

Supplementary Draft Report

WaterNSW's Non-Urban Metering
Reform Charges

3608-44



Prepared for
IPART

3 September 2021

Contact Information

Cardno (Qld) Pty Ltd

ABN 57 051 074 992

Level 11

515 St Paul's Terrace

Fortitude Valley QLD 4006

Locked Bag 4006

www.cardno.com

Phone +61 7 3369 9822

Fax +61 7 3369 9722

Document Information

Prepared for IPART

Project Name WaterNSW's Non-Urban
Metering Reform Charges

File Reference 360844-RPT-0C-
Supplementary Draft Report
Review v0C.docx

Job Reference 3608-44

Date 3 September 2021

Version Number C

Author(s):

Justin Edwards, Senior Consultant

Stephen Walker, Business Leader – Asset
Strategies

Approved By:

Stephen Walker, Business Leader – Asset
Strategies

Effective Date 3/09/2021

Date Approved 3/09/2021

Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
1.0	10/08/2021	Draft for review	Justin Edwards	Stephen Walker
A	20/08/2021	Final	Justin Edwards	Stephen Walker
B	23/08/2021	Minor amendments	Justin Edwards	Stephen Walker
C	03/09/2021	Minor corrections following fact checking	Justin Edwards	Stephen Walker

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Acronyms

CICL	Coleambally Irrigation Co-operative Limited
GVIA	Gwydir Valley Irrigators Association
HVVUA	Hunter Valley Water Users Association
IPART	Independent Pricing and Regulatory Tribunal
MVPD	Murray Valley Private Diverters
NSWFA	NSW Farmers' Association
NSWIC	NSW Irrigators' Council
PIAC	Public Interest Advocacy Centre
TRC	Tamworth Regional Council
WNSW	WaterNSW

Table of Contents

1	Introduction	1
	1.1 Background	1
	1.2 Purpose of this report and scope	1
2	Key issues included in submissions received by IPART on its Supplementary Draft Report	2
3	Efficient costs	3
	3.1 Ability to draw conclusions on efficient costs based on the information provided	3
	3.2 Level of catch-up efficiencies applied for operating expenditure	3
	3.3 Calculation of number of working weeks in a year	5
	3.4 Capital expenditure on automation and information systems	6
	3.5 Tranche 1 implementation issues and impacts on overall timeframe and efficient costs	7
4	User shares	12
5	Telemetry	14
6	Channel meter costs	15
	6.1 Non-urban water meter policy requirements for channel meters	15
	6.2 Impact of the Non-Urban Water Metering Policy on WaterNSW's channel meters	15
	6.3 Basis for WaterNSW's channel meter costs	15
	6.4 Review of WaterNSW's channel meter costs	16
	6.5 Conclusion	17
7	Impacts of the updated Government-owned meter program and costs model	18
8	Impact of Flood Plain Harvesting meter changes on WaterNSW's costs	20
9	Recommendations	21
	9.1 Recommended metering scheme management expenditure	21
	9.2 Government-owned meter costs	22

Tables

Table 6-1	WaterNSW's build-up of channel meter costs	16
Table 7-1	WaterNSW's previous government-owned meter program	18
Table 7-2	WaterNSW's updated government-owned meter program	18
Table 9-1	Recommended efficient operating expenditure for metering scheme management (Scenario 1)	21
Table 9-2	Recommended efficient operating expenditure for metering scheme management (Scenario 2)	21
Table 9-3	Recommended efficient capital expenditure for metering scheme management	22
Table 9-4	Recommended efficient operating expenditure for Government owned meters	22
Table 9-5	Recommended efficient capital expenditure for Government owned meters	23

1 Introduction

1.1 Background

In June 2021, IPART published its Supplementary Draft Report following its review of Water NSW's Non-Urban Metering Reform Charges for the period 1 October 2021 to 30 June 2025.

Cardno undertook a review and analysis of Water NSW's proposal to implement non-urban metering reform which informed IPART's report.

IPART has now received submissions on its Supplementary Draft Report which it needs to consider in arriving at a final report.

1.2 Purpose of this report and scope

The purpose of this report is to consider and provide a response to the key issues included in submissions on IPART's Supplementary Draft Report to inform IPART's final report.

The scope of this report is limited to issues that are relevant to the assessment of user shares, cost drivers and efficient costs, which Cardno has provided advice on previously. Other issues included in submissions will be considered by IPART.

The following section identifies key issues within the scope of this report.

2 Key issues included in submissions received by IPART on its Supplementary Draft Report

The key issues that have been received in submissions responding to IPART's Supplementary Draft Report can be broken to cover a number of key themes and areas. These are as follows:

- > User shares
 - Whether users are responsible for 100% of impacts or whether Government is an impactor
 - Whether there are grounds for the effective user share to be reduced due to initial costs being higher than long term, steady state costs (i.e. consistent with the approach taken to compliance expenditure)
- > Efficient costs
 - The ability to draw conclusions on efficient costs based on the information provided
 - Level of catch-up efficiencies applied
 - Level of continuing efficiency applied
 - Calculation of working weeks
 - Capital expenditure on automation and information systems
 - Whether issues in the Tranche 1 implementation will impact on the overall timeframe and efficient costs
- > Telemetry
 - Telemetry and non-telemetry tariff structure
 - Telemetry rebate
 - Impact of uptake of telemetry on user charges

Of the above key themes, the following are outside the scope of this report and will be considered separately by IPART:

- > Level of continuing efficiency applied
- > Telemetry and non-telemetry tariff structure
- > Telemetry rebate.

In the following sections, we consider each of the key themes that are in scope.

3 Efficient costs

3.1 Ability to draw conclusions on efficient costs based on the information provided

A key theme in a number of submissions received by IPART was the ability to draw conclusions on efficient costs based on the information provided by WaterNSW. For example, in response to the Draft Report, NSWIC stated:

NSWIC cannot agree with the draft decision that "WaterNSW has provided sufficient information for us to make draft decisions on efficient costs".

It is the view of NSWIC that unless efficient costs can be demonstrated, then it is not appropriate for those costs to be recovered from water users. If there remains any uncertainty or information availability problems, Government should have to at least cover the gap to the extent of that uncertainty.

Similar sentiments were also expressed by CICL and NSWFA in their submissions on IPART's Draft Report.

Our review of WaterNSW's 30 November 2020 non-urban metering reform submission to IPART concluded that the planning documents and supporting information developed by WaterNSW did not display the level of rigour that we would expect to see to provide assurance over a program of this level of materiality. However, in reviewing WaterNSW's updated submission provided to IPART in April 2021, we found that this submission was substantially more developed than the earlier submission, with greater consideration of risk, support for the expenditure forecasts and testing of the assumptions included in the cost build-up. We considered that WaterNSW's April 2021 submission is based on a level of justification that is appropriate for expenditure of this magnitude and complexity. Our review of WaterNSW's revised April 2021 submission informed IPART's June 2021 Supplementary Draft Report. We have not seen any new information that would lead us to change this opinion.

It should also be noted that our methodology for determining efficient expenditure makes allowance for uncertainty, as we recognise that the future is inherently uncertain and an agency like WaterNSW does not have perfect information available to it. Our review methodology tests the robustness of underlying assumptions, and where we consider the assumptions are materially inappropriate, we make adjustments to arrive at our forecast of efficient costs. The catch-up efficiencies applied by us also provide an incentive to the regulated businesses to reduce uncertainty as they implement expenditure plans over time.

In conclusion, we consider that the expenditure plans provided by WaterNSW are supported by sufficient justification for the magnitude and complexity of the expenditure. We also note that the efficiency methodology applied by us accounts for uncertainty in expenditure forecasts.

3.2 Level of catch-up efficiencies applied for operating expenditure

WaterNSW included a number of comments on the level of catch-up efficiencies included in IPART's Draft Report. These were as follows:

WaterNSW notes that IPART has proposed an unprecedented level of catch-up efficiency of 3.2% per annum (on a cumulative basis) to the administrative (operating) costs of the metering scheme, a scheme which is being implemented for the first time in NSW and has WaterNSW taking all the risks with respect to implementing the supporting policies, systems and operating model.

We submit that the 3.2% cumulative catch up efficiency based on WAMC-wide costs beyond those of WaterNSW costs) is both excessive and arbitrary and could compromise our ability to administer the metering scheme to the standards set by the NSW Government. The proposed Cardno catch-up efficiency rises to 12.2% in 2024-25, which we consider to be unattainable when implementing the new metering reforms.

WaterNSW considers that there should be no catch-up efficiencies applied and that catch-up efficiencies should be considered in the next determination period rather than applying it over the next four years. This is due to new services being implemented, with limited short-term ability to find efficiencies while meeting a challenging roll-out timetable.

In addition, WaterNSW made the following comment on the level of catch-up efficiency for operating expenditure that was proposed and included in IPART's Supplementary Draft Report:

We consider that Cardno has taken the wrong starting point in its analysis. Any catch-up efficiency to be incorporated by IPART should be capped at 1.1% p.a. as per the March 2021 IPART Rural Valleys and WAMC Draft Determinations and the associated Cardno / Atkins reports (not 3.2% p.a. proposed in the Supplementary Draft Report).

This reflects that it is one entity (WaterNSW) providing metering services to both RV (regulated rivers) and WAMC (unregulated rivers and groundwater). It is impractical and unachievable to apply a higher catch-up efficiency for the new set of metering obligations than for our core Rural Valleys and WAMC obligations that draw on many of the same resources.

We note that some of Water NSW's concerns over the level of catch up efficiency are similar to those that it put forward previously. However, in its current submission, Water NSW has also raised questions regarding whether the level of catch-up efficiency applied to non-urban metering reform should be different to that applied to other areas of its business. Water NSW has also placed emphasis on the achievability of the level of catch-up efficiency applied. We discuss these two issues in turn in the following paragraphs.

Water NSW's position is that the catch-up efficiency for operating expenditure should not exceed 1.1% per annum, consistent with that applied for Water NSW's rural valleys and Water Administration Ministerial Corporation businesses in the recent respective draft determinations as the metering activities are delivered by the same resources and the same overall business. In response we note that there is a sound theoretical basis for applying differing levels of catch-up efficiency to reflect the relative maturity of business processes for a specific activity relevant to the efficient frontier where this can be distinguished. For example, different level of catch-up efficiency have been applied in the Water Administration Ministerial Corporation determination for operation expenditure delivered by the Department of Planning, Industry and Environment. The higher level of catch-up efficiency for Water NSW's metering reflects our assessment that there is greater ability to achieve catch-up efficiency for these activities than more widely in the business.

WaterNSW made a further argument in its response to the Draft Report that a further consideration in setting the level of catch-up efficiency was that is the efficiency is to be based on the observed efficiency achieved for historical operating expenditure for water monitoring then this assessment should only be based on the costs over which Water NSW had control. Water NSW has submitted analysis that shows that if only its own costs relating to water monitoring are considered, the level of catch-up efficiency achieved reduced to 2.2% per annum (down from the 3.2% per annum applied).

There are two parts to the water monitoring costs that WaterNSW considers should be excluded from this analysis:

- > Costs for W01-05 Surface water ecological modelling were included in our analysis but this activity has been undertaken by DPIE in the current period and will be in the future period. Removing these costs from the analysis makes a very small difference and increases the calculated level of catch-up efficiency so we do not consider further.
- > WaterNSW commenced responsibility for water monitoring activities on 1 July 2016 but DPIE continued to undertake some activities and incur some costs that are within the scope of Water Administration Ministerial Council activities. These costs total \$3.37 million (Real \$2020/21) of which most (\$2.70 million) was incurred in 2016/17.

We do not think that it is valid to exclude these costs incurred by DPIE from the analysis. That is because the costs are attributable to delivering the service (irrespective of the service provider) and are within the scope of the Water Administration Ministerial Council business. If these costs were excluded there would then be substantial uncertainty that the costs fully reflected the service delivered. Also, we note that costs from 2016/17 to 2017/18 (i.e. when WaterNSW became almost wholly responsible for service delivery) actually increased and most of the efficiencies are achieved from 2017/18 forward. This supports that the 2016/17 costs of WaterNSW only likely understate the full cost of providing this service.

Based on the preceding analysis, we recommend that the catch-up efficiency for metering reform operating expenditure be maintained at 3.2% per annum.

Regarding the achievability of the catch-up efficiency, we reiterate that this is based on our assessment of the maturity of the expenditure proposal and underlying business processes in place and planned to deliver the expenditure. We disagree with Water NSW's position that due to this being a "new service... [there is]...limited ability to find efficiencies while meeting a challenging roll out timetable". Our experience is the opposite – expenditure proposals for new services generally include conservative assumptions and,

therefore, should present greater opportunities for efficiency gains. While we have made adjustments for where assumptions reflect an inefficient cost or scope, our assessment is that opportunities for material catch-up efficiencies remain.

For example, in our April 2021 report we detailed the following areas which we consider are opportunities for Water NSW to gain catch-up efficiencies:

- > Automating the upload of LID data into the Data Acquisition System (DAS) earlier than allowed for in Water NSW's assumptions. Water NSW's cost model currently includes a declining profile of time taken to upload data (0.4 hours in year 1, 0.2 hours in year 2 and 0 hours thereafter), reflecting its expected timeframe for implementing an automated solution.
- > Optimising the level of testing of government-owned meters to confirm accuracy of the fleet. Water NSW has assumed that it will need to test 5% of the meter fleet to confirm overall accuracy. We consider that this may be conservative as Water NSW may be able to test fewer meters when it better understands the underlying variance in the population of meters. However, as it is important to establish accuracy, we did not apply an adjustment to this assumption.
- > Optimising travelling routes, as currently WaterNSW has assumed a flat 1 hour per site. Considerable more work will need to be completed by WaterNSW to develop meter site rounds so that the most efficient routes can be planned for the field officers for each area.
- > Synergies with other field based activities for downloading of the LID for meters not connected to telemetry in order to remove the need for a second visit at a later date to download the LID. The metering activities have considerable similarities with the surface water and groundwater monitoring activities in that they involve field staff undertaking activities across the State to collect information and then manage this information, which creates the potential for synergies.

3.3 Calculation of number of working weeks in a year

With regard to the number of working weeks that formed a base assumption in the calculation of the efficient operating costs, WaterNSW has said:

In the Cardno Supplementary Report, Cardno has adjusted the total available working week per annum from 40.66 to 41.41. On page 11 of the Cardno report, Cardno state that:

The basis for this is that the 40.66 universally throughout WaterNSW's cost models to both the field staff and the non-field staff, e.g. communications and service centre personnel. However, office-based staff would not get the fifth week of annual leave (although this is dependent on their location under the terms of the EBA, with staff who work west of the Western and Central Division of the State described as such in the Second Schedule to the Crown Lands Consolidation Act 1913 (NSW) before its repeal accrue additional annual leave of five working days a year), and would not be subjected to the same field safety training requirements, safety assessments, downtime due to vehicle maintenance, etc. As a result, we have assumed that non-field staff work a 42 week working year. The 41.41 working week that has been used in WaterNSW's cost model is the weighted average of the 40.66 working weeks for field staff and the 42 working weeks for the non-field staff. The average four year ratio of field staff to non-field staff is 44% to 56% and this split has been used to weight the average working weeks assumption we have included in the model.

WaterNSW disagrees with Cardno's assessment. To clarify, the Enterprise Bargaining Agreement does not state that non-field staff are not entitled to a fifth week of annual leave, shift workers are entitled to a fifth week of annual leave.

We also note that communications and service centre personnel are subject to mandatory training, team/management meetings, staff development and performance reviews, safety training and safety assessments and other training such as training on IT processes. It is incorrect to assume non-field staff would not be subject to the same level of corporate and or safety training as the field staff.

In fact, non-field staff may be subject to other specific training specific to their role in managing IT processes, implementing and providing oversight of corporate process, managing customer enquiries and complaints, processing and managing highly sensitive data and processing compliance and non-compliance certificates subject to legal requirements.

WaterNSW requests that IPART adopt the 40.66 working week assumption as per our April 2021 metering submission.

We reviewed the current Enterprise Bargaining Agreement (EBA) and confirmed that WaterNSW are correct that the five weeks annual leave allowance also extends to shift workers. The additional annual leave entitlements outlined in Section 5.1(c)(ii) states, “*shift workers who work a shift roster Monday to Sunday accrue additional paid annual leave of five days per year*”. However, we note that WaterNSW’s customer call centre, which includes an option for Licensing and Compliance queries, is open between 8am and 5pm Monday to Friday. It is unclear the numbers of call centre and administrative staff involved in the data processing of the meter information who would be shift workers that would qualify for this additional leave entitlement.

As noted in our previous report, Clause 5.1(c) specifies that:

“Employees who work west of the Western and Central Division of the State described as such in the Second Schedule to the Crown Lands Consolidation Act 1913 (NSW) before its repeal and as per the map included at Schedule 5 of this Agreement accrue additional annual leave of five working days a year.”

We discussed this topic with WaterNSW in our August 2021 discussions. Although WaterNSW stated that it expects staff involved with the administration and processing of data for the metering reform activities to be located in its regional offices, and therefore entitled to the additional week of annual leave, it has yet to develop its resourcing plan to confirm the locations and numbers for these staff.

We noted in our April 2021 report that the 40.66 working weeks proposed by WaterNSW was based on the following assumptions:

- > 52 weeks per annum
- > 5 weeks annual Leave (regional employees)
- > 2 weeks public holidays
- > 2.2 weeks non annual leave (e.g. sick leave).

This equates to 42.8 weeks.

However, 95% utilisation (‘at work’ allows for mandatory training, team/management meetings, staff development and performance reviews, safety training and safety assessments, vehicle maintenance and other training (e.g. training on process changes arising from the WAVE program)) has been applied by WaterNSW to derive the 40.66 total working weeks per annum.

Based on our analysis that was included in our April 2021 report, the impacts of the change in working weeks from the 40.66 proposed by WaterNSW to the adjusted 41.41 that we included in our review of the efficient costs are included in the following table.

	FY22	FY23	FY24	FY25	Total
Change in working weeks from 40.66 to 41.41	-\$0.07	-\$0.1	-\$0.13	-\$0.12	-\$0.42

In the absence of firm evidence (i.e. a resourcing plan) to confirm the location of Water NSW’s staff undertaking these activities and the categories of staff, we consider that, on balance, our initial adjustment to base efficient costs on 41.41 working weeks per year should remain.

3.4 Capital expenditure on automation and information systems

With regard to the assumptions related to proposed expenditure on automation and information systems included the calculation of the efficient capital costs, WaterNSW has noted the following:

On page 32 of the Cardno Supplementary Report, Cardno stated that:

Removal of the \$0.328 million that WaterNSW has included in FY22 as a capital allowance to automate upload time for initial site inspection. The reason for this adjustment is because we consider that this expenditure duplicates the WAVE program expenditure. "WaterNSW considers that the current WAVE program does not include for this scope. We note that one of the benefits of WAVE is "Improved customer service from meeting customer expectations that now include web-based transactions, real time visibility of transaction status and water information" and consider that this functionality falls within this scope. We understand that the WAVE program and functionality is under development and there is opportunity for WaterNSW to incorporate this in an integrated and effective way in the wider scope.

WaterNSW does not agree with Cardno’s assessment. WaterNSW’s proposed costs of automation are incremental to the WAVE project as are the total costs of the non-urban metering reform which

have been costed as a new activity and does not replace any of the existing work undertaken by WaterNSW.

It should be noted that the WAVE expenditure was included in our 30 June 2020 submission prior to the submission of our non-urban metering proposal in November 2020 and prior to the required clarification and guidance from the Government on the operational impact of the non-urban metering reform. The recommendation for WaterNSW to incorporate into WAVE the specific costs of automation in an integrated and effective way in the wider scope, requires a commensurate increase in the IT allowances for the new metering charges (as proposed) or an adjustment to the WAVE capital allowances for the WAMC and Rural Bulk Water Charges.

WaterNSW submits that the proposed capital expenditure on automation should be included in the new metering charges. If not, then WaterNSW submits that there should be an equivalent adjustment to the WAVE capital allowances for the WAMC and Rural Bulk Water Charges.

We understand Water NSW's position given that the costs of metering reform are being considered after the costs of the WAVE program been considered earlier. However, we do not agree that efficient capital expenditure for metering should include an uplift over and above that already allowed for within the WAVE program. This is for two reasons:

- > While the metering expenditure has been considered in this regulatory review after the WAVE program, metering reform predates the WAVE program and the broad needs around customer metering and capturing customer data through telemetry or non-telemetered meters is something that we believe would have been reasonably anticipated by Water NSW and we note that early scoping and business case documents, as well as the functional specification, while not explicitly referencing this functionality, do clearly articulate that needs in this area have been known to WaterNSW for some time.
- > The WAVE program is not a single software package with pre-defined functionality. WAVE is a collection of many initiatives in work streams that will be met through different systems and functionality. This scope allows Water NSW to be flexible in prioritising the overall program to meet its business needs and we would expect this to occur in any case with or without the need to automate data upload. We would expect an efficient business to work with its service provider to adapt to the best available information cost effectively within the contract.

We further note that this expenditure is likely to be capital expenditure, where the expenditure (as part of the overall, integrated program), is deemed to be efficient, it will be included in Water NSW's Regulatory Asset Base at the next regulatory review.

3.5 Tranche 1 implementation issues and impacts on overall timeframe and efficient costs

IPART received a number of comments in the submissions on its Supplementary Draft Report related to the implementation of the proposed metering program, issues experienced in the Tranche 1 stage of the four year program and whether these issues will impact on the overall timeframe and the efficient costs that have been proposed.

NSWFA noted in its response to the Draft Report that:

The implementation of the metering reform has encountered many barriers that are out of the control of water users. As Tranche 1 of the metering reformed is behind schedule (in term on not having 100% implementation) and as the barriers to implementation remain, it can be assumed that the metering reform project will not be delivered to the current timeline. There are a number of costs that are dependent on successful roll-out of the metering reform. Water user must be assured that potential increases in costs that may arise due to the 'delayed' roll-out of the metering reform are not passed on to them.

Similar responses related to issues with the rollout of the metering program to date were submitted by CICL and GVIA.

GVIA noted:

The pricing determination assumptions may also be inaccurate in terms of total numbers of sites to be required to be metered and/or telemetered. This is confirmed by Natural Resource Access Regulator, who found that more than 50% of sites were inactive and out-of-scope in the first tranche. If this trend continues, there will be a significant impact on cost recovery and future prices and water users will be required to fund these mistakes.

In its response on the Draft Report, CICL also provided views on some of the specific challenges that were being experienced in the rollout of the program. These challenges included:

- > *The accuracy of data regarding the number of sites which will require a meter. CICL believes the underlying assumptions about licence numbers and works will prove incorrect as the reform proceeds. As an example, it has been reported that based on recent data supplied by the Natural Resource Access Regulator (NRAR) of the sites required to comply by 1 December 2020 (stage one), half of the sites were either inactive or 'out of scope,' with most of these sites, 'inactive' 2.*
- > *Limitations on the number of qualified commercial contractors to provide the services necessary to irrigators to complete the process.*
- > *Limitations on the supply of AS4747 accredited meters with the supply of some meters impacted by the COVID-19 pandemic.*
- > *Limitations on access to services to allow telemetry connection.*

3.5.1 Overview

We discussed the implementation of the metering programs for customer meters and government-owned meters to date with WaterNSW in August 2021. While WaterNSW does not have control over customers complying with the policy, it has understanding of the progress of uptake as customers need to register compliant meters through its DQP portal. Water NSW is also advised if customers decide to make a work inactive.

WaterNSW noted that the first stage of the program for rolling out metering to the largest water users (above 500mm) by 1 December 2020 was behind schedule. Only 50 compliant meters had been processed through WaterNSW's portal by 1 December 2020 and WaterNSW confirmed that as of 2 August 2021, 234 sites are communicating with the DAS, making them compliant with the Non-Urban Meter Reform, with the split of sites being 109 Government-owned meters and 125 private meters. These 234 water users have a valid certificate and WaterNSW noted that there are approximately 600 water users currently in the pipeline who have a certificate and have ordered an LID to be installed, although the installation and set-up is yet to be completed.

3.5.2 Progress of program rollout for private meters

For the private water meters, WaterNSW's cost estimates for the Determination period were based on 1,257 works being required in this first tranche (887 currently metered works, 370 new works). As such, the latest information on the sites communicating with the DAS shows that more than 8 months after the first tranche of meters were due to have been made compliant, the program remains a long way behind schedule. In addition to this, the program is also 8 months into the second stage, where a further 7,601 meters (2,605 currently metered sites, 4,996 new works) are required to have been made compliant by 1 December 2021.

According to WaterNSW, the feedback for reasons as to why the uptake has been slow and behind schedule has varied. For example, some water users have said that the implementation of the non-urban metering reform has been unclear and confusing. However, NRAR has also been undertaking engagement work to inform customers and test compliance with the policy. In the last three months of FY22, NRAR observed an improvement in compliance rates for water users who had been required to make their meters compliant by 1 December 2020. State-wide inspections conducted by NRAR found that 55% of the affected pumps were fitted with an accurate meter.¹ This proportion (of pumps fitted with compliant meters) is higher than that observed by WaterNSW as communicating with the DAS indicating that users have not move on from the initial step of installing the compliant meter to undertaking the steps necessary for it to provide metering information via telemetry to WaterNSW (all of Tranche 1 meters are required to be connected via telemetry).

WaterNSW has received feedback that some water users have been hesitant to progress towards compliance as they were not certain that the policy would continue along its original timeframe for implementation. WaterNSW has heard from DQPs and from DPIE that quotes for compliant meters are being obtained but these quotes are not being taken up into actual orders to complete the works. Water NSW considers that this is having an impact on DQPs as they are not wanting to take on more staff to meet the expected demand if the demand is not eventuating. Orders being confirmed by water users would give

¹ <https://www.dpie.nsw.gov.au/nrar/news/nrar-takes-action-as-45-of-affected-pumps-not-fitted-with-accurate-meters>

the DQPs confidence to recruit more staff and upskill their resourcing capabilities. However, the DQPs consider that the demand can be met once the customers confirm their orders.

In response to issues raised by stakeholders in their submissions related to market and technical barriers to achieving compliance with the requirements, WaterNSW commented that its view from conversations with various stakeholders is that there is generally a sufficient supply of Pattern Approved meters for customers, although there may be limitations for larger meters (greater than 1000mm). These larger meters are included in Tranche 1 but are a small percent of the cohort and are unlikely to have a material impact. In addition, WaterNSW commented that LID manufacturers are not experiencing any supply challenges at the current time. It has been informed by DQPs that some of the NSW Government-approved LID model products can be ordered, configured, and delivered within five business days. WaterNSW noted that it is aware of a small number of sites that cannot connect to the telemetry service due to network limitations. This will be resolved by the rollout of a satellite solution.

Therefore, the supply of meters and LIDs and telemetry barriers are not considered to be a major issue for implementing the compliance requirements. From discussions that WaterNSW has had, it appears that there are no supply challenges that will materially impact a water user's ability to meet their roll out compliance date. However, that may change if there is a significant increase in demand for meters.

3.5.3 Progress of rollout for Government-owned meters

With regard to the government-owned meters, the program that WaterNSW has adopted has been revised from its original submission (which was based on the program being accelerated), back to the original compliance date plan that was initially proposed.

The current program for the government-owned meters (i.e. that which is based on the original compliance date) is:

- > 182 meters compliant by 1 December 2020 (182 cumulative compliant meters)
- > 38 meters compliant by 1 December 2021 (220 cumulative compliant meters)
- > 1,776 meters compliant by 1 December 2022 (1,996 cumulative compliant meters)
- > 826 meters compliant by 1 December 2023 (2,822 cumulative compliant meters)

WaterNSW has completed 109 meter installations to date out of the 182 meters that were required to be made compliant by 1 December 2020. Although the December 2020 program has not been achieved, WaterNSW expects to complete the remainder of government-owned meters that were proposed to be made compliant by 1 December 2020 by 1 December 2021. The 38 meters that are programmed to have been made compliant by 1 December 2021 are expected by WaterNSW to be completed on time. The majority of these meters are believed by WaterNSW to be groundwater meters.

Although the government-owned meter fleet compliance program is behind schedule, WaterNSW considers that it only needs in the region of 20 days to complete the rest of the remaining meters in the first tranche. WaterNSW identified that government-owned meter program has been impacted by a number of external factors, including wet weather in the last four weeks and restrictions relating to Covid-19 including the border closure between New South Wales and Victoria over the last 12 months, meaning that the VIC-based contractor has not been able to complete the required works.

In addition, WaterNSW confirmed that there have been data transmission issues, with flow data being reported in incorrect units, and connectivity issues. WaterNSW purchased a more expensive LID model with an antenna that was capable of more frequent uploads of data each day but has found in some cases that the internal antenna is not strong enough and the LIDs have needed additional installation to be able to transmit the data. WaterNSW did not anticipate these issues and although work to rectify them is being carried out, this has required additional resources that were not expected.

We have provided additional commentary on the updated government-owned meter program in Section 7.

Progress of program rollout for meters in Stage 2

For the total 234 meters (125 private meters, 109 Government-owned) that have been made compliant as of 2 August 2021, WaterNSW is not able to accurately confirm how many are from the Tranche 1 cohort that were required to have been made compliant by 1 December 2020 and how many are from Tranche 2 of the program and requiring to be made compliant by 1 December 2021. WaterNSW's high level analysis indicates most of the sites that have been made compliant are for meters greater than 500mm and, therefore, are from Tranche 1 of the rollout.

WaterNSW noted that due to the way the data is currently captured, it is not yet able to provide detailed commentary on Tranche 2 compliance rates for private meters. WaterNSW also noted that given the scarcity of available data and the early stages of the reform, the analysis that it has completed to date cannot be used to extrapolate compliance take-up for future compliance dates, noting these are regulatory requirements.

However, WaterNSW has confirmed that 38 government-owned meters need to be made compliant by 1 December 2021 in the second stage of the program and it is confident that this will be completed by the due date.

3.5.4 Changes to WaterNSW activities based on current progress

DPIE and NRAR have identified that due to water users being hesitant in making their meters compliant to date, and with approximately 8,000 meters in total needing to be compliant by 1 December 2021, more communication with water users as to their obligations is required.

As a result, WaterNSW has been charged with 'standing up' a Communications Taskforce that will have responsibility for communicating the requirements to impacted customers. This is a change from what had initially been proposed, where communications with water users have been carried out by DPIE.

There is a view that there are awareness issues that need to be resolved, with some water users not receiving the necessary information and others not fully understanding their obligations and what they need to do to make their meters compliant. The activities associated with this taskforce were unanticipated and not included in WaterNSW's metering reform submission to IPART. This activity is expected to continue for at least 18 months, until the compliance dates for water users in the southern catchments are due.

In addition, WaterNSW's cost model included various assumptions on consumer behaviour related to the number of customers who would be submitting their monthly meter read digitally, which it considers are unlikely to be met, although it has no evidence to show this. If more water user data has to be processed manually, this will increase WaterNSW's proposed costs for these activities. However, WaterNSW does not expect there to be any impact on the non-telemetry charge that customers without telemetry will incur.

WaterNSW's cost model also included a total of 1,066 floodplain harvesting meters to be compliant with the policy, 373 in FY21 and the remaining 693 due to be made compliant in FY22. These meters were included in WaterNSW's cost model as having telemetry. However, the regulation governing these meters has recently been disallowed by the NSW parliament. As of 1 July 2021, WaterNSW had anticipated that there would be 373 of these meters connected to telemetry. This reduction of available meters being connected to telemetry from its original calculations is considered by WaterNSW to have material implications on the quantum that it can recover from regulated charges, as its fixed costs for telemetry will be spread across fewer meters.

We have provided further commentary and analysis of the impacts of the changes to the flood plain harvesting meters in Section 8.

The slower uptake by water users in Stage 1 for meters above 500mm that need telemetry also means that there are currently less sites in the DAS to apply the fixed charges to.

Although WaterNSW has identified these changes to its activities, at the current time it does not have sufficiently better information to provide robust updated forecasts of compliance across all tranches and forecasts of costs. The marketing plan for the additional communication function that WaterNSW has taken on is expected to be developed in the next month so there are currently no detailed costs that can be provided.

As a result of these changes to the activities and the potential cost impacts of them, we note WaterNSW is likely taking on additional risk in being able to provide these activities within its originally proposed costs.

In the absence of better information of forecasts for customers becoming compliant with the policy across all tranches and of any impacts of customer costs, we recommend that WaterNSW's previously submitted forecasts and costs be retained as the basis of determining efficient costs for implementing metering reform. This also allows for efficient costs to be in alignment with the mandated program for customers to be compliant.

3.5.5 Incurred costs for government-owned meters compared with cost estimates

We asked WaterNSW if it was able to provide any additional information based on the government-owned meters that have been made compliant to date related to actual costs incurred and the actual numbers of meters that were excavated, removed, replaced, tested and rectified to allow this information to be compared with WaterNSW's forecasted numbers and costs.

WaterNSW responded that that sample excavation and testing of the government-owned meters is due to be completed within a few months, although this may be impacted by wet weather and any border restrictions due to Covid.

WaterNSW noted that costs are tracking well against the budget but did not provide any evidence to support this statement.

4 User shares

IPART's Supplementary Draft Report proposed that metering costs be recovered through a 100% user share. This is consistent with user shares for the existing WAMC activities associated with metering and also consistent with the recommendations of the 2019 Rural Water Cost Shares report.

The responses to IPART's Draft Supplementary Report included a number of submissions that provided questions and comments related to the proposed user shares for the metering costs being assigned to water users. IPART received a number of submissions that questioned whether water users should be responsible for 100% of the impacts or whether Government is an impactor that should also take on a share of the proposed costs.

For example, in response to IPART's Supplementary Draft Report, NSWIC commented:

NSWIC does not agree with the draft decision for a 100% customer share...IPART makes the case that "customers who use meters are driving the need for upgrades to make them compliant with the new framework and should be required to contribute 100% of the efficient costs".

NSWIC is of the position that the NSW Government drove the need for upgrades due to its failure to deliver compliance services that water users were required to pay for in previous determination periods.

IPART also received responses on its Draft Report from NSWFA, GVIA and CICL that also argued that water users should not bear 100% of the costs of implementing non-urban water metering reform in NSW.

In its response to IPART's Draft Report, GVIA commented that:

...it was our understanding that the inception costs of this reform like the establishment of the Data Acquisition Service were to be recovered by government.

GVIA also included a recommendation in its response that:

...a full review of the assumptions included in the metering reform policy be undertaken prior to the setting of metering charges by the Tribunal. Until such time that this can be completed, the NSW Government who is the impactor, should fully fund any actual costs incurred by WaterNSW, until there is confidence in the assumptions and outcomes being achieved.

NSWFA commented in its response to the Draft Report that:

NSW Farmers does not agree with the 100% customer share for costs as it is at odds with the impactor-pays principle. The majority of water users already had water meters (many with telemetry) installed and operational. The government changes in policy and metering standards to rebuild confidence in government water management has driven the costs.

We consider that the submissions calling for a reduction in the user share have not interpreted the impactor pays principle correctly in suggesting that Government is an impactor. The purpose of metering reform is to protect the rights of water users. Metering data protects the integrity of the rights of water users through:

- > Accounting for entitlements accurately in water planning and allocating water sustainably between different users
- > Ensuring that entitlements are accessed fairly and sustainably
- > Helping identify threats to existing entitlements, e.g. increased interception of overland flows.

Water use, by water users, needs to be measured otherwise it cannot be assured that water will be used sustainably and fairly with benefits accruing to the owners of entitlements. The 2019 rural water cost shares report similarly states:

The measurement of water take is essential to protecting the integrity and value of water rights by preventing over extraction of the water resource. Consistent with the existing sharing framework, in applying the impactor-pays approach we consider that the need for water take data collection (W03-01) is driven by users and therefore we recommend that users are the sole impactors (100 per cent).

Some submissions also considered that the user share should be less than 100% due to costs being attributable to the Government's failure to ensure compliance or because costs for implementation are high. For example, NSWIC states:

NSWIC is of the position that the NSW Government drove the need for upgrades due to its failure to deliver compliance services that water users were required to pay for in previous determination periods.

The Government responded to the loss of public confidence due to its own failures by setting a higher standard of metering regulation (above the national standard, and any other standard globally) with which water users must now comply.

To repeat, the issue was not with the standard of meters irrigators already had, but the Government's failure on its compliance activities. Water users argued against aspects of the Government's reform, including the market's limited capacity to supply, and cost to water users large and small.

And in its response to IPART's Draft Report, CICL stated that:

...CICL believes the NSW government should be responsible for a greater share of the costs of establishment and early implementation of this necessary, significant and important reform. CICL recommends a cost share between government and water users of 50 percent and not 100 percent to water users as proposed by IPART.

We do not agree that the underlying driver for metering policy is a failure by Government to ensure effective compliance. As set out above, metering is necessary to protect the rights of water users. The underlying principles are set out in the National Water Initiative of 2004, where the New South Wales government, along with other governments, agreed to a range of principles, including that the information available from metering is "practical, credible and reliable". A national framework for non-urban metering was first published in 2009.

The timing of these key policy documents highlight that while the compliance issues identified in the 2017 Matthews Report was an important catalyst for accelerating non-urban metering reform, the underlying principles pre-date the compliance shortcomings. Further, the New South Wales government in implementing non-urban metering reform is doing so broadly consistent with good practice as established in the National Water Initiative Agreement, the metering framework and as codified in the Australian Standard for non-urban water meters (AS4747). AS4747 is the basis of the requirements in both the National non-urban metering framework and the New South Wales Non-urban water metering policy.

5 Telemetry

IPART received a number of comments on the impact of the uptake of telemetry on the proposed costs included in its Supplementary Draft Report.

In its response to the Supplementary Draft Report and, in particular, IPART's draft decision on telemetry charges NSWIC said:

NSWIC is highly concerned that this pricing structure is designed to shift people to 'voluntarily' opt-in to telemetry when they are not required under regulation to do so. This transfers a large responsibility from WaterNSW to the water user (and a large cost given the expense of purchasing, installing and maintaining telemetry equipment).

NSWIC is of the position that there is insufficient evidence to predict the behavioural response of users to telemetry incentives. Given the high costs for telemetry (at a time of numerous other reforms and financial pressures on the sector), NSWIC would predict that the one-off telemetry rebate will not materially increase the number of customers using telemetry over the 2021 determination period.

It must be noted that the rebate is relatively small in the scheme of total costs for purchasing, installing and maintaining telemetry equipment. It also must be noted that those who are not mandatorily required to install telemetry are smaller users with a generally lower ability to pay. For these reasons, we would predict that there will likely be low levels of voluntary opt-in above the regulatory requirements, despite the incentives in place, and any assumptions on voluntary uptake must be critically analysed.

In addition, GVIA also noted that:

The adoption of voluntary adoption of the government telemetry system is very unlikely, even with the proposed glide path (which is unachievable given the above [number of sites to be telemetered and progress of the first tranche]). The system is currently providing no benefit to water users; it is not interfaced with water ordering, accounts, or river operations and data is not presented in a usable format. The only beneficiary is the regulator, although given data exists on data loggers it's unclear what additional benefit telemetry provides other than more timely access to information (that is later downloaded anyway).

While it is not in our scope to comment on the tariff structure, we are interested in the uptake of telemetry compared with initial forecasts where this might have an impact on costs.

In our August 2021 interviews with WaterNSW, we discussed whether it had any updated information regarding the uptake of telemetry in the customer meters installed in Stage 1 and in the first eight months of the current stage due to be completed by 1 December 2021.

WaterNSW responded that it is not yet in a position to judge whether the telemetry uptake is higher than anticipated, as all sites triggered by the Stage 1 rollout are greater than the 500mm threshold. Therefore, the majority of customers that are currently linked to the DAS have had no choice but to adopt telemetry under the regulatory requirements for meters of this size.

Although Stage 2 is in progress, WaterNSW commented that it will not be able to provide a confident update on the uptake of telemetry for customer meters that are not required to have telemetry installed until after 1 December 1 2021. As a result, WaterNSW has not made any changes to the assumed telemetry uptake included in its cost forecasts.

6 Channel meter costs

WaterNSW's metering pricing model includes a charge for channel site meters based on \$9,500 adjusted for telemetry costs. In our August 2021 interview with WaterNSW we discussed how the new metering charges apply to channel meters and the basis for the underlying costs that have been calculated.

6.1 Non-urban water meter policy requirements for channel meters

We discussed with WaterNSW how the metering policy applies to the channel meters. WaterNSW responded that the channel meters are covered by the new regulations / metering policy. We confirmed that in the absence of pattern approved meters for open channels, the policy covers alternatives for these metering sites. The policy specifies that non-pattern approved meters are required to have their design certified by a qualified DQP prior to installation to confirm that they are compliant with the appropriate standard and suitable for the type of channel and that the metering equipment must be validated at least every 12 months.

For existing meters that are not pattern approved, the policy requires that a report must be submitted to the Minister by the roll-out date to confirm that either the manufacturer of the meter has confirmed the meter was $\pm 2.5\%$ in accuracy in laboratory conditions, and the meter has been validated by a duly qualified person (DQP) or a DQP has checked the accuracy of the meter and confirmed the meter is within $\pm 5\%$ accuracy in the field. In addition, for both of these options, a LID and tamper-evident seals must be installed and the meter needs to connect to the DAS (unless the work is a surface water pump authorised to be less than 200mm or a groundwater work).

Under the requirement of the policy the DQPs are required to provide the certification for the design metering equipment for open channels to the person for who the work has been done within seven days of completing the work. It is an offence if a DQP fails to comply with this requirement.

6.2 Impact of the Non-Urban Water Metering Policy on WaterNSW's channel meters

WaterNSW's channel meters are required to follow the pathway to compliance as per the Non-Urban Water Metering Policy.

As a result of the requirements of the policy for channel meters, WaterNSW's channel meters need to be validated and new LIDs need to be installed. In relation to the validation certificate, there is a requirement for a first accuracy test, and WaterNSW has identified that this may require some channel cleaning being completed prior to validation. The channel meters require a validation each year under the new regulations / metering policy, unlike the closed conduit meters, which require validation every five years.

6.3 Basis for WaterNSW's channel meter costs

WaterNSW has a total of 19 government-owned channel meters that will incur the charge. These meters are all open channel construction with sensors in the channels. The sites have more than one sensor in-situ. At the present time there are no pattern approved channel meters, which presents an issue to WaterNSW in what to do with these sites going forwards.

WaterNSW noted that channel sites must be validated annually under the policy. In addition, WaterNSW has assumed that channel meters need to be calibrated three times a year to provide confidence that readings are accurate. The calibration activities involve a wet test and the submission of a new validation certificate each time the meter is calibrated. WaterNSW advised that channel meters are required to be calibrated more frequently than other meters as they need to be calibrated for measuring a wider range of flows. Therefore, the charge assumes the three visits per year to complete the calibration at different water levels and different flow rates through the channel meter. WaterNSW noted that if it does not carry out regular calibration of the channel meters, there are more regular disputes with customers as to the accuracy of the meters. As a result of this, customers are moving away from channel meters due to disputes on the accuracy of the meters if they are not calibrated regularly.

Although we requested the advice provided to WaterNSW from the certified hydrographers to support that the recommended number of visits that WaterNSW has allowed for each year, this was not able to be provided by WaterNSW.

The basis of WaterNSW's \$9,500 estimate for the annual channel meter charge that was provided in August 2021 is set out in Table 6-1.

Table 6-1 WaterNSW's build-up of channel meter costs

Activity	Cost per unit	Total Cost
2 days onsite staffing costs for 2 staff for 7 hours to conduct wet test = 28 hours	\$75 per hour	\$2,100
2 hours driving to site and back with 2 staff = 4 hours	\$75 per hour	\$300
1 night hotel cost for 2 staff = 2 nights	\$150 a night	\$300
4 hours of admin time to complete and submit Validation Certificate	\$75 per hour	\$300
2 hours of admin time to manage the visit, checking Validation Certificate and managing contractor	\$75 per hour	\$150
	Total cost per visit	\$3,150
	Total annual cost for 3 visits	\$9,450

We also observed that WaterNSW's cost model includes the addition and subtraction of a telemetry charge. We confirmed with WaterNSW that its cost estimate only accounts for the field costs and the telemetry Charge is not included in the Channel Meter charge.

6.4 Review of WaterNSW's channel meter costs

6.4.1 Validation/calibration assumptions and costs

We queried the need for three visits per year to each site for calibration purposes and why one annual calibration was not sufficient. WaterNSW responded that certified hydrographers have recommended that more regular visits (6 to 8 times a year) are required if water is being taken throughout the year to ensure the accuracy of the water measurements. However, rather than visit each channel meter site at this frequency, WaterNSW are of the view that gauging high, medium and low flows would be sufficient to obtain sufficient data to manage the changing channel heights, which can have an impact on the meter readings. WaterNSW also noted that customers using these sites have quite often questioned the meter readings given the different flow heights and flow rates in a channel. Therefore, more regular gauging is considered to be required to provide more accurate meter readings.

WaterNSW also noted that the channels can be fed by multiple pumps/pipes and this can also impact on the meter readings and the requirement for gauging due to the potential for different heights and flow rates in the channel.

As the sensors are located in mid channel, cleaning and gauging of the site is impacted by weed growth, debris and site maintenance around the sensors' pad, with WaterNSW considering that maintenance is required at each site three or more times per year.

6.4.2 Alternative options to existing channel meters

We questioned WaterNSW as to whether any analysis has been undertaken to determine whether there would be lower costs to replace these channel meters with a different technology given the \$9,450 cost per site per year in calibration costs.

WaterNSW responded that the channel meters were installed to trial alternative lower cost technologies. As such, they were trialled as the lowest cost option to avoid the costs of installing a meter on every pump, e.g. three pumps into one channel would mean one channel meter is required rather than three meters, one at each pump. The sensors are located downstream of any intake via other channels and/or pumps. By being set away from other channels and/or pumps, the channel meters allow for different intakes to be absorbed into the water flow, before reaching the sensors.

WaterNSW noted that the existing channel meters are considered alternative technology, as they are not standard non-pattern approved meters. As a result, there is a requirement for a DQP to 'sign off' on every meter to endorse that they are fit for purpose and accurate (hence, the annual accuracy test).

Although WaterNSW installed the channel meters to trial alternative lower cost technologies, we queried whether there was a simpler alternative solution that could be used.

WaterNSW responded that the channel meters could be removed but this would incur additional costs which have not been contemplated and a meter would then need to be installed on every pump, which would be at a significant cost.

WaterNSW has estimated that the cost could range from approximately \$1.2 million, as a lower range estimate, to \$2.3 million, as an upper range estimate, for the 35 pumps connected to the 19 channel sites. WaterNSW does not consider this to be a financially viable alternative but has not completed financial analysis at this time.

There is capability for customers to opt out of the Government meter scheme prior to WaterNSW initiating the upgrades, install alternative technologies and incur the private costs of compliance if the customer believes that this is the lowest costs option for them and it is supported by the works approval.

WaterNSW noted that all 19 channel meter sites will be reviewed prior to the compliance dates in December 2022 to determine whether a different technology is more suitable. However, as noted above, WaterNSW considered that replacing these meters is likely to be expensive and it has not included any provisions for replacement of the meters in its submission.

6.5 Conclusion

The Non-Urban Water Metering Policy has provided a pathway for compliance for the 19 non-pattern approved channel meters that WaterNSW currently has installed. Under this policy there is a requirement for annual validation of the accuracy of the meter. However, WaterNSW's build-up for the channel meter costs is based on three visits each year to each site. WaterNSW has said that the justification for this increase above the policy requirement is included in hydrographical advice but this information has not been able to be provided to us at this time.

As a result, we are unable to conclude that the channel meter costs proposed by WaterNSW to meet the requirements of the Non-urban Water Metering Policy are efficient. We recommend that the Meter Service Charge for channel meters remain at \$6,237.

7 Impacts of the updated Government-owned meter program and costs model

As noted in Section 3.5, WaterNSW has revised its four year capital expenditure program between FY21 and FY24 for making the Government-owned meters compliant with the legislation. The program used to develop WaterNSW's government-owned meter costs included in its original pricing submission to IPART is provided in Table 7-1, with the updated program provided in Table 7-2

Table 7-1 WaterNSW's previous government-owned meter program

	FY21	FY22	FY23	FY24	FY25
Buried to be made compliant	376	510	243	0	0
Above Ground/Other to be made compliant	447	335	581	330	0
Meters to be made compliant each year	823	845	824	330	0
Cumulative compliant meters	823	1,668	2,492	2,822	2,822
Cumulative non-compliant meters	1,999	1,154	330	0	0

Table 7-2 WaterNSW's updated government-owned meter program

	FY21	FY22	FY23	FY24	FY25
Buried to be made compliant	133	0	996	0	0
Above Ground/Other to be made compliant	49	38	780	826	0
Meters to be made compliant each year	182	38	1,776	826	0
Cumulative compliant meters	182	220	1,996	2,822	2,822
Cumulative non-compliant meters	2,640	2,602	826	0	0

The main difference in the updated program from the previous version used to develop WaterNSW's April 2021 cost forecasts is that the newer version has a much softer start over the first couple years before a ramp out to finish the program in the last two years of the program. The previous program had a roughly even split of meters to be made compliant in each of the first three years of the program, with the remainder completed in the fourth year. The updated program has only 220 meters to be made compliant by the end of FY22 compared to the 1,668 meters that WaterNSW was proposing to have been made compliant by the same due date in its previous program.

Although the proposed capital expenditure required to make the Government-owned meters is the same over the five year FY21 to FY25 period, a total of \$14.58 million, one major difference is that the capital expenditure included in FY21 has decreased from \$3.985 million in the previous cost model to \$1.622 million in the updated cost model.

We note that in our April 2021 report we said:

WaterNSW has forecasts \$3.985 million capital expenditure in the current period. To the extent that this expenditure reflects as incurred expenditure for capital expenditure on government meters, we accept this expenditure as prudent and efficient. That is, we do not expect WaterNSW to have allocated a 10% contingency to actual costs as we have adjusted for in the future period.

Based on the updated program for making the Government-owned meters compliant, we have updated our recommended efficient capital expenditure for Government-owned meters and presented this in Table 9-5.

As WaterNSW's operating expenditure forecasts for maintaining compliance for the Government-owned meters is based on the number of meters initially being made compliant in each year, the updating of the program also impacts on its proposed operating expenditure estimates.

There is a reduction in operating expenditure in WaterNSW's revised forecasts, with \$7.9 million now being proposed compared to \$9.1 million over the four year Determination period. Although the operating expenditure has been impacted by the revised program to make the Government-owned meters compliant, the telemetry charge price component that was initially proposed by WaterNSW has now been itemised as a

separate charge under the Draft Determination. The telemetry charge price was previously set at \$254 for all compliant meters, and totalled \$2.49 million over the four year Determination Period.

Based on the updated program for making the Government-owned meters compliant, we have updated our recommended efficient operating expenditure for Government-owned meters and presented this in Table 9-4.

We note that on an indicative basis and including the revised inputs in WaterNSW's cost model for the Government-owned meters, there is an increase in the forecast Meter Service Charge (MSC). As a result of WaterNSW's revised program to make the Government-owned meters compliant, the rollout is deferred from the early years of the Determination period to the later years in the four year period. As a result, the number of site visits that are required as part of WaterNSW's annual service visit to each meter have been reduced from its previous expenditure proposal. This has the impact of the fixed cost components of the program (e.g. provisions for LID and meter failure) needing to be spread across a proportionally smaller number of site visits.

In its original submission, WaterNSW's proposed MSC operating expenditure (excluding telemetry) was \$924 per year. If the proposed costs / volumes are passed onto customers, the indicative MSC operating expenditure will be \$1,001 per year, representing an increase of 8.3%.

WaterNSW has noted that although it consider that it is not ideal that Cardno/IPART has adjusted the recommended MSC operating expenditure downwards, it is prepared to accept a lower failure rate of LID and meter failure so that customers are not further inconvenienced or confused with a higher charge.

8 Impact of Flood Plain Harvesting meter changes on WaterNSW's costs

As noted in Section 3.5, WaterNSW's cost model included a total of 1,066 floodplain harvesting meters, 373 in FY21 and the remaining 693 due to be made compliant in FY22.

These meters were included in WaterNSW's cost model as having telemetry. However, the regulation governing these meters has recently been disallowed by the NSW parliament.

As of 1 July 2021, WaterNSW had anticipated that there would be 373 of these meters connected to telemetry. This reduction of available meters being connected to telemetry from its original calculations is considered by WaterNSW to have material implications on the quantum that it can recover from regulated charges, as its fixed costs for telemetry will be spread across fewer meters.

Subsequent to our August 2021 discussions with WaterNSW, it provided additional clarification to confirm the current situation and the future expectations for the 1,066 floodplain harvesting meters. This was as follows:

- > None of 373 floodplain harvesting meters included in the meter rollout program for FY21 have been made compliant or connected to telemetry
- > None of the expected 693 floodplain harvesting meters scheduled in the FY22 rollout will be compliant or connected to telemetry unless the regulation is passed between now and June 30 2022
- > WaterNSW is unable to predict the expected compliance dates for the floodplain harvesting meters, as this is a decision for DPIE based on the requirements of the regulations being passed
- > WaterNSW's expectation is that all 1,066 floodplain harvesting meters will need to be compliant if/once the relevant regulation is passed
- > WaterNSW's expectation is that all 1,066 floodplain harvesting meters will need to be connected to telemetry if/once the relevant regulation is passed.

As a result of WaterNSW providing greater clarity regarding the floodplain harvesting meters, we have assessed WaterNSW's scheme management operating expenditure cost using two different scenarios to reflect the uncertainty around when/if these meters are included in the regulations.

The two scenarios that have been modelled are:

- > Scenario 1: Costs excluding all 1,066 floodplain harvesting meters
- > Scenario 2: Costs including the floodplain harvesting meters but rolled in with a two year delay. This means that the 373 meters included in WaterNSW's cost model in FY21 are made compliant in FY23 and the 693 meters WaterNSW included in FY22 are now made compliant in FY24. In addition to the two year delay, we have assumed that all 1,066 meters will be telemetered.

We have provided revised recommended efficient operating expenditure for WaterNSW's metering scheme management for both of these scenarios in Table 9-1 and Table 9-2.

9 Recommendations

9.1 Recommended metering scheme management expenditure

9.1.1 Operating expenditure

We have updated our recommendations for the efficient operating expenditure for WaterNSW's metering scheme management from our recommendations in our April 2021 report to take account of the changes that have been made since our last review of WaterNSW's cost models.

As noted in Section 8, we have provided two operating expenditure forecasts based on two different scenarios for the floodplain harvesting meters being made compliant.

In addition to the adjustments that we made to WaterNSW's proposed operating expenditure in our April 2021 report, we have made an additional adjustment to remove the GST component of WaterNSW's vehicle operating costs that were included in its cost model and which had previously not been adjusted for. This additional adjustment has been taken into account for both scenarios.

Our recommended efficient operating expenditure for metering scheme management for the future period, based on the exclusion of all 1,066 floodplain harvesting meters (Scenario 1), is set out in Table 9-1.

Table 9-1 Recommended efficient operating expenditure for metering scheme management (Scenario 1)

	2021/22	2022/23	2023/24	2024/25	Total
<i>Proposed operating expenditure (April 2021)</i>	5,523	7,233	8,697	8,238	29,690
Proposed operating expenditure, revised	5,292	7,049	8,513	8,043	28,898
Adjustments	-325	-388	-426	-415	-1,555
Proposed expenditure net of adjustments	4,967	6,661	8,087	7,628	27,343
Catch-up efficiency (%)	-3.20%	-6.30%	-9.30%	-12.20%	
Catch-up efficiency (\$)	-159	-419	-752	-931	-2,261
Proposed expenditure net of adjustments and catch-up efficiency	4,808	6,241	7,335	6,698	25,082
Continuing efficiency (%)	-0.70%	-1.40%	-2.09%	-2.77%	
Continuing efficiency (\$)	-34	-87	-153	-186	-459
Recommended efficient operating expenditure	4,774	6,154	7,182	6,512	24,623

Note: the first row of the table shows WaterNSW's proposed operating expenditure included in its revised April 2021 submission and which included the floodplain harvesting meters being installed in FY21 and FY22.

Our recommended efficient operating expenditure for metering scheme management for the future period, based on the floodplain harvesting meters being made compliant with a two year delay from what had originally been proposed by WaterNSW (Scenario 2) is set out in Table 9-2. This scenario also assumes that all 1,066 floodplain meters will be telemetered.

Table 9-2 Recommended efficient operating expenditure for metering scheme management (Scenario 2)

	2021/22	2022/23	2023/24	2024/25	Total
<i>Proposed operating expenditure (April 2021)</i>	5,523	7,233	8,697	8,238	29,690
Proposed operating expenditure, revised	5,293	7,141	8,742	8,238	29,414
Adjustments	-325	-393	-440	-427	-1,586
Proposed expenditure net of adjustments	4,968	6,747	8,302	7,811	27,828
Catch-up efficiency (%)	-3.20%	-6.30%	-9.30%	-12.20%	
Catch-up efficiency (\$)	-159	-425	-772	-953	-2,308

	2021/22	2022/23	2023/24	2024/25	Total
Proposed expenditure net of adjustments and catch-up efficiency	4,809	6,322	7,530	6,858	25,519
Continuing efficiency (%)	-0.70%	-1.40%	-2.09%	-2.77%	
Continuing efficiency (\$)	-34	-88	-157	-190	-469
Recommended efficient operating expenditure	4,775	6,234	7,373	6,668	25,050

Note: As for the previous table, the first row of the table presents WaterNSW's proposed operating expenditure included in its revised April 2021 submission and which included the floodplain harvesting meters being installed in FY21 and FY22.

9.1.2 Capital expenditure

Our recommended efficient capital expenditure for metering scheme management for the future period is set out in Table 9-3.

In addition to the adjustments that we made to WaterNSW's proposed capital expenditure in our April 2021 report, we have made an additional adjustment to remove the GST component of WaterNSW's total Corporate Systems capital expenditure that were included in its cost model and which had previously not been adjusted for. The adjustments also includes a small adjustment to the vehicle capex (a total adjustment of \$30,000 over the four year Determination Period) that results from the adjustment to the working weeks from 40.66 to 41.41 working weeks in the year.

Table 9-3 Recommended efficient capital expenditure for metering scheme management

	2021/22	2022/23	2023/24	2024/25	Total
Proposed capital expenditure	1,552	534	466	198	2,750
Adjustments	-364	-24	-23	-18	-429
Proposed expenditure net of adjustments	1,187	510	444	180	2,321
Catch-up efficiency (%)	-1.25%	-2.50%	-3.75%	-4.50%	
Catch-up efficiency (\$)	-15	-13	-17	-8	-52
Proposed expenditure net of adjustments and catch-up efficiency	1,172	497	427	172	2,268
Continuing efficiency (%)	-0.70%	-1.40%	-2.09%	-2.77%	
Continuing efficiency (\$)	-8	-7	-9	-5	-29
Recommended efficient capital expenditure	1,164	490	418	167	2,240

9.2 Government-owned meter costs

9.2.1 Operating expenditure

Our recommended efficient operating expenditure for Government owned meters for the future period is set out in Table 9-4.

Table 9-4 Recommended efficient operating expenditure for Government owned meters

	2021/22	2022/23	2023/24	2024/25	Total
<i>Proposed operating expenditure, original ^a</i>	1,785	2,290	2,492	2,492	9,060
Proposed operating expenditure ^a	899	1,986	2,492	2,492	7,869
Adjustments	-2	-20	-28	-28	-79
Proposed expenditure net of adjustments	896	1,966	2,464	2,464	7,791
Catch-up efficiency (%)	-3.20%	-6.30%	-9.30%	-12.20%	
Catch-up efficiency (\$)	-29	-124	-229	-301	-682
Proposed expenditure net of adjustments and catch-up efficiency	868	1,843	2,235	2,163	7,109
Continuing efficiency (%)	-0.70%	-1.40%	-2.09%	-2.77%	

	2021/22	2022/23	2023/24	2024/25	Total
Continuing efficiency (\$)	-6	-26	-47	-60	-138
Recommended efficient operating expenditure	862	1,817	2,188	2,104	6,970

a Excluding telemetry costs, which are included in the costs for metering scheme management (Table 9-1)

9.2.2 Capital expenditure

Our recommended efficient capital expenditure for Government owned meters for the future period is set out in Table 9-5.

Table 9-5 Recommended efficient capital expenditure for Government owned meters

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
<i>Proposed capital expenditure, original</i>	3,985	4,009	4,433	1,662	491	14,580
Proposed capital expenditure, revised	1,622	943	7,651	4,016	347	14,580
Adjustments		-75	-292	-103	0	-470
Proposed expenditure net of adjustments		868	7,359	3,913	347	12,488
Catch-up efficiency (%)		-1.25%	-2.50%	-3.75%	-4.50%	
Catch-up efficiency (\$)		-11	-184	-147	-16	-357
Proposed expenditure net of adjustments and catch-up efficiency		858	7,175	3,766	332	12,130
Continuing efficiency (%)		-0.70%	-1.40%	-2.09%	-2.77%	
Continuing efficiency (\$)		-6	-100	-79	-9	-194
Recommended efficient capital expenditure	1,622	852	7,075	3,688	322	13,559