

Position Paper

Long Term Regulatory Framework for SEQ Water Entities

February 2014

The QCA wishes to acknowledge the contribution of the following staff to this report:

Catherine Barker, William Copeman, Shannon Murphy, George Passmore, Matthew Rintoul and Rick Stankiewicz

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SUBMISSIONS

This report is a draft only and is subject to revision. Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (the QCA). Therefore submissions are invited from interested parties concerning its assessment of the long term regulatory framework. We will take account of all submissions received.

Written submissions should be sent to the address below. Submissions, comments or inquiries regarding this paper should be directed to:

Queensland Competition Authority
GPO Box 2257
Brisbane QLD 4001

Telephone: (07) 3222 0545
Fax: (07) 3222 0599
Email: water@qca.org.au

The closing date for submissions is 30 June 2014.

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EXECUTIVE SUMMARY

Ministers' Direction

The Ministers have directed the QCA to investigate and report on a long-term regulatory framework for the monopoly distribution and retail water and sewerage activities of the five SEQ distributor-retailers (the entities) — Unitywater, Queensland Urban Utilities (QUU), and the Logan, Redland and Gold Coast City Councils. If accepted, the framework would apply from 1 July 2015.

The overarching regulatory objective is to protect the long term interests of the users of SEQ water and sewerage services by ensuring that the prices of these services reflect prudent and efficient costs, while promoting efficient investment in and the use of these services, having regard to the reliability, safety and security over the long term.

The Ministers required that the form of prices oversight should minimise the administrative burden on the entities and facilitate a move to a more light-handed framework over time.

Background

SEQ distributor-retailers have been subject to different forms of price monitoring since 2008. Over 2010–13 the QCA annually reviewed the costs of water and sewerage services, monitored changes in prices and compared the entities' revenues against the maximum allowable revenue. The maximum allowable revenue reflects the QCA's assessment of the activities' total prudent and efficient costs.

The QCA is undertaking a review of the five entities' prices for the 2013–15 period with a Final Report due on 31 March 2014.

Long term regulatory framework

Recommended approach to regulation

In previous price monitoring reviews of QUU and Unitywater no evidence of an exercise of market power has been found. These entities have also sought to adopt many recommended improvements in policies and procedures. It is therefore not considered necessary for prices to be determined by Ministers or the QCA - provided such efforts are maintained.

The recommended form of regulation is annual performance monitoring. It is recommended that the QCA monitor and report upon the entities' performance against a range of measures including prices, revenues, certain costs (where necessary to justify breaches of the CPI-X rule), recommended procedures and policies (including strategic investment and customer engagement practices), service quality standards and the application of appropriate pricing principles (these being the subject of a separate Position Paper).

Incentives for performance

Public reporting by the entities and transparent review by the QCA is considered a key ingredient in promoting continued performance improvement.

As a starting point, a prudent and efficient cost base needs to be established and annual efficiency targets set (by reference to CPI-X).

Many jurisdictions where price or performance monitoring is applied incorporate the prospect of detailed cost of service reviews to further promote performance improvement. In almost all jurisdictions in Australia price determination is applied to significant urban water service providers.

For this purpose, and as recommended by the Commission of Audit (2013), a determination power consistent with IPART's, needs to be incorporated within the QCA Act.

Where an entities' performance is unacceptable, it is recommended that the QCA should determine prices unless there is an imperative to manage short-term cost pressures. In the latter instance, prices should be determined by the Minister

Such intervention would be justifiable where evidence emerges that an entity may be exerting monopoly power through, for example, excessive pricing (revenues), inefficient costs or reduced service standards.

A scheduled full cost of service review is otherwise recommended when an entity's Water Netserv Plan is updated, which, under legislation, is required at least every 5 years. However, the QCA does not recommend it proceed with the scheduled review if the changes to the Water Netserv Plan (endorsed by the Minister) are not material.

Transition

The outcome of the 2013–15 price monitoring review will inform the QCA on the readiness of the entities to be transitioned to long term performance monitoring. It is recommended that transition paths be tailored for entities according to their readiness for performance monitoring.

Key criteria are: the absence of public interest or equity issues warranting attention; clear definition of regulated services; evidence that market power is not being exercised (including that initial cost base is prudent and efficient; absence of imminent material changes in circumstances or major infrastructure costs; and demonstrated capacity to provide the required information accurately and on time, based on prior regulatory processes.

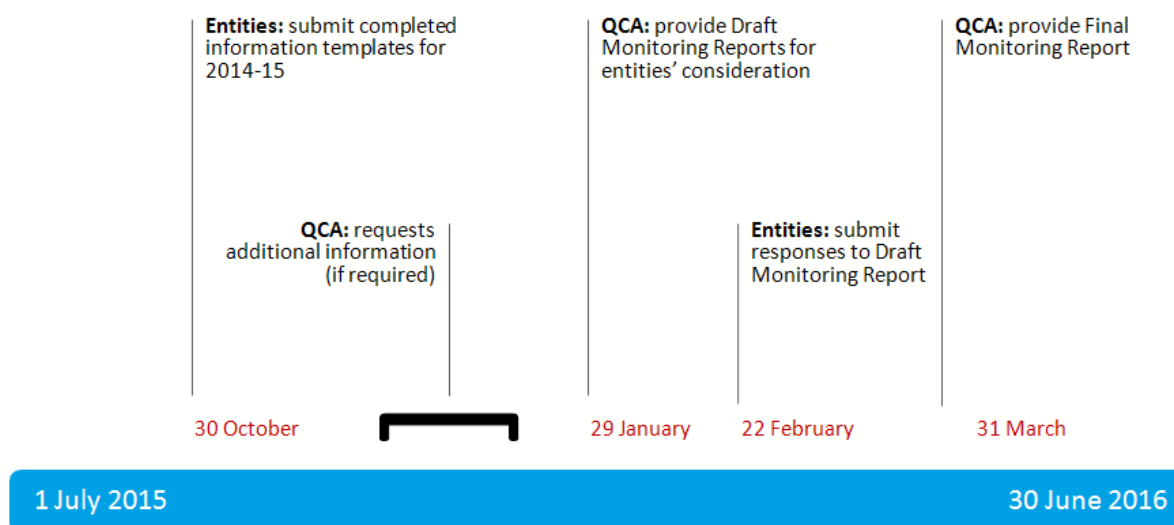
Each entity should meet each of these criteria before transition to the long-term light-handed framework can occur. Performance in terms of customer engagement, strategic planning for long term investment, service quality and pricing principles will also be relevant.

Timing and length of regulatory periods

It is recommended entities report annually on their performance for the previous year (*ex post* approach). Information returns would be due on 31 October. A Final Report would be due from the QCA by 31 March the following year.

For regulatory certainty and where appropriate, it is recommended that entities be allowed to seek approval to vary prices from CPI-X or other requirement on 31 October (*ex ante*). Any ruling by the QCA would be binding on any future reviews unless supporting information is later found to be misleading.

Timelines associated with reporting for a typical year (in this instance 2015-16) are outlined in Figure 1.

Figure 1: Timelines Associated With Reporting (2015-16)

CPI-X

As noted, to promote incentives and manage risks, monitoring prices against CPI-X is recommended. Where prices exceed CPI-X, entities will be required to justify the differences.

Differences due to the following are recommended to be accepted as pass-throughs:

- changes in uncontrollable costs such as changes to Government legislation and bulk water charges or where there are market-driven changes in WACC
- over or under recovery of certain prudent and efficient costs from and including 2013-14 or
- an adjustment previously substantiated by the entity.

A sustained breach of the CPI-X price cap would be a key element for invoking a more detailed cost of service review and potentially price determination.

The value of X will be established in consultation with the entities by 30 May 2014.

Triggers

Consistent with most other jurisdictions, specific triggers or performance criteria will not be defined. This follows from the difficulty of establishing criteria which can respond to the wide possible range of circumstances.

Indicative scenarios are outlined in Chapter 3 (Section 3.5) for the key performance monitoring parameters. Performance in customer engagement, long term strategic investment planning practices and pricing principles may also influence a decision to trigger a review.

Before a review is initiated, it is recommended that entities will be given an opportunity to explain in more detail the reasons for the deterioration in performance.

Regulatory parameters

The Maximum Allowable Revenue (MAR) establishes the amount of revenue that an efficient entity would need to remain commercially viable but not enjoy monopoly profits. The MAR comprises the key building blocks: return on capital (WACC applied to the Regulatory Asset Base (RAB)), return of capital (depreciation) and efficient operating costs.

Key recommendations are that:

- (a) the 2013–15 price monitoring review provide the basis for assessing the suitability of 2014–15 costs for the initial cost base
- (b) new capital expenditure should be prudent (reflecting drivers of compliance, growth, renewals/maintenance, service) and efficient in scope and standard of works
- (c) the RAB should be rolled forward taking account of prudent and efficient capex, depreciation and disposals, and escalated at CPI
- (d) capital contributions, including developer charges revenue, should be taken into account
- (e) return of capital should be based on straight-line depreciation with any variations to be justified to the QCA
- (f) operating costs should be prudent in terms of compliance, growth, renewals and service drivers, and efficient in terms of least cost.

Information requirements for monitoring prices and costs

The QCA proposes to annually assess prices (and their components) against CPI-X targets. Entities will be required to submit an annual information return identifying increases in prices and price components (as well as changes in other non-financial measures).

If price increases (or the components of prices) exceed CPI-X, further information will be required depending on the reason for the difference. For example, if the increase was due to a tariff restructure, the QCA will require information on the nature of the impact on total revenues.

Where prices or revenues have increased by more than CPI-X and cannot be justified on the basis of cost pass-throughs (see above), the QCA will require entities to provide broad data to estimate the MAR.

Where information is insufficient or absent, the QCA will seek further information and indicate on its public website that it is doing so.

The QCA proposes to work with entities to prepare a more detailed Information Requirement template by 31 May 2014.

Customer engagement practices

As part of the light-handed regulatory approach, it is recommended entities develop a best practice customer engagement strategy and report annually to the QCA on the strategy and any revisions.

It is proposed that SEQ entities submit by 31 October 2015 an initial statement of their customer engagement strategy. The entities' customer engagement strategy should as a minimum include the establishment of a customer consultation committee.

Strategic approach to long-term investment

The QCA is required to assist businesses develop a strategic approach to long-term investment in the water sector, taking account of non-infrastructure and efficient demand side management initiatives and including sufficient co-ordination with other regulatory and regulatory review processes.

A strategic approach to long-term investment requires clear and consistent legislation, conformance with regional strategic planning, co-ordination of infrastructure plans, and appropriate asset management standards and project evaluation methods. It is recommended that the DRs and the council water businesses be subject to the same legislative and regulatory requirements.

It is recommended that as part of annual performance reporting, entities demonstrate to the QCA:

- (a) effective strategic planning. Entities should provide evidence of board/council approval and Ministerial endorsement of their relevant Water Netserv Plans
- (b) co-ordination with planning requirements. Entities should provide their annual capital works plans or annual performance plans
- (c) compliance with asset management standards. SEQ entities are to provide annually, details of their compliance with the asset management standard they have implemented
- (d) methods adopted for evaluation of efficiency of long term investments. Entities should annually report on the project evaluation practices used for significant capex projects.

Service quality performance reporting

As part of a light handed framework, service quality performance reporting is necessary to complement the oversight of prices. The reporting framework should incorporate indicators that are relevant and meaningful to stakeholders, allow comparisons, are cost effective to collect and are measurable.

It is recommended that entities report against 38 indicators in categories of baseline, water and sewerage reliability and service, water quality, water consumption recycling and reuse, customer responsiveness and service, and the environment.

Twenty-nine of these indicators are already part of the National Performance Reporting (NPR) framework. Of the 9 non-NPR indicators, eight are already identified by some or all of the entities in their customer service standards or are based on data collected for SAMPs. The additional indicator, properties served per wastewater treatment plant, is a baseline indicator readily derived from existing information.

Entities should publish annually on their websites their performance against the identified 38 service quality indicators by 31 October each year.

It is recommended the QCA will review and analyse service quality as part of annual performance reporting. The Minister will be advised of any material breaches and these may trigger a full cost of service review.

Comparison to price monitoring approach

Compared with the price monitoring framework, the recommended approach requires information on prices, revenues and costs, as well as a broader range of performance based measures, for example, details of customer engagement practices, regulatory co-ordination, asset management and planning and service quality.

Much of this information is already reported by the entities, although in a variety of places. This information is not, however, independently reviewed and analysed. It is important to do so having regard to the broad customer base.

The approach is light-handed in comparison to the previous price monitoring framework as:

- (a) the framework does not include annual complex and costly prudency and efficiency reviews of capital or operating expenditure (unless specifically requested by an entity as a binding ruling)
- (b) regulatory compliance and administration costs for the entities should be much lower compared to the existing price monitoring approach. Entities can minimise overall regulatory costs by demonstrating that they are not exercising market power
- (c) the process builds on the information gathered through the past price monitoring reviews.

Moreover:

- (a) entities are afforded the opportunity to provide further explanatory information before a full cost of service review is triggered. Entities, therefore, have some ability to manage the risk of regulatory intervention
- (b) entities are able to determine their own prices and pricing structures consistent with the broad pricing principles. The QCA will not set prices unless absolutely necessary to ensure prices reflect prudent and efficient costs.

Implementation of the framework

A number of actions are required before the framework can commence from 1 July 2015. It is proposed that these will be addressed with separate reports to be completed by 30 May 2014, in consultation with the entities. These are:

- (a) transition to the new framework. Each entity will be assessed for readiness to transition after the 2013-15 price monitoring review is completed
- (b) X factor. The X factors to apply to each entity will need to be developed to inform entities prior to 30 May 2014. These will be determined in consultation with the entities
- (c) under-and over -recovery. The rules and mechanisms for managing under- and over-recovery of revenues are to be defined
- (d) information return template. The QCA will develop an information return template for annual performance monitoring. This will include operating cost categories.

Costs of regulation

For the 2013-15 price monitoring review, the SEQ entities are required to meet the QCA's regulatory costs. The cost to each entity is \$415,000 in 2013-14 (\$2.07 million in total), rising to \$439,000 in 2014-15 (\$2.2 million in total). These estimates include the cost of development of the long term regulatory framework which represents about half of the regulatory costs.

Costs are incurred by the QCA in administering the long-term regulatory framework. Where no additional information is required, for example if prices do not increase by more than CPI-X, costs will be significantly lower than those applied annually for a full cost of service review. QCA estimates the annual cost to the entities will be \$100,000.

Additional costs may be incurred where a request for further information notice is issued and the QCA is required to undertake further analysis. Actual costs could vary on a case-by-case basis (Table 2).

Table 2. Approximate Costs Incurred (\$,000) per entity per annum

	<i>Light handed monitoring</i>	<i>Request for further information - additional costs</i>	<i>Cost of Service Review</i>
QCA costs	100	+50	+100

1 INTRODUCTION

1.1 Ministerial Direction

The Ministerial Direction (**Appendix A**) requires the Queensland Competition Authority (the QCA) to investigate and report on a long-term regulatory framework for the monopoly distribution and retail water and sewerage activities of the five SEQ entities – Unitywater, Queensland Urban Utilities (QUU), and the Logan, Redland and Gold Coast City Councils. Subject to Ministerial approval, the framework is intended to apply from 1 July 2015.

The stated overarching regulatory objective is to protect the long-term interests of the users of SEQ water and sewerage services by ensuring that the prices of these services reflect prudent and efficient costs, while promoting efficient investment in and the use of these services, having regard to their reliability, safety and security over the long term.

The QCA is required to: set out the form of regulation; describe how the regulatory framework will be implemented; assist businesses to develop a strategic approach to long-term investment and an appropriate level of customer engagement; and establish service quality indicators to inform customers about the entities' comparative performance.

The QCA is also required to set out pricing principles and recommend the treatment of certain regulatory parameters.

In doing so, the recommended regulatory framework must: ensure the costs of implementation do not exceed the benefits; take account of the different characteristics of the entities; and be proportionate with the risk of misuse of market power.

The institutional arrangements are outside the QCA's remit.

1.2 Purpose of this paper

The purpose of this Position Paper is to address:

- (a) the general approach to, and form of, economic regulation
- (b) key regulatory parameters (excluding return on capital)
- (c) the appropriate levels of customer engagement
- (d) the strategic approach to long term investment
- (e) service quality performance reporting requirements.

Comments on this Position Paper are due by **30 June 2014**.

1.3 Other papers

Pricing principles and the treatment of return on capital are to be the subject of two subsequent Position Papers to be released by **28 March 2014** and **30 May 2014** respectively. The Position Papers are intended to provide a basis for further comment.

The QCA recognises that the overarching regulatory framework, pricing principles and treatment of certain regulatory parameters are interrelated and their sequential release may require revisiting draft recommendations of earlier Position Papers.

Comments on the Position Papers and the QCA's responses are to be incorporated in a Final Report to be released by **30 September 2014**.

2 BACKGROUND

2.1 Institutional arrangements

Drinking water supply, sanitation and wastewater management are essential for community development. Water is a key input into energy production, industry and tourism as well as natural ecosystems.

In response to the drought conditions occurring in SEQ, investment in the storage, treatment and delivery of water increased significantly, as did the price of water. As a result, there have been significant institutional changes in the water sector over the past few years.

Until 2011 the water and sewerage distribution and retail services were delivered by three entities - Unitywater, QUU and Allconnex Water (Allconnex).

In April 2011 the Government provided SEQ councils with the opportunity to opt out of their Distributor-Retailers (DRs) and re-establish council water businesses. As a result, Allconnex was de-amalgamated, with its services provided by Logan, Redland and Gold Coast City Councils.

Unitywater services both Moreton Bay and Sunshine Coast communities. QUU services communities in Brisbane, Ipswich, Somerset, Lockyer Valley and Scenic Rim.

More recently:

- (a) the SEQ bulk water industry was consolidated. LinkWater and the SEQ Water Grid Manager were merged with Seqwater to operate as one single statutory body responsible for bulk water service delivery, from 1 January 2013.
- (b) the Queensland Water Commission was abolished and its functions transferred to the Department of Energy and Water Supply (DEWS) and Seqwater.

2.2 Services

The distribution and retail water and sewerage activities of the SEQ entities incorporate a wide range of end services.

Distribution and retail water services include residential and non-residential reticulated water services, metered standpipes and tanker filling stations, and laboratory services.

Their delivery involves the distribution and reticulation of potable and recycled water, and water treatment or dosing.

Sewerage services include residential and non-residential reticulated sewage services and tankered discharge services. These include the collection and transmission of sewage through reticulated infrastructure, treatment and recycling, and disposal.

Also referenced in the Ministerial Direction are trade waste services and stormwater drainage and re-use services. QUU and Unitywater cannot under the *Water Supply (Safety and Reliability) Act 2008* (Water Supply Act) provide stormwater services, while Logan, Redland and Gold Coast City Councils do not recover the costs of stormwater from water and wastewater charges. However, the potential of harvesting stormwater for reuse is explicitly addressed in the Ministerial Direction.

The bulk water activities of Seqwater are not within the scope of the review.

2.3 Market power

The water and wastewater activities of SEQ entities which have the potential to exercise market power have not been identified in the Ministerial Direction. To ensure that appropriate price oversight arrangements are in place, the relevant activities need to be identified.

Market power represents an ability to raise and maintain prices above efficient costs for an extended period, and may be influenced by the institutional and legislative arrangements applying to, or the economic characteristics of, the service provider.

Economic characteristics which can give rise to such market power include economies of scale (when the average cost of production decreases as output increases, potentially creating a natural monopoly) and economies of scope (when two or more goods can be produced jointly at a lower total cost than separately). The presence of natural monopoly, where overall costs are most efficient if there is only one supplier, provides the main rationale for economic regulation.

Also relevant are: the extent of actual or potential competition; the availability of substitutes; any countervailing buyer power; the extent of vertical integration and opportunities for cross-subsidies.

A necessary condition for market power to exist is barriers to entry to potential competitors. Barriers to entry include: high fixed costs, the sunk cost of infrastructure investment and high transactions costs, and government regulation.

Market power can be evidenced by an entity:

- (a) using too many inputs, such as paying staff excessive wages, or over-investing in infrastructure - *productive* inefficiency
- (b) charging prices that are above efficient costs, restricting the quantity available to potential users or providing a lower quality of service - *allocative* inefficiency
- (c) resisting responding to new demand, new low-cost technologies or improved managerial processes - *dynamic* inefficiency.

Essentially, an entity could be considered to exert market power when competitive pressures do not effectively constrain its commercial behaviour - that is, where there is either an absence of vigorous rivalry in the market and there are barriers to entry into the market; or there is evidence that it is exercising substantial market power - this may include earning an excessive return, or where an excessive return would be earned if operating inefficiently or is cross subsidising (QCA 2000).

2.4 Relevant Activities

The QCA is not aware of any explicit legal barrier to entry into the retail and distribution water and wastewater market in SEQ. However, there are strong institutional impediments to competition or contestability.

Local governments have approval powers as assessment managers under the *Sustainable Planning Act 2009* (SPA) relating to urban development, including the development of water infrastructure. The local council entities could use this power to frustrate the ability of potential entrants to install infrastructure.

QUU and Unitywater also have powers under the SPA regarding development approvals as concurrence agencies. The Water Supply Services Legislation Amendment Bill 2014 proposes to establish a 'utility model', under which the delegation of QUU's and Unitywater's powers to their participating local governments will be removed. Despite this, QUU's and Unitywater's participating councils, who are the beneficiaries of dividend and other payments, could use the SPA (currently under review) as a barrier to entry. This barrier to entry is particularly relevant for reticulated services.

The entities account for all of the reticulated distribution and retail water and sewage services (including trade waste) activities in SEQ and in each relevant council area. Their fixed costs are high, essentially sunk, and the costs of negotiating service delivery to the large number of customers are substantial.

Potential substitutes for distribution and retail water reticulated services are very localised (rainwater tanks, tankered water and bores) and can often only substitute for some use. Most customers have no countervailing market power and are required to pay water charges even in the absence of receiving service (for example, on vacant lots). Some larger customers may have some limited countervailing power through on-site storage.

Metered standpipes are only available from the entities.

Competition to tanker filling stations is possible by access to bores although this is also limited and only available in particular localities.

Laboratory services provided by entities essentially operate for internal water quality testing purposes. These could also provide services for other customers and can be subject to competition.

Similar characteristics apply to reticulated sewage (including trade waste) services. Sewage can only be transported economically through pipelines connected to sewage treatment plants. These plants tend to be decentralised, with each serving a relatively small catchment area.

There may be some local limits on market power with respect to sewage due to the availability of on-site treatment and some opportunities for treatment plants to be established by other providers, particularly in growth areas where there are green-field developments. About 127,000 properties in SEQ are not connected to a sewer and the vast majority of these use septic tanks to treat waste. Tankered waste services may also provide some localised alternative.

Larger trade waste customers have greater scope for bypass options and could potentially use on-site treatment and disposal as a substitute for incurring trade waste charges. However, these constraints on overall market power are relatively minor.

There is also some potential for competition between water supply and sewerage services, where processed wastewater (recycled water) can replace potable water. For example, dual reticulation forms part of the Pimpama Coomera Waterfuture project by the Gold Coast City Council (QCA 2010a).

While technological changes are occurring, particularly in water production and metering, no changes have substantially undermined the entities' market power.

Essentially, the entities have substantial market power in their distribution and retail water and sewerage (including trade waste) activities.

Stormwater activities are also typically not able to be delivered by alternative parties due to their integration with the provision of roads.

The QCA considers that of these services, the regulatory framework is not intended to apply to laboratory and tankered waste discharge services (Table 1 refers).

Table 1: Services

<i>Service provided</i>	<i>Level of Market Power</i>
Residential reticulated water	Extremely High
Residential reticulated sewerage and treatment	Extremely High
Non-residential reticulated water	Very High
Non-residential reticulated sewerage and treatment	Very High
Metered standpipe water	High
Tanker filling stations	High
Laboratory services	Low
Trade waste	High
Tankered discharge waste services	High
Stormwater	Extremely High

2.5 Past Economic Regulation of the Water Sector in SEQ

Monopoly prices oversight is intended to ensure monopolies do not abuse their market power (Queensland Commission of Audit 2013).

The Queensland Commission of Audit (2013) noted that the distribution-retail entities have been subjected to a significant level of regulatory uncertainty since their creation in 2010.

2.5.1 Price Monitoring 2008-13

Monitoring

Over 2008-2010, the QCA was required to annually monitor prices and report on:

- (a) the extent to which increases in retail water prices were attributed by the local governments to increases in bulk Water Grid costs and other costs
- (b) whether the attributed increases go beyond those required to recover the increase in bulk Water Grid costs advised by the Government, and other costs.

Over 2010-13 the QCA was required annually to:

- (a) provide timely and transparent information to customers about the costs and other factors underlying the provision of water and wastewater services
- (b) monitor the change in prices for households and small business customers having regard to a CPI price limit
- (c) monitor the change in prices for services not included in the CPI price limit against the total prudent and efficient cost of the relevant activity
- (d) monitor the maximum allowable revenue based on the total prudent and efficient costs of carrying on the activity.

Findings

No Exercise of Market Power

The QCA (2011, 2012a, 2013a) found no evidence of an exercise of monopoly power by Unitywater and QUU and that these DRs complied with the CPI cap in 2011-12 and 2012-13. Expected revenues were below the QCA's estimate of prudent and efficient costs.

Benefits of Oversight

The QCA (2013a) noted the entities (including Allconnex) had significantly reduced their forecast costs over 2010-13 from those originally forecast. In total, capital expenditure forecasts were reduced by around \$1.09 billion, while operating expenditure forecasts were reduced by \$127.38 million over this period.

The QCA concluded that this achievement was a response to an environment and policies (which included price monitoring) which constrained the entities from exercising market power and led to the reduction of the forecast cost of service delivery.

The QCA (2013a) also estimated the total prudent and efficient costs of the reviewed entities to be \$77.49 million below those submitted by the entities over 2010-13.

Customer concerns about water price increases were a major contributor to the dissolution of Allconnex.

Limitations

In the past, the QCA (2013a) has not reviewed the:

- (a) initial regulatory asset base (RAB) used for pricing purposes as the QCA was required to accept the value advised by Government
- (b) appropriateness of the entities' prices for particular services or the price structures
- (c) service standards and performance framework which underpin costs.

Opportunities were identified to improve demand forecasting, consideration of regional initiatives, decision-making processes and implementation strategies for major projects (QCA 2011).

Previous reviews were not required to address many of the requirements of the Ministerial Direction to:

- (a) assist entities to develop a strategic approach to long term investment
- (b) address best practice stakeholder engagement
- (c) seek to ensure co-ordination with other regulatory and regulatory review processes
- (d) encourage whole-of-sector approaches.

2.5.2 Price Monitoring 2013-15

The QCA is undertaking a review of the entities for 2013-15 to be completed in March 2014.

3 THE LONG TERM REGULATORY FRAMEWORK

3.1 Ministerial Direction

The Ministerial Direction requires a long-term framework which:

- (a) protects the long-term interest of the users of SEQ water and sewerage services by ensuring the prices of these services reflect prudent and efficient costs having regard to service reliability, safety and security
- (b) ensures appropriate levels of customer engagement, co-ordination with other regulatory processes, promoting whole of sector solutions, and incorporates incentive mechanisms and service quality performance monitoring (including specific information)
- (c) assists customers understanding of how the costs of water and sewerage services influence prices
- (d) incorporates aggregate annual revenue under/over-recoveries in relation to core water and sewerage services in a manner that balances the interests of the SEQ entities and their customers
- (e) is administratively cost-effective
- (f) reflects the risk of misuse of market power and different characteristics and size of the entities.

The QCA is also required to facilitate the transition to more light-handed prices oversight over time.

3.2 Approaches to economic regulation

In Australia, the general approaches to price regulation are typically characterised as direct and indirect regulation (Queensland Commission of Audit 2013). These represent the manner by which the desired outcomes are to be achieved.

There are also many forms of regulation. These are more detailed regulatory arrangements designed to alter entities' behaviour in a particular manner. They are broadly, but not necessarily, associated with each general approach.

Direct regulation

Direct regulation occurs where either an independent regulator sets prices (or allowable revenues) with legal effect or makes recommendations to Ministers who set prices.

To facilitate such decisions, direct regulation focuses upon the nature of costs, revenues and often the proposed prices and their structure.

Indirect regulation

Indirect regulation occurs where an agency of government observes and reports on pricing behaviour. Its main advantages are reduced regulatory intrusion, lower costs of regulation and compliance and greater flexibility for the regulated entity to adapt its pricing to changing circumstances.

Other approaches

It is arguable that there are other approaches to regulation such as arbitrary control (where prices of a monopoly service are determined regardless of demonstrable evidence of a need to apply any regulatory intervention) or franchise auctions.

These could be classified as direct or indirect approaches, respectively.

In any case, arbitrary control is associated with a high degree of uncertainty while the franchise auctions would have significant institutional implications. For these reasons, they are not addressed further.

Other jurisdictions

All major urban water providers in other states are subject to direct regulation. Where applied, price determination powers rest with the economic regulator (Queensland Commission of Audit 2013). For example:

- (a) in New South Wales IPART has a standing reference to conduct investigations and determine prices for the state's major water entities (Sydney Water Corporation, Sydney Catchment Authority and several local councils)
- (b) in Victoria, a Water Industry Regulatory Order (WIRO) made under the *Water Industry Act 1994* provides the ESC with an ongoing responsibility to approve or set pricing for numerous regulated metropolitan, regional and rural water entities.

An overview of the approaches adopted in various jurisdictions appears in Table 2.

Table 2: Approach to Regulation in Other Jurisdictions

<i>Jurisdiction</i>	<i>Water Entities</i>	<i>Approach to Regulation</i>
New South Wales	Sydney Water Corporation Sydney Catchment Authority Several local councils	Direct - IPART determines prices
ACT	ACTEW	Direct - ICRC determines prices
Victoria	Numerous metropolitan, regional and rural water entities	Direct - ESC determines prices
South Australia	SA Water	Direct - ESCOSA determines average revenue caps
	Intermediate and minor water entities	Indirect - annual price monitoring
Western Australia	Water Corporation	Direct - ERA recommends prices to be set by the Minister

QCA analysis

Objectives

Neither the overarching objective nor the specified elements of the Ministerial Direction provide definitive guidance on the appropriate approach to regulation.

Some requirements, such as the need to address the treatment of aggregate annual revenue under/over recoveries are associated with forms of regulation that would suggest a direct approach. The requirement that the long-term framework should facilitate the entities moving to more light-handed prices oversight over time would suggest an indirect approach.

Principles, characteristics and criteria

The Queensland Commission of Audit (2013) considered that a set of guiding principles based on OECD Guiding Principles for Regulatory Quality and Performance (2005) should be developed to guide regulatory arrangements.

The OECD principles require that good regulation should serve clearly identified policy goals and: be cost-effective; promote innovation through market incentives and goal-based approaches; be consistent with other regulations; and be compatible with competition, trade and investment facilitating principles.

The desirable characteristics of a regulatory process being conducted openly, transparently, consistently, predictably, independently, and competently are also widely noted (NERA 2004, COAG 2004, Ballance and Taylor 2005).

These general principles and characteristics of good regulation, however, are not implicit to any particular approach *per se* (NERA 2004).

The Queensland Commission of Audit (2013) also observed that deterministic [direct] approaches can be justified where there is a real risk and concern of unreasonable pricing practices for an essential service.

Such a risk and concern can arise where there is substantial market power, significant potential for efficiency gain (NZCC 2006, IPART 2002, PC 2002, NERA 2004, Ballance and Taylor 2005) and service providers have a low predisposition to respond to concerns about performance.

It is also relevant to note that regulators usually have far less information about the cost and demand conditions facing the entities they regulate than do the entities themselves. Without complete information, regulators cannot set optimal prices or direct entities to produce optimal outputs. Regulatory mechanisms (approaches and forms) are required, therefore, that induce entities to produce optimal outputs with optimal inputs (Train 1991).

Market power

The potential for SEQ entities to exercise substantial market power for certain services has been noted above.

Potential efficiency gains

The potential for efficiency gain from regulation is a function of both the size of the entity and the size of potential inefficiencies relative to the costs of regulation.

The economic size of the entities is considered significant as outlined in Table 3 below.

Table 3 Economic size of the SEQ Distributor Retailers (2012-13)

	<i>Regulatory Asset Base \$m</i>	<i>Capital Expenditure \$m</i>	<i>Operating Expenditure \$m</i>	<i>Revenue \$m</i>	<i>Population Served</i>	<i>Non- residential connections</i>
Unitywater	2,835	150	260	507	722,030	16,018
QUU	4,461	363	572	836	1,354,429	34,665
Logan	1,152	68	93	160	246,232	5,053
Redland	482	12	42	91	148,053	3,071
Gold Coast	2,605	125	232	403	541,079	13,612

Source: Entities' submissions

Following the several reviews to 2012-13, the difference between Unitywater and QUU's estimates, and the QCA's estimates of total prudent and efficient costs for the water and sewerage activities was about 1.5% (QCA 2013a).

However, this does not reflect the potential gains that may result from further improvements to decision-making processes, the adoption of regional investment perspectives, and attention to other limitations of past reviews. Essentially, the benefit that can be gained from these is not yet quantifiable.

Predisposition

A monopoly's predisposition to exercise market power depends on:

- (a) the possible consequences of reactions from customers or regulators
- (b) the magnitude of the potential commercial benefit to the entity which may be affected by prior exposure to regulation
- (c) the relative commercial maturity of the entities (and ability of the entities and customers to make informed commercial decisions).

To date the main consequences faced by the entities has been the potential adverse publicity associated with any reported excessive costs. In the case of Allconnex, the customer response to proposed higher increases in prices is considered to be a substantial cause of the subsequent de-amalgamation.

No evidence of an exercise of market power has been found in the (limited) reviews of Unitywater or QUU over the 2010-13 period.

Both Unitywater and QUU have indicated a willingness to further improve the cost-effectiveness of service delivery, adopting many of the recommendations of the QCA's past reviews and progressively improving expenditure decision-making processes.

Costs

In considering the potential gains, the costs of regulation can also be significant and can include:

- (a) compliance and administration costs of the entity and regulator and can involve:
 - (i) management and staff time
 - (ii) hiring of external expertise
 - (iii) training costs

- (b) costs associated with imperfect information and limited flexibility
- (c) lobbying or 'rent seeking' costs
- (d) costs associated with investment distortions (PC 2009).

Any change from one form of regulation to another is also costly. It is likely to be less costly to move from direct to indirect regulation, rather than from no regulation to some.

On current estimates, annual regulatory oversight of the 5 entities costs QCA about \$2 million per annum and compares favourably against the savings identified by the QCA of \$77.49 million over 2010-13 (not including the reductions since 2010-11 capital and operating cost forecasts). The costs to the entities are in addition to the QCA's costs.

Heavy v Light handed regulation

The PC (2003) has defined the extent to which regulatory intervention is heavy or light-handed by the:

- (a) substantiveness of the variables the regulator attempts to control
- (b) extent to which the regulator attempts to control the relevant variables
- (c) compliance costs imposed on businesses.

Direct regulation typically focuses upon the service standards, costs, revenues and often the proposed prices and their structure. Under direct regulation the Minister or independent regulator establishes the price or maximum allowable revenue (and is thus intrusive). To inform such decisions, direct regulation requires substantial information, external independent review (and therefore is considered intrusive), and is costly to administer or costly to comply with.

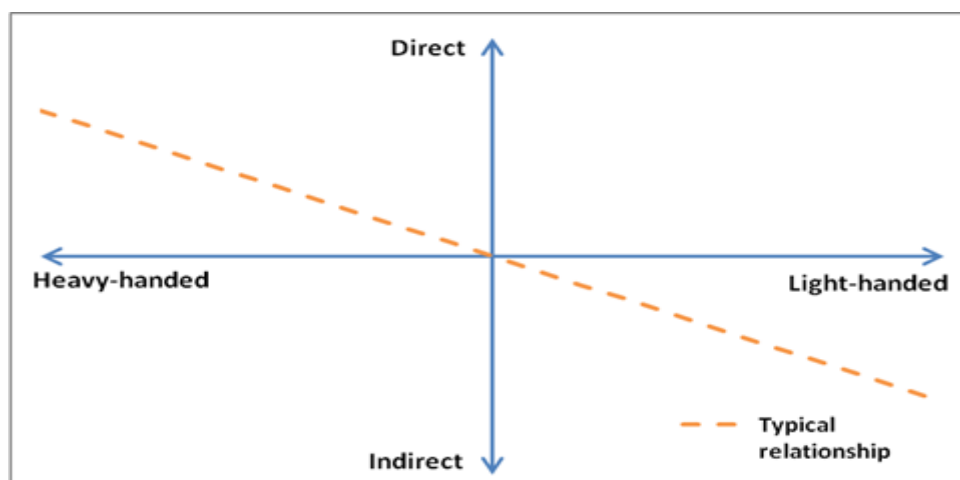
Direct regulation is therefore generally considered to be heavy-handed.

Indirect regulation occurs where an agency of government observes and reports on pricing behaviour, but does not usually involve the direct regulation of prices. Details of the components of prices are therefore not typically required.

Indirect regulation is therefore generally considered to be light-handed.

The relationship between the general approach and the heavy or light-handedness is depicted in Figure 2.

Figure 2: Direct and Indirect Approaches to Regulation



Conclusion

Overall a *prima facie* case for directly setting prices for at least Unitywater and QUU is not evident at this time.

A government may, through Ministerial determination, wish to retain the option to exercise its judgement on prices to ensure certain public interest matters are addressed. However, no such concerns are indicated in the Ministerial Direction or are evident in submissions.

Moreover, Ministerial involvement in price determinations should only be the avenue of last resort - that is if there was an imperative to manage short-term cost pressures in essential services that are not substitutable (Queensland Commission of Audit 2013).

The QCA therefore does not recommend the adoption of a direct approach to economic regulation for the SEQ water entities in the long-term - unless entities' performance deteriorates.

However, the QCA's 2013-15 review is not yet complete. The QCA has not completed any reviews of Logan, Redland and Gold Coast City Councils. The council entities have greater capacity to undertake cost shifting as they provide a wider range of non-regulated services.

Having regard to the significant economic size of the entities, and the potential but as yet unquantifiable gains from matters not previously addressed, an indirect approach to regulation would seem preferable.

Moreover, as many of the potential gains follow from process and pricing improvements, it is likely that over time less regulatory oversight will be required. A transition to the preferred approach to regulation is recommended.

Further, the length and nature of the transition may vary between entities. The QCA will detail its recommended transition path for each entity after the 2013-15 review is completed.

Draft Recommendation

- 3.1 An indirect approach to economic regulation is recommended for the longer term.**
- 3.2 Where an entities' performance is unacceptable, the QCA determine prices unless there is an imperative to manage short-term cost pressures. In the latter instance prices should be determined by the Minister.**
- 3.3 A transition to indirect regulation be adopted. The length and nature of the transition may vary between entities.**

3.3 Form of regulation

There are many forms of regulation, some broadly associated with each of the general approaches.

For example, direct regulation is typically considered to involve cost of service (or rate of return) regulation and incentive regulation. Indirect regulation is typically considered to include pricing principles and price monitoring. Some forms of regulation are not unique to a particular approach.

For presentational purposes, the forms of regulation are addressed within the category of general approach with which they are associated.

3.3.1 Direct approaches

Cost of service

Under cost of service (or rate of return) regulation prices are set by the regulator to cover the entity's costs. Such regulation has been applied in many jurisdictions in the USA.

The cost of service comprises a return on capital, a return of capital (depreciation), and operating costs, which together with a supporting case, is submitted to the regulator for review.

The regulated entity, or the regulator, can request a review when prices are inadequate to recover costs by way of:

- (a) cost pass-through mechanisms which allow costs beyond the entity's control to be passed through to users prior to the next formal regulatory review
- (b) review triggers which bring forward or re-open a review as a result of a pre-specified event
- (c) an 'unders-and-overs' account to ensure revenue adequacy.

The key advantage of cost of service regulation is that it ensures sufficient revenue for the entity. It also provides consumers with assurance that the prices paid for water reflect the costs of providing a service.

The main concern is that it induces businesses to use inputs inefficiently (Baumol and Klevorich 1970) as:

- (a) the entity has no incentive to reveal the true cost of services (information asymmetry)
- (b) the entity has little incentive to pursue efficiencies as savings are passed to customers
- (c) there are significant information requirements (and costs) for the regulator and the entity
- (d) there is an incentive to over-invest to maximise revenue from the allowed rate of return which would generally exceed the cost of debt (Averch and Johnson 1962).

Cost of service regulation therefore has not been applied to water entities on its own in Australia, and is not considered to have suitable incentive properties to meet, in particular, the prudence and efficiency requirements of the Ministerial Direction's overarching regulatory objective.

Profit sharing

Earnings or profit sharing regimes are a form of cost of service but represent a shift towards incentive regulation. These allow the entity to keep only a portion of the earnings it receives in excess of a given level. The remainder must go back to customers.

Regulators in the US have used earning sharing controls (Frontier Economics 2010).

These mechanisms have stronger productive efficiency incentive properties than conventional cost of service regimes. However, a profit-related mechanism can be information-intensive and difficult to implement, if only for the need to establish an agreed definition of profit.

The information costs are, therefore, considered excessive (relative to other forms of incentive regulation). On its own it does not address pricing and service quality performance reporting.

Incentive regulation

Incentive regulation responds to the deficiencies of cost of service regulation. It seeks to provide incentives for service providers to continuously seek out cost efficiencies.

In the Australian urban water sector, independent regulators generally establish a cost of service and then apply incentives for improved performance - typically by reference to changes to CPI less an X factor to reflect expected efficiency gains.

The X factor may be based on an appraisal of the entity's ability to achieve cost savings (cost-linked incentive regulation), or it may be 'unlinked' from costs, and based on broader productivity assessments. Sometimes a Y-factor is incorporated to account for pass-through of specific cost items out of the control of the regulated entity (Vogelsang 2001).

Unlinked incentive regulation is widely accepted because it encourages the businesses to use cost information unavailable to the regulator.

Industries with a history of cost of service regulation may be particularly suited as the current prices should provide a suitable starting point for further efficiency gains.

If initial prices are not based on efficient costs, or significant cost changes occur in the future, legacy prices may entrench existing pricing inefficiencies (NERA 2004).

The main concerns are that:

- (a) there is an incentive to run down assets or reduce service quality to achieve designated cost savings. Service quality monitoring is therefore necessary
- (b) there can be a high regulatory burden (Fearon 2006)
- (c) it can impinge on the entity's commercial focus (with a risk of regulatory error)
- (d) in mature industries where efficiency gains may be limited there is a tendency for it to converge to cost-based regulation (Ergas et al 2001).

The effectiveness of the incentives also depends on the associated mechanisms, including the form of price control, correction mechanisms, review triggers and cost pass-throughs etc.

Yardstick competition

Under yardstick regulation, prices are set on the basis of comparisons of various measures with those of other comparable entities. It can provide incentives for entities to seek lower costs by competing with other entities for cost reductions.

Typically, if an entity can achieve cost savings lower than the group benchmark (adjusted if necessary for entity differences), it can retain the savings for a period. Over time, the benchmark may be further reduced as efficiency gains are made.

A range of measures can be used to compare performance, including:

- (a) partial productivity measures - where output is related to a quantity of a single input and, therefore, may not provide reliable information
- (b) total factor productivity (TFP) - TFP indicators require aggregation of the entity's outputs and inputs, with appropriate weightings and can therefore be difficult to apply
- (c) data envelopment analysis (DEA) - involves determining an efficiency frontier using linear programming and identifies how far the entity is from the frontier
- (d) stochastic frontier analysis (SFA). This is similar to DEA but allows for assessment of probabilistic events on efficiency.

Yardstick regulation in its pure form is not widely used in Australia. Ofwat (2008) uses a form of company specific yardstick regulation for 21 regional water monopolies in England and Wales.

The main concerns are that:

- (a) it requires a number of similar and similarly regulated businesses - or, it must be feasible to account for differences (requiring additional information, subjectivity and complexity)
- (b) it relies on past performance and makes no assessment of future capital and operating expenditure requirements and thus is not forward-looking
- (c) there is a possibility of regulatory error as prices do not reflect costs (Frontier Economics 2010).

The absence of a suitable number of comparable organisations in SEQ makes yardstick regulation inexact. The QCA's experience in several reviews - SunWater (QCA 2012b), Seqwater (QCA 2013c) and price monitoring distribution-retail entities in SEQ have provided only a broad basis for comparison of entities' performance.

3.3.2 Indirect approaches

Pricing principles

This involves the specification of pricing principles with which service providers must comply.

Appropriate pricing principles are necessary to ensure relevant signals to customers about the cost of services, and their responses provide relevant signals to service providers about the demand for those services.

The QCA's *Statement of Regulatory Pricing Principles for the Water Sector* (QCA 2000) has been found to be useful for guiding service providers in setting water prices.

However, pricing principles alone cannot ensure that prices reflect prudent and efficient costs and thus are more useful as a supplement to other forms of regulation.

Pricing disclosure

Price disclosure involves the publication of key information to increase scrutiny of prices and market performance.

Disclosure enhances transparency and can improve understanding of performance and underlying costs sufficient to deter unfair discriminatory pricing.

Information disclosure has been implemented by the ACCC (2011a) as Tier 1 rules that require all bulk water operators in the Murray Darling Basin to publish their schedule of fees and charges. Public disclosure is all that is required for smaller Tier 1 entities. This approach minimises regulatory costs but relies on an active and informed customer body to provide scrutiny.

The QCA has relied on disclosure (albeit via detailed Network Service Plans) to assist in ensuring SunWater (QCA 2012b) and Seqwater (QCA 2013c) irrigation expenditure proposals between price reviews are prudent and efficient. Irrigation customers are very familiar with various options and validity of proposed costs and can associate to raise concerns. Such customer engagement is not envisaged to be possible by residential customers and small businesses in SEQ.

Price monitoring

Price monitoring seeks to provide sufficient transparency and information for stakeholders to respond and to establish whether a *prima facie* market power is likely to be a concern. It involves a regulator 'tracking' prices, profits and/or quality over time (NERA 2004).

Price monitoring allows a business to operate commercially without intrusive regulatory intervention (Queensland Commission of Audit 2013) and at lower compliance cost. The ACCC (2007) has warned, however, that attempts to improve price monitoring over time are likely to result in expanded data requirements and higher compliance costs.

COAG (2006) has considered the role of price monitoring in the context of the regulation of significant infrastructure facilities and concluded that price monitoring should be considered:

- (a) where it can improve the level of price transparency
- (b) as a first step where price regulation may be required or
- (c) when scaling back from more intrusive regulation.

Price monitoring has been adopted for ports and airports in Australia and New Zealand:

- (a) the ACCC (2012b) considers that the monitoring of Australian ports provides useful information to stakeholders and, as a consequence, there is no consideration being given to adopting a different approach
- (b) the PC (2011b) recommended the Australian airports regime be maintained as there was:
 - (i) little evidence of systematic failure in the delivery of investment
 - (ii) no evidence of misuse of market power
- (c) ESCOSA (2012a) noted that since 2007 there has been no evidence of misuse of market power in South Australian ports and recommended continuing price monitoring for another five years
- (d) a prospect of more prescriptive regulation of Victorian ports was removed in the absence of any evidence of a misuse of market power (ESC 2009).

Airport and port businesses face a degree of countervailing market power as their customers are typically few in number and well-resourced. In contrast, price monitoring is a less common form of regulation for Australian network industries, such as electricity and water.

However, ESCOSA (2013b) is to subject intermediate and minor retailers of potable water and sewerage services to pricing principles/price monitoring. A revenue determination has been applied to SA Water for the three year period from 1 July 2013.

Light-handed regulation of electricity that applied in Germany from 1998, was considered to have failed (Oxera 2012). This failure was primarily due to:

- (a) the economic regulator's informational disadvantages compared to electricity operators which included legal constraints on access to cost data
- (b) a lack of the necessary instruments to sanction inadequate behaviour.

Price monitoring may therefore be appropriate where, in the absence of countervailing market power:

- (a) stakeholders are able to understand the information provided - either of their own volition or with the assistance of a regulator's analysis
- (b) there is in place some prospect of more detailed direct regulation.

Performance monitoring

Performance monitoring focuses upon a business performance and allows entities the flexibility to seek the lowest-cost means for achieving the level of performance desired.

It tends to be more accommodating to technological change that can improve performance (Coglianese 2003) and can reduce the need for prescriptive regulation (Oxera 2012).

Performance monitoring can focus solely on outcomes (of which price may be one) - or incorporate other measures on which performance is required.

Outcome-based regulation (OBR), being progressed in the United Kingdom, (Ofwat 2013a) focuses on the delivery of high-level 'outcomes' rather than the regulation of inputs. Ofwat proposes to determine some industry-wide minimum outcomes, with the remainder, and associated outcome delivery incentives, set by companies in consultation with their customers.

Oxera (2013) suggests the following elements should also be undertaken for OBR:

- (a) entities need to consult with customers and understand their priorities (desired outcomes), via qualitative and quantitative research, and use representative customer groups to test the results, credibility and interpretation of this empirical evidence
- (b) outcomes need to be measurable and transparent (and relevant, meaningful, comparable, accurate and verifiable)
- (c) entities need to identify the cost implications of delivering different levels of service for each outcome in order to decide which level is economically efficient and affordable for customers.

DEWS (2013a) proposed to investigate the benefits of moving away from the emphasis on setting and approving plans towards business-based performance reporting (BBPR) for urban water service providers (WSP) across Queensland. In BBPR, the business rates and reports its own performance against a number of key performance indicators (KPIs). The *Water Supply Services Legislation Amendment Bill 2014* proposes to change the regulation of urban WSPs from process monitoring and compliance to public reporting on performance and stronger business responsibility and accountability.

ESC (2012) also considers the performance measures need to identify baseline performance of businesses, provide incentives for improvement, inform customers about the level of service, provide information for developing regulatory standards and assessing compliance against those standards, and make comparisons between businesses.

Performance monitoring and reporting systems (including OBR and BBPR) are consistent with less intrusive, lighter-handed, regulation. Under appropriate governance arrangements, they can provide more flexible, cost-effective, and timely incentive-based economic regulation. Their scope can be more readily aligned with the desired regulatory objectives.

Propose and respond

Under the propose-respond model, the regulated entity submits a proposal to the regulator for consideration. The regulator is unable to reject that position, or substitute its own proposal, if it could be demonstrated that the proposal fell within a reasonable range.

Variations include 'final offer arbitration', or 'pendulum' arbitration whereby the decision is made between bids made by the owner or the user, but no other.

This approach was used in the Queensland sugar industry to negotiate the division of proceeds between growers and millers from 1996 until 2004 but was replaced by a conventional dispute resolution procedure. Final offer arbitration was originally used to avoid ambit claims but was regarded as a 'confrontational' approach and resulted in win/lose scenarios (Hildebrand 2002).

A significant concern is that the regulator may not have sufficient information to determine a reasonable range unless it has had a prior regulatory role. Further, the reasonableness test could provide an incentive for regulated entities to propose upper end estimates for all individual components leading to a systematic upwards bias in returns to regulated entities.

The approach also provides little guidance to other stakeholders and thus does not promote regulatory certainty or consistency.

Negotiate-arbitrate

Negotiate-arbitrate processes are typically applied where there are only a limited number of customers or participants and require:

- (a) the regulated access provider and access seeker to attempt to negotiate a commercial agreement
- (b) if commercial negotiations fail, the regulator is generally required to arbitrate.

The process may be complemented by guidance from the regulator on the boundaries for pricing outcomes, or advice on key matters such as efficient costs. A variation, constructive engagement, involves a formalised negotiation process which results in a plan being submitted by the negotiating parties to the regulator- as for UK airports (CAA 2005).

An advantage of the negotiate/arbitrate process is that it can reduce information requirements and therefore costs as both entities have an incentive to avoid an extended costly arbitration.

The model was applied to GrainCorp's application to access Freight Australia's declared rail freight network in Victoria. The process was regarded as legalistic, protracted and costly (Fearon 2006).

Applicability to the urban water industry is likely to be limited as there are many customers with little to no bargaining power. Few if any larger customers have the financial capacity to engage in such formal regulatory processes (as distinct from commercial negotiations).

3.4 The appropriate form of regulation for SEQ entities

The objectives of the long term regulatory framework required by Ministers, and principles, desired characteristics and criteria for selecting alternative forms of regulation have been identified above.

Stakeholder submissions

QUU (2013b) submitted that the regulatory framework should provide certainty in terms of under-recovery to allow businesses to make strategic long term decisions without concerns that the regulatory framework may change. The framework should ensure that the cost burden of applying regulation is minimised.

QUU proposed that where the risk of misuse of market power is low, the oversight would be minimal. This is especially so where businesses are under-recovering in relation to a QCA-determined MAR.

QUU submitted that the strength of regulatory penalties and incentives is a factor in setting the level of oversight.

Unitywater (2013c) submitted that from 2015, the preferred form of regulation is light handed price monitoring of water and sewerage supply services that excludes oversight of non-regulated services and miscellaneous fees and charges.

BCC (2013) submitted that it welcomed a move to more light-handed regulation. The framework should consider the entities' budget processes and requirements, and should provide long term certainty and stability to the entities while allowing them to respond to short-term pressures.

Gold Coast City Council (2013) submitted that, to promote efficiencies, the regulatory framework should be designed on a propose-respond model incorporating a consultative and transparent process.

Moreton Bay Regional Council (MBRC 2013) submitted that due to the costs of regulation of \$1.8 million, there is a burden on customers not experienced by water consumers elsewhere in the State, and that regulatory compliance should be removed. Should this not be acceptable to Government, compliance requirements should be drastically reduced to using information already available.

Logan City Council (2013a) submitted that it welcomed a move to light-handed regulation, from 1 July 2015, to reduce costs to the regulator, the business and customers.

Qldwater (2013) submitted that the key structural and capacity differences between stand-alone DRs and councils should be appropriately considered. Unitywater (2013c) and QUU (2013b) proposed that the DRs and Councils should be treated on similar terms.

QCA analysis

Form of regulation

Some forms of regulation incorporate inherent limitations and are thus considered unsuitable for long term regulatory purposes:

- (a) cost of service fails to provide incentives to reduce costs
- (b) profit sharing is difficult to achieve and costly to administer
- (c) propose and respond models tend to result in prices trending to the upper end of the range and thus less likely to achieve efficient costs.

Some forms of regulation are considered to be inappropriate for SEQ:

- (a) negotiate-arbitrate regulatory processes are more suited to negotiations between very large customers and service providers rather than the SEQ customer base
- (b) yardstick regulation requires more close comparators (or years of consistent data if longitudinal analysis is to be undertaken) than available for SEQ
- (c) pricing disclosure is unlikely to disclose information capable of being critically reviewed by the majority of urban customers.

Other forms of regulation address more of the key elements of the Ministerial Direction as outlined in Table 4 below - but not all of the requirements on its own.

Table 4 Ministerial Direction and Forms of Regulation

Requirement of Ministerial Direction	Most Appropriate Form of Regulation
Protects the long-term interest of the users of SEQ water and sewerage services by ensuring the prices of these services reflect prudent and efficient costs having regard to service reliability, safety and security; and, incorporates service quality performance monitoring	Incentive regulation (incorporating cost of service review) and pricing principles
Ensures appropriate levels of customer engagement, co-ordination with other regulatory processes, promoting whole of sector solutions, and incorporates service quality performance monitoring (including specific information)	Performance monitoring (with scope expanded beyond output based reporting to ensure coverage of necessary processes and outcomes)
Assist customers understanding of how the costs of water and sewerage services influence prices	Incentive regulation (incorporating cost of service review) and pricing principles
Incorporates aggregate annual revenue under/over-recoveries in relation to core water and sewerage services in a manner that balances the interests of entities and their customers	Incentive regulation (incorporating cost of service review)
Is administratively cost-effective	Performance monitoring
Reflects the risk of misuse of market power and the different characteristics and size of the entities	Incentive regulation for larger entities and performance monitoring for the smaller entities

Overall, incentive regulation (based on a cost of service review) accompanied by the application of the appropriate pricing principles and a comprehensive performance monitoring framework would most effectively address the requirements of the Ministerial Direction.

Such a comprehensive incentive based form of regulation (often accompanied by determinations by an independent regulator) has been adopted in many jurisdictions because of the significant potential of the entities to exert market power and absence of countervailing market power. It has also formed the core of the QCA's remits in the past (for GAWB, SunWater and Seqwater).

Such a comprehensive approach, however, comes at a cost. There is significant time, effort and cost dedicated to the annual detailed regulatory review of expenditures. Regulatory scrutiny also introduces the prospect of regulatory uncertainty and error.

When considered against the principles, desired characteristics and criteria identified above:

- (a) despite the significant market power of the entities, QUU and Unitywater have under-recovered the [prudent and efficient] costs of operation identified by the QCA
- (b) the difference in estimates of prudent and efficient costs between QUU and Unitywater and the QCA, based on available information, is only modest
- (c) QUU and Unitywater have been pre-disposed to responding constructively to opportunities for improving decision-making processes and pursuing identifiable areas for cost efficiency.

Providing appropriate initiatives can be developed to maintain performance and respond to other requirements of the Ministerial Direction, no further detailed reviews (incorporating cost of service reviews) may be necessary for these entities – in contrast to the detailed annual cost of service based reviews being undertaken.

Public reporting by the entities and transparent review is considered a powerful means of ensuring continued performance improvement. Once such a review is completed, consistent with current practices, entities would face the prospect of adverse public comment.

It is recommended that annual monitoring and reporting be undertaken by the (independent) QCA of the entities' performance against a range of measures including prices, revenues, certain costs (including efficiency targets) and recommended procedures and policies (including strategic investment and customer engagement practices), and service quality standards.

This contrasts with the more detailed annual cost of service price monitoring reviews being undertaken which involve prudency and efficiency reviews of capex and opex.

Many jurisdictions where price or performance monitoring is applied incorporate the prospect of detailed cost of service reviews to further promote performance improvement and to deter the exercise of market power.

That detailed reviews would serve as an appropriate response to provide the right incentives to constrain the monopoly activity exercising its market power was noted at the introduction of such powers in the QCA Act (*QCA Amendment Bill 2008 - Explanatory Notes*).

Relevant mechanisms could include:

- (a) an automatic right of complaint to a regulator or request for review
- (b) automatic right to implement price determination
- (c) appropriate sanctions for breaches, including claw back provision for prior 'gains'.

In almost all jurisdictions in Australia price determination is applied to significant urban water service providers. It is also recommended as an element of the recommended performance monitoring regime for the entities. As recommended by the Commission of Audit (2013) a determination power is required to be incorporated in the QCA Act.

To accommodate the prospect of invoking a detailed review, a standing remit for a performance monitoring investigation is required (section 23A of the QCA Act refers).

While the Queensland Government could pass legislation in the event of a breach under performance monitoring to provide the QCA with a price determination power this would not provide for timely reviews. The QCA recommends the QCA Act be amended to provide for a price determination power similar to that which applies in NSW under IPART. This is consistent with the recommendations of the Commission of Audit (2013) and as previously accepted by the Queensland Government (Queensland Treasury and Trade 2013). At the time of writing no amendments have been made to the QCA Act.

It is noted that in NSW and Victoria the independent economic regulator exercises the deterministic power.

Such intervention would only be justifiable where evidence emerges that an entity may be exerting market power through, for example, excessive pricing (revenues), inefficient costs or reduced service standards.

A cost of service review is otherwise recommended to be scheduled when an entity's Water Netserv Plan is updated, which, under legislation, is required at least every 5 years (see Chapter 6). This is in effect, a stocktake of the effectiveness of annual performance monitoring over the preceding period - the QCA will not proceed with the scheduled review if the changes to the Water Netserv Plan (endorsed by the Minister and councils) are not material and do not warrant a full cost of service review.

Other matters

In respect to stakeholder submissions, the QCA:

- (a) agrees that regulatory certainty is an important objective and the commitment to a long-term performance monitoring framework is consistent with such a requirement. The recommended approach recognises the low risk of misuse of market power and the costs of more intensive regulation
- (b) considers that public scrutiny combined with the prospect of a detailed review and potentially price determination should provide sufficient incentive for compliance
- (c) accepts that services with low market power (non-regulated) should be excluded from the review framework (except insofar as determination of cost allocation requires an understanding of their cost drivers)
- (d) accepts that information requirements should draw upon existing budget processes and requirements (wherever possible). In the past the QCA was required to develop information requirements (in consultation with the entities) at a time that a range of other planning information requirements were being developed. This review will co-ordinate these with those now in place
- (e) considers the costs of regulatory review to be significantly below the benefits achieved to date. However, further refinements should further reduce costs
- (f) considers the nature of the performance reporting framework is to be relevant to all entities equally - irrespective of size. However, the transition paths may require differential costs to apply
- (g) considers that innovation attracting regulatory scrutiny is not a disadvantage as the community seeks an explanation for changes in prices (and costs), as noted in the Ministerial Direction.

Draft Recommendation

3.4 In the long-term, the entities be subject to a performance monitoring framework.

3.5 Performance monitoring be complemented by the prospect of detailed public review and the potential for price determination.

3.6 Amendments will be required to the QCA Act for the purposes of 3.4 above.

3.5 Key elements of the long-term framework

The recommended long-term regulatory framework comprises performance monitoring, with a prospect of detailed price and cost review and potentially a price determination.

The Ministers' Direction requires that the QCA also:

- (a) recommend the preferred length of the regulatory period (timing)
- (b) recommend incentive mechanisms to support innovation and other efficiencies
- (c) facilitate the entities moving to more light-handed prices oversight over time (including how the regulatory framework will be implemented on an ongoing basis).

3.5.1 Timing issues

For the recommended long-term framework, timing issues include:

- (a) the frequency of performance monitoring
- (b) the timing of reviews
- (c) the regulatory period applying to any price determination.

Frequency of performance monitoring

SEQ entities set prices for services on a 1 year budget cycle although their Water Netserv Plans will set out infrastructure plans for 20 years or more. Where light-handed price monitoring is in place such as in airports or ports in SA, price monitoring is annual, and continues indefinitely.

With the move from detailed annual cost reviews and having regard to the pace of changes that have occurred institutionally and from a climate perspective, annual performance reviews would seem appropriate.

Annual reviews would provide timely information for customers and Government agencies to understand the basis for prices (which are annually set) and to respond to changing and emerging matters.

Review timing

Since 1 July 2010, the QCA has reviewed revenues and costs during the regulatory period after entities set prices - with the QCA reviewing the information available to entities at the time of setting prices. The QCA assessment process is neither an ex-ante assessment (as for a typical price determination) nor an ex-post assessment (as for a typical price monitoring report).

Stakeholder submissions

Unitywater (2013c) submitted that consideration be given to long-term price monitoring using an ex post review of audited accounts to remove estimation error.

QUU (2013b) submitted that reviews are being undertaken at the same time the business must finalise end of financial year statutory reporting requirements. The framework should consider conducting regulatory reviews either completely before or after the regulatory period. QUU noted that in other jurisdictions, regulatory reviews are completed prior to the commencement of the regulatory period.

QCA analysis

The Ministerial Direction requires the QCA to develop service quality performance reporting to inform customers about the comparative performance of the entities.

Monitoring regimes for Australian airports, NSW water providers and Victoria water providers are all conducted on an ex-post basis. *Ex-post* monitoring of past performance provides:

- (a) a focus on actual outcomes
- (b) a basis to prioritise improvements for future planning.

The Ministerial Direction also requires the QCA to assist customer understanding of how costs of water and sewerage services influence prices identifying key drivers of existing retail price levels and annual price increases.

Ex-ante assessment of costs would provide a basis for outlining the basis for future changes in prices for customers. *Ex-ante* review of costs would also promote:

- (a) greater certainty for entities where cost increases are involved
- (b) greater ability to avoid those costs deemed to be inefficient
- (c) greater focus on factors controllable or predictable by the entities rather than outcomes.

The QCA recommends *ex-post* annual performance monitoring against pre-specified indicators to ensure a clear focus upon outcomes - revenue and prices against costs and service quality (to establish whether market power is being exercised). However, QCA will accept *ex ante* details from an entity seeking certainty that the QCA will accept the deviation from CPI-X in a future period.

The SEQ entities should submit their completed information templates for a financial year by 31 October following the financial year. This should provide sufficient time for all relevant information for the past year to be available. A QCA draft report would be completed by the end of January the following year, allowing time for entities to respond to any recommendations prior to locking in pricing decisions for the following price period.

Commencement

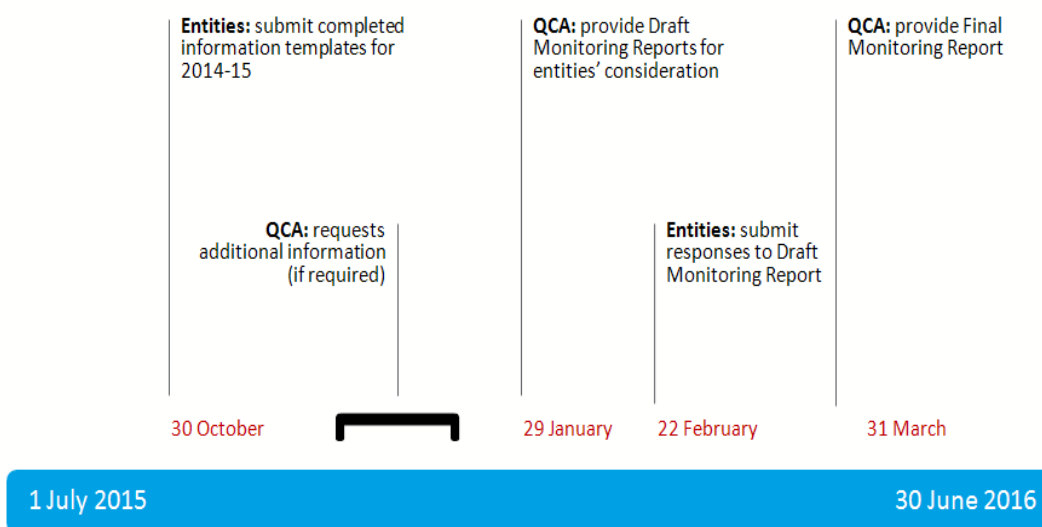
Under the Ministerial Direction the long-term framework would apply from 1 July 2015.

The QCA recommends that the performance reporting measures be put in place over 2014-15 and be available for review for 2014-15 from 30 October 2015. This will enable the QCA to compare the forecasts received for 2014-15 from the 2013-15 review, against outcomes for that year. This in turn will ensure a suitable reference for future efficient costs as a basis for future analysis.

Essentially, entities would use the period from 1 July 2015 to prepare returns for 30 October 2015. The QCA would prepare a Draft Report for 29 January 2016 and a Final Report for 31 March 2016.

Time-lines for annual performance monitoring associated with the QCA's proposed light handed approach are outlined in Figure 3.

Figure 3: Timelines Associated With Reporting (2015-16)



Detailed reviews and price determinations

In the event that a detailed regulatory review or price determination is required, the length of the regulatory period for which any performance targets or prices are to be applied would be an issue.

The QCA has in the past been directed to adopt: a five-year regulatory period for its oversight of GAWB (an initial review covered 3 years); a 3 year regulatory period (with annual reporting) for past price monitoring in SEQ; and annually for bulk water in SEQ.

Other jurisdictions

Regulators typically adopt a shorter initial regulatory review period and then gradually move to longer periods, adjusting these if required to take account of changing circumstances.

For example:

- (a) IPART initially applied 2-year regulatory periods for bulk/retail suppliers such as Hunter Water taking into account uncertainties about future demand on water supply systems, which could have implications for capital investment (IPART, 2003a)
- (b) under Government direction, ESCOSA (2013) adopted a 3-year initial regulatory period (2013-16), and the next regulatory period is to be 4 years
- (c) OTTER (2012) adopted an initial 3-year regulatory period (2012-15), to be followed by a 5-year regulatory period.

In some jurisdictions subsequent regulatory periods were shorter for a variety of reasons:

- (a) IPART (2005a) for some entities subsequently adopted 4-year periods (rather than 5 years) on the grounds that the regulated industry is undergoing change or facing uncertainty
- (b) IPART (2008) for some other entities considered that the shorter period was necessary to improve entities' information collection and recording systems, develop more comprehensive pricing proposals and undertake work to correct other shortcomings identified in the review
- (c) in the ACT, ICRC (2004) adopted a 5-year review period and then subsequently used a shorter 4-year price period (2004-08), due to uncertainties about water usage, drought impacts, concerns about long term capital projections, and potential commitments to a new major water source.

There is a broad range of factors that influence the decision as to the length of the regulatory period. Ofwat's (2010) analysis is summarised in Table 5.

Table 5 Long vs Short Regulatory Periods

<i>Benefits of a Long Regulatory Period</i>	<i>Benefits of a Short Regulatory Period</i>
Investment Certainty - a longer-term review of capital expenditure reduces regulatory risk	Flexibility - Prices and price structures can adjust frequently to increase allocative efficiency.
Incentives - entities can retain cost savings for a longer period and therefore have greater incentives for efficiency gains and innovation	Revenue Adequacy - frequent reviews reduce the risk that revenues and costs diverge over time due to unforeseen events
Innovation - entities may be able to demonstrate benefits of innovation within one regulatory period	Adaptability - regulators may gradually increase rigour and information requirements to allow entities to mature and adjust to the regulatory regime gradually
Price Certainty - greater price certainty may reduce the risks associated with complementary investment by customers	
Cost - less frequent reviews impose less administrative burden on entities and regulators	

Source: Ofwat (2010)

Stakeholder submissions

Gold Coast City Council (2013) submitted that a forward-looking review period provides certainty to water entities, and incentives for water authorities to achieve efficiency gains. Gold Coast City Council noted that the QCA should consider possible conflicts with the *Local Government Act 2009*, which limits councils to only adopt an annual budget.

QUU (2013b) noted that the previous annual reviews did not allow time to implement the findings of the review. These regular reviews also added to the costs of the business. Long term reviews add extra risk, so an appropriate balance is sought.

Unitywater (2013c) proposed that the regulatory period should be either 3 or 5 years, nominated by the relevant water entity.

QCA analysis

In general, regulators apply a 5-year regulatory period unless:

- (a) there are significant changes expected in the service provider's business activities
- (b) the entities are new to regulation. In this case, an initial shorter regulatory period of say 3 years may be applied before transitioning to 4 or 5 years
- (c) there are issues with the level and quality of information available from the regulated entities, particularly in regard to long-term forecasts
- (d) light handed forms of regulation are employed that are less burdensome.

In the case of SEQ entities, the previous and current price monitoring reviews are collectively of sufficient rigour to be classified as an initial review period (depending on the outcomes of the 2013-15 review particularly for the three councils). On this basis, in the event of a price determination by the QCA, it should apply for 5 years, unless specific circumstances justify otherwise. The entity would then return to a light-handed framework provided the QCA's transition criteria are met (see below).

As a detailed review and price determination will require a greater level of information and analysis compared to performance monitoring, such a review will typically take up to 12 months. Any such review should be announced at the time of the Final Report in any year (that is 31 March). It is recommended that during the investigation, the retail and distribution component of prices be frozen (real terms).

Draft Recommendation

- 3.7 Performance monitoring be undertaken on an ex post annual basis.**
- 3.8 Entities submit their completed information returns for a financial year by 31 October following the financial year. The QCA's Final Report should be released by 31 March of the following year.**
- 3.9 Entities make their first submissions by 30 October 2015.**
- 3.10 The QCA prepare a Draft Report by 29 January and a Final Report by 31 March 2016.**
- 3.11 In the event of a regulatory price determination, a 5-year regulatory period apply unless circumstances justify a shorter period.**
- 3.12 During any detailed price investigation, the component of the price relating to retail and distribution services be frozen (in real terms).**

Binding rulings

The Ministerial Direction also requires the QCA to assist the businesses to develop a strategic approach to long-term investment and ensure that whole-of-sector solutions, non-infrastructure solutions and efficient demand-side management initiatives are encouraged.

Large long-term investments and non-infrastructure initiatives present a risk for the entities under an ex-post performance monitoring regime as costs incurred by entities may be later disallowed.

There is thus merit in an ex-ante mechanism for reducing regulatory risk. This should take the form of a ruling which, unless there are significant deficiencies of fact later found to exist at the time of a submission, would be binding on any future regulatory reviews by the QCA.

Relevant details would be submitted to the QCA on 31 October each year.

Draft Recommendation

- 3.13 Where an entity seeks a binding ruling for particular initiatives in a future period, relevant details be submitted to the QCA on 31 October of each year.**
- 3.14 The QCA be bound by its ruling provided that there are no significant deficiencies of fact later found to exist at the time of a submission.**

3.5.2 Incentives

Incentives are a key feature of regulatory oversight and more so for performance monitoring. The avoidance of detailed reviews itself is considered a key incentive for ensuring performance. Other mechanisms are also typically implemented for this purpose.

CPI-X

Following an initial price review, where the cost base and pricing practices are set, most regulators estimate further potential productivity gains (identified by the X-factor) that should be achieved in total expenditure over the forthcoming regulatory period.

Other jurisdictions

The application of X-factors represents a generally accepted regulatory approach.

For example, IPART (2012a) identified annual catch-up efficiency gains for opex (up to 2% per year), to move Sydney Water to the efficiency frontier of a benchmark utility, and annual continuing efficiency gains for technical innovation (0.25% per year). IPART netted out planned gains already identified by Sydney Water, and adjusted for controllable costs, to give a net gain over the 4-year period, accumulating to 1.8%.

ESCOSA (2013a) used the same approach for capex efficiencies, applying a continuing efficiency gain of 0.4% per year and a catch-up efficiency of 0.6% per year for uncontracted future capex.

Ofwat (2010) assumed a continuing efficiency improvement factor of 0.25% a year for both water and sewerage base operating expenditure. Ofwat also assumed continuing efficiency improvements for all companies of 0.4% a year for all capital expenditure incurred during 2010-15 and 0.25% a year for the 2015-25 period. Ofwat took a more conservative view of the scope for continuing efficiency after 2015 to reflect the greater uncertainty in predicting costs and productivity further into the future.

QCA analysis

Determining the X-factor and the service quality performance targets requires a level of regulatory judgement – if too low, the service provider may not have much incentive to reduce costs, but if too high, service standards may be compromised in order for required cost savings to be met. For this reason monitoring of service quality is essential.

Generally this is achieved by reference to:

- (a) benchmarking the business against comparators
- (b) comparison to an engineering model of best practice for a service provider operating under the same operating environment conditions
- (c) historical cost performance, historical rates of planned maintenance, and the potential for one-off impacts to affect opex
- (d) efficiency targets established in other jurisdictions
- (e) an analysis of total factor productivity.

The appropriate X factor/s will be reviewed in a separate report by 30 May 2014, in consultation with the entities.

If achieved over a regulatory period there would not appear any evident reason to review an entity's performance – subject to there being no major changes in the market for water services or technology.

Form of risk management

Risk is the prospect of variation between expected and actual outcomes. Management or mitigation of individual risks will impose different costs on different parties and attitudes to risk are likely influenced by the ability of parties to manage the risk (QCA 2012d). Allocation of risk to parties best able to manage it provides incentive for improved performance (Ofwat 2010) and should increase economic efficiency (Jin 2009).

There are two fundamental mechanisms to control such risks going into the future - revenue and price caps. Both provide an entity with an incentive to minimise costs as once the cap is set as under either, entities can secure the benefits of efficiency gains until the end of regulatory period or longer.

The Ministers' Direction also specifically requires the QCA to consider the treatment of aggregate annual revenue under/over recoveries in relation to core water and sewerage services as part of the permanent price monitoring framework. Such a mechanism can be used to minimise revenue risks for entities.

It is also an issue for the opening revenue requirement due to the past under-recovery of costs considered to be prudent and efficient (up to 30 June 2015).

Revenue caps

Under a revenue cap, the regulated entity is guaranteed the opportunity to earn a set level of revenue, and is protected from demand volatility (QCA 2013d).

As revenue is fixed, where the revenue cap covers a number of products or services, an entity can increase profits by increasing the prices of relatively high cost, price insensitive services while reducing the prices of relatively low cost price sensitive services (AER 2012).

Volume risk is passed to the customer through changes in prices.

If demand is higher than expected and there is no excess capacity, the extra revenues required to fund any supply augmentation may not be available until the next price review (unless arrangements are in place for cost pass-through or review triggers).

Over the short term, a revenue cap can promote demand side management projects that reduce demand (Crew and Kleindorfer 1995) but generally if building blocks are used there is a general incentive to increase the volume of sales to increase the size of network on which a return can be achieved (AER 2012).

Less information is required than for price caps as the regulator only requires information on the total revenue for the regulatory period.

To avoid the prospect of cross-subsidies the revenue cap is often accompanied by pricing principles that proscribe inappropriate price structures.

There are a number of issues associated with revenue caps in that they may:

- (a) increase the volatility of prices to customers to an unacceptable level. This volatility may in turn discourage investment by customers
- (b) reduce the transparency of the regulated price by creating a gap between the published price and the out-turn regulated price.

A fixed revenue cap is usually set at the commencement of the regulatory period and not varied. Under a variable revenue cap, revenues are linked to a particular variable or group of variables, such as demand or performance measures. In this instance, if demand changes the amount of revenue can be adjusted.

Average revenue caps may be used to set maximum per unit revenues, and where set separately for different products and services, are similar to price caps in regard to risk management.

Price caps

Price caps control the prices charged by the service provider, rather than revenue. There is no effective limit on revenue within the regulatory period.

Under a standard price cap the service provider has an incentive to reduce costs, improve productivity, and increase sales, at least until prices are reset in the future. Accordingly they have a disincentive to undertake demand management that restricts output.

Where there are different costs for different services an individual price cap can be set for each service or consumer type (and thus prevents cross subsidisation across different consumer classes).

There are a number of issues associated with price cap regimes:

- (a) the regulated entity has little flexibility to adjust prices once set within the regulatory period unless accompanied by within-period adjustment mechanisms such as review triggers
- (b) a price cap requires a significant amount of information for the setting of the price control, including for example, demand forecasts and demand elasticity and can evolve into cumbersome fact finding and consultative procedures similar to those found for cost of service regulation (Gomez-Ibanez 2003).

Fixed price caps are set for the regulatory period, usually subject to either the CPI or CPI-X.

An important aspect of ideal price cap regulation is that these factors are set with reference to exogenous benchmarks and not entity-specific values that are vulnerable to manipulation by the regulated entity (Beesley and Littlechild 1989; Laffont and Tirole 1994).

A weighted average price cap limits annual price increases on the basis of a basket of specified services. Often the weights will be fixed with reference to the base year in which the control is set. Under such an arrangement, a business has an ability to rebalance prices during the regulatory period. Complexities arise in determining the basket of services, the weighting system and how and when changes are made.

Under a weighted average price cap, an entity will have an incentive to reduce the price for those services where sales are highly sensitive to price and the incentive to increase the price for services which are price insensitive (AER 2012). Such potential cross-subsidies may not be inconsistent with economic efficiency (see QCA 2013d, Pricing Principles Position Paper).

A particular difficulty with a weighted average price cap is that the specification of weights requires a greater level of information than a simple price cap.

Hybrid approaches

Hybrid approaches combine price and revenue caps. These include different forms of regulation for different customer categories, different services or different parts of charges.

For example, a revenue cap may apply to the fixed cost component and a price cap may apply to the variable cost component of the total revenue requirement.

Other jurisdictions

In this respect, a price cap form of regulation applies in most other jurisdictions. For example, ICRC for ACTEW Corporation changed from a revenue cap to a price cap approach on the basis of concerns with the revenue cap about the potential for year-to-year price fluctuations, lack of certainty for customers and the resource intensive nature of annual price resets (ICRC 2013).

ESC (2013a) approved a ‘hybrid’ form of price control to apply to City West Water, Western Water and Melbourne Water. This involves a price cap applying to the initial year of the regulatory period with the businesses having the ability to propose a tariff basket to apply at the time of the annual price review. ESC considered that this approach provides a balance between the need for revenue certainty and customers’ need for price stability.

However for Yarra Valley Water, the ESC (2013a) approved a revenue cap to apply for the duration of the regulatory period. ESC considers that this approach addresses difficulties experienced with revenue variability and limitations associated with demand forecasting.

QCA analysis

Control mechanisms

In reviewing SunWater’s irrigation schemes, the QCA (2012b) noted that it is the allocation of risks and the nature of regulatory arrangements that are important rather than the characterisation of the form of price control.

The preferred form of risk management, tariff structure and the discount rate need to be consistent to ensure risks are appropriately allocated and managed, and parties appropriately compensated. The nature of the appropriate tariff structure and appropriate discount rate are addressed in subsequent chapters.

The nature of the relevant risks, their appropriate allocation and the recommended means of addressing that risk appears in Table 6 below.

Table 6 Summary of Risk and Recommended Allocation and Mechanism

<i>Risk</i>	<i>Nature of the Risk</i>	<i>Allocation of Risk</i>	<i>Recommendation</i>
Short Term Volume Risk	Risk of fluctuating customer demand and supply due rainfall or demand.	Entities can only partially manage these risks. As customers are the beneficiaries of service provision, those risks not able to be managed by the entities should be allocated to customers.	Either revenue cap (with growth factor) or price cap with triggers (cost of service review or binding ruling) for material changes in the volumetric and fixed would achieve allocative efficiency and revenue adequacy respectively. A fixed revenue cap could involve an unacceptable number of price resets.
Long Term Volume Risk (Planning and Infrastructure)	Risk of matching asset capacity to future demand.	Ministerial Direction requires customers to bear cost of past assets. Cost-reflective tariffs (with long run marginal cost in the volumetric component) can provide appropriate signals for future demand. Entities responsible for cost effective responses.	Either revenue or price cap would address this requirement. The appropriate infrastructure response and necessary revenue base for prices be established through the initial review. For subsequent periods where there are significant variations in costs, cost of service reviews or binding rulings may be necessary. Either price or revenue cap could be adopted.
Market Cost Risks	Changing input costs	Entities should bear the risk of controllable costs. Customers should bear the risk of uncontrollable costs	Breaches of CPI-X and/or service quality performance targets likely to trigger cost review. Uncontrollable costs such as those resulting from Government legislation should be passed through.
Bulk Water Cost Risk	A substantial and specific form of input cost risk relating to the cost paid by entities for bulk water (set by Queensland Government)	Customers bear this risk.	Cost pass-through.

Essentially, a revenue cap would result in considerable potential price volatility (unless accompanied by price bands) while a price cap would result in more stable prices and could incorporate an acceptable price band or defined triggers for changes under more extreme circumstances.

Any changes to future prices above CPI-X would be a significant factor in deciding whether to trigger a more detailed cost of service review (except insofar as they incorporate an underspend from a previous period or for which the reasons could be substantiated by the QCA).

The bulk water price is determined by the State Government, without any control by the entities. As noted in the 2013-15 review, bulk water costs typically make up over 50% of the entities' operating expenditure (QUU 2013a, Unitywater 2013b).

Brisbane City Council (2013) noted that one of the major costs for water entities is the cost of bulk water - the investigation needs to consider the ability of entities to absorb these increases.

This cost and corresponding risk of cost increase should be allocated to customers through an automatic pass-through mechanism included on customers' bills.

Other proposed cost pass-throughs, for example associated with regulatory compliance costs for new regulations or increases in Government charges, should be clearly detailed in information submissions. Revenues are also subject to demand variations and growth over time.

Unders and overs -accounts

Where actual revenues fall short of those implied by the prices based on previously deemed prudent and efficient costs, a decision is typically required as to whether an adjustment is required - and if so whether an immediate adjustment is made (referred to as P_0 adjustment) or whether a smoothed (glide-path) approach should be adopted.

Relevant considerations are:

- (a) the magnitude of the difference between efficient and actual prices
- (b) reasons for revenues being below efficient costs
- (c) the feasibility and time required for efficient costs to be achieved
- (d) the impact on consumers.

Other jurisdictions

For 2012-13, Unitywater and QUU put forward prices that based on their demand projections, under-recovered the MAR set by the QCA for the year. In aggregate terms for both water and wastewater services, QUU's revenues are around 90% of MAR.

Most jurisdictions do not allow unders and overs accounts for their water sector. For example:

- (a) ERA (2013a) determined that it would not make adjustments for under- and over-recovery of revenue in the subsequent regulatory period. The intent was to encourage entities to develop demand forecasts as accurately as possible
- (b) for Sydney Catchment Authority, IPART (2012b) minimised the need for unders and overs by linking volumetric and fixed charges to costs, and applying a separate volumetric charge for when the desalination plant is operating
- (c) ICRC (2013) proposed not to adopt an unders and overs approach, but instead to adjust prices biennially within the 6-year regulatory period, to take account of deviations between actual and forecast revenues.

ESCOSA (2013), however, allowed SA Water an adjustment mechanism of 30% of the difference between actual revenue and forecast revenue to be adjusted in the subsequent regulatory period. This adjustment is subject to a 1% materiality threshold. The method of adjustment will be determined at the time of the next determination.

Stakeholders Submissions

QUU (2013b) submitted that mechanisms to deal with any under- or over-recoveries should ensure that the regulated entity recovers revenues over the long-term while being mindful of equity concerns for customers.

Unitywater (2013) suggested guidance is required on formalised eligibility and business rules regarding the carrying forward of MAR under or over-recoveries.

QCA analysis

An unders and overs account with frequent (annual) adjustments may have the advantage of ensuring that revenues do not depart substantially from costs.

The problem with the unders and overs approach is that it can reduce incentives for efficiency. The mechanism transfers risks to the consumers.

Under a performance monitoring approach in which the objective is to prevent the exercise of market power in a light-handed manner, the QCA remains of the view that past under-recovery may be the result of a legitimate exercise of an entity's discretion to forego these revenues and accept a lower rate of return.

Also relevant is whether the under-recovery has been below the QCA's estimate of prudent and efficient costs. These issues are under consideration in the 2013-15 review.

Where under-recovery occurs in the future and it is not the result of an express decision to accept lower than prudent and efficient costs, it would seem that prior under-recoveries could be offset against future over-recovery. It is therefore proposed that under-recoveries incurred in 2013-14 and 2014-15 as part of a price path can be carried forward and capitalised in the MAR. For previous years, under-recovery may only be recognised where it relates to flood impacts (QCA 2014a).

However, where an initial over-recovery occurs, then it should be returned to customers having regard to the related costs and circumstances.

The QCA will separately report on the mechanisms for managing under- and over-recovery by 30 May 2014.

Draft Recommendation

3.15 The performance monitoring framework monitor prices (as well as other performance measures) on an ex post basis.

3.16 Price changes in any period be assessed against CPI-X.

3.17 Where prices exceed CPI-X, entities will be required to justify the differences.

3.18 Differences due to the following will be accepted as pass-throughs:

- (a) uncontrollable costs (such as those following on from Government legislation and bulk water charges or where there are market-driven changes in WACC)**
- (b) where they represent the difference between actual and efficient costs from a previous period (over or under recovery from and including 2013-14) or**
- (c) where they have been substantiated by an entity prior to the reporting period.**

3.19 Any changes in prices above CPI-X be a significant factor in deciding whether to trigger a more detailed cost of service review (except insofar as they incorporate 3.16 (a) and (b)).

Triggers for cost of service reviews

Under the light handed framework, the issue is whether triggers for a full cost of service review should be explicitly defined, with pre-defined thresholds or whether triggers should be implicit (less defined), leaving flexibility for the regulator to decide on whether a cost of service review should be commenced.

Other jurisdictions

The nature of the regulatory intervention and whether the threshold is explicitly defined or implicit in other jurisdictions where light handed price monitoring is practised is summarised in Table 7 below.

Table 7 Nature of Regulatory Intervention and Threshold

<i>Industry</i>	<i>Nature of Intervention</i>	<i>Explicit Thresholds</i>
International Airports - New Zealand	The Minister for Commerce can direct a pricing review by the NZCC.	None
International Airports - Australia	Returns in excess of reasonable expectations could make an airport subject to price review by the ACCC.	None
Stevedoring – Australia	Nil	Not applicable.
Ports – South Australia	ESCOSA can require justification for price increases.	Annual price increases greater than CPI
Port of Melbourne Corporation	The relevant Minister may initiate price review based on petitioning from customers or advice from ESC.	None
Water - Minor and Intermediate retailers in South Australia	ESCOSA can set prices for a retailer if it considers this approach is justified. The Treasurer can direct ESCOSA to adopt a less light-handed approach.	None

Source: ESC (2011a, 2013a, 2013b), ESCOSA (2012a, 2012b, 2013a, 2013b), ACCC (2012b, 2013), PC (2011b), NZCC (2010, 2013)

As shown above, there are typically no pre-defined performance thresholds.

QCA analysis

The implicit trigger may have lower administrative costs and provide greater flexibility. Explicit triggers have the benefit of regulatory certainty and transparency (Table 8 refers).

Table 8 Explicit Triggers

<i>Benefits of an explicit trigger</i>	<i>Benefits of an implicit trigger</i>
Transparency – entities and customer can be actively engaged in setting expected performance standards.	Flexibility – implicit triggers are more able to respond to changing community expectations of performance.
Regulatory certainty – removal of a subjective assessment increases certainty. Entities will know in advance whether their performance is satisfactory.	Holistic – implicit triggers are more able to consider trade-offs between price and quality. Entities have incentives to manage all aspects of their business.
	Cost – the initial setting of expected performance standards is likely to be an information intensive exercise that may approximate a full price determination. An implicit trigger would avoid this cost.
	Comparability – implicit triggers may enable regulators to compare entity performance against its peers or history. Such benchmarking or longitudinal comparison may be more appropriate than thresholds.
	Customer focus – implicit triggers may assist entities to maintain focus on serving customers rather than becoming focussed on regulators.

On balance, an implicit trigger allowing the regulator to exercise judgement is superior. However, while the QCA proposes not to define the thresholds which would trigger a cost of service review and price determination, it has defined the measures which must be reported annually. These measures will be the inputs into the QCA's decision on whether to initiate a cost of service review and price determination and therefore provide some certainty to entities.

Before triggering a cost of service review, entities will have the opportunity to provide additional information relevant to the issue in question, through a request for further information. The intent is to avoid, if possible, the costs and complexity of a full cost of service review.

Where breaches relate to customer engagement, investment strategy, or pricing principles, and prices and costs are otherwise within CPI-X, the QCA's should publicly report its concerns.

The QCA will assess any potential trigger event taking into account past performance, the potential costs of a full cost of service review as compared to the benefits (that is the materiality of the breaches), and any other mitigating circumstances.

Trigger scenarios

Indicative scenarios are shown in Table 9 below, for the key performance monitoring indicators. Performance in customer engagement, long term strategic investment planning practices and application of pricing principles may also influence a decision to trigger a review.

Table 9 Review Trigger Scenarios

<i>Scenario</i>	<i>Changes in Prices/ Revenues</i>	<i>Changes in Costs (Maximum Allowable Revenue)</i>	<i>Changes in Service Standards</i>	<i>Response</i>
1	In line with CPI-X	In line with CPI-X	No significant change	No cost of service review required
2	In line with CPI-X	Materially above CPI-X	Significant deterioration	Cost of service review possible
3	In line with CPI-X	In line with CPI-X	Significant deterioration	Cost of service review possible
4	Materially above CPI-X	In line with CPI-X	No significant change	price determination possible
5	Materially above CPI-X	Materially above CPI-X	No significant change	Cost of service review probable
6	Materially above CPI-X	In line with CPI-X	Significant deterioration	Cost of service review probable
7	Materially above CPI-X	Materially above CPI-X	Significant deterioration	Cost of service review highly likely

Where service quality changes occur, breaches of standards set by technical regulators (for example for drinking water quality standards) will be referred also to the relevant regulator.

Where service quality standards are significantly higher than the minimum set by a regulator or changed, evidence that the difference is supported by customers will be required when considering whether to trigger a more complete review.

Draft Recommendation

3.20 The QCA trigger a full cost of service review in accordance with the scenarios defined in Table 9.

3.21 The QCA publicly report any concerns with an entity's customer engagement policies or procedures, investment strategy, or pricing principles as well as any intention to trigger a price review.

3.5.3 Transition to long-term framework

To address the requirements of the Ministers' Direction, for the long-term, the QCA recommends a performance monitoring framework which 'tracks' entities' performance against:

- (a) CPI-X and certain financial information
- (b) pricing principles
- (c) desired customer engagement practices
- (d) service quality standards (including performance targets).

A process for transitioning from the existing framework to a light-handed approach is required,

Stakeholder submissions

Unitywater (2013c) proposed that the price monitoring framework should create incentives for water entities to transition to light-handed price monitoring or even have it removed altogether where the entity has demonstrated it is worthy of this reward. The QCA should establish criteria for such an objective.

QUU (2013b) noted that the existing price monitoring framework was developed with a view to transitioning to a deterministic regulation at the end of the 3-year period.

QUU considered that the process of moving to a more light-handed approach over time should happen through a focus on processes rather than outputs, with regulatory 'hurdles' put in place to transition to a focus on reasonableness rather than prudence and efficiency.

Brisbane City Council (2013) submitted there should be clear and timely provisions for transitioning from the existing regulatory framework to any new approach.

QCA analysis

The initial focus on inputs has reflected the Government's concerns about the nature and size of the entities' capital and operating programs and what this implies about likely future pricing outcomes.

The focus on inputs is also pertinent given water and wastewater-specific legislative obligations imposed on the entities are a key driver of the size of their capex and opex programs.

The limitations of the QCA's earlier reviews and requirements of the Ministers' Direction have been noted above.

In considering a move from regulatory price setting to a price monitoring regime (where some form of prices oversight is considered necessary), the PC (2011a) has concluded that a staged approach should be adopted.

The PC also recommended that guidance be provided as a prerequisite to utilities on items such as pricing principles, service obligations, transparent processes and procedures for supply augmentation and the setting of prices, the nature and funding of Community Service Obligations, annual performance reporting requirements, provision for independent reviews, and sanctions for poor performance.

ESC (2011c) in assessing the pricing proposals of Victorian water businesses to apply from 1 July 2013, considered transitional arrangements when transferring from one form of price control to another, with particular regard to impacts on disadvantaged customers and how the change affects price stability.

Criteria

The QCA supports the concept of a staged transitioning. The 2013-15 price monitoring investigation provides for a detailed review of the cost of service and the identification of key cost savings targets.

The criteria for an immediate transition to long-term performance monitoring could include:

- (a) absence of public interest or equity issues that may warrant regulatory review
- (b) regulated services are clearly defined and separated from non-regulated services. The QCA would need to be confident that cost-shifting has not occurred

- (c) evidence that market power is not being exercised - that is, the opening cost base is efficient and further cost increases comply with the CPI-X mechanism (with above referenced qualifications) and service quality is in line with expectations
- (d) absence of imminent material changes in circumstances or major infrastructure costs
- (e) demonstrated capacity to provide the required information accurately and on time, based on prior regulatory processes.

Each entity should meet each of these criteria before transition to the long-term light-handed framework can occur. Performance in terms of customer engagement, strategic planning for long term investment, service quality and pricing principles will also be relevant.

The QCA will use the information available to it after the 2013-15 price monitoring investigation to inform its assessment, and will report on each entity by 30 May 2014.

Where a regulatory review has been triggered for an entity, the same criteria would apply for that entity to return to light-handed monitoring.

Opening cost base

Where regulated prices are being set for the first time, or where significant changes in price/revenues are required, a regulator generally seeks to estimate a base revenue requirement. A move to light-handed performance monitoring requires assurance that the starting point is appropriate.

As noted above, for Unitywater and QUU the level of expenditure deemed prudent and efficient for the purpose of the 2013-15 review could be accepted as the cost base for the longer term as:

- (a) the difference between the entities and QCA's estimates of total prudent and efficient costs is about 1.5% in 2012-13
- (b) capital expenditure proposals will have been reviewed 4 times (by two different independent groups of consultants) and the sample size totals in excess of 30% (typically accepted as an appropriate sample size) of the new capital expenditure base since 2010. Further, the RAB prior to that date is required to be accepted
- (c) non-bulk operating expenditure has also been reviewed 4 times (by two different independent groups of consultants). While concerns existed with expenditure proposals and some aspects of the scope of the review, the application of a 2% efficiency gain per annum was considered valid for 2010-13.

For Logan, Redland and Gold Coast City Councils the 2013-15 review may provide sufficient information for this purpose.

Where the above criteria are not met, the existing arrangements should continue until outstanding elements are addressed to ensure an initial efficient cost base is in place. This would include implementation by entities of improvements to various pricing and other practices to precede the implementation of a long-term performance framework. The exact nature of the scope and timing of the reviews for any entity is dependent upon the outcomes of the 2013-15 review.

In summary, should an entity be considered not ready for immediate transition, the QCA proposes a further detailed review - for a 1-year period (2015-16).

Further, as required by the Ministerial Direction, depending upon the outcomes of the 2013-15 review, the QCA will establish a means for managing potential price shocks for customers including those arising from changes in pricing policies, including tariff structures, the provision of subsidies and how they may be treated. For this purpose the QCA will also establish a value for the X-factor.

Draft Recommendation

- 3.22 The QCA use the outcomes of the 2013-15 investigation to inform how entities transition to the long-term framework.**
- 3.23 The criteria for an immediate transition to long-term performance monitoring include:**
- (a) absence of public interest or equity issues that may warrant regulatory review**
 - (b) regulated services are clearly defined and separated from non-regulated services**
 - (c) evidence that market power is not being exercised, that is, the opening cost base is efficient and further cost increases comply with the CPI-X mechanism (with above referenced qualifications) AND service quality is in line with expectations**
 - (d) absence of imminent material changes in circumstances or major infrastructure costs**
 - (e) demonstrated capacity to provide information accurately and on time.**
- 3.24 Performance in customer engagement, strategic planning for long term investment, service quality and pricing principles also be taken into account in assessing readiness for light handed price monitoring.**
- 3.25 The existing regulatory framework continue to be applied until entities have successfully demonstrated initial compliance with the above criteria.**

4 REGULATORY PARAMETERS

4.1 Ministerial Direction

The Ministerial Direction requires the QCA to recommend treatment of the following regulatory parameters:

- (a) the roll-forward of the regulatory asset base (RAB) within and across regulatory periods. A revaluation of the initial RAB (established for the purpose of the 2010-13 price monitoring period) is not to be considered
- (b) the weighted average cost of capital (WACC) – this is the subject of a future Position Paper
- (c) calculating the return of capital
- (d) assessing efficient prudent and efficient operating and capital costs, including the process the QCA will apply in assessing prudence and efficiency
- (e) principles to guide the treatment of capital revenues, including gifted assets and infrastructure charges.

Incentive mechanisms, also required to be addressed, are addressed in the previous chapter.

The following details are relevant to both the establishment of the initial asset base and potentially for any variation to the CPI-X price cap.

To identify instances of potential monopoly pricing, annual financial information is required for performance monitoring. The relevant information requirements follow from a consideration of market power and the treatment of the above regulatory parameters.

4.2 Maximum allowable revenue

Generally-accepted regulatory practice in the Australian water sector is to use the 'building blocks' approach to calculate the revenue needed to cover a service provider's costs.

The maximum allowable revenue (MAR), establishes the total amount of revenue that an efficiently operated service provider would need to remain commercially viable, but not enjoy monopoly profits. It is generally expressed on an annual basis (the MAR).

The MAR for a particular regulatory period normally comprises the following 'building blocks':

- (a) a return on capital based on a WACC applied to a depreciated RAB, updated to reflect any additional capital expenditure (net of asset disposals, customer and government contributions)
- (b) a return of capital based on a suitable depreciation method, or calculated as a renewals annuity
- (c) operating, maintenance, and administrative costs based on efficient costs relative to the appropriate scale of operation, including tax equivalents and any provision for externalities
- (d) an allowance for working capital (if applicable).

The water sector is characterised by wide variations in climatic conditions which will affect demand, operating expenditures and returns to the service provider.

4.3 Regulatory asset base

The RAB consists of those assets necessary for the provision of the regulated (usually monopoly) services. These are usually non-current assets, but can include net current assets (working capital) depending on whether the service provider suffers an economic cost arising from the timing difference between accounts receivable and accounts payable.

The main regulatory issues relate to the valuation of non-current RAB assets (including network assets and land), and the treatment of new capital expenditure.

The issues relating to asset valuation can be summarised as:

- (a) the method of asset valuation
- (b) approaches to assessing prudent and efficient new capital expenditure
- (c) the method of roll-forward of asset value.

In the SEQ urban water sector, the initial RAB is set by the Government and under the Ministerial Direction; a revaluation of the existing RAB is not to be considered.

4.3.1 Asset valuation

National commitments and positions

The relevant NWI principles are in summary:

- (a) valuation of new assets - new and replacement assets should be initially valued at efficient cost
- (b) valuation of legacy assets - legacy assets that are to be retained should be valued at Depreciated Replacement Cost, (DRC); Depreciated Optimised Replacement Cost (DORC); Optimised Replacement Cost (ORC), indexed actual cost, Optimised Deprival Value (ODV) or using another recognised valuation method.

The legacy date equates to the date where a 'line in the sand' has been drawn. Where jurisdictions have not drawn a line in the sand, the legacy date will be no later than 1 January 2007 and may be in accordance with earlier dates as determined by governments or economic regulators.

Other jurisdictions

In NSW (IPART 2012a), the ACT (ICRC 2006), Victoria (ESC 2011a), and Tasmania (OTTER 2012) the initial RAB was an economic value (EV), based on drawing a line in the sand, to estimate a present value of existing and anticipated revenue. This provided an initial financial value of the assets. Prudent and efficient new capex was rolled in each year.

QCA analysis

For SEQ, the Government has drawn a line-in-the-sand on the RAB for SEQ entities and adopted an economic value based on 2007 revenues. The RAB for the combined bulk and retail sectors was defined on the basis of the present value of net revenues across the water sector, and the bulk/retail split was apportioned using then available council written down values of the assets. The basis for this approach was that the assets are 'sunk' assets with no value in an alternative use (KPMG 2007).

Consistent with the Direction, the QCA will accept the RAB established in the 2013-15 price monitoring review carried forward to 1 July 2015.

Draft Recommendation

4.1 The QCA accept the QCA forecast RAB at 1 July 2015 as established in the 2013-15 price monitoring review.

4.3.2 Prudent and efficient capital expenditure

Under the Ministerial Direction, the QCA is to recommend the efficient and prudent capital costs, including the process that will apply in assessing prudence and efficiency. The process is described below, in answer to the Direction. However, under the annual performance monitoring framework, the QCA will only apply the prudence and efficiency review process in the event of a full cost of service review being triggered, or where required as part of a binding ruling.

National commitments and positions

The NWI stated that new and replacement assets should be initially valued at efficient cost. Valuations should not be based on the net present value of cash flows.

Other jurisdictions

Most regulators subject new capex to review of prudence and efficiency. For example, ESC (2011a) adopted a 4-step test:

- Step 1: project is justified either to meet broadly defined government objectives or benefits demonstrably outweigh the costs, or were supported by customers that were informed of the costs
- Step 2: demonstrated prudence where a project justified at Step 1 meets objectives at lowest efficient cost, taking account of whether a range of reasonable options was considered and lowest NPV option selected
- Step 3: assessment of the business' delivery mechanism for effective risk management, appropriate staging, contracting and project management
- Step 4: assessment of cost estimation methodology.

QCA analysis

In recent reviews of SEQ bulk water entities and DRs, the QCA applied a prudence and efficiency test to new capital expenditure (including replacement).

The general criteria applied by the QCA in such tests are that:

- (a) capital expenditure is prudent if it is required in response to key drivers: as a result of a legal obligation (compliance), growth in demand (growth), renewal of existing infrastructure that is used and useful (renewal), or it achieves an increase in the reliability or the quality of supply that is explicitly endorsed or desired by Government or by customers (service). Capital expenditure may also be driven by efficiency gains in operations, to achieve lower operating costs (efficiency).
- (b) capital expenditure is efficient if:
 - (i) the scope of the works (which reflects the general characteristics of the capital item) is the best means of achieving the desired outcomes after having regard to the options available, including the substitution possibilities between capex and opex and non-network alternatives such as demand management

- (ii) the standard of the works conforms with technical, design and construction requirements in legislation, industry and other standards, codes and manuals. Compatibility with existing and adjacent infrastructure is relevant as is consideration of modern engineering equivalents and technologies
- (iii) the cost of the defined scope and standard of works is consistent with conditions prevailing in the markets for engineering, equipment supply and construction.

The assessment of prudence takes account of potential:

- (a) bypass options – such options are limited in distribution/retail services. Large customers may find it economic to bypass services in some circumstances
- (b) non-network options – such options, if not already exploited, could defer the timing of capital expenditure, for example through demand management, sponsoring new low-use technologies, supply restrictions or system leakage reduction
- (c) excess capacity - for most water utilities there are considerable benefits in terms of minimising total costs from installing assets to meet not only existing demand, but also to allow for a reasonable (expected) level of growth in demand. Generally, planned excess capacity, where it is considered necessary to produce the lowest long-run total cost, on a present value basis, should be retained in the optimised asset base
- (d) redundant or stranded assets – assets that are no longer used or are superseded. Assets would not be considered to be stranded if they must continue to be maintained due to supplier of last resort requirements or to address a relevant risk
- (e) over-investment or gold-plating – the level of investment exceeds that necessary to provide the service at least cost.

In reviewing proposed new capital expenditure, the QCA in some cases found that an alternative configuration using different combinations of assets may be more prudent and efficient. For such cases, the QCA adopted the prudent and efficient configuration.

In the event that a full cost of service review is triggered, the QCA proposes to adopt the same methods for assessing prudence and efficiency of sampled capex.

For annual performance reporting purposes, the QCA will not undertake prudence and efficiency reviews. Entities will be responsible for ensuring that their investment decisions meet the prudence and efficiency criteria. Where prices or revenues diverge from CPI-X due to capex related issues, and the QCA seeks to investigate these specific issues, entities will be required to demonstrate that alternative investment options (including replacement or upgrades of existing infrastructure rather than new investment) have been appropriately assessed. This is discussed in Chapter 6.

Draft Recommendation

4.2 Prudence be assessed against key drivers: compliance, growth, renewals, service and business efficiency. Efficiency is tested against the scope and standard of works.

4.3 Entities ensure investments are consistent with prudence and efficiency tests.

4.3.3 Asset roll-forward

Asset roll-forward refers to the method for carrying forward the RAB over successive regulatory periods. The annual roll-forward should be undertaken using a method of return of capital that fully recovers the initial cost of an asset over its economic life and a rate of escalation consistent with maintaining the real value of the initial investment over time. Ultimately, the NPV of capital charges applied over the life of the asset should equal the initial cost, or purchase price, of an asset.

National commitments and positions

The NWI principle for asset roll-forward is that the RAB comprising prudent new investments and legacy investments should be rolled forward each year in accordance with the following formula, which can be expressed in nominal or real terms:

$$RAB_t = (RAB_{t-1} + \text{Prudent \& Efficient Capital Expenditure}_t - \text{Depreciation}_t - \text{Disposal}_t (\text{discarded assets}))$$

(Where t = the year under consideration).

Where assets are optimised, they should not be subject to further optimisation unless there are relevant changes in market circumstances.

Other Jurisdictions

In urban water decisions, Australian regulators have adopted the roll-forward approach proposed in the NWI pricing principles (ERA 2013a; IPART 2008, 2013; ICRC 2006; OTTER 2012; ESC 2011a; ESCOSA 2013a).

Nominal rates are typically rolled forward using inflation (IPART 2008; OTTER 2012). However:

- (a) ICRC (2006) used a capital escalation factor based on industry forecasts (by BIS Shrapnel) of engineering and construction cost increases in the water and sewerage sector
- (b) Ofwat (2010) also used a roll-forward of Regulatory Capital Value for UK water businesses. Ofwat includes a capital maintenance charge to maintain serviceability.

Stakeholder submissions

Unitywater (2013c) submitted that guidance is required on RAB roll-forward and MAR construction.

QCA analysis

While asset roll-forward is straightforward within a regulatory period, issues arise when contemplating roll-forward over successive regulatory periods. Most Australian regulators support the principle of roll-forward (rather than full asset revaluations) on the grounds that:

- (a) it is simpler and less costly
- (b) ongoing revaluations may affect the future incentive of regulated entities to invest.

Capital expenditure which was originally considered prudent and efficient by the regulator may later become redundant or sub-optimal due to changes in demand or technology. Any subsequent adjustments in successive regulatory reviews may, therefore, result in losses and reduce the incentive to efficiently invest in future infrastructure.

Once reviewed for prudence and efficiency, assets would be subject to no further optimisation, unless, in some rare circumstances:

- (a) the regulator had previously been misled in some way
- (b) there are actual bypass options
- (c) there are issues in relation to customers' capacity to pay (although this is difficult to assess, the QCA will refer to any customer engagement processes undertaken by the entity) or
- (d) there is a need to promote outcomes in downstream or upstream markets that are consistent with those of properly functioning competitive markets.

Where entities overspend on capital relative to prior projections, consideration needs to be given to whether such over-expenditures are efficient and whether it should be included in the RAB in subsequent periods.

Where actual capex is less than forecast, entities are typically allowed to earn a return on the forecast amount, provided service quality does not deteriorate. However, the RAB at the start of the next regulatory period will only reflect actual expenditure. New assets will enter the RAB at commissioning date.

The QCA recommends that nominal values be adopted in the roll-forward valuation, and that base values be escalated using an appropriate factor to maintain values in real terms. The relevant index is CPI (or other indicator such as the mid-point of the RBA's inflation target band). There is a case to apply industry-specific input indexes where these are available, stable and reliable. Industry-specific indexes have the advantage of maintaining the value of the asset in equivalent terms, but may be volatile and less predictable for setting prices over a regulatory period.

Draft Recommendation

4.4 For setting prices, entities roll-forward the RAB taking account of prudent and efficient capital expenditure, depreciation and asset disposals.

4.5 For rolling-forward the RAB CPI be adopted.

4.3.4 Contributed assets and capital subsidies

Contributed assets are those assets that are funded or provided by water users, or funded or provided by others on their behalf. Assets may have been contributed in the past through transfer of ownership of a facility, direct payment for the facility involved, a capital contribution towards an expansion of existing facilities or through payments for developed land (developer charges).

National commitments and positions

The NWI proposes that new contributed assets (i.e. grants/gifts from governments and contributions from customers (e.g. developer charges)) should be excluded or deducted from the RAB or offset using other mechanisms so that a return on and of the contributed capital is not recovered from customers. If a renewals annuity is used, it should include provision for replacement of contributed assets.

For contributed assets other than developer charges, funding should be recognised as an asset contribution only where there is clear contractual or policy evidence that this funding was meant to be used to lower long-term prices.

Other jurisdictions

ERA (2013a) excluded developer contributions from the asset base. ESCOSA (2013a) likewise excluded customer contributions and gifted assets from new capital expenditure.

Stakeholder submissions

Unitywater (2013c) suggested guidance is required on the treatment of developer contributions.¹ The Queensland Department of Local Government, Community Recovery and Resilience (2013) indicated an interest in the treatment of capital revenues, gifted assets and developer charges.

QCA analysis

Capital contributions

Recognition of capital contributions for setting prices depends on the particular circumstances surrounding the capital contribution, particularly the intention and expectations of the parties at the time the capital contributions were made. In SEQ revenues from infrastructure charges are likely to be the main source of external capital contributions.

Where it is proposed to recognise capital contributions, different approaches have been adopted. In general these involve either:

- (a) including the contributed assets in the regulatory asset base, but employing some form of offsetting mechanism to account for the contribution or
- (b) excluding contributed assets from the regulatory asset base for pricing purposes.

These approaches can be applied to previous or future capital contributions. In general, option (b) is simpler, but may not be practical where the capital contribution relates only to a subset of the customer base. In these cases, if it is administratively not overly complex, it is recommended to recognise any specific arrangements between identifiable contributors and the water business by adjusting prices for those specific users in accordance with the terms of the arrangement.

Any price offsets or adjustments should reflect the capital-related costs, namely return on capital and depreciation, unless otherwise specified.

Capital subsidies

Capital subsidies or grants form a specific sub-group of contributed assets, and generally refer to subsidies provided by the State or Commonwealth Government to various water businesses. Local government water services businesses, for instance, have acquired significant assets that have been funded, in full or in part, through grants from other levels of Government.

Options for dealing with capital subsidies include:

- (a) treating the subsidy as an equity injection, with no consequent changes to pricing
- (b) recognising the subsidy as revenue in the period in which it is received, and including in the entity's asset base any assets funded by the subsidy

¹ In its submission to the 2013-15 price monitoring review, Unitywater also noted its obligation under the Local Government Tax Equivalents Manual (Queensland Treasury and Trade 2010) to return a share of capital revenue it receives to its participating councils via tax equivalents, reducing the funds available to Unitywater to build infrastructure.

- (c) amortising the value of the subsidy over the remaining life of the relevant assets and including this as revenue to offset the amount required of other revenue sources.

The appropriate approach to regulatory recognition of capital subsidies depends, largely, on the purpose of the grant. The purpose may be to reduce the service costs to a particular consumer or group of consumers. In the absence of any specific agreement or agreed purpose, or evidence to suggest that a particular outcome was intended, the treatment of past and future grants should be at the asset owner's discretion.

Draft Recommendation

4.6 Revenues from capital contributions (including infrastructure charges) and capital subsidies (where verifiable) be taken into account in determining the revenue requirement.

4.3.5 Valuation of land and easements

The SEQ entities hold, or may invest in, land and easements for buildings, pipelines or other facilities.

QCA analysis

The QCA considers that land should be valued for regulatory purposes at a value consistent with its next best use – the opportunity cost to the asset owner, or the value which would be faced by a new entrant to the market.

New easements are best valued at market value where this is available, or historic cost indexed forward by CPI (in the absence of an observed market value).

Draft Recommendation

4.7 Easements be valued at market value where this is available, or historic cost indexed forward by CPI (in the absence of an observed market value).

4.3.6 Work in progress

Water infrastructure can take a long time to build and provide services – financing and holding costs can be incurred where asset construction spans more than one year.

QCA analysis

The QCA's preferred approach is for work in progress that spans more than one year to be capitalised until completion/commissioning at the appropriate WACC. The capital expenditure should only be included in the asset base when it is able to provide services.

Draft Recommendation

4.8 Work in progress spanning more than a year be capitalised until commissioning at the appropriate WACC.

4.3.7 Working capital

Working capital is generally defined as the difference between a service provider's current assets and current liabilities, and is a measure of operating liquidity.

Despite this general definition, the components of current assets and current liabilities included in the actual calculation of working capital can vary. However, it is common practice to include the trade component of accounts receivable (trade debtors), the trade component of accounts payable (trade creditors), and inventories if these are material.

Whether or not working capital will be required will depend mainly on the timing difference between the cash received from customers on account (accounts receivable, or trade debtors) and the cash paid to suppliers on account (accounts payable, or trade creditors), plus the need to finance inventories.

The timing difference creates a financial liability when the average collection days for accounts receivable are greater than the average payment days for accounts payable (that is, on average it takes longer to receive cash than to pay it, resulting in a shortfall). Conversely, when the average payment days for accounts payable are greater than the average collection days for accounts receivables, there is a surplus of cash on average.

To cover the economic cost of any working capital required to supply regulated services, a return on working capital should be included in the maximum allowable revenue.

Other jurisdictions

In 2000 the Victorian economic regulator rejected Victorian electricity distributors' proposals for working capital allowances on the basis that, given the assumption regarding return on capital implicit in the building block formula that payments are received at year end, while in practice, utilities receive payments from customers throughout the year, there is already an excess net present value revenue for the return on assets component that would more than compensate for this purpose (Deloitte 2011).

Since this 2000 decision, ESC has not provided an allowance for working capital in its pricing decisions for regulated entities.

In its Final Report on the Bulk Water Charges for the State Water Corporation (State Water) 2010-14, IPART (2010) included an allowance for working capital in the return on capital to recover the costs of managing revenue volatility risk caused by variability in the availability of water (for example, the borrowing costs associated with providing services in years when extractions (and therefore revenue) is below forecast).

ESCOSA (2005) considered the need for separate working capital allowances for capital related costs and operating related costs. ESCOSA found that, although there was no basis for providing a working capital allowance for the capital cost component, a working capital allowance on the operating expenditure was appropriate.

ICRC (2008) explicitly did not include working capital as an allowance as it was already provided in ACTEW's regulatory model. Since 2002, the Australian Economic Regulator (AER) has consistently held that, under a building block framework, regulatory allowances for working capital funding are unnecessary.

QCA analysis

In its previous water decisions the QCA has generally assessed the need for a working capital allowance based on the difference in value between a service provider's current assets and current liabilities multiplied by the applicable WACC (QCA 2010b, QCA 2012a, QCA 2012b, QCA 2013c).

However, the particular categories of current assets and liabilities included in the calculation have varied depending on the actual business circumstances of service providers.

If justified, an allowance for working capital should be included in the MAR to recover any economic cost arising from the timing difference between receivables and payables, plus the cost of maintaining relevant material inventory if this has not already been included in the RAB. The onus of proof as to whether it is justified lies with the entity.

The calculation of the allowance, if any, should reflect not only the particular trading circumstances of the service provider, but also should take into account other relevant current assets and liabilities if these have a material effect on cash flow patterns (for example, prepayments, accrued revenues, other creditors and accruals, and wages and salaries payable).

Draft Recommendation

4.9 A working capital allowance account for the timing difference between receivables and payables, plus inventory costs where it can be justified.

4.4 Return of capital

To ensure appropriate investment incentives, investors need both an adequate return on capital plus a return of capital over the economic life of the asset. Return of capital, or depreciation, represents the repayment of capital to an investor. This is different from an accounting or physical definition of depreciation.

There is considerable scope to choose different methods of depreciation but it is critical to ensure that the present value of capital charges (return on capital and return of capital) over the life of the asset equals the initial cost of an asset. This includes the application of an annuity (QCA 2014c).

The return on capital and the return of capital can be calculated and shown separately or combined in the form of an annuity charge.

Key issues are the alternative methods of calculation and the parameters used in applying each of the methods.

National commitments and positions

The NWI pricing principles state that charges will be set to achieve full cost recovery of capital expenditures (net of transparent deductions/offsets for contributed assets and developer charges) through either:

- (a) a return of capital (depreciation of the RAB) and return on capital (generally calculated as rate of return on the depreciated RAB) or
- (b) a renewals annuity and a return on capital (calculated as a rate of return on an undepreciated asset base).

Other jurisdictions

Straight-line depreciation has been adopted as a measure of asset consumption in most recent regulatory decisions applied using assessed asset lives for asset categories (ERA 2013a; IPART 2008, 2013; ICRC 2012; OTTER 2012; ESC 2013; ESCOSA 2013).

OTTER (2012) applied an asset renewal annuity (ARA) in addition to depreciation. The ARA was an attempt to smooth capital expenditures over the 3-year regulatory period.

Ofwat (2009) applied a depreciation charge to above-ground assets such as treatment works. For underground assets, pipes for water and sewerage, it applied an infrastructure renewals charge, based on a 15-year average (2005-20) of renewals expenditure.

QCA analysis

Depreciation

Cost-based depreciation charges allocate the original cost of an asset over its estimated (remaining) useful economic life. The asset base is then 'depreciated' or 'written-down' in each period to return the initial capital to the business.

Central issues are the assessment of the useful life of the asset (the time over which the asset depreciation occurs), the pattern or profile of depreciation, and the estimate of the salvage or residual value that may be realised at the end of an asset's useful life.

The useful life of the asset is best determined by reference to asset management plans. The depreciation profile may be:

- (a) straight-line – an equal annual amount of reduction in service potential
- (b) constant efficiency – reduction in service potential occurring mostly towards the end of the asset life or
- (c) accelerated depreciation or diminishing value method – reduction in service potential is by a constant percentage each year, producing more rapid depreciation in the early years of the asset life.

Water storage and distribution system assets exhibit different physical depreciation profiles. Dams have long lives requiring minor maintenance to maintain service potential, while pipelines may lose service potential more evenly. Assets such as pumps and motors may exhibit linear consumption patterns. However, as noted the key economic issue is to ensure the recovery of capital over the life of the asset.

Straight-line depreciation is usually adopted as a default position because it is simpler, transparent and typically the standard approach in business. This approach has been adopted in the QCA's urban water regulatory reviews and is applied almost universally in other jurisdictions.

The application of straight-line depreciation can mean that capital charges are larger in absolute terms in the beginning of the asset life relative to those in later years. This can mean material changes in the level of prices between regulatory periods. This difference may be exacerbated over time where long-lived assets include a significant amount of excess capacity which is taken up with rising demand over the asset life (QCA 2014c).

If an asset is underutilised but demand is expected to grow and asset stranding risk is low, it will be economically efficient and likely to be perceived as equitable for capital charges to increase in real terms over time (by adopting a back-end loaded depreciation). This back-ended approach effectively carries the value of excess capacity forward for future users to pay (QCA 2014c).

While the straight-line depreciation approach is adopted as the default option, entities may consider alternative depreciation profiles that take account of excess capacity and demand growth implications. For some assets, an approach that allocates a loading on future users may be considered appropriate (QCA 2014c). Entities should advise of any such variations from straight-line depreciation.

Renewals annuity

Rather than set an asset depreciation charge, a renewals annuity reflects the costs of necessary refurbishment/rehabilitation of individual parts of the network over a relatively long period of time. The infrastructure asset network is considered an integrated, renewable system to be maintained in perpetuity, rather than a collection of individual assets each with its own asset life and maintenance requirements. There is no direct reference to the (historic/actual) cost of the assets in question, only replacement or refurbishment costs.

The essential input to a renewals annuity approach is the asset management plan. Taking account of the age, condition and service capacity of the system, a total maintenance plan is developed which identifies the most effective operating lives and times for replacement of all assets which, together, comprise the system or network. An expenditure program, in some cases as long as 35 years, is then developed to both replace component parts of the system when required and to carry out all other operations and maintenance. These expenditure projects are converted to an annuity and an asset restoration reserve (ARR) is established to carry the accumulated balance (whether unspent or overspent) of this annuity charge.

The main application of renewals annuities has been in irrigation pricing. The rationale for adopting such an approach is that it is considered to provide a lower cost for asset replacement for long life assets such as dams and channels, as compared to a full asset consumption charge. The renewals annuity enables sustainable funding and operation of a scheme consistent with lower bound pricing.

A renewals annuity should be structured to allow for periodic asset maintenance, asset refurbishment and replacement of all assets in the system. If a planning period less than the economic life of the asset is adopted, the annuity charge will be under-estimated (QCA 2014c). Over time, the renewals annuity may increase upwards as replacement of long-lived high cost assets enter the planning period.

Where the system has initial excess capacity, pricing based on smoothing over the life of the longest life asset in the system can avoid the front loading of prices.

The QCA recommended the continuation of renewals annuities in its reviews of SunWater (QCA 2012b) and Seqwater (QCA 2013c) irrigation operations. In these reviews, the QCA adopted a 20-year time horizon (2012-36 for SunWater and 2013-36 for Seqwater).

In recent years there has been a move away from renewals annuities in some businesses (eg Goulburn-Murray Water 2006). The reasons relate to issues in the greater provision of urban services (where depreciation is typically applied), management of the ARR, the risk of price spikes as the planning horizon is moved forward, and the risk that funds will be set aside for assets that may not be replaced.

In the light of these experiences, the renewals annuity approach should not be adopted for urban water pricing. A depreciation measure provides more stable asset consumption costs over time, is simpler and more transparent, and avoids the additional management of an ARR.

Draft Recommendation

4.10 Return of capital be based on straight-line depreciation.

4.11 Details of alternative depreciation profiles for long life assets be justified to the QCA.

4.5 Operating costs

Operating costs of water services typically include labour and contractors, repairs and maintenance (routine and non-routine), materials, and administration. A competitive and efficient market would ensure that, in general, operating costs are minimised.

National commitments and positions

The NWI (COAG 2004) indicates that full cost recovery includes efficient operational maintenance and administration costs.

QCA analysis

Prudent and efficient costs

The most common means of estimating efficient costs is to benchmark the performance of a particular utility against other relevant businesses. Another approach is internal benchmarking over time which allows a firm to establish its own relevant performance indicators. Under these approaches, efficiency levels for inputs, unit costs and quality of service are set on the basis of lowest-cost, highest-service standards (van den Berg 1997).

Key difficulties include the lack of an appropriate set of businesses against which valid operational conclusions can be drawn. It may also be difficult to determine the optimal balance of operating, maintenance and administration costs and capital expenditure over time.

In some cases, the regulator may have no option but to accept operating cost projections by the regulated organisation so long as sufficient supporting evidence, for example, independent cost reviews, is provided. This may be necessary until sufficient time has elapsed to enable a time series of comparative data to be collected.

An alternative approach that has been adopted by the QCA is to undertake a bottom-up expert analysis of the efficiency of a sample of operating cost items and extrapolate where possible.

Operating expenditure is prudent if the expenditure:

- (a) is necessary to operate the water services in review
- (b) is required to meet growth in demand for services or
- (c) results from a legal or compliance obligation.

For expenditure to be efficient, it must represent the least-cost means of providing the requisite level of service within the relevant regulatory framework. Operating expenditure is efficient if it is undertaken in a least-cost manner over the life of the relevant assets and is consistent with relevant benchmarks. In assessing efficiency, it is necessary to have regard to the conditions prevailing in relevant markets, historical trends in operating expenditure and the potential for efficiency gains or economies of scale.

In general, the QCA considers that operating costs should reflect efficient service delivery given the scale and nature of the business activity.

Under the light handed performance monitoring framework, prudent and efficient base year operating costs may be used as a reference point to assess forecast costs.

Draft Recommendation

4.12 Operating costs are prudent if justified in terms of service, growth or compliance drivers.

4.13 Operating costs are efficient where they represent the least cost over the life of the assets.

4.6 Tax equivalents

A government business may benefit from tax exemptions or concessions that are not available to private sector competitors.

Therefore, in order to satisfy competitive neutrality obligations, certain government business undertakings in Queensland are required to include a tax allowance in their cost bases, and therefore prices, in order to maintain tax neutrality between the government businesses and their private competitors, or potential competitors.

These tax allowances are called tax equivalents.

National commitments and positions

The National Competition Policy (NCP) agreements (COAG 2007) and the associated NWI agenda (COAG 2004) provide the framework for nationwide competition policy reform in the water sector.

A specific policy element of NCP reforms is competitive neutrality, the purpose of which is to remove benefits which accrue to government business activities as a result of their public ownership, such as the exemption from taxation.

As a signatory to NCP agreements, the Queensland Government is committed to achieving consistency, as far as practicable, with the direction and spirit of the national water reform agenda under the NWI, including competitive neutrality reform. This is reflected in its general policy objectives for the structural and regulatory reforms of urban water supply arrangements in south east Queensland.

Other jurisdictions

IPART uses a post-tax Weighted Average Cost of Capital (WACC), and therefore includes tax liabilities as a separate cost building block (IPART 2012a, 2012b, 2013). The tax liability is calculated as the tax that would be payable by a comparable privately owned business.

ESC (2011a) and ACCC (2011b) use a post-tax building block model and therefore include a taxation forecast in the total revenue requirement. However, these regulators calculate the taxation with reference to the forecast taxation to be incurred by the entity over the regulatory period, rather than benchmarking against a comparable private firm.

ESCOSA (2013a) uses a post-tax WACC, and explicitly includes an estimate of tax expense in the cash flows using entity-specific revenues and costs, but benchmark interest expenses.

OTTER (2012) and ERA (2013a) uses a pre-tax WACC which implicitly embeds 'benchmark' tax effects in the cost of capital, thus precluding the need for a separate tax allowance in the total revenue requirement.

ICRC (2013) has concluded that competitive neutrality concerns are not relevant in the market for water and sewerage services in the ACT, and therefore does not allow for tax equivalents in ACTEW's cash flows.

SEQ approach

In order to meet their tax neutrality obligations, the councils are required to include tax equivalents in their costs in accordance with the Local Government Tax Equivalents Regime (LGTER) administered by the Office of State Revenue (Queensland Treasury and Trade 2010).

The LGTER determines the amounts of income tax and State tax equivalents to be paid by the entities because they are not liable to pay Commonwealth income tax, or State duty, payroll and land taxes. Both income tax and State tax equivalents are paid to the relevant local authority.

QCA analysis

A tax equivalents allowance may be based on either actual cash flows for the business, or based on the benchmarked parameters for capital structure, cost of debt etc (as used by IPART). Generally, where a benchmarked WACC is used, a benchmarked tax equivalents estimate would be more consistent.

The QCA employs the Officer WACC3 or 'vanilla' form of the discount rate, which defines corresponding cash flows in nominal, post-tax terms.

Therefore, when calculating the maximum allowable revenue requirement, it is necessary to include an amount to compensate the entities for tax equivalents.

Draft Recommendation

4.14 The MAR include an allowance for tax equivalents based on a benchmark private sector entity.

4.7 Cost allocation

Indirect costs are the cost of facilities used jointly or in common by several or all services, or customer groups.

A cost allocation problem arises where there is a need to assign indirect costs to a particular service, customer, or customer group but there is no economically feasible way to trace the costs directly to that service, customer, or customer group in a clear cost-causative way.

Under such circumstances there is usually no one 'best' way to allocate these costs, and judgment based on knowledge and experience is needed. As there is a degree of arbitrariness or subjectivity in whatever method is chosen, the aim is to use a method which results in a 'fair and reasonable' allocation which is acceptable to stakeholders.

This is an important issue in the setting of cost-reflective prices for water services because the system cost of water services infrastructure is often characterised by a large proportion of common or joint costs.

4.7.1 Cost allocation in principle

General economic guidance on what is 'fair and reasonable' cost allocation is usually provided by two commonly-accepted principles: the stand-alone cost test; and the incremental cost test. These are also called the 'subsidy-free' tests (Faulhaber, 1975).

The stand-alone cost test comprises two elements:

- (a) each user's (service or customer) share of the cost must not be greater than the user's stand-alone cost. That is, no user can do better on its own than under the proposed cost allocation.
- (b) the cost share for any group of users must not be greater than their combined costs. That is, no group of users can do better on its own than under the proposed cost allocation.

The incremental cost test is satisfied if the cost allocated to any user group is at least as much as the incremental costs of including that group on the system. If this condition is satisfied, no single group will be subsidising another.

As shown by Brown and Sibley (1986), these two principles of cost allocation are equivalent whenever common or joint costs are fully allocated to users. If costs are fully allocated and the stand-alone test is not met, then cross-subsidies must exist as the contribution of at least one group to total costs is less than its incremental costs.

If a cost allocation approach passes both stand-alone and incremental cost tests, it will provide incentives for all interested parties to cooperate, rather than by-pass the system and supply themselves by alternative means. Also it will not give rise to cross-subsidies and it will allocate all costs among users.

4.7.2 Cost allocation in practice

The stand-alone and incremental cost tests are often impractical to apply because of the difficulty of obtaining reliable, transparent, or cost-effective measures of stand-alone (and therefore incremental) costs. Another difficulty is that it may not be possible to calculate cost allocations that meet the tests. Alternatively, even if the tests are satisfied, a unique allocation of costs normally cannot be determined, and judgment in making a final choice will still be required.

These difficulties give rise to the use of alternative, simpler approaches in practice. These methods commonly distribute indirect costs to users in proportion to some allocator (or cost allocation base) perceived as 'reasonable', such as output or usage quantities, revenues, or costs directly attributed.

However, although these allocation methods may appear reasonable and plausible proxies for the incurrence of indirect costs, the costs allocated are arbitrary in the theoretical sense that there are no clear arguments, based on economically meaningful criteria, for preferring one allocator over another (Kahn 1971).

Notwithstanding this theoretical objection, attempting to trace causal responsibility for some of the common costs can reduce the risk that the final allocations will violate the cost tests. For example, the costs of a local storage reservoir to accommodate daily fluctuations in demand might be allocated to customer classes according to the extent to which each is causally responsible for the daily peak.

Moreover, despite the lack of a clear economic rationale for using cost allocation bases (CABs), Brown and Sibley (1986) showed that, for the types of cost functions used in most applied economics work, the use of direct (attributable) costs as the CAB does have a strong axiomatic foundation and is therefore not strictly arbitrary. In this sense at least, the use of direct costs as the allocator, where applicable, may have claims to being a superior approach for the assignment of indirect costs.

National commitments and positions

NWI principles (COAG 2004) explicitly refer to cost allocation in the following contexts:

- (a) for urban water supply, unattributable joint costs should be allocated such that total charges to a customer must not exceed stand-alone cost or be less than avoidable cost where it is practicable to do so
- (b) the costs of water planning and management activities are to be allocated between water users and governments using an impactor pays approach, where an impactor is any individual, group of individuals or organisation whose activities generate costs, or a justifiable need to incur costs. The impactor pays approach seeks to allocate costs to different individuals, groups of individuals or organisations in proportion to the contribution that each individual, group of individuals or organisation makes to creating the costs, or the need for the costs to be incurred.

Water planning and management costs are to be identified and differentiated by catchment or valley or region and by water source where practicable.

- (c) the common costs of recycled water and stormwater schemes should be allocated using a beneficiary pays approach, with specific cost share across beneficiaries based on the scheme's drivers (and other characteristics of the recycled water/stormwater reuse scheme).

QCA analysis

For practical reasons, allocation of indirect costs to water services, customers or customer groups should be carried out using a suitable cost allocation base.

In previous water decisions the QCA has used a variety of cost allocation bases to allocate indirect costs depending on the perceived reasonableness of the allocator to proxy for a causal link between the costs incurred and the service provided. For example:

- (a) for GAWB (QCA 2010b), indirect costs were allocated to network segments on the basis of the segments' shares of total direct costs, and thence to users according to their share of throughput
- (b) for SunWater (QCA 2012b) and Seqwater (QCA 2013c) indirect costs were assigned to irrigation schemes on the basis of the schemes share of direct labour costs and total direct costs, respectively, and thence to customer groups within the schemes using measures of water reliability, water allocations, or water use depending on the nature of the customer group and costs, and whether costs were fixed or variable.

Each significant common cost pool should be allocated to services and customers on the basis of a reasonable attempt to proxy the causal relationship between the costs incurred and the water or wastewater service performed. Cost allocators also need to be assessed for their ease and cost of use.

The more costs are related to the provision of services, the greater is the cost reflectivity of pricing structures, and the more effective are pricing signals.

Draft Recommendation

4.15 Each significant common cost pool be allocated to services and customers on the basis of a causal relationship between the costs incurred and the water or wastewater service performed

4.8 Information Requirements for monitoring prices and costs

Discerning market power

The explanatory notes relating to the objective of price monitoring under Part 3 of the QCA Act indicate that the QCA is required to constrain the monopoly activity from exercising its market power.

The QCA (2009) has published criteria for the identification of government monopoly business activities, for the purpose of declaring them for regulatory oversight. One of the QCA's recommended criteria is whether:

there is evidence that the government business activity is exercising substantial market power which may include that it is earning an excessive return, or would be earning an excessive return were it not operating inefficiently or is cross subsidising.

Consistent with the QCA Act explanatory notes and the criteria for identification of government monopoly business activities, the SEQ Interim Price Monitoring Framework (the Framework) requires the QCA to report any instance where revenues significantly exceed (or fall below), or are considered likely to significantly exceed (or fall below), the MAR for a sustained period.

This is consistent with economic literature which focuses largely on the outcomes of an exercise of market power (Joskow & Kahn 2001) which while noting that the outcomes of an exercise of market power are varied, monopolies exercise their market power, in particular, to achieve excessive profits (Tirole 1988).

Other outcomes of an exercise of market power have been noted above and include: using too many inputs, such as paying staff excessive wages, or over-investing in infrastructure (productive efficiency); providing a lower quality of service (allocative efficiency); and resisting responding to new demand, new low-cost technologies or managerial processes (dynamic).

Other considerations in forming an opinion about whether market power is being exercised include whether:

- (a) the conduct was materially facilitated by the entity's substantial degree of power in the market
- (b) the entity engaged in the conduct in reliance on its substantial degree of power in the market
- (c) it is likely that the entity would have engaged in the conduct if it did not have a substantial degree of power in the market
- (d) the conduct is otherwise related to the corporation's substantial degree of power in the market
- (e) it is using the power for an illegal purpose (ACCC 2012b).

The misuse (intent and legality) of market power are legal considerations, and not the focus of the QCA's investigation – it being to identify any excessive profits or costs achieved as an outcome of an exercise of market power.

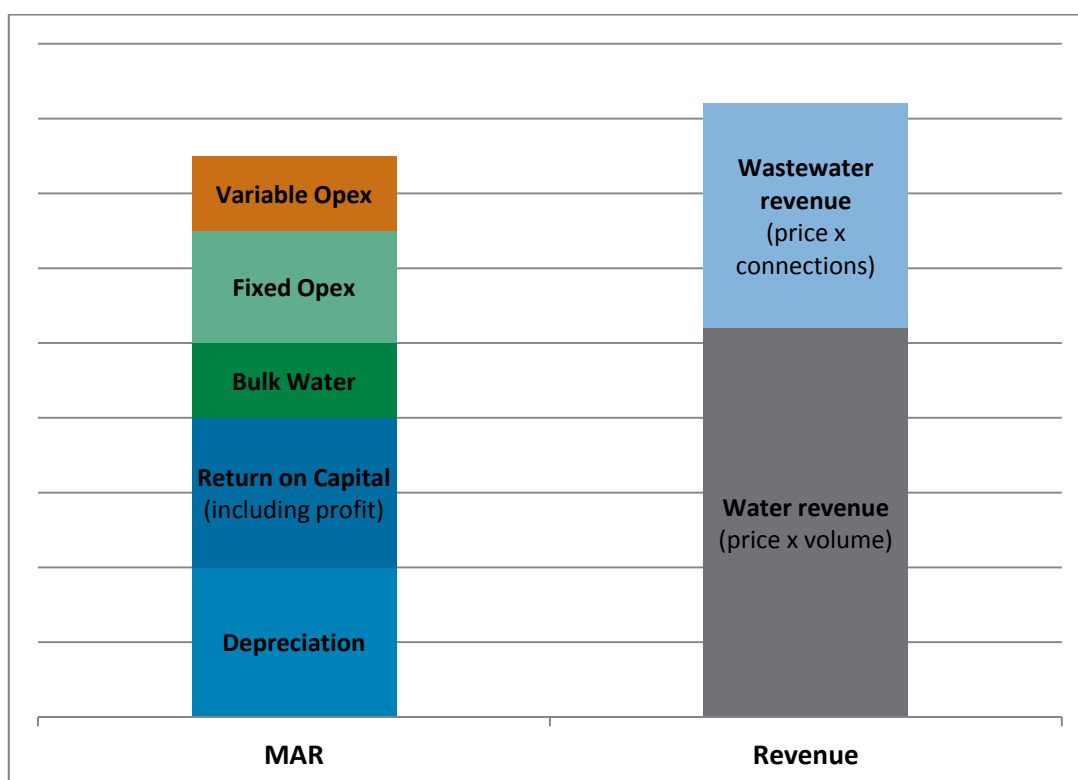
Measuring market power

A stylised comparison of MAR and revenue is shown in Figure 4. The MAR represents the total prudent and efficient costs of providing water and wastewater services, including an allowance for return on capital.

It is important to note that return on capital includes a component related to return on equity, or profit. This allowance for profit included in the MAR is considered to be a fair or appropriate level of profit to be earned by the entity. Profit earned above this level is considered to be excessive.

The stylised example shown in Figure 4 presents a situation where revenue (the right hand bar) is greater than costs (the left hand bar). In this case, the entity is exercising market power to earn excessive profits.

Figure 4 MAR vs. Revenue



Explicit intent

The most evident exercise of market power would occur where prices were set by entities to explicitly result in forecast revenues in excess of MAR over a sustained period. This represents the classical case of monopoly pricing which is profit maximising for an unfettered, unregulated monopoly (Pindyck and Rubinfeld 2008).

For performance monitoring and any cost of service review, the QCA will compare an entity's forecast revenues and MAR to establish whether there is any explicit intention to exceed MAR.²

² The implementation of an unders and overs account could result in a deliberate over recovery for a given year, to offset an actual under recovery in preceding years. For the purposes of this discussion, over recoveries are assumed to be on a persistent, net present value basis, rather than part of an unders and overs arrangement.

Potential over-recovery

Potential forecast error can occur in many ways – for example, costs could be overestimated or demand underestimated (resulting in higher prices than required to meet MAR, as forecast costs are divided by forecast quantity to determine prices).

The QCA acknowledges that a finding of inefficient expenditure or under-forecast demand does not necessarily equate to an intention to exercise market power.

Indeed, revisions made by the QCA are generally considered to be a difference of opinion regarding the most appropriate forecast, rather than evidence of an intention to over-recover. However, the QCA does not consider it is necessary to show that an entity intended to make excessive profits, only whether it is likely to.

Other jurisdictions

In other jurisdictions where financial performance is monitored, the regulated entities are typically required to report on income or profits, revenues, expenditure, financial position, cash flows, and asset values. In many cases, costs and asset values must be attributed between different services and locations. A summary of information collected is provided in Table 10.

Table 10 Financial Performance monitoring in other jurisdictions

<i>Industry</i>	<i>Reporting requirements</i>	
International Airports – New Zealand	Return on investment Regulatory tax allowance RAB roll forward Related party transactions	Actual to forecast expenditure Segmented information Consolidation statement Asset & Cost allocations
International Airports – Australia	Income Statement Balance Sheet Cash Flow Statement	Operational Statistics Cost Allocations
Stevedoring – Australia	Revenue/costs per 20-foot equivalent unit (or container) Revenue/costs per 40-foot equivalent unit Number of container lifts	
Ports – South Australia	Profit and Loss Account Revenues and costs by service and location	Statement of Financial Position Accounting Principles and Policies
Ports – Victoria (Melbourne)	Profit and loss statement Statement of financial position Capital expenditure and asset disposals	Asset revaluations Related services and related party transactions Cost allocation
Water - Minor and Intermediate retailers in South Australia	Income Expenses Profit	Asset Values Capital Expenditure

Source: ESC (2011a, 2013a, 2013b), ESCOSA (2012a, 2012b, 2013a, 2013b), ACCC (2012a, 2013), PC (2011b), NZCC (2010, 2013)

QCA analysis

As noted in Chapter 3, to establish whether market power is being exercised, the QCA's proposed performance monitoring framework requires:

Price information requirements

For the purpose of measuring whether there was any exercise of market power, the QCA will need to assess the annual change in each retail distribution price. For this purpose, the QCA will require an assessment of prices against CPI-X targets. Entities will be required to submit an annual information return identifying increases in prices (as well as changes in other non-financial measures).

If prices (or the components of prices) exceed CPI-X, further information will be required depending on the reason for the difference.

For example, if the increase was due to a tariff restructure, the QCA will require the nature of the impact on total revenues, and may also require information (such as the nature of risks and costs) underpinning the reason for the change in the tariff structure. If not available in the initial submission, the QCA would require further information from an entity. In this instance the following information would seem relevant:

- (a) revenues for water and sewerage activities
- (b) sales volumes and number of connections for water and sewerage services
- (c) details of tariffs and tariff structures
- (d) average prices for water and sewerage
- (e) average bills for residential users of water and sewerage on 200kL per household per year.

Where prices or revenues have increased by more than CPI-X and cannot be justified on the basis of cost pass-throughs (see above), the QCA will require entities to provide broad data to estimate the MAR such as:

- (a) RAB roll-forward summary including:
 - (i) opening RAB
 - (ii) total commissioned capex
 - (iii) depreciation
 - (iv) disposals
 - (v) closing RAB
- (b) return on capital (WACC). Entities will develop their own WACC based on the methodology that is to be outlined in a separate Position Paper dealing with WACC.
- (c) total operating costs including for water and sewerage:
 - (i) operating costs by type: for example, employee costs, contractors, sub-contractors, electricity, chemicals, sludge handling, other materials and services, and other costs
 - (ii) operating costs by activity: for example, planned maintenance, unplanned maintenance, operations, executive, finance and legal, HR and marketing, communications, IT and other

- (d) tax equivalents
- (e) total MAR based on the above.

The QCA proposes to work with entities to prepare a more detailed information requirement template by 31 May 2014.

Requests for further information

Where an entity's price exceed CPI-X (or breaches another non-financial criteria) an entity should submit the relevant supporting information justifying the departure to the QCA in its initial submission. Where this is insufficient or absent, the QCA will seek further information and indicate on its public website that it is doing so.

Binding rulings

At the time of the review of past performance (*ex post*), the benchmark for effective future performance (*ex ante*) continues to be CPI-X (with appropriate adjustments), unless the entities seek a binding ruling or can justify expected variations.

Entities may seek a binding ruling when they anticipate that CPI - X will be exceeded.

Relevant information could then include:

- (a) forecast bills for customer categories (residential and non-residential)
- (b) forecast total demand (volumes of water and wastewater)
- (c) forecast total MAR
- (d) forecast total revenue
- (e) expected material capital expenditure items
- (f) expected material changes in operating costs, including any specific items.

Outperformance

Where entities demonstrate that price increases are in line with CPI-X but costs increased by less than CPI-X due to efficiency initiatives, these gains may be retained by the entities for up to three years before being passed through to customers. The retention of such gains would not be truncated in the event of a triggered or scheduled cost of service review. Relevant information should be submitted to the QCA.

Draft Recommendation

- 4.16 Each year, entities submit to the QCA details of prices (and components of prices) and changes from the preceding year.**
- 4.17 If changes in prices (or the components of prices) exceed CPI-X, further supporting information including the reason for the difference be submitted in the entities' initial submission.**
- 4.18 The QCA should seek additional information on any matter that it considers is necessary to assess whether the change in prices can be justified.**
- 4.19 The QCA should indicate on its public website that it is seeking further information if the initial submission is deficient.**
- 4.20 Where entities anticipate that CPI - X will be exceeded in a future period, entities may request a binding ruling from the QCA.**
- 4.21 Efficiency gains may be retained by entities for up to three years.**

5 CUSTOMER ENGAGEMENT

5.1 Introduction

Ministerial Direction

Under the Ministerial Direction, the QCA is required to consider the appropriate levels of customer engagement.

In particular, the QCA is directed to:

- (a) assist with transition toward best-practice stakeholder engagement
- (b) develop service quality performance reporting to inform customers about the comparative performance of SEQ entities
- (c) ensure the regulatory framework assists customers understand how the costs of water and sewerage services influence prices.

Relevance

In a competitive market, customers have the ability to choose services from a service provider based on their preferred bundle of attributes including price and service standard.

The willingness-to-pay revealed by customers for their choices provides service providers with valuable information about worthwhile investments and levels of service. Competition provides the basis for ensuring service levels are provided at least cost.

Such choices are not typically available in a monopoly market. Moreover, economic regulation is usually needed to ensure that the price of those services is not excessive. Such regulation usually involves setting or monitoring prices and service levels.

Customer engagement is important in competitive markets to define customer expectations which firms can seek to address. Customer engagement is even more important in monopoly markets because, in the absence of alternative service providers, it provides an opportunity for customers to reveal their preferred combinations of service quality and price.

Structured and purposeful customer engagement can also help regulators test the proposals put forward by regulated entities by:

- (a) verifying the appropriateness of proposed customer service standards
- (b) identifying the most cost-effective response to meeting a particular service standard
- (c) identifying opportunities for customers to pay for different levels of supply reliability
- (d) monitoring the performance of regulated service providers
- (e) explaining the reasons for changes in costs and prices
- (f) improving frameworks for protecting customers against hardship, and abuses of monopoly power.

Customer engagement also provides reassurance to other stakeholders, including government and the broader community, that the services provided reflect customer preferences and not just the interests of the service provider.

Customer involvement is thus generally seen as one important mechanism for providing appropriate checks and balances on the activities of regulated service providers.

To meet these objectives it is essential that customers are meaningfully engaged in decision-making on an on-going basis.

5.2 National commitments and positions

The National Water Commission (NWC) has recommended that governments, regulators and service providers should ensure that the urban water sector gives a greater voice to customers by exploring opportunities for customer choice in pricing and service delivery, improved engagement in objective setting and the determination of trade-offs (between levels of service and other outcomes and costs), improved customer protection frameworks, and competition (NWC 2011)

The NWC's supporting recommendations were that:

- (a) customers should be better informed and further engaged in planning and policy processes, and the public should be better informed about trade-offs between levels of service and other outcomes and the costs they entail
- (b) effective and transparent customer protection frameworks should be established in all jurisdictions
- (c) jurisdictions should fund urban water customer and community advisory bodies to enable increased customer engagement in policy, regulation and service delivery.

The NWC sees these recommendations as helping the water sector make the most of existing opportunities to better meet customer needs and provide value-for-money services.

COAG has established a consistent set of generic consumer laws, the Australian Consumer Law (ACL), jointly administered by the ACCC and State agencies which commenced from January 2011 (COAG 2013).

5.3 Forms of customer engagement

There are several different forms of customer engagement used in regulatory decision-making. These approaches include consult and respond, consumer panels, customer surveys and willingness-to-pay (WTP) studies and constructive engagement (CEPA 2011, Decker 2013).

Consult and respond

Consult and respond (or public consultation) provides an opportunity for customers or their representatives to respond to major regulatory proposals, with the regulator making the final decision.

The approach can take different forms, including: public hearings and workshops; opportunities to respond to regulators' issues and position papers; research reports and draft decisions; through generally accessible media such as websites; and private meetings with representative customer bodies. Targeted consultation may be one-off and focused on target audiences through workshops or seminars (Owen 2013).

Advantages of the consult and respond approach include (CEPA 2011, Ofwat 2011):

- (a) wide discretion is usually given to customers about how to interact and respond
- (b) there are no restrictions usually on the submission of expert reports and opinions

- (c) it is relatively inexpensive compared with other forms of customer engagement
- (d) a broad range of customers can be reached by through a range of media (including the regulator's website)
- (e) it provides a useful source of information flow between the regulator, regulated entities, and customers, including how prices reflect costs
- (f) it can mitigate potential misalignment between customers and customer representatives.

On the other hand, limitations include:

- (a) the technical nature of many issues makes it difficult for residential and small business customers to respond effectively, and only large well resourced customers, or their representative organisations, tend to become involved
- (b) although small customers may be represented by large or intermediate-sized users, this will depend on the issue
- (c) specific interest groups may seek to capture the process
- (d) it is not always clear to customers how the regulator or the service provider takes submissions into account. This can lead to low participation
- (e) the approach is increasingly seen as necessary, but not sufficient, and needs to be supplemented with other forms of customer involvement.

Customer panels

Specialist customer panels or advisory committees provide the customer view to either the service provider or the regulator, depending on the purpose of the panel. These vary considerably in their design, size, composition, functions, funding and status. Two common forms are customer consultative groups (or committees) and customer challenge panels.

Customer consultative committees are designed to engage with entities on the development of their strategies and water plans. Customer challenge panels are designed to engage with the service provider or regulator about certain aspects of regulatory decision-making.

Advantages of the customer committee approach include that it:

- (a) is relatively inexpensive
- (b) can address the representation gap by allowing the views of small customers to be heard
- (c) allows for the regulator to hear a diversity of views on relevant issues
- (d) can build understanding on relevant issues
- (e) can promote the development of expertise leading to more informed engagement
- (f) can provide a source of information flow between the regulator, regulated entities, and customers.

However, there are also some limitations:

- (a) people with the potential to make a valuable contribution may not be included, or the views of long-standing members become less representative (IPART 2012c)
- (b) issues championed by the panel may not be representative of all customer interests. For example, the views of large industrial users may predominate

- (c) the approach may lead to disappointment and disengagement by panel members if they perceive their input is not sufficiently valued by regulatory decision makers.

Customer challenge panels typically bring together a group of consumer advocacy experts who can challenge an entity's customer engagement framework, or can be used to advise a regulator directly on the effectiveness of the entity's customer engagement (AER 2013, Owen 2013). Challenge panels may provide a quicker source of advice on complex consumer issues and can be used to achieve a better balance between consumer and provider in regulatory processes.

Customer surveys

In customer surveys, a representative random sample of participants is requested to answer a standardised set of questions on a clearly defined issue.

Customer surveys take various forms, such as questionnaires, telephone or face-to-face surveys, online surveys, or customer complaint databases. Surveys often include questions on customer attitudes and priorities on such matters as service levels and standards, service delivery strategies and price structures. Responses are generally qualitative or attitudinal (IPART 2011).

Advantages of customer surveys are that they are generally well understood, can be undertaken for a variety of issues, and are relatively easy to construct and undertake (CEPA 2011, IPART 2012c). They can be undertaken for specific categories of expenditure (CEPA 2011) and can be used to gain feedback from large and diverse groups of customers.

Disadvantages include obtaining a representative sample of all customers, and making objective assessments of customer views (for example, on trade-offs between prices and service standards). Biases can result due to the type of survey. For example, on-line surveys exclude some customers due to timing, language barriers and survey fatigue.

Willingness-to-pay (WTP) studies

In WTP studies, customers are directly asked about the value they place on different service levels or service options whose price is unable to be revealed because of the lack of a market.

Stated preference techniques, which are similar to market research interviews, are often used to establish the collective willingness to pay for particular alternatives. These WTP measures are based on values determined by observing customers' responses to questions about a range of hypothetical choices.

WTP analyses are often used where, in the absence of market data, it is necessary to impute values using the stated preferences of customers.

Advantages of WTP include that it enables researchers to add quantitative data to a cost-benefit analysis, and make comparisons among alternative choices, where otherwise only qualitative judgements would be available.

Disadvantages are that WTP studies can be time-consuming and expensive to construct and carry out.

In addition, methodological issues about clarity of choice options, possible bias in questions included, and interpretation of data can produce results that are problematic.

Other limitations of both simple surveys and WTP studies include that the evidence obtained may not be sufficiently differentiated or representative of customers' views, and the views of future customers will normally not be recognised.

Constructive engagement

Under this approach, regulated entities consult directly with customers about their activities, business and investment plans, and services. The regulator remains the determinative body.

For constructive engagement to work successfully both parties need to: be committed to the process; be well informed; and, have sufficient expertise and resources to engage effectively. For these reasons, the approach is more relevant to larger customers, and customer representative bodies, compared to small businesses or households.

Advantages of the constructive engagement approach include that it:

- (a) encourages regulated entities to develop constructive relationships with customers
- (b) can make customers better informed about the activities of the entity, drivers of price changes, and constraints on decision-making
- (c) allows customers and entities to focus on the issues that they think are important
- (d) can be combined with traditional regulation to allow customers to influence discretionary expenditure while ensuring that mandatory requirements are met.

Limitations include:

- (a) structuring and managing the process, together with associated information needs and disclosures, can increase the burdens and costs for all parties
- (b) the interests of future customers need to be an explicit focus of any constructive engagement process
- (c) the regulatory framework and the role of the regulator need to be clear before any constructive engagement takes place
- (d) information asymmetry between parties, and absence of suitable dispute resolution processes, have raised concerns.

Constructive engagement can be developed to the point that regulated companies and customers are able to negotiate settlements or agreements between themselves, with the regulator only involved in the event of arbitration.

Negotiated settlements allow for new initiatives to be introduced, and for parties to agree on trade-offs across price control issues particularly on matters that may not have been addressed through the standard regulatory process.

Issues can arise if some interests are not adequately represented in negotiations. For example, an agreement between a service provider and large users can result in decisions being made which disadvantage smaller or future customers.

5.4 Other jurisdictions

Approaches adopted by regulators in the various water jurisdictions throughout Australia and overseas range from general guidance to more prescriptive requirements for customer engagement.

Principles and best-practice

Owat (2011) has proposed that customer engagement should be guided by the following principles:

- (a) engagement should promote understanding of customers' needs and responding effectively in plans and ongoing delivery
- (b) it is the companies' responsibility to engage customers and to demonstrate that this is being carried out effectively
- (c) engagement is not a 'one-size-fits-all' process, but should reflect the particular characteristics and circumstances of each company, and its various customers
- (d) customers and their representatives, should be able to challenge the companies throughout the process. If this is not done effectively, the regulator must be able to challenge the companies on behalf of customers.

A number of regulators³ have also suggested that good customer engagement should include the following characteristics:

- (a) the process should be continuous, rather than periodic around price reviews
- (b) customer types should be segmented (including future customers), so that service providers understand and engage customers' particular needs and concerns
- (c) customer engagement needs to be evidence based, with information collected through market research, focus groups, customer surveys and willingness-to-pay studies
- (d) stakeholders need to be willing and able to engage with one another. For this purpose:
 - (i) customer representative bodies need to fully understand the needs of member customers in order to adequately represent their views
 - (ii) customers, and their representatives, need to understand the regulatory framework in order to engage effectively
 - (iii) parties need to invest time and effort to be effective in the regulatory process. Therefore, it is important that customers, or their representatives, have access to the necessary information and resources
 - (iv) parties should feel that they can influence decisions. Service providers and the regulator should work with customers not only in planning and conducting the engagement process, but also in interpreting responses and demonstrating that different views have been taken into account.
- (e) the process needs to be transparent and objective. It should be an impartial and open process and should not mislead, or lead in predetermined directions
- (f) the process should enable the timely exchange of information between service providers, customers and the regulator
- (g) a range of options should be explored. These should not be limited to traditional approaches (for example, cost versus quality or reliability of service; demand management versus capital investment; alternative sources of water supply)
- (h) the activities should be fit for purpose, and costs should be commensurate with perceived benefits.

³ For example, see Ofgem (2010), Ofwat (2011), and IPART (2012)

General guidance

The general framework proposed by IPART (2012c) sets out the following expectations of regulated water businesses in relation to customer engagement for price reviews:

- (a) provide evidence of the customer engagement they have undertaken in relation to their proposed discretionary expenditure
- (b) provide evidence of the customer engagement they have undertaken on proposed changes to price structure
- (c) undertake customer engagement in accordance with generally accepted principles of good industry practice
- (d) engage with their customers for price reviews early (that is, prior to submitting a pricing proposal)
- (e) provide, along with their price proposal, a separate, short, plain English summary of their proposal that contains a clear statement of its customer impacts.

In determining its approach, IPART engaged Cambridge Economic Policy Associates (CEPA 2011) to review how other regulators and regulated businesses approach customer engagement in Australian and international jurisdictions.

Based on the evidence from its case studies and analysis, CEPA observed:

- (a) consumer groups and customer representative bodies can play a key role in several of the forms of customer engagement, provided they are adequately resourced
- (b) regulators and regulated entities, need to ensure that customer friendly consultations take place. This may be facilitated through either structured consultation with some key stakeholders as to how public consultation could be improved
- (c) constructive engagement can play an important role, especially for discretionary expenditure, when strong consumer groups or well informed and resourced customers exist (so a mix of a consumer panel with constructive engagement might be a good combination in this case)
- (d) customer engagement is a responsibility for both regulators and regulated entities and so ensuring that the right mix of engagement is occurring by the right parties at the right time is important
- (e) increased use of formal justification for expenditure based on cost-benefit analysis, supported by well designed surveys, could be appropriate, although this is likely to be expensive
- (f) effective customer engagement needs to be well managed and requires commitment of resources and time
- (g) to encourage customer involvement in the process, it may be necessary to provide a right of third party appeal to demonstrate significant commitment.

CEPA also identifies situations where combinations of approaches may work well. For example:

- (a) customer consultative committees and constructive engagement should combine well because a strong customer group can play an important role in engaging and negotiating with the service provider (the State Water approach in NSW is an example)

- (b) synergies should exist between customer challenge panels and effective public consultation as the challenge panel is able to take the role of an informed and well-resourced respondent (the Australian Energy Regulator's (AER) Consumer Challenge Panel (CCP) is an example).

The ESC encourages service providers to explore other ways to engage customers, including targeted fact sheets, newsletter inserts in bills, or electronic media (ESC 2011b).

Prescriptive requirements

Some other regulators rely on more prescriptive customer engagement requirements.

For example, the Essential Services Commission of Victoria (ESC) (ESC 2011b) requires that:

- (a) service providers must undertake in-depth customer consultation on the content and presentation of their draft Water Plans, which set out plans and outcomes for the next regulatory period and provide information to ESC about services, expenditure, revenue and tariffs (as does the Essential Services Commission of South Australia (ESCOSA) ESCOSA (2012d))
- (b) key service and price information must be accessible to customers during all phases of the development of the Water Plan and submission process
- (c) draft Water Plans must enable readers to easily understand the prices and tariff structures proposed, summarise proposed major projects and service outputs and the rationale for them, and include information so that customers can easily understand service and price trade-offs (as does Ofwat 2012).

Ofwat (2012) also requires its water companies to set up an independent customer challenge group that reports back to Ofwat on the effectiveness of customer engagement in developing companies' plans.

Both ESC and Ofwat may reject elements of a service provider's pricing proposal if they consider that customer consultation was ineffective or inadequate (ESC 2011b; Ofwat 2012).

Customer engagement practices

Water businesses use various media to provide information to customers and provide avenues for customers to provide feedback back to the entities. This is done through media releases, newsletters and websites.

Customer surveys are used by some entities. For example, North East Water (Victoria) (2013) Busselton Water in WA (2012) undertake a customer survey each year to determine customer satisfaction levels, on measures of water quality, pressure, supply reliability, and contact service.

Customer advisory committees are commonly used by water businesses. For example:

- (a) Yarra Valley Water (2012) gains customer insights from a combination of market research, key stakeholder briefings and ongoing review and input from its Customer Advisory Committee. It has established an on-line two-way portal for customers to ask questions and provide feedback.

- (b) Western Water (2013) maintains a Customer Advisory Group that provides a direct link between the Board of Western Water, customers and advocacy groups on matters that affect customer service. In addition, annual customer surveys are undertaken to gauge customer satisfaction with services provided with the results of the customer surveys being made available on Western Water's website.
- (c) State Water (the rural bulk water provider in NSW) maintains a Customer Service Charter that outlines scheme specific services standards that have been agreed through input from Customer Service Committees (CSCs). State Water convenes CSCs quarterly for consultation regarding pricing and water delivery strategies and to discuss asset management priorities.
- (d) Hunter Water's Operating Licence sets out consultation obligations in detail, including regularly conducting customer consultative forums. Hunter Water has a Customer Panel, established in 2009, which focuses primarily on customer service related issues and environmental management.
- (e) in accordance with the provisions of the *Sydney Water Act 1994*, Sydney Water (2011) is required to establish a Corporate Customer Council with membership representing a wide variety of stakeholders reflecting a broad range of customers. Sydney Water also convenes regularly a Commercial and Industrial Customer Forum which includes representatives from peak organisations in the manufacturing, food and industrial sectors.
- (f) the Water Corporation of Western Australia (Water Corporation 2012) - the principal provider of water and wastewater services throughout the state - convenes a Customer Advisory Council which provides advice regarding issues affecting customers such as strategic initiatives, operations and service levels. The Customer Advisory Council comprises 11 representatives from metropolitan and country regions.

SunWater (as major supplier in Queensland of water for irrigation) regularly convenes Irrigator Advisory Committees for the purpose of:

- (a) facilitating advice from irrigators regarding scheme specific operational issues
- (b) discussing matters in relation to customer relationships and managing the physical aspects of the scheme.

SunWater is also responsible for compiling, and publishing on its website (for customer consideration) network service plans that outline operating and renewals (that is, capital) expenditure associated with a particular scheme.

There are fewer examples of customer challenge panels. The Economic Regulation Authority of Western Australia (ERA 2013b) has established a consumer consultative committee to advise on its oversight of regulated activities.

The Australian Energy Regulator (AER 2013) has established a 13-member CCP as part of its Better Regulation reform program to represent the interests and expertise of customers. The members of the panel have local and international expertise in economic regulation, energy networks and consumer representation. They are appointed for a 3-year term and a number of the members of the panel are called upon to provide advice on a particular determination.

Ofwat (2013b) has a Customer Advisory Panel to inform or challenge Ofwat on key sector-wide assumptions that would impact on companies' business plans being developed as part of the 2014 price review. The panel comprises experts appointed on an individual capacity but who also serve in various consumer organisations and small business peak bodies. The panel has convened a number of meetings during the investigation period and its work comes to a close once Ofwat has finalised its methodology (Ofwat 2013c).

The most notable example of constructive engagement/negotiation processes is the Civil Aviation Authority's (CAA) regulation of the UK airports. Under this process, the regulated entities (airports) and customers (airlines) negotiated outcomes for capacity requirements, service quality, efficient capex, and revenues from non-regulated charge, leaving the regulator a role in assessing opex efficiencies, cost of capital, RAB roll-forward and the revenue requirement (Littlechild 2010).

In NSW, State Water negotiated with its nine Hunter Valley based customer service committees on discretionary service levels (Frontier Economics 2013).

SEQ entities' customer engagement

In SEQ, the Water and Sewerage Services Code for Small Customers in South East Queensland (DEWS 2013c) (the SEQ Customer Code) made under the DR Act, provides for standards and conditions of service that must be provided to small customers, namely all residential customers and non-residential customers using less than 100kL per year.

It is intended to provide a balance between the interests of small customers and service providers. It acknowledges the need for adequate protection of small customers' interests. Customers can provide feedback on the Charter to their respective entity.

The SEQ Customer Code sets out service standards, complaint resolution procedures, billing arrangements, leakage policy, and arrangements for the payment and collection of accounts. The SEQ Customer Code requires that each entity must publish a customer service charter on its website and make this available to any customer upon request.

In December 2013, DEWS initiated an extensive review for the purpose of providing service providers and their customers the opportunity to contribute to improving the effectiveness of the SEQ Customer Code. Submissions to the review are due by 7 March 2014. Consultation on any potential changes to the SEQ Customer Code is scheduled to conclude by July 2014.

Customer service standards are reviewed in further detail in a subsequent chapter.

SEQ entities use a range of customer engagement methods to gain an understanding of their customers' needs. These include conducting surveys and holding quarterly customer discussions on issues such as service standards, water leakages, tariff structures and fluoride levels (see Table 12).

Table 12 Summary of Approaches to Customer Engagement Used by SEQ Entities

<i>Entity</i>	<i>Customer Engagement Approach</i>
Unitywater	<p>Unitywater has a Customer Advisory Group that meets on a quarterly basis. The Group includes representatives from the community and business sectors and provides feedback on issues impacting community and business customers.</p> <p>Unitywater has a Customer Charter which sets out customer service commitments, including water pressure, system loss management, water quality, and connection times.</p> <p>Unitywater conducts 3-monthly rolling surveys of its customers to gauge their feedback on a range of issues related to water use. Unitywater noted that its customer satisfaction ratings have been improving consistently over time. Unitywater undertook community consultation in developing its Water Netserv Plan.</p>
QUU	<p>QUU's Customer and Community Reference Group has eleven members representing community sectors, local government and major industries. Formed in late 2010, the Group meets quarterly and is consulted on water and sewerage pricing and related topics such as hardship and concealed leaks.</p> <p>QUU tracks customer satisfaction through annual focus groups and monthly customer surveys. Through this research QUU has identified four key drivers of customer satisfaction and their corresponding weightings: value 39%, transparency 11%, customer focus 29%, and reliability 21%. QUU calculates a monthly measure of its brand health.</p> <p>QUU has a Customer Service Standards document which sets out its target levels for various indicators including water quality, water pressure, customer complaint response, unplanned interruptions and response to incidents. A Customer Charter summarises customers' rights and responsibilities.</p>
Logan City Council	<p>No customer engagement framework specifically for water. LCC may discuss water issues as part of its general customer engagement if needed.</p> <p>LCC has a customer charter and standards of service, with the latter defining targets for compliance, unplanned interruptions, customer complaints, and response times.</p>
Redland City Council	<p>Redland Water (RW) includes material (such as flyers) with Redland City Council's (RCC) quarterly rates and charges bills. RCC also has a print and radio media presence in the council area where water issues are discussed. Particular issues of interest to customers are identified through complaints and a call centre (RW has a separate call centre from RCC). Through these processes, RW implements a 'personalised' approach to customer engagement; for example, RW officers regularly visit customers to talk about specific issues such as concealed leaks, water charges and so on.</p> <p>RW has customer charter and service standards documents. The service standards define targets for water quality, supply continuity, connection times, and wastewater blockages and overflows.</p>
Gold Coast City Council	<p>GCCC is establishing a framework for customer engagement.</p> <p>It recently conducted the first residential customer survey of its customers which will set the baseline for customer behaviour. It intends to develop time series data that can be used to assess community views on water use, fluoride in the water, water leakage and tariff structure. GCCC is reviewing the 1000+ responses from the general community and will share its findings with the QCA shortly.</p> <p>GCCC has published Customer Service Charter and Standards. This detailed document sets out its target levels for various indicators including water quality, water pressure, odour complaints, customer complaint response, unplanned interruptions and response time for repairs.</p>

5.5 Stakeholder submissions

Gold Coast City Council (2013) submitted that it has instigated a range of engagements to understand customer needs. Council recently undertook a customer survey on attitudes to water use and water efficiency, fluoridation and water and sewerage tariff structures.

QUU (2013) submitted that it will consult with customers (through QCOSS and its own Customer and Community Reference Group), to ensure that its positions are submitted with the support of stakeholders.

5.6 QCA analysis

Where competition is absent, such as in the SEQ urban water sector, there is typically limited opportunity for customers to reveal information about their preferences and WTP for different trade-offs in the provision of water and sewerage services. Such trade-offs can relate to: cost versus quality; demand management versus capital investment in additional capacity; and alternative sources of water supply.

Similarly, service providers have limited information about how to deliver the best value-for-money services to their customers.

Customer engagement is a two-way process which involves not only providing information to customers (about prices, services and costs), but also receiving information from customers (about WTP, attitudes, options and priorities).

Good customer engagement will influence entities' water plans in a positive way by: taking customers' priorities into account in service and expenditure plans; motivating entities to demonstrate that customers are receiving value for money; and fostering cost effective solutions over time.

The details of customer engagement are unlikely to be the same across all entities, or during different price reviews, as the issues will vary between entities and customers, and over time. Therefore, to engage customers effectively, flexibility is required.

Effective customer engagement should lead to more relevant, cost-effective service provision, improved performance by the entities and greater understanding of regulatory issues and processes. Service providers should better understand their customers' concerns and preferences, and customers should develop a better understanding of why and how they are charged for essential water and sewerage services.

Relative roles of QCA and SEQ entities

Traditionally, the QCA has sought to comprehensively engage stakeholders in a transparent manner when conducting water price investigations or price monitoring reviews. Opportunities for stakeholder involvement are provided through many avenues. These include: workshops; direct consultation; and opportunities to make submissions on entities' water plans, research reports, on assessments prepared by specialised consultants employed by the QCA, and the QCA's position papers and Draft Reports.

Under the light-handed framework, the QCA will collate and analyse the entities' information returns and provide a Draft Report for consultation with stakeholders. However, by its nature, the Draft Report will be less detailed than the equivalent in a more determinative process. Therefore, the entities themselves will need to demonstrate that they have undertaken relevant customer engagement activities to take various interests into account.

Mandated compliance standards

Many of the service standards governing the delivery of water and sewerage services are set by technical regulators or government agencies external to the water service provider and the QCA.

Some of these standards, such as environmental standards and security of supply criteria, are likely to be major drivers of cost and of the overall level of service provided to customers (Frontier Economics 2013).

This highlights the need to clearly define responsibility and accountability for determining, and consulting on, different aspects of the services provided to customers.

Although the QCA expects entities to comply with their legal and regulatory obligations, it would not expect the entities to engage with customers on mandatory compliance issues. However, entities may choose to inform customers on how these standards are met and the costs involved in complying with them.

Customer differences

Customers usually will hold diverse views. For example, a large industrial customer may have different priorities from the majority of households or small businesses. In addition, households and business customers are not uniform groups.

Entities should therefore identify whether views collected during customer engagement represent a wide group of customers or a particular group of customers.

As a general position, entities' plans should reflect the priorities of the majority of its customers and wider stakeholders. However, in specific cases entities may have the ability to segment levels of service and therefore reflect the views of particular customer groups. For example, large industrial users may put a higher value on security of supply than households.

Depending on the characteristics of the physical infrastructure, and subject to the requirements of mandated standards, these differences could be reflected in varying levels of service.

Ensuring engagement outcomes

While engaging with customers to establish desired water service goals is important, what matters more is that agreed outcomes are delivered in practice.

In the absence of market incentives, one means of encouraging regulated entities to meet their service obligations is to include a mechanism within the regulatory framework that monitors service providers' performance and rewards success, or penalises failure, to achieve the specified standards. An example of such a mechanism is Ofwat's Service Incentive Mechanism (SIM) (Ofwat 2010).

The SIM measures entities' performance against two consumer experience measures: a quantitative measure aimed at capturing instances where entity fails to meet consumers' expectations based on the number of complaints and unwanted contacts received; and a qualitative measure derived from a consumer experience survey.

Reputational incentives are generated by publishing comparative assessments of the entities' performance against the two consumer experience measures.

Financial incentives are produced by making positive or negative adjustments to each entity's price limit based on their performance against the consumer experience measures.

The QCA recommends (in a subsequent chapter) that service quality measures and aggregate performance indexes be developed by the entities following a process of customer engagement. These can be expected to provide a basis for public transparency of an entity's performance against desired customer standards. Non-compliance is to be addressed through public reporting of the entities' performance and potentially the prospect of more detailed reviews.

The Energy and Water Ombudsman of Queensland (EWOQ) also has a role in ensuring that water utilities in south east Queensland are accountable for their customer service through its complaints and dispute resolution functions.

Recommended approach

Based on the best practice principles and guidance provided by other regulators, SEQ entities' customer engagement should:

- (a) promote understanding of customers' needs and for this purpose be:
 - (i) representative - ensuring broad representation of customer views. Nevertheless, it is acknowledged that the entities have statutory responsibility for the ultimate management of their businesses
 - (ii) responsive - provide for different price/service quality trade-offs for different customers
- (b) be the responsibility of the SEQ entities who should be able to demonstrate that this is being carried out effectively and for this purpose be:
 - (i) relevant - different forms of engagement may be employed for different purposes and evolve in a manner consistent with the move to a light-handed regulatory framework over time
 - (ii) evidence based - information should be collected through market research, focus groups, customer surveys and WTP studies (where cost effective)
 - (iii) open and transparent - the process should provide relevant information (including identifying customer priorities, price/service quality options and associated costs (and their drivers) to customers. The process should be objective and open to challenge
 - (iv) timely - the process needs to be continuous, and occur within timeframes necessary to assist decision-making
 - (v) collaborative - enabling customers to define their expectations on service quality and price to the entity, and allows entities to provide relevant information to customers
 - (vi) cost-effective - the costs of engagement mechanisms and programs should be considered against their perceived benefits.

Application of these principles can be expected to result in different approaches between the entities according to their different characteristics, their customers and circumstances which change over time.

As a minimum, the QCA would expect that a customer engagement strategy would incorporate:

- (a) transparent and timely provision of information to customers through relevant media - newsletters, websites and local press releases. This is a low cost and effective option - simple actions such as making websites more intuitively accessible can substantially improve customer engagement.
- (b) a customer consultation committee to develop, implement and oversee the strategy. Attesting to their contribution, such committees have been widely adopted including in SEQ by QUU and Unitywater. The council entities may source relevant customer feedback from elected representatives or through wider council consultations.

- (c) regular updates of Customer Charter and Customer Service Standards. These should be made available on-line and customers should be invited to provide feedback.

The QCA expects these points will be addressed in each entity's customer engagement strategy. The QCA proposes to assess these strategies against best practice principles; where appropriate, the QCA will advise entities of potential improvements.

In general, the constructive engagement approach leading to negotiated settlements is not suited to SEQ distribution-retail as the customer base is too numerous and diverse. However, this does not preclude its application to particular circumstances (for example, for large customers).

The entities have started to undertake engagement activities which are consistent with some of the elements of this approach. Any decisions made by the entities in response to customer engagement are their responsibility.

Draft Recommendation

- 5.1 Each SEQ entity, in consultation with its customers, develop a strategy for customer engagement based on best practice principles.**
- 5.2 Customer engagement should:**
- (a) promote understanding of customer's needs and be representative and responsive of customer views**
 - (b) be relevant, evidence based, open and transparent, timely, collaborative, and cost-effective.**
- 5.3 The customer engagement strategy should include a customer consultation committee.**
- 5.4 SEQ entities submit by 31 October 2015 an initial statement of their customer engagement strategy.**
- 5.5 The QCA will assess these customer engagement strategies and provide, where appropriate, advice to entities on possible improvements to ensure best practice**

6 STRATEGIC APPROACH TO LONG TERM INVESTMENT

6.1 Background

Ministerial Direction

As part of the overarching objective of the regulatory framework, the QCA is to ensure the prices of services reflect prudent and efficient costs, while promoting efficient investment in and use of these services.

To this end, the Ministerial Direction requires that the regulatory framework should:

- (a) ensure there is sufficient co-ordination with other regulatory and regulatory review processes, taking into consideration things such as Water Netserv plans, Total Water Cycle Management (TWCM) plans, environmental regulation and land use planning
- (b) ensure that opportunities for a whole-of-sector approach to solutions for the industry are encouraged (including non-infrastructure and efficient demand side management initiatives)
- (c) assist the entities develop a strategic approach to long-term investment in the water sector.

The framework is also to take into account the different characteristics of the entities (in particular their size), and minimise the administrative burden placed upon them.

Light-handed regulatory framework

The recommended regulatory framework outlined in preceding chapters seeks to achieve a light-handed form of regulation which provides incentives to entities to make prudent and efficient long-term investment decisions.

Under such a proposal, unless a detailed review is required, there is no regulatory oversight of the prudence and efficiency of particular capital expenditure proposals. Rather, it is recommended that entities, instead, demonstrate compliance with relevant legislative requirements, policies, principles and procedures.

6.2 Legislative framework

The key legislation and its relevance to all SEQ entities includes:

- (a) the *Sustainable Planning Act 2009* (SPA) - instruments include the SEQ Regional Plan, State Planning Policy 4/10 for Healthy Waters (management of stormwater and wastewater)
- (b) the *Water Act 2000* (Water Act) - regulation of water supply, including water resource plans, Water Security Program for SEQ⁴, and the SEQ Bulk Water Supply Code

⁴ Seqwater is required to prepare the water security program for SEQ: Water Act, s 350. Seqwater expects to submit the program to DEWS by August 2015 (Seqwater 2013).

- (c) *Water Supply (Safety and Reliability) Act 2008* (Water Supply Act), which sets out requirements for Strategic Asset Management Plans (SAMPs), Drinking Water Quality Management Plans (DWQMPs), Customer Service Standards (CSS), System Leakage Management Plans (SLMPs), Recycled Water Management Plans (RWMPs) and Drought Management Plans (DMPs)
- (d) the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009* (DR Act) includes provisions for the SEQ entities to prepare the SEQ design and construction code, Water Netserv Plans, customer service standards and a customer charter
- (e) the *South-East Queensland Water (Distribution and Retail Restructuring) and other Legislation Amendment Act 2012* (DR Amendment Act) extended the same requirements to the council water businesses. The councils also have various planning related regulatory obligations under the *Local Government Act 2009* (LGA)
- (f) the *Environmental Protection Act 1994* and the Environmental Protection Regulation 2008 set licence conditions for water and sewage treatment plants. The Environmental Protection (Water) Policy 2009 (EPP Water) previously required local governments in SEQ to prepare TWCM Plans.

The QCA understands the obligation to prepare SAMPs, SLMPs, DMPs and CSS under the Water Supply Act will be removed for all water service providers in Queensland, to be replaced by a Key Performance Indicator (KPI) approach to urban water supply regulation.

Stakeholder submissions

Logan City Council (2013a) submitted that the council water business is subject to requirements of the DR Act as well as the regulatory requirements of the LGA, creating unnecessary regulatory complexity. Logan City Council seeks a regulatory environment that distinguishes the difference between a local government water business and a separate DR.

QCA analysis

The DR Act and the DR Amendment Act provide a framework for application of the same planning requirements for the DRs and the councils. However, there are regulatory obligations under the LGA which apply only to the commercial business units (CBUs) of the local governments that duplicate the requirements of the DR Act - for example, Annual Performance Plans (APP) duplicate some of the content of Water Netserv plans and asset management plans duplicate some requirements of the Water Supply Act (details below).

The corporate governance frameworks and reporting requirements of QUU and Unitywater differ markedly from the CBUs. However, there is no evident reason for there to be differences in the regulatory obligations the entities must meet as SEQ service providers under the DR Act. Gold Coast Water and Logan Water have already mapped the duplication between the requirements of the DR Act and the LGA (including the Local Government Regulation 2012 (LGR)).

To assist entities to develop a strategic approach to long term investment, it is appropriate that council water businesses be covered only by the requirements placed on the DRs. This would reduce duplication and the complexity of the regulatory environment, thereby reducing the administrative burden on the councils. This could be achieved by providing an exemption to those requirements under the LGA that go beyond the requirement of the impositions placed on DRs.

Draft Recommendation

6.1 The council water businesses be subject to the same legislative and regulatory planning requirements as the DRs.

6.3 Strategic planning

Background

National commitments and positions

The COAG National Urban Water Planning Principles were agreed in 2009. Key principles are:

- (a) delivering urban water supplies in accordance with agreed levels of service
- (b) basing urban water planning on the best information available at the time and investing in information on an ongoing basis to improve the knowledge base
- (c) adopting a partnership approach so that stakeholders are able to contribute to urban water planning, including consideration of the appropriate supply/demand balance
- (d) managing water in an urban context on a whole-of-water-cycle basis
- (e) considering the full portfolio of water supply and demand options
- (f) developing and managing urban water supplies within sustainable limits
- (g) using pricing and markets where efficient and feasible to help achieve planned urban water supply/demand balance
- (h) periodically reviewing urban water plans.

Water Netserv Plans

Under the DR Act, all five SEQ service providers must complete a Water Netserv Plan by 1 March 2014.⁵ The plans are to be reviewed at least every 5 years (from 1 March 2014), with connection areas being reviewed annually.⁶ Water Netserv Plans require endorsement by the Planning Minister for consistency with the SEQ Regional Plan (discussed below), and by participating councils to ensure consistency with local government planning assumptions.⁷

Water Netserv Plans provide for strategic planning for the operation of the SEQ service providers' businesses and for planning the delivery of water and sewerage infrastructure for at least 20 years. They are therefore the instrument by which the SEQ service providers define a strategic approach to long-term investment.

In terms of a strategic approach to long-term investment, Part A of the entities' Water Netserv Plans must include (i) relevant planning assumptions, (ii) details of infrastructure networks for water and sewerage services, (iii) details of any proposed increases in the capacity of infrastructure networks, (iv) the desired standard of service for infrastructure, (v) the water demand management strategy, and (vi) a charges schedule.⁸

Part B of a Water Netserv Plan must include information on the entity's existing and proposed infrastructure for providing its services, indicating how the entity proposes:

⁵ DR Act, s 99BJ.

⁶ DR Act, s 99BL.

⁷ DR Act, s 99BS(1)(d).

⁸ Refer to the DR Act, s 99BO for further detail on Part A requirements.

- (a) to meet performance targets and service standards for assets relating to the operation, maintenance and replacement of existing infrastructure
- (b) to provide new infrastructure to meet expected future development and growth in its relevant area, considering demand for the services based on low, medium and high population growth scenarios.⁹

Part B plans must also indicate the measures to minimise water losses and sewerage overflows, protect public health through drinking water quality management measures, provide for TWCM for water and sewerage, indicate how the entity seeks to achieve ecological sustainability, and inform about the management of trade waste and recycled water where relevant.¹⁰

Further, the Water Netserv Plans must take account of:

- (a) documents that are relevant to the entities' water and sewerage service delivery and its plan; for example the SEQ Water Strategy, SEQ Infrastructure Plan and Program, and sub-regional TWCM plans (discussed below)
- (b) the most efficient cost asset cycle planning for the entity's business
- (c) the relevant local government TWCM plan(s)¹¹
- (d) any guidelines relevant to the making of the plan and prepared by the chief executive under section 100C of the DR Act
- (e) the customer water and wastewater code.¹²

QUU, Unitywater, Gold Coast City Council and Logan City Council have had their Water Netserv Plans endorsed by the Planning Minister and relevant local governments. Redland City Council's Water Netserv Plan Part A and Part B documents were updated in June 2013. The council also referred Part A to the Queensland water supply regulator for comment as part of its consultation process. The council has not yet endorsed its plan, nor submitted it to the Planning Minister, pending advice from DEWS that legislative amendments to the requirements for inclusion in Water Netserv Plans may be made.¹³

State and regional planning instruments

Table 13 identifies the State and regional strategic planning instruments relevant to the SEQ entities' distribution and retail activities.

⁹ DR Act, s 99BP(1)(a)(i)-(ii).

¹⁰ DR Act, s 99BP(1). Part B must also include other matters prescribed under a regulation, including for example matters included in a plan prepared under the Water Supply Act (s 99BP(1)(h)), and is not limited to the matters listed in s 99BP(1) (s 99BP(2)).

¹¹ Although the EPP Water no longer requires TWCM plans, the DR still refers to them in the matters SEQ service providers must take account of when preparing Water Netserv Plans.

¹² DR Act, s 99BQ(1).

¹³ The entities advised the QCA of the status of their plans in the 2013-15 price monitoring investigation.

Table 13 High-Level Planning Instruments

<i>Plan/Instrument</i>	<i>Objectives and Actions</i>	<i>Relevance to SEQ Entities' Investment Decisions</i>
SEQ Regional Plan 2009-2031 (under Sustainable Planning Act 2009)	Framework for sustainable growth to 2031. Objective is for water in SEQ to be managed on a sustainable and total water cycle basis to provide sufficient quantity and quality of water for human uses and to protect ecosystem health.	Pre-eminent plan for SEQ and takes precedence over all other planning instruments. Establishes principles for regional infrastructure planning, total water cycle management, efficient water use, water supply planning and catchment management. Requires incorporation of TWCM and water sensitive urban design (WSUD) principles in land use and infrastructure planning.
SEQ Infrastructure Plan and Program 2009-2026	Outlines infrastructure priorities to support the SEQ Regional Plan.	Minimal relevance as projects mainly relate to bulk water supply.
SEQ Water Strategy	Blueprint for maintaining SEQ water supply security. Ensure that water in SEQ is managed on a sustainable and integrated basis to provide secure and reliable supplies of acceptable quality for all uses for the long term.	Focus is on water supply security, including demand management options. Outlines the framework for TWCM planning in SEQ, including regional TWCM, sub-regional TWCM ¹⁴ (catchment scale) plans, council TWCM plans and development scale plans (WSUD focus).
State Planning Policy 4/10 for Healthy Waters (under Sustainable Planning Act 2009)	Planning to ensure that stormwater and wastewater is managed consistent with environmental values.	Relevant for stormwater and wastewater management - input to TWCM plans.
Statement of Obligations for the Queensland Bulk Water Supply Authority (Seqwater) 2013	Investment and operating decisions are to be made considering the whole of SEQ system least cost, subject to appropriate arrangements between Seqwater and its customers (cl 3.3.1). Seqwater is to plan and manage water in a total water cycle framework including its water supply catchments (cl 4.2.2).	Consideration of whole of sector solutions and TWCM principles in Seqwater's investment decisions.

The Government in December 2013 finalised for public release a single State Planning Policy (SPP). The SPP is a broad statutory planning instrument that has ascendancy over other planning instruments such as regional plans (including the SEQ Regional Plan). The SPP describes state interests in planning and development and outlines how these are to be dealt with in planning and council development assessment processes. As an example, the SPP recognises the importance of land use planning in ensuring the integrity of critical water infrastructure.

¹⁴ Sub-regional TWCM plans have been completed for Ripley Valley (February 2012), Caloundra South and Palmview (February 2012), and Caboolture West (April 2012): (QWC 2012).

In addition to the existing plans, the Government is developing a long-term strategy to create a water sector that can deliver integrated catchment-based, recreation, water supply, sanitation, irrigation and environmental services at the lowest cost.¹⁵

Other jurisdictions

Most other jurisdictions adopt planning approaches wherein high level strategic plans guide long term water sector investments.

For example, the Victorian Government has the Living Melbourne, Living Victoria Roadmap (DSE 2011). The Roadmap defines a vision for providing secure and resilient water supplies, protecting the environmental health of urban waterways, protecting public health and delivering affordable water supplies.

ESC (2011) requires that proposed capital expenditure in businesses' Water Plans which are submitted to the ESC as part of 5-yearly regulatory reviews, reflect obligations imposed by government, including technical regulators. ESC noted that businesses should demonstrate that capital expenditure is efficient on a whole-of-sector basis.

The NSW Metropolitan Water Plan 2010 (NSW Office of Water 2010) sets out how Government will meet the medium-term needs of growing metropolitan areas, while protecting river health, ensuring water supplies are adequate during drought and minimising costs to the community. The plan focuses on dams, recycling, desalination (including operating rules) and water efficiency. The plan is reviewed every four years and progress is reported and reviewed by an independent panel each year. The plan is a key input to IPART's regulatory decisions and water businesses must demonstrate compliance.

Stakeholder submissions

Gold Coast City Council (2013) submitted that the QCA should consider Government policies such as the 30-year Water Strategy and the review of infrastructure charges.

QCA analysis

A strategic approach to long-term investment in the water sector requires that the entities comply with relevant legislation and strategic planning instruments as noted above.

The high-level strategic planning instruments provide guidance on issues relevant to the SEQ entities including investments in demand management options as an alternative to infrastructure, WSUD principles and TWCM. Planning instruments at the entity (or shareholding council) level are also required to reflect these strategic principles. To minimise the administrative burden on the entities, evidence of approval by boards (for QUU and Unitywater), and endorsement by the Planning Minister and relevant local governments, of Water Netserv Plans will demonstrate to the QCA that a strategic approach to long-term investment has been undertaken.

As noted in Chapter 4 (Section 4.8), the QCA may request entities to provide more information on capital expenditures where CPI-X is exceeded after allowing for relevant adjustments. This could require up to 6 of the largest capex items to be detailed.

¹⁵ <http://www.dews.qld.gov.au/policies-initiatives/water-sector-reform/30-year-strategy>

For these projects, entities are required to detail how these investment decisions are consistent with the objectives of legislation and other high level strategic requirements. This includes the 30-year strategy (where relevant) and the SPP. They should also be reflected in annual capital works plans.

Should compliance not be demonstrated, the QCA may consider this to be a contributory factor for instigating more detailed prudence and efficiency reviews.

Draft Recommendations

6.2 Entities should provide evidence of board/council approval and Ministerial endorsement of their relevant Water Netserv Plans to the QCA.

6.4 Co-ordination with other planning requirements

Total Water Cycle Management Plans and Guidelines

The EPP Water previously required Unitywater's and QUU's participating local governments, and local governments with a population of at least 25,000 (including Gold Coast, Logan and Redland City Councils), to prepare TWCM plans by 1 July 2015.¹⁶ Plans were to include provisions about the collection, treatment and recycling of waste water, stormwater, ground water and other water sources and the integration of water use in its area.¹⁷

The local governments were obliged to co-ordinate their TWCM plans with relevant guidelines, any regional water supply strategy applying to its council area, the SEQ Regional Plan and any sub-regional TWCM plan under the SEQ Regional Plan.¹⁸

Although the requirement has been removed from the EPP Water, many councils have already completed their plans. Table 14 summarises the status of TWCM plans for SEQ's local governments.

¹⁶ EPP Water, ss 16(2) and 19(1)(a)-(b).

¹⁷ EPP Water, s 19(2)(a)-(b).

¹⁸ EPP Water, s 19(3).

Table 14 Status of TWCM plans for SEQ councils

<i>SEQ service provider</i>	<i>Local Government</i>	<i>Status of TWCM plan</i>
Queensland Urban Utilities	Brisbane City Council	<i>Brisbane's Total Water Cycle Management Plan</i> published June 2013.
	Ipswich City Council	Development of TWCM strategy included in <i>Corporate Plan 2012-17</i> .
	Lockyer Valley Regional Council	<i>Lockyer Valley Planning Scheme (Strategic Framework)</i> states that a TWCM plan will be prepared.
	Scenic Rim Regional Council	Unknown
	Somerset Regional Council	Unknown
Unitywater	Moreton Bay Regional Council	<i>Total Water Cycle Management Plan</i> published October 2012.
	Sunshine Coast Regional Council	<i>Sunshine Coast Waterways and Coastal Management Strategy</i> proposed the development of a TWCM plan.
Gold Coast Water	Gold Coast City Council	<i>Total Water Cycle Management Fact Sheet</i>
Logan Water	Logan City Council	Developing council's TWCM plan included in the <i>Logan Rivers and Wetlands Recovery Program</i> .
Redland Water	Redland City Council	<i>Total Water Cycle Management Plan for Redland City Council Final Report</i> published February 2013.

The Total Water Cycle Management Guideline for South East Queensland indicated that regulatory co-ordination of these plans could be achieved by consultation with the SEQ Regional Co-ordination Group, the CEOs Committee for Natural Resource Management and the Council of Mayors [SEQ] environment committee (DERM 2010).

The forthcoming DEWS urban water supply regulatory reforms may involve the TWCM Plans becoming a voluntary process for the councils. Under this new approach, the entities would refer to TWCM Plans where available, but otherwise would refer to the EPP Water in developing Water Netserv Plans.

Drinking Water Quality Management Plans

Under the Water Supply Act, each drinking water service provider must prepare a DWQMP for the provider's drinking water service. The plan must include details of the operational and verification monitoring programs under the plan, including the parameters to be used for indicating compliance with the plan and the water quality criteria for drinking water.

In SEQ, multiple water service providers are involved in the supply of drinking water to consumers. Therefore individual plans should consider, where relevant: existing agreements and arrangements between providers for the supply of water, emergency response plans, reporting, water quality monitoring programs and other related matters (DEWS 2010a).

DWQMPs also include Risk Management Improvement Programs which demonstrate (to the regulator) how the water service provider will address risks to drinking water quality and outline the interim, short- and long-term management measures and actions and implementation timeframes (DEWS 2010a).

Priority Infrastructure Plans (PIP)

Under the SPA, councils are to prepare PIPs - an infrastructure planning instrument for water supply networks, sewerage networks, and stormwater drainage networks (as well as roads and public parks). PIPs will identify required network upgrades to meet demand growth as part of strategic overall planning. PIPs will provide a key input to Water Netserv Plans.

The Department of State Development, Infrastructure and Planning (DSDIP) is reviewing the infrastructure planning and charging framework (DSDIP 2013). This could have implications for the entities and may need to be taken into account in planning procedures and the timing and funding of infrastructure.

SEQ Bulk Water Supply Code

The SEQ Bulk Water Supply Code (DEWS 2012a), issued under the Water Act, includes provisions (chapter 2) for co-ordinated water system planning between the bulk and distribution sectors in SEQ (including water quality improvements).

The code requires Seqwater and the SEQ entities to form a "Joint Working Group" (JWG). The JWG requires members to disclose their capital expenditure and infrastructure plans to each other and to identify the opportunities to co-ordinate infrastructure, operations and optimisation of assets across the SEQ network. The JWG is also required to decide the Key Possible Projects (KPPs) which should be the subject of an annual JWG report to the Minister.

Planning Guidelines for Water Supply and Sewerage

The Planning Guidelines for Water Supply and Sewerage (WSR Guidelines) (DEWS 2013d) assist entities in the planning phase and to promote consideration of a wide range of infrastructure, source substitution and non-asset solutions to meet community needs. It has an emphasis on integrated system planning incorporating water, sewerage and stormwater, with guidelines for delivering the optimal strategy at lowest financial, social and environmental cost.

SEQ Water and Sewerage Planning Guidelines

Developed by SEQ service providers, the SEQ Water and Sewerage Planning Guidelines (SEQ planning guidelines) provide a framework for water services planning consistent across the region to accommodate current and future demands. The SEQ planning guidelines complement the WSR planning guidelines.

Annual capital works plans

In addition to the infrastructure planning requirements of Water Netserv Plans, the DR Act requires QUU and Unitywater to develop an annual capital works program for constructing or acquiring plant and equipment, and adding to or replacing its existing plant and equipment.¹⁹ For the councils, the LGR requires APPs for CBUs to state (among other things, detailed below) "the unit's proposed major investments" for the financial year.²⁰

¹⁹ DR Act, s 100B.

²⁰ LGR, s 175(2)(g).

Local Government Regulation - CBUs

The LGR requires CBUs to conduct business in accordance with the key principles of commercialisation: (i) clarity of objectives, (ii) management autonomy and authority, (iii) accountability for performance, and (iv) competitive neutrality.²¹

The LGR also imposes specific financial planning and accountability obligations on local governments²², of which some are relevant to SEQ's council water businesses. These include:

- (a) financial statement forecasts for the budget year and the next two financial years, including the estimated costs of the activities of the council's CBUs.²³
- (b) an annual operational plan (AOP) for each financial year, including an APP for each CBU of the local government.²⁴ In terms of long-term investment, APPs state the CBU's (i) notional capital structure, and treatment of surpluses, (ii) proposed major investments and borrowings and (iii) policy on the level and quality of service consumers can expect.
- (c) a council's annual report for a financial year must contain an annual operations report (AOR) for each CBU.²⁵

Table 15 summarises the key planning instruments relevant to SEQ and the relevant legislation. A co-ordinated approach to these various plans is necessary to ensure consistent, whole-of-sector, least cost outcomes.

²¹ LGR, ss 27-28.

²² LGR, ch 5.

²³ LGR, s 169.

²⁴ LGR, ss 174-175.

²⁵ LGR, s 190(1)(c).

Table 15 Legislation and Planning Instruments - relevant to SEQ entities

Category	Water Service Providers			Environmental Protection	Land Use Planning	Water Resources and Supply
Legislation	Water Supply (S&R) Act 2008 Public Health Regulation 2005	SEQ Water (Distribution and Retail Restructuring) Act 2009 (DR Act)	Local Government Act 2009 Local Government Regulation 2012	Environmental Protection Act 1994 Environmental Protection Regulation 2008	Sustainable Planning Act 2009	Water Act 2000
Policy					State Planning Policy - 4/10 Healthy Waters	
Regional Plans					SEQ Regional Plan 2009-31 (and SEQ Infrastructure Plan and Program 2009-26) SEQ Water Strategy 2010	Water Resource Plans Resource Operations Plans SEQ Regional Water Security Program SEQ Bulk Water Supply Code
LG/entity plans	DWQMPs RWMPs (SLMPs, SAMPs and DMPs are replaced by Water Netserv Plans for SEQ)	Water Netserv Plans Customer Service Charter (under Water and Sewerage Services Code for Small Customers in SEQ) Customer Service Standards (under SEQ Customer Code)	Council-wide long term asset management plans Budgeted statement of income and expenditure, for the budget year and the two following years. Annual performance plans for CBUs. Annual operations report for CBUs.		Priority Infrastructure Plans (LGs) Infrastructure Charges Schedules (LGs) Sub-regional TWCM Plans	Joint Working Group - Key Possible Projects

Stakeholder submissions

QUU (2013) suggested that a whole-of-sector approach with increased co-ordination could lead to lower long-term capital investment for the industry.

Gold Coast City Council (2013) submitted that to promote co-ordination with other regulatory planning processes, the QCA should consider entering a Memorandum of Understanding with other regulators. This should provide a holistic understanding of regulatory obligations.

Unitywater (2013) called for closer co-operation between government agencies, economic and environmental regulators and the Energy and Water Ombudsman of Queensland (EWOQ) to promote least-cost solutions. Unitywater cited an example as being environmental licence conditions which can lead to expensive solutions for sewage collection, transport and discharge.

QCA analysis

Co-ordination of planning regulatory instruments

The Water Netserv Plan draws together the outputs of a range of plans, and an effective and approved Water Netserv Plan demonstrates that the entities have already adopted a strategic approach to planning. For example, a Water Netserv Plan is typically based on:

- (a) the requirements of the high-level strategic plans of Government, such as the SEQ Regional Plan and the SEQ Water Strategy
- (b) strategic planning within each entity's service area - for example to identify optimal system configuration to meet growth needs and infrastructure/non-infrastructure solutions, and take account of total water cycle management principles
- (c) local government PIPs which assist with system network planning for new developments
- (d) pre-feasibility and detailed feasibility planning, a more refined assessment of the range of options to address needs.

In response to stakeholder comments, closer co-operation between government agencies, economic and environmental regulators and the EWOQ is generally supported, although EWOQ's role is limited to dispute resolution and not policy-making.

A Memorandum of Understanding between the QCA and other regulators such as DEWS is not considered necessary as compliance with the requirements of Water Netserv Plans would effectively ensure such co-ordination and a whole of sector approach. Seqwater's obligations to make investment and operating decisions considering the whole of SEQ system least cost, and the Bulk Water Supply Code's requirement for co-ordinated water system planning between the bulk and distribution sectors in SEQ, provide further mechanisms to achieve the objectives of the Ministers' Direction as they relate to long-term investment. This in turn should lead to more efficient cross-sector capital investments and lower administration costs.

Annual performance monitoring

For the purposes of light-handed economic regulation, the annual capital works plan (or annual performance plan) developed by each entity will serve as the initial reference for annual monitoring of capital investments as, once approved by the board/council, they represent a culmination of a co-ordinated approach to planning.

The QCA does not propose to further monitor co-ordination with other planning instruments (other than the Water Netserv Plan) unless prices and/or costs are considered to have exceeded CPI-X after allowing for relevant adjustments.

In such circumstances, entities may be requested to identify the 6 largest water, sewerage and recycled water projects, commissioned in the preceding year.²⁶

For these items, any variations occurring for the relevant year (2014-15 for the first return) from those indicated in annual capital works plans, or any projects not previously identified, should be supported with relevant details, including cost drivers, consistency with higher level planning and reasons for any variations. Updates to Water Netserv Plans should also be submitted.

Should compliance and co-ordination not be demonstrated, the QCA may consider this to be a contributory factor for instigating more detailed prudence and efficiency reviews

Draft Recommendations

6.3 Entities annually report to QCA on their annual capital works plans or annual performance plans.

6.4 Annual updates to Water Netserv Plans also be submitted.

6.5 Asset management

Asset management frameworks provide the information base for the entity to better manage its assets, to identify drivers for capital investments, and to provide input to Water Netserv Plans.

In terms of the council water businesses, the LGA requires a local government's financial management system to include a long-term asset management plan.²⁷ These plans must:

- (a) provide for strategies to ensure the sustainable management of the assets mentioned in the council's asset register and the council's infrastructure
- (b) state the estimated capital expenditure for renewing upgrading and extending the assets for the period covered by the plan
- (c) be part of, and consistent with, the long-term financial forecast.²⁸

National commitments and positions

The Local Government and Planning Ministers' Council (LGPMC) (2009) set out guiding principles for a national asset management framework for local governments, based on seven elements:

- (a) development of an asset management policy - establishing objectives and requiring adoption of an asset management plan informed by community consultation and financial reporting
- (b) governance and management arrangements - assigning roles and responsibilities, and maintaining accountability
- (c) defining levels of service - including establishing quality and cost standards, and reviewing standards in consultation with community
- (d) data and systems - to enable performance measurement over time, identify funding gaps and enable benchmarking

²⁶ The sample size of 6 is chosen based on the Ministers' Direction for the 2013-15 investigation.

²⁷ LGA, s 104(5)(a)(ii).

²⁸ LGR, s 168. Refer to the LGA, s 105(5)(a)(iii) and the LGR, s 171 for information regarding long-term financial forecast requirements.

- (e) skills and processes - including setting targets for improvement, training and providing guidelines
- (f) evaluation - mechanisms for evaluating effectiveness and compliance.

The LGPMC framework is not limiting on state jurisdictions - the nationally consistent approach is to sit within the context of each state's legislative framework. Individual states can pursue additional elements in their asset management frameworks.

Other jurisdictions

Australia

Most State Governments provide guidelines and principles to assist local governments with asset management planning in all activities including water and sewerage. For example:

- (a) in WA, the Department of Local Government and Communities (2011) provides guidelines for Asset Management Plans. These set out the required inputs (e.g. asset data, demand forecasts, renewals priorities, asset lives, new asset priorities) and outputs (plans for each asset class, expenditure projections, financial and funding information)
- (b) in Victoria, the Department for Victorian Communities (2004) set out guidelines for developing an asset management policy, strategy and plans. Plans should define service levels, planning horizon, risk management strategies, changes in asset service potential, and be linked to other council strategic plans
- (c) in NSW, IPART (2012d) recommended Hunter Water Corporation be required to develop and implement an asset management system consistent with PAS-55 or a system based on the Water Services Association of Australia's (WSAA) Aquamark asset benchmarking tool (discussed below), or other appropriate standard as agreed by IPART
- (d) in South Australia (2013), the Department of Planning, Transport and Infrastructure (2013) provides a Strategic Asset Management Information System (or SAMIS) to assist in the management of assets through establishing an asset register and planner that creates preventative maintenance schedules
- (e) in Tasmania, the State Government (2009) provided a framework consistent with the LGPMC guidelines.

Other approaches

PAS-55

The British Standards Institution's (2008) Publicly Available Specification 55 – Asset Management (PAS-55) outlines the planning and implementation elements of an organisation's asset management system.

Ofwat considers PAS-55 to be a governance framework which demonstrates that the company is self-aware of its capability and is developing improvement plans.

PAS-55 identifies a checklist to deliver an entity-specific approach to asset management. This checklist includes:

- (a) general requirements
- (b) asset management policy
- (c) asset management strategy, objectives and plans, and contingency planning

- (d) asset management enablers and controls, including structure, authority and responsibilities; outsourcing, training, consultation and communication, documentation, information management, risk management and legal and other requirements
- (e) implementation of asset management plan(s)
- (f) performance assessment and improvement, including condition monitoring, investigation of asset-related failures, evaluation of compliance, audit, and improvement actions
- (g) management review.

A similar draft ISO standard is being developed, Draft International Standard ISO/DIS 55001 Asset management - Management systems - Requirements (ISO 55001).

Ofwat

In its 2009 review of water and sewerage charges for water and sewerage companies in England and Wales for the period 2010-15, Ofwat conducted an asset management assessment (AMA) of each company's final business plan to assess the technical and managerial processes applied in developing capital maintenance business plan submissions.

The AMA scoring criteria includes nine high-level areas (containing 28 sub-components). The high-level areas are:

- (a) stakeholder engagement
- (b) leadership, policy and strategy
- (c) management
- (d) processes
- (e) systems
- (f) data - testing for reliability of data
- (g) analysis - includes verification, sensitivity and validation checks
- (h) reporting
- (i) balance - a balanced view of risks across the whole plan.

Ofwat scores, by sub-service²⁹, each of the above components from 0 (lowest) to 5 (highest) against an 'aspirational statement' which defines "the upper limit of expectations for a frontier company in the 2009 price review". A score of 4 out of 5 represents a fully justified plan.

2013-15 Price monitoring investigation

The Ministerial Direction for the 2013-15 price monitoring investigation required the QCA to review the robustness of the entities' capital policies and procedures relating to planning and delivery, having regard to "good industry practice" using a sample of six capital expenditure projects.

For the investigation, the QCA's consultant (SKM) assessed each entity's asset management system against the PAS-55 standard, as representing good industry practice. Unitywater indicated its asset management system will meet the PAS-55 framework and QUU advised it intends to meet the ISO standard.

²⁹ Sub-service areas are: (1) water infrastructure; (2) water non-infrastructure; (3) sewerage infrastructure; and (4) sewerage non-infrastructure.

Gold Coast, Logan and Redland City Councils use the International Infrastructure Management Manual (IIMM), published by the Institute of Public Works Engineering Australia (IPWEA) for their asset management plans. This methodology was endorsed for Queensland local governments in the Asset Management Advancement Program 2011-12 Guideline (DLGP 2011). Gold Coast City Council indicated that, through the implementation of continuous improvement activities over the next few iterations of its asset management plans (updated annually), it will strive to achieve alignment with the ISO 55000 asset management standards.³⁰

SKM found that each of the entities had deficiencies in their asset management systems compared to good industry practice. The entities also identified a number of projects/initiatives that were underway and/or planned to address the known shortcomings in their asset management systems.

As in earlier price monitoring investigations, QUU and Unitywater also noted their participation in the IWA/WSAA 2012 Asset Management Performance Improvement Project³¹ (WSAA asset management project). The WSAA asset management project benchmarked the entities' asset management practices against other participating water authorities. In its review, SKM noted that this benchmarking program uses self-assessment, with subsequent review and validation by external consultants. The results are compared against those of other participating water authorities, not against a published standard of requirements for good industry practice. The relative results will therefore vary dependent on the other authorities participating (SKM 2013).

Stakeholder submissions

For the 2013-15 price monitoring review, QUU indicated that the ISO 55000 series of standards is an aspirational goal. Compliance with this standard does not necessarily represent good industry practice, as the ISO 55000 series has not been published by the ISO organisation and is not widely used by the water industry in Australia.

QUU is of the view that:

- (a) good industry practice in Australia is best represented by WSAA's Aquamark framework
- (b) a non-compliance result in assessment against the (unpublished) ISO 55000 business system does not mean that QUU's system is not robust. The purpose of a business management system is to identify and manage non-conformance to improve the overall system. As such QUU believes that its systems are robust and in line with good industry practice.

QCA analysis

For SEQ entities, asset management plans should be developed for relevant asset classes, for example, sewerage treatment plants, pipelines, reservoirs etc. Entities should maintain an asset register with details of asset type, location, acquisition date, value, and condition monitoring updates. Plans should provide information on levels of service required of assets, risk management, financial information including capex projections and drivers, whole of life costings (including operating costs) and schedules for performance review, maintenance and asset improvements.

³⁰ GCCC (2013), unpublished response to SKM's draft report for 2013-15 price monitoring investigation.

³¹ IWA - International Water Association.

The plans should identify the key drivers, and necessary information, for example:

- (a) for demand growth: relevant demand analysis and forecasts
- (b) for compliance: details of the relevant regulatory requirement or Government directive
- (c) for renewal or replacement: assessment of risks and criticality of the investment and the optimal approach to maintenance and replacement as supported by relevant data
- (d) for service quality enhancement: analysis of customer preferences and requirements, or details of Government policy direction

For the annual performance reporting, it is recommended that the SEQ entities provide details of their compliance with the asset management standard they have implemented, and report on progress in addressing areas of improvement to achieve good industry practice (QCA 2014b).

For example, in capital planning and asset management, SKM found (in the 2013-15 price monitoring review) that:

- (a) QUU needs to develop its benefits realisation and improve consistency with asset management standards. QUU has plans in place to do so
- (b) Unitywater's asset management system was not yet consistent with good industry practice. SKM noted that Unitywater has not yet fully implemented its Consolidated Asset Management System (CAMS) which will improve asset management
- (c) Gold Coast Water's asset management system was not robust but SKM noted Gold Coast Water is developing a compliance program
- (d) Logan Water's asset management system was not robust but SKM noted Logan Water has identified a number of tasks to improve asset management in the business
- (e) Redland Water's documentation and compliance requirements were not addressed adequately but SKM noted Redland Water is developing a comprehensive program of planned improvements (QCA 2014b).

If a review is triggered, and the QCA undertakes a cost of service review, the QCA review of entities' asset management standards would be based on a sample of the key elements of good asset management, drawing on PAS-55 (ISO 55000) and the objective asset management standards currently in place.

The QCA also supports the entities' participation in the WSAA asset management benchmarking project where it is cost-effective to do so.

Draft Recommendation

- 6.5 SEQ entities provide to the QCA annually, details of their compliance with the asset management standard they have implemented and report on progress in addressing areas of improvement to achieve good industry practice.**
- 6.6 Should a cost of service review be triggered, the QCA assess entities asset management practices against PAS-55.**

6.6 Evaluating efficiency of long-term investment alternatives

Background

Once the basis (prudence) for capital expenditure is defined, relevant options and their relative benefits and costs need to be considered. This is particularly the case with water and sewerage sector investments which involve capital-intensive long-life assets (pipelines, pump stations, reservoirs, sewage treatment plants, etc.). Investment evaluation processes should consider:

- (a) customer demand and needs, including the level of service required. It is common practice when evaluating investment alternatives to allow for reasonable expected additional capacity to meet not only existing demand, but also long-term growth in demand, compliance or service quality expectations
- (b) various risks related to long-term investment. These include construction, planning, environmental (e.g. climatic uncertainty), financial, technological, and demand risks, as well as regulatory and government policy risk. The appropriate allocation of risks among customers, service providers, and Government can help minimise costs. Scenario analysis is a useful tool in assessing risks and the costs of managing them.
- (c) financial viability and sustainability of the water business. Large investments in additional capacity imply that full cost recovery will occur over the long-term. Therefore, an important consideration is how these costs should be shared among current and future users of the infrastructure.

The conventional approach to assessing long-term investments is to use cost-benefit analysis to evaluate and rank the net present value (NPV) of alternatives. This approach has the advantage of being relatively simple, but may be difficult to apply where there are a number of non-infrastructure solutions such as demand management, with different timings and risks. Scenario analysis, as a complementary tool, can help assess risks and establish contingency allowances for the various alternatives being evaluated.

Cost effectiveness analysis may be applied where the level of benefit is the same across all options. The analysis focuses on the lowest cost option to achieve the specified outcome.

Multi-criteria analysis applies weightings to a range of pre-determined (often qualitative) criteria or objectives relevant to the investment options, for example, equity impacts, effects on the environment, etc. In doing so, it can incorporate more information and be more flexible, but the weightings may be difficult and subjective to derive.

Another approach is real options analysis, which enables comparisons of combinations of a potentially large number of options, involving different timings, costs and risks, with continual re-evaluation over time.

Options analysis can generate a sequence of whole-of-sector responses, including partial investments (e.g. in land) to keep open the range of options for future growth. It may be appropriate where the benefits of a project remain uncertain, and it is known that information will improve to enable better decisions in the future. For example, demand management options may not deliver significant water savings but could defer major investment decisions until information improves.

National commitments and positions

The NWI (2004) required that proposals for investment in new or refurbished water infrastructure continue to be assessed to be economically viable and ecologically sustainable prior to the investment occurring.

Other jurisdictions

In most jurisdictions, project evaluation guidelines are available to assist service providers to evaluate alternative investments. For example, NSW Treasury has Guidelines for Economic Appraisal (2007) which can be applied by public agencies for investments exceeding \$1 million. In Victoria, projects exceeding \$5 million must be subject to the Treasury's Investment Evaluation Policy and Guidelines (1996). In addition to financial cost-benefit analysis, the Guidelines call for analysis of non-quantifiable socio-economic impacts.

The ESC (2011) considers a range of factors in assessing water service providers' capital expenditure, including obligations imposed by technical regulators, variations from historical trends, consistency with best-practice asset management, proposed timeframes and risk-sharing. Business' Water Plans must include:

- (a) 10-year capital expenditure forecasts, distinguishing between business-as-usual and new expenditure
- (b) drivers of expenditure, for example, to meet existing levels of service, to meet higher targets imposed by Government, to meet higher customer expectations, to address changes in demand or to reduce operating costs. Businesses should demonstrate that best-practice risk-based asset management practices have been used, and a range of options has been considered in making expenditure decisions. Real options analysis may be used
- (c) demonstrated capacity to meet timing of projects. ESC noted a previous tendency for timing to be optimistic. Incentives and risk-sharing structures with contractors should be symmetric
- (d) details of the 10 largest projects, their drivers, outcomes, delivery dates and annual costs. Water Plans should demonstrate evidence of options and risk analyses, including cost-benefit analyses and risk mitigation plans
- (e) forecast capital expenditure based on P50 cost assumptions (50% probability the cost will not be exceeded). Plans should also show P5 and P95 costs.

In 2008, the ERA considered proposals for the application of real options modelling by the Water Corporation of WA to analyse alternative supply and demand options. ERA also proposed that this analysis be performed by an Independent Procurement Entity (IPE). Options modelling was considered an appropriate approach given the large number of supply and demand management options available, varying risks and costs and changing circumstances over time. However, the approach was not adopted.

In response to QCA recommendations, SunWater has implemented a process for evaluating asset renewals and replacement options for material projects. SunWater identifies options including a 'do-nothing' option if appropriate, and uses cost benefit analysis or cost effectiveness analysis to identify a preferred option. A risk analysis assigns a level of risk according to categories - WH&S, environment, operations, customer and financial. The analysis is used to develop a business case for the preferred option.

QCA analysis

Within the overall strategic and entity-level planning framework, to support the asset management procedures and as an input to Water Netserv Plans, the range of investment options (including non-infrastructure options) should be evaluated to identify the preferred option using where appropriate:

- (a) cost-benefit analysis or cost-effectiveness analysis of various alternatives, including non-infrastructure alternatives and reviewing non-quantifiable costs and benefits
- (b) real options analysis, where there is a large number of significant options with different scales, timing and risk profiles, and which may require a sequenced or staged acquisition of assets
- (c) risk assessments including costs of risk mitigation measures.

Under the existing price monitoring regulatory framework, the QCA has assessed the prudence and efficiency of capital expenditure, using the criteria noted in Chapter 4.

Queensland Government agencies are already required to comply with Project Evaluation Guidelines issued by the Queensland Treasury (1997).

In the light handed framework, the QCA will not undertake prudence and efficiency reviews, unless specifically requested to do so by the entities or as part of a subsequent review (unless a detailed review is required). The entities will be required to report on the project evaluation methods applied for significant capex.

For the 6 identified material capital expenditure projects, if and where there are significant variations in capital costs from those indicated in the annual capital works plan, or where the project was not identified in the annual capital works plan, entities should provide to the QCA evidence of that an appropriate approach to project evaluation, including options and risk analyses has been applied.

Variations are generally considered to be material where they differ from those proposed by between 5 and 10% (AASB 1031). For the purpose of the light handed framework a threshold of 10% is considered to be material.

Draft Recommendation

6.7 Entities report on the project evaluation practices used for significant capex projects.

6.8 Entities submit details of project evaluation, including options analysis and risk analysis, for up to the 6 largest capex items, where required as part of a request for further information.

7 SERVICE QUALITY PERFORMANCE REPORTING

7.1 Background

Under the Ministerial Direction, the QCA must:

- (a) develop service quality performance reporting (SQPR), in consultation with the entities and other stakeholders, based on service quality indicators of relevance to residential and non-residential customers to inform these customers about the comparative performance of the entities
- (b) ensure that SQPR is not excessively onerous or costly to implement by focusing on a reasonable range of meaningful indicators in the following areas: baseline (contextual) information; water and sewerage reliability and service (including water) quality; water consumption, recycling and reuse; customer responsiveness and service.

Terminology

Service quality refers to the attributes of a water or sewerage service that relate to utility, health, safety and reliability. Examples include water quality and reliability (frequency, timing and duration of interruptions to water services, and overflows of wastewater).

A service standard refers to an obligation relating to a service quality attribute. An obligation can be specified in law, accepted as a de facto industry standard, or adopted by entities in consultation with customers.

A performance indicator is the basis on which the service standard will be measured.

A target refers to the desired performance level.

Performance refers to the outcomes achieved by a service provider in relation to the defined targets.

Price monitoring 2010-15

In its SEQ Interim Price Monitoring Framework Report (2010), the QCA recommended that entities' standards of service, as approved by other agencies, be adopted for the purposes of interim price monitoring.

During price monitoring over 2010-13, the QCA was not required to monitor entities' performance against standards of service. However, it noted that customer service standards specified by the entities under the *Water Supply (Safety and Reliability) Act 2008* varied considerably across the state and across SEQ entities (QCA 2011). In subsequent reports, the QCA (2012) supported the development of specific and measurable service standards as a first step in the development of a more integrated performance monitoring framework for the entities (QCA 2013a).

7.2 Objectives and criteria

Key issues

The Ministerial Direction's stated objective for establishing SQPR is to inform residential and non-residential customers on the comparative performance of SEQ entities.

The QCA is directed to consult with stakeholders in developing cost-effective SQPR based on a reasonable range of meaningful, customer-relevant service quality indicators in the following areas: baseline (contextual) information; water and sewerage reliability and service (including water) quality; water consumption, recycling and reuse; customer responsiveness and service.

National commitments

Section 75 (*Benchmarking Efficient Performance*) of the National Water Initiative (COAG 2004) requires States and Territories to report independently, publicly and on an annual basis, the benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies. Reporting is to be made on the basis of a nationally consistent framework.

This requirement is met through the annual National Performance Reports (NPR) published by the National Water Commission (NWC 2013).

The NWC notes that the benefits of the NPR include public accountability to the community, governments and regulators, prioritisation of works programs, and comparability of performance of similar-sized entities. A requirement of the NPR framework is that a comprehensive audit of the data collected under the NPR is undertaken at a minimum of three yearly intervals.

Other jurisdictions

ESC's performance reporting framework is designed to inform customers about the level of service, identify baseline performance of individual businesses, provide data for developing regulatory standards and allow comparisons between businesses.

ESC's (2012) criteria require indicators to be: relevant and meaningful; collected on a consistent basis across businesses to assess variances and aid performance comparisons; reliable and verifiable in terms of accuracy; and, consistent with national reporting. ESC suggested the framework should focus on a reasonable number of meaningful indicators to ensure the costs of collecting, reporting, and analysing information and data do not exceed the expected benefits.

Information returns to ESC also reflect data collected on behalf of other parties such as for the purpose of the NPR published by the NWC. ESC introduced the indicator set in 2004 and reviewed it in 2009 and 2012. ESC intends to again review the indicator set in 2014-15.

IPART (2013) report annually on the performance of metropolitan retail and bulk water utilities to inform stakeholders and to strengthen utilities' accountability and incentives to maintain and improve performance over time.

ERA (WA) (2013) reports on the performance of water, wastewater and irrigation schemes licensed by the ERA, to highlight comparative performance and examine service performance over time.

OTTER's (2013) performance reporting framework is designed to provide information for the Regulators' State of the Industry Report and to assist with comparative analysis.

QCA analysis

The objectives of SQPR are to inform the criteria for identifying the range of performance indicators that should be monitored.

Relevance

Indicators should be relevant to the nature of the services provided by each entity; and to the key issues of concern to entities, their customers, and other interested parties (Kaufman and Lowry 1999, QCOSS 2012 and CSIRO 2002).

Service quality indicators that are material and linked to controllable cost drivers will be of particular interest to customers (and the economic regulator seeking evidence of an exercise of market power is required).

Stakeholders, as well as government and the entity, need to be informed about (controllable) variances over time between an entity's planned and actual performance against agreed service standards, and the reasons for these variances.

The customer engagement and consultation strategies discussed in Chapter 5 may be used to determine customer preferences for water and sewerage service indicators (WSAA and CSIRO 2002).

Comparability

The performance indicators should also enable useful comparisons across entities, and over time, where appropriate. There are obvious advantages in using the indicators (and accompanying metrics) developed as part of NPR process, or those in use in other jurisdictions, to maximise the scope for performance comparisons with a range of entities.

However, it is expected that specific performance indicators will also need to be developed to meet the particular requirements of entities and their customers.

Cost effectiveness

The performance reporting framework should be cost-effective in application, and balance costs of collection, recording and analysis against perceived benefits. To ensure that SQPR is cost-effective:

- (a) the costs of collecting, reporting and analysing data and information should be justifiable in terms of the expected benefits
- (b) the number of indicators used should be reasonable and reflect as far as possible existing service standards
- (c) the set of indicators chosen should take into account the size and characteristics of the entities.

A general indication of cost effectiveness is implied where the indicators, and the relevant metrics, are widely adopted by other jurisdictions.

Measurability

Indicators should be defined and collected on a consistent basis (ESC 2004, MJA 2009), controllable by the entity, verifiable, quantifiable and timely (DEWS 2013). Meyrick/Pacific Economics (2003) also emphasised the need for independent external scrutiny of the distributor's measurement and reporting systems. The ability to verify or audit the indicators would provide greater credibility to the reporting framework and support consumer confidence.

Draft Recommendation

- 7.1 The service quality performance reporting framework incorporate indicators that are:**
- (a) relevant and meaningful to stakeholders**
 - (b) linked to controllable costs**
 - (c) suitable for relative performance assessment within, and across, entities over time**
 - (d) cost effective - the costs of collecting and reporting indicators should be justifiable relative to benefits**
 - (e) measurable - clearly defined, quantifiable, reliable, and verifiable.**

7.3 Choice of indicators for SQPR

Background

The Ministerial Direction requires the following general categories of performance indicators to be incorporated in SQPR:

- (a) baseline indicators - contextual data that defines the business, such as number of customers, length of pipelines, number of infrastructure assets
- (b) water and sewerage network reliability and service quality (including water quality) indicators - for example, number and frequency of leakages and interruptions
- (c) water consumption, recycling and reuse indicators - for example, trends in water consumption and uptake of recycled water options
- (d) customer responsiveness and service indicators - for example, customer complaints and response times.

The key issue is to match the criteria to the available sets of indicators to identify a reasonable number of indicators in these categories that satisfy Ministerial Direction requirements.

Available and known indicators are:

- (a) NPR indicators
- (b) additional indicators used by other jurisdictions
- (c) indicators identified by DEWS
- (d) other indicators that may be suggested by the entities including those used in customer service standards.

A further issue is how the indicator is measured (metrics). For example, the number of unplanned interruptions to water supply may be expressed as a total, or as a number per 1000 properties, or per 100 properties, or a number per 100 km. To enable comparability, baseline indicators should provide the necessary information.

National commitments and positions

For the NPR, 180 indicators, with standardised definitions, have been jointly developed by WSAA, the NWC and the parties to the NWI, being the Commonwealth and State Governments and the Bureau of Meteorology (NWC 2012).

The NPR indicator categories include baseline data for water resources, water and sewerage assets, recycled water and stormwater; and performance data for system operations, water losses, customer service (including complaints) and unplanned interruptions, environmental performance, public health (including water quality), system costs, financial measures and pricing. The indicators are listed in Appendix B.

Other jurisdictions

In other jurisdictions where annual service quality performance reporting is in place, regulators have adopted a subset of the NPR indicators and added other indicators specifically targeted to the objectives of the respective reporting frameworks, including licence conditions.

The categories of indicators used in the main jurisdictions are listed in Table 16.

Table 16 Performance Indicator Categories in other Jurisdictions

<i>Regulator</i>	<i>Indicator Categories</i>	<i>Comment</i>
ESC	72 performance indicators including usage, price trends and payment management, customer responsiveness and service, network reliability, water quality, conservation and the environment and historical performance, drainage and waterways services.	Non-NPR indicators include bill payments and hardship arrangements, water supply interruptions, responses to sewerage system blockages, and trade waste volumes. ESC (2012) also used survey techniques to assess customer service quality - deriving a greeting quality index, agent manner ratings, and enquiry handling skills. ESC's annual reporting also includes updates on major infrastructure projects.
IPART	Drinking water quality, water and sewerage reliability and continuity, environmental impact (which includes water use and recycled water), customer service complaints, and expenditure and sales for retail entities.	IPART is developing a standardised set of hardship indicators for concessional plans, hardship applications and flow rate restrictions for non-payment.
ERA (WA)	Categories of sources of water, uses of water, asset data, and customer service which constitute a subset of NPR indicators.	A number of additional indicators set out in licence conditions.
ICRC	A subset of NPR indicators, some with different metrics.	26 non-NPR indicators that relate to various types of complaints and responses to complaints, and duration and frequency of planned interruptions.
OTTER	Categories of water and sewerage supply reliability (including planned and unplanned interruptions), customer responses and payment plans, affordability and hardship information and measures.	Water entities are required to report on all NPR indicators as well as a comprehensive list of additional indicators.
Ofwat (UK)	4 high-level areas customer experience, reliability and availability, environmental impact and financial.	

ESC (2012), IPART (2013), ERA (2013), ICRC (2012), OTTER (2013) and Ofwat (2012)

The ESC undertakes regulatory audits to ensure the integrity of reported data, and also periodically reviews the framework to identify new indicators, remove indicators that are no longer useful, and modify indicators to make them more relevant (ESC 2012). For example, the ESC in 2012 removed 11 indicators, modified 8, clarified 16 and added 5. Some indicators were flagged for further review (mainly productivity based indicators).

In 2012 IPART collected information on 82 additional indicators (to the NWI) from Sydney Water. Following review this was reduced to 40 to remove obsolete indicators and duplications, reduce the burden of regulation and ensure the remaining indicators are more diagnostic to support decision making (IPART 2012).

Appendix B provides a list of the NPR indicators, identifying most of those used by other regulators. Appendix C provides a list of additional non-NPR indicators used by other regulators. Most of the other regulators have supplemented the NPR in the area of customer service, suggesting that the NPR is considered deficient in this area. Some regulators, such as OTTER and ESC, have a series of indicators relating to customer payment activities, hardship arrangements, concession holders and status of customer debt. Many of these indicators relate to licence conditions.

Queensland

DEWS is progressing state-wide reforms to replace various planning processes with an annual performance reporting framework. The proposed framework would require mandatory reporting, including annual reporting on targets set in customer service standards. Annual comparative reports, based on a set of key performance indicators (KPI), will compare the performance of like service providers.

Specific KPIs have been established to promote regulatory reduction and to vary according to the size of the service provider and the type of service provided.

In finalising the framework, a Business Advisory Group was established to:

- (a) provide advice and feedback to DEWS on proposed KPIs and their application to the different sizes of service providers
- (b) provide advice to DEWS on practical industry issues associated with the implementation of performance reporting on the selected KPIs
- (c) develop practical solutions for industry issues relating to the reporting of KPIs.

Membership of the Business Advisory Group comprised service providers and their representatives, including Logan City Council and the Queensland Water Directorate (qldwater).

DEWS proposes that the SEQ entities and other water providers with more than 10,000 connections be required to complete the NPR indicator set, as well as a number of additional indicators.

These include water security indicators such as demand forecast for the next year and over 5 years, capacity to meet demand, available contingency supplies, and supply restrictions. Other indicators relate to costs, including number of employees, staff with appropriate skills, annual maintenance costs, and previous and forecast 5-year average renewals costs. The additional indicators are targeted towards DEWS strategic objectives for the water industry.

QCOS, in a comparative survey of customer service standards, identified the priority standards as:

- (a) frequency and duration of planned and unplanned interruptions
- (b) response time to incidents
- (c) water quality
- (d) lost or unaccounted for water
- (e) infrastructure failures, such as breaks, chokes and sewerage overflows

- (f) water pressure or flow rates
- (g) customer service, standards around complaints and call response times.

QCROSS concluded that a common set of standards should apply for SEQ.

qldwater

Qldwater is an industry association representing water service providers. In partnership with the LGAQ and State Government agencies, qldwater developed the Statewide Water Information Management (SWIM) system to make it easier for water service providers to supply data requested by State and Commonwealth Governments, including for the NPR framework.³²

SWIM is a data submission portal that is designed to cater for any temporal and spatial frequency of data reporting required (from daily to annual, for water schemes to whole jurisdictions). SWIM collects data on 256 performance indicators (2009-10) for a range of purposes, including NPR and SAMP reporting. Many of the NPR indicators relate to bulk activities and are not relevant to the SEQ entities.

The Energy and Water Ombudsman Queensland

The Energy and Water Ombudsman (EWOQ) provides a free and independent dispute resolution service for residential and small business customers in South East Queensland. Disputes may relate to billing, credit, customer service, land, provision (connections) and supply (planned or unplanned interruptions). EWOQ cannot assist complaints relating to prices or policy related matters.

In a recent paper, QCROSS (2012) stated that it is not sufficient to rely on customer complaints to EWOQ as an enforcement mechanism for customer service standards as its primary focus is as a dispute resolution body. EWOQ is not resourced or empowered to sanction entities' performance or to undertake relevant audits. In addition, the public reporting that they undertake is limited and would not provide sufficient disaggregation of data to allow any weaknesses to be identified.

SEQ

There are a number of regulatory instruments relevant to service quality standards for SEQ entities:

- (a) Drinking Water Quality Management Plans (DWQMP) - the DWQMP specifies the parameters to be used for indicating compliance with the water quality criteria for drinking water. Mandatory parameters to be measured and reported under the Public Health Regulation 2005 include e.coli and fluoride (where added). Additional water quality requirements set by DEWS (2010b) in the Water Quality and Reporting Guideline for a Drinking Water Service are based on the health guideline values of the Australian Drinking Water Guidelines (ADWG).
- (b) Water Netserv Plans - Water Netserv plans must state the desired standard of service for infrastructure used to provide services (in Part A)³³, how the entity will meet these standards (in Part B), and measures proposed to minimise water losses caused by leakage from infrastructure and sewerage overflows (in Part B).

³² <http://www.swim.qldwater.com.au/index.php>

³³ The DR Act lists examples of these standards as 'standards about water supply pressure and volume for particular areas; and rates of removal of sewage for particular areas'.

- (c) Water and Sewerage Services Code for Small Customers in South East Queensland (the SEQ Customer Code) - Part B sets out customer service standards that need to be set by each entity, such as unplanned interruptions, response times and flow rate. The entities must publish and maintain service standards targets on their websites.

The DR Act lists examples of the desired standard of service as standards about water supply pressure and volume for particular areas; and rates of removal of sewage for particular areas. However, these are not framed as obligations – there are no mandatory service standards or performance indicators specified for inclusion in a Water Netserv Plan.

The SEQ Customer Code has requirements relating to the reliability of services which relate to the timeliness of appointments, supply restrictions, that service be restored after unplanned interruptions in accordance with an appropriate priority level, and at least 48 hours notice be given of planned interruptions. The entities are accorded considerable flexibility in applying the obligations to their own circumstances.

The indicators, and targets, set out in each of the entities' Customer Service Standards under the SEQ Customer Code are listed in Table 17 below.

Table 17 Entities' Customer Service Standards - Indicators and Targets

<i>Indicator/Target</i>	<i>Redland City Council</i>	<i>Logan City Council</i>	<i>Gold Coast City Council</i>	<i>Unitywater</i>	<i>QUU</i>
<i>Water and sewerage reliability and service</i>					
Average frequency of unplanned interruptions – water	≤ 2 (per 1,000 connections per annum)	< 150 (per 1,000 connections per annum)	< 100 (per 1,000 connections per annum)	< 10 (per 100kms per annum)	≤ 100 (per 1,000 connections per annum)
Average duration of unplanned interruptions – water (min)	restore 97% of interruptions within 5 hours	restore 95% of interruptions within 5 hours	restore 80% of interruptions within 5 hours	restore 90% of interruptions within 5 hours	restore 90% of interruptions within 5 hours
Response to urgent incidents	Respond to loss of water supply within 1 hour on mainland	no reference	no reference	< 1 hour in 90% of time	< 1 hour in urban areas/< 2 hours in rural areas
Response to non-urgent incidents	no reference	no reference	no reference	no reference	< 24 hours in urban areas/< 72 hours in rural areas
Break per 100 km of main - water	≤ 8 breaks per 100km of main per annum	< 20 breaks per 100km of main per annum	no reference	no reference	no reference
Infrastructure leakage index (water losses)	no reference	< 95 litres/connection/day	no reference	no reference	no reference
Notice of planned works involving interruption	at least 48 hours	no reference	at least 48 hours	at least 48 hours	at least 48 hours
Average duration of planned interruptions – water	no reference	5 hours	no reference	no reference	no reference
Average sewerage interruption	restore services within 5 hours	no reference	no reference	no reference	no reference
Sewerage main breaks and chokes	no reference	< 50 (per 1,000 km of mains)	no reference	no reference	no reference
Sewage overflows to customer property	≤ 2 overflow events for every 1000 properties per annum	< 5 overflow events for every 1000 properties per annum	< 5 overflow events for every 1000 properties per annum	no reference	no reference
Overflow events for each 100km of sewer and rising main	≤ 8	< 20	no reference	no reference	no reference
Sewage odour complaints (per 1000	≤ 0.85 complaints for every	< 3 complaints for every	< 3 complaints for every	no reference	no reference

Indicator/Target	Redland City Council	Logan City Council	Gold Coast City Council	Unitywater	QUU
customers)	1000 properties	1000 properties	1000 properties		
Minimum pressure	At least 98% of properties (when tested due to complaint) have pressure of ≥ 22 metres of static head	Pressure to be ≥ 22 metres of static head at the hydrant	Pressure to be ≥ 22 metres of static head immediately upstream of the water meter	Pressure to be between 210kPa (or 21 metres of static head) and 800kPa (or 80 metres of static head) at the boundary	Pressure to be ≥ 210 kPa (or 21 metres of static head) at connection to property
Minimum flow rate	At least 98% of properties (when tested due to complaint) have flow rate of ≥ 30 litres a minute at the meter	no reference	no reference	Flow rate to be ≥ 23 litres a minute to meet household needs	Flow rate to be ≥ 25 litres a minute in urban areas
Water Quality					
Water quality guidelines	no reference	> 98% of samples pass E.coli test Compliance with chemical standards at all zones	> 98% of samples pass E.coli test Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health and Medical Research Council's Australian Drinking Water Guidelines
Number of zones where microbiological compliance was achieved (e.g. 23/24)	no reference	> 98% of samples pass E.coli test Compliance with chemical standards at all zones within Logan City Council	> 98% of samples pass E.coli test Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health and Medical Research Council's Australian Drinking Water Guidelines
Number of zones where chemical compliance was achieved (e.g. 23/24)	no reference	> 98% of samples pass E.coli test Compliance with chemical standards at all zones	> 98% of samples pass E.coli test Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health Medical Research Council, Australian Drinking Water Guidelines	Compliance with the National Health and Medical Research Council's Australian Drinking Water Guidelines
Water quality complaints	≤ 4 complaints for every 1000 properties	< 5 complaints for every 1000 connections per annum	< 5 complaints for every 1000 connections per annum	no reference	≤ 8 complaints for every 1000 properties

Indicator/Target	Redland City Council	Logan City Council	Gold Coast City Council	Unitywater	QUU
<i>Customer Responsiveness and Service</i>					
Percentage of calls answered by an operator	no reference	no reference	no reference	≥ 80% of calls answered within 30 seconds	≥ 80% of calls answered within 30 seconds
Complaints acknowledged within 10 days (water and sewerage)	no reference	no reference	100% of written enquires acknowledged within 10 business days	100% of written enquires acknowledged within 10 days	no reference
Installation of new service connection	within 15 days of receiving request	no reference	no reference	within 15 days of receiving application and payment	within 15 days of receiving application and payment, 95% of the time

Source: GCCC (2012), LCC (2012), RCC (2012), QUU (2012a) and Unitywater (2013)

Stakeholder submissions

Logan City Council (2013a) submitted that water businesses prepare performance reports to the NWC that are subject to quality auditing processes. This should be used as a base rather than using a different set of indices. Gold Coast City Council (GCCC 2013) also submitted that use of the NPR framework should be considered to reduce the administrative and reporting burden.

GCCC submitted that a service quality performance framework should consider business characteristics including age and type of assets, geography and customer types.

QCA analysis

Within the categories stipulated in the Ministerial Direction, the QCA has identified a range of indicators considered to meet the criteria of relevance, comparability, cost effectiveness and measurability.

In assessing the customer value criterion, QCOSS's commentary on the preferred service indicators and the indicators used in entities' customer service standards are also taken into account. For comparability, QCA reviewed service quality indicators in the NPR and those adopted by other regulators and other agencies. The QCA also reviewed those indicators proposed by DEWS that had been established in consultation with industry through the Business Advisory Group. Cost effectiveness and measurability are considered indirectly through the choice of metrics and consistency with indicators used elsewhere.

Baseline indicators

These indicators relate to contextual data such as the nature and numbers of customers, distribution and retail services provided, characteristics of water and sewerage infrastructure facilities (e.g. pipeline sizes and lengths, reservoirs, sewerage treatment plants, etc.), and other relevant business characteristics.

Baseline indicators provide a basis for comparison between entities, by identifying similarities and differences in their physical and operational characteristics. These comparisons should help establish the drivers of material differences in costs across SEQ that are not comparable, or controllable, by the entities.

The NPR uses a number of baseline indicators, while the SQPR frameworks of ERA and ICRC also use some of these indicators. QCOSS did not comment on baseline indicators.

The QCA selected eight baseline indicators relating to number of customers and types of assets (Table 19) that define the cost drivers and facilitate benchmarking comparisons. Seven of the indicators are sourced from the NPR (NWC 2012). An additional indicator to measure the number of properties served per wastewater treatment plant is recommended as this is an area of potential interest in terms of future cost savings.

In response to Gold Coast City Council's comment concerning business characteristics, the QCA considers that indicators for age and type of assets are difficult to specify. No other jurisdictions have used such baseline indicators. Geographic and customer type differences are reflected to some extent in the selected baseline indicators.

Performance indicators

Performance indicators are considered in terms of the criteria, the indicators used in other jurisdictions, indicators already specified in customer service standards (CSS) of the five entities, QCOSS proposals and submissions.

Based on these submissions, the QCA has compiled a list of potential indicators that meet the objectives and criteria and can be used as a basis for initial service quality reporting.

The QCA's list of potential indicators, and justification, is detailed in Table 19 in the categories of:

- (a) water and sewerage supply system reliability - 13 indicators are recommended, which represent activities within the control of the entities, and reflect the effectiveness of their asset management strategies. It is noted that -
 - (i) five indicators are sourced from NPR and are widely used by other regulators
 - (ii) a non-NPR indicator for pressure and flow rate is considered of value to customers and was suggested by QCOSS (2012). All the SEQ entities include an indicator for pressure/flow rate in their customer service standards. An appropriate metric is required for flow-rate, and the ESC approach of flow-rate complaints per 100 customers would be relatively low-cost to collect and would be of value to customers. The proportion not meeting standards upon testing is an alternative metric.
 - (iii) response to urgent incidents is of value to customers and is used in the customer service standards of three of the entities
 - (iv) sewage outflows to a customers' property is another non-NPR indicator considered to be of interest to customers and required under SAMPs. It is a GSL indicator in Victorian retailers and Hunter Water.
 - (v) an indicator of odour complaints is also considered relevant and of value to customers. While not an NPR indicator, odour complaints have been adopted by IPART, ESC and ICRC. The three SEQ councils have used this indicator in their customer service standards.
 - (vi) frequency and duration of planned water interruptions is considered indicative of the entity's management of the system. It is noted however, that customers may have a greater degree of tolerance for these compared to unplanned interruptions. The NPR does not include planned interruptions, although ESC, ICRC and OTTER incorporate such indicators, and similar indicators are required in SAMPs, expressed as a ratio to unplanned interruptions. QCOSS also supported indicators of planned interruptions.
- (b) water quality/public health - four indicators are sourced from the NPR framework. These are controllable by the entities. Water quality was noted by QCOSS as being important. An indicator of water quality complaints is used by nearly all regulators, while ERA and IPART use some of the public health indicators.
- (c) water consumption and recycling activities - these are summarised in five indicators, sourced from NPR. These provide further contextual information - while the recycling water measures may be of limited interest to customers, they facilitate comparability and are required by the Ministerial Direction. Most of the selected indicators are used also by other regulators.
- (d) customer service and responsiveness - there are three specific indicators which are expected to be of interest to customers and measure the effectiveness of the entity's customer interface and its response. The NPR indicators C13 and C14 are reported also by ESC, IPART and ERA. An additional non-NPR indicator to measure response to complaints aligns with indicators used by IPART, OTTER and ICRC.

- (e) environmental - four indicators are recommended, all from NPR. These are descriptive indicators, and define the potential environmental impact of the entity. Indicators E1 to E4 are reported by IPART, ESC and ERA, are a form of baseline indicator and therefore assist in comparability and benchmarking.

In total, there are 38 recommended service quality indicators, 29 sourced from NPR and 9 additional indicators. For the most part, they reflect either the key cost drivers or the system reliability and customer service performance of the entity (Table 18).

This is considered to be a reasonable number of indicators and is fewer than those used by other regulators. This should ensure that the collection and reporting process is not onerous for the entities, and that the benefit of reporting indicators justifies the costs.

Of the nine non-NPR indicators, eight are already identified by some or all of the entities in their customer service standards or are based on data collected for SAMPs. The additional indicator, properties served per wastewater treatment plant, is a baseline indicator readily derived from existing information.

There are no indicators in the set that are not used already either in the NPR, SAMPs, the entities' Code-driven customer services standards, or in at least one other jurisdiction. Entities should therefore be familiar with the recommended indicators. The selected indicators are considered to be measurable and auditable, being broadly in line with NPR and those used by IPART and ESC which both audit their indicator sets.

The array of indicators is a starting point - following customer consultations, entities may identify additional indicators, which may be added, or metrics modified. The metrics and definitions are proposed to align with NPR where relevant, and otherwise are to be clarified in conjunction with DEWS and the entities prior to implementation. As in other jurisdictions, the selection of indicators and their definitions/metrics is an iterative process.

The proposed indicator set does not include any indicators for performance in managing hardship, pending DEWS' review of such indicators.

Table 19 Indicators of Service Quality Performance Reporting Framework

<i>Recommended Indicator</i>	<i>NPR Ref</i>	<i>Comment relating to criteria</i>
Baseline (Contextual Information)		
Connected residential properties – water supply (000s)	C2	Connections drive costs, facilitates comparability. Reported by ERA and ICRC.
Connected non-residential properties – water supply (000s)	C3	Connections drive costs, facilitates comparability. Reported by ICRC
Connected residential properties – sewerage (000s)	C6	Connections drive costs, facilitates comparability
Connected non-residential properties – sewerage (000s)	C7	Connections drive costs, facilitates comparability
Length of mains (km)	A2	Cost driver, facilitates comparability. Reported by ERA and ICRC.
Properties serviced per km of water main (no/km)	A3	Density explains differences in costs between rural and urban supply, facilitates comparability. Reported by ERA.
Properties served per km of sewer main (no/km)	A6	Density – explains differences in costs between rural and urban supply, facilitates comparability. Reported by ERA.

Recommended Indicator	NPR	Comment relating to criteria
Properties served per wastewater treatment plant (no/plant)	-	This is not a NPR indicator but is another measure of density to complement the above related to sewer mains. It can be easily derived from existing information.
Water and sewerage reliability and service		
Average frequency of unplanned interruptions – water (no per 1000 properties or per 100 km of mains)	C17	Customers value uninterrupted supply. Already in CSS for all 5 entities as constitutes a minimum condition of <i>Customer Water and Wastewater Code</i> . This indicator applied where assets are owned and maintained by the water entity.
Average duration of unplanned interruptions – water (min)	C15	Customers value uninterrupted supply. Already in CSS for all 5 entities as constitutes a minimum condition of <i>Customer Water and Wastewater Code</i> . This indicator applied where assets are owned and maintained by the water entity.
Breaks per 100km of main - water	A8	Indicator of asset performance, of value to customers, facilitates comparability. Already in Redland and Logan City Council CSS. It is accepted that this indicator may catch breaks not caused by the actions of the entity.
Response to urgent incidents (% within 1 hour)		Provides an indicator of asset management performance, of value to customers. A CSS of Redland City Council, QUU and Unitywater. A minimum condition of <i>Customer Water and Wastewater Code</i> .
Infrastructure leakage index (water losses)	A9	Indicator of asset performance, facilitates comparability. Already a Logan City Council CSS. A standard approach to measuring leakage is required to facilitate comparison.
Average frequency of planned interruptions – water (no per 1000 properties)	-	Provides an indicator of a controllable variable, reflects reliability of infrastructure, and is of interest to customers. Related data already collected for SAMPs.
Average duration of planned interruptions – water (min)	-	Provides an indicator of a controllable variable, reflects reliability of infrastructure, and is of interest to customers. Already a Logan City Council CSS.
Average notice of planned interruption (hours)	-	Provides an indicator of a controllable variable, reflects reliability of infrastructure, and is of interest to customers. Already a CSS for 4 SEQ entities.
Pressure/Flow rate complaints (number per 1000 properties)	-	Not a NPR indicator. Customers value minimum pressure and flow rate levels. ESC has adopted this indicator, and all 5 entities include it in their CSS as constitutes a minimum condition of <i>Customer Water and Wastewater Code</i> .
Average sewerage interruption (minutes)	C16	Customers value uninterrupted supply. Redland City Council CSS.
Sewerage main breaks and chokes (per 100km)	A14	Indicator of asset performance, facilitates comparability. Already a Logan City Council CSS.
Sewage overflows to customer property	-	This is not a national indicator but is required under SAMPs. It is considered of value to customers and is a cost driver. A GSL indicator in Victoria. A CSS of the 3 councils.
Sewerage odour complaints (per 1000 customers)	C11	NPR indicator refers to sewerage service complaints including odour complaints. Indicator is widely adopted by other jurisdictions, relevant for comparability. A CSS of the 3 councils.
Water Quality		
Water quality guidelines - Number of zones where compliance with ADWG was achieved, Text description	H1	Customers value technical water quality. A CSS of 4 SEQ entities.

Recommended Indicator	NPR	Comment relating to criteria
Number of zones where microbiological compliance was achieved	H2	Customers value technical water quality. A CSS of 4 SEQ entities.
Number of zones where chemical compliance was achieved	H4	Customers value technical water quality. A CSS of 4 SEQ entities.
Water quality complaints (no per 1000 properties)	C9	Customer complaints provides a useful check on technical compliance scores. A CSS of 4 SEQ entities.
Water consumption, recycling and reuse		
Total water supplied (ML)	W11	Cost driver
Average annual residential water supplied (kl/property)	W12	Cost driver and allows for the calculation of an average bill
Total sewage collected (ML)	W18	Cost driver
Total recycled water supplied (ML)	W26	Covers any use. Based on 'recycling' in Ministers' Direction – may be of interest of certain customers and drive certain costs for particular customers
Recycled water (percent of effluent recycled)	W27	Covers any use. Based on 'recycling and reuse' in Direction – may be of interest of certain customers and drive certain costs for particular customers
Customer responsiveness and service		
Total water and sewerage complaints (includes water quality, water service and sewerage service) (no per 1000 properties)	C13	Customer complaints provides an inverse indicator of customer satisfaction
Percentage of calls answered by an operator within 30 seconds (%)	C14	Commonly adopted indicator for customer service, enables comparability. A CSS of QUU and Unitywater.
Complaints responded to within 10 days (% of C13) water and sewerage	-	An indication of effectiveness in addressing customer concerns. Of value to customers. Similar indicators adopted by ICRC, IPART and OTTER. A CSS of QUU, GCCC and Unitywater.
Installation of new service connection (days)	-	An indication of effectiveness in addressing customer concerns. Of value to customers. A CSS of QUU, Unitywater and Redland CC.
Environment		
Per cent of sewage treated to primary level	E1	Indicators of value to customers, and useful for comparison purposes. Indicators adopted by IPART, ERA and ESC, and is relevant cost driver
Per cent of sewage treated to secondary level	E2	Indicators of value to customers, and useful for comparison purposes. Indicators adopted by IPART, ERA and ESC and is relevant cost driver
Per cent of sewage treated to tertiary level	E3	Indicators of value to customers, and useful for comparison purposes. Indicators adopted by IPART, ERA and ESC and is relevant cost driver.
Per cent of sewage volume treated that was compliant	E4	Indicators of value to customers, and useful for comparison purposes. Indicators adopted by IPART, ERA and ESC

Source: QCA 2013. NWC 2012.

Draft Recommendation

7.2 38 identified service quality indicators be monitored annually. Definitions be refined in conjunction with the entities and DEWS for the Final Report.

Composite indicators

The array of separate indicators provides transparency and enables stakeholders to assess whether the entity has exceeded or fallen short of the benchmark for each indicator. However, it is often difficult to establish the appropriateness of trade-offs in changes (particularly between service quality and costs).

A weighting of the indicators to give sub-indices or a single service quality performance index has the advantage of simpler presentation and high-level analysis of quality and cost. Over time this would provide a picture of changes in service quality and cost (price). Entities could report, for example, a single score for customer service and a single score for system reliability.

Issues, however, arise in developing the weights, compiling the data where different metrics apply and providing an interpretation for customers. Unless there is a benchmark target level understood by customers, indexes may have limited practicality.

Other jurisdictions

ESC (2012) proposed survey-based customer scores to measure customer loyalty (the net promoter score or NPS) and customer effort to initiate and resolve a service request (customer effort score or CES). However, these have not yet been applied.

Ofwat (2012a) uses serviceability indicators which are derived based on a composite of customer service, public health, environment and asset performance. Each company makes a judgement and assesses its status as either improving, stable, marginal or deteriorating.

Ofwat (2012b) also has a service incentive mechanism (SIM) based on two customer experience measures - a quantitative measure based on number of complaints, abandoned calls and unwanted phone contacts; and a qualitative component based on a survey of 200 customers each year. This gives a score out of 100, taken over a 3-year period. The score is used to determine price limits in the following year, with a range of +0.5% to -1.0%.

QCA analysis

For the SEQ entities, sub-indices for key areas of service quality could be developed, to progress towards, for example, composite indexes for assessing comparative performance, particularly over time, for network reliability and customer service.

The weights used in forming the indexes should reflect relative customer valuation of the various attributes. Weights could be proposed by entities as part of customer engagement and this work progressed prior to implementation of the monitoring regime. It is possible these weights would vary across SEQ entities.

The QCA does not propose to develop such composite indicators at this stage. The entities may consider such indicators on an individual basis.

7.4 Reporting procedures

Reporting and auditing

National commitments and positions

National performance reporting (NPR) is not mandatory. The NWC expects water utilities with more than 10,000 connected properties to participate.

The National Performance Framework 2011-12 Auditing Requirements and Audit Report Template set out the requirements which a water utility had to meet in order to report its results in the National Performance Report (NWC 2011).

In particular, parties are required to undertake a comprehensive audit of the data collected by each urban water utility at a minimum of three yearly intervals.

Other jurisdictions

In other jurisdictions – NSW, Victoria, WA, Tasmania – the economic regulator collates and audits information returns and prepares annual water industry performance reports. In NSW, the Office of Water also publishes annual performance monitoring and benchmarking reports for non-metropolitan water and sewerage service providers that are not subject to review or oversight by IPART.

Existing arrangements in SEQ

Only QUU and Unitywater reported as part of the NPR in 2010-11 and 2011-12. DEWS, in, progressing state-wide reforms to replace various planning processes with annual performance reporting, propose that entities with more than 10,000 connections will be required to report annually on NPR and additional indicators. For smaller providers, DEWS has proposed a subset of indicators drawn from the NPR as well as additional indicators.

The SEQ Customer Code requires entities to publish and maintain CSS on their website. There is no requirement for entities to report performance against their service standards.

Qldwater co-ordinates the SWIM program to facilitate the reporting of about 200 water and sewerage services indicators which are passed to Commonwealth and State agencies. NPR reporting entities are to submit their data to SWIM by 30 September each year.

QCA analysis

The Ministerial Direction requires a SQPR framework designed to inform customers. The recommended indicators are targeted for this purpose, and in concert with performance monitoring reporting, provide scope to analyse costs, prices and service levels which are considered interdependent. Cost related indicators are covered in Chapter 4.

It is noted that the entities are to be required to report on service quality to various agencies, including DEWS. Any requirement for a further report to QCA adds to administration costs and the level of 'red-tape'. It is therefore proposed that DEWS, through SWIM, act as the collection agency and that the indicators, reported annually, be provided to the QCA through these agencies. The exact process for this will be determined in the implementation phase.

Although the indicators are auditable, the QCA does not propose a scheduled auditing process. In a light-handed framework, complex auditing would add to administration costs and the benefits may not justify such costs. It is expected that DEWS may perform such a role as technical regulator. However, the QCA may request explanatory information regarding selected performance indicators relevant to the exercise of monopoly power, and may request

additional information from entities where parameters are linked to cost drivers. These include baseline indicators, water and sewerage reliability and service, and water quality indicators.

The QCA recommends that the SEQ entities place their service quality performance reports on their respective websites to allow comparison with target performance levels.

The QCA recommends that the entities' performance against the service quality indicators be subject to comparative analysis over time and reported annually to the Minister for Energy and Water Supply. Data envelopment analysis (DEA) or other forms of efficiency frontier assessment may be used to assist.

Draft Recommendation

- 7.3 Entities be required to publish annually on their websites their performance against the identified 38 service quality indicators.**
- 7.4 The QCA request additional information for service quality indicators where necessary to identify whether there is an exercise of market power.**
- 7.5 The entities' performance against the service quality indicators be subject to comparative analysis by the QCA.**

Timing

Performance indicators provide only a historical view of how a water service provider has performed. By using only performance monitoring, the first sign of any issues is likely to be when the standard deteriorates or there is a failure to meet target levels. There are few lead KPIs that can be used to forecast future performance or that can be used to gain an insight into how a water service provider is being run and its technical capability to continue to provide its services into the future (Cardno 2012).

The information from SWIM is entered into the SWIM database in early September, reviewed by DEWS and typically finalised by end October. This is consistent with the QCA's recommended reporting date of 31 October and would allow the QCA to complete its analysis and reporting by 31 March the following year in order for entities to address any implications for their costs for the forthcoming year.

NPR information is not available till March-April the year following the reporting year (for example, March 2013 for the 2011-12 reporting year). This is too late for it to be useful for entities to analyse and incorporate in budget processes for the next financial year. Any differences in performance reporting could be addressed in conjunction with the entities as required. Although it may be possible to also incorporate any responses, that should be at the entities' discretion.

Draft Recommendation

- 7.6 Service quality reports be compiled each year and placed on entities' websites by 31 October.**

7.5 Performance assessment and enforcement

Public disclosure and transparency may be insufficient to modify unacceptable behaviour. More rigorous sanctions depend on the overall legislative and regulatory framework and could include sanctions, fines, and requirements to address failures.

Other jurisdictions

IPART (2013b) employs a water licence compliance policy to enforce licence conditions including service quality standards. IPART may respond to contraventions by requiring more frequent compliance reports and audits, an undertaking from the operator or development and implementation of a remediation plan. A fine may apply where a licensee has knowingly contravened conditions.

In Victoria, many of the service quality indicators (e.g. connections, system reliability, service quality, billing), are identified in the Customer Service Code for Urban Water Businesses (ESC 2013). The ESC monitors and audits reports and can enforce compliance with the code.

ERA (2012) informs the Minister on any non-compliance, with breaches classed as minor, moderate and major.

In Tasmania, OTTER (2012) publishes an annual State of the Industry Report, which includes pricing and financial indicators, and identifies priorities for improving performance. Public reporting is used as an incentive for the industry to maintain and improve performance.

GSL schemes

Guaranteed Service Level (GSL) schemes are in place in some jurisdictions, including for Hunter Water (planned and unplanned water interruptions, water quality and pressure incidents, and wastewater overflow) and the Victorian metropolitan retailers (unplanned and planned water and sewerage interruptions and sewerage spills on property).

ESC (2011) noted that the cost of implementing a GSL scheme is small relative to other service improvement projects. In Victoria, a typical rebate for unplanned interruptions not restored within 5 hours is \$50, and a rebate for a sewage spill to property is \$1000.

Owat (2012b) uses a combined indicator to penalise providers by adjusting their price limits in ensuing years (as noted above in reference to 'composite indicators').

QCA analysis

Public reporting by an independent economic regulator, in concert with price, revenue and cost monitoring, provides a level of transparency about performance that can provide a basis for stakeholders to exert pressure for change where this is warranted.

Reporting could be complemented by media releases from the regulator in regard to identified compliance failures.

Publication of comparative service quality performance indicators helps address information asymmetry by making consumers more aware of how other distributors are performing relative to their own. This can place pressure on the local provider to improve its performance.

Other complementary mechanisms for compliance and enforcement of service standards could include QCA media releases, advising Ministers of material breaches, payment of fines for breaching regulatory obligations (ESCOSA 2013).

Overall performance monitoring and the constituent SQPR must be complemented by the prospect of detailed cost of service review, and a focus on other inputs and processes as outlined in Chapter 4.

Depending upon the nature of the reports, a cost of service review could be triggered where material failures or differences between changes in cost, price and/or service standards occurred, where materiality reflects a variation of 10% or more from that forecast or budgeted. Moreover, the QCA proposes 'watch' and 'all clear' ratings where the differences or changes were deemed concerning (but not material), or not concerning and free of any concerns, respectively.

Before triggering a cost of service review, entities will have the opportunity to provide more information to explain a service quality deterioration. For example, the lower standards may be temporary due to climatic impacts or unforeseen one-off system failures. QCA will consult with the entities in regard to such circumstances.

Further, the QCA will liaise with DEWS, as the technical regulator, in regard to service quality changes.

GSL Schemes

Guaranteed Service Level (GSL) schemes that are in place in some NSW, Victorian and Tasmanian water entities are established voluntarily by the relevant entities. They apply typically to a small number of high value indicators of importance to customers: for example duration of unplanned water supply interruptions and sewage overflows to property.

QCOS (2012) commented that a GSL scheme should be applied in Queensland. Such schemes involve additional costs in terms of administration which need to be taken into account, but the benefits in terms of incentives for efficiencies should offset these costs.

SEQ entities may consider implementing GSL schemes from 2015. Entities should consult with customers to identify the indicators that are easily definable and reliable. Rebates should be a meaningful amount to provide an incentive to improve services.

Draft Recommendation

7.7 Service quality performance:

- (a) be addressed in public annual performance reports by the QCA (including attendant media statements)**
- (b) be subject to specific advices by the QCA to the Minister**
- (c) material deterioration in performance trigger a full cost of service review.**

7.8 Entities should consult with customers to determine scope for a Guaranteed Service Level (GSL) scheme for high value indicators.

APPENDIX A - MINISTERS' DIRECTION NOTICE

QUEENSLAND COMPETITION AUTHORITY ACT 1997
SECTIONS 10(e)
MINISTERS' DIRECTION NOTICE

Referral

As the responsible Ministers, pursuant to section 10(e) of the *Queensland Competition Authority Act 1997* (the QCA Act), we direct the Queensland Competition Authority (QCA) to investigate and report on a long-term regulatory framework for the monopoly distribution and retail water and sewerage activities (the activities) of the following entities (the DRs):

- Northern SEQ Distributor-Retailer (Unitywater);
- Central SEQ Distributor-Retailer (Queensland Urban Utilities);
- Logan City Council;
- Redland City Council; and
- Gold Coast City Council;

For the purposes of the investigation and report, the Authority is directed to investigate and report on the regulatory framework which would apply from 1 July 2015, including reporting requirements, based on the following overarching regulatory objective:

'To protect the long term interests of the users of SEQ water and sewerage services by ensuring the prices of these services reflect prudent and efficient costs, while promoting efficient investment in and use of these services, having regard to service reliability, safety and security over the long term'.

For the purposes of developing and implementing such a framework, the QCA is directed to:

- a) develop a regulatory framework for the identified businesses and the QCA to operate from 1 July 2015 onwards – this must set out:
 - i. pricing principles to apply to the industry (including water, sewerage, trade-waste, recycled water services and stormwater re-use services);
 - ii. form of regulation; and
 - iii. the preferred length of the regulatory period.
- b) outline how the regulatory framework will be implemented on an ongoing basis;
- c) assist the businesses to develop a strategic approach to long term investment in the water sector; and
- d) assist with transition toward best practice stakeholder engagement.

Conduct of the QCA pursuant to this referral

1. The development of the regulatory framework should consider the following over-arching principles:
 - a) ensure the costs of implementing the regulatory regime do not exceed the benefits;
 - b) appropriate levels of customer engagement for the framework;
 - c) sufficient co-ordination with other regulatory and regulatory review processes taking into consideration things such as Netserv plans, Total Water Cycle Management Plans, environmental regulation and land use planning;

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- d) ensure that opportunities for a whole-of-sector approach to solutions for the industry are encouraged under the regulatory framework (including non-infrastructure and efficient demand side management initiatives).
 - e) taking account of the different characteristics, in particular, size of the DRs.
2. The framework should recommend treatment of the following regulatory parameters:
 - a) the roll-forward of the regulatory asset base (RAB), within and across regulatory periods. A revaluation of the initial RAB (established for the purpose of the 2010-13 price monitoring period) is not to be considered;
 - b) the Weighted Average Cost of Capital (WACC);
 - c) calculating the return of capital;
 - d) assessing efficient and prudent operating and capital costs, including the process the Authority will apply in assessing prudence and efficiency;
 - e) principles to guide the treatment of capital revenues, including gifted assets and infrastructure charges; and
 - f) incentive mechanisms to support innovation and other efficiencies.
 3. In developing and implementing the regulatory framework, the following supplementary regulatory objectives will be considered:
 - a) the form of prices oversight applied should be proportionate with the risk of misuse of market power by the DRs to ensure that the costs of implementing the framework do not exceed the benefits;
 - b) the framework should be developed to allow for the management of potential price shocks for customers, including:
 - i. price paths within and across regulatory periods, where appropriate;
 - ii. changes in pricing policies, including tariff structures;
 - iii. the provision of subsidies and how they may be treated;
 - c) the form of prices oversight applied should seek to minimise the administrative burden on DRs, including the number of, and detail required in, information returns provided to the Authority and duplication in reporting requirements;
 - d) the Authority must develop service quality performance reporting, in consultation with the DRs and other stakeholders, based on service quality indicators of relevance to residential and non-residential customers, with the objective of informing these customers about the comparative performance of SEQ DRs.

In doing so, the QCA should ensure that the framework is not excessively onerous or costly to implement by focusing on a reasonable range of meaningful indicators in the following areas: baseline (contextual) information; water and sewerage network reliability and service (including water) quality; water consumption, recycling and reuse; customer responsiveness and service;
 - e) the treatment of aggregate annual revenue under/over-recoveries in relation to core water and sewerage services should be considered as part of the permanent price monitoring framework in a manner that balances the interests of the DRs and their customers;
 - f) the long-term framework should facilitate the DRs moving to more light-handed prices oversight over time; and
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-
- g) a primary focus of the long-term framework should be on assisting customer understanding of how the costs of water and sewerage services influence prices by;
- i. identifying the key drivers of existing retail price levels and annual price increases, particularly where prices increase by more than the rate of general inflation; and
 - ii. reinforcing and promoting understanding of accountabilities for retail prices and service outcomes.

Consultation

The Authority must undertake an open consultation process including all relevant parties and consider all submissions.

For this purpose, the Authority must prepare, in consultation with relevant stakeholders, and publish, a work program, which provides for the release of appropriately sequenced position papers (incorporating draft recommendations).

Consistent with section 34 of the QCA Act, all information papers, submissions and the Final Report must be published on the Authority's website.

Timetable

The Authority must provide to the Ministers and the Minister for Energy and Water Supply a Final Report by 30 September 2014.



TIM NICHOLLS
Treasurer and Minister for Trade



JARROD BLEIJIE
Attorney-General and Minister for Justice

APPENDIX B- OVERVIEW OF SERVICE QUALITY AND PERFORMANCE - NPR INDICATORS AND OTHER JURISDICTIONS

Appendix B lists all NPR indicators and identifies that are used by other regulators in State-based performance reporting.

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPs)</i>
WATER RESOURCES							
Sources of water							
Volume of water sourced from surface water (ML)	W1	YES	YES	YES	YES	-	-
Volume of water sourced from groundwater (ML)	W2	YES	YES	YES	-	-	-
Volume of water sourced from desalination (ML)	W3	YES	YES	YES	-	-	-
Volume of water sourced from desalination of marine water (ML)	W3.1	-	-	-	-	-	-
Volume of water sourced from desalination of groundwater (ML)	W3.2	-	-	-	-	-	-
Volume of water sourced from desalination of surface water such as dams, rivers or irrigation channels (ML)	W3.3	-	-	-	-	-	-
Volume of water sourced from recycling (ML)	W4	YES	YES	-	YES	-	-
Volume of water received from bulk supplier (ML)	W5	YES	YES	-	-	-	-
Volume of potable water received from bulk supplier (ML)	W5.1	-	-	-	-	-	-
Volume of non-potable water received from bulk supplier (ML)	W5.2	-	-	-	-	-	-
Volume of bulk recycled water purchased (ML)	W6	-	YES	-	-	-	-
Total sourced water (ML)	W7	YES	YES	-	-	-	-
Use of water supplied							
Volume of water supplied – Residential (ML)	W8	YES	YES	-	-	-	-
Volume of potable water supplied – Residential (ML)	W8.1	-	-	-	-	-	-

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPs)</i>
Volume of non-potable water supplied – Residential (ML)	W8.2	-	-	-	-	-	-
Volume of water supplied – Commercial, municipal and industrial (ML)	W9	YES	YES	-	-	-	-
Volume of potable water supplied – Commercial, municipal and industrial (ML)	W9.1	-	-	-	-	-	-
Volume of non-potable water supplied – Commercial, municipal and industrial (ML)	W9.2	-	-	-	-	-	-
Volume of water supplied – Other (ML)	W10	YES	-	-	-	-	-
Volume of non-revenue water (ML)	W10.1	-	-	-	-	-	-
Volume of non-potable water supplied – Other (ML)	W10.2	-	-	-	-	-	-
Volume of water supplied – Managed aquifer recharge (ML)	W10.3	-	-	-	-	-	-
Volume of water supplied – Agricultural irrigation (ML)	W10.4	-	-	-	-	-	-
Total urban water supplied (ML)	W11	-	-	YES	-	-	-
Total urban potable water supplied (ML)	W11.1	-	-	-	-	-	-
Total urban non-potable water supplied (ML)	W11.2	-	-	-	-	-	-
Total volume of potable water produced (ML)	W11.3	-	-	-	-	-	-
Average annual residential water supplied (kL/property)	W12	YES	YES	YES	-	-	-
Volume of water supplied – Environmental flows (ML)	W13	-	-	-	YES (GL, %)	-	-
Volume of bulk water exports (ML)	W14	-	YES	-	-	-	-
Volume of potable bulk water exports (ML)	W14.1	-	YES	-	-	-	-
Volume of non-potable bulk water exports (ML)	W14.2	-	YES	-	-	-	-
Volume of bulk recycled water exports (ML)	W15	-	YES	-	-	-	-
Sewage collected							

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPS)</i>
Volume of sewage collected – Residential sewage, non-residential sewage and non-trade waste (ML)	W16	-	-	-	-	-	-
Volume of sewage collected –Trade waste (ML)	W17	-	-	-	-	-	-
Total sewage collected (ML)	W18	YES	YES	-	YES	-	-
Volume of sewage supplied to other infrastructure operators (ML)	W18.1	-	-	-	-	-	-
Volume of sewage received from other infrastructure operators (ML)	W18.2	-	-	-	-	-	-
Volume of sewage taken from sewer mining (ML)	W18.3	-	-	-	-	-	-
Volume of sewage measured at inlet to treatment works (ML)	W18.4	-	-	-	-	-	-
Volume of treated sewage effluent (ML)	W18.5	-	-	-	-	-	-
Sewage collected per property (kL/property)	W19	YES	-	YES	YES	-	-
Uses of recycled water and stormwater							
Volume of recycled water supplied – Residential (ML)	W20	YES	-	-	-	-	-
Volume of recycled water supplied – Commercial, municipal and industrial (ML)	W21	YES	-	YES	-	-	-
Volume of recycled water supplied – Agricultural (ML)	W22	YES	-	YES	-	-	-
Volume of recycled water supplied – Environmental (ML)	W23	YES	-	YES	-	-	-
Volume of recycled water supplied – On-site (ML)	W24	YES	-	YES	-	-	-
Volume of recycled water supplied – Other (ML)	W25	-	-	YES	-	-	-
Volume of recycled water supplied – Managed aquifer recharge (ML)	W25.1	-	-	-	-	-	-
Total recycled water supplied (ML)	W26	-	YES	YES	-	-	-
Recycled water (per cent of effluent recycled) (%)	W27	-	YES	YES	-	-	-

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPs)</i>
Total volume of urban stormwater discharges from a stormwater discharge point (ML)	W28	-	-	-	-	-	-
Volume of urban stormwater supplied to other infrastructure operators (ML)	W28.1	-	-	-	-	-	-
Volume of urban stormwater received from other infrastructure operators (ML)	W28.2	-	-	-	-	-	-
Volume of urban stormwater supplied for managed aquifer recharge (ML)	W28.3	-	-	-	-	-	-
Volume of urban stormwater used (ML)	W28.4	-	-	-	-	-	-
Total volume of treated and untreated sewage discharges from a sewage discharge point (ML)	W29	-	-	-	-	-	-
ASSET DATA							
Number of water treatment plants providing full treatment (No.)	A1	-	YES	-	-	-	-
Length of water mains (km)	A2	-	-	YES	YES	-	-
Properties served per km of water main (No./km)	A3	-	-	YES	-	-	-
Number of sewage treatment plants (No.)	A4	-	YES	-	-	-	-
Length of sewerage mains and channels (km)	A5	-	-	YES	-	-	-
Properties served per km of sewer main (No./km)	A6	-	-	YES	-	-	-
Number of recycled water treatment plants (No.)	A7	-	-	-	-	-	-
Water main breaks (No. per 100 km of water main)	A8	YES	YES	YES	YES	-	YES
WATER LOSS							
Infrastructure leakage index (ILI)	A9	-	YES	-	-	-	-
Real losses (L/service connection/day)	A10	YES	YES	-	-	-	YES
Real losses (kL/km water main/day)	A11	-	YES	-	-	-	-

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPs)</i>
Sewerage mains breaks and chokes (No. per 100 km of sewer main)	A14	YES	YES	YES	YES (number)	YES	YES
Property connection sewer breaks and chokes (No. per 1000 properties)	A15	-	-	-	YES (number)	YES	-
CUSTOMERS							
Population receiving water supply services (000s)	C1	-	-	-	-	-	-
Connected Residential properties – Water supply (000s)	C2	-	-	YES	YES	-	-
Connected Non-residential properties – Water supply (000s)	C3	-	-	-	YES	-	-
Total connected properties – Water supply (000s)	C4	-	-	-	-	-	-
Population receiving sewage services (000s)	C5	-	-	-	-	-	-
Connected Residential properties – Sewerage (000s)	C6	-	-	-	-	-	-
Connected Non-residential properties – Sewerage (000s)	C7	-	-	-	-	-	-
Total connected properties – Sewerage (000s)	C8	-	-	YES	-	-	-
Water quality complaints (No. per 1000 properties)	C9	YES	YES	YES	YES (number)	-	YES
Water service complaints (No. per 1000 properties)	C10	-	YES /100 customers	YES	YES (number)	-	-
Sewerage service complaints (No. per 1000 properties)	C11	-	YES /100 customers	YES	YES (number)	-	-
Billing and account complaints – water and sewerage (No. Per 1000 properties)	C12	-	YES /100 customers	YES	YES (number)	-	-
Total water and sewerage complaints (No. per 1000 properties)	C13	YES	YES	YES	-	-	-
Percentage of calls answered by an operator within 30 seconds (%)	C14	YES	YES	YES	-	-	-
Average duration of an unplanned interruption – Water (minutes)	C15	YES	YES	YES	YES	YES	YES

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPs)</i>
Average sewerage interruption (minutes)	C16	YES	-	-	YES	-	-
Incidence of unplanned interruptions – Water (No. per 1000 properties)	C17	YES	YES	YES	YES	-	YES
Number of restrictions applied for non-payment of water bill (No. per 1000 properties)	C18	YES	YES	-	-	YES	-
Number of legal actions applied for non-payment of water bill (No. per 1000 properties)	C19	-	YES	-	-	-	-
ENVIRONMENT							
Per cent of sewage treated to a primary level (%)	E1	YES	YES	YES	-	-	-
Per cent of sewage treated to a secondary level (%)	E2	YES	YES	YES	-	-	-
Per cent of sewage treated to a tertiary or advanced level (%)	E3	YES	YES	YES	-	-	-
Per cent of sewage volume treated that was compliant (%)	E4	YES	YES	YES	-	-	-
Number of sewage treatment plants compliant at all times (e.g. 5 of 6)	E5	-	YES	YES	-	-	-
Public disclosure of your sewage treatment plant's performance (yes/no)	E6	-	-	-	-	-	-
Compliance with environmental regulator – Sewerage (yes/no)	E7	-	-	-	-	-	-
Per cent of biosolids reused (%)	E8	YES	YES	-	-	-	-
Greenhouse gas emissions – Water (tonnes CO ₂ -equivalents per 1000 connected water properties)	E9	-	YES	-	-	-	-
Greenhouse gas emissions – Bulk utility water (tonnes CO ₂ -equivalents per ML)	E9.1	-	YES	-	-	-	-
Greenhouse gas emissions – Sewerage (tonnes CO ₂ -equivalents per 1000 connected sewerage properties)	E10	-	YES	-	-	-	-
Greenhouse gas emissions – Bulk utility sewerage (tonnes CO ₂ -equivalents per ML)	E10.1	-	YES	-	-	-	-

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPs)</i>
Net Greenhouse gas emissions – Other (net tonnes CO ₂ -equivalents per 1000 connected water properties)	E11	-	YES	-	-	-	-
Net greenhouse gas emissions – Bulk utility other (net tonnes CO ₂ -equivalents per ML)	E11.1	-	YES	-	-	-	-
Total net greenhouse gas emissions (net tonnes CO ₂ -equivalents per 1000 connected water properties)	E12	YES	YES	-	-	-	-
Total net greenhouse gas emissions – Bulk utility (net tonnes CO ₂ -equivalents per ML)	E12.1	-	YES	-	-	-	-
Sewer overflows reported to environmental regulator (No. per 100 km of sewer main)	E13	-	-	YES	-	-	-
PRICING AND FINANCE							
Water							
Tariff structure (text) (Description)	P1	-	-	-	-	-	-
Free water allowance (kL/property)	P1.1	-	-	-	-	-	-
Fixed charge (\$/property) (Basis for charge)	P1.2	-	-	-	YES	-	-
Usage charge 1st step (\$/kL) Up to kL	P1.3	-	-	-	YES	-	-
Usage charge 2nd step (\$/kL) From kL to kL	P1.4	-	-	-	YES	-	-
Usage charge 3rd step (\$/kL) From kL to kL	P1.5	-	-	-	-	-	-
Usage charge 4th step (\$/kL) From kL to kL	P1.6	-	-	-	-	-	-
Usage charge 5th step (\$/kL) From kL to kL	P1.7	-	-	-	-	-	-
Usage charge 6th step (\$/kL) From kL to kL	P1.8	-	-	-	-	-	-
Usage charge 7th step (\$/kL) From kL to kL	P1.9	-	-	-	-	-	-
Usage charge 8th step (\$/kL) From kL to kL	P1.10	-	-	-	-	-	-
Usage charge 9th step (\$/kL) From kL to kL	P1.11	-	-	-	-	-	-

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPs)</i>
Special levies (\$/property) (Description)	P1.12	-	-	-	-	-	-
Income from special levies retained by utility? (yes/no)	P1.13	-	-	-	-	-	-
Annual bill based on 200 kL/a (\$)	P2	-	-	-	-	-	-
Average annual residential water supplied (kL)	P2.1	-	-	-	-	-	-
Typical residential bill (\$)	P3	-	-	-	-	-	-
Number of meter readings per annum (No.)	P3.1	-	-	-	-	-	-
Number of bills per annum (No.)	P3.2	-	-	-	-	-	-
Sewerage							
Tariff structure	P4	-	-	-	-	-	-
Fixed charge (\$/property)	P4.1	-	-	-	YES	-	-
Usage charge (\$/kl)	P4.2	-	-	-	-	-	-
Special levies (\$/property)	P4.3	-	-	-	-	-	-
Income from special levies retained by utility? (yes/no)	P4.4	-	-	-	-	-	-
Annual bill based on 200kL/a (\$)	P5	-	-	-	-	-	-
Typical residential bill (\$)	P6	-	-	-	-	-	-
Number of bills per annum (No.)	P6.1	-	-	-	-	-	-
Water supply and sewerage							
Annual bill based on 200kL/a (\$)	P7	-	-	-	-	-	-
Typical residential bill (\$)	P8	-	-	-	YES	-	-
Revenue							
Total Revenue – Water (\$000)	F1	-	-	-	YES	-	-
Total Revenue – Sewerage (\$000)	F2	-	-	-	YES	-	-

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPS)</i>
Total Income for utility (\$000)	F3	-	-	-	-	-	-
Residential revenue from usage charges – Water (%)	F4	-	-	-	-	-	-
Revenue per property for water supply services (\$/property)	F5	-	-	-	-	-	-
Revenue for water supply services (\$/ML) – Bulk utility	F5.1	-	-	-	-	-	-
Revenue per property for sewerage services (\$/property)	F6	-	-	-	YES	-	-
Revenue for sewerage services – Bulk utility (\$/ML)	F6.1	-	-	-	-	-	-
Income per property for utility (\$/property)	F7	-	-	-	-	-	-
Income for whole of utility – Bulk utility (\$/ML)	F7.1	-	-	-	-	-	-
Revenue from community service obligations (\$)	F8	-	-	-	-	-	-
Written-down value of fixed water supply assets (\$000s)	F9	-	-	-	-	-	-
Written-down value of fixed sewerage assets (\$000s)	F10	-	-	-	-	-	-
Costs							
Operating cost – Water (\$/property)	F11	-	-	-	-	-	-
Operating cost – Bulk utility water (\$/ML)	F11.1	-	-	-	-	-	-
Operating cost – Sewerage (\$/property)	F12	-	-	-	-	-	-
Operating cost – Bulk utility sewerage (\$/ML)	F12.1	-	-	-	-	-	-
Combined operating cost water and sewerage (\$/property)	F13	YES	-	-	-	-	-
Combined operating cost – Bulk utility water and sewerage (\$/ML)	F13.1	-	-	-	-	-	-
Capex							
Total water supply capital expenditure (\$000s)	F14	-	-	-	YES	-	-
Total sewerage capital expenditure (\$000s)	F15	-	-	-	YES	-	-

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPs)</i>
Total capital expenditure for water and sewerage (\$000s)	F16	-	-	-	-	-	-
Water supply capital expenditure (\$/property)	F28	-	-	-	-	-	-
Water supply capital expenditure – Bulk utility (\$/ML)	F28.1	-	-	-	-	-	-
Sewerage capital expenditure (\$/property)	F29	-	-	-	-	-	-
Sewerage capital expenditure – Bulk utility (\$/ML)	F29.1	-	-	-	-	-	-
Financial data							
Economic real rate of return – Water (ratio)	F17	-	-	-	-	-	-
Economic real rate of return – Sewerage (ratio)	F18	-	-	-	-	-	-
Economic real rate of return – Water and sewerage (ratio)	F19	-	-	-	-	-	-
Dividend (\$000s)	F20	-	-	-	-	-	-
Dividend payout ratio (%)	F21	-	-	-	-	-	-
Net debt to equity %	F22	-	-	-	-	-	-
Interest cover (ratio)	F23	-	-	-	-	-	-
Net profit after tax (NPAT) (\$000s)	F24	-	-	-	-	-	-
NPAT Ratio (%)	F30	-	-	-	-	-	-
Community service obligations (\$000s)	F25	-	-	-	-	-	-
Capital works grants – Water (\$000s)	F26	-	-	-	-	-	-
Capital works grants – Sewerage (\$000s)	F27	-	-	-	-	-	-
PUBLIC HEALTH							
Water quality guidelines (text)	H1	-	-	-	-	-	-
Number of zones where microbiological compliance was achieved	H2	-	-	YES	-	-	-
% of population where microbiological compliance was achieved	H3	YES	-	YES	-	-	-

<i>NPR Indicators</i>	<i>NPR Reference</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS (SAMPS)</i>
(%)							
Number of zones where chemical compliance was achieved	H4	YES	-	-	-	-	-
Risk-based drinking water management plan externally assessed? (yes/no)	H5	-	-	-	-	-	-
Risk-based drinking water management plan (Please specify plan in place e.g. ISO9001, HACCP, ADWG Aquality assessment)	H6	-	-	-	-	-	-
Public disclosure of drinking water quality performance (yes/no)	H7	-	-	-	-	-	-

Source: NWC (2013)

APPENDIX C: OVERVIEW OF SERVICE QUALITY AND PERFORMANCE - NON-NPR INDICATORS AND OTHER JURISDICTIONS/SAMPS

Appendix C lists the non-NPR indicators that are used by other regulators in State-based performance reporting.

<i>Non-NPR Indicators</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS - SAMPS</i>
LOSSES						
Sewer main breaks and chokes caused by tree-roots (Number)	-	-	-	YES	-	-
Sewer inflow and infiltration (ratio)	-	-	-	-	-	YES
CUSTOMERS						
Non-payment restrictions (days)	-	YES	-	-	YES	-
Debt levels for customers subject to restrictions and legal action (\$)	-	YES	-	-	YES (res and non-res)	-
Hardship grants (no)	-	YES	-	-	YES	-
Physical visits (no)	-	YES	-	-	-	-
Payments on time (%)	-	-	-	-	YES	-
Flexible payment plans (number)	-	-	-	-	YES	-
Number on payment plans restricted in previous 24 months	-	-	-	-	YES	-
Customers using direct debit (Number)	-	-	-	-	YES	-
Customers owing more than \$500	-	-	-	-	YES	-
Concession recipients (number)	-	-	-	-	YES	-
Water quality incidents (/1000 properties)	-	-	-	-	-	YES
Unplanned interruptions - water	YES (min/customer)	-	-	YES (number)	-	-

<i>Non-NPR Indicators</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS - SAMPS</i>
Water pressure failure (no of properties)	YES	-	YES (% to standard)	-	-	YES (Minimum)
Bursts and leaks (Priority 1,2, 3)	-	YES	-	YES (damage to property)	YES	-
Responses within 24 hours	-	-	-	YES	-	-
Minutes to respond to bursts and leaks	-	YES	-	-	-	-
Time taken to rectify bursts and leaks (average minutes)	-	YES	-	-	-	YES
Water supply interruptions, planned and unplanned (/100km of water main)	-	YES	-	-	YES	-
Water supply restored within 5 hours (%)	-	YES	-	-	YES	YES
Customers receiving 1,2,3,4,5, and 6+ water supply interruptions in a year	-	YES	-	-	YES (>5)	YES (>1)
Customers affected by interruptions longer than 5 hours	YES	YES	-	-	-	-
Customers affected by interruptions longer than 1 hour	YES	-	YES (% not affected)	-	-	-
Customers affected by planned interruptions in peak hours	-	YES	-	-	-	-
Non-revenue water (unaccounted for)	-	YES	-	YES (%)	YES (%)	-
Planned interruptions - water (number)	-	-	-	YES	-	-
Duration of planned water supply interruption (minutes)	-	-	-	YES	YES	YES
Planned interruptions per 1000 properties	-	-	-	YES	YES	-
Planned interruption average (minutes/property)	-	-	-	YES	YES	-
Planned interruptions relative to unplanned	-	-	-	-	-	YES
Unplanned interruptions - sewerage (number)	-	-	-	YES	-	--
Sewerage outages per 1000 properties	-	-	-	YES	-	-
Total response time to sewerage blockage (minutes)	-	YES	-	-	YES	-

<i>Non-NPR Indicators</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS - SAMPS</i>
Time taken to repair sewerage blockage (minutes)	-	YES	-	-	-	-
Customers receiving 3 sewerage blockages in a year	-	YES	-	-	YES	-
Sewer spills from reticulation and branch sewers	-	YES	-	-	YES	-
Sewer spills from reticulation and branch sewers fully contained within 5 hours	-	YES	-	-	YES	-
Sewer spills to a customer's property	-	YES	-	-	-	YES
Sewer supply customer interruptions restored within x hours	-	YES	-	-	-	-
Customer sewer spills in a house not contained within 1 hour	-	YES	-	-	-	-
Number of events and volume of sewage spilt from emergency relief structures	-	YES	-	-	-	-
Sewerage treatment standards (% of samples compliant)	-	YES	-	-	-	-
Uncontrolled dry weather sewerage overflows (no of properties)	YES	-	-	-	-	-
Properties experiencing 3 or more dry weather overflows	YES	-	-	-	-	-
Sewerage spills (any) /100km main	-	-	-	-	-	YES
Call connect time to operator	-	YES	-	-	-	-
Flow rate complaints (/100 customers)	-	YES	-	-	-	YES (Minimum, % of connections)
Sewerage odour complaints (/100 customers)	YES (Number)	YES	-	YES (number)	-	YES (/1000 connections)
Other complaints (/100 customers)	-	YES	-	-	-	-
GSL payments or rebates paid (number)	-	YES	-	YES	-	-
Value of Rebates (\$)	-	-	-	YES	-	-
Instalment plans (no)	-	YES	-	-	-	-
Complaints resolved within 10 days (% 2-10 days, %<2 days) (Sydney Water)	YES	-	-	-	-	-
Complaints with substantive response within 10 days (Hunter Water)	YES	-	-	-	-	-

<i>Non-NPR Indicators</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS - SAMPS</i>
Complaints referred to ombudsman (Number)	YES	-	-	-	-	-
Complaints - property damage - water	-	-	-	YES (number)	-	-
Complaints - property damage (sewerage)	-	-	-	YES (number)	-	-
Complaints - meters - water	-	-	-	YES (number)	-	-
Complaints - failure to provide notice - water	-	-	-	YES (number)	-	-
Complaints - failure to provide notice - sewerage	-	-	-	YES (number)	-	-
Complaints - unplanned interruptions - water	-	-	-	YES (number)	-	-
Complaints - unplanned interruptions - sewerage	-	-	-	YES (number)	-	-
Other complaints	-	-	-	YES (number)	-	-
Complaints - water acknowledged in 10 days	-	-	-	YES (number)	YES (%)	-
Complaints - water - responded to within 20 days	-	-	-	YES (number)	-	-
Complaints - sewerage- acknowledged in 10 days	-	-	-	YES (number)	-	-
Complaints - sewerage - responded to within 20 days	-	-	-	YES (number)	-	-
Response to non-urgent incident	-	-	-	-	-	YES
ENVIRONMENT						
Volume of trade waste collected (ML)	-	YES	-	-	-	-
Trade waste volume received (% of total volume)	-	YES	-	-	-	-
Electricity consumption - water assets (kWh/ML)	YES	-	-	-	-	-
Electricity consumption - wastewater assets (kWh/ML)	YES	-	-	-	-	-
Electricity from renewable sources (%)	YES	-	-	-	-	-
PRICING AND FINANCE						
Revenue per property (total)	YES	-	-	-	-	-

<i>Non-NPR Indicators</i>	<i>IPART</i>	<i>ESC</i>	<i>ERA</i>	<i>ICRC</i>	<i>OTTER (Tas)</i>	<i>DEWS - SAMPS</i>
Revenue variations from determination (%)	YES	-	-	-	-	-
Water sales variation from determination (%)	YES	-	-	-	-	-
COSTS						
Opex variations from Determinations (%)	YES	-	-	-	-	-
Total Capex/property	YES	-	-	-	-	-
Capex variations from determinations (%)	YES	-	-	-	-	-
PUBLIC HEALTH						
Drinking water standards (% of connections meeting standards)	-	YES	-	-	-	-
Reduction in N loads to Port Philip Bay (tonnes)	-	YES	-	-	-	-
River health - % of targets achieved	-	YES	-	-	-	-

GLOSSARY

A

ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACL	Australian Consumer Law
ACT	Australian Capital Territory
ACTEW	ACT Energy and Water
AER	Australian Energy Regulator
AOP	Annual Operational Plan
AOR	Annual Operations Report
APP	Annual Performance Plan
ARA	Asset Renewal Annuity
ARR	Asset Renewal Reserve

B

BBPR	Business-Based Performance Reporting
BCC	Brisbane City Council

C

CAA	Civil Aviation Authority (UK)
CAB	Cost Allocation Basis
CBU	Commercial business unit
CCG	Customer consultative groups
CCP	Customer Challenge Panel
CEPA	Cambridge Economic Policy Associates
COAG	Coalition of Australian Governments
CPI	Consumer Price Index
CSO	Community Service Obligation
CSS	Customer Service Standards

D

DEA	Data Envelopment Analysis
DEWS	Department of Energy and Water Supply
DLGP	Department of Local Government and Planning
DORC	Depreciated Optimised Replacement Cost
DR	Distributor-Retailer
DR Act	South-East Queensland Water (Distribution and Retail Restructuring) Act 2009 (Qld)
DRC	Depreciated Replacement Cost

DWQMP Drinking Water Quality Management Plan

E

ERA Economic Regulation Authority (Western Australia)
 ESC Essential Services Commission (Victoria)
 ESCOSA Essential Services Commission of South Australia
 EV Economic Value
 EWOQ Energy and Water Ombudsman of Queensland

F

G

GAWB Gladstone Area Water Board
 GCCC Gold Coast City Council
 GSL Guaranteed Service Level

H

I

ICRC Independent Competition and Regulatory Commission (ACT)
 IPART Independent Pricing and Regulatory Tribunal (NSW)
 IPWEA Institute of Public Works Engineering Australia
 IWA International Water Association

J

K

KPI Key Performance Indicator

L

LCC Logan City Council
 LGA Local Government Act 2009 (Qld)
 LGR Local Government Regulation 2012 (Qld)
 LGTER Local Government Tax Equivalent Regime

M

MAR Maximum Allowable Revenue
 MBRC Moreton Bay Regional Council

N

NCP National Competition Policy
 NPR National Performance Reporting
 NPV Net Present Value
 NSW New South Wales

NWC	National Water Commission
NWI	National Water Initiative
NZCC	New Zealand Commerce Commission

O

OBR	Outcome-Based Regulation
ODV	Optimal Deprival Value
OECD	Organisation for Economic Co-operation and Development
OFGEM	Office of Gas and Electricity Markets (UK)
Ofwat	Office of the water regulator (UK)
OTTER	Office of the Tasmanian Economic Regulator

P

PC	Productivity Commission
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Q

QCA	Queensland Competition Authority
QCOSS	Queensland Council of Social Service
QUU	Queensland Urban Utilities

R

RAB	Regulatory Asset Base
RTI	Right to Information Act 2009

S

SA	South Australia
SAMP	Strategic Asset Management Plan
SEQ	South East Queensland
SEQ Regional Plan	South East Queensland Regional Plan 2009 - 2031
sewage	Sewage is household and commercial wastewater that contains, or may contain, faecal, urinary or other human waste
SFA	Stochastic frontier analysis
SIM	Service Incentive Mechanisms, a service-based incentive mechanism used by Ofwat
SQPR	Service Quality Performance Reporting
SWIM	Statewide Water Information Management

T

TFP	Total factor productivity
Trade Waste	Trade Waste is water-borne waste from business, trade or manufacturing premises, other than (a) waste that is a prohibited substance; or (b) human waste; or (c) stormwater.
TWCM	Total Water Cycle Management

U

UK	United Kingdom
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USA United States of America

V

W

WACC Weighted Average Cost of Capital

Wastewater Wastewater is spent or used water generated on premises from industrial, commercial or manufacturing activities, or animal husbandry activities, other than spent or used water generated from—
(a) an agricultural activity; or
(b) a resource activity as defined under the Environmental Protection Act 1994, section 107.

WIRO Water Industry Regulatory Order (Victoria)

WSAA Water Services Association of Australia

WTP Willingness-to-pay

X

Y

Z

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