IPART

Independent Pricing and Regulatory Tribunal
New South Wales

Hunter Water Corporation operating licence review – Cost Benefit Analysis

2017-2022

Final Report
Water Licensing

May 2017

ISBN 978-1-76049-064-5

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1 Cost Benefit Analysis framework

1.1 The review of Hunter Water's operating licence

The Independent Pricing and Regulatory Tribunal (IPART) is conducting an end of term review of Hunter Water Corporation's (Hunter Water) operating licence.

We last reviewed Hunter Water's operating licence in 2012 and the current Hunter Water operating licence expires on 30 June 2017. We propose renewing the licence for the maximum period of five years, to take effect from 1 July 2017 to 30 June 2022.[1]

This cost benefit analysis document should be read as an accompaniment to the document it supports, IPART's *Review of the Hunter Water Corporation Operating Licence 2017-2022 – Final Report*. The cost benefit analysis contained within this document supports the changes contained in the final report, and other documents in the operating licence package (ie, licence, customer contract and reporting manual).[2]

The role or purpose of the operating licence

The primary role of the operating licence is to provide a transparent, auditable and enforceable regulatory framework for Hunter Water to legally undertake its activities, while protecting the interests of consumers, community and the environment. This is consistent with the requirements of the operating licence under Part 5, Division 1 of the *Hunter Water Act 1991* (Hunter Water Act).

In considering the role of the operating licence, and potential licence requirements, it is also important to be aware that many of the potential environmental and health impacts of Hunter Water are regulated by other instruments.

1.2 Overview of Cost Benefit Analysis

We conducted a Cost Benefit Analysis (CBA) of proposed changes to Hunter Water's operating licence and the associated Reporting Manual.[3] This CBA is part of the end of term review of Hunter Water's operating licence and has been conducted in accordance with the NSW Government's Guide to Better Regulation.[4] The extent of our analysis is proportionate to the relative significance of each proposed change.

1 As allowed by section 15 of the *Hunter Water Act 1991*.

2 These documents are available on IPART's website and include: *Review of the Hunter Water Corporation Operating Licence 2017-2022 – Final Report*, and, *Hunter Water Corporation Reporting Manual – Final Reporting Manual*, December 2016.

3 The Reporting Manual consolidates and details all reporting requirements imposed under the operating licence, including required performance indicators and the format and timetable of reporting.

4 Department of Finance, Services & Innovation, *NSW Guide to Better Regulation*, October 2016. See https://www.finance.nsw.gov.au/better-regulation.

This CBA supports, and should be read in conjunction with, IPART's *Review of the Hunter Water Corporation Operating Licence, Final Report* (Final Report) published at the same time as this document.

We considered the costs and benefits of proposed changes to Hunter Water's operating licence. The cost and benefits discussed here are incremental to the 'base case' of the current operating licence and current 'business as usual' practices (ie, a 'no policy change scenario').[5] Costs and benefits are defined broadly to include all identifiable economic costs and benefits (ie, all costs and benefits to Hunter Water, Hunter Water's customers, the environment and the broader community).

The timeframe of the CBA is the 5-year period 2017-18 to 2021-22. This period aligns with the expected term of Hunter Water's next operating licence. The decision to limit the time frame for the CBA to five years was made in order to simplify the process and related data requirements.

As part of this CBA, we sent six Requests for Information (RFIs) to Hunter Water for information on the costs and benefits of proposed changes to the operating licence. Hunter Water provided responses to IPART on 7 and 14 September, 18 October 2016, 9 December 2016, and 21 and 29 March 2017. We also sent an RFI to NSW Health for information on proposed licence changes relating to public health. NSW Health provided a response on 13th September 2016. Much of the analysis in this document is informed by Hunter Water and NSW Health's responses to our RFIs.

Where possible, we sought to quantify costs and benefits, however in many instances, we assessed costs and benefits in qualitative terms, that is taking account of their value based on a quality or characteristic rather than on a dollar, quantity or measured value. This reflects the availability of information as well as the nature of the proposed changes to the operating licence.

Where we proposed changes that result in increased efficiency, cost savings or improved standards of service, we assumed these benefits will flow through to Hunter Water's customers.

5 This consistent with guidance regarding selection of a realistic base case in NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 9.

1.3 Overview of proposed changes

We considered changes to the licence that impact on the following issues:

- licence structure
- stormwater system augmentation
- obligation to serve
- timing of licence reviews
- Water Conservation Strategy and Economic Level of Water Conservation
- Calculating system yield
- unfiltered water customers
- NSW Health's role in water quality management
- System Performance Standards
- drinking water quality management
- systems consistent with Australian Standards
- Asset Management System
- State of the Assets report
- Environmental Management System and Quality Management System
- customer rebates
- an MoU with DPI Water.
- an MoU with Fire and Rescue NSW
- non-standard customer contracts
- an MoU with NSW Health
- National Water Initiative performance indicator reporting, and
- review of IPART performance indicators

The greatest reported impact on stakeholders in terms of quantitative and/or qualitative costs or benefits were in the areas of customer rebates, obligation to service and the economic level of water conservation (ELWC). We summarise these issues below.

Customer rebates

Hunter Water pays rebates to its customers for planned and unplanned interruptions to service, wastewater overflows and for low pressure supply of water. We considered changes to the conditions under which each of these categories of rebates is paid.

We note that rebates represent a transfer payment; that is for each rebate paid (representing a cost to Hunter Water), there is an equal value benefit to customers represented by a rebate received. The net impact of these transactions on the NSW community, considered in isolation, is zero. Incremental costs or benefits would only arise from changes in behaviour resulting from changes to the rebate regime.

There are dual reasons for providing service level rebates to customers. One reason is to provide compensation to the customer for inconvenience; the other is to penalise the service provider for poor performance, in order to encourage better performance. IPART's view is that rebates should be provided for events that cause inconvenience to customers, and be set at a level proportionate with the extent of inconvenience.[6] We have considered changes that may better align rebate payments to customer inconvenience for each category of rebate.

There is also a link between performance and the service level rebates allowed by Hunter Water. A substantial majority of rebates paid by Hunter Water are for first and second events, which reflect the number of interruptions experienced (in contrast to a three or more event rebate which does not increase as more events occur). Of a three year annual average of 7,973 rebates provided by Hunter Water, a three year annual average of 1,353 (or 17%) were provided for three or more service interruptions and 17 (0.2%) for three or more wastewater overflows. No rebates were paid for multiple low pressure events.[7]

Hunter Water's rebates are calculated on a per kilolitre basis which means that as the price per kilolitre increases over time (Hunter Water's current pricing determination increases the water usage charge by the rate of inflation), so does the rebate amount allowed.[8]

Table 1.1 Preferred options relating to rebates.

Preferred option	Key considerations
Add a clause to the customer contract limiting rebates on planned interruptions to interruptions between 5am-11pm.	▼ potential cost of planned work being conducted outside of normal business hours ▼ better aligns rebates with time of day customers are inconvenienced
Require Hunter Water to rebate an amount equal to the annual water service charge for unplanned water interruptions for three or more events between 5am and 11pm.	▼ sub-optimal alignment of rebates with time of day customers are inconvenienced ▼ avoids cost of planned work being conducted outside of normal business hours
Require Hunter Water to pay a rebate amount equal to the annual wastewater service charge for wastewater overflows for three or more events.	▼ potential cost of infrastructure works to prevent overflows ▼ rebates would better reflect inconvenience to customers
Require Hunter Water to pay a rebate for one low pressure event per year based on system monitoring.	▼ provides easier access to rebates for affected customers

Obligation to service

Hunter Water currently has an obligation to make services available to properties within its area of operations.[9] This obligation does not extend to customers licensed under the *Water Industry Competition Act 2006* (WIC Act), who may not be property owners.

6 IPART's position was established in 2011, regarding rebates for inconvenience rather than as a punitive measure. Refer to report – IPART, *Review of the Customer Contract for Hunter Water Corporation – Final Report*, February 2011, p 7.

7 Hunter Water reply to request for information, 14 September 2016, worksheets 34(new).b, 35(new).b and 36(new).b

8 IPART, June 2016, *Hunter Water Corporation: Maximum prices for water, sewerage, stormwater drainage and other services from 1 July 2016, Water - Determination, Determination No.4, 2016*, p 15.

Hunter Water currently has two WIC Act licensees as customers, Huntlee Water and Cooranbong Water, neither of which has yet received services for a full financial year. Hunter Water has received around $19,000 from one of these customers for services provided from April 2016 to March 2017.[10]

We considered options to require Hunter Water to provide services to either:

- any person within its area of operations, or
- property owners and WIC Act licensee customers within the area of operations.

The CBA indicated that the preferred option is to require Hunter Water to service property owners and WIC Act licensees within the area of operations.

While noting that Hunter Water has successfully negotiated supply contracts with WIC Act licensees, the preferred option would provide greater certainty of supply for WIC Act licensees, which may lead to efficiencies arising from increased competition.

Costs may arise for Hunter Water as the obligation to provide services would likely have an effect when negotiating the terms and conditions for supply with these customers, however this can be considered in the nature of a transfer which would have no net effect on the whole NSW community.

There may also be an additional cost relating to a likely increase in debt recovery activities, as recovery of debt would not be enforced by being attached to a property title.[11] Currently, Hunter Water is able to negotiate appropriate security and liability conditions in Utility Services Agreements, however a WIC Act licensee may not be willing to negotiate such terms if it perceives Hunter Water to be obligated to provide services without security.

Hunter Water stated that, whilst the financial viability tests in the WIC Act licensing process provide some mitigation of bad debt risk, the introduction of legislation covering last resort arrangements means that financial viability remains a risk.[12]

Economic level of water conservation

In 2015-16, Hunter Water spent around $5.0 million on water conservation activities (excluding the Kooragang Industrial Water Scheme). These activities include water efficiency measures, leakage management and recycled water use.[13]

Hunter Water's current operating licence includes clauses defining water demand management and the control of water loss from leakage.[14] The concept of Economic Level of Water Conservation (ELWC) includes definitions of water recycling and water efficiency activities (including demand management), and water leakage (within and downstream of

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9 Hunter Water Operating Licence 2012-2017, clause 1.6.1.
10 Hunter Water reply to IPART request for information, 21 March 2017.
11 Section 40 of the Hunter Water Act grants Hunter Water the right to recover unpaid contract charges from successors in property title.
12 Hunter Water reply to IPART request for information, 9 December 2016.
13 Hunter Water reply to IPART request for information, 21 March 2017. Cost includes both operating and capital expenditure.
14 *Hunter Water Operating Licence 2012-2017*, clauses 3.1 and 3.2.

its water treatment plants). We examined options to include a requirement for Hunter Water to develop and implement an ELWC methodology in the licence.

The CBA assessment indicated that the preferred option is to require Hunter Water to develop an ELWC methodology and then replace the Economic Level of Leakage and water conservation targets with a requirement in the licence to implement an ELWC.

Benefits arising from the preferred option include:

- a more efficient allocation of resources by not relying on arbitrary water conservation targets, and
- better selection of water conservation projects as a rigorous ELWC methodology would consider related costs and benefits.[15]

Hunter Water stated that ELWC-related costs may decline over time following the publication of the first Water Conservation Report, as the organisation becomes familiar with the ELWC approach and information requirements. Hunter Water also acknowledged that there may be additional, incremental, costs arising over time from amendments to the ELWC methodology as the organisation gained practical experience.

1.4 Summary of preferred options

We considered the incremental costs and benefits of options relating to each issue, and reached a preferred option for each. We applied sensitivity analysis consistent with NSW Treasury guidance.[16]

Below is a summary of preferred options. All of these options were assessed by this cost benefit analysis as having the greatest net social benefit (Table 1.2).

15 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.
16 NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45.

Table 1.2 Summary of results of cost benefit analysis of preferred options

Preferred option	Qualitative and quantitative costs and benefits (NPV, 2015-16 dollars, assumes 7% discount rate, over five years of licence term)
Change licence structure to improve accessibility to customers, the community and other stakeholders.	▼ improves accessibility to customers, the community and other stakeholders ▼ may create efficiencies for utility as licence structure reflects water cycle and internal utility structure ▼ provides a template for operating licences therefore avoiding the cost of 're-developing' licence structure for other reviews
Amend licence clause 1.3.1 of Hunter Water's licence to allow for augmentation of Hunter Water's stormwater and drainage system.	▼ could lead to cost-shifting of required augmentation works from Hunter Water to third parties ▼ removes ambiguity around application of the existing operating licence clause ▼ removes an imposed barrier to co-operation between Hunter Water, councils and developers ▼ more efficient project selection which allows Hunter Water to consider projects that deliver lower cost stormwater solutions
Require Hunter Water to service property owners and *Water Industry Competition Act 2006* licensee customers within the area of operations.	▼ certainty of supply for WIC Act licenses ▼ efficiencies arising from increased competition ▼ additional cost relating to a likely increase in debt recovery activities
Make no change to the proposed licence period.	▼ an increase in overall cost due to more frequent IPART operating licence reviews ▼ efficiency savings from harmonisation of licence obligations prior to a later price review
Hunter Water to calculate and report on system yield using a methodology which is agreed under an Memorandum of Understanding with DPI Water.	▼ may enable funding of calculating and reporting of system yield activities in future pricing decisions ▼ assurance of ongoing yield calculations to inform DPI Water in regional water supply planning ▼ documentation of yield calculation would improve knowledge transfer giving rise to a benefit from continuity of yield date, ▼ would support the ongoing regional management of water supply in the region into the future ▼ may improve consistency of licence with other utilities
Require Hunter Water to prepare a water conservation strategy for water conservation activities upstream of its water treatment plants.	▼ minimal cost relating to documentation and reporting ▼ increased transparency of water conservation activities ▼ documentation of current practices would improve knowledge transfer giving rise to a benefit from continuity of activities and projects ▼ may improve consistency of licence with other utilities

Preferred option	Qualitative and quantitative costs and benefits (NPV, 2015-16 dollars, assumes 7% discount rate, over five years of licence term)
Develop an Economic Level of Water Conservation methodology and then replace the Economic Level of Leakage and water conservation target (within and downstream of its water treatment plants), with a requirement in the licence to implement an Economic Level of Water Conservation.	▼ more efficient resource allocation ▼ methodology better reflects actual net benefits of water conservation projects ▼ increased transparency around selection of water conservation projects ▼ costs of -$191,598
Make minor amendment to the drinking water conditions in Hunter Water's operating licence to include unfiltered water for non-potable water purposes.	▼ health risk to people who potentially consume unfiltered water as this water is still supplied under proposed change ▼ reduces chance of people consuming non-potable water by informing customers of proper use of unfiltered water ▼ reduced exposure for Hunter Water to legal liability from customers consuming unfiltered water ▼ $1,218,139 in net social cost avoided by adopting preferred option
No change to condition 2.1.4 of Hunter Water's operating licence relating to NSW Health's role in drinking water quality.	▼ does not achieve alignment of wording in operating licence with NSW Health's authority which would occur under other options considered ▼ qualitative outcomes would be similar under both the base case and other options considered
No change to condition 2.2.4 of Hunter Water's operating licence relating to NSW Health's role in recyced water quality.	▼ does not achieve alignment of wording in operating licence with NSW Health's authority which would occur under other options considered ▼ qualitative outcomes would be similar under both the base case and other options considered
No change to conditions 2.1.3 and 2.1.4 of Hunter Water's operating licence relating to NSW Health's role in drinking water quality.	▼ no incremental quantitative cost in defining 'significant changes' ▼ avoids qualitative costs associated with other options considered such as: – inflexibility to changes arising from 'locking in' a definition of 'significant changes' – savings in cost to achieve consensus between IPART, NSW Health and Hunter Water which may not be possible – additional or fewer administrative costs depending on how broad the proposed definition would be

Preferred option	Qualitative and quantitative costs and benefits (NPV, 2015-16 dollars, assumes 7% discount rate, over five years of licence term)
No change to conditions 2.2.3 and 2.2.4 of Hunter Water's operating licence relating to NSW Health's role in recycled water quality.	▼ no incremental quantitative cost in defining 'significant changes' ▼ avoids qualitative costs associated with other options considered such as: – inflexibility to changes arising from 'locking in' a definition of 'significant changes' – savings in cost to achieve consensus between IPART, NSW Health and Hunter Water which may not be possible – additional or fewer administrative costs depending on how broad the proposed definition would be
No change to conditions 2.1.2 and 2.2.2 of Hunter Water's operating licence relating to the relationship between Hunter Water and NSW Health.	▼ Hunter Water and NSW Health have a strong, constructive working relationship and the need for additional regulatory intervention is not demonstrated ▼ avoids qualitative costs associated with other options considered such as: – compliance related costs depending on depending on how broad the proposed definition would be – inflexibility to changes arising from 'locking in' a definition of 'significant changes' – may not be possible to achieve consensus between IPART, NSW Health and Hunter Water
Retain existing standards in licence relating to System Performance Standards.	▼ avoids risk that Hunter Water would not met a particular standard ▼ other options have some minor efficiency gains ▼ $67,000 in net social cost avoided by retaining base case
Retain the current drinking water quality provisions from the existing licence.	▼ small additional administrative cost in managing participation in separate water quality and operational audits ▼ benefit from additional confidence and assurance in reporting of Hunter Water's compliance with its Drinking Water Quality Management Plan to the public ▼ other considered options included $30,570 (Option B) and $43,982 (Option C) in costs avoided by retaining the base case
Amend licence to require an Asset Management System to be consistent with International Organization for Standardisation's ISO 55001:2014 *Asset Management System Requirements,* or other standards approved by IPART, by 31 December 2017, and for consistency to be maintained.	▼ other advantages of an AMS consistent with ISO 55001 include: – enhanced service levels – reduced risk of asset failure – asset cost savings – audit cost savings ▼ NPV of net social benefit (quantifiable items only) -$21,231

Preferred option	Qualitative and quantitative costs and benefits (NPV, 2015-16 dollars, assumes 7% discount rate, over five years of licence term)
Remove the requirement in Hunter Water's Reporting Manual for 'State of the Assets' reporting.	▼ benefits identified in the Cost Benefit Analysis relating to the last licence period have not materialised nor would be achieved by the maintenance of this reporting requirement ▼ net social benefit of $39,761
Remove the requirement for certification of the EMS and QMS but retain a requirement for the EMS and QMS to be consistent with the Australian and New Zealand standards or other standards approved by IPART. Change the standard of consistency for the EMS from ISO14001:2004 to AS/NZS ISO 14001:2016 *Environmental management systems – Requirements with guidance for use* and the QMS from ISO9001:2008 to AS/NZS ISO 9001:2016 *Quality management systems – Requirements*.	▼ may increase audit costs in short term ▼ provides assurance to stakeholders ▼ enhanced efficiency (cost savings and/or service improvements) ▼ reduced risk of service or system failure ▼ reduced cost in providing information to stakeholders (eg, NSW Health, customer groups) ▼ may give rise to future audit cost savings in longer term ▼ enables Hunter Water to determine the most efficient and effective way of demonstrating consistency with the relevant standard
Add a clause to the customer contract limiting rebates on planned interruptions to interruptions between 5am-11pm.	▼ potential cost of planned work being conducted outside of normal business hours ▼ better aligns rebates with time of day customers are inconvenienced ▼ information systems costs of $17,469
Require Hunter Water to rebate an amount equal to the annual water service charge for unplanned water interruptions for three or more events between 5am and 11pm.	▼ sub-optimal alignment of rebates with time of day customers are inconvenienced ▼ avoids cost of planned work being conducted outside of normal business hours ▼ information systems costs of $17,469
Require Hunter Water to pay a rebate amount equal to the annual wastewater service charge for wastewater overflows for three or more events.	▼ potential cost of infrastructure works to prevent overflows ▼ rebates would better reflect inconvenience to customers ▼ information systems costs of $17,469
Hunter Water to pay a rebate for one low pressure event per year based on system monitoring.	▼ provides easier access to rebates for affected customers ▼ information systems costs of $52,406
Amend condition 3.3.1 of Hunter Water's operating licence to state that Hunter Water must use its best endeavours to develop, agree, maintain and comply with a Memorandum of Understanding in agreement with Department of Primary Industry Water for the development and implementation of the Lower Hunter Water Plan.	▼ wording more accurately reflects the status of the LHWP and would improve consistency with Sydney Water's licence

Preferred option	Qualitative and quantitative costs and benefits (NPV, 2015-16 dollars, assumes 7% discount rate, over five years of licence term)
Amend Hunter Water's operating licence to include a requirement for an Memorandum of Understanding with Fire and Rescue NSW, including specific requirements regarding terms.	▼ cost of risk of property damage and loss of life arising from not fully addressing some properties not having sufficient water supply for firefighting purposes ▼ substantial capital expenditure savings ▼ greater flexibility for Hunter Water and FRNSW to agree mutually beneficial content of the MoU ▼ would bring about practical, efficient improvements for fire safety ▼ meeting and MoU related costs of $81,006
No change be made regarding non-standard customer contracts in Hunter Water's operating licence.	▼ sub-optimal encouragement of unfiltered water customers to take up contracts and modify their use of unfiltered water to reduce human consumption ▼ other considered option included $1,428,897 in net social cost avoided by retaining base case
No change be made to the requirement for a Memorandum of understanding with NSW Health in Hunter Water's operating licence.	▼ retains regulatory trigger to revise any relevant clauses of the MoU ▼ small benefit in providing formal assurance the MoU with NSW Health is maintained
Add to Hunter Water's operating licence a requirement to report against National Water Initiative performance indicators.	▼ addresses a regulatory gap identified in the operating licence
IPART to conduct a review of Hunter Water's indicator definitions as part of the licence review process and conduct an industry-wide performance indicators review after July 2017.	Costs include: ▼ increased labour costs ▼ potential lack of alignment and loss of comparability between NSW metropolitan water utilities ▼ duplication of effort by stakeholders who are active across several jurisdictions. Benefits include: ▼ refines the current definitions and resolves existing inconsistencies in indicators, ▼ potential increases in efficiency and productivity ▼ potential ability to access additional performance information sooner

2 Licence structure

2.1 Modify licence structure

We considered an option to restructure the operating licence document to assist in ease of reading and understanding for stakeholders, ie, Hunter Water staff, other government agencies and customers.

Preferred option

Change licence structure to group requirements into similar activity areas based around the water supply chain and better align licence requirements with the responsibility areas within Hunter Water to improve accessibility to customers, the community and other stakeholders.

Options

Option A (base case): No change to licence structure.

Option B: Modify licence structure to group requirements into similar activity areas based around the water supply chain and better align licence requirements with the responsibility areas within Hunter Water.

Qualitative and Quantitative Costs and Benefits

Cost: The costs relating to Option B were assessed as small, as it is structural change in the document presentation and would not have wider impacts.

Benefit: The proposed structure should improve accessibility to customers, the community and other stakeholders. This is because the structure proposed by IPART reflects Hunter Water's supply chain and would improve understanding of the licence requirements and the regulatory context in which Hunter Water operates.

The proposed structure may also provide a template for operating licences that can be used for other water utilities regulated by IPART, therefore avoiding the cost of 're-developing' licence structure for other reviews.

Assessment

Given the benefits of Option B compared with the base case, and the minor level of costs, the CBA assessment indicated, on the basis of CBA alone, that Option B is preferred.

3 Licence context and authorisation

3.1 Stormwater augmentation

Hunter Water has around $136.5 million of stormwater assets representing around 6% of the value of all assets and infrastructure. Hunter Water spends, on average, around $1.9 million per year on maintenance and renewal of stormwater assets which is 1.4% of total operating expenditure.[17]

Clause 1.3.1 of the operating licence requires Hunter Water to provide, operate, manage and maintain a drainage service which is of the same capacity as that originally transferred from the Hunter Water Board to Hunter Water. This is consistent with section 13(1)(b) of the Hunter Water Act which requires Hunter Water to:

> …provide, operate, manage and maintain a drainage service within the capacity of the drainage service included in the business undertaking transferred under Part 3 by the Hunter Water Board to the Corporation as at the date of the transfer of the business undertaking.

We considered an option to alter the wording of clause 1.3.1 to include, and allow for, 'augmentation' of the drainage system by Hunter Water.

Preferred option

Amend licence clause 1.3.1 of Hunter Water's licence to allow for augmentation of Hunter Water's stormwater and drainage system.

Options

Option A (base case): No change to the licence relating to licence condition 1.3.1.

Option B: Amend licence conditions to allow augmentation of stormwater assets.

Assumptions

We assumed that Option B would involve an amendment to Hunter Water's operating licence to include a provision similar to recent changes to Sydney Water's operating licence. This would allow, but not require, Hunter Water to construct stormwater drainage infrastructure for the purpose of increasing the capacity of its Stormwater Drainage System.[18]

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17 Hunter Water reply to IPART request for information, 21 March 2017. Written down value (WDV) of stormwater assets at 30 June 2016 was $136.5 million, WDV of all assets at 30 June 2016 was $2,363.2 million (excluding work in progress). IPART's 2016 Hunter Water price determination allowed for an average of $1.9 million per annum in operating expenditure on stormwater compared with $133.6 million per annum in total operating expenditure (2015-16 dollars). See IPART's 2016 model (Financial Model) for Hunter Water's 2016 Price Determination and IPART, *Review of prices for Hunter Water Corporation, from 1 July 2016 to 30 June 2020,* Table 4.2, p 48.

18 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 11.b.

Qualitative and Quantitative Costs and Benefits

Cost: The lack of an obligation on Hunter Water to undertake necessary additional stormwater works could lead to cost-shifting of required augmentation works from Hunter Water to third parties (ie, local councils or developers).

Benefits: Option B would allow Hunter Water to construct stormwater assets that increase the capacity of the existing system. As the proposed changes do not create an obligation on Hunter Water each project would be considered on its merits.

Option B also does not preclude third party funding of augmentation projects. Hunter Water could increase the scale of planned works where funding is provided by an external party (eg, a local council or developer).

The option also removes ambiguity around the application of the existing operating licence clause, and removes an imposed barrier, in the current condition, to co-operation between Hunter Water, councils and developers. Co-operation between Hunter Water and other stakeholders could lead to better planned and more efficient stormwater augmentation works.

Option B also allows Hunter Water to consider projects that deliver lower cost stormwater solutions if a third party is willing to invest in augmentation works. Councils and developers could approach Hunter Water to consider stormwater augmentation works as an alternative to higher cost projects such as detention basins, potentially lowering the overall cost of necessary works for the wider community.

Assessment

We considered potentially substantial benefits, including increased efficiencies, against related controllable potential costs, relating to Option B. The CBA assessment indicated, on the basis of CBA alone, that Option B is preferred.

3.2 Obligation to service

Hunter Water currently has an obligation to make services available to properties within its area of operations.[19] This obligation does not extend to customers licenced under the *Water Industry Competition Act 2006* (WIC Act), who may not be property owners.

Hunter Water currently has two WIC Act licensee customers, Huntlee Water and Cooranbong Water, neither of which has yet received services for a full financial year. Hunter Water has received around $19,000 from one of these customers for services provided from April 2016 to March 2017.

We considered options to require Hunter water to provide services to any person within its area of operations, or to provide services to property owners and WIC Act licensee customers within the area of operations.

19 Hunter Water Operating Licence 2012-2017, clause 1.6.1.

Preferred option

Require Hunter Water to service property owners and *Water Industry Competition Act 2006* licensee customers within the area of operations.

Options

Option A (base case): Make no change to licence ie, retain the current arrangement whereby Hunter Water is only obliged to service property owners within the area of operations.

Option B: Require Hunter Water to service any person within the area of operations.

Option C: Require Hunter Water to service property owners and WIC Act licensee customers within the area of operations.

Assumptions

We assumed this obligation is intended to cover the on-selling of water and sewerage services to WIC Act licensee customers and excludes recycled water waste disposal by the WIC Act licensee customer into Hunter Water's sewerage system.

Qualitative and Quantitative Costs and Benefits

Option B:

Costs: Incremental costs relating to Option B include:

- labour and direct expenses relating to modifications to the existing customer information (billing) system
- possible loss of temporal data for trend analysis of water consumption over time at a property (analysis is used to identify leaks and faulty meters)
- increased workload in call and service centres arising from a need for additional staff to respond to a higher number of customer contacts with an increased average call time due to administrative processes involved in creating new customer accounts, performing credit checks and a greater number of contracts with customers
- changes in occupancy are likely to be more frequent than changes in property ownership which would result in additional meter readings
- an increase in the cost of reading meters as tenants more often move outside the normal meter-reading cycle which would diminish the economies of scale gained from reading meters sequentially
- increased costs of retrofitting separate metering for required for multi-customer premises

- additional cost relating to a likely increase in debt recovery activities, as recovery of debt would not be enforced by being attached to a property title (ie, ultimately an outstanding amount is tied to a property and is generally fully settled when a property changes hands)[20]
- cost of increased debt write off in the case of account arrears as essential services cannot be withdrawn without public health implications
- option may result in an inconsistency between governing legislation (eg, Hunter Water Act 1991, section 36 and section 40) and subordinate instruments (ie, the operating licence) giving rise to costs from changing legislation and related instruments, and
- extending the obligation to 'any person' is a significant change from the existing provisions that relate only to property owners.

Benefits:

Option B would provide greater certainty of supply for WIC Act licensees, which may lead to efficiencies arising from increased competition. We note however that, to date, Hunter Water has successfully negotiated supply contracts with WIC Act licensee customers.

Option C:

Costs:

Costs may arise for Hunter Water as the obligation to provide services would likely have an effect when negotiating the terms and conditions for supply with WIC Act licensees, however this can be considered in the nature of transfer which would have no net effect on the whole community of NSW.

There may be an additional cost relating to a likely increase in debt recovery activities, as recovery of debt would not be enforced by being attached to a property title (ie, ultimately an outstanding amount is tied to a property and is generally fully settled when a property changes hands).

Hunter Water stated that currently, Hunter Water is able to negotiate appropriate security and liability conditions in Utility Services Agreements, however a WIC Act licensee may not be willing to negotiate such terms if it perceives Hunter Water to be obligated to provide services. Hunter Water further stated that, whilst the financial viability tests in the WIC Act licensing process provide some mitigation bad debt risk, the introduction of legislation covering last resort arrangements means that financial viability remains a risk.[21]

We note Option C is not a pure application of the foreclosure principle, as Hunter Water has effectively foreclosed the provision of services to 'any person', not just property owners and WIC Act licensees.

[20] Section 40 of the Hunter Water Act grants Hunter Water the right to recover unpaid contract charges from successors in property title.

[21] Hunter Water reply to IPART request for information, 9 December 2016.

Benefits:

Option B would provide greater certainty of supply for WIC Act licensees, which may lead to efficiencies arising from increased competition. We note however that, to date, Hunter Water has successfully negotiated supply contracts with WIC Act licensee customers.

Assessment

There are similar benefits arising from option B and C. However the costs arising from Option B outweigh the associated benefits such that Option B results in a net loss of social benefit. Option C does not generate a similar level of associated costs and therefore gives rise to a net social benefit.

The CBA assessment indicated therefore, on the basis of CBA alone, that Option C is preferred.

3.3 Timing of reviews

Each five yearly operating licence review costs Hunter Water and IPART around $0.7 million in total, mostly relating to labour and consultancy expenses.[22]

We considered an option to align the schedules of Hunter Water's operating licence and price reviews such that any changes to the operating licence can be considered immediately in the subsequent price review. We note that to achieve alignment an adjustment to the period of operating licence reviews can be made from 2022 (when an alignment would otherwise occur).

Preferred option

Make no change to the proposed licence review period.

Options

Option A (base case): No change to licence review period (ie, pricing review every four years; licence review every five years).

Option B: No change in the licence review period next five years (same as base case). From 2022, reduce the operating licence review period from five to four years, with licencing and pricing reviews alternating every two years.

Assumptions

There are some additional administrative costs incurred by bringing IPART's Hunter Water operating licence review forward by one year, but this would not occur until 2025-26, which is outside of the time period covered by this cost-benefit analysis (2017-18 to 2021-22).

22 Hunter Water reply to IPART request for information, 21 March 2017, and IPART estimates.

Qualitative and Quantitative Costs and Benefits

Cost: There would be an increase in the cost of more frequent IPART operating licence reviews over a longer period of time. This increase is estimated to be around 25% (or $200,000) in additional licence review related costs.[23] The first year that would be impacted by this change would be 2026 which is outside the scope of this cost-benefit analysis. For this reason we not provided a detailed quantitative analysis.

Benefit: There may be efficiency savings arising from harmonisation of the knowledge of new or amended licence obligations prior to the development of submissions to a later price review.

As there is no change proposed over the next five years, and given the uncertainty in the forecast amount of potential savings over a longer period of time, we are not able to quantify this benefit.

Assessment

For this issue, we considered the potential increased costs over a period of time that was longer than the usual licence period of five years. We also recognised the unquantifiable benefits associated with Option B including potential efficiency savings and better regulatory outcomes from aligned operating licence and pricing reviews. However, given the unquantifiable nature of these benefits we consider that the costs of Option B outweigh the potential benefits.

The CBA assessment indicated therefore, on the basis of CBA alone, that the base case is preferred.

23 Calculated as (5 years /4 years)-1 x cost of review (IPART estimate: $300,000 and Hunter Water estimate of $500,000 x 25%, or $200,000 in 2015-16 dollars).

4 Water Conservation

4.1 System yield

System yield is the calculation of how much water a utility's system can generate; for example, the yield that the Lower Hunter storages can supply is an average of 75 billion litres of water each year. The current Hunter Water operating licence does not contain provisions requiring the calculation of system yield. Hunter Water does, however report system yield.[24]

System yield is reported in the Lower Hunter Water Plan and is used to inform DPI Water in managing regional water supply. The yield calculation is required in forecasting water availability and informing planning for meeting demands into the future.

We considered an option requiring Hunter Water to calculate and report on system yield using a methodology which is agreed under an MoU with DPI Water.

Preferred option

Hunter Water to calculate and report on system yield using a methodology which is agreed under an MoU with DPI Water.

Options

Option A (base case): Make no change to the licence.

Option B: Hunter Water to calculate and report on system yield using a methodology which is agreed under an MoU with DPI Water.

Assumptions

We assumed that an MoU is already required in another part of the licence.

Qualitative and Quantitative Costs and Benefits

Costs: No costs identified.

24 System yield is reported by Hunter Water in its annual *Compliance and Performance Report*.

Benefits:

Benefits include of Option B include:

- may enable funding of calculating and reporting of system yield activities in future pricing decisions
- assurance of ongoing yield calculations to inform DPI Water in regional water supply planning
- reporting of yield calculation would improve knowledge transfer giving rise to a benefit from continuity of yield date
- would support the ongoing regional management of water supply in the region into the future, and
- may improve consistency of licence with other utilities.

Assessment

Given the lack of cost and substantial potential benefits from requiring the reporting of system yield (Option B), the CBA assessment indicated, on the basis of CBA alone, that Option B is preferred.

4.2 Water conservation strategy

We considered an option of including a licence requirement for Hunter Water to prepare a water conservation strategy in relation to the system operating arrangements of water storage and transmission (ie, upstream of Hunter Water's water treatment plants).

A water conservation strategy would include

- identification and documentation of current water conservation components of existing operational procedures, and
- a process for:
  - identifying additional options for conserving water within system operating arrangements
  - comparing these options, and
  - selecting options for implementation.

Preferred option

Require Hunter Water to prepare a water conservation strategy for water conservation activities upstream of its water treatment plants.

Options

Option A (base case): Make no change to the licence.

Option B: Require Hunter Water to prepare a water conservation strategy for water conservation activities upstream of its water treatment plants.

Assumptions

We assume that there are already water conservation strategies in place and that Option B would relate mostly to formalising and documenting current practices.

Qualitative and Quantitative Costs and Benefits

Costs: There may be a minimal cost relating to documentation and reporting of current and future water conservation practices.

Benefits:

Benefits include of Option B include:

- increased transparency of water conservation activities
- documentation of current practices would improve knowledge transfer giving rise to a benefit from continuity of activities and projects, and
- may improve consistency of licence with other utilities.

Assessment

Given the relatively low costs and substantial potential benefits from adopting an water Conservation Strategy (Option B), the CBA assessment indicated, on the basis of CBA alone, that Option B is preferred.

4.3 Economic Level of Water Conservation

In 2015-16 Hunter Water spent around $5.0 million on water conservation activities. These activities include water efficiency measures, leakage management and recycled water use (excluding Kooragang Industrial Water Scheme).[25]

Hunter Water's current operating licence includes conditions relating to water demand management and the control of water loss from leakage.[26] The concept of Economic Level of Water Conservation (ELWC) incorporates water recycling and water efficiency activities (including demand management) and water leakage (within and downstream of its water treatment plant), in its definition. We examined options to include a requirement for Hunter Water to develop and implement an ELWC methodology in the licence.

Preferred option

Develop an Economic Level of Water Conservation methodology and then replace the Economic Level of Leakage and water conservation target (within and downstream of its water treatment plants), with a requirement in the licence to implement an Economic Level of Water Conservation.

25 Hunter Water reply to IPART request for information, 21 March 2017. Cost includes both operating and capital expenditure.

26 *Hunter Water Operating Licence 2012-2017*, conditions 3.1 and 3.2.

Options

Option A (base case): Leave operating licence conditions unchanged.

Option B: Replace the Economic Level of Leakage (ELL) and water conservation target with a requirement in the licence to develop an ELWC (this would not occur until the ELWC methodology is fully implemented).

Option C: Same conditions as Option B. In addition, link the ELWC provisions to the demand side measures identified in the Lower Hunter Water Plan (LHWP), as the primary mechanism for developing an optimal portfolio of demand and supply measures, to secure the region's water needs.

Assumptions

We assumed that any ELWC methodology would be applied to systems including and downstream of Hunter Water's water treatment plants only. Systems upstream of water treatment plants would be considered in Hunter Water's Water Conservation Strategy.

We relied on Hunter Water's best estimates of the likely cost of additional internal labour and note that, where required, Hunter Water obtained external economic advice.[27]

We further note that Hunter Water has participated on an interagency working group with Sydney Water Corporation (Sydney Water), and has an established ELL methodology and reporting process.[28]

Our analysis assumes that the Water Conservation Report[29] would include conservation projects undertaken in past 12 months and projects planned for the next reporting year (ie, not for the five-year term of the licence).

Qualitative and Quantitative Costs and Benefits

Benefits:

Potential qualitative benefits of adopting an ELWC (Option B) include:

- the elimination of risk that Hunter Water is inefficiently allocating resources towards achieving an arbitrary water conservation target
- a rigorous ELWC methodology that better reflects actual net benefits of water conservation projects and activities and reduces the scope for arbitrary targets being imposed on particular water conservation initiatives, and

27 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.
28 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.
29 It is proposed that Hunter Water's Operating Licence will require Hunter Water to submit an annual Water Conservation Report which reports on water conservation relating to the ELWC methodology.

- increased transparency around selection of candidate water conservation projects, through the publication of likely costs and benefits of water conservation activities (including external costs and benefits), and reporting on net benefits of particular initiatives.[30]

Option C may provide qualitative benefits arising from better regional water conservation targets. However these benefits are difficult to measure and quantify.

Hunter Water stated that activities involved in adopting an ELWC include:

- developing an ELWC approach, principles and methodology
- educating key personnel on how to apply the new ELWC method
- gathering of information on the costs and benefits of candidate projects
- applying the ELWC method to candidate projects across the business, and
- publishing a water conservation program.[31]

Hunter Water also stated that ELWC-related costs may decline through time following the publication of the first Water Conservation Report, as the organisation becomes familiar with the ELWC approach and information requirements. Hunter Water also acknowledged that there may be additional, incremental, costs arising over time from amendments to the ELWC method as the organisation gained practical experience. Given the uncertainty of forecasting these cost decreases and increases we assumed that these two changes would offset each other over the licence term.

Net Present Value analysis

Table 4.1 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost	-50,000	-50,000	-50,000	-50,000	-50,000
Benefit					
Net (cost)/benefit	**-50,000**	**-50,000**	**-50,000**	**-50,000**	**-50,000**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b and IPART calculations.

Table 4.2 Net Present Value (NPV) analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost	-222,316	-191,598	-172,308
Benefit			
Net present value	-222,316	**-191,598**	-172,308

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows Net Present Value (NPV) over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b and IPART calculations.

30 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.
31 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.

There were no material additional, incremental, quantifiable costs or benefits relating Option C. Hunter Water indicated that activities required by the LHWP are already undertaken by Hunter Water.[32]

Assessment

Our analysis shows there is a substantial quantifiable cost (the mid-range forecast is $191,598 over five years) associated with replacing the requirement in the licence for adopting an ELL and water conservation target with a requirement to adopt an ELWC (Option B, see Table 3.2). However this is a relatively modest amount compared with the cost of water conservation activities undertaken by Hunter Water overall ($5 million in 2016).[33]

There are qualitative benefits to be realised from the adoption of an ELWC, the most substantial of these being increased efficiency to be gained from considering a wider set of influences on water conservation decisions (ie, additional to demand management and leakage) that better reflect achievable actual net benefits. The impact of efficiency gains could be large given the level of cost associated with water conservation activities.

There are no substantial or measurable costs or benefits relating to Option C.

Given the relatively low costs and substantial potential benefits from adopting an ELWC (Option B), and the lack of measurable costs and benefits relating to Option C, the CBA assessment indicated, on the basis of CBA alone, that Option B is preferred.

32 Meeting with IPART and Hunter Water, 29 August 2016.
33 Email from Hunter Water, 18 October 2016.

5 Supply services and performance standards

5.1 Unfiltered water

Hunter Water customers situated between Chichester Dam and the Dungog water treatment plant are supplied with 'unfiltered water' (ie, water that has not been treated to a potable water standard) via the transfer pipeline from Chichester Dam to Grahamstown Dam.[34]

Unfiltered water supplied to customers represents around 0.15% of all water sourced from Chichester Dam, or 0.05% of all water sourced by Hunter Water. Hunter Water received around $60,000 in revenue from unfiltered water customers in 2015-16.[35] Hunter Water's current licence does not cover unfiltered water.

Hunter Water has developed non-standard customer contracts that set out the terms and conditions of supply and to note the quality (non-potable) of the water being supplied to these customers.

We considered ways to minimise the risk of these customers using unfiltered water for potable water uses. Both Hunter Water and NSW consider unfiltered water to be unsuitable for drinking purposes.

Preferred option

Make minor amendment to the drinking water conditions in Hunter Water's operating licence to include the use of unfiltered water for non-potable water purposes.

Options

Option A (base case): No change to the licence (ie, licence does not cover unfiltered water). Currently Hunter Water provides unfiltered water to 68 customers along the pipeline, of which only 13 have contracts.

Option B: Introduce licence conditions to cover unfiltered water with standards similar to the Australian Drinking Water Guidelines.[36]

Option C: Require Hunter Water and NSW Health to agree on the terms and conditions for the supply of unfiltered water in an MoU.

Option D: Make a minor amendment to the drinking water conditions in the licence to include the use of unfiltered water for non-potable water purposes only.

34 IPART, *Review of the Hunter Water Corporation Operating Licence Issues Paper*, May 2016, p 32.
35 Hunter Water reply to IPART request for information, 21 March 2017.
36 National Health and Medical Research Council, *Australian Drinking Water Guidelines (2011) – Updated November 2011*, November 2011.

Assumptions

Option B: For this option we assume that water supplied to these customers would meet the Australian Drinking Water Guidelines (ADWG).

Our analysis assumes that Hunter Water does not currently have the power to disconnect the supply to unfiltered water customers along the transfer pipeline, but that this power would exist under Option B. We also assume that Hunter Water would not construct alternative infrastructure for the supply of potable water to these customers under this option.

This Option relates to 55 unfiltered water customers who have not signed non-standard supply agreements with Hunter Water and therefore could be, and likely would be, (due to health concerns relating to the unsuitable use of water) disconnected. This would result in a cost of lost revenue to Hunter Water as these customers would no longer buy unfiltered water. This lost revenue is calculated as the unfiltered water price multiplied by an annual water demand of 28.3ML. This calculation is partially offset by assumptions that:

- the affected customers would tanker in half of water supply needed (ie, half of the volume would be sourced using standpipes) at the potable water usage charge of $2.25/kL.[37]
- half of the property owners install a 3,000L tank at approximately $1,500 each
- electricity cost relating to pumping water from a domestic tank to the home are $13.5 per week per customer,[38] and
- water cartage costs are $20.40/kL.[39]

Option C: Our analysis of Option C assumes that Hunter Water would not have the power to disconnect unfiltered water customers. Hunter Water stated that constructing alternative infrastructure to connect these customers to the potable water network would cost around $7.5m. This work would need to be funded by:

- the unfiltered water customers themselves (approximately $110,000 each), or
- Hunter Water by being considered commercially viable and recognised as a high priority area for connection within Hunter Water's area of operations, and cost of construction could then be passed through to the broader Hunter Water customer base through pricing, or
- Hunter Water by receiving a direction from the Minister under section 20N of the State Owned Corporations Act 1989 and a direction under section 16A of the Independent Pricing and Regulatory Tribunal Act 1992 to recover efficient costs of a non-commercial activity (see Appendix A), or
- Hunter Water by receiving a direction from the Government and a reimbursement of $7.5m through a Community Service Obligation.

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37 IPART has assumed that water use would half due to the increase in price from unfiltered to potable water, resulting in less demand and a change in use by customers.

38 Office of Water, *Water Management (General) Regulation 2011 - Regulatory Impact Statement*, September 2011, p 80, assumes $12 per household. We have inflated this amount to $13.50 to estimate 2015-16 dollars.

39 Office of Water, *Water Management (General) Regulation 2011 - Regulatory Impact Statement*, September 2011, p 79, assumes $18 per kL. We have inflated this amount to $20.40 to estimate 2015-16 dollars.

We note that the avoidance of these works does not represent an incremental benefit under Options B or C as they are also avoided under the base case.

Option D: Making a minor change to the drinking water clause only, to include a reference to both potable and non-potable water being supplied by Hunter Water would lead to Hunter Water meeting the requirements of the ADWG by providing the appropriate information to its customers that the water is not suitable for drinking.

This option is similar to the base case, with minor wording changes to specifically identify non-potable water, and would rely on the protections within the framework of the ADWG to manage this issue, along with clear and concise individual agreements with these unfiltered water customers.

Qualitative and Quantitative Costs and Benefits

Option B:

Cost: Hunter Water and NSW Health consider that unfiltered water is not potable. There is a health risk to people who consume this water. It is notable that much of the cost of supplying potable water is water cartage, as potable water would need to be transported from a potable water supply (eg, Gloucester) to customers' storage tanks. This cost would be borne by customers rather than Hunter Water which may raise ability to pay and equity issues with this option.

Benefit: Hunter Water would benefit from Option B by being able to maintain a management system which is compliant with ADWG and only supply potable water that meets the Guidelines. There would be an additional benefit of lowered exposure to liability from customers consuming unfiltered water.

The community would benefit from a reduced risk of negative health effects from the consumption of water that is not suitable for drinking purposes. We note the value of this benefit is difficult to quantify. There is an elevated risk of contamination from the transfer of water from mains to truck and then to tank, however this risk is controlled by a NSW Health requirements that water carters keep records, and develop and adhere to a quality assurance program.[40]

Option C:

Cost: Under this option Hunter Water is at risk of not fulfilling its commitments to maintain a management system which is compliant with ADWG.[41] Hunter Water would continue to supply unfiltered water to customers along the transfer pipeline, which is identified as unsafe for drinking purposes. This continues an exposure to liability from non-compliance with operating conditions continues.

This option also continues the risk of negative health effects through consuming water not intended for drinking purposes. Hunter Water noted that this option is essentially the same as the base case except that Hunter Water is required to agree on Terms and Conditions in

40 See http://www.health.nsw.gov.au/environment/water/Pages/drinkwater-watercarters.aspx.
41 *Hunter Water Operating Licence 2012-2017*, Clause 2.1.1.

the MoU. Hunter Water further noted that this Option would not address the fundamental issue of the risk of customers consuming non-potable water.[42]

Benefit: There is a relatively small reduction in risk to customers as an MoU may result in better regulation of supply to customers (for example, by requiring an information campaign).

Option D:

This option could involve a minor cost to Hunter Water for providing additional educational material and/or information to unfiltered water customers regarding the use of non-potable water.

There is a benefit in lowering the risk of negative health effects from customers consuming non-potable unfiltered water.

Net Present Value analysis

Option B: Our analysis indicates there is a net quantitative cost for this option as set out in Tables 4.1 and 4.2.

Table 5.1 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (Hunter Water – lost revenue unfiltered)	-24,214	-25,346	-26,479	-26,479	-26,479
Cost (customers – water tank)	-42,000				
Cost (customers - water cartage)	-288,660	-288,660	-288,660	-288,660	-288,660
Cost (customers domestic pumping)	-19,656	-19,656	-19,656	-19,656	-19,656
Cost (customers – potable water)	-31,838	-31,838	-31,838	-31,838	-31,838
Benefit (customers unfiltered)	24,214	25,346	26,479	26,479	26,479
Benefit (Hunter Water – revenue potable)	31,838	31,838	31,838	31,838	31,838
Net (cost)/benefit	**-350,316**	**-308,316**	**-308,316**	**-308,316**	**-308,316**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 11.b; *Office of Water, Water Management (General) Regulation 2011 - Regulatory Impact Statement*, September 2011, pp 79 80; and IPART calculations.

42 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 11.c.

Table 5.2 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (Hunter Water – lost revenue unfiltered)	-114,562	-98,563	-88,258
Cost (customers – water tank)	-39,589	-36,684	-34,711
Cost (customers - water cartage)	-1,283,474	-1,106,134	-994,771
Cost (customers domestic pumping)	-87,397	-75,321	-67,738
Cost (customers – potable water)	-141,560	-122,000	-109,717
Benefit (customers - unfiltered)	114,562	98,563	88,258
Benefit (Hunter Water – revenue potable)	141,560	122,000	109,717
Net present value	-1,410,460	**-1,218,139**	-1,097,220

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 11.b; Office of Water, *Water Management (General) Regulation 2011 - Regulatory Impact Statement*, September 2011, pp 79 80; and IPART calculations.

We were not able to quantify costs or benefits relating to Option C or Option D, but expect that they would be small.

Assessment

All options provide net benefits greater than the base case. Option B would help address the issue of the risk of negative health effects through consuming water not intended for drinking purposes. However this benefit comes at a substantial related cost.

Option C provides a small benefit (ie, similar to the base case, but with terms relating to supply contained in an MoU with NSW Health), but at a substantial cost (ie, the risk of unfiltered being used as drinking water).

Option D offers the greatest benefit (ie, information provided to customers that may result in better awareness of safe uses for unfiltered water) when compared to its related cost (ie, the cost of educational and/or information materials and the risk of unfiltered being used as drinking water).

The CBA assessment indicated therefore, on the basis of CBA alone, that Option D is preferred.

5.2 NSW Health's role in water quality management

5.2.1 Condition 2.1.4

Currently, Hunter Water's operating licence, condition 2.1.4 states (emphasis added):

> Hunter Water must obtain NSW Health's *approval* for any significant changes proposed to be made to the Drinking Water Quality Management System before implementing or carrying out its activities in accordance with them.

We considered other options for addressing NSW Health's powers over the safety of recycled water supply.

Preferred option

No change be made to condition 2.1.4 of Hunter Water's operating licence.

Options

Option A (base case): Maintain wording of licence condition 2.1.4 which requires NSW Health's 'approval' for any significant changes to the Drinking Water Quality Management System (DWQMS).

Option B: Change licence condition 2.1.4 to require any 'significant' changes to the DWQMS to be 'to the satisfaction of NSW Health'.

Option C: Remove licence condition 2.1.4.

Assumptions

Our analysis assumes that Hunter Water's practices would remain unchanged relative to the base case, as would the requirements necessary to demonstrate full compliance.

The analysis of Option C further assumes that NSW Health establishes a compliance regime under the *Public Health Act 2010*, and IPART removes audit requirements for drinking water and recycled water from the operating licence (as per section 4.4). We also note that this option would not contravene the *Public Health Act 2010* exemption from section 25(1) under section 25(3).[43]

Qualitative and Quantitative Benefits

Option B: The main benefit arising from this option is the alignment of wording in the operating licence with NSW Health's authority (noting that NSW Health is not an approval authority for Hunter Water's operations).

We note that Hunter Water expects, regardless of any change in the licence, to continue its current approach of involving NSW Health when developing and implementing substantial changes to its management systems to ensure that outcomes are mutually acceptable.[44]

Option C: Our qualitative analysis suggests that qualitative outcomes would be similar under both the base case and Option C, given that both an appropriate compliance regime would exist under either option.[45]

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43 The *Public Health Act 2010*, section 25(1) states "A supplier of drinking water must establish, and adhere to, a quality assurance program that complies with the requirements prescribed by the regulations". Section 25(3) of the same Act states "The Chief Health Officer may, by notice in writing, exempt a supplier of drinking water or class of suppliers from subsection (1) if the Chief Health Officer is satisfied that the supplier, or class of suppliers, is subject to other appropriate licensing or other regulatory requirements".

44 Hunter Water reply to IPART request for information, 7 September 2016, worksheets 2.b and 2.c.

Net Present Value analysis

Table 5.3 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (NSW Health)	-5,000	-5,000	-5,000	-5,000	-5,000
Benefit (Hunter Water)	5,000	5,000	5,000	5,000	5,000
Net (cost)/benefit	**-**	**-**	**-**	**-**	**-**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2.c and IPART calculations.

Table 5.4 NPV analysis of cash flows of Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (NSW Health)	-22,232	-19,160	-17,231
Benefit (Hunter Water)	22,232	19,160	17,231
Net present value	-	**-**	-

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2.c and IPART calculations.

Assessment

Our analysis indicates there is no net benefit arising from Option B or Option C (ie, that there is no net difference in costs or benefits if IPART or NSW Health undertake activities related to this clause).

The CBA assessment indicated therefore, on the basis of CBA alone, that the preferred option is that no change be made to the licence.

5.2.2 Condition 2.2.4

Currently, Hunter Water's operating licence, condition 2.2.4 states (emphasis added):

> Hunter Water must obtain NSW Health's *approval* for any significant changes proposed to be made to the Recycled Water Quality Management System before implementing or carrying out its activities in accordance with them.

This requires the approval of NSW Health before a significant change can be made to the Recycled Water Quality Management System (RWQMS). We considered other options for addressing NSW Health's powers over the safety of recycled water supply.

Preferred option

No change be made to condition 2.2.4 of Hunter Water's operating licence.

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45 There are quantitative savings (ie, benefits) associated with Option C for Hunter Water. These benefits arise from IPART costs not being passed through to the utility via Section 18D of the *Hunter Water Act 1991* which requires Hunter Water to pay Treasury the cost involved with carrying out the operational audit. These savings represent a transfer however as they are offset by the additional cost of audit that will be borne by NSW Health.

Options

Option A (base case): Maintain wording of licence condition 2.2.4 which requires NSW Health's 'approval' for any significant changes to the RWQMS.

Option B: Change licence condition 2.2.4 to require any significant changes to the RWQMS to be 'to the satisfaction of NSW Health'.

Option C: Remove licence condition 2.2.4.

Assumptions

Our analysis assumes that Hunter Water's practices would remain unchanged relative to the base case, as would the requirements necessary to demonstrate full compliance.

The analysis of Option C further assumes that NSW Health establishes a compliance regime under the *Public Health Act 2010*, and that IPART removes audit requirements for drinking water from the operating licence (as per section 4.4).

Qualitative and Quantitative Benefits

Option B: The main benefit arising from this option is the alignment of wording in operating licence with NSW Health's authority (noting that NSW Health is not an approval authority for Hunter Water's operations).

We note that Hunter Water expects to continue its current approach of involving NSW Health when developing and implementing significant changes to its management systems to ensure that outcomes are mutually acceptable.[46]

Option C: Our qualitative analysis suggests that qualitative outcomes would be similar under both the base case and Option C, given that both IPART and NSW Health are capable of providing an appropriate compliance regime.

There are quantitative savings (ie, benefits) associated with Option C for Hunter Water. These benefits arise from IPART costs not being passed through to the utility via section 18D of the *Hunter Water Act 1991* which requires Hunter Water to pay Treasury "the cost (as certified by the Tribunal) involved in and in connection with carrying out the operational audit of the Corporation". However these savings are offset by the additional cost of audit that would be borne by NSW Health (see Tables 4.11 and 4.12).

46 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 3.b.

Net Present Value analysis

Table 5.5 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (NSW Health)	-5,000	-5,000	-5,000	-5,000	-5,000
Benefit (Hunter Water)	5,000	5,000	5,000	5,000	5,000
Net (cost)/benefit	**-**	**-**	**-**	**-**	**-**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 3.c and IPART calculations.

Table 5.6 NPV analysis of cash flows of Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (NSW Health)	-22,232	-19,160	-17,231
Benefit (Hunter Water)	22,232	19,160	17,231
Net present value	-	**-**	-

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 3.c and IPART calculations.

Assessment

Our analysis indicates no net benefit from Option B or Option C (ie, that there is no net difference in costs or benefits if IPART or NSW Health undertake activities related to this clause).

The CBA assessment indicated therefore, on the basis of CBA alone, that the preferred option is that no change be made to the licence.

5.2.3 Conditions 2.1.3 and 2.1.4

Currently, conditions 2.1.3 and 2.1.4 of Hunter Water's operating licence require Hunter Water to notify IPART and gain the approval of NSW Health before implementing or carrying out any 'significant changes' to the Drinking Water Quality Management System (DWQMS).

No guidance currently exists regarding the meaning of 'significant changes' in the licence. We considered options for further defining the meaning of 'significant changes'.

Preferred option

No change be made to conditions 2.1.3 and 2.1.4 of Hunter Water's operating licence.

Options

Option A (base case): Do not define the meaning of 'significant changes'.

Option B: Define the meaning of 'significant changes' in licence.

Option C: Require the meaning of 'significant changes' to be defined in the MoU between Hunter Water and NSW Health.

Assumptions

The analysis relies heavily on the scope of the definition of 'significant changes'. In reaching a recommendation we assumed the definition of 'significant changes' to be similar in scope to currently accepted practice.

Qualitative and Quantitative Benefits

Option B: There is no incremental quantitative cost in defining 'significant changes' in the licence. Ongoing compliance costs depend on how broad or narrow the definition of 'significant changes' would be in the licence, and the extent to which that would vary from current practice.

Hunter Water noted in its reply to our information request that it may not be possible to achieve consensus among IPART, NSW Health and Hunter Water on the definition of in time for issue of the new Operating licence.[47]

We also note that there is a risk (ie, a cost) associated with the inflexibility to changes in circumstances and/or NSW Health's preferences arising from 'locking in' a definition of 'significant changes'. The inflexibility arises from the requirement for the Governor's approval to change a definition in the Operating licence.

Additionally, NSW Health and Hunter Water may incur additional administrative costs if the definition of 'significant changes' incorporates a broader range of changes than are currently accepted as significant. This is considered unlikely as both parties consider the current practice to be appropriate.

This option has a non-monetary benefit of clearer expectations and reduced ambiguity for compliance audits. However, this benefit may not be realised as interpretational issues have not arisen during compliance audits of the 2012-2017 operating licence.

NSW Health and Hunter Water may make administrative cost savings if a narrower definition of 'significant changes' is adopted. This is also considered unlikely as both parties consider current practice to be appropriate.[48]

Option C: This option also has a qualitative benefit of clearer expectations and reduced ambiguity for audit of compliance (similar to Option B), however, interpretational issues have not arisen during compliance audits of the 2012-2017 Operating licence.

47 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2A.b. and 2A.c.
48 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2A.b. and 2A.c.

In defining 'significant changes' in an MoU , which can be changed by agreement between Hunter Water and NSW Health, Option C provides greater flexibility than Option B to make definitional changes across the term of the Operating Licence (ie, the Governor's approval is not required for change).

Assessment

The costs and benefits relating to Option B and Option C are balanced. We note that one of the main determinates of relative cost or benefit is, in the context of the operating licence, how broad or narrow the scope of 'significant changes' is taken to be. We further note the benefits of clearer expectations and reduced ambiguity arising from a definition are offset by the risk imposed on stakeholders by the inflexibility of including a definition of 'significant changes' in the licence. There is more flexibility allowed under Option C than Option B.

For these reasons, and on balance, The CBA assessment indicated that although Option C is preferable to Option B, on the basis of CBA alone, that the preferred option is that no change be made to the licence.

5.2.4 Condition 2.2.3 and 2.2.4

Currently, conditions 2.2.3 and 2.2.4 of Hunter Water's operating licence require Hunter Water to notify IPART and gain the approval of NSW Health before implementing or carrying out any 'significant changes' to the Recycled Water Quality Management System (RWQMS).

No guidance currently exists regarding the meaning of 'significant changes' in the licence. We considered options for further defining the meaning of 'significant changes'.

Preferred option

No change be made to conditions 2.2.3 and 2.2.4 of Hunter Water's operating licence

Options

Option A (base case): Do not define the meaning of 'significant changes'.

Option B: Define the meaning of 'significant changes' in licence.

Option C: Require the meaning of 'significant changes' to be defined in the MoU between Hunter Water and NSW Health.

Assumptions

The analysis relies heavily on the scope of the definition of 'significant changes'. In reaching a recommendation we assumed the definition of 'significant changes' to be similar in scope to currently accepted practice.

Qualitative and Quantitative Benefits

Option B: There is no incremental quantitative cost in defining 'significant changes' in the licence. Ongoing compliance costs depend on how broad or narrow the definition of 'significant changes' is in the licence, and the extent to which the definition would vary from current practice.

Hunter Water noted in its reply to our information request that it may not be possible to achieve consensus between IPART, NSW Health and Hunter Water on the definition of in time for issue of the new Operating Licence.[49]

We also note that there is a risk (ie, a cost) associated with the inflexibility to changes in circumstances and/or NSW Health's preferences arising from 'locking in' a definition of 'significant changes'. The inflexibility arises from the requirement for the Governor's approval to change a definition in the Operating licence.

Additionally, NSW Health and Hunter Water may incur additional administrative costs if the definition of 'significant changes' incorporates a broader range of changes than are currently accepted as significant. This is considered unlikely as both parties consider the current practice to be appropriate.

This option has a non-monetary benefit of clearer expectations and reduced ambiguity for compliance audit. However, this benefit may not be realised as interpretational issues have not arisen during compliance audits of the 2012-2017 operating licence.

NSW Health and Hunter Water may make administrative cost savings if a narrower definition of 'significant changes' is adopted. This is also considered unlikely as both parties consider current practice to be appropriate.[50]

Option C: This option also has a qualitative benefit of clearer expectations and reduced ambiguity for audit of compliance (similar to Option B, however, interpretational issues have not arisen during compliance audits of the 2012-2017 Operating Licence.)

In defining 'significant changes' in an MoU , which can be changed by agreement between Hunter Water and NSW Health, Option C provides greater flexibility than Option B to make definitional changes across the term of the Operating Licence (ie, the Governor's approval is not required for change).

Assessment

The costs and benefits relating to Option B and Option C are balanced. We note that one of the main determinates of relative cost or benefit is, in the context of the operating licence, how broad or narrow the scope of 'significant changes' is taken to be. We further note the benefits of clearer expectations and reduced ambiguity arising from a definition are offset by the risk imposed on stakeholders by the inflexibility of including a definition of 'significant changes' in the licence. There is more flexibility allowed under Option C than Option B.

49 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 3A.b. and 3A.c.
50 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 3A.b. and 3A.c.

For these reasons, the CBA assessment indicated, on the basis of CBA alone, that although Option C is preferable to Option B, the preferred option is that no change be made to the licence.

5.2.5 Conditions 2.1.2 and 2.2.2

Currently, conditions 2.1.2 and 2.2.2 of Hunter Water's operating licence require Hunter Water ensures that it's Drinking Water Quality Management System (DWQMS) and Recycled Water Quality Management System (RWQMS) are fully implemented and that all relevant activities are carried out, in accordance with the system, including 'to the satisfaction of NSW Health'.

No guidance currently exists regarding the meaning of 'to the satisfaction of NSW Health' in this licence condition. We considered options for further defining the meaning of 'to the satisfaction of NSW Health'.

Preferred option

No change be made to condition 2.1.2 and 2.2.2 of Hunter Water's operating licence.

Options

Option A (base case): Do not define the meaning of 'to the satisfaction of NSW Health'.

Option B: Define the meaning of 'to the satisfaction of NSW Health' in the licence.

Option C: Require the meaning of 'to the satisfaction of NSW Health' to be defined in the MoU with NSW Health.

Assumptions

The analysis relies heavily on the scope of the definition of 'to the satisfaction of NSW Health'. In reaching a recommendation we assumed the definition of 'to the satisfaction of NSW Health' to be similar in scope to currently accepted practice.

Qualitative and Quantitative Costs and Benefits

Option B: The costs and benefits of this issue are similar to those relating to the definition of 'significant changes' in conditions 2.1.3 and 2.1.4 of Hunter Water's operating licence. Defining the meaning of 'to the satisfaction of NSW Health' would result in an increase in regulatory requirements, and therefore compliance related costs. However the relative costs or benefits are dependent on how broad or narrow the definition in the licence, and the extent to which it would vary from current practice.

Hunter Water has stated that it and NSW Health have a strong, constructive working relationship and the need for additional regulatory intervention is not demonstrated.[51]

51 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2B.b. and 2B.c.

We also note that there is a risk (ie, a cost) associated with the inflexibility to changes in circumstances and/or NSW Health's preferences arising from 'locking in' a definition of 'to the satisfaction of NSW Health'. The inflexibility arises from the requirement for the Governor's approval to change a definition in the Operating licence.

Hunter Water noted in its reply to our information request that it may not be possible to achieve consensus among IPART, NSW Health and Hunter Water on the definition of in time for issue of the new Operating Licence.[52]

This option has a non-monetary benefit of clearer expectations and reduced ambiguity for audit of compliance. However, this benefit may not be realised as interpretational issues have not arisen during compliance audits of the 2012-2017 Operating Licence.

Option C: As with Option B, this option would result in an increase in regulatory requirements. Again, similar to Option C this option has a qualitative benefit of clearer expectations and reduced ambiguity for audit of compliance.

However, in defining 'to the satisfaction of NSW Health?' in an MoU , which can be changed by agreement between Hunter Water and NSW Health, Option C provides greater flexibility than Option B to make definitional changes across the term of the Operating Licence (ie, the Governor's approval is not required for change).

There were no material measurable quantitative costs or benefits related to Option B or Option C.

Assessment

The costs and benefits relating to Option B and Option C are balanced. We note that how broad or narrow the scope of 'to the satisfaction of NSW Health' as one of the main determinates of relative cost or benefit. We further note the benefits of clearer expectations and reduced ambiguity arising from a definition are offset by the risk imposed on stakeholders by inflexibility. There is more flexibility allowed under Option C than Option B.

For these reasons, the CBA assessment indicated, on the basis of CBA alone, that although Option C is preferable to Option B, the preferred option is that no change be made to the licence.

5.3 System Performance Standards

Hunter Water's annual expenditure directly relating to conforming to System Performance Standards (SPS) is around $150,000 per year. This expenditure includes data recording, extraction, processing and reporting but does not include:

- capital costs of information systems for data capture, processing and extraction
- establishment of process and procedures, and
- capital and operating expenditure to comply with performance requirements.[53]

52 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2B.b. and 2B.c.

SPS help ensure that customers receive a suitable level of service and are included in the current licence.[54] There are trade-offs between the standard of service provided by Hunter Water and the costs of providing that service. Since the current SPSs were introduced, Hunter Water's performance has remained within the fixed SPS thresholds by a significant margin.[55]

We considered changing SPS so that thresholds increase and/or decrease as the number of customers, water consumption, or number of water and wastewater connections increases and/or decreases.

Preferred option

Retain existing standards in the licence relating to System Performance Standards.

Options

Option A: (base case): Retain existing system performance standards in the operating licence.

Option B: Use a proportional basis (ie, a percentage basis) for the system performance standards in the operating licence so that the standards remain constant relative to increasing customer base.

Option C: Use a proportional basis (ie, a percentage basis) for the system performance standards in the operating licence and have excluded events (ie, events outside Hunter Water's control such as major weather events).

Option D: Same requirements as Option C and add an additional reporting requirement at the end of each financial year applying the SAIDI, SAIFI and Major Day Event thresholds. The definitions are based on *IEEE Standard 1366-2012*.

Assumptions

Option B: We assumed a 1% to 1.2% annual customer growth factor, based on historical rates of growth for Hunter Water, compounding over five years, which would increase the threshold set in individual performance standards in line with water consumption, water and wastewater connections growth and/or population growth. This would ensure that the underlying threshold stays constant, relative to total customer base, over time.[56]

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53 Hunter Water reply to IPART request for information, 21 March 2017.

54 *Hunter Water Act 1991, s 13(1)(c).*

55 *Hunter Water Operating Licence 2012-2017*, conditions 4.2.2, 4.2.3 and 4.2.4. An amendment was made to the SPS contained in Hunter Water's operating licence on 16 July 2010, as published in the NSW Government Gazette, No 92, 16 July 2010. Hunter Water's performance against service standards is published in annual reports (audited by IPART) and can be found at https://www.hunterwater.com.au/About-Us/Our-Organisation/Governance/Regulatory-Reporting.aspx.

56 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.b.

Option D:

Option D is similar to Option B except that would use Major Event Day (ie, extreme weather events) thresholds that are clearly defined in *IEEE Standard 1366-2012*.

We assumed Hunter Water proposes analysing, testing and reporting the application of these new indicators in the context of the water industry (in conjunction with other metropolitan water utilities and IPART). Other assumptions include:

- No formal reporting requirement would be included in the upcoming operating licence.
- The indicators would be developed and refined during the next operating licence period.
- That Hunter Water would report to IPART by 30 June 2019 detailing proposed water continuity measures and results based on applying historical data. The report would include proposed methodology, definitions and settings.
- A robust process would involve discussions between Hunter Water, Sydney Water, Central Coast and IPART.

Assumed costs relating to this option are:

- The input data required for the indicators is currently recorded, however, it is not readily extractable in the required daily form.
- ICT costs of approximately $3,500 (35 hours for 1 employee) would be incurred to extract the six years of data required for use in informing further discussion and development of the indicators.
- Other internal labour costs of approximately $35,000 are required to adapt and develop the indicators for use in the water industry, including determining the appropriate major event threshold.
- The cost in information system changes are $20,000 in both 2017-18 and 2018 19.

Hunter Water stated that increasing the performance standard thresholds for water pressure, water continuity or wastewater overflow would not have a measurable impact on likely capital expenditure. Hunter Water does not expect to breach existing performance standards and thresholds over the next five years, excluding extreme or major uncontrollable events.[57]

Qualitative and Quantitative Costs

Option B: There are no material qualitative costs relating to this option.

Option C: Hunter Water stated that while there is merit in excluding major uncontrolled events (ie, major storms, earthquakes, and floods), it is difficult to define an independent and objective measure for 'excluded events'.[58]

Option D: More robust reporting would increase the risk that Hunter Water may not meet a particular standard, and likely lead to changes in practices and improvements in customer service levels (see below).

57 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.b.
58 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.c.

Qualitative and Quantitative Benefits

Option B: There may be savings for Hunter Water and customers in lower capital and operating expenditure as increasing the performance standard thresholds:

- reduces the risk of operating licence breaches, and
- defers expenditure targeted at meeting particular performance standards.

Hunter Water could not quantify the magnitude of these potential savings.[59]

Option C: As the current system performance standards are designed for once in twenty year events, including major weather events, major events are already considered in current standards and there is no incremental benefit relating to this option. Enforcement action for a breach of system performance standards caused by one or more extreme weather events per year would take into account factors outside Hunter Water's control.

Option D: If a robust reporting regime leads to appropriate new indicators, then the benefits could include:

- improved indication of Hunter Water's day-to-day performance and impact on customers
- improved comparability of performance across utilities (but only if indicators are adopted by other utilities)
- driving improvements in performance to meet more relevant targets for customer service levels
- potential for future development of incentive schemes
- improved understanding of the practical application of these indicators in the water industry
- development of robust, well-designed, meaningful measures that could potentially replace existing performance standards, and
- the avoided cost of reporting against non-robust measures.[60]

Net Present Value analysis

Option D:

Table 5.7 Quantitative costs and benefits relating to Option D (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (data extraction)	-3,500				
Cost (indicator development)	-35,000				
Cost (information technology)	-20,000	-20,000			
Benefit					
Net (cost)/benefit	**-58,500**	**-20,000**			

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 10.d and IPART calculations.

59 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.b.
60 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.d.

Table 5.8 NPV analysis of cash flows of Option D (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (data extraction)	-3,299	-3,057	-2,893
Cost (indicator development)	-32,991	-30,570	-28,926
Cost (information technology)	-37,155	-33,795	-31,555
Benefit	-	-	-
Net present value	-73,445	**-67,422**	-63,373

Note: There were no substantial or measurable benefits relating to Option D. Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 10.d and IPART calculations.

Assessment

We note that for Option B and C qualitative and quantitative costs and benefits did not exist or were difficult to determine. For Option D there were identifiable qualitative benefits that were offset by substantial quantitative costs. Given the lack of measurable net benefits relating to Options B, C and D the CBA assessment indicated, on the basis of CBA alone, that the base case is preferred. We consider there is room for review of possible changes to the current standards.

5.4 Drinking water quality

The operating licence contains conditions in clause 2.1 that require the quality of drinking water to meet public health standards. Hunter Water's costs directly relating to compliance activities for this condition are around $45,000 per year.[61] IPART considered options including moving the drinking water compliance regime from the operating licence to NSW Health's responsibility.

Preferred option

Retain the current drinking water quality provisions from the existing licence.

Options

Option A (base case): Retain the current drinking water quality provisions in the existing licence.

Option B: NSW Health establishes compliance regime under the *Public Health Act 2010*, and IPART removes audit requirements for drinking water from the operating licence.

Option C: NSW Health establishes compliance regime under the *Public Health Act 2010*, and IPART removes audit requirements for drinking water from the operating licence (the same

61 *Hunter Water Operating Licence 2012-2017*, condition 2.1.1 requires Hunter Water to maintain a Management System that is consistent with Australian Drinking Water Guidelines, which are published by the National Health and Medical Research Council and the Natural Resource Management Ministerial Council.

as Option B above) *AND* NSW Health audits and reports (publicly and to IPART) on Hunter Water's compliance with its drinking water Quality Management Plan.

Assumptions

For our analysis we assumed that:

- NSW Health can obtain the same market prices from external auditors as IPART and can achieve economies of scope by using the same auditors state-wide, whereas IPART can achieve economies of scope by only covering Sydney Water, Hunter Water, WaterNSW and covering other operating licence topics (eg, assets, customers).
- The average cost of auditing drinking water quality clauses is based on an historical audit cost per clause and all clauses were assumed to require equal auditing effort.
- IPART drinking water Quality Management System audit costs are 50% of overall audit costs.
- That the cost to NSW Health of introducing an audit regime includes labour costs of approximately $35,000 required to adapt and develop the audit management procedures and processes.
- The additional cost of reporting publicly and to IPART Hunter Water's drinking water Quality Management Plan compliance is $3,500 per year.[62]

Qualitative and Quantitative Benefits

Option B and Option C: Hunter Water stated that the costs of this option would be the same as the base case assuming NSW Health would apply similar rigour and audit processes as IPART. There may also be a small additional administrative cost in managing participation in separate water quality and operational audits. NSW Health submitted that it does not currently have a formal audit process and would need to develop resources for this function. We consider that this involves a transfer of cost from one area of government to another and therefore does not have a net incremental social impact compared with the base case.[63]

For Option C we consider there is a qualitative benefit to the public arising from additional confidence and assurance in reporting of Hunter Water's compliance with its drinking water Quality Management Plan.

62 NSW Health reply to IPART request for information, 13 September 2016, worksheet 1.b, Hunter Water reply to IPART request for information, 7 September 2016, worksheet 1.b and IPART estimates.

63 A regulatory mechanism does not currently exist for NSW Health's costs to be passed through to Hunter Water, resulting in a cost saving to Hunter Water. This saving is offset by an equal cost increase for NSW Health. We note that the cost of audits conducted by IPART are passed on to Hunter Water through section 18D of the *Hunter Water Act 1991* which requires Hunter Water to pay NSW Treasury "the cost (as certified by the Tribunal) involved in and in connection with carrying out the operational audit of the Corporation".

Net Present Value analysis

Option B:

Table 5.9 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (audit activities NSW Health)	-45,817	-45,817	-45,817	-45,817	-45,817
Cost (audit development)	-35,000				
Benefit (audit activities IPART)	45,817	45,817	45,817	45,817	45,817
Net (cost)/benefit	**-35,000**				

Source: NSW Health reply to IPART request for information, 13 September 2016, worksheet 1.b and IPART calculations and estimates.

Table 5.10 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (audit activities NSW Health)	-203,717	-175,569	-157,893
Cost (audit development)	-32,991	-30,570	-28,926
Benefit (audit activities IPART)	203,717	175,569	157,893
Net present value	-32,991	**-30,570**	-28,926

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: NSW Health reply to IPART request for information, 13 September 2016, worksheet 1.b and IPART calculations and estimates.

Option C:

Table 5.11 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (audit activities NSW Health)	-55,000	-55,000	-55,000	-55,000	-55,000
Cost (audit development)	-35,000				
Cost (additional reporting)	-3,500	-3,500	-3,500	-3,500	-3,500
Benefit (audit activities IPART)	55,000	55,000	55,000	55,000	55,000
Net (cost)/benefit	**-38,500**	**-3,500**	**-3,500**	**-3,500**	**-3,500**

Source: NSW Health reply to IPART request for information, 13 September 2016, worksheet 1.c and IPART calculations and estimates.

Table 5.12 NPV analysis of cash flows of Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (audit activities NSW Health)	-244,547	-210,758	-189,539
Cost (audit development)	-32,991	-30,570	-28,926
Cost (additional reporting)	-15,562	-13,412	-12,062
Benefit (audit activities IPART)	244,547	210,758	189,539
Net present value	-48,553	**-43,982**	-40,987

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: NSW Health reply to IPART request for information, 13 September 2016, worksheet 1.c and IPART calculations and estimates.

Assessment

Our quantitative analysis suggests that Option B and C both result in a transfer of recurring audit cost from Hunter Water to NSW Health, which provides no net social benefit, and an initial cost incurred by NSW Health in developing its own internal processes to support the audit regime. Option C results in an additional recurring cost for NSW Health relating to additional reporting requirements compared to the base case (Option A) and Option B.

Our qualitative analysis shows that there is no incremental net benefit arising from Option B and a qualitative benefit arising from Option C, which we consider does not offset the quantitative net costs of this Option.

Given the net cost attached to both Option B and Option C, the CBA assessment indicated, on the basis of CBA alone, that the preferred option is that no change be made to the licence.

6 Organisational systems management

6.1 Asset Management System

Condition 4.1 in Hunter Water's current operating licence requires that Hunter Water maintains, implements, carries out activities relating to, and notifies IPART of any changes to, an asset management system. The asset management system (AMS) must be consistent with either the BSI PAS 55:2008 (PAS 55) *Asset Management Standard*, the Water Services Association of Australia's Aquamark benchmarking tool, or another asset management standard agreed to by IPART. IPART agreed to a transition of the AMS to be consistent with international standard ISO 55001, and Hunter Water has stated that the AMS currently meets this standard.[64]

ISO 55001 is a framework for an asset management system that is published by the International Organisation for Standardisation; an international standard setting body comprised of representatives from member nations' standards organisations. The ISO 55001 framework is used to manage the lifecycle of assets, from acquisition to decommission.

We considered options to require the AMS to be consistent with, or to be certified as compliant with, ISO 55001.

Preferred option

Amend licence to require an Asset Management System to be consistent with International Organization for Standardisation's ISO 55001:2014 *Asset Management System Requirements*, or other standards approved by IPART, by 31 December 2017, and for consistency to be maintained.

Options

Option A (base case): Continue the current requirement to maintain an AMS.

Option B: Change the requirement for an AMS to be consistent with ISO 55001 (but without a requirement for ISO certification) by 31 December 2017.

Option C: Change the requirement for an AMS to be consistent with ISO 55001 in licence by 31 December 2017 and certified by 1 July 2018.

64 On 21 July 2014, IPART wrote to Hunter Water advising that the Tribunal, at its meeting on 9 July 2014, approved Hunter Water's proposal to implement a new AMS consistent with ISO 55001. Hunter water stated the AMS is now consistent with ISO 55001, see Hunter Water reply to IPART request for information, 18 October 2016.

Assumptions

Option B and C: The capital cost required to develop an Asset Management System consistent with ISO 55001, and integrated with Hunter Water's Business Management Systems, is $1 million. This cost has already been met by Hunter Water and for the purpose of this CBA is considered a sunk cost and not included in our analysis.[65]

Option C: We assume that:

- a certification audit occurs in 2017-18
- the cost of certification would be similar to certification costs that Hunter Water has already incurred relating to three management systems already certified (in 2016-17 certification costs ranged from $11,475 to $15,990 per system)
- surveillance audits occur annually between certification audits
- audit cost estimates exclude Hunter Water labour costs
- the recertification audit in 2020-21 (three yearly) is not capitalised
- that certification would eliminate need for an IPART audit of certified system, and
- avoided cost of IPART audit activity is based on a four-year average cost per clause audited and average number of AMS clauses audited per year.[66]

Qualitative and Quantitative Costs and Benefits

Option B: We note that Hunter Water has already proposed, and IPART accepted, transition of the AMS to be consistent with ISO 55001, and that the AMS is currently consistent with this standard.[67] Therefore we consider there is no cost or benefit attached to this option.

There is a qualitative benefit, greater than the base case, to the community arising from the assurance of having Hunter Water's AMS consistent with ISO 55001.

Other advantages of an AMS consistent with ISO 55001 include:

- enhanced service levels
- reduced risk of asset failure
- asset cost savings, and
- audit cost savings in the longer term.[68]

There may be potential cost increases in the short term during audits to check 'consistency' with standards, which may not occur where certification is gained. With this option, decisions regarding the most efficient way to demonstrate consistency (ie, either through certification or through audit) can be made by Hunter Water.

65 Hunter Water reply to IPART request for information, 18 October 2016.
66 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c.
67 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.b.
68 IPART, *Cost Benefit Analysis of proposed changes to Sydney Water Corporation's Operating Licence*, *Draft Report*, February 2015, p 15.

Option C: This is option would require an initial certification audit of the AMS in 2017-18 which is forecast to cost $15,000. Annual surveillance and re certification audit activities are forecast to be $5,000 in 2018-19, 2019-20 and 2021 22, and 15,000 in 2020-21 (re-certification audits occur every three years).[69]

There is a potential benefit, incremental to Option B, arising from the avoided costs of IPART operational audits of the AMS clauses. However for the first three years of the licence period, a benefit does not exist, as IPART would continue to monitor AMS clauses to establish the impact of certification on Hunter Water's internal systems.

Net Present Value analysis

Option C:

Table 6.1 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (initial certification)	-15,000				
Cost (annual and recurring certification)		-5,000	-5,000	-15,000	-5,000
Benefit (reduced audit cost)				10,000	10,000
Net (cost)/benefit	**-15,000**	**-5,000**	**-5,000**	**-5,000**	**5,000**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c, Hunter Water reply to IPART request for information, 18 October 2016 and IPART calculations.

Table 6.2 NPV analysis of cash flows of Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (initial certification)	-14,139	-13,102	-12,397
Cost (annual and recurring certification)	-26,145	-21,922	-19,308
Benefit (reduced audit cost)	17,001	13,793	11,854
Net present value	-23,283	**-21,231**	-19,851

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c, Hunter Water reply to IPART request for information, 18 October 2016 and IPART calculations.

Assessment

The CBA assessment indicated that for Option B, there is a benefit to the community from the assurance that Hunter Water's AMS is consistent with the quality standards of ISO 55001.

For Option C our analysis forecasts a net cost relating to certification of the AMS to ISO 55001 and that after the licence period there would be an ongoing net benefit of around $5,000 per year.

69 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c.

The CBA assessment indicated however, on the basis of CBA alone, that Option B is preferred.

6.2 State of the Assets Report

The Reporting Manual requires Hunter Water to provide a biennial State of the Assets Report. The activities relating to each report cost around $26,000. Hunter Water noted that reporting cost depends on the level of detail specified in the Reporting Manual and may vary upwards to $40,000 per report.[70]

We considered the costs and benefits relating to this report.

Preferred option

Remove the requirement in Hunter Water's Reporting Manual for 'State of the Assets' reporting.

Options

Option A (base case): Continue to include the requirement for biennial State of the Assets reporting in the Reporting Manual.

Option B: Reduce the required frequency of the State of the Assets reporting in the Reporting Manual to coincide with price reviews (ie, four-yearly).

Option C: Remove requirement for State of the Assets reporting in the Reporting Manual.

Assumptions

Our analysis makes the following assumptions:

- labour costs relating to the State of the Assets report consist of base pay rate plus on-costs and overheads
- report authoring and internal review takes 150 hours and 12 hours respectively.
- labour cost forecasts are rounded to nearest thousand dollars.

Qualitative and Quantitative Costs and Benefits

The State of the Assets report was introduced as result of Hunter Water's last licence review in 2012. Qualitative benefits recognised at the time were that the State of the Assets report may:

- lead to more efficient investment and asset management practices over time, and
- provide transparent and readily accessible information to regulators.[71]

70 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 9.b.
71 IPART, *Cost Benefit Analysis of proposed changes to Hunter Water Corporation's Operating Licence*, April 2012, pp 23-24.

The benefits from the Cost Benefit Analysis relating to the last licence period have not materialised as IPART does not rely on the State of the Assets reporting for pricing reviews.

Benefits relating to improvements in asset management practices and reporting would also be achieved by the maintenance of an AMS consistent with the ISO 55001 standard. Therefore there is no loss (ie, cost) relating to removing the requirement for State of the Assets reporting.

Net Present Value analysis

Option B:

Table 6.3 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (Labour – report once per licence period)		-26,000			
Benefit (Labour – biennial report)		26,000		26,000	
Net (cost)/benefit		**-**		**26,000**	

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 9.b and IPART calculations.

Table 6.4 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (Labour – report once per licence period)	-23,794	-21,224	-19,534
Benefit (Labour savings – biennial report)	46,222	39,761	35,678
Net present value	22,428	**18,538**	16,144

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 9.b and IPART calculations.

Option C:

Table 6.5 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost					
Benefit (Labour savings – biennial report)		26,000		26,000	
Net (cost)/benefit		**26,000**		**26,000**	

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 9.c and IPART calculations.

Table 6.6 NPV analysis of cash flows of Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost			
Benefit (Labour – biennial report)	46,222	39,761	35,678
Net present value	46,222	**39,761**	35,678

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 9.c and IPART calculations.

Assessment

Our analysis found minimal qualitative net cost or benefit arising from either Option B or Option C. There was however a quantitative net benefit (in the mid-sensitivity range) of $18,538 for Option B and a net benefit of $39,761 for Option C. The CBA assessment indicated therefore, on the basis of CBA alone, that Option C is preferred.

6.3 Environmental Management System and Quality Management System

To manage to manage risks to the environment and quality of its business and service delivery the current licence requires Hunter Water to develop and implement an:

- Environmental Management System (EMS) certified to Australian/New Zealand Standard AS/NZS ISO 9001:2016 *Quality management systems – Requirements,* and
- Quality Management System (QMS) certified to Australian/New Zealand Standard AS/NZS ISO 14001:2016 *Environmental management systems – Requirements with guidance for use*.[72]

Or any other standard approved by IPART on request by Hunter Water.

Preferred option

Remove the requirement for certification of the EMS and QMS but retain a requirement for the EMS and QMS to be consistent with the Australian and New Zealand standards or other standards approved by IPART. Change the standard of consistency for the EMS from ISO14001:2004 to AS/NZS ISO 14001:2016 *Environmental management systems – Requirements with guidance for use* and the QMS from ISO9001:2008 to AS/NZS ISO 9001:2016 *Quality management systems – Requirements*.

Options

Option A (base case): Make no change to the licence.

Option B: Remove the requirement for certification of an EMS and/or QMS from the operating licence.

Option C: Remove the requirement for an EMS and/or QMS from the operating licence

72 *Hunter Water Operating Licence 2012-2017*, cl 6.2 and cl. 7.2.

Option D: Remove the requirement for certification of the EMS and QMS but retain a requirement for the EMS and QMS to be consistent with the International Standards Organisation standards or other standards approved by IPART. Change the standard of consistency for the EMS from ISO14001:2004 to AS/NZS ISO 14001:2016 *Environmental management systems – Requirements* with guidance for use and the QMS from ISO9001:2008 to AS/NZS ISO 9001:2016 *Quality management systems – Requirements*.

Assumptions

We assume that:

- the cost of upgrading systems for certification to new versions of the relevant standards for the EMS and QMS are $350,000 and $400,000 respectively
- that ongoing annual costs relating to each management systems are $5,000, and recertification costs $15,000, similar to those for Hunter Water's AMS
- that under Option B, current certification is allowed to lapse, and
- that under Option C, the new standards are adopted at the October 2017 and August 2018 re-certification audit dates.[73]

Qualitative and Quantitative Costs and Benefits

Advantages of an EMS and QMS consistent with ISO standards include:

- assurance to stakeholders
- enhanced efficiency (cost savings and/or service improvements)
- reduced risk of service or system failure
- reduced cost in providing information to stakeholders (eg, NSW Health, customer groups), and
- audit cost savings in the long term.[74]

There may be potential cost increases in the short term during audits to check 'consistency' with standards, which may not occur where certification is gained. With this option, decisions regarding the most efficient way to demonstrate consistency (ie, either through certification or through audit) can be made by Hunter Water.

We note that the changes required by Option B would create inconsistency with Sydney Water's 2015-2020 Operating Licence (which recently introduced similar clauses to Hunter Water's 2012-2017 Operating Licence) in relation to EMS and QMS.

We further consider there is a small benefit in keeping the requirement in the licence to provide formal assurance the EMS and QMS are maintained.

73 Hunter Water reply to IPART request for information, 18 October 2016.
74 IPART, *Cost Benefit Analysis of proposed changes to Sydney Water Corporation's Operating Licence*, *Draft Report*, February 2015, p 15.

Net Present Value analysis

Option B: The EMS and QMS are currently certified and certification lapses in September 2018. There would be savings of re-certification costs if the requirement for certification was removed from the licence and certification was allowed to lapse.

Table 6.7 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost					
Benefit (allowing EMS certification to lapse)		15,000	5,000	5,000	5,000
Benefit (allowing QMS certification to lapse)		15,000	5,000	5,000	5,000
Net (cost)/benefit		**30,000**	**10,000**	**10,000**	**10,000**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c, Hunter Water reply to IPART request for information, 18 October 2016 and IPART calculations.

Table 6.8 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost			
Benefit (allowing EMS certification to lapse)	26,670	22,956	20,612
Benefit (allowing QMS certification to lapse)	26,670	22,956	20,612
Net present value	53,340	**45,911**	41,224

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c, Hunter Water reply to IPART request for information, 18 October 2016 and IPART calculations.

Option C: The EMS and QMS are currently certified and certification lapses in September 2018. There would be savings of re-certification and audit costs if the requirement for the EMS and QMS is removed.

Table 6.9 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost					
Benefit (allowing EMS certification to lapse)	5,000	15,000	5,000	5,000	5,000
Benefit (allowing QMS certification to lapse)	5,000	15,000	5,000	5,000	5,000
Net (cost)/benefit	**10,000**	**30,000**	**10,000**	**10,000**	**10,000**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c, Hunter Water reply to IPART request for information, 18 October 2016 and IPART calculations.

Table 6.10 NPV analysis of cash flows of Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost			
Benefit (allowing EMS certification to lapse)	31,383	27,323	24,744
Benefit (allowing QMS certification to lapse)	31,383	27,323	24,744
Net present value	62,766	**54,646**	49,488

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c, Hunter Water reply to IPART request for information, 18 October 2016 and IPART calculations.

Option D:

Table 6.11 Quantitative costs and benefits relating to Option D (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (EMS upgrade)		-350,000			
Cost (QMS upgrade)	-400,000				
Net (cost)/benefit	**-400,000**	**-350,000**			

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c, Hunter Water reply to IPART request for information, 18 October 2016 and IPART calculations.

Table 6.12 NPV analysis of cash flows of Option D (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (EMS upgrade)	-320,300	-285,704	-262,960
Cost (QMS upgrade)	-377,038	-349,375	-330,579
Net present value	-697,338	**-635,080**	-593,539

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c, Hunter Water reply to IPART request for information, 18 October 2016 and IPART calculations.

Assessment

We note there are net quantitative savings (ie, benefits) arising from Option B and C, with Option C providing marginally greater benefit. There are substantial net quantitative costs arising from Option D.

The costs of Option D are outweighed by the related significant qualitative benefits. The CBA assessment indicated therefore, on the basis of CBA alone, that Option D is preferred.

7 Customer and stakeholder relations

7.1 Rebates

Hunter Water pays rebates to its customers for planned and unplanned interruptions to service, wastewater overflows and for low pressure supply of water. We considered changes to the conditions under which each of these categories of rebates are paid.

We note that rebates represent a transfer payment; that is for each rebate paid (representing a cost to Hunter Water), there is an equal value benefit to customers represented by a rebate received.

We considered options to:

- add a clause to the customer contract limiting rebates on planned interruptions to interruptions between 5am and 11pm
- require a rebate of an amount equal to the annual water service charge for unplanned water interruptions for three or more events
- require a rebate of an amount equal to the annual wastewater service charge for wastewater overflows for three or more events, and
- require a rebate for one low pressure event per year based on system monitoring.

There are dual reasons for providing service level rebates to customers. One reason is to provide compensation to the customer for inconvenience; the other is to penalise the service provider for poor performance, in order to encourage better performance. IPART's view is that rebates should be provided for events that cause inconvenience to customers, and be set at a level proportionate with the extent of inconvenience.[75] We have considered changes that may better align rebate payments to customer inconvenience for each category of rebate.

There is also a link between performance and the majority of rebates allowed by Hunter Water. A substantial majority of rebates paid by Hunter Water are for first and second events, which reflect the number of interruptions experienced (in contrast to a three or more event rebate which does not increase as more events occur). Of a three year forecast annual average of 7,973 rebates provided by Hunter Water, a three year forecast annual average of 1,353 (or 17%) were provided for three or more service interruptions and 17 (0.2%) for three or more wastewater overflows. No rebates were paid for multiple low pressure events.[76]

Hunter Water's rebates are calculated on a per kilolitre basis whereas Sydney water's rebate amounts are fixed on a nominal basis. This means that as Hunter Water's price per kilolitre

75 IPART's position was established in 2011, regarding rebates for inconvenience rather than as a punitive measure. Refer to report – IPART, *Review of the Customer Contract for Hunter Water Corporation – Final Report*, February 2011, p 7.

76 Hunter Water reply to request for information, 14 September 2016, worksheets 34(new).b, 35(new).b and 36(new).b, and 13 March 2017.

increases over time (under the current pricing determination the water usage charge increases by the annual rate of inflation), so does the rebate amount allowed.[77]

Incremental costs or benefits would only arise from changes in behaviour resulting from changes to the rebate structure. Rebates for planned interruptions are so rarely required that no benefit is identified, although the cost of information technology is recognised. We note the lack of planned interruptions may be caused by the existence of the current rebates.

The information technology costs vary depending on how many changes are introduced to the rebate system. Each rebate change is estimated to cost $20,000 (except low pressure rebates), however any structural change to the software requires a fixed cost of $100,000 (2015-16 dollars).[78]

Given the variable allocation of fixed costs to each change, we included these costs in our considerations as part of our quantitative analysis. For our Net Cost/Benefit calculations we only included the 'per change' cost, and separately taken into account the fixed cost of structural software changes.

7.1.1 Rebates on planned interruptions

Where a customer experiences three or more planned water interruptions in a financial year, each exceeding five hours in duration, they are entitled to an automatic rebate of 15 kilolitres applied to their next bill.[79]

To better align rebates on planned interruption with times customers are most inconvenienced we considered an option to add a clause to the customer contract limiting rebates on planned interruptions to interruptions between 5am and 11pm.

Preferred option

Add a clause to the customer contract limiting rebates on planned interruptions to interruptions between 5am and 11pm.

Options

Option A (base case): Make no change to licence.

Option B: Add a clause to the customer contract limiting rebates on planned interruptions to interruptions occurring between 5am and 11pm.

Assumptions

It is unlikely that there would be incremental costs relating to rebates as no rebates have been paid under the current criteria (ie, events at any time of day) over the last four years

77 IPART, *Hunter Water Corporation: Maximum prices for water, sewerage, stormwater drainage and other services from 1 July 2016, Water - Determination, Determination No.4,* June 2016, pp 9-14.
78 Hunter Water reply to IPART request for information, 14 September 2016, worksheet 33(new).b.
79 Hunter Water, *Hunter Water Customer Contract*, July 2011, Section 7.2 – Rebates.

and Option B includes more stringent criteria (limiting rebate to events occurring during peak hours.

Qualitative and Quantitative Costs and Benefits

Option B: A benefit arises from better alignment of rebates with times of the day that customers are inconvenienced. This is consistent with IPART's stated position that the purpose of rebates is compensation only for customer inconvenience.[80]

We note the water service charge does not get passed on to tenants, which means the affected occupant is not necessarily the recipient of compensation for inconvenience caused by the service shortfall (assuming the rebate is a service charge). Therefore the benefit from the alignment of times inconvenienced does not arise for tenanted properties.

Option B may result in planned work being conducted outside of normal business hours. There may be an increase in cost relating to labour cost. We considered this possible cost increase but were unable to accurately quantify its impact.

In some cases, particularly for business customers, the value of a rebate for service interruption may be substantially less that the inconvenience caused. For example if a business cannot operate without water, then they lose income for the period of interruption.

Net Present Value analysis

Table 7.1 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (software upgrades)	-20,000				
Benefit					
Net (cost)/benefit	**-20,000**				

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 33(new).b and IPART calculations.

Table 7.2 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost	-18,852	-17,469	-16,529
Benefit			
Net present value	-18,852	**-17,469**	-16,529

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 33(new).b and IPART calculations.

80 "Because the cost of providing rebates is borne by Hunter Water's customer base we consider there are strong arguments for providing rebates only where customers are inconvenienced", IPART, *Review of the Customer Contract for Hunter Water Corporation, Water - Final Report* , February 2011, p 7.

Assessment

On balance, we consider the benefit from better aligning rebates with times customers are most inconvenienced, despite the historical lack of need for rebates to be paid, outweighs the costs relating to information technology upgrades and potential increased labour costs under Option B.

The CBA assessment indicated therefore, on the basis of CBA alone, that Option B is preferred.

7.1.2 Rebates on unplanned interruptions

Where a customer experiences an unplanned water service interruption for over five hours between 5:00 am and 11:00 pm due to a failure of the water system, they are entitled to an automatic rebate of 15 kilolitres applied to their next bill. The rebate is received for the first and second event in a financial year.

For three or more unplanned water interruptions, each exceeding one hour in duration, between 5:00 am and 11:00 pm in a financial year, due to a failure of the water system, a customer is further entitled to an automatic rebate of 15 kilolitres applied to their next bill.[81]

We considered options to require Hunter Water to rebate an amount equal to the annual water service charge for unplanned water interruptions for three or more events between 5am and 11pm, for three or more events at any time.

Preferred option

Require Hunter Water to rebate an amount equal to the annual water service charge for unplanned water interruptions for three or more events between 5am and 11pm.

Options

Option A (base case): Make no change to licence.

Option B: Require Hunter Water to rebate an amount equal to the annual water service charge for unplanned water interruptions for three or more events between 5am and 11pm.

Option C: Require Hunter Water to rebate an amount equal to the annual water service charge for unplanned water interruptions for three or more events at any time.

Assumptions

It has been assumed that the "amount equal to the water service charge" component of this option relates to the water service charge applying to single residential properties.

81 Hunter Water, *Hunter Water Customer Contract*, July 2011, Section 7.2 – Rebates.

Qualitative and Quantitative Costs and Benefits

Option A and Option B:

Benefits arising from a rebate for an amount equal to the annual water service charge are:

- there may be a greater influence on the behaviour of the utility, and
- rebate amount is closer to the cost of the service for the inconvenienced customer, rather than an arbitrary amount.

Although there is cost to Hunter Water of providing greater rebates, across the whole of NSW, this can be considered in the nature of transfer.[82]

Option B: A benefit arises from better alignment of rebates with times of the day that customers are inconvenienced. This is consistent with IPART's stated position that the purpose of rebates as compensation for customer inconvenience.[83]

We note the water service charge does not get passed on to tenants, which means the affected occupant is not necessarily the recipient of compensation for inconvenience caused by the service shortfall (assuming the rebate is of a service charge). Therefore the benefit from the alignment of times inconvenienced does not arise for tenanted properties.

Option B may result in planned work being conducted outside normal business hours. There may be an increase in cost relating to labour cost. We considered this possible cost increase but were unable to accurately quantify its impact.

In some cases, particularly for business customers, the value of a rebate for service interruption may be substantially less that the inconvenience caused. For example if a business cannot operate without water, then they lose income for the period of interruption.

Option C: This option would require rebates to be paid for interruptions including those occurring outside peak hours (ie, 5am to 11pm). This would remove the alignment of the rebate with times that customers are inconvenienced, and would be inconsistent with IPART's position regarding the purpose of rebates.

82 We note that the cost of higher rebates is borne across NSW and not only across Hunter Water's customer base, as rebates expense is deducted in calculating dividends for Hunter Water.

83 "Because the cost of providing rebates is borne by Hunter Water's customer base we consider there are strong arguments for providing rebates only where customers are inconvenienced", IPART, *Review of the Customer Contract for Hunter Water Corporation, Water - Final Report* , February 2011, p 7.

Net Present Value analysis

Option B:

Table 7.3 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (IT system)	-20,000				
Cost (Hunter Water - additional rebates)	-22,081	-51,833	-83,101	-83,101	-83,101
Benefit (Customers - rebates avoided)	22,081	51,833	83,101	83,101	83,101
Net (cost)/benefit	**-20,000**				

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 34(new).b and IPART calculations.

Table 7.4 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (IT system)	-18,852	-17,469	-16,529
Cost (Hunter Water - additional rebates)	-283,363	-239,619	-212,459
Benefit (Customers - rebates avoided)	283,363	239,619	212,459
Net present value	-18,852	**-17,469**	-16,529

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 34(new).b and IPART calculations.

Option C:

Table 7.5 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (IT system)	-20,000				
Cost (Hunter Water - additional rebates)	-191,443	-295,576	-405,014	-405,014	-405,014
Benefit (Customers - rebates avoided)	191,443	295,576	405,014	405,014	405,014
Net (cost)/benefit	**-20,000**				

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 34(new).c and IPART calculations.

Table 7.6

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (IT system)	-18,852	-17,469	-16,529
Cost (Hunter Water - additional rebates)	-1,499,358	-1,276,122	-1,137,020
Benefit (Customers - rebates avoided)	1,499,358	1,276,122	1,137,020
Net present value	-18,852	**-17,469**	-16,529

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis,* March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 34(new).c and IPART calculations.

Assessment

Both Option B and Option C give rise to the same net social benefit and the same incremental costs. We note, however, that the costs for Hunter Water (when considered in isolation) are substantially greater under Option C when compared with the Base Case or Option B. For this reason, Option B may be preferred over Option C as this option represents an incremental rather than a relatively large change.

The CBA assessment indicated therefore, on the basis of CBA alone, that Option B is the preferred option.

7.1.3 Rebates on wastewater overflows

Where a customer reports, and Hunter Water confirms, a one-off dry-weather wastewater overflow on their property due to a failure of the wastewater system they are entitled to an automatic rebate of 30 kilolitres applied to their next bill.[84]

We considered options to require Hunter Water to:

- pay a rebate for the first, second and third wastewater overflow, or
- pay a rebate amount equal to the annual wastewater service charge for wastewater overflows for three or more events, or
- pay a rebate amount equal to the annual wastewater service charge for wastewater overflows for two or more events, similar to Sydney Water's obligation.

Preferred option

Require Hunter Water to pay a rebate amount equal to the annual wastewater service charge for wastewater overflows for three or more events.

Options

Option A (base case): Make no change to licence regarding rebates for wastewater overflows.

Option B: Require Hunter Water to pay for the first, second and third wastewater overflow.

Option C: Require Hunter Water to pay a rebate amount equal to the annual wastewater service charge for wastewater overflows for three or more events.

Option D: Require Hunter Water to pay a rebate amount equal to the annual wastewater service charge for wastewater overflows for two or more events.

Assumptions

Wastewater overflows are paid to customers of residential properties only.

84 Hunter Water, *Hunter Water Customer Contract*, July 2011, Section 7.2 – Rebates.

Qualitative and Quantitative Costs and Benefits

Option B: A benefit arises from a rebate amount and structure that better aligns with customer inconvenience as the total rebate amount receives increases with each event.

For Options C and D:

Benefits arising from a rebate for an amount equal to the annual water service charge are:

- there may be a greater influence on the behaviour of the utility, and
- a rebate amount closer to the cost of the service for the inconvenienced customer, rather than an arbitrary amount.

Although there is cost to Hunter Water of providing greater rebates, across the whole of NSW, this can be considered in the nature of transfer.[85]

As information technology changes required by these options can be completed by Hunter Water at minimal cost, there were no information technology costs identified.[86]

Net Present Value analysis

Option B:

Table 7.7 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (IT system)	-20,000				
Cost (Hunter Water - additional rebates)	-50,000	-50,000	-50,000	-50,000	-50,000
Benefit (Customers - rebates avoided)	50,000	50,000	50,000	50,000	50,000
Net (cost)/benefit	**-20,000**				

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 35(new).b and IPART calculations.

Table 7.8 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (IT system)	-18,852	-17,469	-16,529
Cost (Hunter Water - additional rebates)	-222,316	-191,598	-172,308
Benefit (Customers - rebates avoided)	222,316	191,598	172,308
Net present value	-18,852	**-17,469**	-16,529

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 35(new).b and IPART calculations.

85 We note that the cost of higher rebates is borne across NSW and not only across Hunter Water's customer base, as rebates expense is deducted in calculating dividends for Hunter Water.

86 Hunter Water reply to IPART request for information, 14 September 2016, worksheet 35(new).c.

Option C:

Table 7.9 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (Hunter Water - additional rebates)	-63,000	-63,000	-63,000	-63,000	-63,000
Benefit (Customers - rebates avoided)	63,000	63,000	63,000	63,000	63,000
Net (cost)/benefit					

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 35(new).c and IPART calculations.

Table 7.10 NPV analysis of cash flows of Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (Hunter Water - additional rebates)	280,118	241,413	217,109
Benefit (Customers - rebates avoided)	280,118	241,413	217,109
Net present value			

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 35(new).b and IPART calculations.

Option D:

Table 7.11 Quantitative costs and benefits relating to Option D (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (IT system)	-225,000	-225,000	-225,000	-225,000	-225,000
Benefit (Hunter Water - rebates avoided)	225,000	225,000	225,000	225,000	225,000
Net (cost)/benefit					

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 35(new).b, IPART, *Review of prices for Hunter Water Corporation from 1 July 2016 to 30 June 2020*, June 2016, p 118, and IPART calculations.

Table 7.12 NPV analysis of cash flows of Option D (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (Hunter Water - additional rebates)	-1,013,364	-872,902	-784,730
Benefit (Customers - rebates avoided)	1,013,364	872,902	784,730
Net present value			

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 35(new).c and IPART calculations.

Assessment

Wastewater overflows on private property appear to be the service-related event which is the most emotive and causes the most inconvenience for customers.[87] Under all options considered customers would, on average, receive greater rebates which may better reflect the inconvenience experienced.

Both Option C and D give rise to the same net social benefit and the same incremental costs. We note, however, that the costs for Hunter Water (when considered in isolation) are substantially greater under Option D when compared with the Base Case or Option C. For this reason, Option C may be preferred over Option D as this option represents an incremental rather than a relatively large change.

The CBA assessment indicated therefore, on the basis of CBA alone, that Option B is the preferred option.

7.1.4 Rebates for low water pressure

Where a customer reports, and Hunter Water confirms, that their water pressure is below 15 metres head at the point of connection to the water system, for more than 30 minutes on more than five occasions in a financial year, due to a failure of the water supply system, all properties known to be affected are entitled to a rebate of 15 kilolitres to be applied to their next bill.[88]

Preferred option

Hunter Water to pay a rebate for one low pressure event per year based on system monitoring.

Options

Option A (base case): Make no change to licence.

Option B: Hunter Water to pay a rebate for one low pressure event per year, based on system monitoring.

Option C: Hunter Water to pay a rebate for one low pressure event per quarter, based on system monitoring.

Assumptions

We did not make assumptions relating to this issue.

Qualitative Costs and Benefits

Options B and C: The cost of software changes required are the same for both Option B and Option C. Hunter water indicated that, under Option C rebates paid would be around three

87 Hunter Water, *Customer Contract Review - Submission to the Independent Pricing and Regulatory Tribunal*, August 2010, p 7.
88 Hunter Water, *Hunter Water Customer Contract*, July 2011, Section 7.2 – Rebates.

times the amount paid under Option B. We have included the value of rebates in our net present value calculations as rebates represent a transfer between Hunter Water and its customers rather than a net cost or benefit.

Option C: We note Hunter Water's submission that there was one escalated complaint during the 2012-2017 Operating Licence period objecting to the eligibility criteria for the low water pressure rebate.[89] We also note that the three-year average number of customers experiencing six or more low pressure events in a year is zero.[90]

We consider there may be business process efficiency improvements under Option C as a result of removal of the incentive to customers to lodge a complaint that does not entitle them to a rebate.

In its reply to IPART's request Hunter Water also stated that low water pressure is most likely to be experienced during periods of high demand and that Option B considered the highest demand day for each year whereas Option C considers the highest demand day for each billing period, which would vary substantially between seasons.

Hunter Water further stated that this is likely to result in fluctuations in rebate eligibility across bills, with most temporary pressure problems being experienced only over summer (ie, a rebate issued in summer, a possible rebate during shoulder season and likely no rebate during winter) and stable rebate eligibility for those customers with permanent low pressure.

Customers with permanent low pressure generally reside in an area with developer approval for low pressure based on:

- the height of their land relative to the reservoir serving their properties, or
- the incremental costs of boosting pressures is considered higher than the social benefits.

Given that the inconvenience of the service shortfall has already been taken into account for these customers, Hunter Water reasoned that Option C would cause a bias in rebate eligibility to these customers.[91]

89 Phone call with Hunter Water, 3 November 2016.
90 Three years from 2012-13. Hunter Water reply to IPART request for information, 14 September 2016, worksheet 36(new).b.
91 Hunter Water reply to IPART request for information, 14 September 2016, worksheet 36(new).c.

Net Present Value analysis

Option B:

The cost in Table 7.13 arises from information technology investment required for changes to the customer billing system.

Table 7.13 Quantitative costs and benefits relating to Option B and Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost	-60,000				
Benefit					
Net (cost)/benefit	**-60,000**				

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 36(new).b and IPART calculations.

Table 7.14 NPV analysis of cash flows of Option B and Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost	-56,556	-52,406	-49,587
Benefit			
Net present value	-56,556	**-52,406**	-49,587

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 14 September 2016, worksheet 36(new).b and IPART calculations.

Assessment

On balance, we considered that the benefit offered by both options of better aligning rebates with customer inconvenience outweighs the related information technology costs. Option B would result in less fluctuation in rebate eligibility across the whole customer base as low pressure is affected by seasonal influences (ie, seasonal changes). A rebate paid on the annual low pressure would result in better alignment of rebates with customer inconvenience caused by low water pressure.

The CBA assessment indicated therefore, on the basis of CBA alone, that Option B is preferred.

7.2 MoU with DPI Water

Hunter Water's current licence requires it to use its best endeavours to develop and agree, and maintain and comply with, a Roles and Responsibilities Protocol with DPI Water for the development of the Lower Hunter Water Plan (LHWP).

IPART's 2016 Hunter Water price determination made allowance for $1.6 million per year in operating expenditure to meet the funding obligations of the LHWP, as set out in the Roles and Responsibilities Protocol (ie, for Hunter Water to fund its costs and DPI Water's efficient

cost). Hunter Water indicated that in addition to this amount there are internal labour costs of $100,000 to $200,000 per year directly relating to its activities arising from the Roles and Responsibilities Protocol with DPI Water for the development of the LHWP.[92]

Condition 3.3.1 of Hunter Water's current operating licence states:

> 3.3.1 Hunter Water must use its best endeavours to:
>
> a) develop and agree a Roles and Responsibilities Protocol with the Metropolitan Water Directorate for the development of the Lower Hunter Water Plan; and
>
> b) maintain and comply with the Roles and Responsibilities Protocol that has been developed and agreed under clause 3.3.1(a).

We considered options to:

- remove the words "development of" and add the words "development and implementation of" in their place, and
- remove condition 3.3.1 entirely.

One option also changed the terminology 'Roles and Responsibility Protocol' to 'Memorandum of Understanding' (MoU). There are no expected costs or benefits arising from this minor wording change in the licence.

Preferred option

Amend condition 3.3.1 of Hunter Water's operating licence to state:

Hunter Water must use its best endeavors to:

a) develop and agree a Memorandum of Understanding with Department of Primary Industry Water for the development and implementation of the Lower Hunter Water Plan; and

b) maintain and comply with the Memorandum of Understanding that has been developed and agreed under clause 3.1.1(a).

Options

Option A (base case): No change in Licence. That is to retain condition 3.3.1 in its current form, which requires Hunter Water to develop and agree, and maintain and comply with, a roles and responsibilities protocol with DPI Water, in the licence.

Option B: Amend condition 3.3.1(a) to state "the implementation of the Lower Hunter Water Plan" rather than "the development of the Lower Hunter Water Plan".

Option C: Remove the roles and responsibilities protocol with DPI Water from the licence (ie, remove condition 3.3 of current licence).

92 Hunter Water reply to IPART request for information, 21 March 2017.

Assumptions

We have assumed the terminology 'Roles and Responsibility Protocol' and 'Memorandum of Understanding' are interchangeable, with no related costs or benefits arising from this minor wording change in the licence.

The analysis assumes that the relationship between DPI Water and Hunter Water would be documented and possibly formalised regardless of whether it is a requirement of the licence. This is assumed because Hunter Water stated that continuation of the Roles and Responsibilities Protocol (MoU) with DPI Water is preferable and sensible.[93]

This means that under Option C there is no avoided cost of developing and agreeing the MoU.[94]

Qualitative and Quantitative Costs

Option B: In reply to IPART's information request for this analysis, Hunter Water stated that amending condition 3.3.1 to state "the implementation of the Lower Hunter Water Plan" rather than "the development of the Lower Hunter Water Plan" would not accurately describe of the status of the LHWP over the new licence term. In its submission to the operating licence review, Hunter Water stated that the 2014 LHWP is in its implementation phase but that DPI Water intends to review and update the LHWP during the new licence term.

Hunter Water has further stated that wording similar to Sydney Water's 2015-2020 Operating Licence clause 3.1.1(a) would more accurately describe the status of the Lower Hunter Water Plan and would provide for further development of the water plan.[95]

The Sydney Water Operating Licence 2015-2020 states:

> 3.1.1 Sydney Water must use its best endeavours to:
>
> a) develop and agree a Roles and Responsibilities Protocol with the Metropolitan Water Directorate for the development and implementation of the Metropolitan Water Plan; and
>
> b) maintain and comply with the Roles and Responsibilities Protocol that has been developed and agreed under clause 3.1.1(a).

Potential wording for condition 3.3.1 could therefore be (emphasis added):

> 3.3.1 Hunter Water must use its best endeavours to:
>
> a) develop and agree a Memorandum of Understanding with the Metropolitan Water Directorate for the development and implementation of the Lower Hunter Water Plan; and
>
> b) maintain and comply with the Memorandum of Understanding that has been developed and agreed under clause 3.1.1(a).

We considered that adopting this wording may eliminate the cost of inaccurately describing the status of the LHWP in condition 3.3.1.

93 Hunter Water submission to IPART Issues Paper, 15 July 2016, p 24.
94 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 7.c.
95 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 7.b and 7.c.

Option C: There are no material costs relating to this option. We note however that the LHWP is a higher level policy document that allows Hunter Water flexibility to efficiently achieve objectives and outcomes. We also note that greater specificity around this clause could affect IPART's ability to set Hunter Water's maximum prices based on the prudent and efficient costs of delivering its monopoly services.

Qualitative and Quantitative Benefits

Option B: This option more accurately reflects the status of the LHWP and would improve consistency with Sydney Water's operating licence.

Option C: There would be no avoided cost of developing and agreeing the MoU because the relationship between DPI Water and Hunter Water would be documented (and possibly formalised) in any case.

The potential need for a compliance audit of Condition 3.3.1 would be eliminated, which would avoid the cost of IPART's operational audit of this clause. However IPART's practice over the current licence period has been to seek DPI Water's views and only conduct an audit by exception, which has incurred no cost, suggesting that this saving would not be realised.

Assessment

We considered that there are costs associated with Option B that can be avoided by adopting wording that allows for both development and implementation of the LWHP. Option B also better aligns condition 3.3.1 with the status of the LHWP and condition 3.3.1 of the Sydney Water operating licence.

We did not find related cost or benefit relating to Option C.

The CBA assessment indicated therefore, on the basis of CBA alone, that Option B is preferred.

7.3 MoU with Fire and Rescue NSW

Hunter Water has voluntarily begun negotiations with FRNSW with a view to developing a Memorandum of Understanding (MoU).[96]

We considered options to include a requirement for an MoU with FRNSW in the operating licence.

Preferred option

Amend Hunter Water's operating licence to include a requirement for an Memorandum of Understanding with Fire and Rescue NSW, without including specific requirements regarding terms.

96 Meeting minutes IPART and Hunter Water, 29 August 2016.

Options

Option A (base case): Make no change to licence.

Option B: Include a licence requirement for an MoU with Fire and Rescue NSW (FRNSW) without specifying any terms.

Option C: Amend Hunter Water's operating licence to include a requirement for an MoU with Fire and Rescue NSW, including specific requirements regarding terms. (similar to SWC's licence).

Option D: Include a licence requirement for an MoU with FRNSW with specific requirements relating to minimum pressures and flows (over and above SWC's operating licence conditions).

Assumptions

Options B, C and D: For our analysis of these options we made the following assumptions:

- labour costs consist of base pay rate plus on-costs and overheads
- annual meetings of a Strategic Liaison Group take two hours with two representatives per organisation
- quarterly meetings of a working group take two hours each with five representatives per organisation, and
- FRNSW and Hunter Water would incur similar operating costs for participating in the Liaison Group and quarterly meetings.

Hunter Water notes that capital expenditure savings could be substantial if there were more effective planning and decision making in this policy area.

Option D: The cost of infrastructure upgrades to comply with minimum pressures and flow is highly dependent on the thresholds set and the feasibility of various upgrade solutions. Hunter Water provided an example that if 10% of the network required upgrading to achieve adequate water pressure for firefighting across its network it would cost around $200 million. This is significant compared to IPART's 2016 price determination which allowed Hunter Water a total capital expenditure of $365 million (in 2015-16 dollars) over the 4 year determination period.[97]

We assumed the cost avoided due to not requiring on site firefighting equipment as $3,000 per property (the approximate cost of a 5,000L tank and pumping equipment) for 12,000 properties (we discounted the number of affected properties by half to reflect the uncertain nature of the impact on water pressure for each property and the inherent inaccuracy of the estimated number of affected properties).[98]

97 IPART, *Review of prices for Hunter Water Corporation, from 1 July 2016 to 30 June 2020, Water — Final Report*, June 2016, p 59.

98 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.b and IPART calculations.

Qualitative and Quantitative Costs and Benefits

Options B, C and D: Capital expenditure savings could be substantial if there is more effective planning and decision making, however Hunter Water is unable to reliably quantify these savings.

Other quantitative benefits are:

- greater flexibility for Hunter Water and FRNSW to agree mutually beneficial content of the MoU, and
- Hunter Water and FRNSW can collaborate to identify issues and work together to bring about practical, efficient improvements for fire safety.

Option C: Benefits arising from this option are the same as for Option B except there is less flexibility to agree the content of an MoU as the Governor's approval is required to change the Operating Licence. This option would be consistent with other utility licences.

There is a risk of property damage and loss of life arising from not fully addressing the issue of some properties not having sufficient water supply for firefighting purposes. We were unable to quantify this risk.

Option D: Benefits arising from this option are the same as for Option C, with an additional benefit of enhanced firefighting capability for a small portion of connected properties.

If network upgrades occur, some properties may not install more cost-effective means of fire protection (eg, such as on site fire-fighting water storage for medium to high density residential areas).

Approximately 24,000 properties would benefit assuming that 10% of the water network is upgraded to meet a new standard and connection density is consistent across the network.[99]

Net Present Value analysis

Option B:

Table 7.15 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (Hunter Water -meeting costs, one off cost of development of MoU)	-12,500	-10,000	-10,000	-10,000	-10,000
Cost (FRNSW - meeting costs, one off cost of development of MoU)	-12,500	-10,000	-10,000	-10,000	-10,000
Net (cost)/benefit	**-25,000**	**-20,000**	**-20,000**	**-20,000**	**-20,000**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.b and IPART calculations.

99 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.b and IPART calculations.

Table 7.16 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost to Hunter Water (meeting costs, one off cost of development of MoU)	-46,820	-40,503	-36,528
Cost FRNSW (meeting costs, one off cost of development of MoU)	-46,820	-40,503	-36,528
Net present value	-93,640	**-81,006**	-73,056

Note: Discount rates are recommended by NSW Treasury, TPP 17-03, *NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.b and IPART calculations.

Option C:

Table 7.17 Quantitative costs and benefits relating to Option C (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (Hunter Water -meeting costs, one off cost of development of MoU)	-12,500	-60,000	-10,000	-10,000	-10,000
Cost (FRNSW - meeting costs, one off cost of development of MoU)	-12,500	-10,000	-10,000	-10,000	-10,000
Net (cost)/benefit	**-25,000**	**-70,000**	**-20,000**	**-20,000**	**-20,000**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.c and IPART calculations.

Table 7.18 NPV analysis of cash flows of Option C (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost to Hunter Water (meeting costs, one off cost of development of MoU)	-92,577	-81,318	-74,094
Cost FRNSW (meeting costs, one off cost of development of MoU)	-46,820	-40,503	-36,528
Net present value	-139,397	**-121,821**	-110,621

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.c and IPART calculations.

Option D:

Table 7.19 Quantitative costs and benefits relating to Option D (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (Hunter Water -meeting costs, one off cost of development of MoU)	-12,500	-60,000	-10,000	-10,000	-10,000
Cost (FRNSW - meeting costs, one off cost of development of MoU)	-12,500	-10,000	-10,000	-10,000	-10,000
Cost (additional infrastructure cost)	-40,000,000				
Benefit (greater firefighting ability – cost avoided for on-site tanks)	41,400,000				
Net (cost)/benefit	**1,375,000**	**-70,000**	**-20,000**	**-20,000**	**-20,000**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.c and IPART calculations.

Table 7.20 NPV analysis of cash flows of Option D (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost to Hunter Water (meeting costs, one off cost of development of MoU)	-92,577	-81,318	-74,094
Cost FRNSW (meeting costs, one off cost of development of MoU)	-46,820	-40,503	-36,528
Cost (additional infrastructure cost)	-37,703,836	-34,937,549	-33,057,851
Benefit (greater firefighting ability– cost avoided for on-site tanks)	39,023,471	36,160,363	34,214,876
Net present value	1,180,238	**1,100,993**	1,046,403

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.c and IPART calculations.

Hunter Water states that its water prices do not include an allowance for the additional expenditure. The additional capital expenditure would require Community Service Obligation funding, reducing the NSW Government's ability to fund other services. Alternatively, using additional debt may compromise Hunter Water's credit rating, which would increase debt costs and potentially place its financial sustainability at risk.[100]

Assessment

All options provide a net social benefit compared with the base case. Our analysis shows that there are lower costs arising from Option B when compared with Option C. There are benefits of Option C greater than Option B (eg, consistency with SWC, ensuring that the scope of the MoU is clear and reducing the negotiating time and cost arising from defining scope). Although the benefits from Option D may be quantitatively larger and qualitatively greater than the other options, there are inherent inaccuracies in the forecast cost of

100 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.d.

upgrading a large part of Hunter Water's network, and benefit from the network's improved firefighting capability. For this reason we decided not to further consider Option D.

The CBA assessment indicated therefore, on the basis of CBA alone, that Option C is preferred.

7.4 Non-standard customer contracts

Hunter Water has developed non-standard customer contracts that set out the terms and conditions of supply and to note the quality (non-potable) of the water being supplied to customers. There are currently 1,442 customers with non-standard customer contracts from which Hunter Water receives around $5.6 million per year.[101]

Most non-standard customers are situated between Chichester Dam and Dungog Water Treatment Plant and do not have direct access to potable water. Hunter Water supplies these customers with 'unfiltered water', (ie, raw water with added chlorine that has not been treated to a potable water standard) via the transfer pipeline from Chichester Dam to Grahamstown Dam. Hunter Water also has two non-standard customers who are WIC Act licensees.

We considered an option for the operating licence to require Hunter Water to provide a template for a non-standard customer contract (eg, for unfiltered water customers).

Preferred option

No change be made regarding non-standard customer contracts in Hunter Water's operating licence.

Options

Option A (base case): Make no change to licence.

Option B: Provide a template for a non-standard customer contract (eg, for unfiltered water customers) in the operating licence.

Assumptions

For our quantitative analysis we adopted the same assumptions as those for Option B in section 5.1 (Unfiltered water). In addition, we also assumed that:

- Hunter Water does not currently have the authority to disconnect supply to unfiltered water customers
- Option B would give Hunter Water the authority to disconnect supply to non-standard unfiltered water customers
- Hunter Water would not construct alternative infrastructure to supply these customers with potable water, and

101 Hunter Water replies to IPART request for information, 21 March 2017 and 29 March 2017.

- having a template for a non-standard customer contract would bring additional licence related auditing costs.

In reply to IPART's request for information Hunter Water considered Option B to be similar to Option B in section 5.1 (Unfiltered water) with the main difference being that related requirements reside in the standard customer contract rather than in the operating licence (Hunter Water noted that, in the latter case, the unfiltered water customer would need to sign an agreement to the conditions under which unfiltered water is supplied).

Hunter Water further stated that it enters into various non-standard agreements and that it is not possible to create a template (or 'standard') non-standard customer contract that covers the broad range of permutations and combinations of terms and conditions. In addition, Hunter Water stated that creating a standard contract for the unfiltered customers may not be warranted due to the low number of these customers. For our analysis, however, we assumed that a standard customer contract could be created for unfiltered water customers.[102]

Qualitative and Quantitative Costs and Benefits

Option B: A template may provide a qualitative benefit by encouraging more unfiltered water customers to take up contracts and modify their use of unfiltered water to reduce human consumption. This benefit could be achieved using other means, however, such as an information campaign. We also note that non-standard contracts are currently in place, but with a low number of customers using these.

Net Present Value analysis

Table 7.21 Quantitative costs and benefits relating to Option B (2015-16 dollars)

	2017-18	2018-19	2019-20	2020-21	2021-22
Cost (Hunter Water – lost revenue unfiltered)	-24,214	-25,346	-26,479	-26,479	-26,479
Cost (customers – water tank)	-42,000				
Cost (customers - water cartage)	-288,660	-288,660	-288,660	-288,660	-288,660
Cost (customers - domestic pumping)	-19,656	-19,656	-19,656	-19,656	-19,656
Cost (customers – potable water)	-31,838	-31,838	-31,838	-31,838	-31,838
Cost (audit of contracts)	-55,000	-55,000	-55,000	-55,000	-55,000
Benefit (customers - unfiltered)	24,214	25,346	26,479	26,479	26,479
Benefit(Hunter Water – revenue potable)	31,838	31,838	31,838	31,838	31,838
Net (cost)/benefit	**-405,316**	**-363,316**	**-363,316**	**-363,316**	**-363,316**

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 11.b; Hunter Water reply to IPART request for information, 14 September 2016, worksheet 12.b; Office of Water, *Water Management (General) Regulation 2011 - Regulatory Impact Statement*, September 2011, pp 79 80; and IPART calculations.

102 Hunter Water reply to IPART request for information, 14 September 2016, worksheet 12.b.

Table 7.22 NPV analysis of cash flows of Option B (2015-16 dollars)

Sensitivity range	Low	Mid	High
Discount rate	3%	7%	10%
Cost (Hunter Water – lost revenue unfiltered)	-114,562	-98,563	-88,258
Cost (customers – water tank)	-39,589	-36,684	-34,711
Cost (customers - water cartage)	-1,283,474	-1,106,134	-994,771
Cost (customers - domestic pumping)	-87,397	-75,321	-67,738
Cost (customers – potable water)	-141,560	-122,000	-109,717
Cost (audit of contracts)	-244,547	-210,758	-189,539
Benefit (customers - unfiltered)	114,562	98,563	88,258
Benefit (Hunter Water – revenue potable)	141,560	122,000	109,717
Net present value	-1,655,007	**-1,428,897**	-1,286,759

Note: Discount rates are recommended by NSW Treasury, *TPP 17-03, NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45. Analysis shows NPV over the term of the operating licence (ie, five years).

Source: Hunter Water reply to IPART request for information, 7 September 2016, worksheet 11.b; Hunter Water reply to IPART request for information, 14 September 2016, worksheet 12.b; Office of Water, *Water Management (General) Regulation 2011 - Regulatory Impact Statement*, September 2011, pp 79 80; and IPART calculations.

Assessment

The benefits that arise from Option B are similar to those for Option B in section 5.1 of this report, with the exception of additional audit costs relating to the proposed non-standard contracts. Including a template of a non-standard unfiltered water customer contract may increase the take up of licences among non-filtered water customers, however there would be an increase in audit and compliance costs associated with including a template in the licence.

The CBA assessment indicated therefore, on the basis of CBA alone, that the preferred option is that no change be made to the licence.

7.5 MoU with NSW Health

The current licence requires Hunter Water to maintain and comply with a Memorandum of understanding (MoU) to facilitate effective interaction between the two organisations. In particular, the MoU recognises the role of NSW Health in providing advice to the Government in relation to drinking water quality standards and the supply of water which is safe to drink.[103]

Hunter Water indicated that it is difficult to isolate the costs arising from NSW Health-related activities which are embedded within its general operating costs. However costs relating directly to meetings (ie, excluding actions arising from agreements with NSW Health) are approximately $150,000 per year.[104]

Hunter Water provided an example of an identifiable cost arising from an agreement with NSW Health: NSW Health had requested that Hunter Water improve the presence of free chlorine to protect against potential bacterial ingress. A disinfection optimisation strategy

103 *Hunter Water Operating Licence 2012-2017*, Condition 9.1.
104 Hunter Water reply to IPART request for information, 21 March 2017.

was completed in 2014 with the objective of improving the persistence of a disinfection residual (free chlorine) within the distribution system. As a result, IPART's 2016 Hunter Water price determination allowed for additional expenditure of $240,000 per year for increased chemical usage.[105]

Preferred option

No change be made to the requirement for a Memorandum of understanding with NSW Health in Hunter Water's operating licence.

Options

Option A (base case): Make no change to licence.

Option B: Remove the requirement for an MoU with NSW Health from the operating licence.

Assumptions

There would be no avoided cost of developing and agreeing the MoU because the relationship between NSW Health and Hunter Water would need to be documented (and possibly formalised) even if this were not a regulatory requirement. This is because of NSW Health's role as the drinking water quality regulator in NSW.

There may be an avoided cost of IPART's operational audit of this clause under Option B.

Qualitative and Quantitative Costs and Benefits

Option B may mean the removal of a regulatory trigger to revise any relevant clauses of the MoU (as this is usually done following issue of a new Operating Licence).

We consider there a small benefit in keeping the requirement in the licence to provide formal assurance the MoU with NSW Health is maintained.

NSW Health stated support for the requirement of an MoU, as it would outline the basis for the cooperative relationship between the two organisations.[106]

The quantitative costs and benefits were assessed as negligible and we did not conduct a quantitative analysis of them.

Assessment

On balance, the benefits of keeping the requirement for an MoU outweighed the benefits of removing the requirement. The CBA assessment indicated therefore, on the basis of CBA alone, that the preferred option is that no change be made to the licence.

105 Hunter Water reply to IPART request for information, 21 March 2017.
106 NSW Health submission to IPART's Issues Paper, 29 July 2016, p 4.

8 Performance monitoring and reporting

8.1 National Water Initiative performance indicators

IPART is required to collect the National Water Initiative (NWI) data from public water utilities in NSW and report it to the Bureau of Meteorology. This requirement arises from the *National Framework for Reporting on Performance of Urban Water Utilities Deed* where IPART is nominated by the NSW Government to be the NWI data and audit coordinator for NSW public water utilities.

Costs to Hunter Water that relate directly to generating NWI indicator reporting are around $200,000 per year. This amount includes costs such as capital costs associated with ICT systems for data capture, processing and extraction, and establishment of processes and procedures.[107]

Currently there is no requirement in Hunter Water's operating licence or the Reporting Manual for Hunter Water to report to IPART against the NWI performance indicators. It does so voluntarily as part of its wider compliance activities.

We considered if this reporting should be required in the licence.

Preferred option

Add to Hunter Water's operating licence a requirement to report against National Water Initiative performance indicators.

Options

Option A (base case): Make no change to the licence.

Option B: Change the licence to require Hunter Water to report against NWI performance indicators.

Assumptions

Option B has the same quantitative costs and benefits as the base case, as Hunter Water would still produce the same level of reporting if the base case was maintained or if Option B was adopted.

Qualitative and Quantitative Costs and Benefits

There is a qualitative benefit of addressing a regulatory gap identified in the operating licence regarding Hunter Water's obligation to report NWI performance indicators to

[107] Hunter Water reply to IPART request for information, 21 March 2017.

IPART. The relevant clause has been removed from the Reporting Manual, but an amendment to the operating licence to account for this change has not been made.

Given that Hunter Water is already obligated to report this information to IPART under the base case there is very little incremental change in Option B.

There may be a negligible or small increase in audit costs relating to bringing this requirement into the operating licence.

There are no other quantitative costs or benefits relating to Option B.

Assessment

The CBA assessment indicated, on the basis of CBA alone, that Option B is preferred.

8.2 IPART performance indicators

Hunter Water is required to report on performance indicators by the operating licence and the Reporting Manual. Hunter Water's costs directly relating to this reporting are around $50,000 per year and include participation in the annual operational audit for a sample of indicators but excludes capital costs associated with ICT systems for data capture, processing and extraction, and establishment of process and procedures.[108]

Some water utilities regulated by IPART have raised concerns around consistency in the performance indicators being reported, such as those required by clause 8.2 of Hunter Water's current operating licence, and the Reporting Manual.

We considered whether to perform a review of these indicators.

Preferred option

IPART to conduct a review of Hunter Water's indicator definitions as part of the licence review process and conduct an industry-wide performance indicators review after July 2017.

Options

Option A (base case): Make no change to licence.

Option B: IPART to conduct Hunter Water-specific performance indicator definition review as part of the licence review process.

Option C: IPART to conduct Hunter Water-specific performance indicator definition review as part of the licence review process and conduct an industry-wide performance indicators review after July 2017.

[108] Hunter Water reply to IPART request for information, 21 March 2017.

Assumptions

The options provided above include many unknowns and variables, and as a result, are difficult to measure. Therefore our analysis is limited to discussion of the costs and benefits surrounding the options.

Qualitative and Quantitative Costs and Benefits

Option B: Capital and operating costs resulting from changes in performance indicators are heavily dependent on the nature of the proposed changes. An increase or decrease in the number of indicators would cause an incremental increase or decrease, compared to the base case, in the cost of maintaining sufficient records to enable accurate measurement against the indicators.

Other issues that might increase costs are the potential lack of alignment and loss of comparability across NSW metropolitan water utilities and the costs relating to a discontinuous data set.

There is also a potential cost to IPART of further customising its NSW water utilities performance database and report. This could also cause stakeholder confusion and misinterpretation of IPART's database and/or report.[109]

Option C: This option could lead to sunk costs relating to system changes to report new or altered indicators arising from the first review, that are subsequently discontinued in the second review.

Other costs include:

- increased labour costs for Hunter Water related to participating in multiple reviews, and
- potential lack of alignment and loss of comparability between NSW metropolitan water utilities and a discontinuous temporal data set if indicators are altered or discontinued as part of the first review and then reinstated as part for the second review.[110]

Option B and C: Benefits that arise from both options are:

- the ability to refine the current definitions and resolve existing inconsistencies in indicators,
- potential increases in efficiency and productivity that may arise from improvements to the indicators, and
- potential ability to access additional performance information sooner.[111]

Assessment

Both options B and C have similar issues, except that Option C includes a review of industry-wide performance indicators. Consideration has been given to the variable nature of costs relating to as yet unknown changes under either option, and the potential gains

109 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 20.b.
110 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 20.c.
111 Hunter Water reply to IPART request for information, 7 September 2016, worksheet 20.b and 20.c.

attached to both options, with potentially greater gains under Option C (as gains would be made across the industry, and not just to Hunter Water's activities).

The CBA assessment indicated therefore, on the basis of CBA alone, that Option C is preferred.

A Appendix A

Section 20N of the State Owned Corporations Act 1989 states:

20N Non-commercial activities

(1) If the portfolio Minister wishes a statutory SOC to perform activities, or to cease to perform activities, or not to perform activities, in circumstances where the board considers that it is not in the commercial interests of the SOC to do so, that Minister with the approval of the Treasurer may, by written notice to the board, direct the SOC to do so in accordance with any requirements set out or referred to in the notice.

(2) The SOC is required to comply with any such direction.

(3) The SOC is entitled to be reimbursed, from money advanced by the Treasurer or appropriated by Parliament for the purpose, amounts equal to:

(a) the net cost of performing any such activities, including the cost of capital, and

(b) the net cost of complying with a direction to cease to perform or not to perform any such activities.

(4) The amounts and times of payment of those amounts are as agreed between the Treasurer and the SOC or (failing agreement) as determined by a suitably qualified person or persons nominated by the Premier.

(5) The SOC may be reimbursed, from money advanced by the Treasurer or appropriated by Parliament for the purpose, amounts not exceeding the estimated net amount of revenue forgone through ceasing to perform or not performing any such activities, as determined by the Treasurer having regard to such factors as the Treasurer considers relevant in the circumstances.

Section 16A of the Independent Pricing and Regulatory Tribunal Act 1992 states:

16A Passing through efficient costs in price determinations

(1) The portfolio Minister for a government agency may direct the Tribunal, when it makes a determination of the maximum price for a government monopoly service provided by the agency, to include in the maximum price an amount representing the efficient cost of complying with a specified requirement imposed on the agency.

(2) The portfolio Minister for a government agency may direct the Tribunal, when it makes a determination of the methodology for fixing the maximum price for a government monopoly service provided by the agency, to include in the methodology a factor representing the efficient cost of complying with a specified requirement imposed on the agency.

(3) Such a requirement may only be a requirement imposed by or under a licence or authorisation, a requirement imposed by a ministerial direction under an Act, or some other requirement imposed by or under an Act or statutory instrument.

(3A) A portfolio Minister may give a direction to the Tribunal under this section only if:

(a) the portfolio Minister has consulted with the Tribunal on the proposed direction before giving the direction, and

(b) the Minister administering this Act has approved the direction.

(4) The Tribunal is required to comply with a direction under this section.

(5) In its report, the Tribunal is required to set out the terms of the direction and to include an explanation of the manner in which it has complied with the direction.