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### 1.3 Overview of proposed changes

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

- ▼ timing of licence reviews
- ▼ licence structure
- ▼ including an Economic Level of Water Conservation (ELWC)
- ▼ stormwater system augmentation
- ▼ unfiltered water customers
- ▼ System Performance Standards (SPS)
- ▼ drinking water quality management provisions
- ▼ NSW Health's role in water quality management
- ▼ ISO 55001 Asset Management System (AMS) certification
- ▼ removing the requirement to provide State of the Assets Report
- ▼ maintaining certification of the Environmental Management System (EMS) and Quality Management System (QMS)
- ▼ including sub-clause requiring National Water Initiative (NWI) performance indicators
- ▼ review of IPART performance indicators
- ▼ customer rebates
- ▼ non-standard customer contracts
- ▼ an MoU with Fire and Rescue NSW (FRNSW)
- ▼ an MoU with NSW Health, and
- ▼ a roles and responsibilities protocol with DPI Water.

Of these issues the greatest improvements (ie, greatest potential net social benefit) are achieved by:

- ▼ the inclusion of an ELWC methodology
- ▼ amending the licence to allow for augmentation of the stormwater drainage system by Hunter Water, and
- ▼ requiring International Standards Organisation (ISO) certification of the AMS, EMS and QMS.

Examples of the types of and benefits realised by the proposed changes to the licence include:

- ▼ More efficient resource allocation (by developing and implementing to the extent practical an ELWC methodology, with capital and maintenance expenditure relating to water conservation and leakage being more efficiently targeted).
- ▼ Increased transparency and reduced ambiguity (ie, changing licence structure to reflect the water supply chain and organisational structure and responsibilities of the utility).
- ▼ Better selection of projects and engineering solutions based on net benefits of outcomes due to more flexibility in approved activities (eg, by allowing augmentation of stormwater systems rather than just maintenance).
- ▼ Reduction in risk (ie, reduced risk of consumption of non-potable water by unfiltered water customers).
- ▼ More efficient asset management practices that enhance service levels and reduce risk of asset failure (ie, from requiring certified AMS, EMS and QMS).
- ▼ Reduced regulatory costs (eg, more audit assurance from ISO-certified systems), and
- ▼ Improving communication between various stakeholders (eg, requiring a MoU between Hunter Water and FRNSW, and Hunter Water and NSW Health).

## 1.4 Summary of preferred options

We considered the incremental costs and benefits of options relating to each issue, and reached a recommended action for each. We applied sensitivity analysis consistent with NSW Treasury guidance.<sup>5</sup>

Below is a summary of preferred options recommended by this cost benefit analysis. All of these options were assessed as having the greatest net social benefit (Table 1.1).

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<sup>5</sup> NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52.

**Table 1.1 Summary of results of cost benefit analysis of preferred options**

Recommended change	Qualitative and quantitative costs and benefits	Quantitative net social benefit (2015-16 dollars, assumes 7% discount rate)
From 2022, reduce the operating licence review period from five to four years, with licencing and pricing reviews alternating every two years.	<ul style="list-style-type: none"> <li>▼ an increase in overall cost due to more frequent IPART operating licence reviews, and</li> <li>▼ efficiency savings from harmonisation of licence obligations prior to a later price review.</li> </ul>	
Change licence structure to improve accessibility to customers, the community and other stakeholders.	<ul style="list-style-type: none"> <li>▼ improves accessibility to customers, the community and other stakeholders</li> <li>▼ may create efficiencies for utility as licence structure reflects water cycle and internal utility structure, and</li> <li>▼ provides a template for operating licences therefore avoiding the cost of 're-developing' licence structure for other reviews.</li> </ul>	
Develop an Economic Level of Water Conservation methodology and then replace the Economic Level of Leakage and water conservation target with a requirement in the licence to implement an Economic Level of Water Conservation.	<ul style="list-style-type: none"> <li>▼ more efficient resource allocation</li> <li>▼ methodology better reflects actual net benefits of water conservation projects, and</li> <li>▼ increased transparency around selection of water conservation projects.</li> </ul>	-191,598
Amend licence condition 1.3.1 of Hunter Water's licence to allow for augmentation of Hunter Water's stormwater and drainage system.	<ul style="list-style-type: none"> <li>▼ could lead to cost-shifting of required augmentation works from Hunter Water to third parties</li> <li>▼ removes ambiguity around application of the existing operating licence clause</li> <li>▼ removes an imposed barrier to co-operation between Hunter Water, councils and developers, and</li> <li>▼ more efficient project selection which allows Hunter Water to consider projects that deliver lower cost stormwater solutions.</li> </ul>	

Recommended change	Qualitative and quantitative costs and benefits	Quantitative net social benefit (2015-16 dollars, assumes 7% discount rate)
Make minor amendment to the drinking water conditions in Hunter Water's operating licence to include unfiltered water for non-potable water purposes.	<ul style="list-style-type: none"> <li>▼ health risk to people who potentially consume unfiltered water as this water is still supplied under proposed change,</li> <li>▼ reduces chance of people consuming non-potable water by informing customers of proper use of unfiltered water, and</li> <li>▼ reduced exposure for Hunter Water to legal liability from customers consuming unfiltered water.</li> </ul>	Other considered options included \$1,218,139 in net social cost; this is avoided by adopting preferred option.
Retain existing standards in licence relating to System Performance Standards.	<ul style="list-style-type: none"> <li>▼ avoids risk that Hunter Water would not met a particular standard, and</li> <li>▼ other options have some minor efficiency gains.</li> </ul>	Other considered options included \$67,000 in net social cost; this is avoided by retaining base case.
Retain the current drinking water quality provisions from the existing licence.	<ul style="list-style-type: none"> <li>▼ small additional administrative cost in managing participation in separate water quality and operational audits, and</li> <li>▼ benefit from additional confidence and assurance in reporting of Hunter Water's compliance with its Drinking Water Quality Management Plan to the public.</li> </ul>	Other considered options included \$30,570 (Option B) and \$43,982 (Option C) in costs; these are avoided by retaining base case.
No change to condition 2.1.4 of Hunter Water's operating licence relating to NSW Health's role in drinking water quality.	<ul style="list-style-type: none"> <li>▼ does not achieve alignment of wording in operating licence with NSW Health's authority which would occur under other options considered, and</li> <li>▼ qualitative outcomes would be similar under both the base case and other options considered.</li> </ul>	
No change to condition 2.2.4 of Hunter Water's operating licence relating to NSW Health's role in recycled water quality.	<ul style="list-style-type: none"> <li>▼ does not achieve alignment of wording in operating licence with NSW Health's authority which would occur under other options considered and</li> <li>▼ qualitative outcomes would be similar under both the base case and other options considered.</li> </ul>	

Recommended change	Qualitative and quantitative costs and benefits	Quantitative net social benefit (2015-16 dollars, assumes 7% discount rate)
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.	<ul style="list-style-type: none"> <li>▼ no incremental quantitative cost in defining 'significant changes', and</li> <li>▼ avoids qualitative costs associated with other options considered such as:               <ul style="list-style-type: none"> <li>– inflexibility to changes arising from 'locking in' a definition of 'significant changes'</li> <li>– savings in cost to achieve consensus between IPART, NSW Health and Hunter Water which may not be possible, and</li> <li>– additional or fewer administrative costs depending on how broad the proposed definition would be.</li> </ul> </li> </ul>	
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.	<ul style="list-style-type: none"> <li>▼ no incremental quantitative cost in defining 'significant changes', and</li> <li>▼ avoids qualitative costs associated with other options considered such as:               <ul style="list-style-type: none"> <li>– inflexibility to changes arising from 'locking in' a definition of 'significant changes'</li> <li>– savings in cost to achieve consensus between IPART, NSW Health and Hunter Water which may not be possible, and</li> <li>– additional or fewer administrative costs depending on how broad the proposed definition would be.</li> </ul> </li> </ul>	
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.	<ul style="list-style-type: none"> <li>▼ Hunter Water and NSW Health have a strong, constructive working relationship and the need for additional regulatory intervention is not demonstrated, and</li> <li>▼ avoids qualitative costs associated with other options considered such as:               <ul style="list-style-type: none"> <li>– compliance related costs depending on depending on how broad the proposed definition would be.</li> <li>– inflexibility to changes arising from 'locking in' a definition of 'significant changes'</li> <li>– may not be possible to achieve consensus between IPART, NSW Health and Hunter Water</li> </ul> </li> </ul>	

Recommended change	Qualitative and quantitative costs and benefits	Quantitative net social benefit (2015-16 dollars, assumes 7% discount rate)
Amend licence to require an Asset Management System to be consistent with International Organization for Standardization's ISO 55001 in the licence by 31 December 2017 and certified by 1 July 2018.	<ul style="list-style-type: none"> <li>▼ avoids costs of IPART operational audits of AMS clauses, and</li> <li>▼ other advantages of an AMS consistent with ISO 55001 include:               <ul style="list-style-type: none"> <li>– enhanced service levels</li> <li>– reduced risk of asset failure</li> <li>– asset cost savings</li> <li>– audit cost savings.</li> </ul> </li> </ul>	-887,540
Remove the requirement in Hunter Water's Reporting Manual for 'State of the Assets' reporting.	We note that the benefits identified in the Cost Benefit Analysis relating to the last licence period have not materialised nor will be achieved by the maintenance of this reporting requirement.	39,761
Maintain licence requirement for an Environmental Management System and a Quality Management System, and add requirement for certification to the most recent standards (ie, ISO14001:2015 and ISO9001:2016) during the term of the Hunter Water's operating licence.	<ul style="list-style-type: none"> <li>▼ assurance to stakeholders</li> <li>▼ enhanced efficiency (cost savings and/or service improvements)</li> <li>▼ reduced risk of service or system failure</li> <li>▼ reduced cost in providing information to stakeholders (eg, NSW Health, customer groups), and</li> <li>▼ future audit cost savings</li> </ul>	-635,080
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.	<p>Costs include:</p> <ul style="list-style-type: none"> <li>▼ increased labour costs</li> <li>▼ potential lack of alignment and loss of comparability between NSW metropolitan water utilities, and</li> <li>▼ duplication of effort by stakeholders who are active across several jurisdictions</li> </ul> <p>Benefits include:</p> <ul style="list-style-type: none"> <li>▼ refines the current definitions and resolves existing inconsistencies in indicators,</li> <li>▼ potential increases in efficiency and productivity, and</li> <li>▼ potential ability to access additional performance information sooner.</li> </ul>	

<b>Recommended change</b>	<b>Qualitative and quantitative costs and benefits</b>	<b>Quantitative net social benefit (2015-16 dollars, assumes 7% discount rate)</b>
Add a clause to the customer contract limiting rebates on planned interruptions to interruptions between 5am-11pm.	<ul style="list-style-type: none"> <li>▼ potential cost of planned work being conducted outside of normal business hours.</li> <li>▼ better aligns rebates with time of day customers are inconvenienced.</li> </ul>	-17,469
No change be made to Hunter Water's operating licence regarding rebates for unplanned interruptions.	<ul style="list-style-type: none"> <li>▼ does not better align rebates with time of day customers are inconvenienced, and</li> <li>▼ avoids cost of planned work being conducted outside of normal business hours.</li> </ul>	Other considered option included \$17,469 in net social cost; this is avoided by retaining base case.
No change to licence regarding rebates for wastewater overflows.	<ul style="list-style-type: none"> <li>▼ potential cost of infrastructure works to prevent overflows, and</li> <li>▼ rebates would better reflect inconvenience to customers.</li> </ul>	-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	-52,406
No change be made regarding non-standard customer contracts in Hunter Water's operating licence.	Does not better encourage more 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; this is avoided by retaining base case.
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.	<ul style="list-style-type: none"> <li>▼ 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.</li> <li>▼ substantial capital expenditure savings</li> <li>▼ greater flexibility for Hunter Water and FRNSW to agree mutually beneficial content of the MoU, and</li> <li>▼ will bring about practical, efficient improvements for fire safety.</li> </ul>	-81,006
No change be made to the requirement for a Memorandum of understanding with NSW Health in Hunter Water's operating licence.	<ul style="list-style-type: none"> <li>▼ retains regulatory trigger to revise any relevant clauses of the MoU, and</li> <li>▼ small benefit in providing formal assurance the MoU with NSW Health is maintained.</li> </ul>	

Recommended change	Qualitative and quantitative costs and benefits	Quantitative net social benefit (2015-16 dollars, assumes 7% discount rate)
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 Roles and Responsibilities Protocol in agreement with the Metropolitan Water Directorate 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.	



## 2 Utility context

### 2.1 Timing of reviews

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).

#### Recommendation

- 1 From 2022, reduce the operating licence review period from five to four years, with licencing and pricing reviews alternating every two years.

#### 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 will not occur until 2025-26, which is outside of the time period covered by this cost-benefit analysis (2017-18 to 2021-22).

#### Qualitative and Quantitative Costs and Benefits

**Cost:** There will be an increase in the cost of more frequent IPART operating licence reviews over a longer period of time. This cost is estimated to be an increase in cost of 25% of a licence review.<sup>6</sup> The first year that would be

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<sup>6</sup> Calculated as  $(5 \text{ years} / 4 \text{ years}) - 1 \times \text{cost of review (IPART estimate: \$300,000} \times 25\%, \text{ or \$75,000 in 2015-16 dollars)}$ .

impacted by this change will be 2026 which is outside the scope of this cost-benefit analysis. For this reason we have 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

We considered the potential increased costs over a longer period of time. We also recognise the unquantifiable, yet substantial, benefits associated with Option B including potential efficiency savings and better regulatory outcomes from aligned operating licence and pricing reviews. We consider that the benefits of Option B outweigh the potential costs.

Based on this analysis, we recommend that Option B be adopted.

## 2.2 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.

### Recommendation

- 2 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 will 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 will 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, we recommend that Option B be adopted.

## 2.3 Obligation to service

IPART recently considered the conditions under which Hunter Water Corporation has an obligation to supply services to wholesale customers and under what circumstances and/or conditions this obligation should apply. Please see the IPART's *Review of the Hunter Water Corporation Operating Licence* for full discussion of this topic.

We are yet to analyse this issue quantitatively for the purposes of our CBA, and we will undertake further consultation with key stakeholders as part of including this issue in the final CBA to be provided to the Minister in May 2017.

## 3 Water Source Protection and Water Conservation

### 3.1 Economic Level of Water Conservation (ELWC)

Hunter Water's current operating licence includes conditions relating to water demand management and the control of water loss from leakage.<sup>7</sup> The concept of Economic Level of Water Conservation (ELWC) incorporates water recycling and water efficiency activities (including demand management) and water leakage, in its definition. We examined options to include a requirement for Hunter Water to develop and implement an ELWC methodology in the licence.

#### Recommendation

- 3 Develop an Economic Level of Water Conservation methodology and then replace the Economic Level of Leakage and water conservation target with a requirement in the licence to implement an Economic Level of Water Conservation.

#### 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 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.<sup>8</sup>

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<sup>7</sup> Hunter Water Operating Licence 2012-2017, conditions 3.1 and 3.2.

<sup>8</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.

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.<sup>9</sup>

Our analysis assumes that the Water Conservation Report<sup>10</sup> will 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
- ▼ 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.<sup>11</sup>

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.<sup>12</sup>

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,

<sup>9</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.

<sup>10</sup> 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.

<sup>11</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.

<sup>12</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 4.b.

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 3.1 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					
<b>Net (cost)/benefit</b>	<b>-50,000</b>	<b>-50,000</b>	<b>-50,000</b>	<b>-50,000</b>	<b>-50,000</b>

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

**Table 3.2 Net Present Value (NPV) analysis of cash flows of Option B (2015-16 dollars)**

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost	214,030	<b>191,598</b>	172,308
Benefit	-	-	-
<b>Net present value</b>	<b>(214,030)</b>	<b>(191,598)</b>	<b>(172,308)</b>

**Note:** Discount rates are recommended by NSW Treasury, *tpg 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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.

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.<sup>13</sup>

### 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).<sup>14</sup>

<sup>13</sup> Meeting with IPART and Hunter Water, 29 August 2016.

<sup>14</sup> Email from Hunter Water, 18 October 2016.

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, we recommend that Option B be adopted.

## 4 Supply services and performance standards

### 4.1 Stormwater

Condition 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.<sup>15</sup> We considered an option to alter the wording of condition 1.3.1 to include, and allow for, 'augmentation' of the drainage system by Hunter Water.

#### Recommendations

- 4 Amend licence condition 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 will involve an amendment to Hunter Water's operating licence to include a provision similar to recent changes to Sydney Water's operating licence. This will allow, but not require, Hunter Water to construct stormwater drainage infrastructure for the purpose of increasing the capacity of its Stormwater Drainage System.<sup>16</sup>

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<sup>15</sup> *Hunter Water Operating Licence 2012-2017*, Condition 1.3.1, states that "Hunter Water must provide, operate, manage and maintain a drainage service as described in section 13(1)(b) of the Act". Section 13(1)(b) of the Act 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".

<sup>16</sup> 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 identified costs and benefits relating to Option B. After considering potentially substantial benefits, including increased efficiencies, against related controllable potential costs, we decided, on balance, to recommend Option B.

## 4.2 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.<sup>17</sup> Hunter Water's current licence does not cover unfiltered water.

<sup>17</sup> IPART, *Review of the Hunter Water Corporation Operating Licence Issues Paper*, May 2016, p 32.

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.

#### Recommendation

- 5 [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.<sup>18</sup>

**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.

#### 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

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<sup>18</sup> National Health and Medical Research Council, *Australian Drinking Water Guidelines (2011)* – Updated November 2011, November 2011.

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.<sup>19</sup>
- ▼ 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,<sup>20</sup> and
- ▼ water cartage costs are \$20.40/kL.<sup>21</sup>

**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 re-imbursement of \$7.5m through a Community Service Obligation.

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.

<sup>19</sup> IPART has assumed that water use would halve due to the increase in price from unfiltered to potable water, resulting in less demand and a change in use by customers.

<sup>20</sup> 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.

<sup>21</sup> 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.

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 will 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.<sup>22</sup>

#### 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.<sup>23</sup> 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 the MoU. Hunter Water further noted that this Option would not address the fundamental issue of the risk of customers consuming non-potable water.<sup>24</sup>

<sup>22</sup> See <http://www.health.nsw.gov.au/environment/water/Pages/drinkwater-watercarters.aspx>, last accessed 2 November 2016.

<sup>23</sup> *Hunter Water Operating Licence 2012-2017*, Clause 2.1.1.

<sup>24</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 11.c.

**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 4.1 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
<b>Net (cost)/benefit</b>	<b>-350,316</b>	<b>-308,316</b>	<b>-308,316</b>	<b>-308,316</b>	<b>-308,316</b>

**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.

**Table 4.2 NPV analysis of cash flows of Option B (2015-16 dollars)**

<b>Sensitivity range</b>	<b>Low</b>	<b>Mid</b>	<b>High</b>
<b>Discount rate</b>	<b>4%</b>	<b>7%</b>	<b>10%</b>
Cost (Hunter Water – lost revenue unfiltered)	-110,245	<b>-98,563</b>	-88,258
Cost (customers – water tank)	-38,831	<b>-36,684</b>	-34,711
Cost (customers - water cartage)	-1,235,638	<b>-1,106,134</b>	-994,771
Cost (customers domestic pumping)	-84,139	<b>-75,321</b>	-67,738
Cost (customers – potable water)	-136,284	<b>-122,000</b>	-109,717
Benefit (customers - unfiltered)	110,245	<b>98,563</b>	88,258
Benefit (Hunter Water – revenue potable)	136,284	<b>122,000</b>	109,717
<b>Net present value</b>	<b>-1,358,608</b>	<b>-1,218,139</b>	<b>-1,097,220</b>

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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).

Therefore, on balance, we recommend that Option D be adopted.

## 4.3 System Performance Standards

System Performance Standards (SPS) help ensure that customers receive a suitable level of service and are included in the current licence.<sup>25</sup> There are trade-offs between the standard of service provided by Hunter Water and the costs of

<sup>25</sup> *Hunter Water Act 1991*, s 13(1)(c).

providing that service. Since the current SPSs were introduced, Hunter Water's performance has remained within the fixed SPS thresholds by a significant margin.<sup>26</sup>

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.

#### Recommendation

### 6 Retain existing standards in 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.<sup>27</sup>

<sup>26</sup> *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>, last accessed 11 December 2016.

<sup>27</sup> Based on 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.<sup>28</sup>

### Qualitative and Quantitative Costs

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

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<sup>28</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.b.



**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'.<sup>29</sup>

**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).

### 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.<sup>30</sup>

**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.<sup>31</sup>

<sup>29</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.c.

<sup>30</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.b.

<sup>31</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 10.d.

## Net Present Value analysis

### Option D:

**Table 4.3 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					
<b>Net (cost)/benefit</b>	<b>-58,500</b>	<b>-20,000</b>			

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

**Table 4.4 NPV analysis of cash flows of Option D (2015-16 dollars)**

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (data extraction)	-3,236	<b>-3,057</b>	-2,893
Cost (indicator development)	-32,359	<b>-30,570</b>	-28,926
Cost (information technology)	-36,271	<b>-33,795</b>	-31,555
Benefit	-	-	-
<b>Net present value</b>	<b>-71,866</b>	<b>-67,422</b>	<b>-63,373</b>

**Note:** There were no substantial or measurable benefits relating to Option D. Discount rates are recommended by NSW Treasury, *tp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 we recommend that the base case be maintained, while noting that there is room for review of possible changes to the current standards.

## 4.4 Water Quality - Drinking Water

The operating licence contains conditions in clause 2.1 that require the quality of drinking water to meet public health standards.<sup>32</sup> IPART considered options including moving the drinking water compliance regime from the operating licence to NSW Health's responsibility.

### Recommendation

**7 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 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.

<sup>32</sup> *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.

- ▼ The additional cost of reporting publicly and to IPART Hunter Water's drinking water Quality Management Plan compliance is \$3,500 per year.<sup>33</sup>

### 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.<sup>34</sup>

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.

### Net Present Value analysis

#### Option B:

**Table 4.5 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
<b>Net (cost)/benefit</b>	<b>-35,000</b>				

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

<sup>33</sup> 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.

<sup>34</sup> 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".

**Table 4.6 NPV analysis of cash flows of Option B (2016-dollars)**

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (audit activities NSW Health)	-196,124	<b>-175,569</b>	-157,893
Cost (audit development)	-32,359	<b>-30,570</b>	-28,926
Benefit (audit activities IPART)	196,124	<b>175,569</b>	157,893
<b>Net present value</b>	-32,359	<b>-30,570</b>	-28,926

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 4.7 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
<b>Net (cost)/benefit</b>	<b>-38,500</b>	<b>-3,500</b>	<b>-3,500</b>	<b>-3,500</b>	<b>-3,500</b>

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

**Table 4.8 NPV analysis of cash flows of Option C (2015-16 dollars)**

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (audit activities NSW Health)	-235,433	<b>-210,758</b>	-189,539
Cost (audit development)	-32,359	<b>-30,570</b>	-28,926
Cost (additional reporting)	-14,982	<b>-13,412</b>	-12,062
Benefit (audit activities IPART)	235,433	<b>210,758</b>	189,539
<b>Net present value</b>	-47,342	<b>-43,982</b>	-40,987

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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, we recommend that no change be made.

## 4.5 NSW Health's role in water quality management

### 4.5.1 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.

Recommendation

**8** 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)<sup>35</sup>.

### 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.<sup>36</sup>

**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.<sup>37</sup>

### Net Present Value analysis

**Table 4.9 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
<b>Net (cost)/benefit</b>	-	-	-	-	-

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

<sup>35</sup> 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".

<sup>36</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheets 2.b and 2.c.

<sup>37</sup> 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.

**Table 4.10 NPV analysis of cash flows of Option C (2015-16 dollars)**

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (NSW Health)	21,403	<b>19,160</b>	17,231
Benefit (Hunter Water)	21,403	<b>19,160</b>	17,231
<b>Net present value</b>	-	-	-

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 no net benefit for 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).

Based on our analysis we recommend that no change be made to the licence.

#### 4.5.2 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.

#### Recommendation

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

### 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.<sup>38</sup>

**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 vis 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 will be borne by NSW Health (see Tables 4.11 and 4.12).

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<sup>38</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 3.b.

### Net Present Value analysis

**Table 4.11 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
<b>Net (cost)/benefit</b>	-	-	-	-	-

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

**Table 4.12 NPV analysis of cash flows of Option C (2015-16 dollars)**

<b>Sensitivity range</b>	<b>Low</b>	<b>Mid</b>	<b>High</b>
<b>Discount rate</b>	<b>4%</b>	<b>7%</b>	<b>10%</b>
Cost (NSW Health)	21,403	<b>19,160</b>	17,231
Benefit (Hunter Water)	21,403	<b>19,160</b>	17,231
<b>Net present value</b>	-	-	-

**Note:** Discount rates are recommended by NSW Treasury, *tpg 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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).

Based on our analysis we recommend that no change be made to the licence.

#### 4.5.3 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'.

#### Recommendation

**10 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.<sup>39</sup>

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.

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<sup>39</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2A.b. and 2A.c.

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.<sup>40</sup>

**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.

For these reasons, and on balance, we conclude that although Option C is preferable to Option B, we recommend that no change is made to the licence.

#### 4.5.4 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'.

### Recommendation

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

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<sup>40</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2A.b. and 2A.c.

## 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.<sup>41</sup>

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.

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<sup>41</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 3A.b. and 3A.c.

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.<sup>42</sup>

**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.

For these reasons, and on balance, we conclude that although Option C is preferable to Option B, we recommend that no change be made to the operating licence.

### 4.5.5 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 its 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'.

### Recommendation

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

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<sup>42</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 3A.b. and 3A.c.

## 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.<sup>43</sup>

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.<sup>44</sup>

<sup>43</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2B.b. and 2B.c.

<sup>44</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 2B.b. and 2B.c.

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, and on balance, we conclude that although Option C is preferable to Option B, we recommend that no change be made to the operating licence.



## 5 Organisational systems management

### 5.1 ISO 55001 asset management system and certification

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.<sup>45</sup>

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.

#### Recommendation

- 13 Amend licence to require an Asset Management System to be consistent with International Organization for Standardization's ISO 55001 in the licence by 31 December 2017 and certified by 1 July 2018.

#### 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 1 July 2017.

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<sup>45</sup> 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.

**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.

### 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.<sup>46</sup>

**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.<sup>47</sup>

### 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.<sup>48</sup> 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

<sup>46</sup> Hunter Water reply to IPART request for information, 18 October 2016.

<sup>47</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c.

<sup>48</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.b.

▼ audit cost savings.<sup>49</sup>

**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).<sup>50</sup>

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 5.1 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
<b>Net (cost)/benefit</b>	<b>-15,000</b>	<b>-5,000</b>	<b>-5,000</b>	<b>-5,000</b>	<b>5,000</b>

**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.

<sup>49</sup> IPART, *Cost Benefit Analysis of proposed changes to Sydney Water Corporation's Operating Licence*, May 2015, pp 23-24.

<sup>50</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 8.c.

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

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (initial certification)	-13,868	<b>-13,102</b>	-12,397
Cost (annual and recurring certification)	-24,999	<b>-21,922</b>	-19,308
Benefit (reduced audit cost)	16,122	<b>13,793</b>	11,854
<b>Net present value</b>	<b>-22,745</b>	<b>-21,231</b>	-19,851

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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

Our analysis concludes that for Option B, on balance, there is a benefit to the community from the assurance that Hunter Water's AMS is consistent with the quality standards of ISO 5001.

For Option C our analysis forecasts a net cost relating to certification of the AMS to ISO 55001 however after the licence period there would be an ongoing net benefit of around \$5,000 per year. Given this, and the qualitative benefits arising from certification, we recommend that Option C be adopted.

## 5.2 State of the Assets Report

The Reporting Manual requires Hunter Water to provide a biennial State of the Assets Report. We considered the costs and benefits relating to this report.

### Recommendation

- 14 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.

Hunter Water notes that reporting cost depends on the level of detail specified in the Reporting Manual and may vary upwards to \$40,000 per report.

## 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.<sup>51</sup>

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 5.3 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	
<b>Net (cost)/benefit</b>		<b>-</b>		<b>26,000</b>	

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

<sup>51</sup> IPART, *Cost Benefit Analysis of proposed changes to Hunter Water Corporation's Operating Licence*, April 2012, pp 23-24.

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

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (Labour – report once per licence period)	-23,114	<b>-21,224</b>	-19,534
Benefit (Labour savings – biennial report)	44,484	<b>39,761</b>	35,678
<b>Net present value</b>	21,370	<b>18,538</b>	16,144

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 5.5 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	
<b>Net (cost)/benefit</b>		<b>26,000</b>		<b>26,000</b>	

**Source:** Hunter Water reply to IPART request for information, 7 September 2016, worksheet 9.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	4%	7%	10%
Cost			
Benefit (Labour – biennial report)	44,484	<b>39,761</b>	35,678
<b>Net present value</b>	44,484	<b>39,761</b>	35,678

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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. For this reason we recommend that Option C be adopted.

### 5.3 Certification of the EMS and QMS

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 ISO 14001:2004: *Environmental Management Systems – Requirements with guidance for use*, and
- ▼ Quality Management System (QMS) certified to ISO9001:2008: *Quality management systems – Requirements*.<sup>52</sup>

#### Recommendation

- 15 Maintain licence requirement for an Environmental Management System and a Quality Management System, and add requirement for certification to the most recent standards (ie, ISO14001:2015 and ISO9001:2016) during the term of the Hunter Water's operating licence.

#### 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:** Change the EMS from ISO14001:2004 to ISO14001:2015 and the QMS from ISO9001:2008 to ISO9001:2016.

#### 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.<sup>53</sup>

<sup>52</sup> Hunter Water Operating Licence 2012-2017, cl 6.2 and cl. 7.2.

<sup>53</sup> Hunter Water reply to IPART request for information, 18 October 2016.

### 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.<sup>54</sup>

These advantages are enhanced by ISO certification required by this licence.

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.

### 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 5.7 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
<b>Net (cost)/benefit</b>		<b>30,000</b>	<b>10,000</b>	<b>10,000</b>	<b>10,000</b>

**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.

<sup>54</sup> IPART, *Cost Benefit Analysis of proposed changes to Sydney Water Corporation's Operating Licence*, May 2015, pp 7 and 9.



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

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost			
Benefit (allowing EMS certification to lapse)	25,670	<b>26,697</b>	13,342
Benefit (allowing QMS certification to lapse)	25,670	<b>26,697</b>	13,342
<b>Net present value</b>	51,340	<b>45,911</b>	41,224

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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:

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

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

**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 5.10 NPV analysis of cash flows of Option C (2015-16 dollars)**

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (EMS upgrade)	-311,149	<b>-285,704</b>	-262,960
Cost (QMS upgrade)	-369,822	<b>-349,375</b>	-330,579
<b>Net present value</b>	-680,971	<b>-635,080</b>	-593,539

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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

Although there are quantitative savings and costs relating to both Options B and C, we consider that these are outweighed by the significant qualitative benefits of Option B, which are further enhanced in Option C. Therefore we recommend that Option C be adopted.

## 6 Performance monitoring and reporting

### 6.1 National Water Initiative performance indicators

IPART is required to collect the 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.

Currently there is no requirement in Hunter Water's operating licence or the Reporting Manual for Hunter Water to report to IPART against the National Water Initiative (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.

Recommendation

**16** 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 costs and benefits as the base case.

#### 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 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

We considered the costs and benefit of Option B and, on balance, we recommend that Option B be adopted.

## 6.2 IPART performance indicators

Some water utilities regulated by IPART have raised concerns around consistency in the performance indicators being reported, as required by clause 8.2.1 of Hunter Water's current operating Licence.

We considered whether to perform a review of these indicators.

### Recommendation

- 17 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.

### 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.<sup>55</sup>

**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.<sup>56</sup>

**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.<sup>57</sup>

### Assessment

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

<sup>55</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 20.b.

<sup>56</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 20.c.

<sup>57</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 20.b and 20.c.

potential gains attached to both options, on balance, we recommend Option C is adopted.

## 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.

IPART's view is that rebates should be provided for events that cause inconvenience to customers, be set at a level proportionate with the extent of inconvenience.<sup>58</sup> We have considered changes that may better align rebate payments to customer inconvenience for each category of rebate.

Incremental costs or benefits would only arise from changes in behaviour resulting from changes to the rebate regime. 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).<sup>59</sup>

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.

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<sup>58</sup> 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.

<sup>59</sup> Hunter Water reply to IPART request for information, 14 September 2016, worksheet 33(new).b.

### 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.<sup>60</sup>

#### Recommendation

- 18 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 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.

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 than the inconvenience caused. For

<sup>60</sup> Hunter Water, *Hunter Water Customer Contract*, July 2011, Section 7.2 – Rebates.

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					
<b>Net (cost)/benefit</b>	<b>-20,000</b>				

**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
<b>Discount rate</b>	<b>4%</b>	<b>7%</b>	<b>10%</b>
Cost	-18,491	<b>-17,469</b>	-16,529
Benefit			
<b>Net present value</b>	<b>-18,491</b>	<b>-17,469</b>	<b>-16,529</b>

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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.

### Assessment

On balance, we consider the benefit from better aligning rebates with times customers are 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. Therefore we recommend that Option B be adopted.

#### 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.<sup>61</sup>

#### Recommendation

**19 No change be made to Hunter Water's operating licence regarding rebates for unplanned interruptions.**

#### 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.

#### 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 as compensation for customer inconvenience.<sup>62</sup>

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.

<sup>61</sup> Hunter Water, *Hunter Water Customer Contract*, July 2011, Section 7.2 – Rebates.

<sup>62</sup> "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.

In some cases, particularly for business customers, the value of a rebate for service interruption may be substantially less than 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.

### 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 (Customers - additional rebates)	-22,081	-51,833	-83,101	-83,101	-83,101
Benefit (Hunter Water - rebates avoided)	22,081	51,833	83,101	83,101	83,101
<b>Net (cost)/benefit</b>	<b>-20,000</b>				

**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	4%	7%	10%
Cost (IT system)	-18,491	<b>-17,469</b>	-16,529
Cost (Customers - additional rebates)	-271,509	<b>-239,619</b>	-212,459
Benefit (Hunter Water - rebates avoided)	271,509	<b>239,619</b>	212,459
<b>Net present value</b>	-18,491	<b>-17,469</b>	-16,529

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 (Customers - additional rebates)	-191,443	-295,576	-405,014	-405,014	-405,014
Benefit (Hunter Water - rebates avoided)	191,443	295,576	405,014	405,014	405,014
<b>Net (cost)/benefit</b>	<b>-20,000</b>				

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

**Table 7.6 NPV analysis of cash flows of Option C (2015-16 dollars)**

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (IT system)	-18,491	<b>-17,469</b>	-16,529
Cost (Customers - additional rebates)	-1,438,954	<b>-1,276,122</b>	-1,137,020
Benefit (Hunter Water - rebates avoided)	1,438,954	<b>1,276,122</b>	1,137,020
<b>Net present value</b>	-18,491	<b>-17,469</b>	-16,529

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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

On balance, the costs of Option B and Option C outweigh the benefits, and therefore we recommend that no change be made.

### 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.<sup>63</sup>

#### Recommendation

**20 Make no change to licence regarding rebates for wastewater overflows.**

#### 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.

#### Assumptions

Wastewater overflows are paid to customers of residential properties only.

#### Qualitative and Quantitative Costs and Benefits

**Option B and C:** Wastewater overflows on private property appear to be the most inconveniencing and emotive service-related event.<sup>64</sup> Under Option B customers would, on average, receive greater rebates, which may better reflect the inconvenience experienced.

Option B may result in greater cost relating to preventing wastewater overflows. We considered this possible cost increase as significant because preventative work would involve extensive alterations to existing sewerage infrastructure. We were not however able to quantify the impact with accuracy.

#### Option C:

Hunter Water submitted that, because information technology changes required by this option could be completed by Hunter Water at minimal cost, there were no quantitative costs or benefits relating to this option.

<sup>63</sup> Hunter Water, *Hunter Water Customer Contract*, July 2011, Section 7.2 – Rebates.

<sup>64</sup> Hunter Water, *Customer Contract Review - Submission to the Independent Pricing and Regulatory Tribunal*, August 2010, p 7.

## 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	-20,000				
Benefit					
<b>Net (cost)/benefit</b>	<b>-20,000</b>				

**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	4%	7%	10%
Cost	-18,491	<b>-17,469</b>	-16,529
Benefit			
<b>Net present value</b>	<b>-18,491</b>	<b>-17,469</b>	<b>-16,529</b>

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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.

## Assessment

On balance we consider that:

- ▼ For Option B customers would, on average, receive greater rebates, which may better reflect the inconvenience experienced by customers. However this inconvenience is outweighed by the potential cost of infrastructure works to prevent wastewater overflows.
- ▼ Option C would have no greater impact as Hunter Water's historical performance in controlling wastewater overflows far exceeds the minimum standards required by the licence.

Therefore we recommend that no change be made.

### 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.<sup>65</sup>

#### Recommendation

21 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 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.<sup>66</sup> We also note that the three-year average number of customers experiencing six or more low pressure events in a year is zero.<sup>67</sup>

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

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<sup>65</sup> Hunter Water, *Hunter Water Customer Contract*, July 2011, Section 7.2 – Rebates.

<sup>66</sup> Phone call with Hunter Water, 3 November 2016.

<sup>67</sup> Three years from 2012-13. Hunter Water reply to IPART request for information, 14 September 2016, worksheet 36(new).b.

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.<sup>68</sup>

### Net Present Value analysis

#### Option B:

The cost in Table 7.9 arises from information technology investment required for changes to the customer billing system.

**Table 7.9 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					
<b>Net (cost)/benefit</b>	<b>-60,000</b>				

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

<sup>68</sup> Hunter Water reply to IPART request for information, 14 September 2016, worksheet 36(new).c.

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

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost	-55,473	<b>-52,406</b>	-49,587
Benefit			
<b>Net present value</b>	-55,473	<b>-52,406</b>	-49,587

**Note:** Discount rates are recommended by NSW Treasury, *tpg 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 consider 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 will result in better alignment of rebates with customer inconvenience caused by low water pressure. Therefore we recommend that Option B be adopted.

## 7.2 Non-standard customer contracts

Customers situated between Chichester Dam and Dungog Water Treatment Plant 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 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.

### Recommendation

**22 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 4.2 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
- ▼ having a template for a non-standard customer contract would bring additional licence related auditing costs.

It reply to IPART's request for information Hunter Water considered Option B above to be substantially similar to Option B in section 4.2 Unfiltered water, with the 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).

The reply further stated that Hunter Water 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 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.<sup>69</sup>

### 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.

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<sup>69</sup> Hunter Water reply to IPART request for information, 14 September 2016, worksheet 12.b.

## Net Present Value analysis

**Table 7.11 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
<b>Net (cost)/benefit</b>	<b>-405,316</b>	<b>-363,316</b>	<b>-363,316</b>	<b>-363,316</b>	<b>-363,316</b>

**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.

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

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost (Hunter Water – lost revenue unfiltered)	-110,245	<b>-98,563</b>	-88,258
Cost (customers – water tank)	-38,831	<b>-36,684</b>	-34,711
Cost (customers - water cartage)	-1,235,638	<b>-1,106,134</b>	-994,771
Cost (customers - domestic pumping)	-84,139	<b>-75,321</b>	-67,738
Cost (customers – potable water)	-136,284	<b>-122,000</b>	-109,717
Cost (audit of contracts)	-235,433	<b>-210,758</b>	-189,539
Benefit (customers - unfiltered)	110,245	<b>98,563</b>	88,258
Benefit (Hunter Water – revenue potable)	136,284	<b>122,000</b>	109,717
<b>Net present value</b>	<b>-1,594,041</b>	<b>-1,428,897</b>	<b>-1,286,759</b>

**Note:** Discount rates are recommended by NSW Treasury, *tpg 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 4.2 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.

On balance, we recommend that no change is made to the licence regarding non-standard contracts.

### 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).<sup>70</sup>

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

#### Recommendation

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

#### 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:** Include a licence requirement for an MoU with FRNSW with specific requirements to include some terms of the agreement (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

**Option 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

<sup>70</sup> Meeting minutes IPART and Hunter Water, 29 August 2016.

- ▼ 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.<sup>71</sup>

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).<sup>72</sup>

### Qualitative and Quantitative Costs and Benefits

**Option 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. Requiring a complicated process for change may result in requirements that do not address needs and cannot be easily amended to meet mutually agreed MoU changes or changes in circumstances.

<sup>71</sup> IPART, *Review of prices for Hunter Water Corporation, from 1 July 2016 to 30 June 2020, Water – Final Report*, June 2016, p 59.

<sup>72</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.b and IPART calculations.

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.<sup>73</sup>

#### Net Present Value analysis

##### Option B:

**Table 7.13 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
<b>Net (cost)/benefit</b>	<b>-25,000</b>	<b>-20,000</b>	<b>-20,000</b>	<b>-20,000</b>	<b>-20,000</b>

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

<sup>73</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.b and IPART calculations.

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

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost to Hunter Water (meeting costs, one off cost of development of MoU )	-45,117	<b>-40,503</b>	-36,528
Cost FRNSW (meeting costs, one off cost of development of MoU )	-45,117	<b>-40,503</b>	-36,528
<b>Net present value</b>	-90,235	<b>-81,006</b>	-73,056

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 7.15 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
<b>Net (cost)/benefit</b>	<b>-25,000</b>	<b>-70,000</b>	<b>-20,000</b>	<b>-20,000</b>	<b>-20,000</b>

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

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

Sensitivity range	Low	Mid	High
Discount rate	4%	7%	10%
Cost to Hunter Water (meeting costs, one off cost of development of MoU )	-89,567	<b>-81,318</b>	-74,094
Cost FRNSW (meeting costs, one off cost of development of MoU )	-45,117	<b>-40,503</b>	-36,528
<b>Net present value</b>	-134,685	<b>-121,821</b>	-110,621

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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 7.17 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				
<b>Net (cost)/benefit</b>	<b>1,375,000</b>	<b>-70,000</b>	<b>-20,000</b>	<b>-20,000</b>	<b>-20,000</b>

**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 D (2015-16 dollars)**

<b>Sensitivity range</b>	<b>Low</b>	<b>Mid</b>	<b>High</b>
<b>Discount rate</b>	<b>4%</b>	<b>7%</b>	<b>10%</b>
Cost to Hunter Water (meeting costs, one off cost of development of MoU )	-89,567	<b>-81,318</b>	-74,094
Cost FRNSW (meeting costs, one off cost of development of MoU )	-45,117	<b>-40,503</b>	-36,528
Cost (additional infrastructure cost)	-36,982,249	<b>-34,937,549</b>	-33,057,851
Benefit (greater firefighting ability– cost avoided for on-site tanks)	38,276,627	<b>36,160,363</b>	34,214,876
<b>Net present value</b>	<b>1,159,694</b>	<b>1,100,993</b>	1046,403

**Note:** Discount rates are recommended by NSW Treasury, *tpp 07-5, NSW Government Guidelines for Economic Appraisal*, July 2007, p 52. 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.<sup>74</sup>

<sup>74</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 28.d.

## 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. 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 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.

Based on the above analysis we recommend that Option B be adopted.

### 7.4 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.<sup>75</sup>

#### Recommendation

- 24 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.

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<sup>75</sup> Hunter Water Operating Licence 2012-2017, Condition 9.1.



### 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.<sup>76</sup>

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

### Assessment

On balance, we consider that the benefits of keeping the requirement for an MoU outweigh the benefits of removing the requirement.

Therefore we recommend no change be made to the licence.

## 7.5 Roles and responsibilities protocol 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).<sup>77</sup>

Condition 3.3.1 of Hunter Water's operating licence 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).

<sup>76</sup> NSW Health submission to IPART's Issues Paper, 29 July 2016, p 4.

<sup>77</sup> *Hunter Water Operating Licence 2012-2017*, p 5.

## Recommendation

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

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 and implementation 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 3.1.1(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).

## Assumptions

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<sup>78</sup> stated that continuation of the Roles and Responsibilities Protocol with DPI Water is preferable and sensible.

This means that under Option C there is no avoided cost of developing and agreeing the protocol.<sup>79</sup>

## 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

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<sup>78</sup> Hunter Water submission to IPART Issues Paper, 15 July 2016, p 24.

<sup>79</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 7.c.

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.<sup>80</sup>

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 Roles and Responsibilities Protocol with the Metropolitan Water Directorate for the development *and implementation* 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 3.1.1(a).

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

**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 protocol because the relationship between DPI Water and Hunter Water would be documented (and possibly formalised) in any case.

<sup>80</sup> Hunter Water reply to IPART request for information, 7 September 2016, worksheet 7.b and 7.c.

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.

We therefore recommend that Option B be adopted.

## 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.