



WaterNSW

Annual Review of rural bulk water charges for 2019-20

Final Report
Water

June 2019

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ISBN 978-1-76049-339-4

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1 Executive Summary

1.1 Introduction

The Independent Pricing and Regulatory Tribunal (IPART, or ‘we’) has completed the Annual Review of WaterNSW’s regulated charges for rural bulk water services in the Murray-Darling Basin (MDB) and the Fish River Water Supply Scheme (FRWSS) for the 2019-20 financial year. This review is required under the *Water Charge (Infrastructure) Rules 2010* (WCIR).¹

WaterNSW delivers bulk water to irrigators and other licence holders on regulated rivers across NSW.² WaterNSW operates 42 dams and weirs and other infrastructure across NSW, to deliver water to its customers.³

This is the second Annual Review within the current 4-year determination of WaterNSW’s regulated charges for rural bulk water services (the 2017 Determination),⁴ which set maximum charges from 1 July 2017 to 30 June 2021. The 2017 Determination included three broad categories of regulated charges:

- ▼ **Bulk Water Charges** – annual charges to recover customers’ share of the efficient costs of delivering WaterNSW’s rural bulk water services. These are levied as a two-part tariff, comprising:
 - Fixed entitlement charges - \$ per megalitre (ML) of licensed entitlement,⁵ and
 - Variable usage charges - \$ per ML of water used (extracted from the river).⁶
- ▼ **Murray-Darling Basin Authority (MDBA) and Borders River Commission (BRC) Charges** – which we set for licence holders in the Murray, Murrumbidgee and Border valleys to recover customers’ share of the costs of WaterNSW’s payments to the MDBA and BRC. These are also levied as a two-part tariff, comprising entitlement and usage charges.
- ▼ **Miscellaneous Charges** – which include a range of charges for meter services and other miscellaneous activities.

This Annual Review relates to WaterNSW’s ‘bulk water charges’ (to the extent that they are regulated under the WCIR), and MDBA and BRC charges. This review provided an opportunity for us to consider updating these charges for 2019-20 (ie, the third year of the 2017 determination period), if we consider it to be reasonably necessary to do so, having regard to changes in demand or consumption forecasts and price stability.⁷

¹ The *Water Charge (Infrastructure) Rules 2010* are made under s 92 of the *Water Act 2007* (Cth).

² The difference between unregulated and regulated rivers is that regulated rivers are controlled by a major storage or dam to supply water.

³ IPART, *WaterNSW Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021*, p 1.

⁴ IPART, *WaterNSW Prices for rural bulk water services from 1 July 2017*, Determination, June 2017.

⁵ Or, for customers in the FRWSS: Minimum Annual Quantity (MAQ).

⁶ Except for customers in Lowbidgee valley which have a 100% fixed charge.

⁷ WCIR, rule 37(2).

Other elements of our 2017 Determination, such as prudent and efficient costs and tariff structures, are not within the scope of this Annual Review.

This report sets out our decisions on WaterNSW's 2019-20 regulated charges to its customers in the MDB and FRWSS and explains how we reached these decisions.

1.2 Our decision is to not update charges from the 2017 Determination

Our decision is to maintain charges as set under the 2017 Determination for 2019-20, which includes making adjustments for CPI. This means that current (2018-19) charges will increase in line with CPI (1.3%) from 1 July 2019, for 2019-20. This is consistent with WaterNSW's Annual Review application to have regulated charges for the 2019-20 year adjusted for changes in CPI only.

We considered whether it is reasonably necessary to update regulated charges for 2019-20, having regard to annual changes in demand or consumption, and its impact on price stability. Based on the available information, we have not come to a view that the updated water sales data (ie, changes in usage volumes, entitlement volumes and water allocation ratios) represents a sustained or permanent shift in demand. In relation to the recent spike in usage volumes in the FRWSS, which we highlighted and sought stakeholder comment on in our Draft Report, it is unclear at this stage whether this represents a sustained or permanent shift in demand. While we have not updated these charges for 2019-20, we will continue to monitor the demand in the FRWSS and may update charges at a future annual review if we establish that there has been a sustained or permanent shift in demand.

Overall, we decided it is not reasonably necessary to update charges. This decision is consistent with the ACCC's pricing principles and within the scope of our powers under the WCIR.

1.3 Structure of this report

The remainder of this Report is structured as follows:

- ▼ Chapter 2 provides an overview of the regulatory framework applying to the Annual Review and our approach to the Annual Review.
- ▼ Chapter 3 summarises WaterNSW's application.
- ▼ Chapter 4 explains our decision to not update charges from the 2017 Determination.
- ▼ Chapter 5 outlines the regulated charges that will apply in 2019-20.

2 Overview of the regulatory framework and the annual review process

Under the WCIR, we are required to undertake annual reviews of WaterNSW's regulated charges for rural bulk water services. The valleys included in the Annual Review are listed in section 2.2.

The Annual Review does not relate to maximum charges for rural bulk water services set under the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) (IPART Act).⁸ Consequently, the valleys excluded from the Annual Review are WaterNSW's North Coast, South Coast and Hunter Valleys. Prices for services to urban customers in the FRWSS are also excluded from the Annual Review.

2.1 Regulatory framework

Under Part 9 of the WCIR, IPART is accredited by the Australian Competition and Consumer Commission (ACCC) to determine or approve WaterNSW's bulk water charges in the MDB valleys from 1 June 2016 and onwards.

The charges for WaterNSW's bulk water services supplied in the MDB valleys and to rural customers in the FRWSS are regulated under:

- ▼ The *Water Act 2007* (Cth)
- ▼ The WCIR, and
- ▼ The ACCC's pricing principles for price approvals and determinations under the WCIR of July 2011 (ACCC's 'pricing principles').

The WCIR sets out a 2-stage process for determining or approving the regulated charges for WaterNSW's MDB Valleys (and rural customers in the FRWSS):

1. The approval or determination of regulated charges for a set determination period.⁹ This was completed by IPART in June 2017 and applies from 1 July 2017 to 30 June 2021 (the 2017 Determination).¹⁰ Then,
2. The Annual Review, undertaken after the first year of the determination period set under the first stage, and for each subsequent year within the determination period. WaterNSW is required to submit to IPART an application for approval or determination of its regulated charges for 2019-20. IPART must then approve WaterNSW's application or otherwise determine WaterNSW's regulated charges, in accordance with the Annual Review process set out in the WCIR.¹¹

⁸ The 2017 Determination continues to apply for WaterNSW's rural bulk water services set under the IPART Act.

⁹ WCIR Part 6 Division 2.

¹⁰ IPART, *WaterNSW Prices for rural bulk water services from 1 July 2017*, Determination Water, June 2017.

¹¹ WCIR Part 6 Division 3.

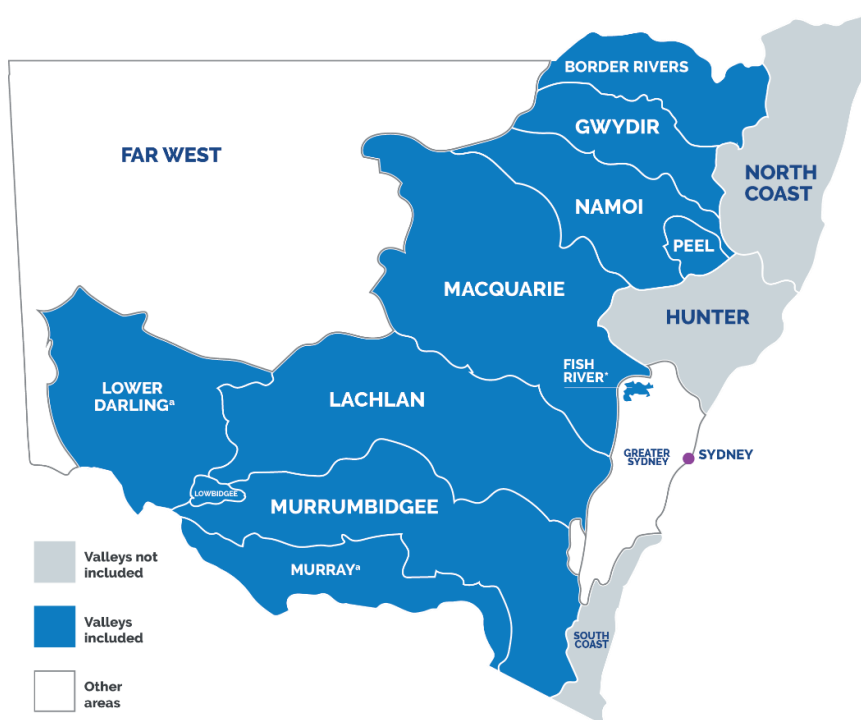
The Annual Review provides us with the opportunity to review and update regulated charges, if it is reasonably necessary to do so, having regard to changes in demand or consumption forecasts, and price stability. Reviewing other elements of our 2017 Determination, such as efficient costs and tariff structures, is not within the scope of an Annual Review.

This is the second Annual Review of WaterNSW's charges for the current determination period. Any variation to charges as a result of this Annual Review would apply for one year only (ie, from 1 July 2019 to 30 June 2020).

2.2 This review applies to all nine MDB valleys and rural FRWSS customers

The Annual Review applies to nine MDB valleys and rural customers in the FRWSS, as shown in Figure 2.1. Further, the Annual Review does not affect WaterNSW's North Coast, South Coast and Hunter Valley customers, as these valleys are not subject to the WCIR.

Figure 2.1 Valleys in and out of scope for the Annual Review



^a We have applied the Murray Valley charges to Lower Darling Valley.

Note: This map is not to scale and is for illustrative purposes only. Only regulated river charges are in scope of the Annual Review. Only rural customers in the FRWSS are in scope of the Annual Review.

2.3 Overview of our approach to consider whether it is *reasonably necessary* to vary charges in the Annual Review

Under the WCIR, IPART must either approve or determine the regulated charges for the relevant year according to the criteria set out under rule 37(2) of the WCIR. Accordingly,

IPART must not vary charges from those set out in the prevailing price determination, except to the extent that it is reasonably necessary, having regard to two matters only:

- ▼ The “changes in the demand or consumption forecasts” set out in WaterNSW’s application for an Annual Review,¹² and
- ▼ “Price stability”.¹³

For WaterNSW, the regulated charges set under the WCIR were set out in the 2017 Determination. We have set constant charges in the 2017 Determination (ie, real \$2017-18), but have included annual adjustments to index charges by CPI (ie, to reflect nominal charges).

To assess the *reasonably necessary* threshold, we consider whether:

- ▼ The change in demand or consumption (ie, water sales volumes) represents a permanent or sustained shift in the demand profile.
- ▼ There is a case to respond to changes in demand or consumption.
- ▼ There is a material demand and revenue volatility risk exposure that WaterNSW would face based on the latest data.

If we were to change the regulated charges for 2019-20 to reflect updated sales volumes, we would apply the approach set out in Appendix A to calculate charges. In essence, Appendix A states that regulated charges could vary as usage, entitlement and water allocations change year on year.

2.4 Overview of the Annual Review timetable

IPART must either approve or determine WaterNSW’s regulated charges within three months of receiving WaterNSW’s pricing application. The timeframe may be extended by one month at a time, provided IPART informs WaterNSW why it has been unable to make its decision during the required timeframe. If IPART requests further information from WaterNSW during the review, any day in which this information request remains unfulfilled extends IPART’s three month period for this review.

In making our decision, we have considered WaterNSW’s pricing application, which was received on 12 March 2019, and two stakeholder submissions we received on the Draft Report. The timetable for this review is outlined in Table 2.1.

Table 2.1 Annual Review timetable

Milestone	Date
Received pricing application from WaterNSW	12 March 2019
Release Draft Report and Draft Approval	16 April 2019
Submissions to the Draft Report close	13 May 2019
Release Final Report and Final Approval	4 June 2019

¹² WCIR, rule 37(2)(a).

¹³ WCIR, rule 37(2)(b).

3 WaterNSW's application for 2019-20

The first step in our Annual Review process is to consider WaterNSW's application for the 2019-20 period. As required under the WCIR, we assess the application (Chapter 4) and consider if it is reasonably necessary to vary charges from those set under the 2017 Determination.

This chapter summarises the key details of WaterNSW's pricing application for the 2019-20 period and information provided to IPART. WaterNSW's pricing application complies with the form and content requirements under the WCIR.

3.1 Summary of WaterNSW's pricing application

WaterNSW requested that IPART approve regulated charges for the 2019-20 period in line with the 2017 Determination, only adjusted for actual inflation.¹⁴

In its application to IPART, WaterNSW noted that it had considered the impact that a change in prices would have on its customers, when it made the decision to propose to leave charges unchanged from the 2017 Determination. Its application indicated that any increase in charges due to a decrease in usage volumes, because of drought, may result in bill pressure to its customers. Further, its application included updated water sales data as required under the WCIR, its estimate of rural charges for the 2019-20 period, and customer bill impacts. For further information, WaterNSW's application can be accessed on our [website](#).

3.2 WaterNSW's proposed charges for 2019-20

The rural charges proposed by WaterNSW for the nine valleys and FRWSS are shown in Table 3.1, Table 3.2 and Table 3.3. WaterNSW calculated the regulated charges by converting the charges included in the 2017 Determination from 2017-18 dollars into 2019-20 dollars.¹⁵ WaterNSW used the following inflation rates to convert the charges:

- ▼ 1.9% per annum to inflate charges from 2017-18 dollars to 2018-19 dollars, and
- ▼ 2.5% per annum to inflate charges from 2018-19 dollars to 2019-20 dollars.

¹⁴ WaterNSW used an inflation rate of 2.5% in its 2019-20 application, to convert the 2019-20 prices listed in the 2017 Determination into 2019-20 dollars. This was based on IPART's inflation rates outlined in the submission information package sent to WaterNSW in February 2019. The 2.5% assumption to convert 2018-19 dollars to 2019-20 dollars (or around 4.4% to convert 2017-18 dollars to 2019-20 dollars) was an estimate only, given that final charges are calculated using the actual March-on-March CPI (which was released by the ABS in April 2019).

¹⁵ As part of its Annual Review application, WaterNSW used the model provided by IPART which effectively converted the 2016-17 dollars used in the Final Report to 2017-18 dollars to line up with the Final Determination in the first instance. Then, the 2017-18 dollars were converted to 2018-19 dollars and 2019-20 dollars for each Annual Review.

Table 3.1 WaterNSW's application for bulk water charges in 2019-20 (\$2019-20) (\$/ML)

Valley	Usage charge	High Security (HS) entitlement charge	General Security (GS) entitlement charge
Border	5.79	5.68	2.11
Gwydir	12.65	11.81	3.71
Namoi	21.30	18.21	8.49
Peel	19.58	44.31	4.28
Lachlan	20.30	16.39	2.91
Macquarie	14.69	14.40	3.04
Murray	2.04	1.64	0.80
Murrumbidgee	3.53	3.14	1.18
Lowbidgee	N/A	N/A	0.84

Source: WaterNSW's Pricing application, March 2019, pp 3-4.

Table 3.2 WaterNSW's application for MDBA/BRC charges in 2019-20 (\$2019-20) (\$/ML)

Valley	Usage charge	HS entitlement charge	GS entitlement charge
Border	0.84	4.92	1.83
Murray	1.60	7.75	3.79
Murrumbidgee	0.32	1.71	0.65

Source: WaterNSW's Pricing application, March 2019, p 4.

Table 3.3 WaterNSW's application for FRWSS charges in 2019-20 (\$2019-20) (\$/kL)

Valley	Usage charges	Usage < Minimum Annual Quantity (MAQ) ^a charges	Usage > MAQ charges
Raw water - major customers	0.42	0.26	0.68
Raw water - minor customers	0.42	0.26	0.68
Filtered water - minor customers	0.81	0.49	1.31

^a In the FRWSS, customers have a Minimum Annual Quantity (MAQ) rather than a licensed entitlement. The fixed charge is based on the customer's MAQ. The MAQs are specified in the water sharing arrangements for the FRWSS.

Source: WaterNSW's Pricing application, March 2019, p 6.

3.3 Updated water sales data

WaterNSW provided the following water sales data (ie, usage volumes, entitlement volumes and water allocations) as part of its application to IPART (refer to Appendix B.2 for more details):

- ▼ forecast demand or consumption for 2019-20
- ▼ estimated demand or consumption during 2018-19, and
- ▼ actual demand or consumption in 2017-18.

We used this information in our review of whether charges should be updated, as follows:

-
- ▼ We used the actual water sales for 2017-18 to recalculate sales forecasts (and hence what updated prices would be) in the nine valleys by updating the 20-year rolling averages of actual water usage and entitlement volumes.
 - ▼ We used the estimate of water sales for 2018-19 and 2019-20 for noting only.

In addition, the updated water sales data informed our assessment of whether changes in demand or consumption represent a sustained or permanent shift. This is discussed in section 4.2 of this Final Report.

4 Our assessment of rural charges for the 2019-20 period

Our decision is to maintain the regulated charges as set under the 2017 Determination, which includes making adjustments for CPI to determine the charges applicable for the 2019-20 period. This means that current (2018-19) charges will increase in line with CPI (1.3%) from 1 July 2019, for 2019-20. This is in line with WaterNSW's Annual Review application for the 2019-20 period.

In reaching our decision, we considered WaterNSW's application, requirements under the WCIR, stakeholder submissions, and we applied our assessment framework as outlined in section 2.3.

Overall, our decision to not updated charges reflects that:

- ▼ We found no strong evidence to suggest that the change in annual water sales data for 2017-18 reflects a sustained or permanent shift in demand or a material change in the industry.
- ▼ While there was a material increase in annual water sales in the FRWSS between 2016-17 and 2017-18, it is unclear at this stage whether this reflects a sustained or permanent shift in water demand. We will continue to monitor FRWSS demand and may update prices at future annual reviews if we can establish that there is a sustained or permanent shift in demand.
- ▼ Consequently, we consider there is no compelling case to update charges. Including the latest data point has the potential to improve the general accuracy of our charges, however we consider this is not the case for this Annual Review, given the volatility in usage volumes and lack of evidence of a sustained or permanent shift in demand. Overall, this measured approach was supported by the NSW Irrigators' Council (NSWIC), as outlined in its submission to our Draft Report.¹⁶
- ▼ We consider that mitigating WaterNSW's revenue volatility risk by updating prices should have a lesser weight than the other two considerations. This is because in the 2017 Determination we provided WaterNSW with a revenue volatility allowance to mitigate revenue volatility risk associated with the misalignment between its cost structure and tariff structure. Furthermore, as per the point above, we do not consider that updating prices would enhance price accuracy (and hence mitigate revenue volatility), because there is not sufficient evidence to suggest the 2017-18 sales data reflects a sustained or permanent shift in demand.

¹⁶ NSWIC, *Submission to WaterNSW Annual Review of rural bulk water regulated charges for 2019-20 – Draft Report*, May 2019, pp 4-5.

4.1 Sustained or permanent shift in demand or consumption

Where there is a sustained or permanent shift in demand, there may be a strong case to vary charges through the Annual Review process. To address this, we assessed the information provided by WaterNSW under the following circumstances:

- ▼ Changes in water volumes on a year-on-year basis
- ▼ Historical trends in water volumes, and
- ▼ Impact on the rolling averages of water volumes used to forecast sales in the 2017 Determination.

The following sections outlines our analysis of actual water demand in the MDB valleys and in the FRWSS.

4.1.1 Actual water demand in MDB valleys

On a year-on-year basis, there was a slight net decline of 3.73%¹⁷ in total actual usage volumes in the eight valleys¹⁸ from 2016-17 to 2017-18. WaterNSW indicated that this decline is due to lower rainfall or drought. However, this decline is not unusual when compared to the overall volatile historical trend in annual usage volumes (see Figure 4.1). Due to the natural unpredictability of rainfall, the impact on water availability and consumption in rural NSW can be volatile, particularly over a short timeframe.

Unless there is strong evidence to support a sustained or permanent shift in water demand, annual changes in water demand or consumption are likely to reflect business-as-usual variations in demand. If this is the case, updating charges annually could result in volatile movements where charges could increase one year and subsequently decrease in the next year. This would impose risks and costs on customers through higher price volatility and uncertainty. In its submission to our Draft Report, NSWIC supported this measured approach, however encouraged IPART to consider other measures for future reviews.¹⁹

If we were to update the 20-year rolling average based on the latest data points, there would be a slight net decline in consumption of 4.10% when compared to the rolling average used in the 2017 Determination. However, this does not necessarily suggest that the 2017-18 data point reflects a sustained shift in water demand. We note that:

- ▼ The rolling average calculation is affected by the difference between the last year 'rolling off' (ie, 1997-98) and new data point (ie, 2017-18) being included.²⁰
- ▼ There needs to be strong evidence that the 2017-18 actual data is reflective of a sustained or permanent change in water demand compared to the forecast used in the 2017 Determination. We currently do not have this evidence.

¹⁷ This is based on the information provided by WaterNSW on water usage volumes, water entitlements, water allocations and Minimum Annual Quantity (MAQ) in FRWSS (see Appendix B).

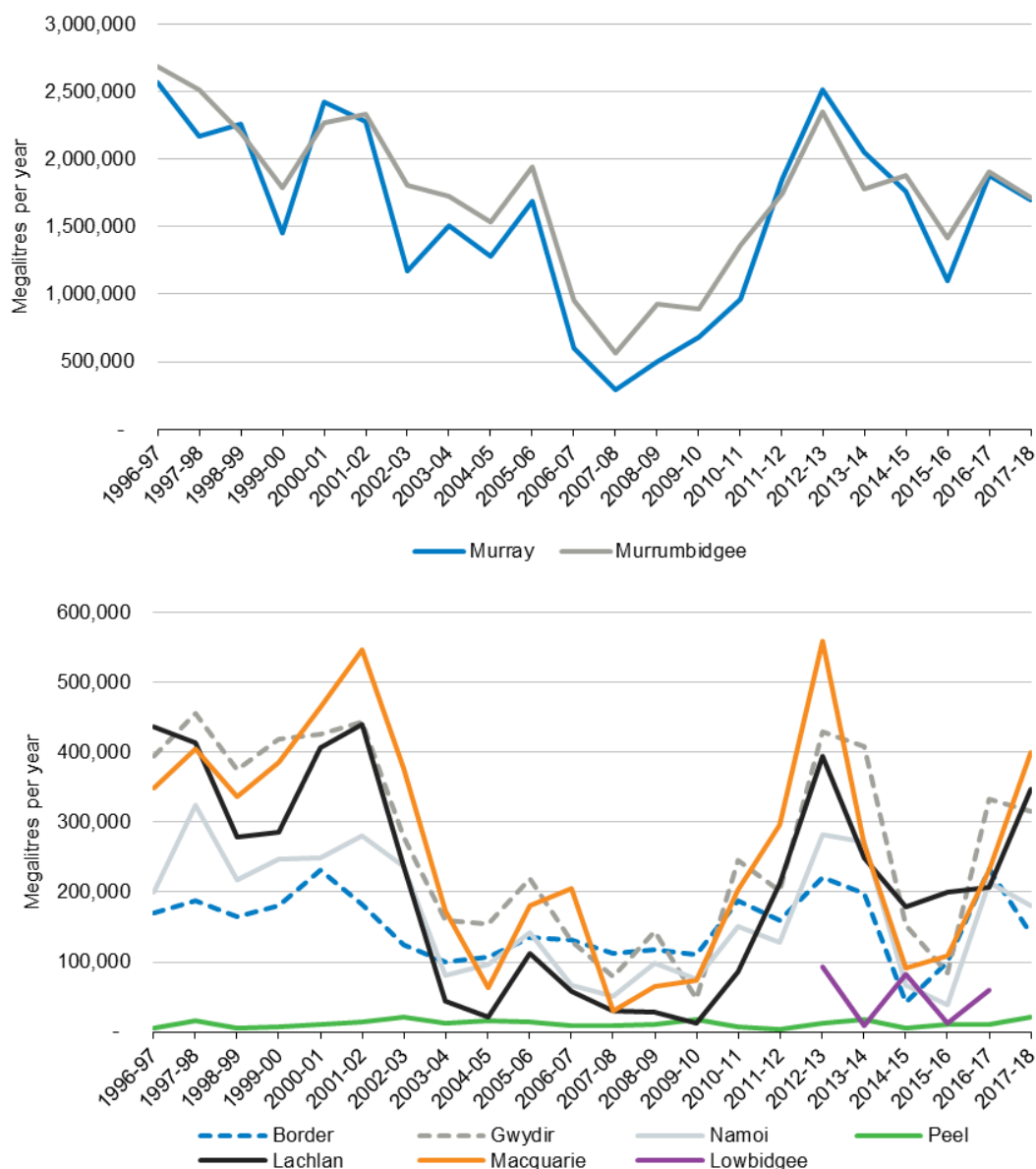
¹⁸ The eight valleys are Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Murray and Murrumbidgee. Lowbidgee is excluded because it only has fixed charges (ie, it does not have usage charges).

¹⁹ NSWIC, *Submission WaterNSW Annual Review of rural bulk water regulated charges for 2019-20 – Draft Report*, May 2019, pp 4-5. In its submission to our Draft Report, NSWIC indicated that, while the full long-term impact of drought is unknown, other measures like flexibility and seasonality of demand could be used to observe how the nature of water consumption is changing.

²⁰ Except for Lowbidgee Valley and FRWSS where we have fewer data points.

On balance, we consider there was no strong evidence to suggest that the latest data reflects a sustained or permanent change in water usage.

Figure 4.1 Historical annual usage volumes in the nine valleys



Note: The 1996-97 to 2015-16 historical usage volumes are based on the data used in the 2017 Determination while the 2016-17 and 2017-18 historical usage volumes are sourced from WaterNSW as part of its 2019-20 application to IPART.

Data source: IPART analysis.

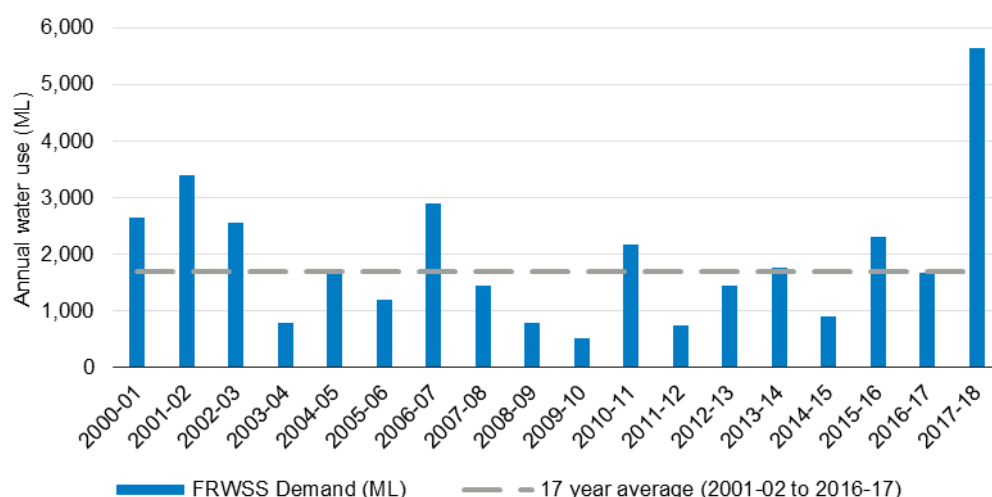
4.1.2 Actual water demand in the Fish River Water Supply Scheme

We observed a large increase in annual usage volumes in the FRWSS in 2017-18, ie, the total annual usage increased by 236.2%,²¹ which mostly relates to higher water use by Energy Australia (see Table B.5). While the total historical annual usage in this scheme is volatile (see

²¹ This is equivalent to 3,959 ML higher water demand from 2016-17 to 2017-18.

figure below), the annual usage in 2017-18 appears to be an outlier. We asked stakeholders for further information on this through the consultation process on the Draft Report. We received a confidential submission from Energy Australia. Based on the information currently available to us, we were unable to determine whether there has been a sustained or permanent shift in water demand. We will continue to monitor the water demand in the scheme in future reviews to assess whether charges need to be updated.

Figure 4.2 Historical total annual usage volumes in the FRWSS



Note: The 2000-01 to 2015-16 historical usage volumes are based on the data used in the 2017 Determination while the 2016-17 and 2017-18 historical usage volumes are sourced from WaterNSW as part of its 2019-20 application to IPART.

Data source: IPART analysis.

4.2 Price stability

To calculate prices, we need to forecast the volume of water demand and entitlements for each year during a determination period. That is, we determine the revenue requirement of the utility over the determination period (which generally equates to our assessment of the efficient costs of delivering the monopoly services) and then set prices each year to recover this revenue requirement, using forecasts of water demand and entitlement volumes. If actual water demand and entitlement volumes equal our forecasts, the utility will recover its revenue requirement through prices. On the other hand, if actual volumes are less than forecast the utility will under-recover relative to its revenue requirement; and if actual volumes are greater than forecast it will over-recover relative to its revenue requirement.

In the scope of this review, the term ‘price accuracy’ refers to the extent to which prices are calculated using accurate water demand and entitlement forecasts. The closer forecast water demand and entitlements are to actuals, the more accurate calculated prices will be in that the utility’s actual revenue received via prices will be closer to its revenue requirement.

In general, including more recent data has the potential to improve the accuracy of charges. For example, if more recent data reflects a sustained or permanent shift in demand, then updating charges can improve price stability and accuracy. However, adjusting charges in response to business-as-usual volatility could introduce greater price volatility, without improving the accuracy of prices, within the 4-year determination period.

To assess price volatility, we calculated indicative charges using updated usage, entitlement volumes and allocation ratios provided by WaterNSW. In addition, we compared these indicative charges with the charges under the 2017 Determination (as discussed in Appendix B), and assessed the potential impact on customer bills (as discussed in Appendix C). The price and bill impact considerations were supported by the NSWIC because this analysis shows the potential impact on water users as a result of price changes.²²

The analyses on indicative charges and bill impact in the nine valleys in the MDB show that:

- ▼ The indicative change in total rural charges would vary on valley-to-valley basis, between -4.5% and 7.7% for all valleys.
- ▼ For high security customers, the indicative impact on customer bills would be within a range of -1.4% and 5.2%.
- ▼ For general security customers, the indicative impact on customer bills would be within a range of -2.5% and 6.0%.

For the FRWSS, the indicative charges and bill impact show that:

- ▼ The access or MAQ charges would be unchanged given that these charges are based on water sharing arrangements for the FRWSS (see Appendix B.2.3 for further details).
- ▼ The indicative usage charges would vary depending on the type of customers and how much they use compared to their MAQ. The estimated change would be within a range of -12.5% and 24.8%.
- ▼ The indicative impact on customer bills would be within a range of -1.8% and 8.0%.

Given that there is no strong evidence to suggest that the latest water data reflects a structural or permanent shift in demand in 2017-18, our decision is that there is no compelling case to update charges to enhance price accuracy. We also consider that incorporating all the new data is better undertaken during the periodic (4-yearly) price review.

Our decision is that it is not reasonably necessary to update charges in 2019-20 when considering the changes in updated water demand data and its impact on price stability.

4.3 Demand and revenue volatility

Overall, we consider that mitigating WaterNSW's revenue volatility risk through updating charges is less material than considering the impact of a sustained or permanent shift in demand and impact on price stability when undertaking the Annual Review. This is because WaterNSW has a revenue volatility allowance included in the 2017 Determination to mitigate its revenue volatility risk associated with the mismatch between its cost structure and price structure (coupled with the difficulty in forecasting sales volumes).²³ This allowance allowed WaterNSW to purchase a risk transfer product to receive the security of an 80:20 fixed to variable price structure.²⁴

²² NSWIC, *Submission to WaterNSW Annual Review of rural bulk water regulated charges for 2019-20 – Draft Report*, May 2019, pp 4-5.

²³ IPART, *WaterNSW Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021*, pp 92-94.

²⁴ In general, WaterNSW's actual price structure is 40:60 fixed to variable, while its cost structure is at minimum 80:20 fixed to variable costs.

5 Charges to apply in 2019-20

In Chapter 4, we discussed our decision to maintain regulated charges as set under the 2017 Determination.²⁵ This means that current (2018-19) charges will increase in line with CPI (1.3%) from 1 July 2019, for 2019-20.

The charges that customers will pay in 2019-20 are set out below. We used the actual inflation rate of 3.3% to convert the charges from 2017-18 dollars in the 2017 Determination to 2019-20 dollars.

Table 5.1 sets our determination of bulk water entitlement and usage charges for high security (HS) and general security (GS) customers. These exclude MDBA and BRC charges, which are set out in Table 5.2.

Table 5.1 WaterNSW bulk water access and usage charges for 2019-20 (\$2019-20)

Valley	Usage charge (\$/ML)	HS fixed charge (\$/ML)	GS fixed charge (\$/ML)
Border	5.73	5.62	2.09
Gwydir	12.52	11.68	3.67
Namoi	21.07	18.02	8.40
Peel	19.37	43.84	4.24
Lachlan	20.08	16.22	2.88
Macquarie	14.53	14.25	3.01
Murray	2.01	1.62	0.80
Murrumbidgee	3.49	3.11	1.17
Lowbidgee ^a	N/A	N/A	0.83

^a There is no usage charge for Lowbidgee Valley as this valley has a 100% fixed tariff structure.

Source: IPART, *Prices for rural bulk water services from 1 July 2017 – Determination*, June 2017, p 11, adjusted for inflation.

Table 5.2 sets out our determination of MDBA and BRC entitlement and usage charges.

Table 5.2 MDBA and BRC bulk water access and usage charges for 2019-20 (\$2019-20)

Valley	Usage charge (\$/ML)	HS fixed charge (\$/ML)	GS fixed charge (\$/ML)
Border	0.83	4.87	1.81
Murray	1.58	7.66	3.75
Murrumbidgee	0.32	1.69	0.64

Source: IPART, *Prices for rural bulk water services from 1 July 2017 – Determination*, June 2017, p 12, adjusted for inflation.

Table 5.3 sets out our determination of access and usage charges for raw water and filtered water customers in the FRWSS.

²⁵ There is an adjustment for inflation “built-in” to the 2017 Determination.

Table 5.3 FRWSS bulk water access and usage charges for 2019-20 (\$2019-20)

Valley	Access (or MAQ) charge (\$/kL)	Usage up to MAQ (\$/kL)	Usage in excess of MAQ (\$/kL)
Raw water – major customers	0.41	0.26	0.67
Raw water – minor customers	0.41	0.26	0.67
Filtered water – minor customers	0.81	0.49	1.30

Source: IPART, *Prices for rural bulk water services from 1 July 2017 – Determination*, June 2017, p 18, adjusted for inflation.



Appendices

A Formulas for updating charges in Annual Reviews

Boxes A.1, A.2 and A.3 (and the accompanying tables) present the formulas we would use if we were to update charges in an Annual Review.²⁶

These formulas are used in Appendix B to calculate indicative charges that would apply if we had updated charges as part of this Annual Review, using 2017-18 actual water sales data (usage and entitlement volumes and allocation ratios) submitted by WaterNSW.

The formulas update charges by including an additional year of new actual, historical data available to determine forecasts for entitlement volumes, usage volumes and water allocation ratios. Both usage volumes and water allocation ratios are forecast by taking a 20-year rolling historical average of the latest data. The latest data used to calculate the forecasts is typically two years behind the year to which the forecast applies.

Box A.1 Calculation of charges for MDB valleys, excluding Fish River Scheme

In valley i , at time t , the allowed charges are:

- a) For high-security entitlements (\$/ML of entitlement):

$$HSEC_{i,t} = \frac{HSP_{i,t} \times Share_i \times Rev_{i,t}^{NRR}}{(HSP_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

- b) For general-security entitlements (\$/ML of entitlement):

$$GSEC_{i,t} = \frac{Share_i \times Rev_{i,t}^{NRR}}{(HSP_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

- c) For usage (\$/ML):

$$UC_{i,t} = \frac{(1 - Share_i) \times Rev_{i,t}^{NRR}}{EWU_{i,t}}$$

The terms used in the above formulas are defined in Table A.1.

Source: ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 68-69, and IPART analysis.

²⁶ This is also presented in Appendix A of the WaterNSW Annual Review of regulated charges for 2018-19 Final Report, which included a review of formulas presented in the 2017 Final Report for our review of WaterNSW's rural bulk water charges from 1 July 2017.

Table A.1 Description of terms used in Box A.1

Definitions	
<i>i</i>	Valley: Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Murray, or Murrumbidgee.
<i>t</i>	Year: 2018-19, 2019-20, or 2020-21.
$HSP_{i,t}$	High security premium for valley <i>i</i> , in year <i>t</i> , calculated as set out below.
<i>Share</i>	The share of entitlement charges in WaterNSW's tariff structure for valley <i>i</i> .
$Rev_{i,t}^{NRR}$	The component of the (nominal) notional revenue requirement to be recovered from WaterNSW customers (ie, customer share of NRR) for valley <i>i</i> , in year <i>t</i> , given by the Building Block Model at the start of the determination period.
$EHSE_{i,t}$	The expected number of high-security entitlements issued for valley <i>i</i> , in year <i>t</i> .
$EGSE_{i,t}$	The expected number of general-security entitlements issued for valley <i>i</i> , in year <i>t</i> .
$EWU_{i,t}$	The expected water usage for valley <i>i</i> , in year <i>t</i> , based on a 20-year moving average of past water usage.
$HSEC_{i,t}$	High security entitlement charge for valley <i>i</i> , in year <i>t</i> .
$GSEC_{i,t}$	General security entitlement charge for valley <i>i</i> , in year <i>t</i> .
$UC_{i,t}$	Usage charge for valley <i>i</i> , in year <i>t</i> .

Source: ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 68-69 and IPART analysis.

The high security premium for valley *i*, in year *t*, $HSP_{i,t}$, is the product of the Security Factor $SF_{i,t}$, and the Reliability Ratio $RR_{i,t}$:

$$HSP_{i,t} = SF_{i,t} \times RR_{i,t}$$

The Security Factor for a valley, $SF_{i,t}$, is given in Table A.2.

Table A.2 Security Factors for each valley

Valley	Security Factor
Border	1.25
Gwydir	1.40
Namoi	1.25
Peel	6.54
Lachlan	2.50
Macquarie	1.88
Murray	1.31
Murrumbidgee	1.69

Source: IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, p 224.

Box A.2 Formulas for charges for FRWSS customers

Customers of the Fish River Water Supply Scheme (FRWSS) pay water charges in three parts:

- ▼ an access charge (the Minimum Annual Quantity (MAQ)) paid per kL of the customer's MAQ entitlement
- ▼ a charge for each kL of water usage that is less than or equal to the customers MAQ entitlement (in kL), and
- ▼ a charge for each kL of water usage that is greater than the customers MAQ.

FRWSS charges are different for each water class (filtered or raw) and each customer category within each water class (minor and major customers).

The formulae that we have used to estimate the charges for each component of the FRWSS for an Annual Review are described below.

$$Charge_{ix}^{MAQ \text{ entitlement}} = \frac{Revenue_{ix}^{MAQ}}{MAQ \text{ level}_{ix}} \quad (1)$$

$$Charge_{ix}^{usage \leq MAQ} = \frac{Revenue_{ix}^{usage \leq MAQ}}{\text{Min}(Usage_{ix}, MAQ \text{ level}_{ix})} \quad (2)$$

$$Charge_{ix}^{usage > MAQ} = Charge_{ix}^{MAQ \text{ entitlement}} + Charge_{ix}^{usage \leq MAQ} \quad (3)$$

Where in formula (2), $Revenue_{ix}^{usage \leq MAQ}$ is set out in formula (4) below:

$$Revenue_{ix}^{usage \leq MAQ} = Revenue_{ix}^{total} - Revenue_{ix}^{MAQ} - Calculated \ revenue_{ix}^{usage > MAQ} \quad (4)$$

Where in formula (4) $Calculated \ revenue_{ix}^{usage > MAQ}$ is set out in formula (5) below:

$$Calculated \ revenue_{ix}^{usage > MAQ} = \text{Max}(0, Usage_{ix} - MAQ \text{ level}_{ix}) \times Charge_{ix}^{usage > MAQ} \quad (5)$$

Table A.3 Description of terms used in Box A.2

Definitions	
Formula 1	
$Charge_{ix}^{MAQ \text{ entitlement}}$	The MAQ entitlement charge per kL of entitlement for customer category <i>i</i> purchasing water class <i>x</i> .
$Revenue_{ix}^{MAQ}$	The required revenue to be collected from MAQ charges for customer category <i>i</i> purchasing water class <i>x</i> .
$MAQ \text{ level}_{ix}$	The historical annual kL of MAQ entitlement by customer category <i>i</i> purchasing water class <i>x</i> .
Formula 2	
$Charge_{ix}^{usage \leq MAQ}$	The charge for each unit of water usage under or equal to the MAQ level for customer category <i>i</i> purchasing water class <i>x</i> .

Definitions	
$Revenue_{ix}^{usage \leq MAQ}$	The required revenue to be collected from usage charges for customer category i purchasing water class x .
$Usage_{ix}$	The amount of the historical water usage for customer category i purchasing water class x .
Formula 3	
$Charge_{ix}^{usage > MAQ}$	The charge for each unit of water that is used after crossing the MAQ threshold for customer category i purchasing water class x .
Formula 4	
$Revenue_{ix}^{total}$	The total required revenue to be collected from charges for customer category i purchasing water class x .
$Calculated\ revenue_{ix}^{usage > MAQ}$	The revenue collected from charging for usage in excess of the MAQ (at the value calculated in Formula 3) for customer category i purchasing water class x .

Box A.3 Calculation of MDBA and BRC charges

In valley i , at time t , the allowed charges are:

- a) For high-security entitlements (\$/ML of entitlement):

$$HSEC_{i,t}^{MDBA/BRC} = \frac{HSP_{i,t} \times Share_i \times Rev_{i,t}^{MDBA/BRC}}{(HSP_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

- b) For general-security entitlements (\$/ML of entitlement):

$$GSEC_{i,t}^{MDBA/BRC} = \frac{Share_i \times Rev_{i,t}^{MDBA/BRC}}{(HSP_{i,t} \times EHSE_{i,t} + EGSE_{i,t})}$$

- c) For usage (\$/ML):

$$UC_{i,t}^{MDBA/BRC} = \frac{(1 - Share_i) \times Rev_{i,t}^{MDBA/BRC}}{EWU_{i,t}}$$

The terms used in the above formulas are defined in Table A.4.

Source: ACCC, *Final Decision on State Water Pricing Application: 2014-15 – 2016-17*, June 2014, pp 75-77; IPART analysis.

Table A.4 Description of terms used in Box A.3

Definitions	
<i>i</i>	Valley: Border, Murray, or Murrumbidgee.
<i>t</i>	Year: 2018-19, 2019-20, or 2020-21.
$HSP_{i,t}$	High Security Premium for valley <i>i</i> , in year <i>t</i> , calculated as set out below.
<i>Share</i>	The share of entitlement charges in WaterNSW's MDBA/BRC tariff structure for valley <i>i</i> .
$Rev_{i,t}^{MDBA/BRC}$	The MDBA/BRC component of the (nominal) notional revenue requirement to be recovered from WaterNSW customers (ie, customer share of NRR) for valley <i>i</i> , in year <i>t</i> , given by the Building Block Model at the start of the determination period.
$EHSE_{i,t}$	The expected number of high-security entitlements issued for valley <i>i</i> , in year <i>t</i> .
$EGSE_{i,t}$	The expected number of general-security entitlements issued for valley <i>i</i> , in year <i>t</i> .
$EWU_{i,t}$	The expected water usage for valley <i>i</i> , in year <i>t</i> , based on a 20-year moving average of past water usage.
$HSEC_{i,t}^{MDBA/BRC}$	High security MDBA/BRC entitlement charge for valley <i>i</i> , in year <i>t</i> .
$GSEC_{i,t}^{MDBA/BRC}$	General security MDBA/BRC entitlement charge for valley <i>i</i> , in year <i>t</i> .
$UC_{i,t}^{MDBA/BRC}$	MDBA/BRC usage charge for valley <i>i</i> , in year <i>t</i> .

Source: ACCC, Final Decision on State Water Pricing Application: 2014-15 – 2016-17, June 2014, pp 75-77 and IPART analysis.

The high security premium for valley *i*, in year *t*, $HSP_{i,t}$, is the product of the Security Factor SF_i , and the Reliability Ratio $RR_{i,t}$:

$$HSP_{i,t} = SF_i \times RR_{i,t}$$

The Security Factor for a valley, SF_i , is given in Table A.5 below.

Table A.5 Security Factors for each valley

Valley	Security Factor
Border	1.25
Murray	1.31
Murrumbidgee	1.69

Source: IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, p 228.

B IPART's analysis – indicative charges

To inform our consideration of whether or not to vary the regulated charges from those set in the 2017 Determination, we calculated the indicative charges that would apply if we were to adjust the prices in the 2017 Determination to reflect the updated sales volume data provided to us by WaterNSW. The following sections summarise our findings.

B.1 Indicative charges if they were updated

The following tables present our calculation of what WaterNSW's 2019-20 regulated charges would be if changed to reflect updated sales volumes (referred to as 'indicative charges'). These charges are in \$2016-17 (ie, they exclude the effects of inflation), to allow comparability with the analysis and decisions set out in the 2017 Final Report.²⁷

Table B.1 details the total usage and entitlement charges applicable for each of the nine valleys in the MDB. The total charge is the sum of WaterNSW's bulk water charges (detailed in Table B.2) and MDBA/BRC charges (detailed in Table B.3). These usage and entitlement charges have been set under the 2017 Determination.

The indicative charges for 2019-20 in Table B.1 illustrate a change in total rural charges of between -4.5% and 7.7%. The change in charges would vary from valley to valley and the type of charges (ie, usage charges versus entitlement charges).

²⁷ IPART, *WaterNSW Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021 – Final Report*, June 2017.

Table B.1 Comparison of the 2017 Determination total charges and indicative charges if we update charges to include latest data (\$2016-17) (\$/ML)

Valley	2019-20 charges As per 2017 Determination	2019-20 charges If prices were to be updated	Difference
Usage charges			
Border	6.23	6.20	-0.5%
Gwydir	11.87	12.35	4.0%
Namoi	19.98	20.79	4.1%
Peel ^a	18.36	17.54	-4.5%
Lachlan	19.04	20.51	7.7%
Macquarie	13.78	14.11	2.4%
Murray	3.40	3.54	3.9%
Murrumbidgee	3.61	3.79	4.9%
Lowbidgee	N/A	N/A	N/A
HS entitlement charges			
Border	9.94	9.74	-2.0%
Gwydir	11.08	11.78	6.3%
Namoi	17.08	18.00	5.4%
Peel ^a	41.57	41.55	0.0%
Lachlan	15.38	15.69	2.0%
Macquarie	13.51	12.98	-3.9%
Murray	8.80	8.99	2.2%
Murrumbidgee	4.57	4.65	1.9%
Lowbidgee	N/A	N/A	N/A
GS entitlement charges			
Border	3.69	3.69	0.0%
Gwydir	3.48	3.44	-1.1%
Namoi	7.96	7.92	-0.5%
Peel ^a	4.02	4.14	3.0%
Lachlan	2.73	2.70	-1.0%
Macquarie	2.85	2.88	1.3%
Murray	4.32	4.29	-0.6%
Murrumbidgee	1.72	1.71	-1.0%
Lowbidgee	0.78	0.78	0.0%

^a As set out in the 2017 Determination, the tariff structure for the Peel Valley was changed from 40:60 fixed to variable charges to 80:20 from 2018-19 onwards.

Note: Table B.1 is equal to the sum of Table B.2 and B.3.

Source: IPART analysis.

Table B.2 Comparison of the 2017 Determination WaterNSW charges and indicative charges if we update charges to include latest data (\$2016-17) (\$/ML)

Valley	2019-20 charges As per 2017 Determination	2019-20 charges If prices were to be updated	Difference
Usage charges			
Border	5.44	5.42	-0.5%
Gwydir	11.87	12.35	4.0%
Namoi	19.98	20.79	4.1%
Peel ^a	18.36	17.54	-4.5%
Lachlan	19.04	20.51	7.7%
Macquarie	13.78	14.11	2.4%
Murray	1.91	1.98	3.9%
Murrumbidgee	3.31	3.47	4.9%
Lowbidgee	N/A	N/A	N/A
HS entitlement charges			
Border	5.33	5.22	-2.0%
Gwydir	11.08	11.78	6.3%
Namoi	17.08	18.00	5.4%
Peel ^a	41.57	41.55	0.0%
Lachlan	15.38	15.69	2.0%
Macquarie	13.51	12.98	-3.9%
Murray	1.54	1.57	2.2%
Murrumbidgee	2.95	3.01	1.9%
Lowbidgee	N/A	N/A	N/A
GS entitlement charges			
Border	1.98	1.98	0.0%
Gwydir	3.48	3.44	-1.1%
Namoi	7.96	7.92	-0.5%
Peel ^a	4.02	4.14	3.0%
Lachlan	2.73	2.70	-1.0%
Macquarie	2.85	2.88	1.3%
Murray	0.75	0.75	-0.6%
Murrumbidgee	1.11	1.10	-1.0%
Lowbidgee	0.78	0.78	0.0%

^a As set out in the 2017 Determination, the tariff structure for the Peel Valley was changed from 40:60 fixed to variable charges to 80:20 from 2018-19 onwards.

Source: IPART analysis.

Table B.3 Comparison of the 2017 Determination MDB/BRC charges and indicative charges if we update charges to include latest data (\$2016-17) (\$/ML)

Valley	2019-20 charges As per 2017 Determination	2019-20 charges If prices were to be updated	Difference
Usage charges			
Border	0.78	0.78	-0.5%
Murray	1.50	1.56	3.9%
Murrumbidgee	0.30	0.32	4.9%
HS entitlement charges			
Border	4.61	4.52	-1.9%
Murray	7.27	7.42	2.2%
Murrumbidgee	1.61	1.64	1.9%
GS entitlement charges			
Border	1.71	1.71	0.0%
Murray	3.56	3.54	-0.6%
Murrumbidgee	0.61	0.60	-1.0%

Source: IPART analysis.

Table B.4 Comparison between the 2017 Determination FRWSS charges and indicative charges if we update charges to include latest data (\$2016-17) (\$/kL)

Valley	2019-20 charges As per 2017 Determination	2019-20 charges If prices were to be updated	Difference
Access (or MAQ) charges			
Raw water – major customers	0.39	0.39	0.0%
Raw water – minor customers	0.39	0.39	0.0%
Filtered water – minor customers	0.76	0.76	0.0%
Usage up to MAQ charges			
Raw water – major customers	0.24	0.21	-12.5%
Raw water – minor customers	0.24	0.24	-2.1%
Filtered water – minor customers	0.46	0.57	24.8%
Usage in excess of MAQ charges			
Raw water – major customers	0.64	0.61	-4.8%
Raw water – minor customers	0.64	0.63	-0.8%
Filtered water – minor customers	1.21	1.33	9.3%

Source: IPART analysis.

B.2 Updated sales volumes

Based on WaterNSW's actual water sales data for 2017-18, we updated our calculations for:

- ▼ Water usage volumes
- ▼ High Security (HS) and General Security (GS) entitlement volumes, and
- ▼ HS and GS water allocation ratios.

B.2.1 Updated water usage volumes

In the 2017 Determination, we generally forecast usage volumes as the 20-year historical average of usage volumes for each valley (ie, forecast usage for each year of the determination period was calculated as the annual average of usage volumes from 1996-97 to 2015-16). When calculating charges that would apply for 2019-20 if we were to update charges as part of this Annual Review (ie, 'indicative charges'), the usage volumes would be calculated by rolling forward the 20-year historical average – ie, using data from 1998-99 to 2017-18. Table B.5 shows the updated 20-year rolling averages of annual historical usage volumes.

Table B.5 Usage Volumes (ML)

Valley	2017-18 (actual full year data)	2017 Determination (20-year average from 1996-97 to 2015-16)	2019-20 Annual Review (20-year average from 1998-99 to 2017-18)
Border	139,605	148,174	148,885
Gwydir	315,046	262,135	252,047
Namoi	180,156	164,799	158,375
Peel	22,084	11,496	12,035
Lachlan	347,406	206,001	191,209
Macquarie	399,825	259,099	253,053
Murray	1,701,381	1,556,610	1,498,367
Murrumbidgee	1,715,238	1,733,642	1,654,408
Lowbidgee ^a	N/A	N/A	N/A
Fish River Water Supply Scheme			
Major Customer (raw) ^b	5,513	1,541	1,761
Minor customers (raw)	57	50	50
Minor customers (filtered)	66	116	107

^a We do not forecast usage volumes for the Lowbidgee Valley as this valley has a 100% fixed tariff structure.

^b To forecast usage volumes of the Major Customer (raw) we used a 15-year rolling average in the 2017 Determination due to limited data availability. We also decided at the time that as new data is created it would be added onto the average until it reaches a 20-year rolling average. For this Annual Review, we have used an 18-year rolling average. In this case, the impact of the first historical data point 'rolling off' is not relevant.

Sources: WaterNSW submission to IPART annual price review (data input into IPART model), March 2019 and IPART analysis.

B.2.2 Updated water entitlement volumes and water allocations

WaterNSW's customers hold water access entitlements in all valleys (except in the FRWSS). These are generally HS and GS entitlements, with the exception of Lowbidgee, which has supplementary entitlements.

Forecast entitlement volumes and water allocations are used to calculate the fixed (HS and GS entitlement) charges in the MDB valleys. In the 2017 Determination, we forecast entitlement volumes for each year of the determination period by using the latest available full year entitlement volume data. This was entitlement volumes for 2015-16.

The tables below show the annual entitlement volumes for 2016-17 and 2017-18 and estimates for 2018-19. To calculate the entitlement charges (in this appendix) that would apply if we had updated charges (ie, 'indicative charges'), we used the entitlement volumes for 2017-18 and updated the HS premiums based on the 20-year average ratio of HS allocations to GS allocations (ie, 1998-99 to 2017-18).²⁸

Table B.6 GS entitlement volumes (ML)

Valley	2016-17	2017-18	2018-19
Border	263,218	263,281	263,218
Gwydir	509,665	509,665	509,665
Namoi	256,212	256,529	256,529
Peel	30,428	29,635	29,635
Lachlan	633,166	633,166	633,166
Macquarie	632,466	632,466	632,466
Murray	2,083,271	2,083,271	2,083,603
Murrumbidgee	2,267,963	2,267,963	2,267,963
Lowbidgee ^a	747,000	747,000	747,000

^a Lowbidgee entitlement volumes are supplementary entitlements.

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2019.

Table B.7 HS entitlement volumes (ML)

Valley	2016-17	2017-18	2018-19
Border	3,141	3,141	3,141
Gwydir	26,920	26,920	26,920
Namoi	8,866	8,866	8,866
Peel	17,367	17,367	17,367
Lachlan	57,301	57,302	57,252
Macquarie	42,688	42,688	42,679
Murray	263,590	263,555	267,497
Murrumbidgee	438,328	438,328	438,330

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2019.

²⁸ A HS entitlement charged is levied on HS entitlement holders for each valley and incorporates a HS premium to reflect the greater security (ie, priority in water allocations) and reliability of water supply enjoyed by HS entitlement holders relative to GS entitlement holders.

Table B.8 GS water allocations

Valley	2016-17	2017-18	2018-19
Border	112%	26%	3%
Gwydir	79%	18%	0%
Namoi	124%	11%	4%
Peel	100%	103%	38%
Lachlan	138%	5%	3%
Macquarie	100%	38%	0%
Murray	100%	51%	0%
Murrumbidgee	100%	52%	18%
Lowbidgee ^a	100%	100%	N/A

^a Lowbidgee entitlement volumes are supplementary entitlements.

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2019.

Table B.9 HS water allocations

Valley	2016-17	2017-18	2018-19
Border	100%	100%	100%
Gwydir	100%	100%	100%
Namoi	100%	100%	100%
Peel	100%	100%	100%
Lachlan	100%	100%	100%
Macquarie	100%	100%	100%
Murray	100%	99%	72%
Murrumbidgee	100%	96%	97%
Lowbidgee	N/A	N/A	N/A

Note: Lowbidgee entitlement volumes are supplementary entitlements.

Source: WaterNSW submission to IPART annual price review (data input and submitted in IPART model), March 2019.

B.2.3 Updated FRWSS Minimum Annual Quantity and customer numbers

In the FRWSS, customers have a Minimum Annual Quantity (MAQ) rather than a licensed entitlement. The fixed charge is based on the customer's MAQ. The MAQs are specified in the water sharing arrangements for the FRWSS. The share of the water resource assigned to specific customers is specified in Schedule 3 of WaterNSW's Water Management Licence for the Fish River Scheme.²⁹ The MAQs are analogous to entitlements in other valleys.

²⁹ This water management license for WaterNSW is issued under Part 9 of the *Water Act (1912)*.

The following table compares the MAQ and customer number inputs used in the 2017 Determination to the inputs that we would have used if we had updated prices (ie, the inputs we have used to calculate the 'indicative charges' in Table B.4). To calculate the 'indicative charges', we used the 2019-20 MAQ to calculate access charges, and the 20-year rolling average of usage volumes in the valley (ie, 1998-99 to 2017-18 period) to calculate usage charges.

Table B.10 Minimum Annual Quantities (MAQ)

	2017 Customer numbers	2019-20 Customers numbers	2017 MAQ	2019-20 MAQ	2017 MAQ Level	2019-20 MAQ Level
Raw water major customer	1	1	8,184 ML	8,184 ML	8,184 ML	8,184 ML
Raw water minor customers	83	83	200 kL per individual	200 kL per individual	16.6 ML	16.6 ML
Filtered water minor	216	228	200 per kL per individual	200 kL per individual	43.2 ML	45.6 ML

Note: For each minor customer, the access charges are set with reference to a deemed MAQ of 200kL outlined in the 2017 Determination (source below).

Sources: WaterNSW submission to IPART annual price review, March 2018, p 7; IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, pp 110-111.

C IPART's analysis – indicative customer bill impacts

In terms of impact on customers, our decision means that current charges and hence bills (assuming the same level of consumption per customer) will be adjusted for an annual change in CPI of 1.3%.

In terms of the impact of our decision to not update prices to reflect updated sales data versus updating prices, the tables below compare expected:

- ▼ Average customer bills in 2019-20 under our decision to maintain prices as per the 2017 Determination (ie, to make no adjustment to prices other than increasing prices by CPI), against
- ▼ Average customer bills that would apply in 2019-20 if we did update prices to account for updated sales data.

The estimated bills are presented in 2019-20 dollars.

For the MDB valleys, our analysis of bills is based on:

- ▼ HS entitlement holders at 100% of usage, and
- ▼ GS entitlement holders at 60% of usage.³⁰

For both HS and GS entitlements, customers are broken down into three categories:

- ▼ Small customers with 100 ML of entitlements
- ▼ Medium customers with 500 ML of entitlements, and
- ▼ Large customers with 1,000 ML of entitlements.

In summary, the indicative customer bill impact shows that:

- ▼ If we had updated WaterNSW charges (see Table C.1), bills for high security customers would be between 1.4% less and 5.2% more than bills under our decision to maintain prices as per the 2017 Determination. For general security customers, this range is between -2.5% and 6.0%.
- ▼ If we had updated MDBA/BRC charges (see Table C.2), bills for high security customers would be between 1.9% less to 3.0% more than bills under our decision to maintain prices as per the 2017 Determination. For general security customers, this range is between nil and 0.3%.

³⁰ These variables are based on the bill impact approach we used in the WaterNSW 2017 Final Report. Source: IPART, *Review of prices for rural bulk water services for WaterNSW – Final Report*, June 2017, pp 183-184.

Table C.1 Indicative comparison of annual bulk water customer bills (\$2019-20) excluding MDBA/BRC charges

Valley	As per 2017 Determination charges – Annual bills (\$)	Indicative updated charges – Annual bills (\$)	Difference (%)
HS Customers			
Small customers			
Border	1,135	1,122	-1.1%
Gwydir	2,420	2,546	5.2%
Namoi	3,909	4,092	4.7%
Peel	6,321	6,232	-1.4%
Lachlan	3,630	3,818	5.2%
Macquarie	2,878	2,858	-0.7%
Murray	363	374	3.0%
Murrumbidgee	660	683	3.5%
Lowbidgee	N/A	N/A	N/A
Medium customers			
Border	5,675	5,610	-1.1%
Gwydir	12,100	12,730	5.2%
Namoi	19,545	20,460	4.7%
Peel	31,605	31,160	-1.4%
Lachlan	18,150	19,090	5.2%
Macquarie	14,390	14,290	-0.7%
Murray	1,815	1,870	3.0%
Murrumbidgee	3,300	3,415	3.5%
Lowbidgee	N/A	N/A	N/A
Large customers			
Border	11,350	11,220	-1.1%
Gwydir	24,200	25,460	5.2%
Namoi	39,090	40,920	4.7%
Peel	63,210	62,320	-1.4%
Lachlan	36,300	38,180	5.2%
Macquarie	28,780	28,580	-0.7%
Murray	3,630	3,740	3.0%
Murrumbidgee	6,600	6,830	3.5%
Lowbidgee	N/A	N/A	N/A
GS Customers			
Small customers			
Border	553	552	-0.2%
Gwydir	1,118	1,145	2.4%
Namoi	2,104	2,152	2.3%
Peel	1,586	1,547	-2.5%
Lachlan	1,493	1,583	6.0%
Macquarie	1,173	1,197	2.1%
Murray	201	205	2.4%

Valley	As per 2017 Determination charges – Annual bills (\$)	Indicative updated charges – Annual bills (\$)	Difference (%)
Murrumbidgee	326	336	2.8%
Lowbidgee	83	83	0.0%
Medium customers			
Border	2,764	2758	-0.2%
Gwydir	5,591	5724	2.4%
Namoi	10,521	10759	2.3%
Peel	7,931	7735	-2.5%
Lachlan	7,464	7914	6.0%
Macquarie	5,864	5987	2.1%
Murray	1,003	1027	2.4%
Murrumbidgee	1,632	1678	2.8%
Lowbidgee	415	415	0.0%
Large customers			
Border	5,528	5516	-0.2%
Gwydir	11,182	11448	2.4%
Namoi	21,042	21518	2.3%
Peel	15,862	15470	-2.5%
Lachlan	14,928	15828	6.0%
Macquarie	11,728	11974	2.1%
Murray	2,006	2054	2.4%
Murrumbidgee	3,264	3356	2.8%
Lowbidgee	830	830	0.0%
Fish River Water Supply Scheme			
Raw water - major customers	3,813	3,743	-1.8%
Raw water - minor customers	406	402	-1.0%
Filtered water - minor customers	608	657	8.0%

Source: IPART analysis.

Table C.2 Indicative comparison of annual bulk water customer bills (\$2019-20) – MDBA/BRC charges only

Valley	2017 Determination charges – Annual bills (\$)	Indicative updated charges – Annual bills (\$)	Difference (%)
HS Customers			
Small customers			
Border	570	559	-1.9%
Murray	924	947	2.5%
Murrumbidgee	201	207	3.0%
Medium customers			
Border	2,850	2795	-1.9%
Murray	4,620	4735	2.5%
Murrumbidgee	1,005	1035	3.0%
Large customers			
Border	5,700	5590	-1.9%
Murray	9,240	9470	2.5%
Murrumbidgee	2,010	2070	3.0%
GS Customers			
Small customers			
Border	231	231	0.0%
Murray	470	471	0.3%
Murrumbidgee	83	83	0.2%
Medium customers			
Border	1,154	1,154	0.0%
Murray	2,349	2,357	0.3%
Murrumbidgee	416	417	0.2%
Large customer			
Border	2,308	2,308	0.0%
Murray	4,698	4,714	0.3%
Murrumbidgee	832	834	0.2%

Source: IPART analysis.

D Background information

WaterNSW (formerly State Water Corporation) delivers bulk water to irrigators and other licence holders on regulated rivers across NSW.³¹ WaterNSW develops and maintains infrastructure and supplies raw water to rural NSW and the Greater Sydney area.

WaterNSW was formed on 1 January 2015 under the *Water NSW Act 2014* (NSW) (the Act). The Act provided for the former State Water Corporation to become WaterNSW. It also abolished the former Sydney Catchment Authority (SCA) and transferred its functions to WaterNSW.

We regulate WaterNSW's charges for its rural bulk water services, which relate primarily to storing and delivering water to entitlement holders in 13 valleys across NSW. We also regulate its meter service charges and other miscellaneous charges that are set on a fee-for-service basis.

D.1 2017 Determination and the Annual Review

In June 2017, IPART released its Final Determination on WaterNSW's charges for the 2017-18 to 2020-21 determination period (the 2017 Determination). This set the target revenue requirement for each year of the determination period and set charges to recover this revenue amount. The 2017 Determination also included a framework and formulae for calculating updated charges for subsequent years of the determination period, as part of the Annual Review. This was subsequently reviewed and changed during the first Annual Review. Appendix A of this report outlines the formula that will be used to update charges.

The charges set for each year of the 2017 determination period used the most up-to-date data available at the time. This was actual usage volumes, entitlements and water allocation percentages up to the 2015-16 financial year. The Annual Review process allows IPART to update charges, if it is reasonably necessary to do so, in order to reflect updated data for usage volumes, entitlements and water allocation ratios.

D.1.1 Revenue requirement

We used the 'building block' method in the 2017 Determination to calculate WaterNSW's notional revenue requirement. The method determines the total efficient costs by aggregating an allowance for a number of components, which reflect the business' operations and ability to deliver its regulated services. These components include:

- ▼ Operating expenditure
- ▼ A return on the assets
- ▼ A return of the assets (regulatory depreciation)

³¹ A regulated river is one where downstream flows are regulated by a major storage or dam to supply irrigation water.

- ▼ An allowance for meeting tax obligations, and
- ▼ An allowance for working capital.

For WaterNSW specifically, there are a number of additional items which are also included in the notional revenue requirement. These are:

- ▼ Murray-Darling Basin Authority (MDBA) and Border Rivers Commission (BRC) costs
- ▼ A revenue volatility allowance
- ▼ Costs related to the recovery of the Unders and Overs Mechanism (UOM)³², and
- ▼ Irrigation corporations and districts (ICD) rebates.

In the 2017 Determination, IPART set charges to reflect a ‘smoothed’ revenue requirement (ie, target revenue requirement), so that for each year of the determination period prices would follow a determined price path (ie, constant in real terms). The target revenue requirement is the actual revenue we expect WaterNSW to generate from charges each year.

The target revenue requirement will be maintained over the 4-year determination period and is not within the scope of the Annual Review.

D.1.2 Tariff structure

WaterNSW currently levies a two-part tariff for most valleys³³ comprised of:

- ▼ A **fixed charge** – an annual fixed charge that applies to the share component specified on each water access licence (ie, \$ per ML of general security (GS) and high security (HS) water entitlement or unit share).
- ▼ A **usage charge** – a charge based on the quantity of water recorded as taken for a water access licence in the billing period (\$ per ML of water taken or usage).

For 2019-20, most valleys maintain the 40:60 fixed to variable tariff structure with the exception of Peel valley and the FRWSS, which have an 80:20 fixed to variable tariff structure, and Lowbidgee valley which has 100% fixed tariff structure.

MDBA and BRC charges are based on an 80:20 fixed to variable tariff structure. These are levied in addition to the bulk water charges in the Border (BRC), Murray (MDBA) and Murrumbidgee (MDBA) valleys.

³² The UOM was discontinued for the 2017 Determination and replaced with the revenue volatility allowance. However, to address the existing UOM balance, IPART incorporated a UOM payback amount in prices so that the balances can be recovered over a 12-year period.

³³ The exception is Lowbidgee where WaterNSW only levies a fixed charge (customers hold supplementary licences that entitle them to water use only when access water is available).

Glossary

2017 Determination	Our pricing Determination for WaterNSW Rural prices applying from 1 July 2017 to 30 June 2021
2017 determination period	The period commencing 1 July 2017 and running to 30 June 2021
ACCC	Australian Competition and Consumer Commission
ACCC's 'pricing principles'	<i>ACCC's Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010</i> , July 2011
BRC	Border Rivers Commission
CPI	Consumer Price Index
FRWSS	Fish River Water Supply Scheme
GS	General security
GL	Gigalitre
HS	High security
HSP	High security premium
IPART	Independent Pricing and Regulatory Tribunal of NSW
IPART Act	<i>Independent Pricing and Regulatory Tribunal Act 1992</i> (NSW)
kL	Kilolitre
MDB	Murray-Darling Basin
MDBA	Murray-Darling Basin Authority
MAQ	Minimum Annual Quantity
ML	Megalitre
NRR	Notional revenue requirement. Revenue requirement set by IPART that represents the

	efficient costs of providing WaterNSW's regulated monopoly services.
NSW	New South Wales
RTP	Risk transfer product
Target revenue	The revenue WaterNSW is expected to generate from charges set by IPART.
UOM	Unders and overs mechanism
WCIR	<i>Water Charge (Infrastructure) Rules 2010</i> made under s 92 of the <i>Water Act 2007</i> (Cth)