Submission to the Economic Regulation Authority's Inquiry on Competition in the Water and Wastewater Services Sector

31 August 2007

WATER CORPORATION

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Foreword

The Water Corporation welcomes the Economic Regulation Authority's Inquiry on Competition in the Water and Wastewater Services Sector.

As outlined in this submission, the Corporation believes that there are opportunities to enhance the use of competition in the procurement of new water sources and wastewater treatment plants.

In addition, there are a number of policy issues to be addressed by Government before these enhancements can be implemented. The Corporation anticipates that this inquiry will address these issues, which include the "trigger point" for commencing new sources given the variability of climate, how sustainability values can be translated into specific, objective assessment criteria for assessing various new sources bid by the private sector, and clear guidance in regard to access regime opportunities. These issues are common across a number of potential models for enhancing competition into the water industry.

While the terms of reference for the Inquiry are framed as "providing advice on possible competitive enhancements", competition is only one of a number of elements which must be considered in designing an efficient, effective and sustainable industry structure. Therefore, consideration should also be given to why Western Australia has fared better in recent years than eastern states' utilities in dealing with climate change and drought.

"Security Through Diversity" is the term coined by the Water Corporation to help guide the State through the drying climate crisis since 2001, when the dams have yielded one quarter of their historical average. It describes a multi-faceted approach which includes new water sources, recycling, catchment management, water trading, and a number of initiatives with industry and the community to boost water use efficiency.

The program was conceived and is run by the Water Corporation. It has succeeded because of absolute clarity of accountability - in Western Australia, there has never been any doubt as to who has final responsibility for making sure customers do not run out of water. The Corporation has been well supported in this role by the Government and the public.

The Western Australian Government has made earlier decisions to respond to climate change than its eastern states' counterparts. The public has also responded to our water efficiency measures. As a result, total sprinkler bans and the need to make short-term reactive source decisions have been avoided.

There has been a clear advantage of having one integrated utility - covering most parts of the State - providing advice. Governments of other states, with far more fragmentation in their utility structures, have not had recourse to a single competent party to define and solve the problems, either across their water supply networks or across the entire water cycle.

Reforms now being considered in Queensland, Victoria and Tasmania all involve bringing together disaggregated structures in search of control and efficiency. Around the world, no model has emerged for the water industry which is recognised as better than the integrated model.

A concept favoured by some policy makers is that a utility such as the Water Corporation should take no part in planning or policy determination, leaving the sourcing of new supplies to others and focusing solely on efficient delivery. In practice, this approach has failed as demonstrated by the positions in which the other states of Australia have found themselves.

In WA, the Water Corporation takes full responsibility for water supply planning. The recent history of planning illustrates its success. A 50-year plan was published in 1995. In 1996 the Corporation adopted the drier post-1975 stream flows as the best predictor of the future and accelerated the implementation of the first two decades of that plan. In 2001, WA experienced the driest winter in living memory and further new investment was initiated. Emerging desalination technology had been investigated in 1999 and 2000, and this now became an important addition to the plan. By 2004, continuing dry winters had led to decisions to proceed with desalination and water trading. In 2005, an updated 50-year plan was published. In 2007, with streamflows apparently trending to an all-time low, the Corporation has embarked upon a completely new 50-year plan in wide consultation with stakeholders.

Water source planning of this nature is best carried out by a party which has direct customer responsibility. This is because of the need continually to manage and predict both demand and supply, to understand the direct consequence of service failure on both customers and the business and how sources will integrate into the scheme. As the Water Corporation does not propose to compete with the private sector for the provision of future water sources, there is no conflict of interest in the Corporation continuing to undertake this planning.

In contrast to water source planning, water resource planning is a much broader activity, and should be managed by a separate authority. The Water and Rivers Commission assumed this role in 1996, and today it is the responsibility of the Department of Water.

In the submission which follows, a number of ways forward are advocated. Some of these emerged from an important strategic review carried out by the Board of Directors of the Water Corporation in 2006 and are now in the process of being developed.

The benefits of competition can be increased through earlier and increased engagement with the private sector in the planning and owning of facilities, and the Water Corporation is actively working towards this scenario.

Further regulatory changes, including an access regime and a system of regulatory impact statements, will be worthwhile.

The Corporation is keen to work with the ERA, Government and stakeholders to plan and optimise water services for Western Australian customers, present and future.

Dr Jim Gill
Chief Executive Officer

Executive Summary

Competition plays an important role in the delivery of water services in Western Australia.

- The private sector directly provides 90% of the Water Corporation's capital projects and 50% of operating expenditure through processes that involve competitive selection.

- Customers obtain the benefits of the Water Corporation efficiently managing competitive procurement processes on their behalf.

- The Corporation has demonstrated many innovations in improving competitive procurement processes, balancing the need to maintain competitive tension with attracting participation, the cost of tendering, and project to project continuity and learning.

Water services provided by the Water Corporation are largely natural monopoly services.

- There are currently few institutional impediments to companies offering services in competition with the Water Corporation.

- Competition "in-the-market"[1] doesn't occur in Western Australia or elsewhere as the underlying economics of service delivery favour a single service provider.

Not all parts of the water and wastewater "value chain" are a natural monopoly.

- Water sources, wastewater treatment and retail services could be delivered through competitive markets with multiple service providers.

- Whether there are net benefits of delivering services through such markets requires consideration of:
    - the significant cost of establishing and transitioning to a market for already relatively low cost services;

    - the scope of potential cost reduction or service improvements that could be achieved through competition;

    - whether the markets are likely to deliver efficient prices.

In 2006, the Water Corporation undertook a significant review of the water industry and structural options. This review concluded that:

- Unlike the implementation of electricity reforms in Western Australia, there is no standard model worldwide for implementation of water reform.
    - The inclusion of storage in the water model, and the subsequent need to optimise production on other than short-run marginal costs, means that electricity models cannot be simply transferred to water.

    - A decision to implement a water source market in Western Australia would be a pioneering reform, and should not be considered unless a successful working model is designed and simulations demonstrate positive outcomes.

[1] Competition "in-the-market" is used to refer to companies competing for the supply of services to customers. In contrast, competition "for-the-market" refers to competition for the right to provide a monopoly service. This term can also be used for the right to provide a water source or wastewater treatment plant with a take-or-pay contract.

- The benefits of competition can be most efficiently and effectively delivered through a competitive procurement process for the next water source and wastewater treatment plant, rather than through market competition from owners of multiple sources, as:
    - sources need to be operated conjunctively to maximise their yield and scheme security, and this can be achieved most efficiently through a planned outcome.
    - once the decision has been made to proceed with a particular source, the major costs and efficiency gains occur at the time of construction.
- a competitive market requires willingness for the private sector to participate. The private sector has indicated that their requirements include:
    - certainty of a project going ahead;
    - level playing field for all proponents;
    - certainty of process. The rules of the game should be well understood and should not change once the process has commenced; and
    - the cost and effort of participating in the process should be commensurate with the size of the prize and likelihood of success.
- a State-based access regime should be implemented.
    - Other parties should have access to key infrastructure to allow them to compete on a visibly equitable basis;
    - A State-based regime will avoid the cost and legal delays associated with utilising the default Part IIIA of the Trade Practices Act;
    - Access charges should be based on the existing retail tariff plus/minus any costs that are incurred or avoided by the retailer to ensure that only viable projects proceed, avoiding the potential to "cherry pick" the uniform tariff structure.

Following the industry review, the Corporation has commenced projects to develop the private sector procurement process for new water sources and wastewater treatment plants and a State-based access regime.

In addition to a purely economic analysis of competition and potential industry structures, some consideration needs to be given to both the essential and integrated nature of water and wastewater services, and the dramatic consequences of any failure in service provision. Significant issues to consider are:

- Security of supply and the importance of a single point of accountability for service delivery.
- The need for whole of value chain and whole of watercycle management. There is a risk that achieving whole-of-community goals will be impeded by the rigidities and inflexibility associated with fragmented industry structures.
- Maintenance of accountability for health standards.

Comments on the specific issues raised by the ERA in the Issues Paper

1. The Authority is seeking further examples of ways to achieve greater economic efficiency and sustainability, through increased competition, in the water industry.

The Water Corporation is developing a competitive model for the procurement of new water sources and wastewater treatment plants (See Section 4). Competition is currently a key feature of private sector participation in the construction and operation for a given source (e.g. Western Australia's second reverse osmosis desalination plant at Binningup). The new model will seek the provision of an output from the private sector (i.e. a volume of water), allowing alternative source options to be assessed competitively.

The proposed model:

- is a procurement model for new water sources and wastewater treatment;
- clearly identifies the Water Corporation as the customer rather than a competitor;
- formalises the process for private participation in competitive new water services;
- offers the private sector the opportunity to participate in and obtain the benefit of information coming from our planning processes; and
- reinforces the acceptability of private ownership of future source and wastewater water treatment assets.

Key elements of this model still need to be resolved and agreed with Government, including:

- calculation of the trigger point for commitment to a new source;
- development of the criteria for selecting the winning proposal. How does a competitive tender include the sustainability criteria that are currently applied to the selection of water sources and wastewater treatment plants?
- how can sustainability criteria be maintained if an unsuccessful "low cost" tenderer can then seek to develop their proposal through an access regime?

We look forward to the Competition Inquiry contributing to the resolution of these issues.

2. The Authority has identified the following broad types of competition: centralised procurement, trading and retail competition, and comparative competition. In addition, third party access is a mechanism that facilitates decentralised procurement, trading and retail competition. The Authority is seeking comments in whether this framework encompasses all of the potential commercial opportunities that might exist.

The framework proposed by the ERA covers the potential enhancements that should be considered. There are no impediments to competition to be considered in the provision of other water service components (e.g. provision of on-site services and "self lay" provisions).

3. Centralised procurement approaches can take the form of competitive supply for a project, an outcome or an entire market. The key institutional and legislative consideration identified thus far relates to determining where responsibility lies for determining the scope of works for which tenders are sought and the assessment of any submissions received. The authority is seeking comments on the most appropriate institutional and legislative arrangements to ensure effective use of competitive supply opportunities.

The Water Corporation's proposed competitive procurement model has been developed on the basis that the Water Corporation is the customer and is seeking to optimise the procurement outcome on behalf of its customers.

The scope of work will be limited to seeking the provision of particular inputs, which will need to be determined by the application of a pre-determined trigger point.

The sustainability criteria for assessing the proposals will also have to be determined in advance and agreed as a matter of Government policy.

The assessment of specific proposals will then need to be undertaken by the Water Corporation as:

- the Water Corporation will be the customer and will have the contractual relationship with the successful proponent. (Providing a water source is not conceptually different from providing operations and maintenance services);

- alternatives will have to include the cost of integration and the synergies of operating any new source with the operations of current sources.

4. What barriers to competitive procurement need to be removed?

The barriers that are in place tend to arise from the natural monopoly elements of the water business and the complexities in developing market structures for the potentially competitive elements of the value chain (See Appendix 2).

As detailed above, a more competitive procurement model that will encourage private sector participation and ownership of water sources and wastewater treatment plants requires:

- calculation of the trigger point for commitment to a new source;

- development of the criteria for selecting the winning proposal;

- how to maintain sustainability criteria if an unsuccessful "low cost" tenderer can then seek to develop their proposal through an access regime.

5. The Authority is seeking comments on any constraints to the use of water trading as a source of bulk water.

The Water Corporation would like to have a greater opportunity to trade water entitlements as a source of bulk potable water. The benefits of trading for the wider non-potable water users (87% of water use) could also be substantial.

A significant constraint on the use of water trading as a source of bulk water for a potable water supply is water quality. Sources need to be managed to drinking water quality standards (e.g. the need to change the management of the Logue Brook catchment from irrigation to drinking water which excludes recreation activities) or expensive water treatment is required. This limits the potential for potable water trades.

Additionally, temporary trading is likely to require utilising transmission assets opportunistically, as permanent investment for intermittent use could result in low utilisation rates and be expensive.

The Water Corporation believes that an efficient and competitive water trading regime requires greater definition and certainty of the property rights associated with water allocations.

6. The Authority is seeking comments on the most appropriate way to ensure efficient service provisions in uneconomic areas.

The Water Corporation currently manages provision of a large proportion of "uneconomic" services as a Community Service Obligation. The Corporation utilises competition in the procurement of construction, operations and maintenance, energy and chemicals in delivering these services, and is compensated for losses through CSO payments from Government.

The Water Corporation takes the role of supplier of last resort. New services to small communities are essential services but are not attractive business opportunities and tend to take up a disproportionate amount of management time.

The Water Corporation has chosen not to participate in competitive processes for new schemes in the past as these were not attractive from a purely commercial point of view. The Coral Bay water and wastewater schemes are a good example. The Corporation has then been asked to step in when the competitive process failed as essential services were not being delivered.

7. The introduction of a State-based third party access regime would require a decision on the comprehensiveness of the regime, a contestable retail market, appropriate licence conditions, an access price, and a consideration of structural issues. The Authority is seeking comments on these and other matters that would assist in an assessment of whether benefits of a State-based regime outweigh the costs.

The Water Corporation supports the implementation of a State-based access regime.

- Other parties should have access to key infrastructure to allow them to compete on a visibly equitable basis;

- A State-based regime will avoid the cost and legal delays associated with utilising the default Part IIIA of the Trade Practices Act;

- Access charges should be based on the existing retail tariff plus/minus any costs that are incurred or avoided by the retailer to ensure that only viable projects proceed, avoiding the potential to "cherry pick" the uniform tariff structure.

The Water Corporation has proposed a scope of services in Section 5.

There are many questions of detail that need to be resolved, including the circumstances under which the regime can be made cost effective.

8. Would a State-based access regime result in commercial operators entering the market?

Consultation with industry indicates that the private sector would rather deal with the Water Corporation on a contractual basis, and not have to seek their own customers.

However, the Water Corporation believes that the establishment of fair access to our monopoly infrastructure assets will provide the opportunity for private sector service providers to back their own commercial judgement should they disagree with the assessment of the economics of their proposal under the Corporation's proposed source procurement process.

9. The introduction of trading and retail competition would require the establishment of a contestable market, appropriate licensing conditions and a consideration of structural issues. The Authority is seeking comments on these and other matters that would assist in an assessment of whether the benefits of trading and retail competition would outweigh the costs.

The Water Corporation's assessment is that there is little scope for net benefits to be gained from introducing wide scale retail competition. This conclusion is based on:

- Retail costs represent less than 5% of the total cost of service provision.

  While other service providers may achieve economies of scale by offering bundled services, this would necessarily be at the cost of economies of scale in the Water Corporation's billing and customer service processes. It is unlikely that after including the costs of setting up a retail market there would be net benefits.

- The opportunity to aggregate customers to allow the development of a new source is limited in water compared to electricity due to the different scale of the potentially contestable water market. For example, contestable electricity customers represent revenues of around $900 million per annum. Large water customers represent water sales in the order of $50 million per annum and a total volume equal to only 2/3 of the Perth Seawater Desalination Plant.

The development of an access regime that covers all non-retail components of the wastewater system (i.e. collection, transmission, treatment and disposal/reuse) would remove any impediment to the development of retail competition.

10. Would removal of barriers to trading and retail competition result in commercial operators entering the market?

The answer to this question depends on the way retail competition is set up.

If retail competition only applies to large customers, it is unlikely that a new entrant could attract enough customers to justify a new major source. Access provision would allow servicing of local customers from a smaller source.

If a broader retail market were developed selling just the retail component of water services, it is likely that other retailers would enter the market to achieve economies of scale from their

existing billing and customer service operations. As noted in 9 above, there would also be losses of economies of scale for the Water Corporation and this is unlikely to result in net benefits after the costs of establishing the market were included.

Such a retail market would also tend to result in the breakdown of the social component of the current pricing structures, which allows discounts for low consumption and price penalties for high consumption. Unless discouraged through the pricing structure under which bulk services are sold to retailers, competitive retailers would be seeking to sell higher volumes.

11. The introduction of a comparative competition regime would require the creation of comparable businesses and the development of a regulatory regime that would provide incentives for businesses to outperform their counterparts. The Authority is seeking comments on these and other matters that would assist in assessing the appropriateness of a comparative competition regime.

Comparative competition does not require the creation of comparable businesses as Perth can be compared to other capital cities and individual activities can be benchmarked against other organisations.

Creation of comparable businesses needs to be assessed in terms of whether comparative competition is a long-term strategy that will continue to justify the additional overheads of multiple organisations.

The Corporation has used comparative competition internally by creating two Perth regions. These were later combined after the benefits of comparative competition were assessed to have fallen below the overhead cost. A similar assessment is currently being made for Melbourne.

12. The Authority is seeking comments on any issues interested parties consider relevant to the inquiry that have not been identified in the Issues Paper.

In addition to a purely economic analysis of competition and potential industry structures, some consideration needs to be given to both the essential and integrated nature of water and wastewater services, and the dramatic consequences of any failure in service provision. Significant issues to consider are:

- Security of supply and the importance of a single point of accountability for service delivery.

- The need for whole of value chain and whole of watercycle management. There is a risk that achieving whole-of-community goals will be impeded by the rigidities and inflexibility associated with fragmented industry structures.

- Maintenance of accountability for health standards.

13. The Authority is seeking comments on other ways in which competition can be increased in the water and wastewater industry.

Creating effective competition is not simply adding competitive process at every possible step. This can create an unattractive market for participants and reduce competition.

The market can be made more attractive to participants by either reducing the field of participants (creating a higher chance of winning) or increasing the size of the prize.

An example is of this strategy is the bundling of capital works. Competition is enhanced in one dimension and reduced in another by bundling a number of projects together. Competition is enhanced by making the "prize" bigger. This makes the field of bidders stronger, particularly during the current construction boom. In another dimension, efficiency has been enhanced by reducing the subsequent points of competition by:

- eliminating the cost of multiple tenders and assembling teams to bid for a larger number of smaller projects, and

- enhancing "dynamic" efficiency as our bundling alliance partners maintain their teams from project to project, transferring experience and knowledge gained between projects.

Care should be taken to get the balance right between taking the opportunity for competition at every step and maximising participation, minimising transaction costs and achieving business continuity.

14. The Authority is seeking comments on the areas to which it should pay most attention.

The Water Corporation is seeking to increase competition in the procurement processes for water sources and wastewater treatment. These processes require a number of policy decisions by the Government to be successfully implemented. The Economic Regulation Authority can make an essential contribution in the following areas:

- Calculation of the trigger point for commitment to a new source;

- Development of the criteria for selecting the winning proposal. How does a competitive tender include the sustainability criteria that are currently applied to the selection of water sources and wastewater treatment plants;

- How to maintain sustainability criteria if an unsuccessful "low cost" tenderer can then seek to develop their proposal through an access regime.

The Water Corporation supports the implementation of a State-based access regime. There are many questions of detail that are still to be resolved.

The Water Corporation believes that creating the conditions for functioning markets for permanent water allocations and temporary water trading has the potential to bring the benefits of competition to both potable and non-potable water users.

1. Introduction

Competition is widely used in Western Australian in the delivery of water services.

- The private sector directly provides 90% of the Water Corporation's capital projects and 50% of operating expenditure through processes that involve competitive selection (see Appendix 1).

  Contracting out work to the private sector provides benefits to the Water Corporation and our customers by reducing costs and improving service levels. The Water Corporation is continually looking for better ways of procuring services to help meet its efficiency targets.

- Institutional impediments to competition in the water industry are relatively few (see Section 2 below). Examples of self-supply, private provision of on-site services and provision of services by third parties are relatively common. This is reflected in the fact that the Water Corporation only provides 13% of the water used in the State.

The Water Corporation does dominate the supply of potable water accounting for 94% of potable water supplied in the State, and close to 100% in the areas which it services. This position reflects the natural monopoly characteristics of the provision of water services. While some attempts have been made to increase in-the-market competition for water services (e.g. the United Kingdom's regulator Ofwat's access regimes and inset rules), these have been unsuccessful, as the underlying economics of the efficient supply of water services favours an single service provider.

However, as noted above, this does not exclude the private sector and competition being used extensively in the delivery of water services. Competition results from the private sector seeking to win construction, operation and supply contracts, rather than in direct competition for customers "in-the-market".

As a natural monopoly service provider, the Water Corporation is subject to external regulation, with service levels and prices set independently. The Water Corporation's monopoly status does not translate through to an ability to make high monopoly profits. Prices to customers are regulated and are:

- based on the cost of service provision;

- lower than they would be under artificially induced competition due to the economies of scale that result with a single service provider.

Not all parts of the Water Corporation's business are a natural monopoly. Water sources, wastewater treatment and retail services could potentially be subject to competition in-the-market. However, consideration of whether there would be net costs or benefits of setting up such markets needs to include:

- the costs of establishment, transition to and operation of such markets, including the cost of maintaining separate entities required for transparency;

- the potential cost reduction or service improvement that could be achieved from a competitive market (through improved technical and dynamic efficiencies);

- whether the particular characteristics of the services provided would allow markets to deliver efficient prices that would lead to allocative efficiency, with customers utilising the appropriate level of service when comparing their value to cost. (see Appendix 2).

The Water Corporation has undertaken an extensive review of the water industry and its potential structures (see Section 3), and believes that "competition-for-the-market" for new water sources and wastewater treatment plants, rather than "competition-in-the-market", is more likely to produce net benefits for customers.

The Water Corporation believes its proposed model of private sector competition to build, own and operate (BOO) its future water and wastewater treatment plants, with the added flexibility to offer alternative solutions (see Section 4), will result in:

- the efficient management of all sources to maximise the yield/security trade-off of Perth's integrated water sources. This would be complex and unlikely to be achieved through a market mechanism.

- the opportunity for the private sector to put forward innovative and alternative solutions, and have them assessed in an open and transparent manner in competition with alternatives.

The Water Corporation also believes that the establishment of a fair access regime to its monopoly infrastructure assets will provide the opportunity for private sector service providers to back their own commercial judgement should they disagree with the assessment of the economics of their proposal under the Corporation's proposed BOO process.

In addition to a purely economic analysis of competition and potential industry structures, some consideration needs to be given to both the essential and integrated nature of water and wastewater services, and the dramatic consequences of any failure in service provision. Significant issues to consider are:

- Security of supply – Western Australia has performed significantly better than the eastern states in dealing with drought and climate change. One reason for this is the single point of accountability for service delivery, and the resulting earlier response to changing climate. Western Australia has avoided the significant community cost of the total sprinkler bans experienced in the eastern states.

- Whole of value chain and whole of water cycle management – the Water Corporation is currently responsible for management across the whole of the value chain (source, treatment, distribution, retail, wastewater collection, treatment, disposal/reuse), and can make decisions in any part to optimise the whole. The Corporation is concerned that the establishment of fragmented structures, which are sometimes presented as being attractive in terms of clear objectives and accountabilities for various parts of the value chain, will in fact lead to rigidities and inflexibility in achieving whole-of-community goals.

- Health – consideration also needs to be given to the management of water quality and health issues under any fragmented industry structure.

2. Institutional Structure

The institutional structure of the water industry in Western Australia is relatively open to competition, and compares favourably with that found in other places around the world and provides few institutional constraints to competition.

In this context, it is useful to compare Western Australia to the six types of competition that are listed on page 17 and 18 of the ERA Issues Paper as being introduced by Ofwat for the privatised water utilities in England.

- Comparative competition

  Comparative competition is undertaken more extensively in England than in Western Australia. This is due to the resources applied to regulation and data that the single regulator, Ofwat, has assembled to compare all English and Welsh water businesses. It should be noted that this higher level of regulation is required as the businesses being regulated are privatised and there are greater incentives to maximise short-term profits rather than long-term service delivery.

  Comparable data is currently collected for Australian utilities but comparative analysis is not used as extensively in setting prices.

  Benchmarking of individual activities between water utilities and with other companies is widely used as a means of achieving efficiency and service level improvements.

- Contracting out for the supply of services

  This strategy is widely used in both the United Kingdom and Western Australia. The optimal level of contracting out is a decision for the utilities and the circumstances they operate in. Utilities have appropriate incentives to make these decisions efficiently.

- Legislated geographic monopoly – inset appointment and out-of-area supply (border competition).

  The Water Corporation's operating licence is not exclusive and other service providers have the right to provide alternative services, either potable or non-potable. There is no institutional constraint on this type of competition other than the need for an alternative supplier to obtain an operating licence from the ERA.

- Competition for on-site water and wastewater services; and
- Competition from the provision of services independently from established networks.

  The Water Corporation does not generally provide on-site services. Private supply and self supply of non-potable water services are common practice in Western Australia, and the optimal procurement strategy for these services is a matter for the property or project owner. The owner may choose a competitive procurement strategy or an alternative if this results in a better outcome.

- Self-lay provisions.

  The self-lay provisions introduced in England that allow developers to have the choice of a contractor laying pipes in a new development adopts the standard Western Australian practice where the developer provides the reticulation for a new development.

The Water Corporation has been willing to negotiate access to our infrastructure. Additionally, as discussed in Section 5 below, as long as a formal access regime does not result in the opportunity to "cherry pick" parts of the Corporation's business due to its uniform regulated prices, the Corporation supports the implementation of an access regime for water assets.

The recent determination by the Australian Competition and Consumer Commission (ACCC) on access pricing methodology for Sydney wastewater assets offers an acceptable basis for pricing.

The Water Corporation acknowledges that there is a perception that its monopoly position is used to unfairly inhibit competition, and as a result, alternative sources of supply cannot compete fairly. The reality is that it is in the Water Corporation's business interests to embrace viable proposals from the private sector. There is no economic advantage to the Water Corporation from excluding such schemes.

Two examples that demonstrate this situation are:

- Harvey Water Trade – the Water Corporation was approached by Harvey Water with a proposal to sell some of their water entitlement to allow them to fund piping infrastructure. The piping would result in water savings and improve service levels to their customers through the delivery of water under pressure. This project was not on the Water Corporation's source development program, but was recognised as an economically viable source and agreement was reached for the project to proceed.

- United Utilities Australia (UUA) proposal for a desalination plant in Esperance and a pipeline to Kalgoorlie – A number of proposals for alternative water supplies to Kalgoorlie had been examined with the objective of reducing the cost of potable water supply, substituting the use of hyper saline groundwater and meeting growth in demand.

  The Water Corporation worked closely with UUA analysing the economics of their proposal and the potential cost savings from closing the Goldfields and Agricultural Water Supply (G&AWS) scheme to Kalgoorlie. When the project appeared to be unviable due to the limited cost savings that would be made from substituting the existing G&AWS supply, the Water Corporation was accused of underestimating the savings to protect its monopoly position in Kalgoorlie. An independent review by the ERA subsequently showed that this was not the case, but the perception remains with some parts of the community.

  The Water Corporation is willing to buy water from UUA at a price that reflects the cost savings that can be achieved relative to alternative sources. Purchasing water at a price above this level would result in either the need for customers to pay more to recover the difference or for taxpayers to support the scheme through higher explicit or implicit CSO subsidies.

3. Water Corporation Review of Water Industry Structure

In 2006, the Water Corporation's Board initiated a review of the possible future direction for the water industry in Western Australia. The review examined possible models for structuring the water industry to improve efficiencies through private sector participation and competition.

The review was undertaken by the Water Corporation, with advice from consultants with experience in the areas of strategy development, performance improvement and organisation efficiency, and others with experience in electricity, gas and water reform and regulation.

The project examined the opportunities for greater competition through structural reform. It should be noted that unlike energy, there is no standard model for industry reform and competition in the water industry. Water reform models from around the world were examined, as well as those used for electricity and gas.

The basic elements of service delivery are the same across utility industries (source-distribution-retail or retail-collection-treatment-disposal/reuse) and many of the alternative structures could be implemented for water. The key issue is "which would deliver the greatest benefit for Western Australian water customers?"

A number of themes were identified and extended into a proposed model for source and wastewater treatment procurement, which if implemented would create new opportunities for private participation in the water industry, increasing both competition and the scope for innovation.

Following the industry structure review, the Corporation has commenced projects to implement the private sector procurement process for new water sources and wastewater treatment plants and a State-based access regime.

Options for Private Sector Participation

The review identified a landscape of structural reform options (informed by the experiences of other utility industries as well as the international water industry), across the water industry value chain. A general summary of the options considered follows:

- Source: A number of different source (i.e. water supply) procurement processes were considered, ranging from simple source procurement models to those which preclude the Corporation as a participant in the process (i.e. only the private sector permitted to participate). A new source procurement process which facilitates private sector participation and ownership of sources was one of the themes that emerged.

- Transmission: Transmission options were viewed as being limited to access type options (i.e. models which provide third parties with a mechanism to use the transmission assets to transport their product) due to the monopoly nature of the assets. Access is another theme that emerged.

- Retail: A range of retail options were considered - such as retail contestability, shared services and privatisation. As Retail is a comparatively small and low value component in the value chain, significant opportunities were viewed as being limited.

- Wastewater treatment and disposal/reuse: Wastewater treatment and disposal is regarded as being analogous to source. Private ownership of new wastewater treatment plants (for

disposal or reuse) and privately owned, catchment-based wastewater utilities were considered. Wastewater treatment plants were included with source procurement as a theme with high potential for future private sector ownership and participation.

- Regional: Due to the geographical spread and regional growth of Western Australia, a number of regional options were considered including a regional multi-utility and an integrated South West water utility (water and wastewater). The potential benefits were not viewed as sufficiently significant to warrant further consideration as part of the review.

The key synergies in the management of remote water and wastewater schemes were assessed to be maximised by maintaining the current link with Perth and the Integrated Water Supply Scheme. The loss of these synergies would be greater than those gained by linking with Horizon Power.

The potential synergies with Horizon Power's remote electricity operations have not been abandoned. The Corporation is working with Horizon to identify savings and improve services such as sharing depots and personnel in remote locations.

Reflecting the importance of electricity to service continuity, the water services business is already linked in an operational sense to electricity. The Water Corporation's operations centre is linked with Western Power's, allowing instantaneous warning and response to any power outage.

Other structures were considered. These were generally implemented as a response to a specific problem (performance, funding constraints) rather than offering superior performance. For example, the discussion of the Welsh Water's performance in the ERA Issues paper deserves closer examination. While their overall performance assessment improved from eighth of ten water and sewerage companies to first between 2001 and 2005 with the adoption of the new structure, it was first by a very narrow margin and its performance had improved up to the level generally achieved at the front of the field. It subsequently dropped to third by a narrow margin in 2005 and is tenth out of twenty two when all companies are included. It cannot be argued that this structure has lead to sustained out-performance. Other structures have and continue to perform just as well.

In summary, the outcome of the analysis identified four emerging themes to improve the efficiency and effectiveness of the Western Australian water industry without creating significant disruption. These themes were:

- private participation in future water sources;
- private participation in future wastewater treatment plants (for disposal or reuse); and
- implementing an access regime;
- the cost imposed by regulation.

4 Water Source and Wastewater Treatment Plant Procurement Model

The Water Corporation has developed a procurement model for the private sector provision of water sources (including treatment) and wastewater treatment, disposal and reuse services. This model has been developed following:

- extensive analysis of procurement models around the world;
- the costs and specific circumstances of water supply and wastewater treatment in Western Australia;
- consultation with potential water industry participants including constructors, operators and financiers and interstate government agencies who have experience in procurement of public private partnerships.

The proposed model:

- is a procurement model for new water sources and wastewater treatment;
- clearly identifies the Water Corporation as the customer rather than a competitor;
- formalises the process for private participation in competitive new water services;
- offers the private sector the opportunity to participate in and obtain the benefit of information coming from the Corporation's planning processes; and
- reinforces the acceptability of private ownership of future source and wastewater water treatment assets.

The analysis by the Water Corporation and its consultants has shown this is the best model for Western Australia and for water customers, and the Corporation would seek that it be used as the explicit benchmark to compare the costs and benefits of alternative proposals.

The model is a natural progression from the current level of private sector participation in water service provision.

Private companies currently construct and operate a large proportion of the Corporation's infrastructure. The next step is to move from the private sector provision of Water Corporation funded and specified infrastructure solutions to the provision of service outcomes. By building, owning and operating future assets, the private sector assumes a greater degree of risk and enjoys the rewards of their endeavours. Two key benefits of public private partnerships are cost efficient transfer of commercial risk to the private sector and profit driven innovation and cost control which the partners share. However, the State and the Water Corporation will always retain ultimate accountability for service provision and the risks associated with being the service provider of last resort.

The model formalises the opportunity for the private sector to participate in the water industry. The Harvey Water trade was an example of a private sector proposal that has augmented Perth's sources, but it was agreed under an ad-hoc process. While this worked for a project that had clear benefits to both parties, the formalisation of the process will provide greater clarity, particularly for those alternatives that are not regarded as being viable.

Consideration was given to creating a contestable retail market similar to the WA electricity market. In this case, bulk water and wastewater would be separated from the monopoly transmission/distribution function. This is not supported due to:

- The low cost of water and wastewater relative to electricity and gas provides a relative limitation on the potential savings achievable via competition. The cost of creating a

contestable market for water is equal to if not greater than that for electricity. Hence the cost benefit of contestability in water is less than for electricity.

- Transportation in water and waste water comprises two thirds of the cost of the service. In electricity, transportation makes up a third of the service cost. Transportation in both industries are natural monopoly assets and therefore will not benefit from in-the-market competition. Consequently, the potential for the water and waste water industry to benefit from in-the-market competition is significantly less than the potential for electricity.

- The water industry has fewer large consumers. The small number of large customers makes it difficult to lock in the minimum off take required to finance new projects. (see Section 6.3).

- Major new sources are only required every 5 to 10 years, depending on demand growth and climate impacts. Smaller sources could be triggered more often. In electricity, major investment in generation occurs annually. Savings driven by competition will only be realised when new projects are developed.

- Due to the high cost of transportation of water and wastewater, the customers that may benefit from direct competition tend to be geographically limited. There are therefore issues around the equity of the benefits of competition. Those not geographically located to be able to benefit from in-the-market competition may bear additional costs.

- The complexity of integration of system and source operations to optimise the yield vs future water supply security mean that there are synergies from operating both source and transmission together.

For all of the above reasons a contestable market structure for the Western Australian water industry is unlikely to be cost effective. While separation could provide the benefit of added transparency for the private sector, the Water Corporation's proposed alternative is more cost effective.

Procurement Model

The Water Corporation's proposed procurement model is intended for the acquisition of additional water supply and waste water treatment capacity from the private sector.

The benefits of private sector participation in service delivery are to:

- Provide an incentive for innovation into service delivery and thereby reduce costs by increasing the importance of the profit motive and competition in project delivery;

- Provide access to private sector capital which in turn will facilitate cost efficient transfer of risk from the Water Corporation; and

- Access the best of all the private and public sector service delivery options.

The disadvantages of private sector participation in service delivery are:

- Longer lead times of up to 12 months for project delivery;

- Loss of flexibility regarding project timing and the ability to amend operational requirements by the sponsoring agency; and

- Higher cost of funding, although this is often overstated because the value of risk transfer should be netted off.

The overall aim when developing the details of the Water Corporation's procurement model has been to maximise the benefits and mitigate the disadvantages.

Development of the model has been focused on designing a process that would ensure participation and maximise the benefits of competition for service delivery. To do so, the key requirements of the private sector had to be identified and satisfied. These requirements are detailed below.

- Certainty of a project going ahead;

- Level playing field for all proponents;

- Certainty of process. The rules of the game should be well understood and should not change once the process has commenced; and

- The cost and effort of participating in the process should be commensurate with the size of the prize and likelihood of success. For example the standard shortlist size for a Public Private Partnership (PPP) tender is no more than three and commonly two. The cost of a developing a bid for a $1 billion project is up to $20 million. Investing that amount with a less than 1 in 3 chance of success could negate the interest of the private sector.

The model was finalised following consultation with thirty industry and government agencies from around Australia. There were several resulting amendments to the original draft of the model.

A key amendment was that the Water Corporation will not be a competitor in this process. This was not the Corporation's initial position as it had concerns about security of supply and the need to be able to guarantee the development of a source when it was required. These concerns have been allayed during consultation with industry, and the Corporation is now confident that it can rely solely on the private sector to efficiently deliver these projects.

The Water Corporation will undertake the planning and preliminary approvals and public consultation for one or more options but it will not develop our its proposal in competition with the private sector.

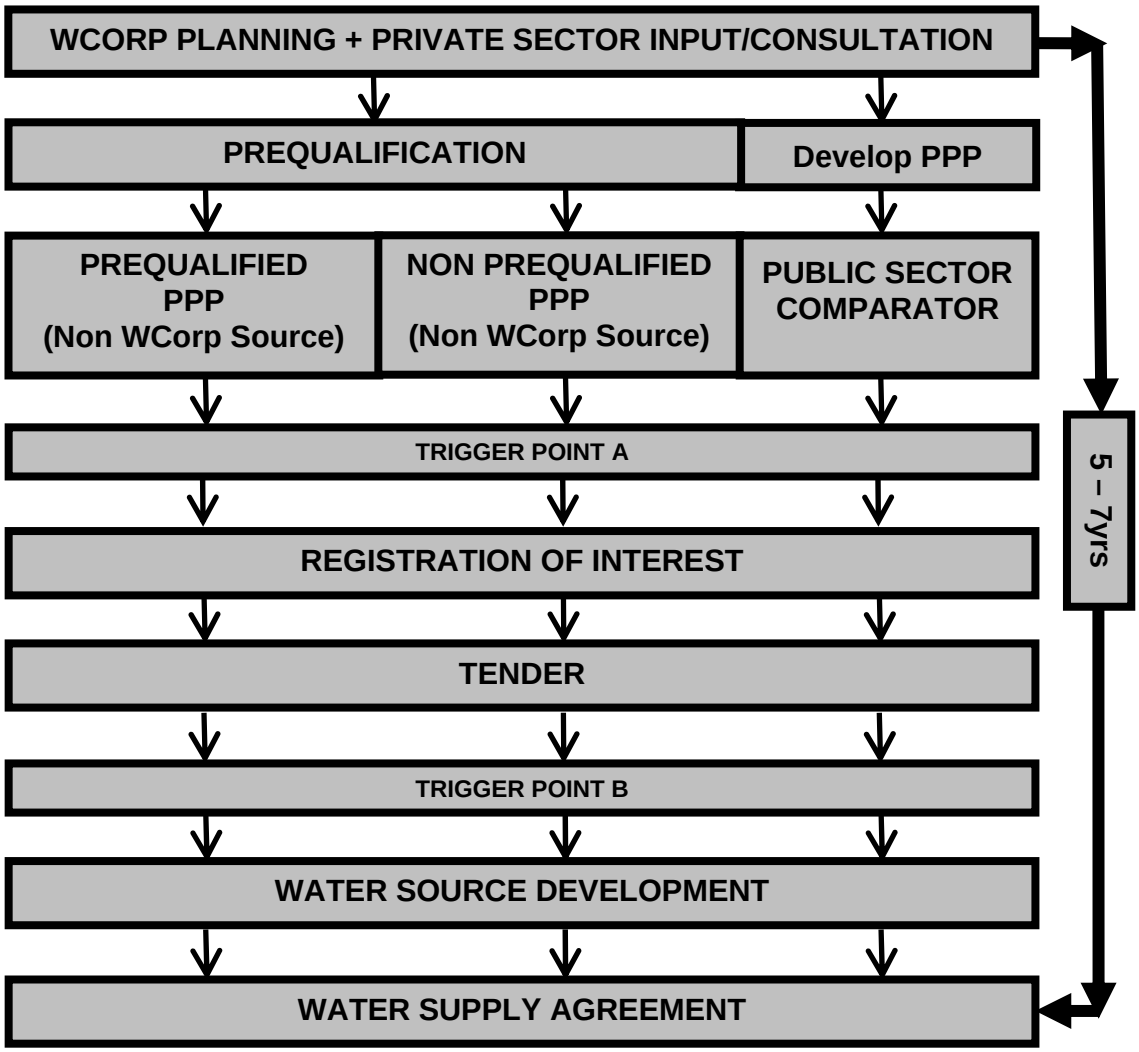
The Corporation's analysis showed that the it will need to continue to undertake planning, identifying potential future water source options and wastewater treatment requirements. This work needs to be carried out by the Water Corporation to ensure that there are potential source and treatment plant solutions available to meet its service obligations to customers. Additionally:

- Distribution and collection systems have to be designed with long-term optimisation in mind.
    - Assets to integrate water sources into existing water supply schemes are a significant proportion of the cost of a new source, and a superficially "cheap" source in the wrong location may in fact be very expensive.
    - Trunk sewers in particular are designed to their ultimate capacity and dominate the capital cost of the wastewater value chain. Wastewater treatment plant sites need to be identified well in advance of construction.

- Monitoring and environmental approvals need to be commenced for potential sources and sites before many (but not all) private sector proponents would be willing to engage in developing a project. Not undertaking this work would both compromise:
    - the timing required to deliver a project;
    - the depth of the competition available when a decision was made to proceed.

- Private sector participants will need a source of information to help them develop their proposals to:
    - allow them to test the relative viability of their proposal at the planning stage before they commit significant resources, including understanding the cost of integration;
    - allow proposals to be optimised relative to existing and other potential sources and the current distribution system configuration.
    - understand the likely timing of future augmentation requirements;
    - obtain advice on what work is expected to be completed prior to calling for registrations of interest so that their proposal will be able to considered.

Below is the diagrammatic representation of the Water Corporation's procurement model which has been widely shared with industry participants and evolved as a consequence.



The 5-7 year timeframe to deliver a new source is dominated by the planning and approval phases. Actual construction and commissioning time vary from project to project. The construction phase of a desalination plant takes around 2 years.

The latter steps of this model are a conventional two stage procurement model. The initial stages however are innovative in many respects. These innovations have been introduced to best satisfy the requirements of the Water Corporation and the industry as discussed earlier. A very comprehensive industry consultation process was undertaken with this model to ensure that the innovative elements in conjunction with the more conventional elements were readily acceptable to industry.

The explanation of the model provided below is centred on the initial, less conventional, elements.

Water Corporation Planning and Private sector Input / Consultation

The Water Corporation will continue to complete infrastructure planning as it has in the past. This will ensure that a coordinated and considered view of future water sources and waste water treatment options is undertaken and thereby provide security for future services. This is particularly critical in the context of the changing / drying climate which has caused timing of sources in the last 10 years to be constantly accelerated.

The key outcome of Water Corporation planning will be a ranked list of options. All planning deliberations, considerations and output will be publicly available.

Following planning the Water Corporation will begin the preliminaries for the first ranked option and possibly to a lesser extent for the second ranked option, depending on whether there is a private sector proponent that is well advanced on developing an alternative project. Preliminaries will include obtaining regulatory approvals and site acquisition.

Prequalification Process

In order to cater for options not ranked as part of the planning process, a prequalification exercise will be undertaken. Prequalification will be for proponents looking to develop a proposal other than that ranked first by the Water Corporation planning process (ie an alternative proposal). Those who pre qualify need to will be provided with preferred access to regulators for obtaining their regulatory approvals and will be provided access to Water Corporation planners in order to have the cost impact of integrating their option into the scheme determined.

Access to regulators and the ability to obtain decisions on alternative sources are critical if the procurement process is to be opened up to alternative source proposals. This is required for any structure that includes private sector ownership.

Prequalification will be assessed based on the proponent's technical and financial capacity and capability as well as the assessed viability of the alternative proposal. The required detail for prequalification submissions will be commensurate with the amount of knowledge on the project that can realistically be expected to be available at that point in time. Prequalification will be reviewed annually to adjust for shifts in the rankings of alternative bids as project development proceeds. This will ensure the most competitive field possible at the tender stage.

Public Sector Comparator

As required by the WA Government PPP Policy "Partnerships for Growth", the Water Corporation will develop a Public Sector Comparator (PSC) prior to the Registration of Interest. This will be based on the Corporation's first ranked planning option.

The PSC will be a desk top assessment of the cost of delivering the project under a business as usual Water Corporation funded option. The PSC will enable proponents, particularly those developing alternative proposals to gauge the competitiveness of their project prior to committing a significant investment to prepare their bid. The PSC will also be used as a hurdle benchmark for all bids as required by Government policy.

Trigger Point

Any process that includes private sector participation requires a clear signal as to when and how the decision will be made to proceed with the next water source or wastewater treatment plant. The Water Corporation notes that this is part of the Inquiry's Terms of Reference and we look forward to the ERA's views on this issue.

The first Trigger Point "A" is the most critical and difficult to define. The required supply/demand balance is a key input into this trigger point decision. Private sector participation will require that this is not left to subjective judgement. Possibilities for defining a trigger point are:

- A comprehensive model that includes inputs on the climate scenario, groundwater availability, demand projections and a valuation of the impact on the community of water restrictions as compared to the cost of the next source; or

- A simple scenario trigger based on avoiding sprinkler bans if a storage/groundwater level occurs.

There has been some discussion in the ERA's previous inquiries on the level of water supply security that should be targeted. This discussion appeared to be somewhat misdirected as it was held in the context of the Water Corporation planning (ie forecast) inputs rather than actuals as at the time of triggering development of the next source.

Debate on the level of security to be used in the planning scenario needs to be balanced with the other assumptions of growth, demand per person, groundwater availability and climate. Planning requires relatively conservative assumptions so that plans are in place to respond as circumstances change.

The trigger point security decision should include the cost of the next source and an assessment of the value to the community of avoiding restrictions. If this cannot be agreed, then agreeing on the simple scenario approach that defines the timing of the next source augmentation may be the only option.

Regardless of the trigger point definition, the lead time required for project delivery from the time of the trigger point needs to be considered. The Southern Seawater Desalination Plant (SSDP) has a delivery schedule of over 4 years from the date it was announced by Government (triggered). This timing is specific to a desalination plant to be delivered in the context of the current lead times for major equipment deliveries. If the SSDP were to be delivered as a BOO, then up to a further 12 months in the schedule would be required.

Some key criteria for the trigger point which emerged from our industry consultation process were that it should be:

- simple to understand;
- transparent;
- not open to interpretation; and
- the definition itself not subject to change once it has been locked in at the planning stage.

Trigger Point "B" is a mechanism to create a buffer of time after the initial trigger point so that in the event that the private sector fails in delivering a viable project, the Water Corporation has sufficient time to implement its own project. The buffer period is between the tender stage and the construction stage. In the event that the tender does not deliver a viable private sector proposal then the Water Corporation would have to implement its own option. The buffer period would be used to procure a constructor for delivery of the Water Corporation funded option.

Registration of Interest and Tender

This will result in a shortlist of no more than three proponents who will then be asked to submit a tender. The ROI is open to any proponent whether pre-qualified, not pre-qualified or submitting a proposal based on the Water Corporation's first ranked planning option.

Evaluation criteria will be based on financial and technical capability and capacity of proponents and a risk adjusted valuation of the bid cost.

Water Supply Agreement

The draft agreement will be issued as part of the Tender Documentation. Negotiations will occur with a preferred proponent post tender award. A finite period of up to 3 months will be allowed for negotiations. The Water Corporation will reserve the right at the end of this period to commence negotiations with the reserve proponent. This mechanism is to avoid the preferred proponent extending the negotiations to obtain leverage because it is aware the Water Corporation has a deadline for project delivery.

Conclusion

- The benefits of competition can be most efficiently and effectively delivered through a competitive procurement process for the next water source and wastewater treatment plant, rather than through market competition from owners of multiple sources, as:
    - sources need to be operated conjunctively to maximise their yield and scheme security, and this can be achieved most efficiently through a planned outcome.
    - once the decision has been made to proceed with a particular source, the major costs and efficiency gains occur at the time of construction.
- a competitive market requires willingness for the private sector to participate. The private sector has indicated that their requirements include:
    - certainty of a project going ahead;
    - level playing field for all proponents;
    - certainty of process. The rules of the game should be well understood and should not change once the process has commenced; and
    - the cost and effort of participating in the process should be commensurate with the size of the prize and likelihood of success.

5 Access Regime

Third party access occurs when an organisation utilises a specific component of another organisation's infrastructure. At present, third parties are able to access specific elements of the Water Corporation's infrastructure through commercial negotiation. For example, recent negotiations include:

- Harvey Water agreeing to a temporary water trade in exchange for access to the Wokalup to Harvey Dam transfer pipeline during summer;

- in 2006, an irrigator near Geraldton requested third party access to the Corporation's water main to transport water from its bore to its adjacent property. The parties reached general agreement on the terms and conditions for access. However, the water quality in the growers bore was lower than expected, and as it was not economic to treat the bore water to a potable standard, access did not proceed.

Third party bulkwater or wastewater providers could potentially gain access to the Water Corporation's network to supply specific retail customers.[2] However, it is likely that most bulkwater or wastewater providers would prefer to deal directly with the Water Corporation rather than incur the additional complexity and risk associated with obtaining retail customers. It is therefore expected that third party access requests from bulk providers will only occur where there has been a failure of the incumbent and the proponent to agree on the term and conditions of supply.

In the event that access negotiations between the incumbent and a third party fail, access can currently be sought under the generic provisions of the Trade Practices Act (TPA). For example, Services Sydney has recently sought access to Sydney Water's wastewater network under the TPA. A key lesson from the Services Sydney case and others arbitrated through Part IIIA of the Trade Practice Act is that obtaining access to facilities under the Trade Practices Act can be a long and onerous process.

The TPA also allows for the establishment of a certified state regime that can potentially avoid the generic arbitration process under the TPA. A certified state regime reduces uncertainty for both access seekers and incumbents, can potentially reduce the time and resources required to process an access application, and could allow for local conditions to be accommodated into the regime. The Water Corporation therefore supports the development of a certified state regime.

The Water Corporation, in consultation with other Western Australian government agencies, has recently explored models for third party access in the WA water sector and examined the possibility of establishing a formal regime that is consistent with the Trade Practices Act. Key issues are addressed in turn below.

Scope of Services

A key consideration for a State-based regime is the scope over which the regime would apply. For example does the regime cover:

- all water and wastewater assets across the State?
- support assets?
- assets that will be used for purposes other than water or wastewater supply?

[2] The Water Corporation's licence to supply water to customers is predominantly non-exclusive, i.e. other businesses may also apply for an Operating Area within the area. Currently some country areas are exclusive, but these are progressively being converted to being non-exclusive.

To avoid application of the regime for unintended purposes, it is proposed that the scope of a State access regime should be clearly defined and initially limited to infrastructure that is used to supply potable water, wastewater and drainage services, and would be uneconomic to duplicate. Water, wastewater and drainage networks are examples of infrastructure that would be uneconomic to duplicate. In some cases, it may also be uneconomic for smaller entrants to duplicate water sources and wastewater treatment facilities.

The Water Corporation's proposed scope of services is shown in Table 1. At the current time, recycled water infrastructure has not been developed on a scale that would be uneconomic to duplicate and therefore it has been excluded from the assets in Table 1.

Table 1: Proposed scope of services for a state based access regime

Category	Location	Facilities
Potable water supply	State-wide	Trunk and distribution mains (including pump stations and other conveyance infrastructure) Reticulation mains Water source infrastructure (eg. dams, borefields, desalination plants) Water treatment plants (potable water only) Water storages (tanks and reservoirs)
Wastewater	State-wide	Main sewers Conveyance and reticulation mains (including pump stations and other conveyance infrastructure) Wastewater treatment plants Ocean outfalls
Drainage	State-wide	Main drains Water treatment and detention infrastructure

Access Pricing

Typically, one of the most contentious issues regarding third party access is price. A number of alternatives models exist for access pricing, including:

- pricing based on the cost of existing assets (eg the "Building Block" costs commonly used for third party access in energy and rail);
- pricing based on the cost to augment the system;
- pricing based on the existing retail tariff, plus/minus any costs that are incurred or avoided by the incumbent (eg. the retail minus approach recently endorsed by the ACCC for Sydney wastewater conveyance assets, the ECPR approach endorsed by IPART and the Cost Principle endorsed by Ofwat) .

The Water Corporation supports access charges based on the existing retail tariff plus/minus any costs that are incurred or avoided by the retailer. Access pricing that incorporates the existing retail tariff allows third party entrants to make the same contribution to (or gain the same benefits from) the Government's Statewide uniform pricing policy as the incumbent service provider. If third party entrants make a contribution to (or benefit from) the Government's uniform pricing then:

- third parties are not encouraged to take advantage of the uniform pricing policy by "cherry-picking" the incumbent's lowest cost supply areas and making windfall gains at the expense of the general customer base;

- the third party entrant will only be encouraged to provide services if the incremental cost is less than the cost that would have been incurred by the incumbent;

- the cost to the third party entrant will reflect the Government's uniform pricing policy and will therefore promote the policy's social and environmental outcomes. To the extent that costs are passed through to customers, the third party's retail prices will also closely reflect the uniform price.

There appears to be close alignment between the Water Corporation's position and the position of those regulators that have recently explored the issue of third party access in water, including the ACCC, the NSW regulator IPART and the UK regulator Ofwat.

Technical and operational matters

Third party access proposals can impact the entire water supply system and the environment in general. In some cases, social and environmental issues are assessed by an existing regulator (eg health or environmental regulators). However other factors, such as water supply reliability, are currently not within the domain of existing regulation. It is therefore critical that arbitrators of access disputes be specifically required to consider non-financial factors such as social, environmental, risk and supply security issues.

Third party proposals should be reviewed from a whole of community perspective and should explicitly consider public good issues such as:

- supply reliability considering the water supply system as a whole;
- whether the proposal can be implemented within the required timeframe;
- impact on customer service standards across the entire system;
- the level of community support; and
- the level of carbon emissions for energy intensive processes.

Commercial

Access pricing should be sufficiently flexible and transparent to encourage third party supply proposals to be introduced at the most efficient time. Therefore the pricing structure should reflect any differences in cost in the short and long term by estimating the cost of access at different points in the future. For example, where long term water sources are expensive, but the incumbent has access to spare capacity in the short term, the access price would ideally encourage the deferral of third party sources until the spare capacity is fully utilised.

In addition, to facilitate the processing of access requests, indicative access charges could be determined for all locations where information is readily available. However, where sufficient information is not readily available to assess a third party access application, it is proposed that the access seeker compensate the incumbent for reasonable expenses (as determined by an independent regulator) incurred to assess the applications. Charges that reflect reasonable expenses incurred would discourage frivolous or poorly researched applications.

Other issues to be resolved

In addition to the questions addressed above, there are a number of other technical, operational and commercial issues that would need to be resolved prior to implementing an effective access regime. Outstanding questions include:

- should water quality guidelines, such as the Water Corporation's existing guidelines for third party water supplies, be formally included in a third party access regime? What other technical or operational conditions should be specifically identified in a third party access regime?

- should new entrants be required to conform to the same service levels as the incumbent with respect to:
    - water supply reliability targets?
    - environmental obligations such as carbon neutrality for desalination plants?
    - customer services targets?
    - other targets or obligations?

- should new entrants be subject to the same regulated price framework as the incumbent?

- should all access seekers be required to demonstrate that they can withstand economic shocks or otherwise provide financial guarantees to ensure that essential water supplies are not placed at risk?

- under what circumstances, if any, should a provider of last resort be specified? Is a supplier of last resort required for commercial or other non-essential use?

- if the Water Corporation is required to perform the services of a provider of last resort, should the Corporation be required to maintain spare capacity for a new entrant's customers at all times? If so, should the access seeker or the general customer base bear the cost of maintaining the spare capacity?

- will the risk of stranded assets reduce the level of investment in the water industry? Does the risk of stranded assets need to be addressed through either the regulated asset value or the cost of capital?

- should access providers such as the Water Corporation publish indicative access prices for key areas across the State including the Metropolitan area and the G&AWS?

- can the level of wastewater infiltration be determined with sufficient accuracy for contractual purposes?

Conclusion

- A State-based access regime should be implemented.

    - Other parties should have access to key infrastructure to allow them to compete on a visibly equitable basis;

    - A State-based regime will avoid the cost and legal delays associated with utilising the default Part IIIA of the Trade Practices Act;

    - Access charges should be based on the existing retail tariff plus/minus any costs that are incurred or avoided by the retailer to ensure that only viable projects proceed, avoiding the potential to "cherry pick" the uniform tariff structure.

6. Regulation

The Water Corporation's 2006 industry review also considered a number of aspects in regard to regulation and acknowledged that regulation :

- is a key cost driver; and
- can be a significant source of uncertainty that impacts the availability of various procurement options.

Cost of Regulation

As with all industries, there are many licensing conditions and regulatory standards governing the conduct of the water business. These regulations are intended to provide protections such as defining customer service, health, environmental and occupational health and safety standards.

The Water Corporation has a strong history of compliance with the licence conditions and regulatory standards that apply in Western Australia evidenced by a number of satisfactory Operating Licence audits. This compliance is part of the cost of doing business and is passed on to customers through our regulated prices or to taxpayers through Community Service Obligation payments from the Government.

Assessment of regulation often focuses on the benefits and there are often calls to increase regulatory standards. Examples include calls for reduction in odour emissions from wastewater treatment plants, the elimination of discharges to water ways or sewerage overflows to the environment. All of these outcomes can be achieved, but at significant cost, which is passed on to customers or taxpayers. Regulation needs to be considered in terms of both the costs and benefits to the community.

At times, there are criticisms of the service standards delivered by the Water Corporation which would be better directed to the underlying regulations (or lack there-of). A recent example has been the expenditure required to meet the Australian Committee on Large Dams safety guidelines. The Water Corporation acknowledges that these guidelines lead to high levels of expenditure on dam safety, but unless alternative safety standards are established and implemented, these levels are required under the current legal framework. Any appropriate change is a decision for the Government, and cannot be made by the Water Corporation.

Another example is drinking water quality. The Water Corporation has undertaken a large program that is improving drinking water standards to comply with higher Australian Drinking Water guidelines. This program has been negotiated with our health regulator and is delivering higher quality drinking water across Western Australia. However, the prioritisation process is within the schemes operated by the Water Corporation. Contrast these standards with those achieved in remote communities not serviced by the Corporation and the question could be asked as to whether the resources being applied to improving drinking water quality are being well targeted.

The Water Corporation supports the introduction of Regulatory Impact Statements (RIS) that require a cost benefit analysis to be carried out at the time of any change in regulation. The Corporation is well aware of the limit on funding for the provision of services, and looks forward to a RIS process which can ensure that the available funds are spent to optimum effect.

Regulatory Uncertainty and the Procurement Process

A large part of the time taken to deliver a new water source or wastewater treatment plant is consumed by the process of obtaining regulatory approvals. This process requires significant resources from both the project proponent and regulator(s). Currently regulators tend to focus on approval for the projects they perceive are most likely to proceed.

A change to the competitive process which allows for more than one source solution to be bid will require regulators to assess approvals for all the potential projects. Not only will this require additional resources for regulators, it will require regulatory processes that do not try to pre-select preferred solutions prior to a tender assessment. Regulators will need to make assessments based on the acceptability of the impact of any individual project, not the relative impact of a project compared to an alternative option.

The timing of regulatory approval also impacts the procurement solutions available. Earlier approval is required for a private sector solution as the private sector needs regulatory requirements to be certain, prior to finalising supply agreements and committing funding.

Another uncertainty that will need to be addressed if competition for water resources will allow trading to higher value uses is certainty of water allocations and the associated property rights. The Water Corporation's experience with trading is that agreement to the progressive transfer of water allocation in future years could not be made without some uncertainty. Water allocation uncertainty may be a major impediment to private sector water sources and water supply scheme, whether they are potable or non-potable.

7. Commentary on ERA Competition Themes

7.1 Centralised Procurement

The Water Corporation's review looked at a range of procurement models for water sources and wastewater treatment plants including:

- the Water Corporation undertaking the procurement:
  - as the customer;
  - as the customer and a project proponent.

- an external body (or network operator) undertaking the procurement:
  - with the Water Corporation (or bulk water entity) as a project proponent;
  - with the Water Corporation (or bulk water entity) excluded from bidding to encourage new private participation.

- contracting management of the whole business.

The key considerations in the Corporation's analysis were:

- *Ensuring security of supply* – this led to an initial position that the Water Corporation should be a project proponent as it would ensure there was at least one proposal available should the market fail to deliver any alternative. As noted in Section 4 above, consultation with industry changed the Corporation's views on this issue.

- *Independence of the decision making process* – this proved difficult (but not impossible) when the Water Corporation was considering being a project proponent:
  - The Corporation's proposed procurement model now has no conflict of interest;
  - There would be a possibility of a future conflict if there is to be "in-the-market" competition between sources (see Appendix 2 for an analysis of why this is unlikely to be an efficient outcome).

- *Technical knowledge* required:
  - there is a clear need for knowledge of the system operations to make the relative assessment of sources to maximise the yield/security ratio;
  - the current levels of experience and knowledge within Western Australia in designing and optimising such acquisition processes.

- The appropriate *incentives* to ensure timely decisions were made to enable the delivery of the appropriate level of service:
  - The Water Corporation has experienced frustration waiting for other agencies to make decisions and seek approval on the provision of water and wastewater services to some communities. This has had significant impacts on the timeliness of the delivery of services, incurred costs of dealing with interim solutions such as wastewater carting and held up development.
  - It is widely acknowledged that Western Australia has dealt with the issue of climate change better than the eastern states, and there is a view that this is in part because of our single point of responsibility for service delivery compared to the fragmented industry structure in the eastern states.

Serious consideration was given to a model that split bulk water sources from the monopoly network operator and distribution. There are two potential reasons to do this:

1. The bulk water supplier could then be an independent project proponent that could compete with private sector project proponents without a perceived conflict of interest. However:

   - The withdrawal of the Water Corporation from the role of project proponent removes the need to incur the cost of creating two organisations;

   - There are significant synergies in operating the sources and the network, and it is efficient to maintain the ownership of existing sources by the network operator. Given the need for a network operator to optimise source use, the opportunity for benefits from private sector involvement is primarily in project selection and construction, not operation and ownership.

2. If in-the-market competition between separately owned water sources were to occur:

   - The Water Corporation's current view is that the complexity of the source yield/security trade-off with the integrated management of 18 different major sources that include dams, borefields and desalination plants, and reuse means that an efficient market-based outcome is unlikely to be achieved (see the simplified example provided in Appendix 2 that demonstrates the potential for inefficient outcomes).

     The Water Services Association of Australia has scheduled research work on this topic in its current business plan. The work will look at modelling the theoretical outcomes of such a water market, and is considered a first step in examining how such water markets may work.

     Any decision to take structural steps in this direction should be based on similar *plus* more detailed research, rather than unsubstantiated extrapolation of the experience in gas and electricity that is often cited as the basis for similar models in water.

   - Whether the market would result in an efficient price for allocation would require customers to be able to make informed decisions on their use/security trade-off.

     This happens in irrigation when an irrigator growing annual crops can afford to take a higher yield with a lower reliability than those irrigating tree crops. These decisions are integral to the efficiency of their businesses and water can be a vital and significant cost input and constraint on output. Trading in entitlements can occur to improve the collective outcome.

     This is unlikely to happen with urban water supplies at an end customer level:

     - Industry already has relatively secure water supplies (they are supplied ahead of sprinkler bans and other external water use) and are unlikely to trade to lower security given the low cost/high value ratio associated with their water use.

     - Residential customers are unlikely to understand (or gain a net benefit from spending the time required to understand) the yield/security trade-off, and are unlikely to make informed decisions to trade to higher or lower security. Transaction costs for individuals would be very high relative to the possible benefits, which would further distort any market outcome.

     Incorporating storage into a water market is a key difference from electricity markets. This year's consumption from dam affects next year's capacity availability in two ways:

- Directly by reducing the amount of water that is available to supply from the dam in the next year; and

- Indirectly, as ground water availability is linked to dam levels.

If borefields and dams were to have separate owners, the operating rules or market would have to recognise that the supply decision of the dam owner would affect the supply capacity of the borefield owner.

If the customer was the network manager, as an informed customer, they may be willing to pay more today for water from a desalination plant so that water is available for next year's (and the year afters) security by leaving it in the dam. Some element in the bidding process for separate source owners would either have to be able to justify this decision to, or compensate, the dam owner.

Additionally, the scheme is currently operated so that water is moved between sources (eg desalination plants to dams when there is a winter surplus and bores to dams in the summer if dam levels are getting low) so there would be negative as well as positive sales.

It would appear to be more efficient to simply compensate the source owner for their costs, including a fixed and variable component, (agreed at the time of construction, with a water supply agreement that they can use for funding). This would result in the network buyer making efficient decisions without the cost and complexity of operating an ongoing bidding system that reflected short-run marginal costs.

A procurement model that considered contracting out the entire management of the water utility for an period (say 15 to 25 years) was considered but rejected on the basis that:

- it only results in a one-off competition for-the-market, then locks into an ongoing contract for the monopoly supply of services. The benefits of the contract can be quickly eroded by the manager seeking to maximise their returns in the short-term when contract renewal and re-bidding are far into the future;

- Contracts tend to be less flexible when circumstances change than with ongoing combined ownership and management.

7.2 Comparative competition

Comparative competition is currently an option without any change in the structure of the industry. Data is collected on water utilities throughout Australia and New Zealand, and there are similar databases available for water utilities in the United Kingdom and the United States of America.

The problem with comparison based on this data is that the operating conditions of utility are significantly different (for example different water sources, topography, city layouts and density, regulatory environments, cost allocations and asset valuation methodologies, and international purchasing power).

Potential solutions to these problems are:

- Extensive analysis to try and normalise the data to make it comparable;

- Benchmark specific activities that can be measured like for like;

- Create comparable structures within a city that are operating under similar circumstances and can be directly compared.

Two examples of creating comparable structures are:

- The Water Corporation created two comparable management regions, Perth North and Perth South, which allowed comparison of relative performance. Additionally, there are two private contracts for the operations and maintenance services within these regions.

  The Water Corporation made the decision that the cost of maintaining two regions, and the issues around subtle differences in practices for customers are not justified from the ongoing benefits of comparative competition. The ongoing benefits of having separate operations and management contracts have been reviewed against the additional overhead costs, and the decision was made to continue with separate operations and maintenance contracts.

- In the early 1990s, Melbourne was split into three retailers to induce comparative competition between management and to allow an assessment of their relative performance.

  The Victorian Government recently announced a review of this structure to consider whether it is efficient and effective. Part of the Government's concern was the emergence of inconsistent prices across the city.

The amalgamation of the Perth regional structure into one region was much simpler than unwinding three separate corporatised entities. Consideration needs to be given to the benefits of any changed structure both in the short and long term.

An alternative considered in the Water Corporation review was to split the organisation back into a metropolitan and a country organisation (as was in place pre-1985 with the Metropolitan Water Authority and the Public Works Department).

The Water Corporation's analysis showed that:

- Comparative competition would not be enhanced as country operations are of a completely different scale to metropolitan operations so results are not directly comparable;

- There would be loss of economies of scale and critical mass in terms of functions such as planning and specialist areas of expertise;

- Much of the south west country supplies are included with Perth as part of the Integrated Water Supply Scheme, and could only be artificially separated.

It has been suggested that part of the motivation for such a split could be to establish a second substantial water utility in Western Australia that may have the capacity to competitively bid on business development "jewels" such as the Wiluna sewerage scheme and the Coral Bay water and wastewater schemes. The view is a serious misunderstanding of the attractiveness of bidding on such small schemes. The Water Corporation views its role in these schemes as supplier of last resort, and the management time spent resolving these type of problems far outweighs any potential financial benefit from managing these very small schemes.

Benchmarking specific activities is the major opportunity for comparative competition, with these assessments helping compare the relative efficiencies of parts of the business.

Additionally, benchmarking provides results that can be directly applied to changing and improving management practices.

The following case study demonstrates why benchmarking at a service level between cities is more problematic.

Case Study: Comparison of Perth and Adelaide wastewater costs

The difficulty in comparing performance across different organisations is highlighted by assessing the reasons for the apparently large differences in wastewater capital cost per property between the Water Corporation and SA Water. In 2003, the Australian water industry's key performance report, *WSAAfacts*, indicated that the Water Corporation's wastewater capital cost per property was $446 – almost double SA Water's cost of $235 per property.

To understand the cost differences between the two organisations, the Water Corporation conducted a detailed benchmarking review. The review indicated that a number of factors contributed to the variation in cost, including:

- housing density affected the length of pipelines required in each city;
- asset revaluation practices were different between the organisations;
- asset life was assessed differently;
- the topography of each city affected the depth of sewers and the number of pump stations required;
- the ocean conditions and environmental regulations affected the length of ocean outfall required;
- the organisations had different levels of treatment capacity and sludge handling;
- Perth sewers required plastic lining of new concrete sewers due to longer retention times.

The results of the detailed review demonstrated that a high level comparison of cost per property was not indicative of performance and that a number of complex factors contributed to the difference in cost between the two organisations.

7.3 Retail Competition

The Water Corporation's assessment is that there is little scope for net benefits to be gained from introducing wide scale retail competition into the water services sector. This conclusion is based on:

- Retail costs represent less than 5% of the total cost of service provision.

  While other service providers may achieve economies of scale by offering bundled services, this would necessarily be at the cost of economies of scale in the Water Corporation's billing and customer service processes. It is unlikely that after including the costs of setting up a retail market there would be net benefits.

- Retail contestability may not be seen as an end in itself, but as a mechanism to develop competition in another part of the industry. For example, the contestable electricity market allows the private sector to sign up a customer base that will allow them to proceed with new generation capacity.

This opportunity is limited in water compared to electricity due to the different scale of the potentially contestable water market. For example:

- Contestable electricity customers (who pay more than $8000 per annum) make up 55% of the electricity market by volume and represent revenues of around $900 million per annum.

- Large water customers (those paying more than $5000 per annum) make up 11% of the water market by volume and represent water sales in the order of $50 million per annum.

If a service provider managed to sign up all the large water customers (very unlikely given their geographic dispersion), they would have enough demand to utilise 2/3 of the Perth Seawater Desalination Plant.

- A potential benefit of retail competition is that the prices generated could reveal customers' real preferences. It is difficult to determine what customers really value through surveys and consultation when they don't have to back their stated preferences with their own money. However, retail competition for water services is unlikely to create an efficient market:

  - Potable water supply must be delivered at a quality that meets its highest use (human consumption). A differentiated product cannot be offered through the monopoly distribution system.

    - Alternative quality water and reuse are already supplied in competition. These products make up 87% of the water market.

  - Alternative levels of security of supply could be offered (eg customers who pay more could avoid restrictions).

    - Efficient valuation of security of supply requires customers to make an informed decision about consumption today compared with the chance of restriction tomorrow. An informed decision on the benefit the customer is paying for (ie avoiding the probability of future restrictions) is complex and difficult to understand.

    - Current Government policy is to apply uniform restrictions on all customers as a water efficiency measure. It would be inconsistent to allow customers to buy their way out of the restriction regime.

The Water Corporation concluded from our consultation with industry that:

- Major project proponents would prefer to proceed with their projects on the basis of a take-or-pay contract with the Water Corporation than to have to obtain their own customer base. This has significant advantages in obtaining funding, and the cost of that funding.

- In the case where a project proponent cannot obtain a contract with the Water Corporation, but is still willing to back their project as being viable, they already have the option of obtaining an operating licence, seeking access and serving customers directly. Establishing a state-based access regime should reduce the time, risk and cost of pursuing this alternative course of action.

7.4 Water Trading

The Water Corporation supports reducing the impediments to water trading to enable water to be traded for both potable water use, and to higher value non-potable use.

A key impediment to competition in water trading is the current water allocation process. The Water Corporation's experience with the Harvey Water trade was that the commercial arrangements were made much more complex due to the uncertainty of the property right associated with current water allocations. It is unlikely that a private company could get its financiers to commit funding for a similar transaction.

It should also be noted that while water trading may potentially make large volumes of water available, its quality and location will determine whether it is suitable to augment potable water supplies. For example:

- While there will be 135GL of irrigation water remaining in the south west after the Harvey Water Trade is completed, only an additional 5 GL will be available in "drinking water" rated catchments and this assumes that Logue Brook is converted from an irrigation to a drinking water dam.

7.5 Community Service Obligation (CSO) Contestability

The Water Corporation is provided with CSO payments to compensate for the provision of uneconomic services. These payments in 2005/06 included:

Losses on Country Services	$235m
Revenue Concessions	$75m
Infill Sewerage	$30m
Total	$340m

- **Country services**

The Water Corporation provides multiple water, sewerage, drainage and irrigation schemes in country regions. The regulated prices set by the Government do not recover the cost of providing these services, and a CSO payment is made to the Water Corporation to compensate for the short-fall.

The potential opportunity for utilising competition in the delivery of new CSO services is limited. As noted above, new CSO services tend to be for very small towns (eg Coral Bay, Wiluna) and the Water Corporation's role has been supplier of last resort. For example, a competitive process was run for the provision of water services at Coral Bay. The Water Corporation chose not to bid, and the service provider selected failed to deliver. The Water Corporation was subsequently asked to provide these services.

It should be noted that the method of calculating this CSO payment includes the progressive recovery of capital investment over time. If any of these existing schemes are made contestable, the assessment needs to be done on the avoidable cost, rather than the current CSO payment, as part of the CSO payment is to compensate for past (sunk) investments.

- **Revenue Concessions**

The Water Corporation is compensated for the difference in the standard tariff and the concessional tariff for customers such as pensioners, Seniors and charitable organisations. These concessions are determined by Government, and the CSO payment ensures that they are funded out of general revenue, rather than through cross-subsidies from other customers.

These CSO payments are not contestable. The payments mean that the Water Corporation is indifferent to how the Government chooses to deliver its social policy decisions. However, the cost signal is useful in demonstrating the costs of such concessions, and allowing an assessment to be made as to whether they are well targeted, or the benefits could be delivered more effectively through alternative social payments.

- **Infill Sewerage**

Infill sewerage is more expensive to provide than in greenfield developments, and is paid for by the Water Corporation rather than property developers.

The CSO payment compensates the Water Corporation for the additional cost of providing these services while maintaining the current sewerage tariff. This avoids the need to pass the additional cost onto the Water Corporation's existing customer base. The payment made is based on the actual costs incurred.

The infill sewerage program has been delivered in a very competitive manner. The procurement process was developed and refined over the duration of the program to encourage the development and maintenance of small, efficient companies to undertake what are relative small, simple projects.

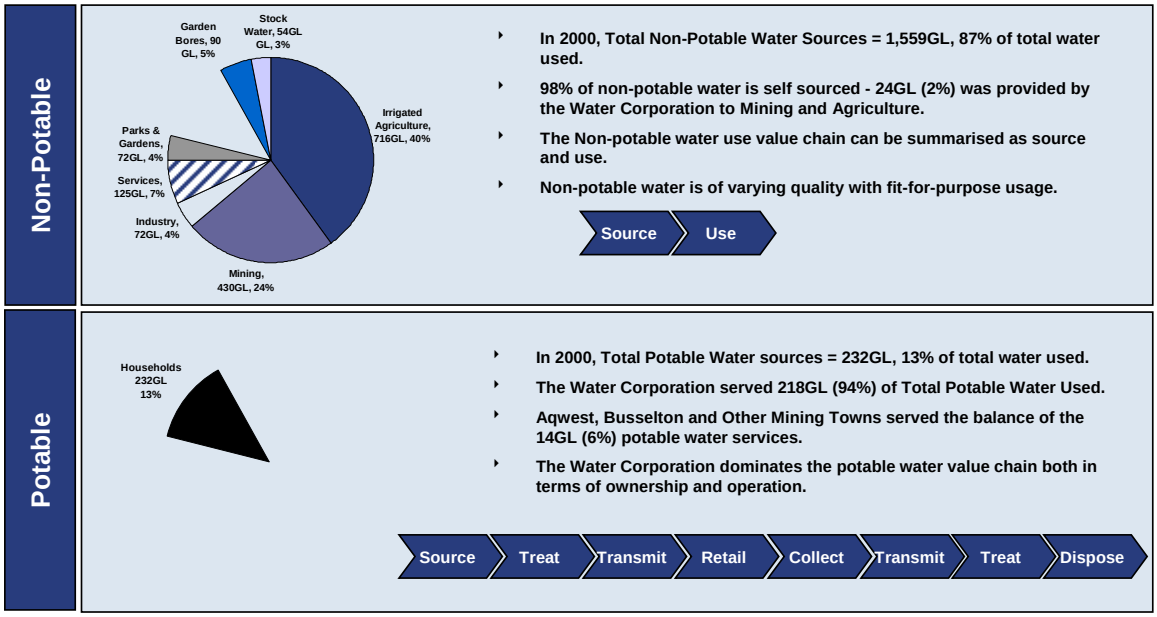
This is a good case study of the need to designing the procurement process to match the service being delivered and developing the industries capability to ensure that there is a competitive market when tenders are called.

APPENDIX 1

Industry Characteristics

Figure 1 depicts the structure of the water industry in Western Australia.

Figure 1
Western Australia water industry structure



The industry can be broadly categorised into potable (13% by volume) (i.e. drinking quality) and non-potable (87% by volume) water. Total non-potable water source capacity was 1,559GL, whilst potable water sources totalled 232GL. The Corporation dominates the potable water market whilst the non-potable market is largely self-sourced.

The water industry is clustered into three value chains namely the water value chain, the wastewater (including reuse) value chain and the drainage value chain.
The key elements of these value chains are summarised below:

- Water value chain:
    - The Corporation dominates the Western Australian potable water supply (94% of potable volume) with Aqwest, Busselton and other mining towns serving the balance.
    - Entitlements to water sources, either through licences or by agreement, are much more widely held.
    - 64% of water in Western Australia is used in mining & irrigated agriculture, most of which is non-potable supplies. The non-potable water value chain can be described as consisting of only the source and use elements of the value chain.
    - Metropolitan transmission operations, and mechanical and electrical services for metropolitan water treatment, are outsourced via alliance agreements. Country

treatment and transmission services are carried out almost exclusively by the Corporation's staff.

- Operations at source and retail are managed by their owners.

- Wastewater value chain:
  - The Corporation owns the wastewater collection, transmission, treatment, and reuse/disposal assets. Kalgoorlie/Boulder is the major exception where the system is owned by the local authority. Local authorities and mining companies also operate sixteen other town schemes.
  - The Corporation plans and project manages wastewater construction and tenders out engineering and construction services.
  - In the metropolitan area, the Corporation operates and maintains the wastewater collection system via alliance agreements.
  - In the country, the operation and maintenance of the wastewater collection system is almost exclusively carried out by the Corporation's staff.

- Drainage value chain:
  - Drainage assets are constructed by greenfields developers and handed over to local authorities.
  - The local authorities own and operate drainage waste collection whilst the Corporation owns the main drains which transmit waste from the local authorities.
  - There is minimal treatment in the drainage value chain prior to disposal direct to the environment.
  - Collection operations and maintenance is conducted by local authorities. The Corporation operates its own transmission network whilst maintenance is carried out through alliance agreements.

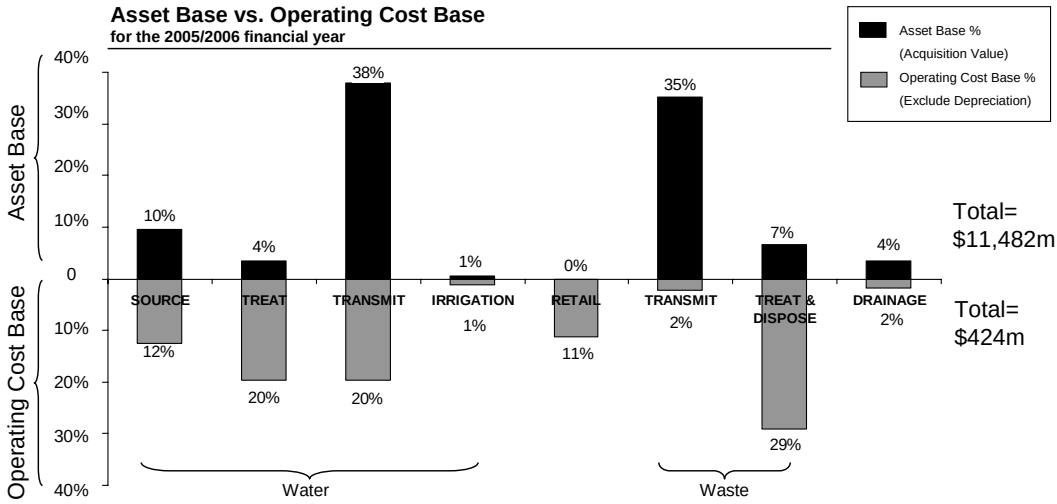
Water Corporation Asset and Cost Base

While the asset base is largely in transmission, the operating cost base is mainly driven by waste treatment and water treatment/transmission. Indeed, waste transmission is a high asset base component but it has low operating cost base.

The largest part of the asset base (i.e. transmission) is a natural monopoly; and due to the state government's policy on privatisation, is not open to private sector ownership.

There is already significant private sector participation in the Corporation's operating costs through its alliance contracting program. In the future, opportunities can exist for the private sector to own and operate new water sources and wastewater treatment plants, which while a smaller proportion of the overall infrastructure, nevertheless remain significant investments.

Figure 2
Water Corporation Asset Base and Operating Cost Base



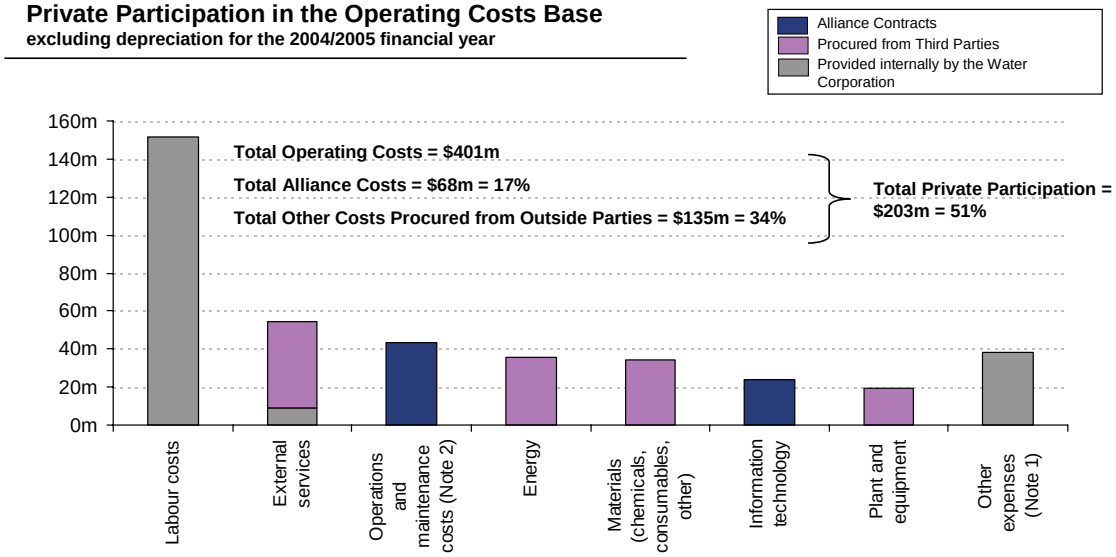
Current Private Sector Involvement in Water Services

The Corporation utilises competition and private sector service provision to achieve service delivery efficiencies and reduce cost to customers. This is achieved through the Corporation's innovative use of alliance contracting for capital and operations, whereby its alliance partners are provided with incentives to realise efficiency improvements, along with the Corporation's financial and service objectives.

Traditional competitive tendering arrangements are also used in circumstances where these deliver the most efficient and equitable outcome.

Figure 4 highlights the extent of private sector participation in the Corporation's operating cost base. 90% of the Corporation's capital projects, representing approximately $550m in 2006, and 50% of its operating expenditure, representing $203m in 2005, are provided directly by the private sector, with service providers selected through competitive processes.

Figure 3
Private Participation in the Operating Cost Base



Note 1: Includes Capital charges, Internal services, Financial Provision, Asset Write-offs.
2: Operations and maintenance activities undertaken internally are reported within the Labour and materials categories.

Source: Annual Financial Statements, Finance

The Corporation has demonstrated many innovations in improving these processes. An example is the recent innovation of bundling capital works. Competition has been enhanced in one dimension and reduced in another by bundling a number of projects together. Competition is enhanced by making the "prize" bigger. This makes the field of bidders stronger, particularly during the current construction boom. In another dimension, efficiency has been enhanced by reducing the subsequent points of competition by:

- eliminating the cost of multiple tenders and assembling teams to bid for a number of smaller projects, and

- enhancing "dynamic" efficiency as our bundling alliance partners maintain their teams from project to project, transferring experience and knowledge gained between projects.

The bundling example demonstrates that care should be taken to get the balance right between taking the opportunity for competition at every step and maximising participation, minimising transaction costs and achieving business continuity.

Another successful procurement strategy has been competitive alliances. The Perth Seawater Desalination Plant was delivered on time and on budget through a competitive alliance process. While the Water Corporation retains ownership, our alliance partners have constructed the plant and will operate it for 25 years, providing an incentive to build and operate the plant to optimise its whole of life cost.

This process will be repeated for the Southern Seawater Desalination Plant. Consideration was given to delivering this project with an alternative Build Own Operate strategy, which includes private sector ownership. This has the potential to achieve benefits by encouraging further innovation and transferring some risks to be managed by the private sector. However, in this case, a BOO strategy was ruled out as it was unable to meet the required delivery timetable. Procurement strategies for future sources need to be designed around the lead time and approval process to ensure the timely delivery of services.

Summary

- The Corporation is a small player relative to total water supply in the State but dominates the asset intensive potable water market (Perth Metro and Regions) with Aqwest and Busselton being a distant second.

- Transmission assets form the largest component of critical infrastructure in the potable water value chain.

- Private participation is significant in the Corporation's capital program. In 2005, the Corporation spent $203m of its total operating costs in the private sector (this is 51% of operational expenditure). Outsourcing of actual operations at 17% of total operational expenditure is more limited. The Corporation views outsourcing and alliance agreements as an opportunity to increase efficiencies through competition and private sector participation.

- The opportunity for retail competition is limited due to the relatively low value of water and the cost of transmission. Large business customers that could be competitively matched with private source owners represent 11% of the market or 2/3 the volume produced by one major source.

Alternative Models

A review of models applying to utilities around the world was undertaken in the following categories:

- Water industry (international and Australia)
- Energy industry (Australia)
- Drivers of Water Utility performance
- Viability of different options

Water Industry

Key elements arising from the review of Australian and global water models are:

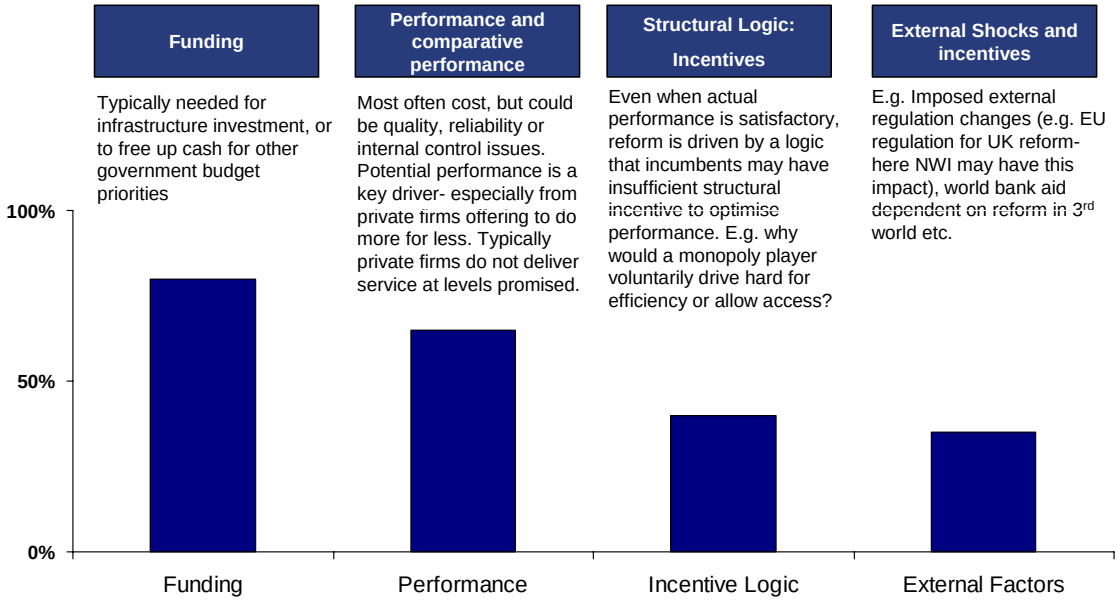
- A wide variety of different models have been implemented around the world with varying levels of private involvement and long term success. These models range from community owned and operated utilities (e.g. Glas Cymru – Wales) through to regional monopoly private utilities (e.g. UK). Multiple models exist between these two extremes.

- These models have different advantages and disadvantages with community options being more accountable and responsible to their customers, but often lacking scale. The models with greater scale often suffer both regulatory inefficiencies and a lack of accountability. Private sector involvement is frequently viewed as delivering the potential for increased efficiencies, innovation and access to unrestricted finance. Its disadvantage is seen as being a loss of public control over the assets and the delivery of essential services.

- Internationally the main drivers of change in the water industry are usually a lack of funding and poor performance (as opposed to perceived better private sector performance). Lack of funding leads to low investment and a deterioration of infrastructure. This drives the shift to the private sector as a perceived better alternative.

- A high degree of "competition for the market" (for the right to provide services, either to the customer or the utility) has been demonstrated. "Competition in the market", where customers have a choice of service provider, has been largely limited to those customers at overlapping service boundaries of different utilities.

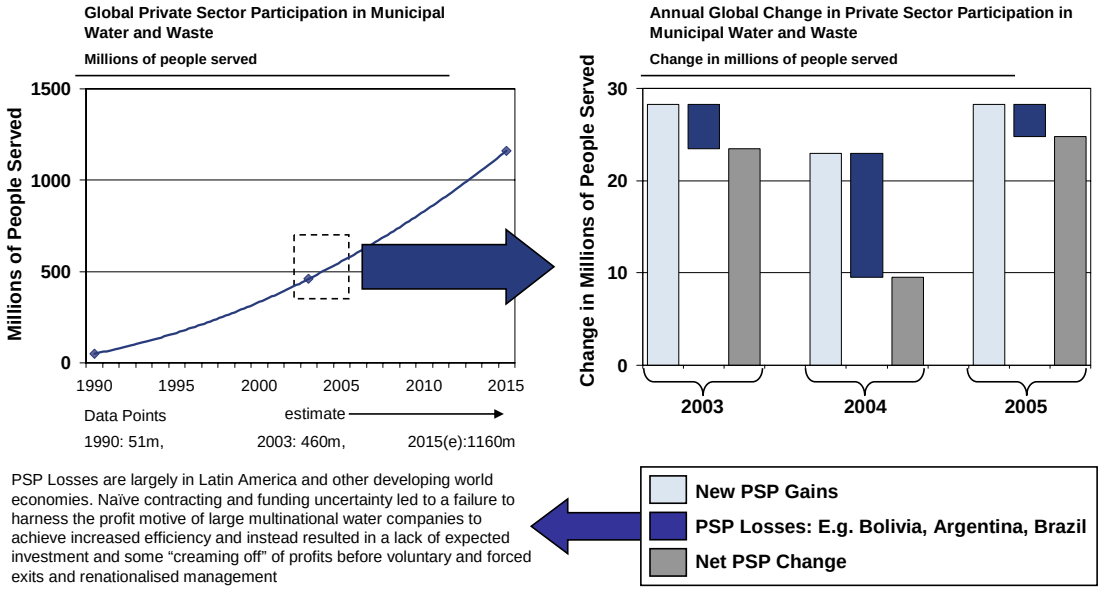
Figure 4
International Drivers for Change



- While the preferred model in developed countries is for public sector ownership and operation, competition for the market is increasing and there is a clear shift towards greater private sector participation. Private ownership, especially of monopoly assets creates a requirement for an effective industry regulator. The developed world has a higher proportion of private sector participation (although still lower than that of the public sector) than the developing world.

- There is also a small but significant trend to reverse private sector operations. This is mainly exhibited in South America where the profit motive of multinational water companies has resulted in them not making the required investments, but has rather seen them extracting profits before making voluntary or forced exits.

Figure 5
Private Participation Trend



- A current trend towards private participation is to take incremental steps to increase participation as a risk management tactic. Private participation to a lesser or greater degree is possible in all the different water industry models.

- Acceptable models for private participation range from subcontracting of capital projects, service contracts, management arrangements, lease, build-own-operate "BOO" and concessions, right out to private monopolies (e.g. UK). The main distinction between services and concessions (on a continuum) is the sharing of risk, duration of contract and the definition of who makes the required capital investments. In the case of a pure concession model, capital investments are made by the private operator and not the public owner of the assets.

- In Australia, all urban water assets are publicly owned, except for entitlements. Operations may be private and there is a broader trend towards private sector involvement in Australia e.g.
    - Delegated management contract: Adelaide;
    - Alliance contracts, desalination build-operate ("BO"): Water Corporation; and
    - JV Operations: ACT.

- Competition for the market is exhibited in water and can be a significant driver of efficiencies. It is possible across all areas of the value chain and typically occurs during tender processes for capital projects or for longer term alliance or management/ operating contracts. Transparency is a key driver for this model to be successful.

Water industry models conclusions

The key conclusions are:

- There is no “ideal “model for the water industry but rather circumstances drive the need for change. Funding and a perceived lack of structural incentives usually drive a change towards greater private sector involvement.

- There is a clear trend towards greater private sector involvement although this is primarily in the operation, and not ownership of assets (UK model is the exception).

- Competition and regulation are primary drivers of performance rather than ownership.

- Public control is important to extract the maximum benefit. Incremental approaches to increasing private sector involvement often reap the most significant benefits.

- There is a trend towards increasing private sector involvement in Australia. This varies from delegated management in South Australia to subcontracting and alliance models in other states. Urban assets remain under public ownership.

- Competition for the market (not in the market) is readily demonstrated in the water industry.

Other Utility Sector Review

A review was undertaken of the experiences and models used in other utility sectors (e.g. electricity, gas and telecommunications). These were considered in the context of Western Australian water. The key outcomes are summarised below:

- Many of the models demonstrated in other utility sectors are similar to those of water (e.g. communitarian, corporatised, delegated management etc). There are however also models which are different in that they exhibit a higher degree of disaggregation of the traditional vertically integrated utility (e.g. generation, transmission, distribution and retail) and they exhibit both competition for the market and in the market (especially at a source and retail level).

- There is global evidence of multi-utilities but efficiency data is mixed. Estimates are that 40-70% of the utility cost base may be subject to synergies. There are economies of scale in retail, billing, customer service, metering and collection. In addition cross and up selling opportunities are present. There is little overlap at a technical level. Multiple examples exist internationally of such organisations.

- While competition in-the-market is not demonstrated in water, it is experienced at multiple levels in other utilities e.g.
    - Choice of bulk supplier.
    - Choice between Retailers who compete on price and customer service.
    - Competition at production (i.e. source or generation).
    - Combination of source and retail competition.

- Non-water utilities exhibit a variety of competitive models with a trend towards increasing liberalisation. This may be applied to water as follows:

- Potential exists for competition at a Retail level by introducing additional Retailers, thereby providing customers with a choice of supplier.

- Competition for sources by a single Retailer may be feasible (but climate risk may complicate the source market and/or deter private sector players from entry – non-climate dependent sources may be the most attractive).

- Multiple competing sources and Retailers are unlikely to be feasible due to the physical characteristics of water (unless they both transact with an intermediary such as the Transmission organisation).

- Competing at a transmission level is not possible due to the enormous investment cost of the infrastructure (network or transmission based competition is not prevalent in the energy sector but can be found in a limited way in telecommunications - especially with substitute products).

- A competitive water market could possibly be created in two ways:

    - A central wholesale market where a purchaser (as above, preferably the network operator) purchases water and then delivers it to Retailers; or

    - Direct competition for users by sources enabled through an access regime (i.e. user charge). There is complexity in determining the quantum of the access charge.

Other utility models conclusions

The key conclusions are:

- Whilst the more liberal models that may be found in the other utility sectors can conceptually be applied to the water sector, the implementation would generally be more complex. Aspects of the models (as outlined above) can however be applied under certain circumstances.

- Competition may be feasible at a source or retail level but an integrated market model may be too complex. Bilateral trading and contestability in the bulk water market could be a significant first step.

- The transmission assets exhibit significant economies of scale and the cost of the assets prohibit any competition in the transmission market. Access may however be provided to promote Retail competition.

- Multi-utilities are found in the global market but synergies are dependent on the specific cost structure and characteristics of the particular market concerned.

Water Utility Performance

The key issues pertaining to water utility performance are:

- Ownership is not regarded as an indicator of performance in water utilities with performance data being mixed. The primary drivers of efficiency are:
    - Scale efficiencies (especially on natural monopoly type assets e.g. transmission networks).
    - Clearly defined roles and accountabilities for industry governance.

  - Competition (in the market or for the market).
  - Effective regulation (including sanctions where appropriate).

- In addition alternatives to create efficiencies include strategies such as:
  - Competition via comparative benchmarking (i.e. between non-competing utilities).
  - Competition at competing utilities service boundaries (in locations where customers can feasibly be served by the overlapping infrastructures of adjacent utilities).
  - Competition for finance i.e. where a utility is self funding its performance would drive its ability to access low cost finance.

- Private sector involvement is frequently regarded as providing efficiency gains but not always for cost of capital (although they can use higher levels of debt to improve financial performance). These efficiency gains are usually achieved through competitive tenders and market competition.

Viability of Options

Conclusions on the viability of the different models are:

- Private ownership, of especially transmission assets, is not widely demonstrated except in the UK. BOO models do exist for specific assets across the value chain (e.g. pump stations, water treatment plants). The domination of public sector ownership is driven by the view that water is a social good (as opposed to economic) and is therefore the responsibility of government; who usually chooses to exercise control through ownership. While there appears to be no fundamental impediment to private sector ownership it is nevertheless not widely demonstrated. In Western Australia the State Government has clearly stated its opposition to privatisation of essential infrastructure. Private ownership of existing assets is therefore not considered at any point in the value chain.

- Water and wastewater networks exhibit "natural" monopoly characteristics. This is not necessarily the case for water sources/ treatment, retail and waste disposal/ reuse. Private sector investment is therefore only regarded as being feasible outside of these natural monopoly elements of the value chain.

- Total water cycle management:
  - Policy, planning and regulation are typically centralised and usually under government control.
  - Operational co-ordination (of the system) is usually best done centrally due to the need to optimise overall system performance and manage the sustainability of the sources (i.e. which sources to draw from when bearing in mind yield, climate dependency, volume and location issues). This does not apply to Retail. In the case of private ownership, regulation would be required to ensure that the best interests of the wider community are served.
  - Asset operations can be contracted out (using a variety of models) but should not be fragmented across the integrated network assets as inefficiencies would result.

- Disaggregated ownership is feasible across the value chain but may incur additional co-ordination costs and a loss of economies of scale. Despite the apparent success of disaggregation in the energy sector, this model is not regarded as feasible in water due to water being a lower value commodity, difficult to transport and harder to integrate into the transmission infrastructure.

APPENDIX 2

Competition between water sources

The Water Corporation's preliminary analysis calls into question whether an efficient market could be established to allow owners of separate water sources to bid to supply services.

- A technically optimal outcome is achievable through a planned outcome. A market could at best match this outcome, and as discussed below, would most likely fall short.

- A possible compensation for a less than perfect outcome could be that the market could provide prices that revealed information that could enhance system augmentation decisions. However, the examples provided below call into question the validity of market prices to signal source expansion.

- The efficient delivery and operation of infrastructure as source owners try to minimise costs. This incentive would be equal under a BOO option.

The potential technical and allocative efficiency of a water source market needs to be determined prior to any consideration of structural changes such as establishing separate bulk water entities. This work has not been done and will take some time.

A market of competing water sources would be fundamentally different from a market of competition electricity generators due to the element of dam storage. Without storage, the electricity market can be split into:

- generating capacity – insuring that future capacity is coming on line to meet demand; and
- operations –a short-term decision on which generators to use to meet current demand.

For electricity, these decisions are independent. For water, they are linked as consumption in one year impacts the capacity that is available in the next and following years.

Other complicating issues are:

- Dams represent the lowest short-run marginal cost source, but the optimal supply strategy is normally to minimise their use (unless they are likely to be over-topped);

- Operating sources conjunctively results in significantly greater yield and reliability than operating them independently.

- Ground water draw in Western Australia is based on dam levels. If these were separately operated in a competitive market, the operations of one supplier would impact the security of the other

- Production of higher marginal cost water from a desalination plant can be stored in a dam, adding to storage levels in future years, providing both additional security from climate variation and ultimately delaying the timing of future source augmentation. For example, it is cheaper to produce desalination water at 60c/kL (compared to dams at 10c/kL) than to augment supplies in 6 years time at $1.35/kL, assuming a 10% evaporation rate and 6% real rate of return. This increases to 16 years for borefields at 20c/kL.

- Depending on climatic conditions, sources are managed to meet both environmental and water supply objectives.

The possibility of efficient in-the-market competition is a question that remains to be answered. Working through the possibilities that come from the simplified model below indicates that the issue of how the market would function, whether it would achieve equilibrium and the opportunities for market participants to achieve greater returns from sub-optimal behaviours needs much more investigation. It should be noted that the Water Services Association of Australia is commissioning research to build an interactive model to investigate some of these questions.

Simplified Water Source Example

The following example has been constructed to demonstrate why a market may be inefficient. It supports proceeding carefully on the assumption that water markets are likely to be inefficient until it can be demonstrated otherwise. Our observation is that economic regulators often appear to assume the opposite.

The following simplified example assumes three competing source providers:

Company 1 – Desalination Plant Owner

Capacity	100 GL per annum
Short-run operating cost	60c/kL

Company 2 – Borefield Owner

Capacity	100 GL per annum
Short-run operating cost	20c/kL

Company 3 – Dam Owner

Storage Capacity	Substantial
Yield	Average 50GL per annum made up of: 100 GL in 50% of years Zero in 50% of years
Short-run operating cost	10c/kL

Customer

Demand	250 GL at $1.00 per kL
Demand elasticity	-0.2 (10% price increase = 2% volume reduction)
Growth	none

Cost of scheme Augmentation $2.01/kL

Base Case – Optimal Planned Outcome

The optimal operation of this scheme is to operate the desalination plant and borefield at there full capacity and take 50GL per annum from the dam. The 250GL would be sold to the customers at $1/kL. Operating costs would be 34c/kL. Augmentation of the scheme at a cost of $2/kL would be inefficient.

Optimal	Desalination	Borefield	Dam	Total
Supply	100GL	100GL	50GL	250GL
Cost	$60m	$20m	$5m	$85m

In addition to the $85m operating cost, source owners would be compensated for the capital cost of constructing their sources. There returns would not depend on an in-the-market outcome.

Case 1 – All sources are bid at their short-run marginal cost (SRMC) and available volume

If all companies bid their available volume based on their short-term marginal cost, a sub-optimal outcome will occur as the dam owner will over-supply in wet years and under supply in dry years.

Source Bid at SRMC	**Desalination**	**Borefield**	**Dam**	**Total**
When dams have 100GL				
Bid	0.6c/kL	0.2c/kL	0.1c/kL	
Supply	75GL	100GL	100GL	275GL
Cost	$45m	$20m	$10m	$75m
Customer Price	$0.60/kL	$0.60/kL	$0.60/kL	
Revenue	$45m	$60m	$60m	$165m
Net	$0m	$40m	$50m	$90m
When dams have zero				
Bid	0.6c/kL	0.2c/kL	0.1c/kL	
Supply	100GL	100GL	0GL	200GL
Cost	$60m	$20m	$0m	$80m
Customer Price	$2.85/kL	$2.85/kL	$2.85/kL	
Revenue	$285m	$285m	$0m	$570m
Net	$225m	$265m	$0m	$490m
Average				
Bid	0.6c/kL	0.2c/kL	0.1c/kL	
Supply	88GL	100GL	50GL	238GL
Cost	$53m	$20m	$5m	$78m
Customer Price	$1.89/kL	$1.73/kL	$0.60/kL	$1.55/kL
Revenue	$165m	$173m	$30m	$368m
Net	$113m	$153m	$25m	$290m

In comparison with the optimal solution

- Production averages 238GL per annum, 12GL less than the 250GL optimal, with loss of consumer surplus.

- Prices oscillate between 60c/kL and $2.85/kL, averaging $1.55/k. The desalination plant and borefield owners make higher returns. The highest price is greater than the cost of augmentation (the average is not) and augmentation would be inefficient.

- While the average cost per kilolitre produced is marginally less (33c/kL compared to 34c/kL) the loss of consumer surplus more than offset this gain.

The dam owner only makes 60c/kL, less than the $1 that would price from an optimal market. Therefore there is an incentive for the dam owner to reduce consumption in one period to sell in another.
If companies bid at short-run marginal cost, and the dam owner is bids the average yield rather than available volume, an efficient outcome is possible. The market rules would need to be such that this behaviour was allowed.

However, further rules would be needed if suppliers can withhold production. As demand is inelastic, source owners can gain from withholding supply. If production has to be centrally managed, the market becomes redundant.

Case 2 – All sources are bid at the long-run marginal cost (LRMC) and market clearing volume

If all companies bid on the basis of the long-run marginal cost ($2/kL), a sub-optimal outcome will occur as sales will be less than capacity, and production will be lost from desalination and the borefield. Companies will make a lot more money than under a marginal cost approach and consumers will pay more.

Companies Bid LRMC	**Desalination**	**Borefield**	**Dam**	**Total**
When dams have 100GL				
Bid	$2.00/kL	$2.00/kL	$2.00/kL	
Supply	72GL	72GL	72GL	215GL
Cost	$43m	$14m	$7m	$65m
Customer Price	$2.00/kL	$2.00/kL	$2.00/kL	
Revenue	$143m	$143m	$143m	$430m
Net	$100m	$129m	$136m	$366m
When dams have zero				
Bid	$2.00/kL	$2.00/kL	$2.00/kL	
Supply	93GL	93GL	28GL	215GL
Cost	$56m	$19m	$3m	$78m
Customer Price	$2.00/kL	$2.00/kL	$2.00/kL	
Revenue	$187m	$187m	$57m	$430m
Net	$131m	$168m	$54m	$353m
Average				
Bid	$2.00/kL	$2.00/kL	$2.00/kL	
Supply	83GL	83GL	50GL	215GL
Cost	$50m	$17m	$5m	$71m
Customer Price	$2.00/kL	$2.00/kL	$2.00/kL	$2.00/kL
Revenue	$165m	$165m	$100m	$430m
Net	$116m	$149m	$95m	$359m

In comparison with the optimal solution

- Production averages 215GL per annum, 35GL less than the 250GL optimal, with loss of consumer surplus.

- Prices average $2/kL compared to $1/kL under the optimal solution. The source owners make much higher returns than with pricing at SRMC ($359m vs $290m). The price is less than the cost.

However, if the system was growing, customer would receive the correct long-term price signal.

Other cases were examined that show that:

- If the dam owning company restrict volume below the average yield (and places a value on the water remaining in storage), a sub-optimal outcome will occur but they will make more money;

- If all the companies bid their marginal costs, and either the desalination company or the borefield company restricts their production, the companies will make more money and a sub-optimal outcome will occur.

The key conclusion from this work is that, based on some simplifying assumptions that still reflect some key elements of Western Australia's water sources, it can be shown that with a competing water source market:

- all source companies will individually have the incentive to reduce production;

- consumers will pay significantly more on average where there is a sub-optimal outcome;

- the price may be in excess of the cost of augmentation, but with perfect knowledge, augmentation will not occur; and

- if augmentation did occur, it would be a market failure and would result in wasted investments.

The above examples do not begin to examine the complication of:

- variations in the borefield capacity based on the dam levels;

- the yield benefits from operating sources conjunctively;

- the value of storing desalination water production in dams (negative supply); and

- the optimal management of each of the sources based on the expected (but uncertain) future augmentation timetable.

A key insight is that management of the short-term draw on sources is a relatively simple optimisation if a planning approach is taken (normally run desalination, maximise borefield productions and minimise dam drawdown, with adjustment when dams may spill or environmental values are threatened) compared to the complexity of the market rules that would be required if it were possible to replicate this result.

Given the oscillation that would occur from year to year with market based prices, no clear signal would be provided that would assist in planning source augmentation decisions.