major project as one with the lessor of:

- total expenditure over its life of greater than \$2 million; or
- 5 per cent of the annual revenue from regulated charges.

The Cohuna Weir Fishway project, with an estimated project expenditure of \$2.5 million, meets the definition of a major project.

The Commission outlined the information requirement for major projects to include a completed business case supported by:

- cost drivers (referring to any specific government or regulatory obligations);
- specific outcomes to be delivered;
- cost-benefit analysis, including a rigorous analysis of options considered for achieving the identified outcomes and preferred approach including a 'do-nothing' option;
- cost comparison of various options considering P5, P50 and P95 estimates;
- a risk analysis of the selected option, with a plan to mitigate the identified risks to ensure the project can be delivered on time; and
- the expected commencement and delivery dates, including the expenditure profile across each year of the regulatory period (and beyond if necessary).

3.2.3 Focus of analysis

The high-level analysis of the selected capital expenditure projects was focussed on answering the following questions:

- Has the need for the project been justified?
- Is the project cost estimation process based on reasonable assumptions of the efficient costs likely to be incurred?
- Is the proposed project timing delivery reasonable?

Our assessment was initially based on G-MW's 2016 Water Plan and the accompanying information templates. We requested further information such as cost-benefit and option analysis, business cases and project estimation details relevant to the three selected projects.

3.3 2016-17 TO 2019-20 CAPITAL EXPENDITURE

G-MW's 2016 Price Submission proposed a capital expenditure program of \$126.8 million over the four year regulatory period, with \$108.1 million relating to infrastructure assets and \$18.7 million relating to corporate activities. The corporate capital expenditure includes \$15.5 million relating to Information Communication and Technology (ICT) assets.

Figure 3-1 below shows G-MW's proposed capital expenditure program for the 2016-17 to 2019-20 regulatory period.

Figure 3-1 – 2016-17 to 2019-20 capital expenditure program

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	TOTAL
Irrigation and drainage services	21.8	18.4	17.1	14.5	71.7
Diversion services	0.9	0.6	0.6	0.6	2.7
Bulk water services	13.6	6.4	7.9	5.9	33.7
Corporate	5.3	5.0	4.7	3.7	18.7
Total	41.5	30.4	30.3	24.6	126.8

Source: G-MW

3.4 ASSET MANAGEMENT FRAMEWORK

The scope of Indec's review did not involve an assessment of G-MW's asset management framework. However, Indec's assessment included gaining a general and high level overview of G-MW's asset management framework to understand if G-MW has in place policies, principles and processes for its asset management and planning. Gaining this understanding assisted Indec's insights into assessing the three projects subject to review.

G-MW does not have a requirement to be certified against either the PAS 55 or ISO 55000 standards. PAS 55 is the British Standards Institution's (BSI) Publicly Available Specification for the optimised management of physical assets. ISO 55000 is the International Standard for Asset Management based on PAS 55. Holding either PAS 55 or ISO 55001 certification demonstrates an organisation's competence in asset management to make better, clearer connections between strategic organisational plans and the actual day-to-day operating environment. It can provide confidence that an organisation is applying sound asset management practices to achieve the organisational objectives which balance the costs, opportunities and risks against the desired performance of assets.

G-MW has advised that it is has benchmarked itself against PAS 55 and is currently augmenting its asset management framework in line with the Victorian Government's direction on asset management. This direction requires G-MW to achieve a benchmark standard against ISO 55001 by July 2018.

G-MW demonstrated to Indec that is has started to develop an asset management framework which displays elements of the PAS 55/ISO 55001 frameworks. Some of the elements observed by Indec included an asset management policy which was approved on 1 May 2014, a draft asset management strategy and supporting asset management plans under development.

G-MW presented to Indec an overview of its Multi-Criteria Analysis Tool, which assists G-MW prioritise capital projects based on compliance, risks, strategic alignment, investment parameters and the maturity of the project.

Indec sighted a number of manuals and guidelines, such as asset condition rating guidelines, consequence of asset failure scoring and asset priority and decision manual to name a few, which document important processes in the asset management framework. The existence of documented practices and procedures assists in establishing consistent practices.

Our assessment has not reviewed, nor does it express an opinion on, the appropriateness or effectiveness of G-MW's asset management framework. The objective for the assessment was to gain a general and high-level understanding of G-MW's asset management framework and the maturity of G-MW's asset planning and management practices.

3.4.1 Capitalisation policy

G-MW advised that direct labour is charged to capital projects and is capitalised upon project completion. Corporate and management overheads are allocated to capital at the asset group level such as irrigation, drainage and bulkwater, rather than at the project level. This allocation is calculated on a fixed percentage basis and is consistent with the approach used for operating costs. It forms part of the regulatory asset base; however, it is not specifically tied to any individual asset.

3.5 PAST PERFORMANCE ON CAPITAL PROJECT DELIVERY

3.5.1 Infrastructure projects

G-MW has forecasted that infrastructure related capital expenditure over the current regulatory period will be \$11.3 million less than that approved by the Commission.

Figure 3-2 below compares the actual results for 2012-14 and 2014-15 and the forecast 2015-16 outcome against the annual amounts approved by the Commission.

Figure 3-2 – Infrastructure capital expenditure 2013-14 to 2015-16

Description	\$ millions			
	2013-14 actual	2014-15 actual	2015-16 forecast	Total
Approved	23.7	36.1	28.5	88.3
Actual/forecast	10.8	22.5	43.7	77.0
Variance	-12.9	-13.6	15.2	-11.3

Source: G-MW 2016 Price Submission

G-MW's 2016 Price Submission outlined a number of factors, which contributed to the \$11.3 million variance and resulted in infrastructure related capital expenditure less than that approved by the Commission. These factors included:

- introduction of new governance arrangements, including the Project Approval Committee to review and approve all proposed expenditure, led to delays in expenditure and reprioritisation of projects and programs of work. This impacted on irrigation, drainage and bulk water projects, with the actual delivery of the planned works now occurring towards the end of the current regulatory period;
- new Asset Criticality Assessment Tool reprioritised projects to better reflect the actual physical condition of the assets and a more risk based approach to asset management;

- during 2013/14 resources were diverted away from the delivery of irrigation capital projects towards projects to meet essential Connections Project milestones. The planned capital expenditure was moved from 2013/14 to 2014/15, and;
- during 2014/15 irrigation capital projects were delivered at reduced unit rates without a change in project scope.

Indec sought further information from G-MW on the under spend and in particular the factors that contributed to the variance. Indec wanted to understand if the factors were systemic and/or likely to impact on the planned capital expenditure over the next regulatory period. The information provided by G-MW is shown in Figure 3-3.

In summary, the explanations for the variances include:

- \$7.4 million under spend across two projects - Tullaroop Dam Safety Upgrade (\$2.6 million) and Mildura Merebin Salinity Interception Scheme (\$4.8 million); and
- \$3.6 million in variances related to a number of small projects.

The capital program involved reprioritising of spending across irrigation programs, with an \$11.2 million reduction in spending on access tracks and fencing, with an increase in spending on backbone remodelling (\$7.2 million), road culvert and crossing replacement (\$2.2 million) and rock armouring (\$1.5 million).

G-MW did not provide details on the 2014-15 irrigation projects, which were delivered at lower unit rates than those forecasted without a change in project scope.

Figure 3-3 – Explanation of infrastructure capital expenditure variances - 2013-14 to 2015-16

Project/Program	\$ millions			Reasons
	Approved capital expenditure	Actual capital expenditure	Variance	
Tullaroop Dam Safety Upgrade	8.8	6.2	-2.6	Delayed due to further analysis of options and design processes to address dam safety risk
Mildura Merbein Salinity Interception Scheme	5.2	0.4	-4.8	Minimum expenditure incurred as a result of MDBA removing their contributions to Stage 2 of the project
Irrigation – backbone remodelling	5.0	12.2	7.2	Changed in expenditure profile to address the risk and criticality of channel banks and the road assets failing to maintain an appropriate level of service. These programs were undertaken at the expense of access tracks and fencing program.
Irrigation – road culvert and crossing replacement	6.7	8.9	2.2	
Irrigation – access tracks and fencing	13.9	2.7	-11.2	
Irrigation – rock armouring	2.6	4.1	1.5	
Other projects	46.1	42.5	-3.6	
Total	88.3	77.0	-11.3	

Source: G-MW

3.5.2 Corporate

G-MW has forecasted that corporate related capital expenditure over the current regulatory period will be \$0.8 million higher than that approved by the Commission.

Figure 3-4 below compares the actual results for 2012-14 and 2014-15 and the forecast 2015-16 outcome against the annual amounts approved by the Commission.

Figure 3-4 – Corporate capital expenditure 2013-14 to 2015-16

Description	\$ millions			
	2013-14 actual	2014-15 actual	2015-16 forecast	Total
Approved	4.1	4.4	3.2	11.7
Actual/forecast	2.2	3.5	6.8	12.5
Variance	-1.9	-0.9	3.6	0.8

Source: G-MW

G-MW provided the following explanations for the annual variances:

- 2013-14 – delayed project starts and revised project approach and operating cost solutions contributed to the underspend;
- 2014-15 – project savings and delays in receipt of equipment resulted in spending less than the approved amount; and
- 2015-16 – overspend has arisen due to the completion of 2014-15 projects and funding of projects from the underspending in 2013-14 and 2014-15.

The overall \$0.8 million overspend in corporate was funded by capital underspend across other parts of the business. The additional ICT projects included were:

- Customer Relationship Management Systems Renewal Programme - \$0.7 million;
- Customer Supplier Innovation - \$0.05 million; and
- Financial Systems Renewal Programme - \$0.05 million.

3.5.3 Delivery of 2015-16 capital program

G-MW has recognised that there is a substantial increase in project delivery capacity required in 2015/16 and also in 2016/17. G-MW has planned a mix of internal and external resources to manage these peaks without impacting on business as usual activities. G-MW has advised that the peaks in 2015/16 and 2016/17 are dominated by a number of larger key projects, which will mostly be delivered by external contractors.

G-MW stated that in the recent years it has delivered a number of key projects for MDBA and Catchment Management Authorities, as well as delivering projects for its internal clients. G-MW advised that the total value of the combined projects delivered annually is typically between \$30 million to \$35 million.

The value of external projects on an annual basis is in the vicinity of \$10 million to \$15 million. G-MW advised that during 2015-16, the projects to be delivered for MDBA is approximately \$3 million, which will provide capacity in project management and field construction staff to deliver G-MW's internal capital works.

The actual capex expenditure as of 31 August 2015 for the 2015-16 year was approximately \$3.5 million. Most of the expenditure will be incurred in the second half of the financial year as the works are scheduled to be carried out during the winter shutdown period starting in May 2016.

3.5.4 Capacity to deliver capital expenditure program

Indec's high level review did not identify any issues which would suggest that G-MW faces higher than normal risks to appropriately resource and deliver the capital expenditure program for the next regulatory period.

G-MW commented that the evolving nature of G-MW's asset management framework resulted in some delays in project delivery during the current regulatory period. Some risk may remain that the changes made to decision making and planning process may continue to delay the commencement of projects and subsequently result in project delivery delays over the next regulatory period.

Infrastructure

G-MW advised Indec that it adopts a mix of internal resources, design consultants and external contractors to deliver the infrastructure capital works programs.

Project scoping, planning, limited engineering design and project management of design and construction phases have generally been undertaken by internal resources, with individuals working across the full cycle of capital projects and maintenance programs.

G-MW engages specialist consultants to complete engineering concept and detailed design work for defined projects.

G-MW maintains an internal construction workforce of about 35 staff. G-MW advised that this workforce is generally engaged on irrigation infrastructure works but is also capable of responding quickly to changes in priorities, including emergency response activities. G-MW has the flexibility to engage additional construction contractors on an as-needs basis to complete works of a specialist nature or when workloads exceed the internal resource capacity.

Corporate

G-MW advised that its ICT section currently has two dedicated project managers and dedicated business analysts to assist with the planning and delivery of the capital program. External resources are called upon where necessary due to specialist skill requirements or to meet resource capacity requirements.

3.6 PROJECT 1 - COHUNA WEIR FISHWAY

3.6.1 Background

G-MW's proposed a capital expenditure of \$2.5 million for the Cohuna Weir Fishway project in its 2016 Pricing Submission. The purpose of this project is to construct a fish passage on an existing G-MW owned and managed structure.

G-MW has completed detailed design cost estimates with the assistance of an independent consultant. G-MW advised that based on a probabilistic risk based cost estimate the detailed design construction cost estimate for the total construction cost is \$2.54 million (P50), as shown in Figure 3-5. This estimate included statutory proposals, quality assurance, design support, project supervision and management costs.

Figure 3-5 – Summary of Cohuna Weir Fishway construction cost estimate

Description	\$ millions
Construction - including civil, mechanical and electrical	1.51
Statutory proposal, Project supervision and management costs	0.39
Base Estimate	1.90
Contingency – Inherent risk	0.38
Contingency – Contingent risk	0.26
Total Cost (P50 Risk Base Costing)	2.54

Source: G-MW's Cohuna Weir Fishway detailed design construction cost estimate

3.6.2 Commission information requirements

G-MW is yet to complete a comprehensive business case for the Cohuna Weir Fishway Project, which is a requirement under the Commission's guidelines. G-MW advised that a business case will be prepared by April 2016 and prior to the project commencing in 2018.

G-MW provided the information it has completed to date, including a Candidate Form, which is a high level project evaluation covering the following issues:

- business problem/driver;
- description of project;
- objective;
- benefits;
- strategic contribution;
- business options;
- dependencies;
- timelines;
- risk identification;
- stakeholder identification and endorsement;

- financial overview and cost estimation; and
- preferred option assumptions.

G-MW provided the following information which supports the investment in the project:

- compliance related cost drivers;
- specific outcomes to be delivered by the project;
- cost-benefit analysis, although according to G-MW it lacked detail because the drivers for this project were compliance related;
- options analysis;
- cost comparisons of various options based on P5, P50 and P95 estimates; and
- risk analysis.

3.6.3 Justification for project

The justification for the Cohuna Weir Fishway project is to comply with legislative requirements and meet policy and local community requirements to construct this local fishway.

G-MW advised that the completion and release of the Native Fish Recovery Plan – Gunbower and the Lower Loddon in 2014 was the trigger for this project. This plan identified barriers for fish passage presented by Cohuna Weir.

G-MW advised that it:

- must comply with the requirements under the Flora and Fauna Guarantee Act to construct this local fishway;
- meet a policy requirement of the Victorian Government's Waterway Management Strategy (VGWMS), which mentioned Gunbower Creek as a high priority waterway for the removal of obstructions to fish passage. Cohuna Weir is on Gunbower Creek; and
- must comply with section 40 of the Water Act, which requires the consideration of environmental issues and strategies such as the VGWMS.

G-MW has indicated that local community support is evidenced by press releases from the North Central Catchment Management Authority (NCCMA), the Gannawarra Shire Council's expression of support and ongoing involvement by a steering committee for this project.

The key objectives to be derived from the Cohuna Weir fishway are documented in the VMMS, the Native Fish Recovery Plan and in an associated project at Hipwell Road.

The Candidate Form considered two options – do nothing and construct fish passage – as a non-infrastructure option was not feasible to achieve the key outcomes and benefits.

3.6.4 Project cost estimation

G-MW advised that it developed a probabilistic risk based cost estimation method to estimate the detailed design construction cost. G-MW's completed a P5, P50 and P95 based estimate. The P50 cost estimate for the total construction cost was \$2.54 million.

This cost estimate was based on a detailed design referenced to an expert recommendation using current rates for materials, plant and labour. It assumed that works will be delivered in house by G-MW. The estimate included costs for statutory approvals, project supervision and management, quality assurance and design support.

The cost estimate for the project is based on the bill of quantities derived from the detailed design. In preparing the probabilistic risk based cost estimate, G-MW reviewed the unit rates to ensure they are relevant and comparable to those within the current market and consistent with the rates achieved in similar projects (Hipwell Road and Hattah Lakes projects). These rates were also tested by the independent consultant against industry standards (Rawlinsons) and contractor rates.

In relation to the contingency allowance, G-MW applied a risk based estimate that combined inherent and contingency risks. Inherent risk allows for variation in both quantity and cost of material, plant and labour. Contingent risk is an allowance for additional cost if adverse events were to occur.

G-MW considered a number of potential risks as part of its probabilistic risk based cost estimate, including wet weather delay, stability of the coffer dam due to extended periods of wet weather and unexpected ground conditions. The inherent risk (\$375,468) and contingency risk (\$261,014) assumptions are equivalent to a 25% total contingency allowance.

G-MW advised that it has nominally split the budget in the 2016 Pricing Submission to allow for the permit process to be undertaken in 2016/17 with the delivery to occur in the winter of 2018. G-MW also advised that construction costs have been split evenly across the 2017/18 and 2018/19 financial years. G-MW added, however, that there is growing pressure from the NCCMA and the Gannawarra Shire Council to deliver the works sooner and there is potential for the works to be delivered in winter of 2017.

3.6.5 Project delivery

G-MW indicated that it would work in accordance with a proposed preliminary construction program, which estimated a project delivery timeframe of about three months. G-MW advised that its delivery schedule for this project is based on two teams working concurrently from either end of the fishway to ensure that critical works can be completed during the winter shutdown and allow the weir to return to operation by the start of the irrigation season.

G-MW indicated that generally the majority of the structure programme is physically delivered in the 3 month shut down period when access to the channel network is possible without impacting on service delivery.

G-MW acknowledged that there are risks to deliver the project within a strict 3 month window and the probabilistic risk based cost estimate has captured these risks. G-MW proposed to prioritise tasks on the critical path which result in the early return of the Cohuna Weir to service to mitigate any impacts on irrigation service delivery.

G-MW has planned the following three delivery scenarios to manage the delivery risks:

- Project is fully delivered within the planned 3 month period;
- Project is partially delivered within the planned 3 month period with critical parts of the fishway completed first, which would impact on irrigation service delivery. Cohuna Weir would return to service by the commencement of the irrigation season. The balance of the project would be completed over an additional 1 to 2 month period. G-MW has experience in delivering projects using this approach without a large impact on costs.
- Wet weather prohibits the completion of tasks on the critical path to reinstate Cohuna Weir into service for the commencement of the irrigation season. Works would be terminated and the site would be backfilled to reinstate Cohuna Weir into service and works would not recommence until the following winter.

3.6.6 Comparisons with similar projects

G-MW provided examples of two completed projects similar to the Cohuna Weir Fishway project; the Casey's Weir Fishway project and the Living Murray Hipwell Road Weir (HRW) project. G-MW included summary information on these projects to enable a high-level analysis to be made on G-MW's performance in delivering against project construction cost estimations and/or timeframes.

Whilst G-MW has constructed numerous vertical slot fishways, there are many characteristics which are unique to each site such as the number of fishway cells, the number and height of the fishway walls and the method of integration with the existing weir. Any direct comparisons between projects may not be possible due to these differences.

Casey's Weir Fishway Project

The Casey's Weir Fishway project had an estimated construction cost of \$0.51 million and was a smaller scale project than the Cohuna Weir Fishway project. The purpose of the Casey's Weir Fishway Project was to construct a fish passage on an existing weir. The construction cost was slightly over estimate by 9 per cent or \$46,043. Figure 3-6 below provides summary information on this project.

Figure 3-6 – Summary of Casey's Weir Fishway Project

Description	Details
Construction cost estimate	\$0.51 million
Actual cost	\$0.55 million
Construction timeframe	6 to 7 months

Source: G-MW

G-MW advised that the Casey's Weir Fishway project was delivered over a 6 to 7 month timeframe. G-MW added that the Casey's Weir site works were not impacting on the ability to provide irrigation services, which resulted in G-MW extending the delivery time at no cost impact rather than try to accelerate the works programme at additional cost.

Hipwell Road Weir Project

The Hipwell Road Weir (HRW) project included the HRW Regulator and Fishway works. Construction work for the fish ladder component of Hipwell Road Weir Project was completed in about 3 to 4 months.

G-MW's recent performance on similar projects has resulted in the achievement of delivery timeframes. Indec has found no reason to suggest that G-MW is unable to deliver the Cohuna Weir project within a three month timeframe.

3.6.7 Key findings

Although G-MW has not completed a business case, it has provided sufficient information required under the Commission's guidelines to demonstrate that the Cohuna Weir Fishway is prudent, efficient and deliverable within the timeframes specified.

3.7 PROJECT 2 – NETWORK INFRASTRUCTURE PROGRAM

3.7.1 Background

The purpose of G-MW's proposed Network Infrastructure Program of works is to renew the major microwave links in the radio network infrastructure supporting the connectivity within and between business sites. GMW maintains a private radio network over much of Northern Victoria that supports the automated irrigation network and its offices. This program of works consists of a number of smaller projects. G-MW advised that although these projects as originally planned were grouped together to collectively ensure the renewal of the Wide Area Network, they are largely independent projects and do not rely on each other to proceed.

G-MW has included \$1.85 million in its corporate capital expenditure proposal to replace four major microwave links over the next regulatory period. Figure 3-7 below includes the financial information made available by G-MW.

Figure 3-7 – Network Infrastructure Program capital expenditure

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	TOTAL
Microwave link	0.20	0.10	0.10	0.10	0.50
Data Centre Firewall	0.45				0.45
Remote Office Server	0.15				0.15
Remote UPS		0.10			0.10
Internet Perimeter Infrastructure		0.15			0.15
Remote Office Access Layer Switch		0.10			0.10
Core Routing & Remote Air conditioning & Power			0.40		0.40
Total	0.80	0.45	0.50	0.10	1.85

Source: G-MW

3.7.2 Justification for project

G-MW has justified the need for the Network Infrastructure Program based on their renewal driver, which is shown in Figure 3-8 below. G-MW advised that the assets requiring renewal are all critical components in supporting the automated irrigation network and its regional business offices. These assets also support the transmission of business information and customer data. Renewal of such assets ensures that the risk of failure and consequently the impact on business continuity is reduced.

Figure 3-8– Network Infrastructure – renewal drivers

Asset	Useful life	Asset Purchased	Year when renewal required/estimated
Microwave link	7-10 years	2008-2009	2015-2019
Data Centre Firewall	5-7 years	Water Plan 4 will be the inaugural implementation	n/a
Remote Office Server	5-6 years	2009-2010	2014-16
Remote UPS	3-5 years	2012	2015-17
Internet Perimeter Infrastructure	5-10 years	2008	2013-18
Remote Office Access Layer Switch	5-7 years	2010	2015-17
Core Routing & Remote Air conditioning & Power	7-9 years	2009	2016-18

Source: G-MW

G-MW did not present any evidence that it has completed an analysis to identify whether the asset lives could be extended and the related risks and costs involved.

G-MW provided high level information to support its justification of the projects in this program of works, including the objective of the project, expected benefits, detailed cost estimates and the preferred delivery model. G-MW completed a high level options analysis which included a do nothing scenario and the preferred solution.

G-MW advised that it has reprioritised some of the some of the projects within the Network Infrastructure Program. As a result, the Remote Office Server Refresh Project has been delivered and is now complete, and the Remote UPS Replacement Project has been initiated. G-MW provided a Candidate Form (Remote Office Server Refresh Project) and a Business Case (Remote UPS Replacement Project) these two projects. G-MW did not provide a Business Case for the completed Remote Office Server Refresh Project.

3.7.3 Project cost estimation

G-MW provided cost estimates for each of the projects in this program of works. The probability of estimates for all these projects are P80 based on similar projects completed during the current regulatory period.

G-MW advised that its cost estimation process is conducted by experienced technology professionals. The cost profile for each project included the estimated costs of procurement of hardware, licensing, project management, labour contingency.

G-MW also advised that the cost estimation process includes contacting suppliers to ascertain current market estimates based on similar technical specifications. Cost estimates for several of the projects listed in this program of works, namely Remote Office Servers, Remote UPS and Internet Perimeter Infrastructure, have drawn on previous similar projects in addition to consideration of changes in equipment and labour rates.

G-MW has not provided details about the risk assessment for the Network Infrastructure Program. G-MW advised that it will consider risk to business operations when assessing available options and the selected solution aims to balance cost and risk to provide a cost effective outcome.

G-MW advised that it has not identified the least cost solution for ICT projects to be delivered over the next regulatory period. G-MW stated that the planning phase for this project will include an assessment of the available technology options available and a detailed assessment will be prepared. As the least cost solution is yet to be identified by G-MW, there is some risk that the final scope and cost of the project may change.

G-MW advised that the ICT project contingency are generally 15 per cent of total project cost and has confirmed that a 15 per cent contingency has been used for the Network Infrastructure Program. G-MW stated that a 15 per cent contingency:

- is in accordance with GMW corporate guidelines for implementation;
- is prudent when projects are being planned, in some cases several years in advance of implementation; and
- addresses the risks associated with deployment of the assets in geographically diverse areas.

However, G-MW had also advised that as recent ICT projects have been completed without the need for contingency funding it has a low expectation that this contingency will be used.

Indec views that a contingency allowance of 10 per cent would be more appropriate given G-MW's recent experience in delivering ICT projects and its low expectation that the contingency will be required.

3.7.4 Project delivery

G-MW has not completed project delivery planning to identify the timeframes, resources and skill sets required to complete the project. This introduces risk that G-MW may experience delays in delivering the project and the project estimates to deliver the project may change.

Some similar projects have recorded delays either during the project or upon completion. For example, the 802.1X Implementation – Network Access Control registered delay due to issues in configuration and change of scope. However, Indec noted that G-MW has delivered a number of other similar projects within the approved scope, budget and within the defined regulator period.

Indec has not identified any abnormal or out of the ordinary delivery risks associated with the planned projects within the Network Infrastructure Program.

3.7.5 Key findings

G-MW has justified the need for the Network Infrastructure Program based on its renewal driver when the ICT asset reaches the end of its useful life. No evidence was provided by G-MW to demonstrate that it completed an analysis which identified if the asset lives could be extended, and if so, what the related risks and costs involved.

As G-MW has not identified the least cost solution of ICT projects there is some risk that the final scope and cost of the project may change. G-MW advised it is yet to complete this analysis and consider the related business operations risks. This step will assess the available options and the selection of the solution which balances cost and risk to provide a cost effective outcome.

G-MW has included a contingency allowance of 15 per cent for this project. Indec views that a contingency allowance of around 10 per cent would be more appropriate given G-MW's recent experience in delivering ICT projects and its low expectation that the contingency will be required

Our review did not identify any abnormal delivery risks associated with such a project.

3.8 PROJECT 3 – DATA CENTRE INFRASTRUCTURE PROGRAM

3.8.1 Background

The Data Centre Infrastructure Program of Works involves the renewal of G-MW's data centre and disaster recovery capability. This program of works consists of three smaller projects and G-MW advised that although these projects have been grouped together to collectively ensure the renewal of the data centre assets, they do not rely on each other to progress.

Figure 3-9 includes the financial forecasts provided by G-MW for the Data Centre Infrastructure Program. G-MW indicated that the capital expenditure for the project would involve \$1.75 million for hardware replacement, of which \$1 million would be required for the primary data centre, \$0.50 million for the secondary data centre and \$0.25 million for the test/training environment.

Figure 3-9 – Data Centre Infrastructure Program capital expenditure

Description	\$ millions				
	2016-17	2017-18	2018-19	2019-20	TOTAL
Primary Data Centre Infrastructure Programme			1.00		1.00
Secondary Data Centre Infrastructure Programme				0.50	0.50
Test Data Centre Infrastructure Programme	0.25				0.25
Total	0.25	0.00	1.00	0.50	1.75

Source: G-MW

3.8.2 Justification for project

G-MW has justified the need for the Data Centre Infrastructure Program of works based on their renewal driver.

Figure 3-10 below shows these details. G-MW advised that the assets requiring renewal are all critical components in supporting the automated irrigation network and its regional business offices. The secondary data centre is required to allow for disaster recovery and business continuity in the event of an emergency incident. The test data centre allows for controlled testing of business systems undergoing upgrades and enhancements without impacting normal business operations.

Figure 3-10 – Data Centre Infrastructure – renewal drivers

Asset	Useful life	Asset Purchased	Year when renewal required/estimated
Primary Data Centre Infrastructure Programme	5 years – storage and servers 5-7 years – networking, depending on business needs	June/July 2014	2018/19
Secondary Data Centre Infrastructure Programme	5 years – storage and servers 5-7 years – networking, depending on business needs	2010	2015-16
Test Data Centre Infrastructure Programme	5 years – storage and servers 5-7 years – networking, depending on business needs	Historically constructed from ex-PDC end of life equipment – storage and network provisioned last year, servers planned for Water Plan 4 Year 1	2016/17 (servers)

Source: G-MW

G-MW advised that the existing hardware will be reaching the end of its useful life, and in most cases greater than 5 years old, becoming expensive or risky to maintain and requiring upgrade to meet increasing requirements of capacity and performance. G-MW did not present any evidence that it has completed an analysis to identify if the asset lives can be extended and at what risk and cost.

G-MW provided high level information to support its justification of the projects in this program of works, including the objective of the project, expected benefits, detailed cost estimates and the preferred delivery model. A high level options analysis was completed by G-MW, which included a do nothing scenario and the preferred solution.

3.8.3 Project cost estimation

G-MW provided estimates for each of the projects in this program of works. The probability of estimates for all these projects are P80 and based on similar projects completed during the current regulatory period.

G-MW stated that its cost estimation process is conducted by experienced technology professionals. The cost profile for each project included the estimated costs of procurement of hardware, licensing, project management, labour contingency. G-MW advised that the cost estimation process includes contacting vendors to ascertain current market estimates based on similar technical specifications. Cost estimates within this program of works considered previous similar projects, for example the Primary Data Centre Equipment Refresh project in 2014-15.

G-MW has not provided details about the risk assessment for the Data Centre Infrastructure Program. G-MW advised that it will consider risk to business operations when assessing available options and the selected solution aims to balance cost and risk to provide a cost effective outcome.

G-MW advised that it has not identified the least cost solution for ICT projects to be delivered over the next regulatory period. G-MW stated that the planning phase for this project will include an assessment of the available technology options available and a detailed assessment will be prepared. As the least cost solution is yet to be identified by G-MW, there is some risk that the final scope and cost of the project may change.

G-MW advised that the ICT project contingency are generally 15 per cent of total project cost and has confirmed that a 15 per cent contingency has been used for the Data Centre Infrastructure Program. G-MW stated that a 15 per cent contingency is in accordance with GMW corporate guidelines for implementation, and is prudent when projects are being planned, in some cases several years in advance of implementation.

However, G-MW had also advised that as recent ICT projects have been completed without the need for contingency funding it has a low expectation that this contingency will be used.

Indec also notes that G-MW had used a lower contingency of 5 per cent for a similar recent project in 2014, the Primary Data Centre (PDC) ICT Equipment Refresh (estimated at \$1,307,694 including contingency).

Indec views that a contingency allowance of 10 per cent would be more appropriate given G-MW's recent experience in delivering ICT projects and its low expectation that the contingency will be required.

3.8.4 Project delivery

G-MW has not completed project delivery planning to identify the timeframes, resources and skill sets required to complete the project. Consequently, G-MW is at risk that the estimates to deliver the project may change once further information is available.

However, Indec noted that G-MW has delivered a number of other similar projects within the approved scope, budget and within the defined timeframes.

Indec has not identified any abnormal or out of the ordinary delivery risks associated with the planned projects within the Data Centre Infrastructure Program.

3.8.5 Key findings

The justification for the need for the Data Centre Infrastructure Program of works is based on its renewal driver. G-MW did not present any evidence that it has completed an analysis to identify whether the asset lives could be extended and the related risks and cost involved.

G-MW is yet to complete the analysis to identify the least-cost solution and its consideration of business operations risks to assess the available options. This analysis will inform the selection of the solution which balances cost and risk to provide a cost effective outcome. As the least cost solution has not been identified by G-MW, there is some risk that the final scope and cost of the project may change.

G-MW has included a 15 per cent contingency allowance for this project. Indec views that a contingency allowance of around 10 per cent would be more appropriate given G-MW's recent experience in delivering ICT projects and its low expectation that the contingency will be required.

Our review did not identify any abnormal delivery risks associated with such a project.