

Independent Pricing and Regulatory
Tribunal

**Review of Sydney Water
Corporation Environmental and
ESD Indicators**

Final Report

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Executive Summary

The Independent Pricing and Regulatory Tribunal (IPART) commissioned GHD Pty Ltd to conduct a review of Sydney Water Corporation's (Sydney Water) environmental indicators as part of the end of term review of Sydney Water's 2000-2004 Operating Licence. The main objective of the consultancy was to recommend to the Tribunal a suite of environmental indicators and an associated reporting framework for inclusion in Sydney Water's new Licence to apply from 1 January 2005. Sydney Water is currently committed to report on over 1000 sets of data, many of which are very technical and, as such, are not readily able to be interpreted by Sydney Water customers.

The Sydney Water Act (1994) is the primary driver for the establishment of environmental indicators. The proposed suite of environmental indicators must enable Sydney Water to report and provide comparisons on a *year-to-year basis* on environmental aspects of *direct impact of its activities on the environment* and specifically include parameters directly related to its primary objectives and special objectives.

In developing a new list of environmental indicators, GHD identified selection criteria, which were used as a guide to determine whether a proposed indicator is suitable as an environmental indicator for Sydney Water. The selection criteria developed, were a function of:

- ▶ The statutory requirements of the Sydney Water Act;
- ▶ IPART overarching criteria (as defined in the consultants brief);
- ▶ Consideration of industry best practice relating to monitoring and reporting of environmental performance (consistent with the principles of the Global Reporting Initiative);
- ▶ Submissions by Sydney Water and other stakeholders; and
- ▶ Previous Operational Audit findings.

The proposed environmental indicators developed by GHD have been broadly based on the current list of Sydney Water's Ecologically Sustainable Development (ESD) indicators. The benefits of using this list of existing indicators as the foundation for the proposed environmental indicators include:

- ▶ It is the product of a public consultation process;
- ▶ Continuity and year to year comparisons between the current indicators and the new indicators will be maintained to a high degree; and
- ▶ The list demonstrated a high level of conformance with the selection criteria.

The scope of the current Sydney Water ESD Indicator List was expanded to include a number of key indicators from:

- ▶ The current Sydney Water Environmental Indicator List;
- ▶ Sydney Water's Environmental Management System Aspects and Impacts Register; and
- ▶ Submissions from Sydney Water and other stakeholders.

The wording of the indicators was further refined from:

- ▶ A public workshop on 1 April 2004; and
- ▶ A second round of meetings and/or submissions from key stakeholders.



The proposed list of indicators has the agreement of Sydney Water and other key stakeholders, except for minor exceptions.

The recommended list of environmental indicators is presented in **Table A**.

It is further recommended that:

- ▶ the broad monitoring and reporting requirements against the final list of environmental indicators be specified by IPART under the Operating Licence and be guided by a monitoring and reporting protocol;
- ▶ Data verification be undertaken by an auditor independent of the annual operational audit due to operational audit time constraints; and
- ▶ All environmental indicator reporting requirements specified by IPART under the Operating Licence and Sydney Water's performance against the indicators be auditable by the operational audit at regular intervals.



Table A Recommended list of environmental indicators

No.	Indicator	Description
<i>Water</i>		
1	Potable Water drawn	<ul style="list-style-type: none"> ▶ Potable water drawn - total volume of potable water drawn by Sydney Water from all sources. ▶ Potable water drawn expressed as a percentage of yield. ▶ Potable water drawn expressed on a per capita basis.
2	Demand management	<ul style="list-style-type: none"> ▶ Total volume of demand saved on account of demand management programs (including savings due to water recycled and reduced unaccounted for water) ▶ Cumulative dollars expended on demand management versus cumulative demand saved.
3	Unaccounted for water	<ul style="list-style-type: none"> ▶ Unaccounted for water - total volume of unaccounted for potable water. ▶ Unaccounted for water expressed as a percentage of potable water drawn.
4	Water recycled	<ul style="list-style-type: none"> ▶ Water recycled - total volume of sewage effluent reused / recycled (report volumes on-site Sydney Water premises and off-site). ▶ Water recycled expressed as a percentage of total sewage effluent discharged. ▶ Cumulative dollars expended on water recycling versus cumulative water recycled.
<i>Water/effluent releases</i>		
5	Sewage effluent volume	<ul style="list-style-type: none"> ▶ Effluent discharged – total volume of sewage effluent discharged to the environment from inland STPs and ocean STPs.
6	Sewage treatment plant (STP) effluent quality	<ul style="list-style-type: none"> ▶ Total mass of phosphorus discharged to streams / rivers from inland STPs. ▶ Total mass of nitrogen discharged to streams / rivers from inland STPs. ▶ Total mass of suspended solids and grease discharged from ocean STPs. ▶ Suspended solids capture rate for inland STPs and ocean STPs.
7	Breaches of statutory instruments	<ul style="list-style-type: none"> ▶ Total number of breaches of conditions relating to environmental impacts under the Environmental Protection Licences for the sewerage treatment systems. ▶ Total number of breaches of conditions relating to environmental impacts under the Environmental Protection Licences for the water treatment plants. ▶ Total number of prosecutions and Notices (including Penalty Infringement Notices) issued to Sydney Water under the POEO Act. ▶ Total number of prosecutions and Notices (including Penalty Infringement Notices) issued to contractors engaged by Sydney Water under the POEO Act.
8	Overflows from the sewage system	<ul style="list-style-type: none"> ▶ Dry and wet weather sewage overflows (report total volume and total number of events). ▶ Volume of dry and wet weather sewage overflows expressed as a percentage of total sewage effluent discharged to the environment. ▶ Total number of properties affected by sewer overflows including public properties.
9	Stormwater	<ul style="list-style-type: none"> ▶ Total length of Sydney Water's stormwater system and total length with natural streamflow conditions. ▶ Total mass of silt and litter removed from Sydney Water's stormwater system per annum and the rainfall at Observatory Hill for the same period.



No.	Indicator	Description
		<ul style="list-style-type: none"> Revenue from stormwater services compared to operating expenditure and capital expenditure for stormwater.
10	Recreational water quality	<ul style="list-style-type: none"> Percentage of time recreational water complied with Beachwatch swimming guidelines. Recreational water includes beaches, the Harbour and inland waters. <p><i>Note: Need to consider new set of swimming guidelines to be released by NHMRC and how it may impact on reporting and year-to-year comparisons.</i></p>
Wastes and residuals		
11	Biosolids	<ul style="list-style-type: none"> Total mass of biosolids produced by Sydney Water. Biosolids beneficially reused expressed as a percentage of total mass produced.
12	Water treatment residuals	<ul style="list-style-type: none"> Total mass of water treatment residuals produced by Sydney Water. Water treatment residuals beneficially reused expressed as a percentage of total mass produced.
13	Trade waste	<ul style="list-style-type: none"> Total mass of heavy metals received under Trade Waste permits.
14	Waste	<ul style="list-style-type: none"> Total solid waste generated by Sydney Water not including treatment waste Waste recycled or reused expressed as a percentage of total waste generated. <p><i>(Indicator to be aligned with WRAPP measurement and reporting requirements.)</i></p>
Additional indicators		
15	Greenhouse gases	<ul style="list-style-type: none"> CO₂ equivalent emissions through purchase of electricity, fuel and gas.
16	Electricity consumption	<ul style="list-style-type: none"> Total electricity consumption consumed by Sydney Water. Total electricity consumption by water assets expressed as a function of water supplied (KWh/ML of water supplied). Total electricity consumption by sewer assets expressed as a function of sewage treated (KWh/ML of sewage treated). Electricity consumption from renewable sources or generated by Sydney Water expressed as a percentage of total electricity consumption.
17	Contaminated land	<ul style="list-style-type: none"> Number of sites under the control of Sydney Water that present a significant risk of harm as defined under the Contaminated Land Management Act.
18	Heritage	<ul style="list-style-type: none"> Proportion of heritage listed sites with Conservation Management Plans prepared Number of applications for a heritage impact permit under the NPW Act and the number granted in relation to Aboriginal cultural heritage.
19	Flora and Fauna	<ul style="list-style-type: none"> Total area of habitat <i>loss</i> under the provisions of the Native Vegetation Conservation Act and the Threatened Species Conservation Act. Total area of habitat <i>gain</i> due to site rehabilitation, restoration or replanting in areas impacted by Sydney Water.
20	Odour	<ul style="list-style-type: none"> Total number of odour complaints generated from the sewage treatment plants or the sewerage system.
21	Noise	<ul style="list-style-type: none"> Total number of noise complaints generated from Sydney Water's construction or operational activities.



1. Introduction

The Independent Pricing and Regulatory Tribunal (IPART, the Tribunal) commissioned GHD Pty Ltd to conduct a review of Sydney Water Corporation's (Sydney Water) environmental indicators as part of the end of term review of Sydney Water's 2000-2004 Operating Licence. The main objective of the consultancy was to recommend to the Tribunal a suite of environmental indicators and an associated reporting framework for inclusion in Sydney Water's new Licence to apply from 1 January 2005. The brief required consideration of:

- ▶ Requirements in the Sydney Water Act, the Operating Licence, and the Annual Reports (Statutory Reports) Act
- ▶ Current environmental and ESD indicators in the Operating Licence;
- ▶ Relevant comments on existing indicators and reporting framework made as part of annual Operational Audits of Sydney Water;
- ▶ A proposal by Sydney Water for new sustainability indicators and associated reporting framework;
- ▶ Current indicators, plans and programs of Sydney Water;
- ▶ Stakeholder submissions made to IPART;
- ▶ Relevant standards and best practice in environmental monitoring and reporting; and
- ▶ Findings of research on relevant environmental, ESD and triple bottom-line indicators used in other jurisdictions.

This report presents the findings of the review and makes a number of recommendations aimed at providing a more streamlined and effective suite of environmental indicators and an associated monitoring and reporting framework.

Both the definition of environment in the Environmental Planning and Assessment Act and the definition of ecologically sustainable development in the Protection of the Environment Administration Act include social and economic aspects of the environment. However, for this brief, IPART requested that GHD focus on the biological and physical aspects of the environment so that the economic, cultural and social aspects could be dealt with in another forum. Thus, the environment in this context is more closely allied to the definition in the Protection of the Environment Administration Act - environment means components of the earth, including:

(a) land, air and water, and

(b) any layer of the atmosphere, and

(c) any organic or inorganic matter and any living organism, and

(d) human-made or modified structures and areas,

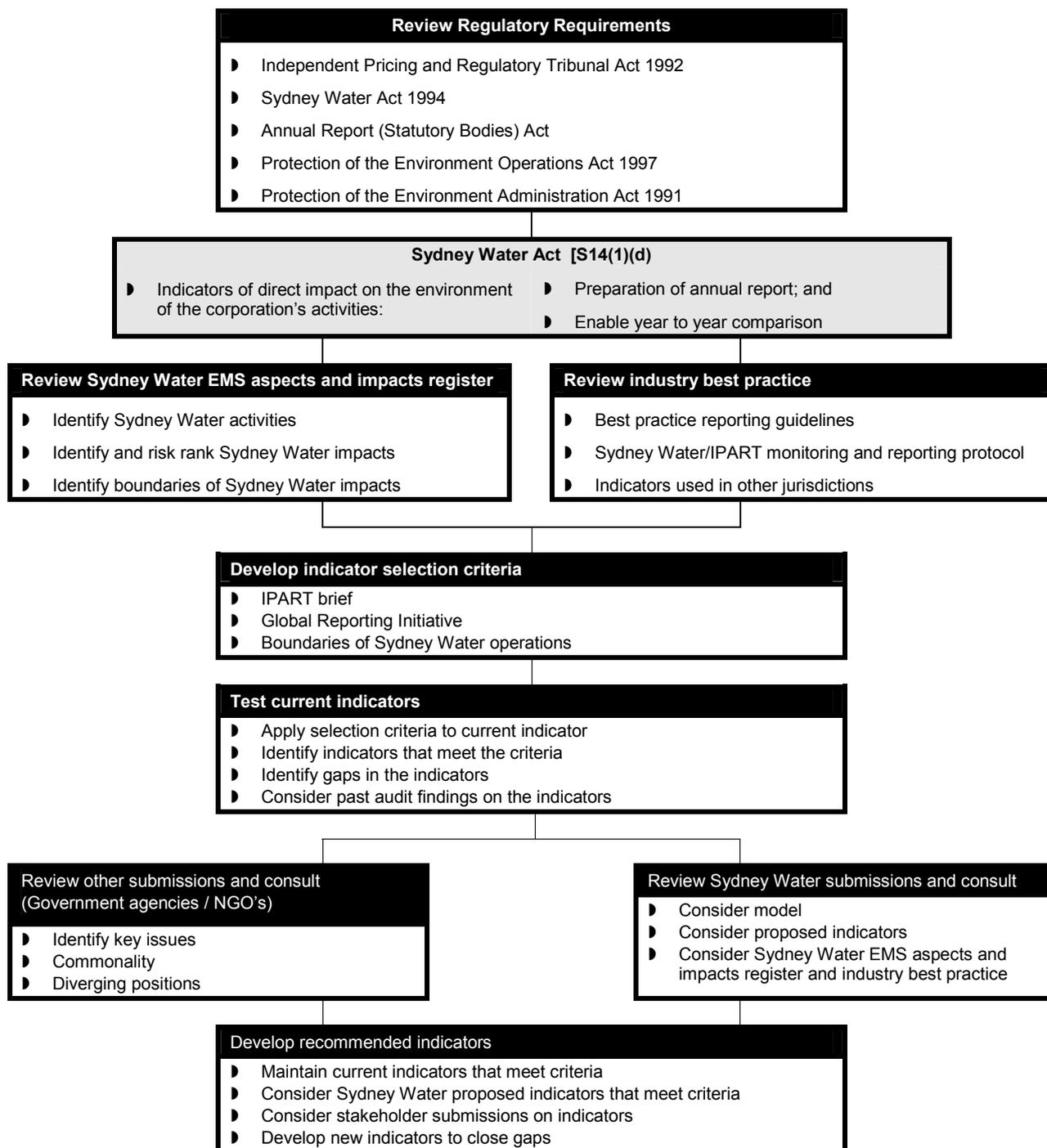
and includes interacting natural ecosystems that include components referred to in paragraphs (a)-(c).



2. Study Methodology

The study methodology adopted to establish the recommended environmental indicators is presented in Table 2.1. The methodology is discussed in greater detail throughout this report.

Table 2.1 Process for reviewing indicators and reporting framework





3. Regulatory Context

Sydney Water is a State Owned Corporation operating under a Licence from the NSW Government, granted under Part 5 of the Sydney Water Act 1994.

The basis for regulation of Sydney Water's environmental performance under its Operating Licence is found in:

- ▶ Independent Pricing and Regulatory Tribunal Act 1992 (IPART Act);
- ▶ Sydney Water Act 1994 (the Act); and
- ▶ Operating Licence under the Act 1994 (the Licence).

These statutory instruments also cross-reference the Annual Reports (Statutory Bodies) Act (AR Act), the Protection of the Environment Operations Act (POEO Act) and the Protection of the Environment Administration Act (POEA Act).

The major features of regulation relating to Sydney Water's environmental performance are set out below.

3.1 Independent Pricing and Regulatory Tribunal Act 1992 (IPART Act)

- ▶ The Tribunal's power as a regulator is established in the IPART Act.

The role of the Licence Regulator for Sydney Water (and also Hunter water and the Sydney Catchment Authority) was transferred to the Tribunal under Schedule 1 of the *Independent Pricing and Regulatory Tribunal and Other Legislation Amendment Act, 2000*.

3.2 Sydney Water Act 1994 (the Act)

In relation to environmental performance, Sydney Water's objectives under the Act [Section 20] are:

- ▶ To be a successful business... and exhibit a sense of social responsibility by having regard to the interests of the community in which it operates; and
- ▶ To protect the environment by conducting its operations in compliance with the principles of ecologically sustainable development.

In implementing those objectives, Sydney Water has a special objective [Section 21] to *prevent the degradation of the environment* by consideration of the principles of 'ecologically sustainable development', as defined under the POEA Act (refer to Section 3.7 of this report).

In particular, Sydney Water must give regard to:

- ▶ environmental impact of its discharges into or onto the air, water or land of substances likely to cause harm to the environment;
- ▶ minimising its creation of waste by the use of appropriate technology, practices and procedures;
- ▶ reducing its use of energy, water and other materials and substances;
- ▶ re-using and recovering energy, water and other materials and substances, used or discharged by it, by the use of appropriate technology, practices and procedures; and



- ▶ reducing significantly the combined environmental impact of the per capita amount of energy and water used and other materials and substances discharged.

These elements therefore are key parameters for consideration for inclusion into the new suite of environmental indicators.

In meeting these objectives, Sydney Water must comply with terms and conditions of any Operating Licence granted under the Act.

The Act requires the Operating Licence to include terms or conditions under which Sydney Water is required to “...compile indicators of the direct impact on the environment of the Corporation’s activities (i) to enable preparation of an annual report on the Corporation’s performance, and (ii) to provide information for a year to year comparison in relation to the Corporation’s performance in this area” [Section 14(1)(d)].

Sydney Water’s “activities” are not defined by the Act, however the Act permits Sydney Water to conduct any activity that it considers will further its objectives. Clearly therefore, all services¹ Sydney Water is licensed to provide, will fall under the definition of “the Corporation’s activities”.

- ▶ It is also a requirement of the Act that an Operating Licence granted to Sydney Water must provide for the preparation of an Operational Audit [Section 14(2)]. Operational Audits are one avenue under the Act for the Tribunal to meet its own requirements, under Section 31 of the Act.

3.3 Operating Licence under the Sydney Water Act 1994 (the Licence)

The current Licence commenced on 12 April 2000, is valid for a 5 year term and is due to expire on 31 December 2004. The licence enables Sydney Water to lawfully provide monopoly services within its area of operation. In return, the Licence imposes a number of performance obligations on Sydney Water in the areas of water quality, system performance, customer service and environmental performance. Current requirements for monitoring and reporting in relation to environmental and ESD indicators, specified in the 2000-2004 Operating Licence, are:

- ▶ Monitor and compile data on indicators of *direct* environmental impact;
- ▶ Environmental indicators must accord with a previously gazetted list of indicators;
- ▶ Publicly consult, prepare and seek gazettal of a list of ESD indicators to *indicate the degree to which its activities and Services comply with the principles of Ecologically Sustainable Development*
- ▶ Monitor and compile data on ESD indicators within 3 months of the Licence commencement date;
- ▶ Report annually on environmental and ESD indicators to IPART (by 1 September) and publicly (one month later) in a manner that allows year to year comparison, using historical data over at least 10 years, where data permits; and
- ▶ Review indicators as part of an end of term Licence review.

¹ Services include: to provide, construct, operate, manage or maintain systems for storing or supplying water; providing sewerage services; providing stormwater drainage systems and; disposing of water.



3.4 Existing environmental and ESD indicators

As required by the Licence, Sydney Water currently monitors and reports against an extensive list of environmental and ESD indicators. The current list of environmental and ESD indicators is provided in Appendix A. Discussion on the current list of indicators is provided in Sections 5 to 8 of this report.

3.5 Annual Reports (Statutory Bodies) Act (AR Act)

The provisions of the AR Act require Sydney Water to:

- ▶ prepare a report of its operations within the period of 4 months after the end of each financial year [Section 8];
- ▶ submit its annual report to the Minister and Treasurer no later than 4 months after the end of the financial year [Section 10], including a letter of submission to the appropriate Minister [Section 9A];
- ▶ make copies of the report available for public sale or distribution as soon as practicable after its annual report has been presented to Parliament, [Section 12].

In addition, the AR Act states that:

- ▶ where, under any other statutory provision, Sydney Water is required to prepare an annual report relating to any of its functions, it shall be sufficient compliance with that provision if the report is included in the annual report body prepared in accordance with the AR Act and regulations [Section 5A].

Reporting requirements under the Sydney Water Act and its Licence would be considered *annual reports relating to its functions*, and could therefore be included within Sydney Water's annual report through Section 5A of the AR Act. The AR Act also states:

- ▶ provisions under this Act (*AR Act*) are *in addition* to any other statutory provisions relating to the preparation of an annual report and that the provisions of this Act (*AR Act*) and regulations shall, to the extent of the inconsistency, prevail [Section 5].

It is noted that the AR Act does not place any requirements or limitations on reporting against environmental obligations and therefore no inconsistencies are present between the requirements of the AR Act and Sydney Water Act or its Operating Licence.

The requirements for reporting environmental performance in the Sydney Water Act and its Licence are more specific and detailed than would be necessary to meet annual report requirements as they serve a different purpose and relate to areas of environmental performance not otherwise required in an annual report under the AR Act. Therefore, while it is possible and desirable for environmental performance to be addressed in Sydney Water's annual report, reporting of environmental performance separately may still be required to provide a sufficient level of detail to meet requirements under the Sydney Water Act and Operating Licence.



3.6 Protection of the Environment Operations Act 1997 (POEO Act)

The POEO Act is the primary piece of environment protection legislation in NSW and is administered by the Department of Environment and Conservation (DEC). The Act affords protection to the air, water and land environments and also regulates waste management. Under the Act, DEC has granted Environmental Protection Licences to Sydney Water for the discharges from its sewage treatment plants systems and water treatment and other infrastructure. Through the Environmental Protection Licences, the DEC applies the following statutory requirements on Sydney Water:

- ▶ Conditions for discharges to air and water and applications to land conditions;
- ▶ Conditions describing limits of pollutants;
- ▶ Conditions for operating infrastructure;
- ▶ Monitoring and recording conditions; and
- ▶ Pollution studies and reduction programs.

Currently there is some perceived overlap related to environmental monitoring and reporting in the requirements of the Operating Licence administered by IPART and the those of the Environment Protection Licence administered by DEC. There is opportunity in this end of term review to streamline regulatory requirements between the Licences and minimise perceived overlap.

The POEO Act also sets out environment protection offences and penalties DEC and the Courts may impose for breaches of the Act.

3.7 Protection of the Environment Administration Act 1991

The Protection of the Environmental Administration Act provides the statutory definition of ecologically sustainable development (ESD) in use in NSW and describes ESD as being the *effective integration of economic and environmental considerations in decision-making processes*. It sets forth the following principles and programs that can be used to achieve ecologically sustainable development:

(a) the precautionary principle -

where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

(b) inter-generational equity –

the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity –

that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) improved valuation, pricing and incentive mechanisms-

that environmental factors should be included in the valuation of assets and services using principles such as polluter pays, full life cycle of costing goods and services and cost effective pursuit of environmental goals through incentive structures.



3.8 Conclusions – regulatory regime

The Sydney Water Act is the primary driver for the establishment of environmental indicators and it requires the Operating Licence to include appropriate terms and conditions relating to environmental indicators. The proposed suite of environmental indicators must be able to report and provide comparisons on a year-to-year basis on environmental aspects of direct impact of its activities on the environment and specifically include parameters directly related to its primary objectives and special objectives.

The End of Term Review provides an opportunity for streamlining environmental and ESD indicators into one combined suite of indicators, that will report against *direct impact on the environment*, as embodied in the Sydney Water Act.

Sydney Water is required to report its performance through annual reports under the Annual Reports (Statutory Bodies) Act, through environmental protection licenses issued by DEC under the POEO Act, and through the Operating Licence required by the Sydney Water Act. There is opportunity to streamline these reporting requirements, although it must also be recognised that these reports serve different purposes, which must be met.



4. Industry Best Practice (monitoring and reporting)

A short review of environmental and ESD reporting was undertaken as part of this study. The review investigated the evolution and latest trends in reporting of environmental performance in Australia and examined relevant environmental, ESD and triple bottom line indicators within selected water utilities.

4.1 State of Environmental Reporting in Australia

Reporting of environmental performance has evolved considerably over the last decade in response to legislative changes, greater environmental awareness within the community and increased demands for accountability by stakeholders. The thinking, approaches and methodologies that have developed over this period are outlined below.

4.1.1 Evolution of reporting

Public environmental performance reporting commenced in earnest during the 1990s coinciding with increasing concerns for the environment and mainstreaming of the concept of *ecologically sustainable development*. Local government, and State and Commonwealth environment agencies began to document the state of the environment through annual *State of the Environment Reports* and this generated debate on requirements for monitoring and reporting of parameters to measure the state of the environment. Increasingly, private businesses and other government agencies began to follow the lead by preparing voluntary Annual Environmental Reports to measure their own impacts on the environment. Over time, this has become more and more commonplace, particularly among larger organisations worldwide, to the point that in 2002, 45% of the Global Fortune Top 250 companies produced reports on environmental performance².

Early criticism of Annual Environment Reports was that they stood in isolation to decision-making, which was not informed by the environmental performance of a business and did not consider long-term sustainability issues. This, along with more recent demands for corporate accountability, social responsibility and the growth of ethical investment, led to a trend in public environmental reporting referred to as a 'triple bottom line' approach, or Triple Bottom Line (TBL) reporting, which addresses the economic, environmental and social performance of an organisation. Since these three dimensions address all aspects of sustainable human development, a further trend has been to refer to these reports as *sustainability reports*.

² KPMG 2002 International Survey of Corporate Sustainability Reporting



4.1.2 Best Practice Guidelines

The evolution of environmental reporting in Australia was accompanied by a number of publications and guides to assist business and agencies measure their environmental performance and report on it using the latest standards at the time. Some of these publications are:

- ▶ *Environmental Indicators for National State of the Environment Reporting*, 1998, Commonwealth of Australia
- ▶ *Core environmental indicators for reporting on the state of the environment*, Australian and New Zealand Environment and Conservation Council, State of the Environment Reporting Task Force, 2000, Environment Australia, Canberra.
- ▶ Commonwealth of Australia, 2000, *A Framework for Public Environmental Reporting – An Australian Approach*, Environment Australia, Canberra.
- ▶ *Australian Public Environmental Reporting Framework in 2000*, Commonwealth of Australia.

As many organisations report their environmental performance voluntarily, public environmental reporting has been generally unregulated or uncoordinated across jurisdictions. This has led to varying standards, guidelines and approaches being developed and raised concerns of credibility (particularly as environmental performance has become a greater consideration in assessing business investment risks).

4.1.3 GRI Sustainability Reporting Guidelines

International efforts to ensure consistency in performance indicators used in TBL reporting led to a set of guidelines being developed by the Global Reporting Initiative (GRI)³. The GRI is internationally accepted and its guidelines, referred to as GRI's *Sustainability Reporting Guidelines* (draft in 2000 and first revision in 2002), are extensively used as the benchmark or blue print for TBL / sustainability reporting. The Guidelines offer a number of reporting principles and an international reporting framework to assist organisations measure and articulate their sustainability performance against a consistent set of indicators.

Environment Australia has adapted the GRI Sustainability Reporting Guidelines to Australian conditions in its recent guide entitled *Triple Bottom Line Reporting in Australia: A Guide to Reporting Against Environmental Indicators*, 2003. This guide sets out a suggested list of environmental and management performance indicators and methodologies for reporting against, derived from the GRI principles, to assist organizations monitor their performance. A draft Australian Standard entitled *General Guidelines on the verification, validation and assurance of environmental and sustainability reports*, has also been prepared (draft for consultation in late 2003) with reference to the GRI Guidelines.

The GRI Sustainability Reporting Guidelines and Environment Australia's interpretive guide to the GRI guidelines have been relied upon in developing a list of environmental indicators for Sydney Water due their widespread endorsement and applicability to Australian conditions.

³ GRI is an official collaborating centre of the United Nations Environment Programme (UNEP) and was founded by the Coalition for Environmentally Responsible Economies (CERES).



4.1.4 Validation and Verification

“Evidence suggests that information contained in sustainability Reports is rarely used either by stakeholders (including investors) or by management to inform judgments and actions – the key test of credible and useful communication”⁴

As the requirements for environmental reporting are continually evolving, issues of credibility and effectiveness of environmental reports in providing useful information to stakeholders have increased the need for organisations to have robust, external assurance of sustainability reports. The Institute of Social and Ethical Accountability’s (AccountAbility) *Assurance Standard AA1000* claims to address issues of credibility and effectiveness by being the first assurance standard covering the full range of an organisation’s disclosure and associated performance through sustainability reports. The standard is compatible with GRI Sustainability Reporting Guidelines and is increasingly being used to assure stakeholders that sustainability reports are verified and validated to a recognized benchmark.

Using the standard requires an organization to have commitment to the practice of ‘*inclusivity*’, including commitment to:

- ▶ *identify and understand* its social, environmental and economic performance and impact, and the associated views of its Stakeholders.
- ▶ *consider and coherently respond* (whether negatively or positively) to the aspirations and needs of its Stakeholders in its policies and practices, and
- ▶ *provide an account* to its Stakeholders for its decisions, actions and impacts.

The standard requires an external assurance auditor to sign off on the principles of materiality, completeness and responsiveness. Namely, that:

- ▶ **Materiality** - states whether the reporting organisation has included in the report the information about its Sustainability Performance required by its stakeholders for them to be able to make informed judgments, decisions and actions.
- ▶ **Completeness** - evaluate the extent to which the reporting organisation can identify and understand material aspects of its Sustainability Performance.
- ▶ **Responsiveness** - evaluate whether the reporting organisation has responded to stakeholder concerns, policies and relevant standards, and adequately communicated these responses in its Report.

The standard is a useful tool to ensure the quality of sustainability reports and is likely to be relied upon more and more for this purpose.

4.1.5 Performance Indicators

Environmental reporting requires monitoring parameters that reflect an organisation’s performance. Performance can be measured in a number of ways and the decision on what to measure must be made in light of the reporting objectives. Performance may measure direct impacts on the environment, the state of the environment itself or indirect measures that reflect environmental management within the business. Various models of indicators that measure performance have been developed and are

⁴ AccountAbility AA1000 Assurance Standard.



discussed in some of the reports outlined above. Table 4.1 presents some of the models for indicators used to measure environmental performance.

Table 4.1 Types of indicators

Report	Type of Indicators / Model.
State of the Environment Reporting	<p>“Pressure - State - Response model“:</p> <ol style="list-style-type: none"> 1. Pressure - human activities and impact on environment 2. Response - actions taken in response to perceived env. problems and issues 3. State - condition of the environment, including effectiveness of responses.
Framework for Public Environmental Reporting - An Australian Perspective	<p>Operational (input / output), Management (system and functional area) and environment condition indicators:</p> <ol style="list-style-type: none"> 1. Operational <ul style="list-style-type: none"> ▶ Input indicators eg consumption, resource use. ▶ Output indicators eg. Emissions (air, noise, water, waste) 2. Management <ul style="list-style-type: none"> ▶ System eg. Policies and procedures ▶ Functional eg. Training and Awareness, purchasing performance, consultation 3. Environmental Condition <ul style="list-style-type: none"> ▶ Environment eg. state of the environment.
Guide to Tripple Bottom Line Reporting in Australia / GRI	<ul style="list-style-type: none"> ▶ Environmental Management Indicators ▶ Environmental Performance Indicators
GRI Sustainability Guidelines	<ul style="list-style-type: none"> ▶ Performance indicators are not divided into types based on the content or nature of the indicator (e.g., policy, input/output, impact), but are organized according to the relevance of the issue to stakeholders. ▶ GRI performance indicators are classified into Core indicators (those relevant to most reporters; and of interest to most stakeholders) and additional indicators ▶ Indicators are a blend of quantitative and qualitative measures.

4.2 Review of indicators used in other jurisdictions.

A short review of ESD and environmental performance indicators used by selected water agencies was conducted as part of this study. The review was limited in extent and involved web-based research and targeted telephone interviews. The scope was confined to other water agencies around Australia and some international water organisations. The extent of information provided is related to the public accessibility of the information on the World Wide Web, and the ease of extracting a list of indicators from the reports within the time available. The information was sourced from a number of reports and may not necessarily cover the same periods of time.



The purpose of the review was to determine if and how other agencies reported against environmental performance indicators benchmarking insight into the review Sydney Water's environmental and ESD indicators. It should be noted that the information presented does not claim to document all activities undertaken by the organisations researched and should be viewed in light of the objectives of the review. Reports and indicators prepared by the following organisations were reviewed:

- ▶ United Utilities (United Kingdom)
- ▶ ActewAGL (ACT)
- ▶ Water Care (New Zealand)
- ▶ City West Water (VIC)
- ▶ Brisbane Water (QLD)
- ▶ Hunter Water Corporation (NSW)
- ▶ Melbourne Water (VIC)
- ▶ SA Water (SA)
- ▶ Water Corporation (WA)

The findings are presented in tabular format in Appendix B and where noted in the table, indicators, targets and plans are attached. The conclusions drawn from the documentation reviewed are:

- ▶ All organisations investigated measure their environmental and / or sustainability performance to some extent.
- ▶ Some organisations report their performance on a voluntary basis, others are obligated to report through Licence or charter conditions, depending on their local regulatory regime ie whether self regulated or regulated by others.
- ▶ The level of detail and format in which performance was reported varied across the organisations and generally reflected regulatory requirements. Some organisations presented integrated and overall performance in environmental, social and economic dimensions of their operations, while others focussed on detailed environmental performance against the local environment authority's licence requirements and environment plan objectives.
- ▶ Most organisations made reference to and were compatible with the GRI Sustainability Reporting Guidelines
- ▶ The basis of performance measurement varied across the organisations. Some organisations reported against targets, others specifically referred to "performance indicators", and some organisations made reference to policies and corporate objectives. Nevertheless, it is noted that targets and objectives as indicators.
- ▶ At least one organisation reported against an industry-wide benchmark set of indicators.
- ▶ As the basis of performance measurement and the format of reporting varied across the organisations, it was difficult to identify consistent elements in the extent of monitoring being undertaken between the organisations.



4.3 Conclusions - proposed indicator model

GHD has undertaken a literature review to identify industry best practice related to environmental performance monitoring and reporting. The review identified that the GRI *Sustainability Reporting Guidelines* provide the current benchmark in reporting sustainability performance and can be used as a blue print for Sydney Water's environmental monitoring and reporting.

The GRI guidelines are extensively referred to and are used by other water agencies included in this review. Indicators developed by these agencies can be used to help develop a new suite of indicators for Sydney Water and a comparison with proposed indicators by Sydney Water is discussed in Chapter 6 of this report.

A number of models are available to assist in the selection of environmental indicators. As the Sydney Water Act requires the indicators to be a direct measure of environmental performance, the most suitable model is believed to be consistent with the Framework for Public Environmental Reporting - An Australian Perspective.

This model delivers an approach, which may be used in a hierarchical manner to select indicators, against an environmental aspect, of the most direct measure.

Ensuring that reports on environmental performance are validated to an acceptable standard is necessary to guarantee credibility and the effectiveness in meeting stakeholder requirements. The AA1000 assurance standard is an appropriate benchmark for validation of Sydney Water reporting on environmental performance.



5. Operational Audit Findings

5.1 Previous Operational Audit findings

Sydney Water's performance against the requirements of the current Operating Licence has been audited on an annual basis since the commencement of the current Licence in April 2000.

The audits identified a number of shortcomings related to environmental and ESD indicators and associated monitoring and reporting. Table 5.1 presents a summary of the findings and recommendations of the annual Operational Audits of the current Operating Licence.

Table 5.1 Summary of findings from the annual Operational Audits

Audit Year	Section of Audit Report	Findings
2002/03	Section 9.1	<i>"...some environmental indicators were not monitored or compiled during the audit period, as a result of the recommendations of an internally commissioned review of its monitoring programs. As a consequence, the auditor was not able to report on the performance of Sydney Water in relation to all the environmental indicators."</i>
	Section 9.1	<i>"Sydney Water has also demonstrated a concerted effort to improve the usefulness of the reporting, however the reporting and monitoring of environmental indicators remains problematic because of the number and relevance."</i>
	Recommendation 9.1	<i>It is recommended that Sydney Water improves the format and presentation of its reporting on Environmental Indicators to more clearly demonstrate performance against each environmental indicator.</i>
	Recommendation 9.5	<i>The End of Term review of the Licence should include a rationalisation of environmental and ESD Indicators to better measure the performance of Sydney Water in key environmental areas.</i>
2001/02	Big Picture	<i>Sydney Water's reporting against the environmental indicators has improved since the previous audit period however, it continues to fall short of clearly reporting performance and has not included a number of gazetted indicators.</i>
		<i>...a reporting format consistent with the format used for the ESD Indicators would considerably improve readability and comprehensibility of the Environmental Indicators report.</i>
		<i>"Statistically significant trends are not readily apparent, and the presentation format is particularly not suited for ready interpretation by the general public or lay person."</i>
	Table 9.2 (9.1.3)	<i>The Environmental Indicators Compliance Report 2002 does not provide a clear report on Sydney Water's performance with the gazetted environmental indicators, although, improvements have been made since the 2000/2001 report.</i>
2000/01	Recommendation 9.6	<i>Present to IPART, for consideration as part of the mid-term Licence Review, opportunities to refine and improve the suite of environmental indicators used to measure its environmental performance.</i>
	Recommendation 9.8	<i>Consider rationalising its environmental performance reporting in relation to the ESD and Environmental Indicators, and rationalise its reporting in relation to performance against the Indicators and the environmental objectives in the Environment Plan.</i>



Audit Year	Section of Audit Report	Findings
	Table 9.1 (i)	<i>Sydney Water should monitor, and compile data on all the environmental indicators and prepare a more readily understandable and comprehensive report of its performance against each environmental indicator as required by the Licence so that the Auditor is able to report on environmental performance and identify the trends in performance over time. A reporting format consistent with the format used for the ESD Indicators would significantly improve the reporting of the Environmental Indicators for this Licence.</i>
	Table 9.2 (9.1.1)	<i>A considerable quantity of data is collected on the environmental indicators, opening the possibility for the data to become degraded during compilation.</i>
	Table 9.2 (9.1.4)	<i>There is only limited discussion of year-to-year comparisons.</i>
	Table 9.2 (9.1.6)	<i>The environmental indicators were reviewed by CSIRO in 1998 and a copy of the report was forwarded to the EPA for comment. Sydney Water has suggested to the EPA that the monitoring of environmental indicators should be amalgamated into one single set for all environmental monitoring. This was under review at the time of the audit. The Auditor concurs that there is scope for rationalisation of the reporting of the various indicators in light of the experience gained over the last five years and the proliferation of indicators in the various regulatory documents that bind Sydney Water.</i>

It is evident from the operational audit findings that:

- ▶ There are too many indicators creating an onerous data collection, monitoring and reporting requirement for Sydney Water;
- ▶ The extensive quantity of information required to be collected for each indicator increases the risk of data being degraded during compilation.
- ▶ The Indicators are overly complex reducing the effectiveness in which the general public can interpret the information provided;
- ▶ Sydney Water has not, in the past, effectively presented its performance against the indicators in a manner which demonstrates trends in performance, year to year comparisons and which allows ready comprehension by the public; and
- ▶ Indicators should be rationalised and reporting requirements reconsidered to address these issues.

5.2 Conclusions from the previous Operational Audits

In reviewing and developing environmental indicators, due consideration must be given to:

- ▶ Reducing the number of indicators to present an overview of Sydney Water's performance without entraining the complexities of its operations;
- ▶ Selecting indicators of sufficiently high level to ensure Sydney Water's performance against the key environmental aspects are reported against; and
- ▶ Present indicators that are readily comprehended by stakeholders including the public, whilst maintaining scientific rigour.



6. Selection Criteria for Environmental Indicators

6.1 Selection criteria

Environmental monitoring and reporting has evolved considerably over the last ten years (since some of the current Sydney Water environmental indicators were gazetted). Evolution has been moulded by change to regulatory requirements, community awareness and changing expectations relating to environmental performance, corporate governance and accountability to stakeholders. This section of the report discusses the basis for selecting a new suite of environmental indicators.

The following selection criteria have been developed as a function of:

- ▶ The statutory requirements of the Sydney Water Act;
- ▶ IPART overarching criteria (as defined in the consultants brief);
- ▶ Consideration of industry best practice relating to monitoring and reporting of environmental performance;
- ▶ Submissions by Sydney Water and other stakeholders (discussed later); and
- ▶ Previous Operational Audit findings.

To ensure Sydney Water's indicators are measurable, reportable, relevant and understandable to the community and scientifically rigorous the criteria have been categorised against the relevant GRI reporting principles. The criteria used to select a new suite of environmental indicators are presented in Table 6.1.

6.2 Using the selection criteria

The selection criteria were used as a guide to determine whether a proposed indicator is suitable as an environmental indicator for Sydney Water. Indicators that were assessed against the criteria include:

- ▶ Current suite of Sydney Water's Environmental and ESD indicators (see Appendix A);
- ▶ Headline and supplementary indicators proposed by Sydney Water in its submission (a copy is available on the IPART website)
- ▶ Indicators proposed by stakeholders in other submissions (see Section 8);
- ▶ Numerous indicators used by agencies in other jurisdictions (see Appendix B); and
- ▶ Indicators derived from Sydney Water's Aspects and Impacts register (see Section 7.3.1).

It is important to note that not all selected indicators will meet all the criteria. However where the indicators could meet the majority of the criteria and an alternate indicator was not available, that indicator was adopted in preference of not having an indicator for a particular environmental aspect.



Table 6.1 Selection criteria

GRI Reporting Principles	Selection Criteria
Completeness	<p><i>All information that is material to users for assessing the reporting organisation's economic, environmental, and social performance should appear in the report in a manner consistent with the declared boundaries, scope, and time period.</i></p> <ul style="list-style-type: none"> ▶ Be able to measure direct impact on the environment; ▶ Include the primary functions of Sydney Water (water, wastewater and drainage services); and ▶ May also include all other activities that Sydney Water conducts to further its objectives, under the Act.
Relevance	<p><i>The degree of importance assigned to a particular aspect, indicator, or piece of information, and represents the threshold at which information becomes significant enough to be reported.</i></p> <ul style="list-style-type: none"> ▶ Be relevant to and understandable by the community; ▶ Measure parameters that are within the reasonable control of Sydney Water (and where possible reflect environmental investment by Sydney Water); ▶ Be cost-effective to monitor; ▶ Be measurable and reportable by Sydney Water; ▶ Rationalise and streamline Sydney Water's environmental reporting requirements under the Operating Licence; and ▶ Avoid duplication with other regulatory requirements and instruments.
Sustainability Context	<p><i>The reporting organisation should seek to place its performance in the larger context of ecological, social, or other limits or constraints, where such context adds significant meaning to the reported information.</i></p> <ul style="list-style-type: none"> ▶ Be consistent with the principles of ESD ▶ Measure parameters that are within the reasonable control of Sydney Water; ▶ Reflect environmental investment by Sydney Water (where possible); and ▶ Identify where effective environmental responses are required.
Accuracy	<p><i>The accuracy principle refers to achieving the degree of exactness and low margin of error in reported information necessary for users to make decisions with a high degree of confidence.</i></p> <ul style="list-style-type: none"> ▶ Scientifically rigorous; and ▶ Be reliable.
Comparability	<p><i>The reporting organisation should maintain consistency in the boundary and scope of its reports, disclose any changes, and re-state previously reported information.</i></p> <ul style="list-style-type: none"> ▶ To the extent possible adopt indicators consistent with the current suite of Sydney Water's environmental and ESD indicators ▶ Allow year-to-year comparison.



7. Sydney Water Submission

In October 2003, the Tribunal released an issues paper and invited submissions to its end of term review of Operating Licences for Sydney Water and the Sydney Catchment Authority (SCA). Responses from Sydney Water and SCA to IPART were required two months prior to the closing of submissions from other stakeholders to allow other stakeholders to comment on the content provided by these agencies. This section of the report discusses the Sydney Water submission.

The development of Environmental and ESD indicators is an iterative process, which involves considerable liaison and consultation between the key stakeholders. To this end, Sydney Water has continued to develop its proposed model to the extent that at the time of drafting this report, its preferred model differed notably from the model it presented in its original submission dated November 2003.

This report summarises the original Sydney Water submission (which forms the basis for comment by other stakeholders). Sydney Water provided a supplementary submission to IPART to highlight the developments that occurred in its model following consultation with the stakeholders and to respond to proposals from IPART and its consultants. [Both the original and supplementary submissions by Sydney Water are available on the IPART website.]

7.1 Sydney Water's submission

Sydney Water's original submission proposed a number of changes to the current reporting regime and interface with the Operating Licence, with the major elements of the submission noted below.

Sydney Water is of the view that the current requirements in the Operating Licence do not offer a complete, balanced picture of its operations and are not business driven.

It proposes an expanded and integrated suite of sustainability indicators (presented as a Sustainability Scorecard) to work in combination with a certified Environmental Management System, with flexible reporting mechanisms through Sydney Water's Annual Report.

The Scorecard would include seven headline indicators reflecting the principal objectives of the Sydney Water Act, supported by a suit of supplementary indicators. The headline indicators would be developed through consultation, included in the Operating Licence, fixed for the term of the Licence, and auditable. The supplementary indicators would be developed through consultation as a Licence condition, could be amended on a yearly basis through agreement with the Minister, and would sit outside the Operating Licence and therefore not be subject to audit. However, all sustainability indicators would be reported in the Annual Report and would therefore be subject to independent audit⁵.

Targets for the Scorecard would be developed through external consultation and gazetted as a Licence condition, though performance would be measured in terms of progress towards, rather than compliance with, the targets.

Sydney Water argues against stormwater, trade waste, energy management, pollution reduction and customer performance indicators being included in the Operating Licence, believing they should instead be supplementary indicators within the Sustainability Scorecard.

⁵ Sydney Water proposes that the Scorecard be verified against the AA1000 auditing standard



Sydney Water is critical of current reporting requirements and notes considerable expense, duplication, redundancy and inflexibility. Sydney Water suggests that changes be made to the Sydney Water Act to enable the Tribunal to streamline annual audit procedures, allow continual monitoring and audits that focus effort based on risk. It proposes to use the Monitoring and Reporting Protocol (M&R) agreed between Sydney Water and the Tribunal as a vehicle for continual reporting, incident reporting and reporting by exception.

In addition, Sydney Water proposes that targeted audits would replace the current comprehensive annual audits.

7.2 Review of the proposed Sydney Water model

The Sydney Water model attempts to link its principal objectives under the Act and the goals under its Corporate Plan to headline and supplementary indicators. This is a positive development, which should be encouraged, as it will yield significant efficiencies in data collection, monitoring and reporting by Sydney Water. It will also benefit stakeholders, as by streamlining the reporting regime, Sydney Water's environmental performance will become more transparent.

There are a number of elements within the model however, which require further consideration before it can be used as a platform for streamlining the environmental indicators required under S14 of the Act. These are discussed below.

Corporate plan 2004 goals

The goals of the Corporate Plan are not sufficiently broad to address all environment aspects related to the Corporation's activities. The Corporate Plan goals encapsulate healthy waterways and clean beaches, water efficiency and responsible resource use. They do not however, address other environmental aspects such as land management, air, noise or heritage, for example. Adopting the model as it stands therefore does not facilitate environmental indicators that are broader than healthy waterways and clean beaches, water efficiency and responsible resource use. The current proposal therefore, does not meet the specific requirements of S14(1)(d) of the Act.

Headline indicators

The headline indicators are the first tier of indicators and aggregate performance against the supplementary indicators (second tier). This would provide a concise performance measure against each indicator and a *simple* approach to report Sydney Water's environmental performance against each Corporate Plan goal. It will be challenging to develop a methodology however, to ensure that the data from the supplementary indicators are accurately interpreted and appropriately weighted to establish a representative value for each headline indicator and in turn the Scorecard. More importantly, should an acceptable methodology be established, the headline indicators would not:

- ▶ report "*direct environmental impact of the corporations activity*", as required by S14(1)(d) of the Act; or
- ▶ be readily transparent to stakeholders and in particular the public.

It is concluded therefore that if the environmental indicators in the new Operating Licence are limited to the headline indicators, those indicators would not meet the requirements of S14(1)(d) of the Act.



Supplementary Indicators

The supplementary indicators are the second tier of indicator in this model are a more direct indicator of Sydney Water's environmental performance, however the indicators presented by Sydney Water, in many instances, do not report "direct impact" for example, "Ecosystem impacts of deep ocean discharges". In fact, a third tier of indicators would need to be monitored and developed in order to determine performance against many of the supplementary indicators proposed by Sydney Water. This significantly complicates the model and may result in *hundreds* of indicators being developed before "direct impact" indicators are attained.

It is concluded therefore that whilst better structured, this model will suffer similar transparency and complexity issues that is recognised in the current list of indicators.

Further the proposal by Sydney Water suggests that the supplementary indicators sit outside the Operating Licence framework, may be changed (via an agreed process) on an annual basis and are not auditable. This position does not meet the spirit of S14(1)(d) of the Act as:

- ▶ A mechanism for change on an annual basis potentially compromises opportunity for year to year comparisons; and
- ▶ There would be no provision for regulatory audit of Sydney Water's performance against environmental of "direct impact".

7.3 Review of the proposed Sydney Water indicators

7.3.1 Comparison with the Sydney Water aspects and impacts register

Sydney Water provided a copy of its current aspects and impacts register that forms an essential component of its Environmental Management System. The register identifies the key environmental aspects of the Corporation's activities and their impact (actual or potential). The impacts have been risk ranked using the Sydney Water corporate risk assessment methodology.

GHD undertook a direct comparison between the aspects and impacts identified in the register and the environmental indicators proposed by Sydney Water in its submission. The comparison identified a correlation between the proposed indicators and the higher risk entries in the register. The comparison also identified a number of environmental aspects that did not have corresponding proposed supplementary or even headline indicators. That is, there were no indicators for a number of the higher risk aspects listed in Table 7.1.

7.4 Negotiations with Sydney Water

Sydney Water provided further advice as the draft environmental indicators were developed and further discussions took place between Sydney Water, IPART and GHD after the public workshop on 1 April 2004. Sydney Water thus contributed to the final wording of the recommended indicators.

Sydney Water also developed a draft glossary of terms to be referenced by the Operating Licence that explains the words or terms used in each indicator in order to provide clarity over the term of the Licence.



Table 7.1 Environmental aspects with no proposed indicator

Environmental aspect omitted	Risk Ranking*
▶ Soil contamination at contaminated sites	Risk rank 4
▶ Fossil fuel consumption for energy/fuel source by vehicles, plant and equipment and operations	Risk rank 5
▶ Construction noise	Risk rank 5
▶ Habitat loss and fragmentation due to infrastructure	Risk rank 6
▶ Damage to aboriginal heritage	Risk rank 7
▶ Use of non-renewable resources; and	Risk rank 8
▶ Green house gas emissions	Risk rank 8

* Using the Sydney Water Corporate Risk Assessment process where a ranking of 1 represents the highest risk.

These environmental aspects were considered when finalising the list of recommended indicators.

7.4.1 Comparative indicators from other jurisdictions

Indicators included in Sydney Water's Sustainability Scorecard were also compared with a list of indicators compiled from other water agencies investigated during the review of industry best practice (refer to Section 4 of this report).

The methodology used to compile the comparative list of indicators was:

- ▶ Indicators from other agencies were gathered from available reports⁶. Five separate lists of indicators were compiled from five agencies.
- ▶ Sydney Water's Scorecard framework was used as a base and the indicator lists were inserted into a table in corresponding locations. This allowed a comparison of indicators used by all agencies for each particular area of the Scorecard.
- ▶ Areas where comparisons were not possible highlighted the gaps and differences between each agencies indicators and the Scorecard. Where considered appropriate, these indicators were appended to the table as possible amendments to Sydney Water's Scorecard.

A summary showing the results of the comparative review of indicators is provided in tabular format in Appendix C.

⁶ Although most of the reports reviewed included performance measures, only five provided performance indicators in a format that easily allowed a list of indicators to be extracted from the report.



8. Other Submissions to End of Term Review

A total of five submissions to the End of Term Review commented on aspects relevant to Sydney Water's environmental and ESD indicators. Only those submissions that were relevant to environmental and ESD indicators are discussed in this report, and only to the extent that they were relevant. Submissions provided by the following organisations were considered:

- ▶ NSW Health;
- ▶ Department of Environment and Conservation (DEC);
- ▶ Total Environment Centre (TEC);
- ▶ Nature Conservation Council (NCC); and
- ▶ Public Interest Advocacy Council (PIAC).

Some of these groups provided more than one submission as they commented on draft copies of the indicators. There were a number of common positions related to Sydney Water's environmental and ESD indicators, expressed in the stakeholders' submissions. These are listed below.

Role of Operating Licence

Submissions generally acknowledged that the role of the Operating Licence should include overall monitoring of environmental performance of Sydney Water. DEC in particular noted that the Sydney Water Act gives environmental protection equal importance to Sydney Water's other objectives and regulation through the Operating Licence and should therefore include environmental and business aspects. TEC and NCC submissions supported this by noting that reporting of Sydney Water's overall performance requires consideration of environmental impacts and performance.

Rationalisation of the list of indicators

All submissions acknowledged the need to refine/rationalise the list of indicators but noted that this should not reduce the range and scope of matters Sydney Water is accountable for.

Removal of duplication with other agencies

All submissions favoured a model where indicators in the Operating Licence provided an overall measure of environmental performance without duplicating the requirements to report to other agencies. DEC commented that its Sewage Treatment System Licences provided *detail* of system environmental performance and the Operating Licence need not duplicate this but should measure *overall* environmental performance of Sydney Water's operations.

Content of Indicators

Where comment was made, submissions supported the inclusion in the Operating Licence of indicators of environmental performance in areas of stormwater, energy, customer service and trade waste. None of the submissions recommended these indicators remain outside or be removed from the Licence.

Support for Sydney Water Proposed model of Regulation

Response to Sydney Water's proposed Sustainability Scorecard was mixed. The Scorecard was accepted generally as a way of streamlining indicators but issues of self-regulation, transparency and accountability were noted. DEC supported the Scorecard on the basis that indicators are independently



established and audited. DEC considered that Sydney Water's proposal to include only Headline Indicators in the Operating Licence would streamline Licence auditing but suggested that the Licence include a framework to specify requirements for auditing and reporting on all indicators.

Submissions from TEC, NCC and PIAC expressed concern about the proposal not to include supplementary indicators in the Operating Licence.

Robustness of indicators

It was generally acknowledged that indicators should not be able to be changed annually, should be developed through public consultation and should allow consistency in reporting against the indicators to monitor trends in performance.

A summary of submissions received from other government agencies, environment groups and interested individuals is provided in Appendix D.



9. Recommendations

9.1 Proposed environmental indicators

The proposed environmental indicators have been broadly based on the current list of Sydney Water's ESD indicators. The benefits of using this list of existing indicators as the foundation for the proposed environmental indicators includes:

- ▶ It is the product of a public consultation process undertaken by Sydney Water at the time of development of the list;
- ▶ Continuity and year to year comparisons between the current indicators and the new indicators will be maintained to a high degree; and
- ▶ The list demonstrated a high level of conformance with the selection criteria.

The scope of the current Sydney Water ESD list was expanded to include a number of key indicators from the current Sydney Water environmental indicators relating to:

- ▶ Beach water quality;
- ▶ Overflows from the sewerage system; and
- ▶ Water recycled.

It is proposed that Sydney Water will no longer be required to report to IPART on its performance against the Gazetted Schedule 10 suite of substances (as required under the current list of environmental indicators). The Schedule 10 substances have been specifically omitted from the proposed environmental indicators as they were found to be overly technical for the purpose of reporting corporate environmental performance. The Schedule 10 substances tended to obscure rather than clarify Sydney Water's overall environmental performance.

Performance against the Schedule 10 substances indicators however will continue to be captured by the proposed environmental indicators but in a much simpler form. The DEC will require Sydney Water to continue to report against the Schedule 10 substances or a similar list under its Environmental Protection Licences. An indicator is proposed for Sydney Water to report by exception any breaches of the DEC licence in this regard. The precise wording of the indicator will be developed between IPART and DEC. The proposed indicator currently reads:

- ▶ Breaches of statutory instruments (specifically DEC Environmental Protection Licences clauses related to environmental impact).

A review of the Sydney Water Environmental Management System Aspects and Impacts Register (as at February 2004) identified a number of environmental aspects that did not have corresponding indicators and therefore indicators for the following were added:

- ▶ Contaminated sites/land;
- ▶ Environmental standards of contractors;
- ▶ Heritage;
- ▶ Flora and Fauna; and
- ▶ Water treatment residuals.



Finally the DEC requested indicators be developed for monitoring Sydney Water's performance related to stormwater and trade waste (to the extent to which Sydney Water has influence).

The proposed list of environmental indicators is presented in **Table 9.1**.

Table 9.1 Recommended list of environmental indicators

No.	Indicator	Description	Source based on:
<i>Water</i>			
1	Potable Water drawn	<ul style="list-style-type: none"> ▶ Potable water drawn - total volume of potable water drawn by Sydney Water from all sources. ▶ Potable water drawn expressed as a percentage of safe yield. ▶ Potable water drawn expressed on a per capita basis. 	Current ESD Indicator
2	Demand management	<ul style="list-style-type: none"> ▶ Total volume of demand saved on account of demand management programs (including savings due to water recycled and reduced unaccounted for water) ▶ Cumulative dollars expended on demand management versus cumulative demand saved. 	Suggested by SWC
3	Unaccounted for water	<ul style="list-style-type: none"> ▶ Unaccounted for water - total volume of unaccounted for potable water. ▶ Unaccounted for water expressed as a percentage of potable water drawn. 	Current ESD Indicator
4	Water recycled	<ul style="list-style-type: none"> ▶ Water recycled - total volume of sewage effluent reused / recycled (report volumes on-site Sydney Water premises and off-site). ▶ Water recycled expressed as a percentage of total sewage effluent discharged. ▶ Cumulative dollars expended on water recycling versus cumulative water recycled. 	Current Environmental indicators
<i>Water/effluent releases</i>			
5	Sewage effluent volume	<ul style="list-style-type: none"> ▶ Effluent discharged – Total volume of sewage effluent discharged to the environment from inland STPs and ocean STPs. 	Introduced for completeness
6	Sewage treatment plant (STP) effluent quality	<ul style="list-style-type: none"> ▶ Total mass of phosphorus discharged to streams / rivers from inland STPs. ▶ Total mass of nitrogen discharged to streams / rivers from inland STPs. ▶ Total mass of suspended solids and grease discharged from ocean STPs. ▶ Suspended solids capture rate for inland STPs and ocean STPs. 	Current ESD Indicator



No.	Indicator	Description	Source based on:
7	Breaches of statutory instruments	<ul style="list-style-type: none"> ▶ Total number of breaches of conditions relating to environmental impacts under the Environmental Protection Licences for the sewerage treatment systems. ▶ Total number of breaches of conditions relating to environmental impacts under the Environmental Protection Licences for the water treatment plants. ▶ Total number of prosecutions and Notices (including Penalty Infringement Notices) issued to Sydney Water under the POEO Act. ▶ Total number of prosecutions and Notices (including Penalty Infringement Notices) issued to contractors engaged by Sydney Water under the POEO Act. 	Replaces current environmental indicators
8	Overflows from the sewage system	<ul style="list-style-type: none"> ▶ Dry and wet weather sewage overflows (report total volume and total number of events). ▶ Volume of dry and wet weather sewage overflows expressed as a percentage of total sewage effluent discharged to the environment. ▶ Total number of properties affected by sewage overflows including public properties. 	Current Environmental indicators
9	Stormwater	<ul style="list-style-type: none"> ▶ Total length of Sydney Water's stormwater system and total length with natural streamflow conditions. ▶ Total mass of silt and litter removed from Sydney Water's stormwater system per annum and the rainfall at Observatory Hill for the same period. ▶ Revenue from stormwater services compared to operating expenditure and capital expenditure for stormwater. 	Requested by DEC and NCC
10	Recreational water quality	<ul style="list-style-type: none"> ▶ Percentage of time recreational water complied with Beachwatch swimming guidelines. Recreational water includes beaches, the Harbour and inland waters. <p><i>Note: Need to consider new set of swimming guidelines to be released by NHMRC and how it may impact on reporting and year-to-year comparisons.</i></p>	Current Environmental indicators
Wastes and residuals			
11	Biosolids	<ul style="list-style-type: none"> ▶ Total mass of biosolids produced by Sydney Water. ▶ Biosolids beneficially reused expressed as a percentage of total mass produced. 	Current ESD Indicator
12	Water treatment residuals	<ul style="list-style-type: none"> ▶ Total mass of water treatment residuals produced by Sydney Water. ▶ Water treatment residuals beneficially reused expressed as a percentage of total mass produced. 	SWC aspects and impacts register
13	Trade waste	<ul style="list-style-type: none"> ▶ Total mass of heavy metals received under Trade Waste permits. 	DEC request



No.	Indicator	Description	Source based on:
14	Waste	<ul style="list-style-type: none"> ▶ Total solid waste generated by Sydney Water not including treatment waste ▶ Waste recycled or reused expressed as a percentage of total waste generated. <p><i>(Indicator to be aligned with WRAPP measurement and reporting requirements.)</i></p>	Current ESD Indicator
<i>Additional indicators</i>			
15	Greenhouse gases	<ul style="list-style-type: none"> ▶ CO₂ equivalent emissions through purchase of electricity, fuel and gas. 	Current ESD Indicator
16	Electricity consumption	<ul style="list-style-type: none"> ▶ Total electricity consumption consumed by Sydney Water. ▶ Total electricity consumption by water assets expressed as a function of water supplied (KWh/ML of water supplied). ▶ Total electricity consumption by sewer assets expressed as a function of sewage treated (KWh/ML of sewage treated). ▶ Electricity consumption from renewable sources or generated by Sydney Water expressed as a percentage of total electricity consumption. 	Current ESD Indicator
17	Contaminated land	<ul style="list-style-type: none"> ▶ Number of sites under the control of Sydney Water that present a significant risk of harm as defined under the Contaminated Land Management Act. 	SWC Aspects and Impacts Register
18	Heritage	<ul style="list-style-type: none"> ▶ Proportion of heritage listed sites with Conservation Management Plans prepared ▶ Number of applications for a heritage impact permit under the NPW Act and the number granted in relation to Aboriginal cultural heritage. 	SWC Aspects and Impacts Register and Current ESD Indicator
19	Flora and Fauna	<ul style="list-style-type: none"> ▶ Total area of habitat <i>loss</i> under the provisions of the Native Vegetation Conservation Act and the Threatened Species Conservation Act. ▶ Total area of habitat <i>gain</i> due to site rehabilitation, restoration or replanting in areas impacted by Sydney Water. 	SWC Aspects and Impacts Register
20	Odour	<ul style="list-style-type: none"> ▶ Total number of odour complaints generated from the sewage treatment plants or the sewerage system. 	Current ESD Indicator
21	Noise	<ul style="list-style-type: none"> ▶ Total number of noise complaints generated from Sydney Water's construction or operational activities. 	Current ESD Indicator

Comparison of the recommended environmental indicators against the selection criteria is provided in Appendix E.

9.2 Monitoring and reporting

It is recommended that the broad monitoring and reporting requirements against the final list of environmental indicators be specified by IPART under the Operating Licence. The Licence would specify:



- ▶ Timing of the report;
- ▶ Report is required to provide year to year comparison over a specified number of years;
- ▶ Report is to provide reasons and justifications for any apparent trends in performance;
- ▶ Report is to interpret the data in terms of performance and direct impact on the environment; and
- ▶ The extent to which the report or data are to be provided in the public arena.

In addition, it is recommended that the existing Monitoring and Reporting Protocol (June 2003) between Sydney Water and IPART be expanded to provide agreement and guidance on monitoring and reporting against the final list of environmental indicators. The protocol would:

- ▶ Outline roles and responsibilities between Sydney Water and IPART;
- ▶ Provide definitions, clarification and interpretation of indicators;
- ▶ Outline the specific monitoring requirements; and
- ▶ Outline reporting principles (consistent with GRI);

The auditor undertaking the operational audit would be guided by the protocol as the measuring instrument to determine whether Sydney Water had fully satisfied its reporting obligations under the Licence.

It is further noted that Sydney water has prepared an *Environmental Indicators Monitoring Program Methods Report* that outlines the methodology for collection, analysis and storage of data collected for Sydney Water's Environmental Indicators Monitoring Program. It is recommended that this document be referenced by the monitoring and reporting protocol and updated to include the new list of environmental indicators.

9.3 Data verification

Data verification is a critical component to assuring the integrity of Sydney Water's reports to IPART. Given the tight time constraints to which the operational audit is undertaken in order to prepare a timely report to Parliament, on behalf of IPART, it is recommended that:

- an auditor independent of the annual operational audit undertake the data verification; and
- the independent verification audit be undertaken such that its findings will be available for consideration as part of operational audit.

It is further recommended that IPART specify as an Operational Licence condition that the data verification be undertaken in accordance with a recognised data verification standard closely aligned to GRI such as *DR03422 – Draft General guideline on the verification, validation and assurance of environmental and sustainability reports* or subsequent revisions.

An alternate verification standard is *AA1000 - Assurance Standard*. As discussed in Section 4.1.4 of this report, the standard requires an external assurance auditor to sign off on the principles of materiality, completeness and *responsiveness*. However, as the proposed environmental indicators are fixed by the Operating Licence, Sydney Water has limited ability to *respond* to stakeholders needs and amend what it reports, although it would have scope to amend how it reports. Careful consideration of the scope of an independent audit would be required if AA1000 is applied.



9.4 Operational Audits

Operational audits as required under the Sydney Water Act (1994), are an integral part of facilitating stakeholder confidence in Sydney Water's reporting on its performance against the environmental indicators.

It is recommended that operational audits be undertaken at regular intervals and the scope of the audit include:

- ▶ Sydney Water's compliance with monitoring and reporting requirements outlined in the Operating Licence relating to the environmental indicators; and
- ▶ an assessment of Sydney Water's performance against the environmental indicators.



10. References

AccountAbility - Institute of Social and Ethical Accountability, 2003, *Assurance Standard AA1000*, London.

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Australian and New Zealand Environment and Conservation Council, State of the Environment Reporting Task Force, 2000, *Core environmental indicators for reporting on the state of the environment*. Environment Australia, Canberra.

<http://www.deh.gov.au/soe/publications/coreindicators.html>

Commonwealth of Australia, 2003, *Triple Bottom Line Reporting in Australia: A Guide to Reporting Against Environmental Indicators*, Environment Australia, Canberra.

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Commonwealth of Australia, 2000, *A Framework for Public Environmental Reporting – An Australian Approach*, Environment Australia, Canberra.

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Global Reporting Initiative, 2002, *Sustainability Reporting Guidelines*, Boston.

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Standards Australia, 2003, *General Guidelines on the verification, validation and assurance of environmental and sustainability reports*, DR 03422, Draft for Public Comment, Sydney.

<http://www.standards.com.au>



Appendix A

Sydney Water's current environmental and ESD indicators



Table 1 Sydney Water's current environmental indicators – gazetted December 1995.

Environmental indicator	Monitored
Sewerage Effluent Discharges to Ocean	
<i>Discharge Quality</i>	
Effluent Quality including schedule 10 chemicals	✓
Nutrients, grease, suspended solids	Monitoring of oil and grease and nutrients is not recorded for Fairfield, Glenfield and Liverpool.
STP discharge volume	✓
<i>Water quality</i>	
Water quality concentrations of schedule 10 chemicals, nutrients, grease, suspended solids based on effluent measurements and measured/modelled dilution rates	✓ Receiving water quality is monitored.
Beach water quality including faecal coliforms and enterococci bacteria at Sydney Beaches (by EPA Beachwatch) and Illawarra beaches (by Sydney Water)	✓
<i>Biota</i>	
For shoreline discharges summarise and report on existing data as basis for ongoing monitoring	No requirement
For ocean outfall discharges, evaluate results of NSW EPA investigation of biota as basis for ongoing monitoring.	No requirement
<i>Sediment</i>	
Schedule 10 chemicals	No monitoring
Sewerage effluent discharges to rivers and streams	
<i>Discharge Quality</i>	
Effluent Quality including Schedule 10 Chemicals,	✓
Nutrients, grease, suspended solids, faecal coliforms	✓ except oil and grease
STP discharge quality	✓
<i>Water Quality</i>	
Nutrients	✓
Chlorophyll a	✓
Faecal coliforms	



Table 1 Sydney Water's current environmental indicators – gazetted December 1995.

Environmental indicator	Monitored
Enterococci bacteria	✓
Oxygen	No
pH	No
Light intensity	No
Conductivity	No
Schedule 10 Chemicals	No
<i>Biota</i>	
Macro invertebrate surveys	✓
Algal species identification	
<i>Sediment</i>	
Schedule 10 chemicals	No
Sewerage Reticulation System	
<i>Discharge Quality</i>	
Effluent Quality including Schedule 10 Chemicals	No
Effluent Quality including nutrients	✓
Effluent Quality including faecal coliforms	✓ for dry weather
Effluent Quality including enterococci bacteria at representative sites	
<i>Water Quality</i>	
Characterise Schedule 10 chemicals	No
<i>Biota</i>	
Complete current studies on settlement panels and intertidal rock platform communities as a basis for ongoing monitoring	No
<i>Sediment</i>	
Schedule 10 chemicals, nutrients in sediments at representative sewer overflow sites	



Table 1 Sydney Water's current environmental indicators – gazetted December 1995.

Environmental indicator	Monitored
Air and Land Impacts - Odour and Emissions from Sewerage Treatment Process	
<i>Odour and emissions for sewage treatment process</i>	
Emission quality of chemical scrubbers for compounds such as hydrogen sulphide, chlorine and amines	For plants that have chemical scrubbers
Odour complaints lodged with NSW EPA	✓
Disposal of water treatment sludges	✓
Disposal volume and re-use percentage	✓
<i>Land application of biosolids</i>	
Reporting of volume applied, compliance with EPA code of practice and application location.	✓ Volume and location



Table 2 “Schedule 10” List of substances (refer Section 23(9) of the Act)

▶ Aluminium	▶ Manganese
▶ Ammonia (insofar as it is a toxicant)	▶ Mercury
▶ Arsenic	▶ Molybdenum
▶ Barium	▶ Monocyclic aromatic compounds, including chlorinated benzenes, chlorinated phenols and phenolic compounds
▶ Benzidene	▶ Nickel
▶ Boron	▶ Nitrate and nitrite (insofar as they are toxicants)
▶ Cadmium	▶ Pesticides, including organochlorines and organophosphates
▶ Chloride	▶ Polyaromatic hydrocarbons, including chlorinated naphthylenes, polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs)
▶ Chromium	▶ Selenium
▶ Cobalt	▶ Silver
▶ Copper	▶ Sulphate
▶ Cyanide	▶ Surfactants
▶ Dichlorobenzidine	▶ Tin
▶ Diphenylhydrazine	▶ Trihalomethanes
▶ Halogenated aliphatic compounds, including chlorinated alkanes and alkenes	▶ Total residual chlorine, including available chloramines
▶ Iron	▶ Zinc
▶ Lead	



Table 3 Current ESD indicators – gazetted June 2000.

No.	Indicator	Description
Ecological Integrity and / or Biodiversity Indicators		
1	Overflows from the sewerage system	<ul style="list-style-type: none"> ▶ Dry and wet weather overflows
2	Leakage from the sewerage system	<ul style="list-style-type: none"> ▶ % of sampled drainage sites exceeding faecal coliform counts
3	Sewage treatment plant effluent quality	<ul style="list-style-type: none"> ▶ Total SS from ocean STPs ▶ Total P discharged to streams / rivers from inland STPs ▶ Total N discharged to streams / rivers from inland STPs
4	Greenhouse gases	<ul style="list-style-type: none"> ▶ CO2 equivalent emissions through purchase of electricity, fuel and gas.
5	Energy	<ul style="list-style-type: none"> ▶ Total usage ▶ KWh/ML of water supplied ▶ KWh/ML of sewage treated ▶ % of total from renewable sources
6	Biosolids	<ul style="list-style-type: none"> ▶ % recycled ▶ quantity recycled annually ▶ quantity and % to landfill
7	Reducing discharges to sewer at source	<ul style="list-style-type: none"> ▶ Number of agreements and permits ▶ Education programs
8	Waste	<ul style="list-style-type: none"> ▶ Waste generated ▶ Waste disposed of to landfill or elsewhere ▶ Waste recycled or reused
9	Species impact	<ul style="list-style-type: none"> ▶ Areas subjected to a Species Impact Statement impacted on by Sydney Water
10	Land and water stewardship	<ul style="list-style-type: none"> ▶ Development and maintenance of an environmental / natural assets inventory of Sydney Water land
11	Remediation of contaminated sites / land	<ul style="list-style-type: none"> ▶ Information on sites posing a 'significant risk of harm' and their remediation.
12	Environmental Management	<ul style="list-style-type: none"> ▶ EMS implementation
13	Staff ESD awareness and training	<ul style="list-style-type: none"> ▶ Development and implementation of staff training programs
14	Environmental standards of contractors	<ul style="list-style-type: none"> ▶ Development and implementation of due diligence requirements on contractors.
Social and Public Health Indicators		
15	Water use	<ul style="list-style-type: none"> ▶ Usage per person



Table 3 Current ESD indicators – gazetted June 2000.

No.	Indicator	Description
		<ul style="list-style-type: none"> ▶ Total releases
16	Unaccounted for water	<ul style="list-style-type: none"> ▶ Annual amount
17	Heritage	<ul style="list-style-type: none"> ▶ Applicable sites with Conservation Management Plans prepared ▶ Activities disturbing or destroying Aboriginal sites / relics
18	Odour	<ul style="list-style-type: none"> ▶ Annual complaints
19	Noise	<ul style="list-style-type: none"> ▶ Annual complaints
20	Overflows on customer properties	<ul style="list-style-type: none"> ▶ % of customers experience overflows from SWC sewerage systems
21	Public Health	<ul style="list-style-type: none"> ▶ Compliance with guidelines and Annual Drinking Water Quality Plan
22	Mitigation of social impact	<ul style="list-style-type: none"> ▶ Sydney Water assistance to customers – number of vouchers issued and used
23	Community consultation	<ul style="list-style-type: none"> ▶ Information on community consultation
24	Social research	<ul style="list-style-type: none"> ▶ Use of community research on issues.
Economic Indicators		
25	User pays	<ul style="list-style-type: none"> ▶ % of water revenue based on usage charges ▶ % of sewerage revenue based on usage charges
26	Polluter pays	<ul style="list-style-type: none"> ▶ Number and type of Tier 1 and 2 prosecutions.
27	Market incentives	<ul style="list-style-type: none"> ▶ % of new developments paying a developer charge ▶ Revenue from trade waste charges
28	Financial capability to fund ESD	<ul style="list-style-type: none"> ▶ Net profit compared to cost of capital funds used to add economic value
29	Operating efficiency	<ul style="list-style-type: none"> ▶ Operating costs per property served.



Appendix B

Review of indicators used in other jurisdictions



Table 1 Comparison of environmental monitoring and reporting in other jurisdictions.

Water Authority	Basis of performance measurement	Reported in	Regulation	Comments	Example indicators attached.
ActewAGL (Canberra)	Performance Indicators	Sustainability Report	Self regulated	Site based licences from EPA Policies and priorities set through 5 yearly EMP Reporting against environmental aspects identified in Environmental Action Plan List of env performance indicators – relate to high risk activities First Annual Sustainability report produced in 2003	✓
Brisbane Water (QLD)	Policies, objectives, targets	Report to Stakeholders	Self / Government Site based licences from EPA	Report covers all aspects of Brisbane City Council's operations.	X
CityWest Water (Melbourne)	Licence Standard / Target	Sustainability Report	Essential Services Commission	See comment for Melbourne Water. Report references GRI indicators.	✓
Hunter Water	Environmental and ESD indicators	Annual Environment (ESD) report	IPART Site based licences from EPA	Indicators included in 5-yearly EMP under Operating Licence	✓
Melbourne Water	Performance Indicators	Annual Report	Essential Services Commission Site based licences from EPA	Currently Melbourne water adheres to 11 Environmental Protection Principles enshrined in the Environmental Protection Act Currently there are no operating licence obligations for environmental monitoring and reporting The regulatory regime is in transition in 2004 as new powers allow government to regulate environmental performance through an industry regulatory order and specific Statements of Obligation on utilities.	X



Water Authority	Basis of performance measurement	Reported in	Regulation	Comments	Example indicators attached.
SA Water	Objectives and targets	Environmental Report	SA Government Site based licences from EPA	Targets and objectives are outlined in Environment Plan	X
The Water Corporation (WA)	Corporate performance measures with targets	Sustainability Report	Office of Water Regulation (nb. regulatory changes in 2004)	Plans are in place to develop relevant criteria and indicators over the next 2 years. Minister for Government Enterprises detailing its performance and progress made in fulfilling the Statement of Corporate Intent (SCI)	X
United Utilities (UK)	Targets and Measures + Environmental Sustainability Indicators.	Corporate Responsibility Report.	Office of Water Services (Economic regulator for the water and sewerage industry in England and Wales). Environmental licence regulators	United Utilities claims to be sectoral leaders in sustainability reporting in the UK and report its performance against overall industry performance in a set of indicators as well as its performance against sustainability indicators developed by the Electricity Association.	✓
WaterCare (NZ)	Sustainability Scorecard Objectives and Targets	Annual Sustainability Report	Company Board and State of Corporate Intent to stakeholders Relevant Legislation	Indicators developed from GRI Sustainability Guidelines.	✓



Appendix C

Comparative review of indicators – other jurisdictions and Sydney Water scorecard



Sydney Water Corporate Goals	Sydney Water Headline Indicators	Sydney Water Supplementary Indicators	United Utilities (UK)	ActewAGL (ACT)	Watercare (NZ)	Citywest Water	Hunter Valley Water	
Clean, safe drinking water	Water quality guidelines & compliance Compliance with ADWG as determined by NSW Health.	1. Compliance in each water delivery system for health and aesthetic guideline values as determined by NSW Health.	<ul style="list-style-type: none"> Achieve zero cryptosporidium exceedences for Service Delivery. Achieve 99.8% compliance with overall drinking water standards. 	<ul style="list-style-type: none"> Site certifications to ISO 14001 – compliance with internal and external audits Drinking Water Quality Licence – health 	<ul style="list-style-type: none"> Achieve full compliance with "Drinking Water Standards for New Zealand 1995" for potable reticulated water. 	<ul style="list-style-type: none"> Water compliance for all zones (target E. coli 95% and Total coliform 90%) 	<ul style="list-style-type: none"> Compliance with Operating Conditions, Monitoring and Reporting Conditions and Management Plan of the Water Management Licence 	
Healthy waterways and clean beaches	Sydney Water operational impact on receiving environments Meet effluent quality limits for discharges to the environment as set by the DEC. <i>Note 1: Includes substances and toxicity.</i>	2. Sewage Treatment System discharges	<ul style="list-style-type: none"> Pollutants discharged to the environment as measured by Pollution Units as set by DEC. Dry weather overflows reaching waterways. Meet wet weather overflow targets. 	<ul style="list-style-type: none"> Compliance with specific treatment plan licences LMWQCC discharge licence compliance LMWQCC incinerator air emission compliance LMWQCC effluent reuse compliance Fyshwick Effluent Reuse Environment Protection Agreement compliance. 	<ul style="list-style-type: none"> Ensure biosolids from the wastewater treatment plant comply with Ministry of Health guidelines for heavy metals Ensure all discharges from the wastewater treatment plant comply with resource consents. Ensure the number of dry weather overflows from the wastewater collection system are no more than six per annum. 	<ul style="list-style-type: none"> Compliance with Environment Protection Authority Licence (target 100%) 	<ul style="list-style-type: none"> Compliance with EPA wastewater treatment plant conditions (flow weighted compliance) Effluent quality (exceedences for BOD, NFR, Grease and Oil, P and N) Number and capacity of wastewater treatment plans by level of treatment. 	
		3. Environmental Impacts	<ul style="list-style-type: none"> Ecosystems impacted downstream of Sydney Water's inland STP discharges. Ecosystem impacts of deep ocean discharges. 	<ul style="list-style-type: none"> Convictions for public health and environmental offences Number of environmental prosecutions Number of reportable environmental incidents. % of priority species on our land with biodiversity action plans % of priority habitats on our land with biodiversity action plans Rivers in classes A-D (river water quality) 	<ul style="list-style-type: none"> Number of chemical, fuel or oil spills reportable to environmental authorities Number of spills escaping to groundwater, stormwater or waterways (excluding sewage) Number of environmental non-compliance notices issued by authorities. Release of PCB's from transmission stations to the environment. Adhere to National Pollution Inventory Reporting requirements. Southwell Park Environment Protection Agreement compliance. 	<ul style="list-style-type: none"> Ensure no successful prosecutions arise from breaches of Resource Management Act consents. 	<ul style="list-style-type: none"> No of spills due to pumping station equipment failure (0%) 	
		4. Bathing water quality	<ul style="list-style-type: none"> Ocean beaches – Percentage compliance to bathing water quality guidelines. Harbour beaches – Percentage compliance to bathing water quality guidelines. 	<ul style="list-style-type: none"> % of designated waters achieving mandatory standards % of designated waters achieving guideline values. 				
		5. Trade waste customer compliance	<ul style="list-style-type: none"> Percentage of industrial customers compliant with Trade Waste Agreement/Permit. Percentage of commercial customers compliant with agreement. 			<ul style="list-style-type: none"> Industrial waste customers non-compliant with tradewaste agreements (target 1%). 	<ul style="list-style-type: none"> Number and five year trend representation of trade waste incidents within the sewerage system. 	
Water efficient city	Sustainable draw on storages by Sydney Water Water saved as a result of Sydney Water's water conservation and recycling initiatives. Percentage of safe yield as drawn by Sydney Water.	6. Water recycled	<ul style="list-style-type: none"> Percent of total wastewater discharged from STPs that is recycled. Percent of total wastewater reused that substitutes reductions in potable water use. 				<ul style="list-style-type: none"> Recycled water – direct and indirect reuse as currently calculated Recycled water – proportion of total average dry weather flow. Recycled water – graphical five year representation. 	



Sydney Water Corporate Goals	Sydney Water Headline Indicators	Sydney Water Supplementary Indicators	United Utilities (UK)	ActewAGL (ACT)	Watercare (NZ)	Citywest Water	Hunter Valley Water
		7. Water Smart Growth <ul style="list-style-type: none"> Reduction of total potable water usage [consumption] per household [per dwelling] in new growth areas against standard. 					<ul style="list-style-type: none"> Residential sector water use (KL / household / annum – 5 yr rolling average) Commercial sector water use (ML / annum – 5 yr rolling average) Industrial sector water use (ML / annum – 5 yr rolling average) Total water supplied (KL supplied to customers – 5 year rolling average)
		8. Infrastructure Leakage Index Unaccounted for water, considering rate of leakage, rate of loss from break and reservoirs, etc.	<ul style="list-style-type: none"> Reduce Leakage from network to 450 ML/d. 		<ul style="list-style-type: none"> Maintain unaccounted (non-revenue) water <2% 	<ul style="list-style-type: none"> Water main breaks per 100km of main (target 80). 	<ul style="list-style-type: none"> Non-revenue water (water loss in ML and % of source supply per year)
Economically efficient viable business	Efficient and viable service Shareholder value added. Operating cost per property.	9. Cash Flows from Operations <ul style="list-style-type: none"> Funds flows from operations (changed from cashflows from operating activities). 					
		10. Maintenance and renewal of assets. <ul style="list-style-type: none"> Percentage of planned maintenance completed on water and sewer mains. Percentage of planned renewals completed on water and sewer mains. 					
		11. Financial Contribution to the Community <ul style="list-style-type: none"> Taxes and dividends paid as a proportion of profits before tax. 					
		12. Financial Return from Investment in Assets <ul style="list-style-type: none"> Return on net operating assets 					
		13. Labour Efficiency <ul style="list-style-type: none"> Total wages as a percentage of total operating expenses. 					
Effective customer service	Customer satisfaction Compliance with operating licence customer and system performance standards. Results of the Customer Satisfaction Index.	14. Average residential bill as a proportion of average household income					
		15. Continue to meet standards of services <ul style="list-style-type: none"> Includes: • Overflows on properties • Water pressure • Water supply interruptions 	<ul style="list-style-type: none"> Reduce score for unplanned interruptions to customer's water supply in north west England to 0.19. 	<ul style="list-style-type: none"> Achieve planned and unplanned water supply and wastewater service interruptions of no more than four per annum. Ensure each planned and unplanned water supply and wastewater service interruption is no more than 14 hours. Meet all service delivery standards. 	<ul style="list-style-type: none"> Customers receiving more than 5 unplanned water supply interruptions in a year (target 0) Customers receiving more than 5 unplanned sewer supply interruptions in a year (target 0) Average water supply interruption time (unplanned: 100 mins, planned: 140 mins) Response to sewer spills (within 1 hour, target 99%) Sewer blockages per 100 km of sewer (target: 28) 		



Sydney Water Corporate Goals	Sydney Water Headline Indicators	Sydney Water Supplementary Indicators	United Utilities (UK)	ActewAGL (ACT)	Watercare (NZ)	Citywest Water	Hunter Valley Water
		16. Customer Complaints <ul style="list-style-type: none"> Number of complaints as determined through the criteria issued in the Minister's Report. Response times to customer complaints. 	<ul style="list-style-type: none"> Reduce number of written complaints from water, wastewater and electricity customers. 		<ul style="list-style-type: none"> Ensure the number of days within a three month period when foul odours from the wastewater treatment plant have a significant impact causing more than two complaints, are no more than six. No odour beyond the odour buffer zone at the wastewater treatment plant by 1 October 2003. 	<ul style="list-style-type: none"> Water quality complaints per 1000 properties connected Response time to assess faults Average time to rectify water faults Correspondence answered within 10 days. 	<ul style="list-style-type: none"> Odours – treatment plan and transport system complaint numbers and trends. Noise – number of breaches of POEO Act due to noise complaints Noise – number of validated noise complaints from the community due to Hunter Water activities.
		17. Mitigation of negative social impact <ul style="list-style-type: none"> Total number of payment assistance vouchers issued. Total number of customer accounts paid using payment assistance. Number of residential disconnections or restrictions of water supply per 1000 properties. Number of complaints to the Energy & Water Ombudsman about Sydney Water (per 10,000 customers). Number of arrangements entered into with disadvantaged customers to prevent restrictions of water supply. 					
		18. Community investments – linkage with community <ul style="list-style-type: none"> Investment in community activities. Meet minimum maintenance requirements for the protection of heritage. 					
		19. Meet growth requirements <ul style="list-style-type: none"> Number of new sewerage and water connections. 					
Responsible resource use	Resource management practices Net greenhouse gas emissions. Waste management compliance. <i>Note 1: Increase volume of increased energy consumption resulting from improved treatment processes. Waste management compliance based on WRAPP targets</i>	20. Energy <ul style="list-style-type: none"> Energy used by source. Energy efficiency. Greenpower. 	<ul style="list-style-type: none"> Emit no more than 265,000 tonnes CO2 from Service Delivery Generate 79 GWh renewable energy within Service Delivery Green Energy to develop a portfolio of at least 200MW of renewable generating capacity over next 5 years. Fixed sites - Energy use per ML water supplied Fixed sites - Energy use per ML wastewater treated Fixed sites - Renewable energy as % of total energy used Fixed sites - Emissions per head of population, tonnes/yr Road transport - Emissions per head of population, tonnes/yr 		<ul style="list-style-type: none"> Maximise use of gas at wastewater treatment plant and hydroelectric generators at Mangatangi and Waitakere Dams. 		<ul style="list-style-type: none"> Energy consumption in buildings – total kWh (10 year trend) Energy efficiency of water and sewer services (kWh per ML of water and per ML of wastewater) Generation of greenhouse gases – tonnes per annum due to electricity consumption for key greenhouse gases.
		21. Percentage waste recycled <ul style="list-style-type: none"> Percentage of solid waste generated by activities undertaken by or on behalf of Sydney Water. Percentage of solid waste recycled through different waste streams. 	<ul style="list-style-type: none"> Dispose of no more than 59,000 tonnes of Service Delivery wastewater sludge % of sludge recycled / reused % of materials from excavations recycled / reused 				<ul style="list-style-type: none"> Biosolids reuse – annual tonnage (dry) and proportions of dewatered biosolids available for reuse (recycled for agriculture; municipal waste minimization, disposed of to landfill; other reuse). Graphical 5 year trend representation.



Sydney Water Corporate Goals	Sydney Water Headline Indicators	Sydney Water Supplementary Indicators	United Utilities (UK)	ActewAGL (ACT)	Watercare (NZ)	Citywest Water	Hunter Valley Water
		22. Beneficial use of By-products <ul style="list-style-type: none"> ▶ Suspended solids capture rate (incoming vs. suspended released). ▶ Percentage of captured biosolids beneficially used (per market and grade). ▶ Percentage of STP grit and screenings beneficially used. ▶ Percentage of water treatment residuals reused. 			<ul style="list-style-type: none"> ▶ Biosolides used for rehabilitation of land at wastewater treatment plant (maximize) 		
Employer of choice	Employee wellbeing Overall job satisfaction rating. Lost Time Injury frequency rate.	23. Representation of minority groups in SW workforce. <ul style="list-style-type: none"> ▶ Percentages for age, gender, people with a disability and cultural background. 			<ul style="list-style-type: none"> ▶ No prosecutions under OHS legislation. ▶ Keep lost time injury frequency rate < 20 (per 1,000,000 hours worked) ▶ Keep lost time injury severity rate < 20 (per 100 employees) 	<ul style="list-style-type: none"> ▶ Lost time injuries per 100 City West Water employees (target: 0) ▶ Sick leave for City West Water employee (target 3.8 days) 	
		24. Investing in Employment programs Range of opportunities provided through employment programs.		<ul style="list-style-type: none"> ▶ Keep unscheduled absenteeism < 2.5% of available working hours. ▶ Injury accidents (lost time and non lost time) of less than 50 per annum. 			
		25. Staff Turnover		<ul style="list-style-type: none"> ▶ Undertaken courses on employment equity / harassment prevention 			
		26. Alignment of Values How well employee values align with those of Sydney Water.		<ul style="list-style-type: none"> ▶ Implement annual performance assessments and training and development programs. ▶ 			



Appendix D
Summary of other submissions



Table 1 - Summary of other stakeholder submissions to the End of Term Review

Submission	Pages	Key Comments related to Environmental and ESD indicators
Government Agencies		
NSW Health	6	<ul style="list-style-type: none"> ▶ No comment related to Environmental and ESD indicators
Department of Environment and Conservation	24	<ul style="list-style-type: none"> ▶ Notes that the Sydney Water Act gives equal importance to Sydney Water objectives of environmental protection, public health and successful business, and therefore believes the operating licence provides a good mechanism for monitoring overall environmental performance of Sydney Water. ▶ Recommends that costs of environmental objectives should be aligned with pricing determinations and that a new licence could help Sydney Water and DEC demonstrate links with capital works, environmental outcomes and maintenance. Indicators should therefore demonstrate the extent to which investment decisions are consistent with environmental protection (including environmental outcomes, integrated water cycle management and least cost planning) and the extent to which asset management contributes to maintaining environmental standards. ▶ Considers that the Licence should measure stormwater performance and ensure that stormwater assets are managed to address environmental impacts. ▶ Supports rationalisation of environmental reporting requirements provided performance does not decline and the ability to independently assess performance remains. ▶ Supports a model where EPA Sewage Treatment System (STS) Licences require <i>detailed</i> monitoring and reporting of sewage treatment performance and the Operating Licence requires monitoring and reporting of <i>overall</i> environmental performance. I.e. indicators support EPA data, not duplicate it. ▶ Generally supportive of Sydney Water's proposed Sustainability Scorecard provided it uses robust data and information sets, measures against indicators established independently and through consultation, and it allows indicators and supporting data to be independently audited. DEC reserves judgement until it sees details of Sydney Water's proposed changes to the Act, the outcomes of STS Licence review and details of methodology to be implemented with the Scorecard. ▶ Believes indicators should not be reassessed or changed annually because of the effect this would have on trend reporting over time; should focus on performance in key environmental areas; should provide information regarding demand / supply balance, planned investments etc, so as to facilitate private sector participation. ▶ Suggests high level indicators should be used to promote compliance with core objectives, increase transparency against performance targets, and reduce the administrative burden of audits. ▶ Proposes that the Operating Licence should include a reporting framework that allows indicators to be linked to published targets and work programs so as to allow removal of targets set in the Environment Plan. The framework should specify the methodology for deriving the headline and supplementary indicators and specify reporting requirements such as data analysis, progress towards indicator targets, rationale and expenditure. ▶ Believes that the Operating Licence should include requirements to monitor and report on Sydney Water's energy use and associated greenhouse emissions and mitigation measures. DEC does not recommend energy reduction targets be included but energy issues should be a consideration in a least cost planning framework. ▶ Recommends that trade waste measures should remain in the suite of



Submission	Pages	Key Comments related to Environmental and ESD indicators
		<p>performance indicators.</p> <ul style="list-style-type: none"> ▶ Considers licence audits could be conducted every 2.5 years with Sydney Water being required to report by exception on non-compliance issues in the intervening period. ▶ Considers it acceptable to remove the requirement for a mid term review.
Peak Environment Non-Government Organisations		
Total Environment Centre	14	<ul style="list-style-type: none"> ▶ Considers it essential that the Operating Licence be an overarching instrument to ensure integrated and effective regulation of Sydney Water. ▶ Supports IPART's view that accurate reporting of Sydney Water's overall performance requires consideration of environmental impacts and performance. ▶ Sees the primary role of DEC and DIPNR being to determine environmental priorities and standards for Sydney Water and the role of the Operating Licence being to require Sydney Water to report on performance against these standards. ▶ Does not support a model of self-assessment and external review for Sydney Water. ▶ Agrees that rationalisation of indicators should occur and sees merit in a list of indicators discussed with Sydney Water. ▶ Is concerned about the relationship between Sydney Water's proposed scorecard, the Operating Licence and audit mechanisms, and believes that supplementary indicators should be included in the Operating Licence and be audited. ▶ Believes customer service indicators should continue to be included in the Operating Licence and should take the form of performance indicators and mandatory standards. ▶ Recommends the introduction of requirements for stormwater management programs and modified requirements for performance against energy efficiency in the Operating Licence. ▶ Suggests that Sydney Water be required to report to IPART and publicly on non-compliances (exceptions reports) in addition to the Operational Audit. ▶ Sees merit in providing 'audit holidays' for parts of the Licence where high performance is continually achieved, so as to allow for focus on other areas.
Nature Conservation Council	22	<ul style="list-style-type: none"> ▶ Believes Operating Licences and annual audits are essential to informing parliament and public and ensure accountability, and are not a duplication of other regulators ▶ Is concerned that Sydney Water's proposal would undermine the statutory obligations in the Licence and is opposed to Sydney Water self-reporting and self-regulating. ▶ Questions whether significant cost savings would result from Sydney Water's proposal as data is collected anyway to meet obligations to DEC. ▶ Is critical of Sydney Water for a lack of integration of reporting requirements and reported information not being translated into improved management and operational decisions. ▶ Is concerned that the model of independent verification proposed by Sydney Water may not be truly independent ▶ Believes that Sydney Water's proposal to leave supplementary indicators outside the Licence is problematic because auditing headline indicators requires reference to supplementary indicators. ▶ Does not support Sydney Water's proposal to allow changes in indicators



Submission	Pages	Key Comments related to Environmental and ESD indicators
		<p>without reference to IPART and stakeholders.</p> <ul style="list-style-type: none">• Suggests that requirements for energy reductions are reviewed in the Operating Licence.• Supports the inclusion of performance indicators in relation stormwater and trade waste in the Operating Licence.• Proposes that annual Operational Audits change focus year to year to concentrate on areas of higher risk, poor performance or emerging issues.
Other interested Stakeholders		
Public Interest Advocacy Centre (PIAC)	8	<ul style="list-style-type: none">• Supports inclusion of customer performance indicators in Sydney Water's Operating Licence• Streamlining of indicators should be undertaken but should not reduce range and scope of matters Sydney Water is accountable for.• Believes Sydney Water Scorecard proposal may reduce accountability• Supplementary indicators should be developed through more consultation and be included in Operating Licence.



Appendix E

Comparison of proposed indicators against selection criteria



Table 1 - Comparison of recommended indicators against selection criteria

No.	Indicator	Description	Completeness* (direct impact of SWC activities)	Relevance* (rationalise; measurable and relevant to stakeholders)	Sustainability Context* (significance in terms of ESD)	Accuracy* (scientific rigour)	Comparability* (year to year/consistent with SWC proposal)
1	Potable Water drawn	<ul style="list-style-type: none"> Potable water drawn - total volume of potable water drawn by Sydney Water from all sources. Potable water drawn expressed as a percentage of safe yield. Potable water drawn expressed on a per capita basis. 	✓	✓	✓	✓	✓
2	Demand management	<ul style="list-style-type: none"> Total volume of demand saved on account of demand management programs (including savings due to water recycled and reduced unaccounted for water) Cumulative dollars expended on demand management versus cumulative demand saved. 	✓	✓	✓	✓	✓
3	Unaccounted for water	<ul style="list-style-type: none"> Unaccounted for water - total volume of unaccounted for potable water. Unaccounted for water expressed as a percentage of potable water drawn. 	✓	✓	✓	✓	✓
4	Water recycled	<ul style="list-style-type: none"> Water recycled - total volume of sewage effluent reused / recycled (report volumes on-site Sydney Water premises and off-site). Water recycled expressed as a percentage of total sewage effluent discharged. Cumulative dollars expended on water recycling versus cumulative water recycled. 	✓	✓	✓	✓	✓
5	Sewage effluent volume	<ul style="list-style-type: none"> Effluent discharged – Total volume of sewage effluent discharged to the environment from inland STPs and ocean STPs. 	✓	✓	✓	✓	✓
6	Sewage treatment plant (STP) effluent quality	<ul style="list-style-type: none"> Total mass of phosphorus discharged to streams / rivers from inland STPs. Total mass of nitrogen discharged to streams / rivers from inland STPs. Total mass of suspended solids and grease discharged from ocean STPs. Suspended solids capture rate for inland STPs and ocean STPs. 	✓	✓	✓	✓	✓
7	Breaches of statutory instruments	<ul style="list-style-type: none"> Total number of breaches of conditions relating to environmental impacts under the Environmental Protection Licences for the sewerage treatment systems. Total number of breaches of conditions relating to environmental impacts under the Environmental Protection Licences for the water treatment plants. Total number of prosecutions and Notices (including Penalty Infringement Notices) issued to Sydney Water under the POEO Act. Total number of prosecutions and Notices (including Penalty Infringement Notices) issued to contractors engaged by Sydney Water under the POEO Act. 	✓	✓	✓	✓	✓
8	Overflows from the sewage system	<ul style="list-style-type: none"> Dry and wet weather sewage overflows (report total volume and total number of events). Volume of dry and wet weather sewage overflows expressed as a percentage of total sewage effluent discharged to the environment. Total number of properties affected by sewer overflows including public properties. 	✓	✓	✓	(data / modelling)	✓
9	Stormwater	<ul style="list-style-type: none"> Total length of Sydney Water's stormwater system and total length with natural streamflow conditions. Total mass of silt and litter removed from Sydney Water's stormwater system per annum and the rainfall at Observatory Hill for the same period. Revenue from stormwater services compared to operating expenditure and capital expenditure for stormwater. 	✓	✓	✓	✓	✓
10	Recreational water quality	<ul style="list-style-type: none"> Percentage of time recreational water complied with Beachwatch swimming guidelines. Recreational water includes beaches, the Harbour and inland waters. <p><i>Note: Need to consider new set of swimming guidelines to be released by NHMRC and how it may impact on reporting and year-to-year comparisons.</i></p>	✓	✓	✓	✓	✓
11	Biosolids	<ul style="list-style-type: none"> Total mass of biosolids produced by Sydney Water. Biosolids beneficially reused expressed as a percentage of total mass produced. 	✓	✓	✓	✓	✓
12	Water treatment residuals	<ul style="list-style-type: none"> Total mass of water treatment residuals produced by Sydney Water. 	✓	✓	✓	✓	✓



No.	Indicator	Description	Completeness* (direct impact of SWC activities)	Relevance* (rationalise; measurable and relevant to stakeholders)	Sustainability Context* (significance in terms of ESD)	Accuracy* (scientific rigour)	Comparability* (year to year/consistent with SWC proposal)
		<ul style="list-style-type: none"> Water treatment residuals beneficially reused expressed as a percentage of total mass produced. 					
13	Trade waste	<ul style="list-style-type: none"> Total mass of heavy metals received under Trade Waste permits. 	✓	✓	✓	✓	✓
14	Waste	<ul style="list-style-type: none"> Total solid waste generated by Sydney Water not including treatment waste Waste recycled or reused expressed as a percentage of total waste generated. <p><i>Indicator to be aligned with WRAPP measurement and reporting requirements.</i></p>	✓	✓	✓	✓	✓
15	Greenhouse gases	<ul style="list-style-type: none"> CO₂ equivalent emissions through purchase of electricity, fuel and gas. 	✓	✓	✓	✓	✓
16	Electricity consumption	<ul style="list-style-type: none"> Total electricity consumption consumed by Sydney Water. Total electricity consumption by water assets expressed as a function of water supplied (KWh/ML of water supplied). Total electricity consumption by sewer assets expressed as a function of sewage treated (KWh/ML of sewage treated). Electricity consumption from renewable sources or generated by Sydney Water expressed as a percentage of total electricity consumption. 	✓	✓	✓	✓	✓
17	Contaminated land	<ul style="list-style-type: none"> Number of sites under the control of Sydney Water that present a significant risk of harm as defined under the Contaminated Land Management Act. 	✓	✓	✓	✓	✓
18	Heritage	<ul style="list-style-type: none"> Proportion of heritage listed sites with Conservation Management Plans prepared Number of applications for a heritage impact permit under the NPW Act and the number granted in relation to Aboriginal cultural heritage. 	✓	✓	✓	✓	✓
19	Flora and Fauna	<ul style="list-style-type: none"> Total area of habitat <i>loss</i> under the provisions of the Native Vegetation Conservation Act and the Threatened Species Conservation Act. Total area of habitat <i>gain</i> due to site rehabilitation, restoration or replanting in areas impacted by Sydney Water. 	✓	✓	✓	✓	✓
20	Odour	<ul style="list-style-type: none"> Total number of odour complaints generated from the sewage treatment plants or the sewerage system. 	✓	✓	✓	✓	✓
21	Noise	<ul style="list-style-type: none"> Total number of noise complaints generated from Sydney Water's construction or operational activities. 	✓	✓	✓	✓	✓

LEGEND:

✓	Meets criterion
X	Does not meet criterion

* Refer to Table 6.1 for selection criteria within these categories.



GHD Pty Ltd ABN 39 008 488 373

57 Herbert st
Artarmon NSW 2064
T: 61 2 9462 7100 F: 61 2 9462 4710 E: atnmail@ghd.com.au

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