

**Review of System Performance Standards  
in Sydney Water Corporation's  
Operating Licence**

**Report to Minister for Energy  
11 April 2001**

**INDEPENDENT PRICING AND REGULATORY TRIBUNAL  
OF NEW SOUTH WALES**

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# 1 INTRODUCTION

The Minister for Energy has requested that the Tribunal conduct a review of the system performance standards in Sydney Water's Operating Licence by 11 April 2001. The Minister has also requested that the Tribunal conduct the review of the Customer Contract by 25 October 2001.

This report only considers the review of system performance standards and indicators. A separate report on the Customer Contract will be sent to the Minister later in the year.

Attachment 1 provides the Terms of Reference for both of these reviews, and Attachment 2 explains how the Tribunal has addressed them for the review of system performance standards.

The Tribunal has recommended that no new system performance standards be introduced at this time but that the existing standards should be tightened. In addition to the existing standards for water pressure, water continuity and sewage overflows, the Tribunal considers that there should be standards for water reliability, repeat interruptions to water supply and repeat occurrences of sewage overflows. Data should be collected to enable appropriate new standards to be introduced at the end of term review in 2004.

The Tribunal recommends the adoption of system performance indicators to provide additional information on the adequacy of system performance. Only failure to satisfy standards constitutes a breach of the licence. However, the reporting of the recommended performance indicators will supplement the specific standards in assessing overall performance. An example is the time taken to respond to sewage overflow incidents.

While the Tribunal believes that customer service performance should be part of the Operating Licence, it was not considered appropriate to incorporate it as a system performance standard. This is because system is defined in the licence in terms of water, sewerage and stormwater structures.

The Tribunal proposes to liaise with Sydney Water to develop a Monitoring and Reporting Protocol to ensure that there is an appropriate quality assurance process for collection, analysis and reporting of performance.

A summary of the recommendations for the existing system performance standards, proposed future standards, indicators of system performance, and customer service indicators is provided in section 1.2 below. Attachment 5 provides suggested standards, indicators and associated definitions. The wording in Attachment 5 will need to be subject to detailed legal review prior to release by the Minister.

This report explains the Tribunal's recommendations and has the following format:

- the review process
- summary of recommendations and the way forward
- role of system performance standards
- water system performance standards
- sewerage system performance standards

- stormwater system performance
- customer service performance.

## **1.1 Review process**

The review of the system performance standards has been conducted in accordance with Section 9(1)(b) of the *Independent Pricing and Regulatory Tribunal Act 1992*.

In undertaking this review, the Tribunal released an Issues Paper in December 2000 that sought submissions from Sydney Water and the public. Submissions were received from 28 organisations and individuals and were placed on the IPART website (Attachment 3 provides a list of submissions). Sydney Water subsequently provided a supplementary submission to the review and a report on its recent customer research.<sup>1</sup>

To assist in the review, the Tribunal engaged a consultant Halcrow Management Sciences Ltd (Halcrow) to advise and report on appropriate system performance standards for inclusion in Sydney Water's Operating Licence. As part of this consultancy, Halcrow reviewed the system performance standards used for water utilities in Australia and overseas and any alternatives to standards.

The Tribunal conducted a workshop on 23 February 2001 to obtain the views of stakeholders on a range of issues. At this workshop, Halcrow presented the key findings from the consultancy and provided a number of options for participants to consider. In running the workshop, the Tribunal invited stakeholders to participate in a discussion of Halcrow's proposals (Attachment 4 lists the workshop participants).

The Tribunal has made its recommendations on system performance standards, taking into account all the information and analysis obtained through the process outlined above.

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<sup>1</sup> Sydney Water Corporation, *System performance standards: Customers' understanding, satisfaction and expectations*, Research Report, February 2001.

## 1.2 Summary of recommendations

### 1.2.1 Recommended system performance standards

The Tribunal recommends that a number of changes should be made to the existing system performance standards for water pressure, water reliability and sewage overflows. Clause 7.3.3 of the Operating Licence prescribes a process for implementing these amendments.<sup>2</sup> The recommended standards should be effective from 1 July 2001, the beginning of the next audit period.

#### ***Water pressure standard***

- Minimum pressure standard should be maintained at 15 metres head
- Designated low pressure areas should be included in the standard
- No more than 15,000 properties a year should receive less than the minimum pressure

#### ***Water continuity standard***

- Separate standards should be implemented for planned and unplanned interruptions
- The reporting threshold should be changed from 6 hours to 5 hours
- No more than 32,000 properties a year should experience planned interruptions and no more than 35,000 properties a year should experience unplanned interruptions

#### ***Sewage overflow standard***

- The number of private properties experiencing sewage overflows should not exceed 25,000 a year

### 1.2.2 Future system performance standards

The Tribunal believes that standards need to be developed for repeat shut-offs of water supply, water reliability, and for dry weather overflows (public land and repeat events). As data are not currently available, the Tribunal recommends that the adoption of these standards be considered at the end of term review of the Operating Licence in January 2004. The Tribunal also recommends that Sydney Water be required to collect data on these events commencing on 1 July 2001.

#### ***Water repeat shut-offs***

- A standard for repeat shut-offs should be introduced when sufficient data are available to set a compliance target

#### ***Water reliability***

- A standard for reliability should be introduced when sufficient data are available to set a compliance target

#### ***Sewage overflow***

- Standards relating to the number of sewage overflows on both public and private land and repeat events, should be developed once sufficient data are available

<sup>2</sup> Clause 7.3.3 of the Operating Licence states "Following receipt of the report the Minister, or a person appointed by the Minister, may publish a notice which lists the amendments to the performance standard that must be adopted by Sydney Water."

### 1.2.3 Indicators of system performance

The Tribunal recommends that a number of indicators should be provided to the Tribunal and be subject to audit as part of the Operating Licence audit. There are two types of indicators: indicators to support the standards, and indicators to facilitate collection of data so that standards can be developed in the future. Sydney Water should be required to collect the data required to calculate indicators from 1 July 2001.

#### ***Water pressure indicator***

- Number of properties experiencing more than one low pressure event in a year
- Number of properties experiencing low pressure events resulting from operational problems in a year

#### ***Water continuity indicators***

- Number of properties experiencing shut-offs classified by duration of shut-off in a year
- Number of shut-off events classified by type of shut-off
- Number of properties experiencing shut-offs within i) 6 months, and ii) 12 months following a shut-off at the same property

#### ***Water reliability indicators***

- Average annual distribution losses from Sydney Water's system in a year expressed in litres per kilometre of main per day

#### ***Sewage overflow indicators***

- Number of sewage overflows to public and private land in a year
- Number of properties experiencing overflows i) within 3 months, ii) between 3 and 6 months, iii) between 6 months and 1 year and iv) between 1 year and 2 years following an overflow at the same property
- Length of time taken to respond to priority 5 and 6 sewage incidents classified by i) less than or greater than 3 hours for priority 5 incidents and ii) less than or greater than 1 hour for priority 6 incidents

#### ***Sewerage system indicators***

- Report on status of pollution reduction programs for the sewerage system
- Number of breaches of licence conditions for the sewerage transport and treatment system in a year

#### ***Stormwater system indicators***

- Report on status of stormwater improvement actions
- Number of properties in a year with above floor flooding due to constraints in the stormwater system
- Volume of trash removed from trash racks in a year

### 1.2.4 Indicators of customer service

The Tribunal believes that performance measures relating to Sydney Water's dealings with its customers should be included in the Operating Licence. However, the Tribunal has concluded that it is not appropriate to include customer service as a system performance standard. This is because the licence defines systems in terms of water, sewerage and stormwater infrastructure.

Therefore, the Tribunal is recommending a staged approach to incorporate customer performance measures into the Operating Licence. The first stage is for the Tribunal to negotiate with Sydney Water measures of customer service and satisfaction to be used for audit purposes, as requested by the Minister.<sup>3</sup> The second stage is to review these measures with the view of incorporating them into Part 5 of the Operating Licence (Customer and Consumer rights) at the end of term review.

The Tribunal believes that Sydney Water should collect data on customer performance from 1 July 2001 and the data should be audited as part of the operational audit. Sydney Water is already required by the Operating Licence to report the number of complaints classified by type and suburb.

#### ***Customer service indicators***

- Time taken to provide a substantive response to customer complaints whether written, telephone or face-to-face
- Time taken to answer telephone calls made to primary contact numbers (service difficulties and emergency line, account and general enquiry line)
- Percentage of properties receiving a bill based on a reading (as opposed to estimating the meter reading)
- Time taken to provide a substantive response to account contacts by customers (eg queries about overcharging)
- Total number of disconnections, flow restrictions and debt recovery actions

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<sup>3</sup> Following the 1999 Operational Audit for Sydney Water Corporation the Minister for Energy issued a ministerial requirement that Sydney Water negotiate with IPART a suite of customer service measures for audit purposes. Correspondence from Minister for Energy to Sydney Water Corporation, 28 July 2000, p 4.

### **1.3 Costs and benefits of recommendations**

The Tribunal has recommended compliance targets for the system performance standards that are in line with Sydney Water's current performance. As a result, additional operating or capital expenditure should not be required to meet the proposed standards. The Tribunal considers it is not appropriate to set higher compliance targets until Sydney Water's ability to finance the associated costs is considered in a pricing determination.

There may be some monitoring and reporting costs associated with the additional indicators. The Tribunal considers that the costs of providing this information should not be significant for Sydney Water. In a number of cases Sydney Water is already collecting the data and the only additional cost would be reporting the data. Provision of this data will enable the Tribunal to better monitor and report on system performance. This, in turn, will help to ensure that adequate service quality is provided and that Sydney water is held accountable for performance.

## 2 SYSTEM PERFORMANCE STANDARDS

### 2.1 The statutory basis for performance standards

The *Sydney Water Act 1994* requires Sydney Water to have an Operating Licence, the terms of which must include quality and performance standards. Section 14(12)(c) of the Sydney Water Act specifies that the operating licence should require Sydney Water:

... to ensure that the systems and services meet the quality and performance standards specified in the operating licence in relation to water quality, service interruptions, pricing and other matters determined by the Governor and set out in the operating licence.<sup>4</sup>

Sydney Water's Operating Licence sets out performance standards in three major areas—system performance, drinking water quality, and demand management. This review considers only the system performance standards in the Operating Licence. In this regard, the Operating Licence requires that

Sydney Water must ensure that its Systems comply with the standards for continuity, water pressure and sewage overflows in Schedule 4 or such other standards determined by the Minister under clause 7.3.<sup>5</sup>

The existing system performance standards relate to the water and sewerage systems, namely water continuity, water pressure and sewage overflows.<sup>6</sup> The operating licence also includes stormwater as a system. If suitable standards can be defined, it is reasonable to expect that stormwater services should be included in system performance standards.

### 2.2 Why measure system performance?

The Tribunal considers that measuring system performance will assist in:

- ensuring that customers receive adequate water, sewerage and drainage services
- providing a surrogate for competition
- demonstrating how well the agency delivers its service.

A service provider should provide a system that is robust and meets the needs of its customers. In a competitive market, there are strong incentives to provide a quality service that satisfies customer needs and preferences, as customers are able to choose an alternate supplier of that service. In a monopoly business, such as Sydney Water, these incentives are not as strong. This creates a risk that other factors may drive business decisions, leading to a breakdown in system performance. Regulatory mechanisms are then needed to alleviate this risk. Measuring system performance is one regulatory tool that can be used to:

- ensure service quality and accountability
- provide a basis for monitoring and reporting on ongoing performance of an agency.

<sup>4</sup> *Sydney Water Act 1994*, Section 14(1)(c).

<sup>5</sup> Sydney Water Operating Licence, clause 7.1.

<sup>6</sup> Sydney Water Operating Licence, Section 7 and Schedule 4.

## 2.3 Standards and indicators

Measures of system performance can either require the agency to achieve a particular target (performance standard) or report the level of service provided (performance indicator). In a regulatory context, the distinction between standards and indicators is important.

Not achieving a performance standard implies failure. For example, if Sydney Water does not meet a particular performance standard it might be regarded as not complying with its Operating Licence. As a result the Minister might impose a penalty on Sydney Water.

There is no requirement to meet a particular target for a performance indicator. However, performance indicators can be used to compare performance against earlier time periods or against similar businesses.<sup>7</sup> Where comparisons are made with other water businesses it is important that the definitions used are the same for each business.

Performance standards and indicators can be used to complement each other. While standards provide targets that must be achieved, in many cases supporting information is required. Performance indicators can:

- provide additional important information not contained within the system performance standard
- provide information about the system in the absence of an appropriate system performance standard.

A particular numerical value must be chosen to determine whether a standard has been met or not. This requires a good deal of historical data to enable a realistic value to be chosen for the standard. In the absence of such data it may be better to develop an indicator, at least in the short to medium term.

## 2.4 Framework

The Tribunal considers that the system performance standards by themselves do not provide sufficient information about Sydney Water's water, sewerage and stormwater systems. To supplement these standards, the Tribunal recommends the introduction of a range of performance indicators.

The terms of reference require that the Tribunal consider whether:

Alternative measures of systems performance are more appropriate.  
Alternative or supplementary means exist to ensure that Sydney Water delivers acceptable system performance for its customers.<sup>8</sup>

System performance standards are a regulatory mechanism for ensuring that appropriate levels of service are provided. However, they provide only a small number of targets to be achieved and do not provide a total picture of the agency's performance. Other regulatory mechanisms include licence conditions, customer contracts and the publication of comparative and trend data. Each of these can provide incentives for improved

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<sup>7</sup> In Victoria, the Office of the Regulator General regulates the water businesses by comparing their performance against a range of indicators.

<sup>8</sup> Terms of reference 3, third and fourth dot points.

performance and the maintenance of minimum levels of service quality in the water industry.

The purpose of introducing performance indicators is not to provide Sydney Water with a range of pass or fail standards to achieve. Rather, it is to indicate any long term improvement or reduction in the level of service. As well as providing supporting information for the system performance standards, indicators can provide an understanding of the operation of the business. Indicators can also provide an incentive to improve performance. The information collected for indicators can in some cases be used as a basis for future development of appropriate and meaningful system performance standards.

The Tribunal notes that the operating licence<sup>9</sup> already requires Sydney Water to collect, and report on, a number of matters. There may be some overlap of this information and the indicators referred to in this report. However, the Tribunal considers that Sydney Water should provide detailed system performance information in a consolidated and concise format.

## 2.5 Criteria for system performance standards

The Tribunal considers that each individual system performance standard should:

- be relevant to a core function of the business
- measure a system output in objective terms with reasonable accuracy but without undue cost
- be concise, unambiguous and understandable to all stakeholders.<sup>10</sup>

A performance measure can only be realistic if it encourages the agency to take action that improves performance. It is important that the agency should not fail standards due entirely to circumstances beyond its control. However, as part of its planning an agency may choose to provide safeguards to minimise the risks from external factors, for example by the agency constructing a system that duplicates an existing system.

In the issues paper, the Tribunal suggested it might be appropriate to develop a protocol between Sydney Water and the Tribunal to ensure that the methodology used to collect and record data is robust.<sup>11</sup> Sydney Water has indicated its support for such an approach.<sup>12</sup> The Tribunal proposes to liaise with Sydney Water to develop a Monitoring and Reporting Protocol. This will ensure that there is an appropriate quality assurance process for the collection, analysis and reporting of performance. This protocol will define the accuracy required to be met in collecting and reporting indicators and standards.

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<sup>9</sup> Sydney Water Operating Licence, clause 7.4 and 7.5.

<sup>10</sup> Halcrow Management Sciences Ltd, *Review of System Performance Standards in Sydney Water Corporation's Operating Licence*, March 2001, p 11.

<sup>11</sup> IPART, *System Performance Standards of Sydney Water Corporation*, Issues Paper, p 10.

<sup>12</sup> Correspondence from Sydney Water dated 21 March 2001.

## 2.6 Definitions

In this report, the following definitions are used:

- a *system performance standard* is a defined output from a system, measured and recorded on an appropriate scale
- a *reporting threshold* means a point on the scale that has been chosen to measure achievement or otherwise of the standard
- a *compliance target* relates to measured performance against this reporting threshold.

This distinction is best illustrated with an example in terms of water continuity. The existing system performance standard for water continuity is “95 per cent of all properties connected to the water supply system will not have the connection affected by an interruption exceeding 6 hours.” Here the reporting threshold is 6 hours of interruption. The compliance target is 95 per cent of properties.

## 2.7 Compliance targets

The Tribunal recommends two changes in setting compliance targets:

1. compliance targets should refer to the actual number of properties that do not achieve the reporting threshold rather than a percentage of properties
2. compliance targets should focus on those properties for which Sydney Water fails to meet the reporting threshold and not those for which it does meet the reporting threshold.

Current standards report the percentage of properties for which Sydney Water meets the reporting threshold. Sydney Water customer research found that reporting the number of properties that don't receive the service at the required standard is easier for customers to understand. Reporting against a number rather than a percentage also means that over time the standards become tighter as the total number of properties increases. This provides Sydney Water with an incentive to improve performance over time.

The Tribunal recommends that compliance targets should be set as numbers of properties for which Sydney Water does not achieve the minimum reporting threshold rather than the percentage of properties for which it does.

## 3 WATER

The Tribunal considers that to ensure the robustness and integrity of the water system, standards are needed for water pressure, continuity of supply, and reliability of supply.

There are currently performance standards in the Operating Licence for water pressure and continuity of water supply. The Tribunal has made a number of recommendations to improve these standards and also some indicators to support these standards.

Further, the Tribunal believes that a standard needs to be developed for the reliability of water supply. As data are not currently available to set a standard, the Tribunal has recommended that data be collected, and that the adoption of the reliability standard be considered at the end of term review of Sydney Water's Operating Licence.

### 3.1 Water pressure

In conducting its review, the Tribunal considered that the objective of a water pressure performance standard is to ensure that a continuously adequate supply of water in terms of flow and pressure is available for all customers.

#### 3.1.1 Recommendations

The Tribunal recommends that for water pressure:

- the minimum pressure standard be maintained at 15 metres head
- designated low pressure areas should be included in the standard
- no more than 15,000 properties a year should receive less than the minimum pressure standard
- the threshold for reporting low pressure resulting from operational problems be reduced from 7 days to 4 days
- Indicators be introduced for the number of properties:
  - (i) experiencing more than one low pressure event in a year
  - (ii) experiencing low pressure events resulting from operational problems in a year.

Attachment 5 provides the pressure standard, indicators and definitions.

#### 3.1.2 Current standard and its limitations

At present Sydney Water must ensure that, on an annual basis, 98 per cent of all properties connected to its water supply system will have water pressure at the main tap<sup>13</sup> in excess of 15 metres head, except in designated low-pressure areas.

The current pressure standard has limitations including:

- a number of geographic areas that experience persistent low pressure are excluded
- low pressure incidents resulting from operational problems and lasting less than 7 days are not included

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<sup>13</sup> The main tap is the point where the customer connects into Sydney Water's main.

- the standard does not differentiate between chronic low pressure resulting from system inadequacies and acute drops caused by system failures
- water pressure data can not be accurately audited unless a gauge is installed for a particular reason.

Over the last five years, the audit results show that Sydney Water has achieved compliance with the pressure standard for at least 99.6 per cent of properties (Table 3.1).

**Table 3.1 Audit results of water pressure performance standard 1995 to 1999**

<b>Licence requirement</b>	<b>1995<sup>2</sup></b>	<b>1996<sup>3</sup></b>	<b>1997<sup>4</sup></b>	<b>1998<sup>5</sup></b>	<b>1999<sup>6</sup></b>
98% customers >15m head at main tap –excluding low pressure areas	99.6%	99.68%	99.62%	99.67%	99.78%
Customers affected <sup>1</sup>					
At least once	5,400	4,837	5,974	5,168	3,553
Repeat occurrences	2,700	na	na	na	na

1. Excludes operational and private supply problems, and customers in designated low pressure areas.
2. Report to the Minister, *1995 Operational Audit of Sydney Water Corporation*, May 1996, pp 30-41.
3. *1996 Operational Audit of the Sydney Water Corporation*, May 1997, pp 3-20 to 3-29.
4. *1997 Operational Audit of the Sydney Water Corporation*, July 1998, pp 25 and 35-36.
5. *1998 Operational Audit of the Sydney Water Corporation*, July 1999, pp 29-30 and 49-50.
6. *1999 Operational Audit of the Sydney Water Corporation*, July 2000, pp 31 and 51-52.

### **3.1.3 Other standards – Australia and overseas**

The pressure standards for water utilities in Australia and overseas vary significantly with regard to what is measured (pressure and/or flow), where pressure is measured, and the compliance targets.

The Water Corporation of Western Australia measures pressure at the outlet of the water meter to the property. Minimum pressure is specified for different geographic areas, and a minimum flow is specified for all customers. South Australia Water has a two tiered measure that includes a target pressure and flow and a minimum pressure and flow. The minimum pressure is 17 metres head and the minimum flow is 20 litres per minute. Hunter Water Corporation has a reporting threshold of 20 metres head measured at the service meter. There are no water pressure standards for the Melbourne water retailers.

In the United Kingdom, the Office of Water Services (OFWAT) uses an approach that shows the net movement in the number of properties affected by low pressure from year to year. The number of properties at the beginning of the year that have received (and are likely to receive) a pressure of less than 10 metres head at the boundary of the property are included in a register. During the year properties are added or removed from the register as better information emerges and as asset deterioration or renewals impact properties. Those properties still on the register at the end of the year are carried forward to the next year.

### **3.1.4 Issues considered**

The Tribunal considered the following issues: exclusion of designated low pressure areas, adequacy of 15 metres head of pressure, and capturing short term pressure fluctuations resulting from operational problems.

### *Exclusion of designated low pressure areas*

The current licence specifically excludes certain low-pressure areas from the pressure requirement. These areas generally have low pressure because they are on high ground adjacent to a reservoir or because the water main is inadequate at times of peak demand. Sydney Water has estimated that there are 2,818 properties in these low pressure areas. Sydney Water supports the inclusion of properties within the designated low pressure areas in determining whether it has achieved the standard.<sup>14</sup>

The Tribunal believes that the pressure standard should be applied universally to all properties and therefore the current exclusion for low pressure areas should be removed.

### *Adequacy of 15 metres head of pressure*

Sydney Water's customer research indicates that the current reporting threshold of 15 metres head of pressure may be set below the level of many customers' expectations. However, increasing the pressure would have significant impacts on the management and operation of the water supply system. Sydney Water estimates that to increase the pressure from 15 to 20 metres head would involve infrastructure investment of between \$400 million to \$1 billion. In addition, the service life of infrastructure would be reduced resulting in renewal costs of about \$10-20 million annually.<sup>15</sup>

The Tribunal has decided that it would be inappropriate to raise the pressure reporting threshold of 15 metres. Firstly, there are significant costs of increasing pressure and it is not clear that customers would be willing to pay for this. Secondly, increasing pressure would compromise Sydney Water's ability to meet the demand management targets in the operating licence and control water leaking from the system. This is because the rate of flow from a tap or a leaking pipe is proportional to the cube of the pressure, that is, increasing pressure from 15 to 20 metres head more than doubles the leakage from pipes.<sup>16</sup>

### *Short term pressure fluctuations*

Short term fluctuations in water pressure affect the quality of service that a customer receives. A short term pressure fluctuation could be due to system maintenance (such as cleaning a reservoir), an operational problem (eg water main breaks), or a deficiency in system capability (eg during high demand periods).

The existing standard and the recommended standard only apply to low pressure incidents resulting from deficiencies in system capability. Sydney Water has indicated that all properties affected by these incidents for a period exceeding 15 minutes are recorded.<sup>17</sup> Properties receiving pressure of less than 15 metres as a result of operational problems are treated differently.

Properties affected by operational problems that result in an interruption to water supply, would often be picked up by the continuity standards (supply interruptions). Any low pressure event resulting from an operational problem that last for more than 7 days is considered a system capability problem and is reported against the existing standard. The Tribunal recognises the distinction between system capability and operational problems.

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<sup>14</sup> Sydney Water Corporation, Supplementary submission, p 10.

<sup>15</sup> Sydney Water Corporation, Supplementary submission, pp 7-8.

<sup>16</sup> Sydney Water Corporation, Supplementary submission, p 7.

<sup>17</sup> Sydney Water Corporation, Correspondence to Tribunal of 21 March 2001, Attachment A, p 1.

However, the Tribunal recommends that the 7 day threshold for reporting low pressure resulting from operational problems be reduced to 4 days. This is an improved level of service and may help to address the customer dissatisfaction expressed in Sydney Water's customer research.

### *Compliance target*

The current compliance target of 98 per cent is equivalent to 31,718 properties. In its supplementary submission, Sydney Water stated that if properties in designated low pressure areas were included in the standard the target should remain at 98 per cent.<sup>18</sup> The Tribunal believes that this is unduly conservative because:

- historical achievement of the compliance target has been in excess of 99.6 per cent, or 6,344 properties
- there are only 2,818 properties in the designated low pressure areas.

Therefore, the Tribunal recommends that an appropriate compliance target for the pressure standard is 15,000 properties.

### **3.1.5 Other measures**

The Tribunal recommends two indicators to support the pressure standard.

1. The first is an indicator for properties affected by repeat low pressure incidents. From a customer service perspective, the Tribunal believes that repeated low pressure incidents need to be reported to highlight the parts of the system where there are operational problems or system deficiencies.
2. The Tribunal also recommends an indicator that reports the number of properties receiving less than 15 metres pressure as a result of operational problems for any duration in a report year. Only incidents of greater than 4 days duration should be reported against the recommended standard. An indicator including all incidents will provide information about the extent of low pressure resulting from operational problems.

## **3.2 Water continuity**

The Tribunal considers that the purpose of a continuity standard is to ensure that Sydney Water provides a robust water supply system to which customers have continuous access. This is important because customers depend on access to the water supply for many essential activities (such as sanitation) and experience considerable inconvenience when the supply is interrupted.

### **3.2.1 Recommendations**

The Tribunal recommends that for water continuity:

- Separate standards should be implemented for planned and unplanned interruptions.
- The reporting threshold should be changed from 6 hours to 5 hours.
- The compliance target for planned interruptions should be 32,000 properties and for unplanned interruptions should be 35,000 properties.

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<sup>18</sup> Sydney Water Corporation, Supplementary submission, p 10.

- A standard for repeat shut-offs should be introduced when sufficient information is available to set a compliance target.
- Indicators should be introduced that provide information on:
  - 1) number of properties experiencing shut-offs classified by duration of shut-off
  - 2) number of shut-off events classified by type of shut-off
  - 3) number of properties for which interruptions recur within i) 6 months, and ii) 12 months.

### 3.2.2 Current standard and its limitations

The current standard for continuity of water supply is that, on an annual basis, 95 per cent of all properties connected to Sydney Water's supply system will not have the connection affected by an interruption exceeding six hours.

This standard does not distinguish between planned or unplanned interruptions. Any interruption of less than six hours duration is not reported. The number of properties that experience repeat interruptions is reported. However this number relates only to interruptions of greater than six hours duration.

Currently Sydney Water measures the duration of an interruption from the time of closure of the last valve on the commencing of repairs to the time of opening of the last valve on completion of the repairs. For unplanned events, this measured duration is shorter than the actual period of disruption experienced by a customer.

As shown in Table 3.2, Sydney Water has easily exceeded the compliance target of 95 per cent for this standard every year for the last 5 years. The lowest compliance level achieved has been 99.33 per cent.

**Table 3.2 Audit results for water continuity standard 1995 to 1999**

Licence requirement	1995 <sup>2</sup>	1996 <sup>3</sup>	1997 <sup>4</sup>	1998 <sup>5</sup>	1999 <sup>6</sup>
95% customers not experience discontinuity > 6hrs	99.4%	99.46%	99.35%	99.59%	99.33%
Customers affected <sup>1</sup>					
At least once	8,400	8,257	10,141	6,366	10,806
Repeat occurrences	330	326	155	101	338

1. Any subsequent discontinuities experienced by the same customer are not counted.
2. Report to the Minister, *1995 Operational Audit of Sydney Water Corporation*, May 1996, pp 30-41.
3. *1996 Operational Audit of the Sydney Water Corporation*, May 1997, pp 3-20 to 3-29.
4. *1997 Operational Audit of the Sydney Water Corporation*, July 1998, p 25 and pp 35-36.
5. *1998 Operational Audit of the Sydney Water Corporation*, July 1999, pp 29-30 and pp 49-50.
6. *1999 Operational Audit of the Sydney Water Corporation*, July 2000, p 31 and pp51-52.

### 3.2.3 Other standards – Australia and overseas

Continuity standards and the way they are measured vary throughout Australia. Some examples are:

- In Western Australia the reporting threshold is one hour. The compliance target is 75 per cent. In addition no properties shall experience more than three interruptions of greater than one hour in any one year.
- Melbourne water retailers have a performance standard for unplanned interruptions only. The reporting threshold is five hours and the standard is incident rather than property based. There is a range of supporting indicators that measures the average frequency of interruptions, average duration and response times.
- In South Australia interruption events are categorised by severity. Various compliance targets are set depending on the severity. The basic reporting threshold is five hours.
- Hunter Water also has a 5 hour threshold. It is a cumulative threshold. Properties are reportable if the total period of all interruptions experienced over a year exceeds 5 hours.

In the United Kingdom, companies are required to report interruptions against a matrix defined by:

- duration - greater than 3, 6, 12 and 24 hours
- cause - either planned, unplanned, caused by third parties or overruns of planned events.

### 3.2.4 Issues considered

The Tribunal considered three key issues in relation to the continuity standard:

1. the need to have separate standards for planned and unplanned interruptions
2. whether the current six hour reporting threshold is appropriate
3. how repeat interruptions should be reported.

#### *Planned versus unplanned*

The number of planned interruptions is a reflection of Sydney Water's maintenance program whereas unplanned interruptions are an indication of system failures. Sydney Water's customer research indicates that the inconvenience associated with unplanned interruptions is greater than for planned interruptions.

The Public Interest and Advocacy Centre (PIAC) advocated separating planned and unplanned interruptions.<sup>19</sup> Sydney Water's supplementary submission also supported this split.<sup>20</sup>

The Tribunal considers that it is important to understand the extent to which interruptions to supply are caused by planned maintenance activities and failures in the system. The Tribunal recommends separate standards for planned and unplanned interruptions.

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<sup>19</sup> PIAC submission, p 4.

<sup>20</sup> Sydney Water's supplementary submission, p 6.

### *Six hour reporting threshold*

Currently only interruptions of greater than six hours duration are reportable. Customer research indicates a preference for a shorter reporting threshold.<sup>21</sup> The Tribunal is recommending five hours as the reporting threshold because:

- it is consistent with other Australian water authorities
- it better satisfies customer preferences
- Sydney Water has indicated that it could comply with the reporting threshold.

A tighter definition of duration of an interruption is also recommended. The measured duration of an interruption should more accurately reflect the time for which a satisfactory water supply is not available to customers. In its supplementary submission, Sydney Water accepted that customers would prefer a tighter definition of an interruption.

### *Repeat shut-offs*

To ensure the supply system is adequately maintained and that customers' expectations are met, the Tribunal recommends that a standard measuring the number of properties for which shut-offs recur within 6 months be adopted. At present, sufficient information is not available to set a compliance target. However, the Tribunal considers that Sydney Water will be able to gather the necessary data from 1 July 2001. If sufficient data are available a target could be set and a standard implemented at the end of term Operating Licence review.

Both Sydney Water and Hunter Water have expressed concern about a standard measuring repeat events at a single property. They consider that such a standard may cause inefficient asset management. Some assets would need to be replaced more quickly than would normally occur. The Tribunal believes that if an appropriate compliance target is set that takes into account Sydney Water's current performance, asset management will not be distorted.

### *Compliance targets*

The current target that 95 per cent of properties should not be affected by interruptions corresponds to around 79,000 affected properties. By contrast, no more than 15,000 properties a year have been affected by interruptions longer than six hours during the last six years.

Sydney Water has undertaken some analysis and proposes that for planned events, a performance level of 98 per cent could be achieved and for unplanned events a 97 per cent performance level could be achieved. Sydney Water's proposed percentage compliance target for planned events equates to 32,000 properties. The target of 97 per cent proposed for unplanned events equates to approximately 48,000 properties. Further analysis of Sydney Water's data shows that a target of 35,000 properties for unplanned events is easily achievable.<sup>22</sup> These targets are for interruptions greater than five hours.

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<sup>21</sup> *System performance standards: Customers' understanding, satisfaction and expectations – Research Report*, February 2001, p 27.

<sup>22</sup> Halcrow Management Sciences Ltd, *Review of System Performance Standards in Sydney Water Corporation's Operating Licence*, March 2001, pp 34-35.

The Tribunal recommends that for the water continuity standard the compliance target for planned interruptions should be 32,000 properties, and for unplanned interruptions should be 35,000 properties.

### **3.2.5 Other measures**

The Tribunal recommends three groups of indicators should be provided to support the continuity standards and to better understand Sydney Water's performance.

1. The first indicator provides information on shut-offs classified by duration. The proposed standards for planned and unplanned interruptions only record incidents greater than five hours duration. The recommended indicator provides additional detail, requiring reporting of the number of properties affected by interruptions in the following categories:
  - > 1 hour but ≤ 5 hours
  - > 5 hours but ≤ 12 hours
  - > 12 hours but ≤ 24 hours
  - > 24 hours.
2. A second indicator classifies interruptions by cause. Four categories are recommended; planned, unplanned, third party damage and power failure. This will provide some information about the key drivers of interruptions.
3. The number of properties at which interruptions recur within 6 months and within 12 months should be reported as a third indicator until a compliance target for the repeat shut-offs standard is set. The indicator should include interruptions of any length greater than one hour.

## **3.3 Water reliability**

The Tribunal believes that a performance standard for the reliability of the water service to customers should be developed. This standard would measure Sydney Water's performance in ensuring that water resources within its control are managed efficiently. The standard would measure whether Sydney Water can meet normal (non-drought) demand without imposing restrictions on water use.

The Tribunal needs to consult with Sydney Water, Sydney Catchment Authority (Catchment Authority) and the Department of Land and Water Conservation to develop such a standard. In addition, data needs to be collected by Sydney Water and the Catchment Authority to inform the standard setting process.

### **3.3.1 Recommendations**

The Tribunal recommends that for water reliability:

- a standard be developed
- an indicator of leakage from the water supply system be introduced.

Attachment 5 provides the proposed leakage indicator.

### 3.3.2 Current standard

There is no current standard for water reliability. While the Operating Licence requires Sydney Water to meet demand management targets<sup>23</sup> there are no targets for water leakage.

Sydney Water and the Catchment Authority have a Bulk Water Supply Agreement that defines the obligations between these parties. Schedule 1 of this agreement provides conditions relating to reliability, robustness and demand reductions. These conditions are written in technical language that is difficult for customers to understand. Further, the Tribunal is concerned that Schedule 1 is ambiguous and could be disputed when restrictions become necessary.

### 3.3.3 Other standards – Australia and overseas

OFWAT has monitored two system performance standards that relate to reliability of water resources. These are:

- An assessment of the population within the area of supply for whom availability of water is below a reference level, usually expressed as the frequency of imposing various restrictions. This has proved ineffective and is likely to be withdrawn.
- A measurement of the proportion of the population that experiences demand restrictions during the year. Indicators of leakage and demand management supplement this standard.

In France, many Municipalities lease water assets for long periods to operators, who are required to operate and develop the system. These leases often include punitive provisions regarding water supply restrictions. Operators are penalised on the basis of flow rate and hours affected for each customer within the area in which restrictions are applied.

In Melbourne the water companies are required to prepare drought and emergency response plans.<sup>24</sup> Water use may be restricted or prohibited during drought or an emergency. These companies report on the number of days over which general water restrictions, due to water shortage, have been applied. Information about water stored in reservoirs over the past three years is used to put any demand restrictions into context. Unaccounted for water is a supplementary indicator.

The licence issued to the Water Corporation of Western Australia<sup>25</sup> requires it to ensure that during conditions that necessitate restrictions on water use, including drought, sufficient water will be available to meet essential in-house demand.

### 3.3.4 Issues considered

A number of stakeholders argued that a measure of water reliability should be developed.<sup>26</sup> In making its recommendations, the Tribunal has considered the complexity of the issue and customer research.

<sup>23</sup> Sydney Water Operating Licence, Clause 8.1.1.

<sup>24</sup> Office of the Regulator-General, *Melbourne's Water And Sewerage Companies – Comparative Report*, January 2000.

<sup>25</sup> Water Corporation of Western Australia, *Water Services Coordination Act 1995*, Operating Licence, 15 July 1999 cited in Halcrow, p 23.

<sup>26</sup> For example, in submissions from the Minister for Agriculture and Land and Water Conservation, and the Peak Environment Non-Government Organisations.

### *Complexity of interrelationships*

Responsibility for water supply is split between Sydney Water and the Sydney Catchment Authority. In summary, water reliability is a function of:

- increasing demand due to growth, which depends on government planning policy (Sydney Water is responsible for making robust demand forecasts)
- effectiveness of demand management and leakage control which is Sydney Water's responsibility
- the yield of water resources, which depends on physical capacity and rainfall (water resources are the responsibility of the Catchment Authority).

In order to develop a standard, sufficient data will need to be collected by Sydney Water and the Catchment Authority. The next stage will be to translate this information into a performance standard. The Tribunal recommends that Sydney Water collect information for the areas of water reliability for which it has responsibilities, that is, leakage control and demand management.

### *Customer research*

Sydney Water has recently reported research<sup>27</sup> that indicates customers are willing to reduce consumption during a drought. Imposing drought restrictions would have a positive impact on customers' perception of the business. Similar willingness by customers to pursue reductions in consumption was evident in earlier research<sup>28</sup> carried out in 1995 during a drought period. Information for non-drought periods is not available.

The Tribunal believes that customers expect their water supply to be managed responsibly and that a system reliability standard would assist this process.

### **3.3.5 Other measures**

At the workshop, Sydney Water argued that leakage management is part of the demand management strategy. While the Tribunal agrees that Sydney Water should achieve demand management targets in the most cost-effective manner, there is a need to distinguish between water leaking from the system and management of customers' demand for water.

The Tribunal recommends that an indicator for leakage from the water supply system should be developed. This will measure average annual losses from the distribution system expressed in litres per kilometre of main per day.

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<sup>27</sup> Sydney Water Corporation, *Customer Research on Water Use: practices and intentions*, September 2000 cited in Halcrow Management Sciences Ltd, *Review of System Performance Standards in Sydney Water Corporation's Operating Licence*, March 2001, p 23.

<sup>28</sup> Sydney Water Corporation, *Community views on Water Conservation and Restrictions*, July 1995 cited in Halcrow Management Sciences Ltd, *Review of System Performance Standards in Sydney Water Corporation's Operating Licence*, March 2001, p 24.

## 4 SEWERAGE

The Tribunal considers that to ensure the robustness and integrity of the sewerage system, standards are needed for sewer overflows<sup>29</sup> to both private and public land.

Currently, the Operating Licence has one sewerage performance standard relating to sewage overflows on to private land. The Tribunal recommends some changes to this standard as well as indicators for public land, cause of sewer overflow, and repeat events. The Tribunal believes that standards should be developed for the number of sewer overflows to public and private land and repeat events. The Tribunal is also recommending some broad indicators of environmental investment in the sewerage system.

### 4.1 Sewage overflows

The objective of sewerage standards and indicators is to measure and assess Sydney Water's performance in maintaining a robust sewerage system and ensuring that leakage from the sewerage system is minimised.

#### 4.1.1 Recommendations

The Tribunal recommends that for uncontrolled dry weather sewage overflows:

- The existing performance standard should be amended so that the compliance target is 25,000 private properties.
- Two further standards should be introduced when sufficient information is available to set a compliance target
  - 1) number of sewage overflows onto both private and public land
  - 2) number of sewage overflow incidents where the time since the last such overflow at the same location is less than 1 year.
- Indicators be introduced that provide information on:
  - 1) number of sewage overflows to public and private land in a year
  - 2) number of sewage overflows classified by cause
  - 3) number of properties experiencing overflows i) within 3 months, ii) between 3 and 6 months, iii) between 6 months and 1 year and iv) between 1 year and 2 years following an overflow at the same property
  - 4) length of time taken to respond to priority 5 and 6 sewage incidents<sup>30</sup> classified by i) less than or greater than 3 hours for priority 5 incidents and ii) less than or greater than 1 hour for priority 6 incidents
  - 5) status of pollution reduction programs for the sewerage system
  - 6) number of breaches of licence conditions for the sewage transport and treatment system in a year.

<sup>29</sup> These sewage overflows are uncontrolled and occur in dry weather. Uncontrolled overflows are defined as overflows from points in the sewerage system not designed to release sewage such as cracks in pipes, or access chambers such as manholes and gullies. Dry weather uncontrolled overflows are only a small proportion of all overflows. Most overflows occur in wet weather from points in the system designed to release sewage.

<sup>30</sup> Priority 6 sewage incidents require a response within 1 hour and meet one or more of the following criteria: danger to environment, danger to health, danger to people, causing damage to property/properties. Priority 5 sewage incidents require a response within 3 hours and meet one or more of the following criteria: no service available to customer, risk to environment, risk to health, risk to people, threat to property/properties.

Attachment 5 provides the standards, indicators and definitions for sewage overflows.

#### 4.1.2 Current standard and its limitations

The Operating Licence requires that Sydney Water ensure that, on an annual basis, 96 per cent of all properties connected to its sewerage system will not have their land affected by a sewage overflow from, or as a result of, a sewer owned or operated by Sydney Water.

Where a sewage overflow occurs again in a reporting period, the property is to be counted each time it experiences an overflow regardless of the number of times any property is so affected.

The major limitation of the current overflow standard is that it does not capture dry weather sewage overflows to public land such as to Council parks or open spaces, National Parks and streets.

Another limitation is that where a customer is affected by overflows more than once (known as repeat events) the data do not distinguish the number of times that the customer has been affected. For instance, it does not distinguish whether a particular customer has been affected 5 times or 5 different customers have each been affected once.

Sydney Water has easily achieved the compliance target of 96 per cent for this standard over the five year period. Table 4.1 shows that the lowest compliance level was 98.7 per cent.

**Table 4.1 Audit results for sewage overflow performance standard 1995 to 1999**

Licence requirement	1995 <sup>2</sup>	1996 <sup>3</sup>	1997 <sup>4</sup>	1998 <sup>5</sup>	1999 <sup>6</sup>
96% customers will not experience a sewage surcharge	98.79%	98.85%	98.86%	98.72%	99.06%
Customers affected <sup>1</sup>					
At least once	17,500	16,919	17,056	19,522	14,586
Repeat occurrences	>1,000	2,137	2,377	2,050	1,746

1. Customers do not include Council parks or open spaces, National Parks, streets and other public areas.
2. *1995 Operational Audit of Sydney Water Corporation*, May 1996, pp 30-41.
3. *1996 Operational Audit of the Sydney Water Corporation*, May 1997, pp 3-20 to 3-29.
4. *1997 Operational Audit of the Sydney Water Corporation*, July 1998, p 25 and pp 35-36.
5. *1998 Operational Audit of the Sydney Water Corporation*, July 1999, pp 29-30 and pp 49-50.
6. *1999 Operational Audit of the Sydney Water Corporation*, July 2000, p 31 and pp 51-52.

#### 4.1.3 Other standards – Australia and overseas

OFWAT<sup>31</sup> has a system performance standard that measures the number of properties affected by internal sewage flooding. While this performance measure is of great importance in the UK, it is not as appropriate for Sydney Water because of the requirement that an overflow gully and boundary trap must be installed between Sydney Water's sewer main and the first internal sewer connection.

31 OFWAT, *June return reporting requirements and definitions manual 2001*, December 2000 cited in Halcrow Management Sciences Ltd, *Review of System Performance Standards in Sydney Water Corporation's Operating Licence*, March 2001 p 49.

The three Melbourne retailers are required to:

- restore sewerage services as soon as possible where the interruption is due to a fault in the licensee's system
- fully contain at least 90 per cent of significant sewage spills from reticulation and branch sewers (the standard does not include releases from emergency release structures) within 5 hours
- minimise damage and inconvenience to customers on whose property a sewage spill occurs, and clean up and disinfect the spill area as quickly as possible.<sup>32</sup>

In addition, the water agencies report on the frequency of service failure measured as sewer blockages per 100 km of main as an indicator of sewerage system performance.

The Water Corporation of Western Australia is required by its licence<sup>33</sup> to:

- ensure that over each 12 month period at least 99.8 per cent of customers will not experience a wastewater overflow on their property which results from any failure of sewerage assets owned or operated by the Corporation
- respond to 95 per cent or more of sewer flooding emergencies within two hours of being notified.

In NSW, Hunter Water has in its Operating Licence similar requirements for sewage overflows to those in the Sydney Water licence.

#### 4.1.4 Issues considered

In reviewing the sewage overflow standard, the Tribunal considered three key issues: sewage overflows to public land, repeat events, and the appropriateness of the existing compliance target.

##### *Public land*

A large number of submissions supported either extending the existing sewage overflow standard to include public land or reporting on overflows to public land.<sup>34</sup> Sydney Water argues in its submission, that there should be no duplication in the roles of the Environment Protection Authority (EPA) and the Tribunal in regulating sewage overflows. However, Sydney Water supports the introduction of an indicator on the number of sewage overflows to public land.<sup>35</sup>

<sup>32</sup> Office of the Regulator-General, *Melbourne's Retail Water & Sewerage Companies; Performance Report, Victoria, July 1998 - June 1999* cited in Halcrow Management Sciences Ltd, *Review of System Performance Standards in Sydney Water Corporation's Operating Licence*, March 2001, p 50.

<sup>33</sup> *Water Services Coordination Act 1995*, Operating Licence; Water Corporation of Western Australia, 2 February 2001 cited in Halcrow Management Sciences Ltd, *Review of System Performance Standards in Sydney Water Corporation's Operating Licence*, March 2001, p 29.

<sup>34</sup> Submissions from PENGOs, Hawkesbury-Nepean Catchment Management Committee, Healthy Rivers Commission, NSW Health, Department of Housing, PIAC, Manly Council, Local Government and Shires Association, Alan McLachlan and Peter Costigan.

<sup>35</sup> Sydney Water Corporation, Supplementary submission, p 2.

The EPA argues that it is important that the Protection of the Environment licences should be preserved as the primary mechanism for regulating the environmental performance of Sydney Water's sewerage systems.<sup>36</sup> The EPA licenses Sydney Water for all types of sewage overflows (uncontrolled and directed,<sup>37</sup> in wet and dry weather) that pollute the environment. The Tribunal is interested in a subset of the overflows regulated by the EPA, namely overflows that are uncontrolled and occur in dry weather. These overflows are an important indicator of the condition of the sewerage assets.

The Tribunal recognises that the EPA is Sydney Water's environmental regulator. However, the Tribunal, as the regulator of Sydney Water's system performance (via the Operating Licence), needs to ensure that the sewerage system is robust. It is important to distinguish between these related regulatory functions. The EPA regulates the sewage overflows for pollution effects and the Tribunal regulates some sewage overflows to monitor that the sewerage system is functioning adequately. Therefore, each regulator has a different reason for obtaining information on sewage overflows.

The Tribunal recommends that a standard for sewage overflows (uncontrolled and dry weather) to public land should be developed. As data is not available to set a standard, the Tribunal recommends that an indicator that measures the number of sewage overflows to public land be implemented.

### *Repeat sewage overflows*

Sydney Water currently reports on the number of customers affected by sewage overflows at least once, and the number of repeat events (see Table 4.1 above). In its supplementary submission, Sydney Water suggests that properties experiencing multiple overflows should be reported.<sup>38</sup>

Sydney Water's customer research<sup>39</sup> found that 65 per cent of customers believed that the sewerage system should be maintained so overflows never occur. In general, this reflected a concern about health risks associated with sewage overflows. A significant proportion (24 per cent) of customers that reported a sewage problem believed that Sydney Water did not fix it.

The Tribunal believes that more detailed information is needed to understand the nature and frequency of sewage overflows. Therefore, the Tribunal recommends indicators be developed for repeat overflows, cause of overflow, and response times to high priority overflow incidents. In addition, the Tribunal recommends that a standard be developed for repeat sewage overflows.

### *Compliance target*

Sydney Water suggests that the compliance target should remain at 96 per cent, which represents about 61,000 properties. Over the last five years, the number of properties affected by uncontrolled dry weather overflows has ranged between 16,332 and 21,572.

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<sup>36</sup> Environment Protection Authority, submission, p 1.

<sup>37</sup> A directed overflow is defined as an overflow from a designed structure in the reticulation system. An uncontrolled overflow is defined as those points in the sewerage system not designed to release sewage such as cracks in pipes, or access chambers such as manholes and gullies.

<sup>38</sup> Sydney Water Corporation, Supplementary submission, p 11.

<sup>39</sup> Sydney Water Corporation, *System performance standards: Customers' understanding, satisfaction and expectations*, Research Report, February 2001, p 33.

The Tribunal believes that the compliance target suggested by Sydney Water is unnecessarily conservative. The Tribunal recommends that the target should be set at 25,000 properties. This provides a reasonable margin above the highest recorded value to allow for significant events.

#### 4.1.5 Other measures

The Tribunal recommends four sets of indicators to support the sewage overflow standard and to better understand Sydney Water's performance.

1. The first indicator classifies sewage overflows according to whether they occur on public and private land and by cause. Three categories are recommended: blockage, third party damage and hydraulic overload. This will provide information on the major drivers of sewage overflows.
2. A second indicator measures the total number of sewage overflows affecting: public land only, private land only, and both public and private land.
3. The third indicator classifies repeat sewage overflows at the same location according to the following time categories:
  - = 3 months
  - > 3 months but  $\leq$  6 months
  - > 6 months but  $\leq$  1 year
  - > 1 year but  $\leq$  2 years
  - > 2 years
4. To monitor the impact of overflows on customers, the fourth indicator measures the response times to priority 5 incidents (a response to a priority 5 incident is required within 3 hours) and priority 6 incidents (a response to a priority 6 incident is required within 1 hour).

#### *Environmental investment*

The Tribunal recommends that two broad indicators should be developed to measure the effectiveness of Sydney Water's investment in the sewerage system.

1. Report on the current status of pollution reduction programs for the sewerage system, that have been identified in Protection of the Environment licences.
2. Total number of breaches of EPA licences for the sewage transport and treatment systems.



## 5 STORMWATER

### 5.1 Stormwater flooding and environmental investment

The Tribunal considers that the objective for measures of stormwater system performance is to monitor whether Sydney Water maintains its stormwater assets so that flooding and impacts on the environment are minimised.

#### 5.1.1 Recommendations

While acknowledging that fragmented institutional arrangements make management of stormwater more difficult, the Tribunal recommends some indicators for stormwater. These indicators will provide data on the extent of flooding resulting from inadequate system capacity and action taken by Sydney Water to improve the performance of its stormwater system.

The Tribunal recommends that for stormwater a series of indicators be adopted that reports on:

- the status of stormwater improvement actions
- the number of properties with above floor flooding due to under performance of Sydney Water's assets
- reports on the volume of trash removed from trash racks.

Attachment 5 provides the indicators for stormwater.

#### 5.1.2 Current situation

There is currently no standard for Sydney Water's stormwater system in the Operating Licence. The Environment Protection Authority is improving the coordination and management of stormwater systems through the development of Stormwater Management Plans. Sydney Water has obligations for investment in these plans for the 17 catchments in which it owns assets.

#### 5.1.3 Other standards – Australia and overseas

In Melbourne, new developments are required to be secure from flooding in storms of less than a 1 in 100 year return frequency. That is systems are designed so that flooding is unlikely to occur during storms of a magnitude that occur more frequently than once in 100 years. When carrying out extensions to serve new development, the opportunity is taken to provide additional capacity to extend 1 in 100 year storm protection to neighbouring areas.

OFWAT's indicator of sewage flooding, by default, covers some stormwater. This is because some stormwater runoff enters the sewage systems and is sent to sewage treatment works. The sewage system has a 2 in 10 year flooding incident reporting threshold. That is the system is designed to cope with flooding incidents of a magnitude that generally occur more often than twice every ten years.

#### 5.1.4 Issues considered

Although several submissions supported the introduction of a system performance standard for stormwater, only one indicated what should be included in the standard. The PENGOS suggested that the standard could include pollution and drainage characteristics. Sydney Water's customer research shows that customers are concerned about stormwater flooding and pollution of waterways.<sup>40</sup>

##### *Institutional arrangements*

Stormwater infrastructure is owned by over 40 separate bodies, predominantly councils.<sup>41</sup> The fragmented management of stormwater assets has led to an absence of accountability and reporting of information on flooding and environmental impacts. Many submissions argued that institutional reform is essential to improve stormwater management. However, it is uncertain when, or if, this reform will occur. In the interim, it is important that Sydney Water adequately maintains its stormwater assets. The Tribunal considers that collecting information through the use of stormwater indicators is a useful starting point for improving accountability and reporting on flooding and environmental impacts.

As Sydney Water has limited control of the quantity of stormwater that flows through its assets, it is difficult to develop performance standards for stormwater in the Operating Licence. For this reason the Tribunal recommends indicators rather than a standard be introduced.

##### *Flooding*

The Tribunal has noted previously that Sydney Water interprets its obligations under its Operating Licence and the *Sydney Water Act 1994* to mean that it has responsibility only for maintaining the original hydraulic capacity of its stormwater assets.<sup>42</sup> It does not assume responsibility for upgrading capacity to meet the increased flow of stormwater that has resulted from urban development. Effectively, this means that flooding due to constraints in Sydney Water's stormwater assets has and will become more severe over time.

Sydney Water's existing stormwater assets have variable capacity. Currently, about 10 per cent of Sydney Water's stormwater assets can accommodate 1 in 20 year average recurrence interval storm flows, that is, storms of a magnitude unlikely to occur more than once in 20 years. The cost of upgrading the remaining assets to a 1 in 20 year standard has been estimated at \$586 million.<sup>43</sup> Sydney Water estimates that to achieve a 1 in 20 year standard it would also need to purchase up to 100 high risk properties at an additional cost of \$50 to \$100 million<sup>44</sup>. Sydney Water reasons that the inner western and southern locations of many of these properties contributes to the high estimate of cost per property.

The Tribunal recommends that an indicator be introduced to measure the number of properties that experience above floor flooding as a result of constraints in Sydney Water's stormwater system. This will enable monitoring of the extent of problems resulting from the inherited hydraulic capacity of Sydney Water's stormwater system.

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<sup>40</sup> Sydney Water Corporation, supplementary submission, p 12.

<sup>41</sup> Sydney Water Corporation submission, p 9.

<sup>42</sup> IPART, *Review of Sydney Water Corporation's Stormwater Charges and Expenditure*, 1998, p 6.

<sup>43</sup> Sydney Water Corporation, supplementary submission, p 12.

<sup>44</sup> Sydney Water Corporation, supplementary submission, p 12.

*Environmental investment*

In the last pricing determination, the Tribunal allowed additional revenue for Sydney Water to fund projects identified under the stormwater management planning process. This decision took into account the considerable concern expressed in submissions that insufficient capital expenditure was allocated to stormwater.

The Tribunal is recommending two indicators that:

1. monitor Sydney Water's progress in completing actions under the Stormwater Management Plans, and
2. measure the volume of trash collected from trash racks.

While the Tribunal recognises that the proposed stormwater indicators will not provide comprehensive information about the stormwater system, they will begin to address the deficiency in available information.



## 6 CUSTOMER SERVICE

The Tribunal believes that performance measures of Sydney Water's dealings with its customers should be included in the Operating Licence. However, the Tribunal considers that it is not appropriate to include customer service as a system performance standard as the licence defines systems in terms of water, sewerage and stormwater infrastructure.

The objective of a customer performance standard is to ensure that Sydney Water's systems for interacting with customers provide efficient and effective levels of service.

### 6.1 Customer service performance measures

#### 6.1.1 Recommendation

The Tribunal is recommending a staged approach to incorporate customer performance measures into the Operating Licence. The first stage is for the Tribunal to negotiate with Sydney Water measures of customer service and satisfaction to be used for audit purposes.<sup>45</sup> The second stage is to review these measures with the view to incorporate them into Part 5 of the Operating Licence (Customer and Consumer rights) at the end of term review.

The Tribunal recommends that the following indicators of customer service be introduced:

1. time taken to provide a substantive response to customer complaints whether written, telephone or face-to-face
2. time taken to answer telephone calls made to primary contact numbers (such as service difficulties and emergency line, account and general enquiry line)
3. percentage of properties receiving a bill based on an actual meter read
4. time taken to provide a substantive response to account contacts (eg queries about overcharging)
5. total number of disconnection, flow restrictions and debt recovery actions
6. Number and value of payment assistance vouchers.

The Tribunal believes that Sydney Water should collect data on customer performance indicators from 1 July 2001 and that this data should be audited as part of the operational audit.

#### 6.1.2 Current situation

The Operating Licence does not have any standards on customer service. However, the licence<sup>46</sup> does require Sydney Water to report to the Licence Regulator on the number of complaints received in any month, categorised by complaint category and suburb.

<sup>45</sup> Following the 1999 Operational Audit for Sydney Water Corporation the Minister for Energy issued a ministerial requirement that Sydney Water negotiate with IPART a suite of customer service measures for audit purposes. Correspondence from Minister for Energy to Sydney Water Corporation, 28 July 2000, p 4.

<sup>46</sup> Sydney Water's Operating Licence, Clause 12.1.6.

Sydney Water currently produces statistics on customer performance as part of its internal management reporting. Statistics collected include information on customer complaints by type, number of rebates by type, and call centre statistics (such as contacts by type, per cent of calls answered in 30 seconds, and per cent of calls abandoned).

### **6.1.3 Other standards – Australia and international**

A survey of the customer service standards for other water utilities indicates that measures of customer service are common, but there is significant variation as to what is measured.

The operating licence for the Water Corporation of Western Australia specifies standards in terms of telephone contacts and responding to customer complaints. Complaints are also regulated in South Australia in terms of response to adverse health or other serious consequences. While the Office of Regulator-General in Victoria does not set official minimum standards of service for customers, the strong comparative competition between the three retail businesses acts as an effective incentive.

OFWAT uses four primary customer performance indicators complemented by secondary indicators, some with associated guaranteed standards. The primary indicators are:

- written and telephone billing contacts received and the number dealt with in 5, 10, 20 and more than 20 working days
- written complaints received and the number dealt with in 5, 10, 20 and more than 20 working days are reported
- metered customers who receive at least one bill during the year based on an actual meter reading
- telephone contact answering times, number of abandoned calls and total time the primary contact numbers were busy.

No formal compliance targets are set for these standards. However, they are graded into bands showing levels of performance and the results of the companies are published.

In their submissions, both the Energy and Water Ombudsman NSW (EWON) and PIAC made reference to the customer service standards developed for the electricity distributors.<sup>47</sup> These performance measures include:

- total number of planned interruptions, number of planned interruptions with less than 2 days notice, and interruptions longer than advised by notice
- response times to customers contacting fault reporting hotlines, and average waiting time before calls to hotlines are transferred to a human operator
- number and types of general customer complaints, number of complaints resolved during the first customer telephone contact, number of complaints resolved within the first 24 hours, and number of complaints referred to outside bodies for resolution.

PIAC supports greater consistency of customer service standards between the water agencies and electricity utilities in NSW.<sup>48</sup>

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<sup>47</sup> Energy and Water Ombudsman NSW, submission, p 3 and Public Interest Advocacy Centre, submission, p 7.

<sup>48</sup> Public Interest Advocacy Centre, submission, p 8.

#### 6.1.4 Issues considered

In its submission, and at the workshop, PIAC argued strongly that aggregate measures of customer performance are needed in Sydney Water's Operating Licence. PIAC considered that the Customer Contract reflects the relationship between Sydney Water and an individual customer, as defined in the Sydney Water Act. This means that consumers of Sydney Water's services who are not customers (such as tenants) are not captured under the Customer Contract.

At the workshop, the water utilities did not object to the principle of having customer standards in the licence but requested that the consequences of standards be considered. Other comments at the workshop were that standards should reflect what customers want, be reported and made visible to the community.

The Tribunal believes that the Operating Licence should contain overall measures of customer service. The most appropriate place in the Operating Licence for these measures would be Part 5, customer and consumer rights.

It is the Tribunal's view that measures of customer service are needed in the areas outlined below.

##### *Complaints*

Customer complaints are a significant indicator of customer satisfaction with performance. Monitoring complaints highlights the areas where customers are dissatisfied so that corrective action can be taken. In 2000, Sydney Water received about 49,000 complaints.

The Operating Licence already requires that Sydney Water report the number and type of complaints classified by suburb, the number and type of complaints resolved or not resolved and any problems of a systemic nature arising from complaints.<sup>49</sup>

The Tribunal believes that there should be an indicator for complaints to measure the time taken to provide a substantive response to customer complaints whether written, telephone or face-to-face.

##### *Responsiveness to telephone calls*

For a customer service business like Sydney Water, it is important that customers can make contact easily. A customer may need to do this for many reasons (such as an account query or burst main) and the quickest way is by telephone.

The Tribunal considers that there should be an indicator for the time taken to answer telephone calls made to primary contact numbers - service difficulties and emergency line, and the account and general enquiry line.

In considering telephone answering data, there is an important distinction between calls received and calls answered. This is because customers may abandon calls. The Tribunal believes that indicators to measure the total number of calls abandoned and the total number of calls where callers receive a busy tone are important to support the indicator.

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<sup>49</sup> Sydney Water Operating Licence, Clause 12.1.6.

### *Accuracy of metered accounts*

More than 98 per cent of the properties serviced by Sydney Water are metered accounts. In many cases one meter services multiple units. Accurate billing based on the amount of product used is essential. However some customers are billed without their meter being read by Sydney Water. These customers either provide Sydney Water with a reading or Sydney Water estimates the usage. In 2000, 25,000 (2.1 per cent) accounts were based on customer reads and 56,000 (4.8 per cent) were based on estimated rather than actual reads.<sup>50</sup>

The Tribunal recommends that there should be an indicator to measure the percentage of metered properties receiving a bill based on an actual meter read.

### *Response to account contacts*

The majority of calls made to Sydney Water's call centre relate to customer queries about accounts (eg overcharging, faulty meter reading, method of payment). Sydney Water has indicated that it does not record all account contacts, particularly those received through the General Inquires telephone line. However, it is developing a new Customer Information Billing System by mid-2002 that will be able to record all account contacts.

The Tribunal considers that an indicator is needed to measure the time taken to provide a substantive response to account contacts by customers.

### *Disconnections and flow restrictions*

Disconnection from the water supply system is a sensitive area for customers as water is a necessity of life. In general, Sydney Water does not disconnect customers from the water supply. Restricting flow is the preferred response. In 2000, Sydney Water disconnected 3 properties and 2,659 properties had the flow restricted.<sup>51</sup> However, these disconnections may have been for reasons other than non-payment of accounts. At the workshop, the PIAC argued that information on disconnections and flow restrictions should be public information as it provides an indication of what happens to people with low incomes.

The Tribunal considers that there should be indicators for the following actions where they result from non-payment of accounts:

- total number of disconnections
- total number of flow restrictions
- total number of debt recovery actions.

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<sup>50</sup> Halcrow Management Sciences Ltd, *Review of System Performance Standards in Sydney Water Corporation's Operating Licence*, March 2001, p 87.

<sup>51</sup> Sydney Water Corporation, Annual Information Return 2000 to IPART.

## **GLOSSARY**

Catchment Authority	Sydney Catchment Authority
EPA	Environment Protection Authority
EWON	Energy and Water Ombudsman NSW
Halcrow	Halcrow Management Sciences Limited
OFWAT	Office of Water Services (Water regulator in United Kingdom)
PIAC	Public Interest Advocacy Centre
Sydney Water	Sydney Water Corporation
PENGOS	Peak Environment Non Government Organisations
Tribunal	Independent Pricing and Regulatory Tribunal



## ATTACHMENT 1 TERMS OF REFERENCE

### Review of Sydney Water's performance standards and Customer Contract

1. The Tribunal is requested, pursuant to section 9(1)(b) of the IPART Act 1992, to report to the Minister for Energy on the recommended terms of the system performance standards by 11 April 2001 and on recommended terms of the Customer Contract by 25 October 2001 as scheduled under clauses 7.3 and 5.1 of Sydney Water's Operating Licence.
2. The Tribunal must take into consideration the requirements of Sydney Water's Operating Licence in reviewing the system performance standards and Customer Contract.
3. In recommending amended terms for the performance standards, the Tribunal must consider whether:
  - Sydney Water's customers' preferences are adequately reflected by current system performance standards
  - the current standards should be increased or decreased based on Sydney Water's current performance levels, customer preferences and financial implications
  - alternative measures of system performance are more appropriate
  - alternative or supplementary means exist to ensure that Sydney Water delivers acceptable system performance for its customers
  - performance standards of other relevant water and wastewater service providers should be applied to Sydney Water.
4. The Tribunal's report must outline the costs and benefits of its recommendations for amending the system performance standards.
5. In developing its recommendations for amended performance standards, the Tribunal must consult with Sydney Water and other key stakeholders.
6. The Tribunal must, when recommending the terms of the Customer Contract, consider:
  - whether Sydney Water's customers' preferences are adequately reflected by the Customer Contract
  - whether additional items need to be included in the Customer Contract
  - the options for simplifying and streamlining the Customer Contract without compromising the requirements of Sydney Water's Operating Licence
  - the adequacy of Sydney Water's and customers' obligations under the Customer Contract.
7. The Tribunal must consult with Sydney Water and key stakeholders for the review of the Customer Contract.

## ATTACHMENT 2 HOW TERMS OF REFERENCE HAVE BEEN ADDRESSED

Term	Extent to which the Tribunal has addressed this Term
<p>1. The Tribunal is requested, pursuant to section 9(1)(b) of the IPART Act 1992, to report to the Minister for Energy on the recommended terms of the system performance standards by 11 April 2001 and on recommended terms of the Customer Contract by 25 October 2001 as scheduled under clauses 7.3 and 5.1 of Sydney Water's Operating Licence.</p>	<p>The Tribunal has sought submissions on the system performance standards. The Tribunal engaged Halcrow Management Services to assist it in the review. Following consideration of the submissions and comments made during the workshop, the Tribunal has recommended a number of amendments to the system performance standards, including proposed future standards, and the introduction of performance indicators. The report on System Performance Standards will be provided to the Minister on 11 April 2001.</p> <p>The review of the Customer Contract is continuing.</p>
<p>2. The Tribunal must take into consideration the requirements of Sydney Water's Operating Licence in reviewing the system performance standards and Customer Contract.</p>	<p>In making its recommendations, the Tribunal has considered the requirements of Sydney Water's Operating Licence. The Tribunal has:</p> <ul style="list-style-type: none"> <li>• restricted its advice to the definition of system in the Operating Licence</li> <li>• recommended adoption of amended standards in accordance with clause 7.3.3 of the Operating Licence.</li> </ul>
<p>3. In recommending amended terms for the performance standards, the Tribunal must consider whether:</p>	
<ul style="list-style-type: none"> <li>• Sydney Water's customers' preferences are adequately reflected by current system performance standards</li> </ul>	<p>The Tribunal has examined Sydney Water's Research Report on System Performance Standards - Customers' understanding, satisfaction and expectations. The Tribunal has considered views expressed by customers and consumer groups in their submissions. The Tribunal has considered customers' preferences in recommending new standards, for example shorter reporting thresholds for water continuity. These matters are discussed in Sections 3 to 6 of the report.</p>
<ul style="list-style-type: none"> <li>• the current standards should be increased or decreased based on Sydney Water's current performance levels, customer preferences and financial implications</li> </ul>	<p>The Tribunal has noted that Sydney Water has easily achieved its performance targets in recent years. Based on current performance levels and expectations of customers the Tribunal has recommended compliance targets that are more stringent than previously applied. These targets should be achieved without additional financial</p>

Term	Extent to which the Tribunal has addressed this Term
	<p>impost on Sydney Water.</p> <p>The Tribunal has also recommended the introduction of a number of new standards. However, as data is not available the Tribunal proposes that these be reviewed at the end of term review.</p>
<ul style="list-style-type: none"> <li>Alternative measures of system performance are more appropriate</li> </ul>	<p>The Tribunal considered whether alternative measures were appropriate. The Tribunal has recommended the introduction of system performance indicators to supplement the performance standards. These are discussed in section 2 .</p>
<ul style="list-style-type: none"> <li>Alternative or supplementary means exist to ensure that Sydney Water delivers acceptable system performance for its customers</li> </ul>	
<ul style="list-style-type: none"> <li>Performance standards of other relevant water and wastewater service providers should be applied to Sydney Water.</li> </ul>	<p>The Tribunal has considered performance standards in use in other parts of Australia and in the United Kingdom (see sections 3 - 7).</p>
<p>4. The Tribunal's report must outline the costs and benefits of its recommendations for amending the system performance standards.</p>	<p>The Tribunal considers that the standards recommended for Sydney Water are easily achievable and there is unlikely to be any additional costs on Sydney Water (see section 1.3). The Tribunal considers that the main benefit of the amended arrangements will be improved reporting that will ensure service quality and accountability.</p>
<p>5. In developing its recommendations for amended performance standards, the Tribunal must consult with Sydney Water and other key stakeholders.</p>	<p>The Tribunal sought a submission from Sydney Water, key stakeholders and the public. The Tribunal held a public forum on February 23 2001. The Tribunal had a number of discussions with Sydney Water and key stakeholders. In addition, Halcrow undertook discussions with a number of stakeholders. The results of these discussions are reported in Halcrow's report.</p>
<p>6. The Tribunal must, when recommending the terms of the Customer Contract, consider:</p> <ul style="list-style-type: none"> <li>Whether Sydney Water's customers' preferences are adequately reflected by the Customer Contract</li> </ul>	<p>The review of the Customer Contract is to commence following the completion of the review of the system performance standards.</p>

## Independent Pricing and Regulatory Tribunal

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Term	Extent to which the Tribunal has addressed this Term
<ul style="list-style-type: none"><li>• Whether additional items need to be included in the Customer Contract</li><li>• the options for simplifying and streamlining the Customer Contract without compromising the requirements of Sydney Water's Operating Licence</li><li>• the adequacy of Sydney Water's and customers' obligations under the Customer Contract.</li></ul>	
7. The Tribunal must consult with Sydney Water and key stakeholders for the review of the Customer Contract.	An issues paper is to be released in late April seeking submissions from Sydney water, key stakeholders and the community.

## **ATTACHMENT 3 LIST OF SUBMISSIONS**

### ***Organisations***

Australian Business Ltd  
Australian Consumers' Association  
Australian Water Association  
Department of Housing  
Department of Urban Affairs and Planning  
Energy and Water Ombudsman NSW  
Environment Protection Authority NSW  
Gosford City Council  
Hawkesbury Nepean Catchment Management Trust  
Healthy Rivers Commission  
Hunter Water Corporation  
Illawarra Customer Council  
Local Government and Shires Association  
Manly Council  
Minister for Agriculture and Minister for Land and Water Conservation  
National Standards Commission  
NSW Department of Health  
Peak Environment Non-Government Organisations  
Public Interest Advocacy Centre  
Port Hacking Protection Society  
Southern Catchment Management Board  
Sydney Catchment Authority  
Sydney Water Corporation  
The Property Owners Association of NSW  
Vineyard Riverstone Marsden Park Developments Pty  
Wyong Shire Council

### ***Individuals***

McLachlan, Mr A  
Wood, Mr W

## ATTACHMENT 4 WORKSHOP PARTICIPANTS

<b>Organisation</b>	<b>Name</b>
Australian Business Ltd	Michael Carolin
Australian Water and Wastewater Association Inc	Chris Davis
C S I R O	Andrew Speers
Energy and Water Ombudsman of NSW	Mark Aitkin
Environment Protection Authority	Warren Hicks
Gosford City Council	Terry Bowditch
Halcrow Management Sciences Ltd	Keith Hall
Hunter Water Corporation	David Evans
Independent Pricing & Regulatory Tribunal	Felicity Hall
Independent Pricing & Regulatory Tribunal	Jim Cox
Independent Pricing & Regulatory Tribunal	Michael Seery
Independent Pricing & Regulatory Tribunal	Tom Parry
Individual	Alan McLachlin
Peak Non Government Environment Groups & SWC Corporate Customer Council	Brigid Dowsett
Public Interest Advocacy Centre	Jim Wellsmore
Public Interest Advocacy Centre	Trish Benson
Sydney Catchment Authority	Jacqueline Fynn
Sydney Water Corporation	Judi Hansen
Sydney Water Corporation	Paul Freeman
Sydney Water Corporation	Peter Mayhook
Wyong Shire Council	Ken Grantham

## ATTACHMENT 5 STANDARDS, INDICATORS AND DEFINITIONS

*Note: Report year means a period of 12 consecutive months commencing on 1 July of each year and ending on the next following 30 June. At the expiration of each report year a new report year commences.*

### A. Water pressure

#### SPS 1

##### Water pressure

The number of properties connected to Sydney Water's system that do not receive continuous water pressure at the main tap of at least 15 metres should not exceed 15,000 properties in a report year. The number of properties is to include designated low-pressure areas.

**Accuracy:**  $\pm 10\%$  with 95% confidence limits

#### Definitions

- A reportable property is one where pressure falls below the relevant reporting threshold for a continuous period exceeding 15 minutes during the year as a result of inadequate system capability under normal operating conditions or as a result of operational problems that are not remedied within 4 days of the first occurrence in a report year
- System capability means the ability of the water supply system, under normal operating conditions, to adequately meet all customer water demands on the system up to and including maximum hour demands
- Maximum hour demands are specific and are the maximum sum of all customer demands on that particular part of the water supply system occurring over a one hour period on the maximum consumption day of the year
- Normal operating conditions exclude short-term operational problems, such as mainbreaks, which are measured by the continuity performance requirements, and circumstances of abnormal demand, such as those due to fire fighting
- A main tap is the point of connection of the customer's service to the Sydney Water main
- Where connected properties are in multiple occupancy, each separately billed or occupied part shall be counted as one connected property
- Connected properties currently unoccupied shall be included

<b>Indicator</b>	<b>Guidance</b>
Number of properties that do not receive continuous water pressure at the main tap of at least 15 metres as a result of abnormal operations	Include any property affected by operational problems for any duration Exclude properties affected by system capability problems
Number of properties where pressure of less than 15 metres head at the main tap occurs more than once during the report year	Include any property affected for a continuous period exceeding 15 minutes as a result of abnormal operations or system capability deficiencies Exclude properties in Designated Low Pressure Areas

## **B. Water Continuity**

### **SPS 2a Unplanned interruptions**

Sydney Water must ensure that in any report year, the number of properties connected to its water supply system that are affected by an unplanned shut off of water supply exceeding 5 hours does not exceed 35,000

**Accuracy:**  $\pm 5\%$  with 95% confidence limits

### **SPS 2b 'Planned and warned' interruptions**

Sydney Water must ensure that in any report year, the number of properties connected to its water supply system that are affected by a 'planned and warned' shut off of water supply exceeding 5 hours does not exceed 32000

**Accuracy:**  $\pm 5\%$  with 95% confidence limits

### **SPS 2c Repeat interruptions**

A standard has been recommended but is not yet defined

### **Definition (for SPS 2a and 2b)**

- A reportable property is one affected by a shut off of water supply exceeding 5 hours
- Shut off means a total loss of water supply and begins at the earliest of either when Sydney Water was notified of an interruption or when valve isolation commenced
- A shut off ends when normal supply is restored
- A planned shut off commences at the time specified in the notice
- Exclude shut offs at single properties caused by meter malfunctions or difficulties in the customer's own pipework
- Where a property experiences multiple shut offs exceeding 5 hours in a report year, it shall be counted as a reportable property in the appropriate category each time
- Planned means notice has been given in accordance with the Customer Contract
- Unplanned means that notice has not been given in accordance with the Customer Contract and includes events caused by third party damage and power failure
- The number of reportable properties from an incident shall be estimated by counting each property from the best available database taking account of pressure data where relevant
- Where connected properties are in multiple occupancy, each separately billed or occupied part shall be counted as one connected property
- Connected properties currently unoccupied shall be included

Indicator to collect information for future standard	Guidance
<p>1. Number of properties where time since the last shut off was:</p> <p>≤ 6 months,</p> <p>&gt; 6 months ≤ 1 year</p>	<p>Include all planned and unplanned interruptions of any duration exceeding 1 hour</p>

Other Indicators	Guidance
<p>2. Number of properties affected by shut-offs in a report year that are:</p> <ul style="list-style-type: none"> <li>• &gt;1 hour but ≤ 5 hours</li> <li>• &gt;5 hours but ≤ 12 hours</li> <li>• &gt;12 hours but ≤ 24 hours</li> <li>• &gt;24 hours</li> </ul>	<p>The definitions for SPS 2(a) and 2(b) apply where appropriate</p>
<p>3. Number of events in a report year by type of interruption:</p> <ul style="list-style-type: none"> <li>• Planned and warned</li> <li>• Unplanned</li> <li>• Third party damage</li> <li>• Power failure</li> </ul>	<p>Include all planned and unplanned interruptions of any duration exceeding 1 hour</p> <p>Notice given in accordance with the Customer Contract</p> <p>All events where notice has not been given in accordance with the Customer Contract</p> <p>Includes events caused by third party damage and power failure</p> <p>Third party damage means physical damage caused directly or indirectly by someone other than Sydney Water, its agents or contractors</p> <p>Events caused by loss of main power supply</p>

### C. Reliability

**Standard:** A reliability standard has been recommended but is not yet defined

Indicator	Guidance
<p>1. Average annual distribution losses expressed in litres per kilometre of main per day</p>	<ul style="list-style-type: none"> <li>• Distribution losses means the difference between measured quantity of water put into supply at the treatment plant and measured quantity of water delivered to customers</li> <li>• Adjustments may be made for operational use and legal unmetered use provided that they are based on proper records and assessment</li> <li>• Adjustments may be made for meter inaccuracy or non registration where substantiated by recent statistically valid analysis</li> <li>• Adjustments may be made for the mismatch between customer meter reading dates and reporting year end provided they are consistent year on year</li> <li>• Mains means pipes that are owned and maintained by Sydney Water starting downstream of the meter on which water input is calculated</li> </ul>

## **D. Sewage Overflows**

### **SPS 3a: Sewage overflows on private land**

Sydney Water must ensure that in any report year, the number of private properties affected by dry weather uncontrolled sewage overflow incidents does not exceed 25,000

**Accuracy:**  $\pm 5\%$  with 95% confidence limits

### **SPS 3b: Sewage overflows on public land**

A standard is recommended but is not yet defined

### **SPS 3c: Repeat sewage overflows**

A standard is recommended but is not yet defined

### **Definition (for SPS 3a)**

- Uncontrolled sewage overflow means an overflow from any part of the reticulation system that is not a directed overflow
- Only dry weather uncontrolled sewage overflows that are notified to Sydney Water or identified by its employees are to be included
- Uncontrolled sewage overflows during wet weather are excluded
- Directed overflow structure means a designed structure (excluding access chambers) in the reticulation system which operates as a relief to allow sewage to discharge at a planned location or a sewage pumping station, but does not include a bypass from a sewage treatment plant
- Directed sewage overflow means an overflow from a directed overflow structure
- All directed sewage overflows are excluded
- Where connected properties are in multiple occupancy, each separately billed or occupied part shall be counted as one connected property
- Private property means all property privately owned and/or used for private purposes
- Private property currently unoccupied shall be included
- Dry weather uncontrolled sewage overflows to private land shall be reportable overflows regardless of whether they affect public land as well
- Where a private property is affected by more than one dry weather uncontrolled sewage overflow in a report year, the property shall be counted each time it is affected

Indicators to collect information for future standard	Guidance
<p>1. Number of dry weather uncontrolled sewage overflows in a report year affecting:</p> <ul style="list-style-type: none"> <li>• Private land</li> <li>• Public land</li> <li>• Private and public land</li> </ul> <p>2. Number of dry weather uncontrolled sewage overflows in a report year where time since the last sewage overflow at the same location was:</p> <p style="padding-left: 20px;">≤ 3 months</p> <p style="padding-left: 20px;">&gt; 3 months ≤ 6 months</p> <p style="padding-left: 20px;">&gt; 6 months ≤ 1 year</p> <p style="padding-left: 20px;">&gt; 1 year ≤ 2 years</p>	<p>The definitions for SPS 3(a) apply where appropriate</p>

Other Indicators	Guidance
<p>1. Number of dry weather uncontrolled sewage overflows in a report year resulting from:</p> <ul style="list-style-type: none"> <li>• Blockage</li> <li>• Third party damage</li> <li>• Hydraulic overload</li> </ul>	<p>The definitions for SPS 3(a) apply as appropriate</p> <p>Including but not limited to chokes and collapses</p> <p>Third party damage means physical damage caused directly or indirectly by someone other than Sydney Water, its agents or contractors</p> <p>Total less third party damage and blockage</p>
<p>2. Response to priority 6 incidents by time band in a report year:</p> <p style="padding-left: 20px;">≤1 hour</p> <p style="padding-left: 20px;">&gt;1 hour</p>	<p>Priority 6 incidents require a response within one hour and meet one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>• Danger to environment</li> <li>• Danger to health</li> <li>• Danger to people</li> <li>• Causing damage to property/properties</li> </ul>
<p>3. Response to priority 5 incidents by time band in a report year:</p> <p style="padding-left: 20px;">≤3 hours</p> <p style="padding-left: 20px;">&gt;3 hours</p>	<p>Priority 5 incidents require a response within 3 hours and meet one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>• No service available to one customer</li> <li>• Risk to environment</li> <li>• Risk to health</li> <li>• Risk to people</li> <li>• Threat to property/properties</li> </ul>

### ***E. Sewerage system***

<b>Indicator</b>	<b>Guidance</b>
<p>1. Number of pollution reduction programme actions:</p> <ul style="list-style-type: none"> <li>- in progress during the report year</li> <li>- due for completion during the report year</li> <li>- completed during the report year</li> <li>- not completed during the report year (by status: on schedule or behind schedule)</li> </ul>	<p>Reportable actions are pollution reduction programme actions for Sydney Water's sewage treatment systems, including reticulation networks, under the environment protection licences issued to Sydney Water by the EPA and in force at the start of a report year.</p>
<b>Sewage transport</b>	
<p>2. Number of breaches of licence consent conditions in a report year</p>	<p>Total breaches</p>
<b>Sewage treatment</b>	
<p>3. Number of breaches of licence consent conditions in a report year</p>	<p>Total breaches</p>

## F. Stormwater system

Indicator	Guidance
<p>1. Number of stormwater environment improvement programme actions:</p> <ul style="list-style-type: none"> <li>- in progress during the report year</li> <li>- due for completion during the report year</li> <li>- completed during the report year</li> <li>- not completed during the report year (by status: on schedule or behind schedule)</li> </ul>	<p>Reportable actions are those in Sydney Water's stormwater environment improvement programme agreed by the EPA at the start of a report year</p>
<p>2. Total number of habitable properties with above floor flooding in a report year</p>	<p>Exclude properties where flooding not due to under performance of Sydney Water assets</p> <p>Habitable properties means all properties on which is erected at least one dwelling or other structure which is designed to be inhabited as a place of residence or abode whether actually inhabited or not provided the dwelling or structure is capable of being inhabited as a place of residence or abode. "Habitable property" has a corresponding meaning.</p>
<p>3. Volume of trash removed in a report year</p>	<p>In cubic metres</p>

## G. Customers

*All customer indicators should be reported on the basis of a report year where report year means a period of 12 consecutive months commencing on 1 July of each year and ending on the next following 30 June. At the expiration of each report year a new report year commences.*

### G1.1 Complaints

**Indicator:** Time to provide a substantive response to customer complaints:

% within 2 days

% within 5 days

% within 10 days

#### Definition of a complaint

- A complaint is any communication received from a consumer or representative of a consumer which expresses dissatisfaction with a product, service or disservice of Sydney Water or its representative that relates to its obligations as set out in the *Sydney Water Act 1994* or its Operating Licence.
- Sydney Water is not required to make judgements on whether the complaint is justified
- A communication can be in any medium including face to face, telephone, letter, fax or electronic mail
- Dissatisfaction includes any element of dissatisfaction, whether mildly termed or in Sydney Water's opinion unjustified
- A complaint received from a customer representative, such as a solicitor, local MP or Energy and Water Ombudsman NSW should be included as a complaint
- Sydney Water's representative includes its own employees and any one employed by another body working on behalf of Sydney Water, for example a contractor
- Where a further communication from the customer or his representative is received actively chasing the complaint, this shall be logged as a separate complaint, although one providing or requesting further information is not to be recorded as a complaint
- A letter or telephone call advising of a problem (eg burst main) does not necessarily constitute a complaint unless it expresses dissatisfaction with the business.

**Definition of a substantive response**

A substantive response is one that addresses the issues raised by the customer and:

- resolves them to the customer's satisfaction, or provides explanation of the relevant policy and explains why no further action is required; or
- provides a date when the issue will be resolved if the complaint is relating to future planned operational or capital works

A part response is not a substantive response. (For example, it may be provided to advise the customer that further investigation is required before it is able to provide a substantive response.) The response time should be reported from when the proposed action has been completed, except where the response relates to future planned operational or capital works.

**General requirements**

- response times should be calculated using working days where date of receipt is day 0 and weekends and public holidays are not included. A part response should not be recorded as a response
- where Sydney Water responds to a written complaint by telephone call or visit then the date of the telephone call or visit must be recorded as the date of response.

Sydney Water may exclude complaints that are;

- anonymous
- not about its core activities as expressed in the operating licence or the *Sydney Water Act 1994*
- sent in response to or alongside invitations for feedback from Sydney Water, eg in response to customer surveys.

## G1.2 Telephone calls to a primary contact number

**Indicator:** Percentage of calls received by a permanent primary advertised number that are answered:

Within 15 seconds

Within 30 seconds

### Definitions

- a primary permanent advertised number is one which Sydney Water advertises to its customer base for use in contacting Sydney Water
- only includes telephone calls received during the advertised hours for the relevant permanent primary advertised number
- calls to an automated bill payment telephone number are excluded

### Calls answered and response times:

- a call is received once the caller hears the first ring tone
- a call is answered once an agent answers the call
- an agent is a person engaged by Sydney Water to answer telephone calls to one of the principal primary advertised numbers
- for avoidance of doubt, an agent does not include any pre-recorded or voice synthesiser message
- response times should be calculated from when the caller hears the first ring tone to the point the caller speaks to an agent.

### General requirements

Where Sydney Water uses alternative methods of answering a call the following points should be considered as times when the call is considered answered by Sydney Water and response times should be calculated accordingly;

- Interactive Voice Response units and touch tone telephone – from the time of the first ring tone to the point the customer speaks to an agent
- Answer phone messages – from the time of the first ring tone up to the point the message has completed its run, and asks customer to leave their details
- recorded message - where a recorded message is used to advise customers of a particular incident, the response time is to be considered from the point the customer hears the first ring (or the message begins, whichever is first) to the point the message has run for at least 20 seconds or has completed, whichever is first.

Sydney Water may exclude calls that are;

- not made from the primary customer base, such as suppliers of Sydney Water, Sydney Water contractors etc, using the primary contact numbers
- to a temporary contact point, for example one specifically set up to deal with flooding incidents.

### G1.3 Metered accounts where meter not read

**Indicator:** Percentage of metered accounts receiving a bill not based on:

An actual meter read during the report year

A business meter read for two consecutive report years

#### Definitions

- a metered account refers to any account which is billed based on volume
- if a property has multiple meters and each metered account receives a separate bill based on a meter read, these should be reported as separate metered accounts for the purposes of this indicator
- if a property has multiple meters and a single account is issued due to common ownership, the meters will be treated as separate metered accounts for the purposes of this indicator
- a customer meter read is one which is provided by the customer to Sydney Water
- a business meter read is one taken by Sydney Water or its contractor
- an actual meter read is one taken by Sydney Water or its contractor or the customer (i.e. includes both a customer meter read and a business meter read)

## G1.4 Account contacts

**Indicator:** Time to provide a substantive response to account contacts by time band:

- % less than one day
- % less than five days
- % less than ten days

### Definition of an account contact

An account contact is defined as

- any communication received from the customer that relates to any aspect of the billing or payment process, and requires a response or action from Sydney Water
- a communication can be in any medium, whether face to face, telephone, written, fax or electronic mail.
- calls to an automated bill payment telephone number are excluded

### Definition of a substantive response

A substantive response is considered one that does the following:

- addresses the issues raised by the customer and resolves them to the customer's satisfaction, or provides explanation of the relevant policy, and explains why in its opinion no further action is required
- if the issue cannot be addressed immediately due to circumstances beyond the control of Sydney Water, the response must provide a clear strategy of action and/or identify when the action will be undertaken
- a part response is not a substantive response. (For example, it may be provided to advise the customer further investigation is required before it is able to provide a substantive response.)

### General requirements

- where a further communication from the customer or his representative is received actively chasing the account contact, this shall be logged as a separate contact
- response times should be calculated using business days where date of receipt is day 0 and weekends and public holidays are not included. A part response should not be recorded as a response
- where Sydney Water provides a substantive response to an account contact by telephone call or visit then the date of the telephone call or visit must be recorded as the date of response.

## G1.5 Other indicators

Customer contacts	Guidance
1. Calls made to one of the permanent advertised contact numbers where callers received a busy tone	Record the total number of calls made where callers to one of the principal contact numbers received a busy tone. This figure should be recorded separately for each of the permanent advertised principal customer contact numbers. For example, it must record the number of calls made to the general customer services number that received a busy tone even if lines for payment of bills are available.
2. Total number of calls abandoned	Calls received where the customer hangs up before the agent answers the call, or before the call is considered answered where there is an automatic system.
<b>Disconnections</b>	
3. Total number of disconnections for non payment	A disconnection is defined as the point where the customer's water supply is completely cut by Sydney Water due to the non-payment of a bill.
4. Total number of flow restrictions for non payment	A flow restriction is defined as Sydney Water's direct intervention in the supply system in order to reduce flow to a customer's property in response to the non payment of a bill.
5. Total number of debt recovery actions	The total number of debt recovery actions that are initiated by Sydney Water
6. Number and value of payment assistance vouchers utilised	Total number and value of payment assistance vouchers utilised in report year