Issues Paper

Inquiry into Developer Contributions to the Water Corporation

31 October 2007

Economic Regulation Authority
WESTERN AUSTRALIA

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Perth, Western Australia
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Foreword

The Treasurer of the State Government of Western Australia has requested the Economic Regulation Authority (**Authority**) to undertake an inquiry into the Water Corporation's developer charges.

In accordance with the Terms of Reference, the Authority will examine and make recommendations on the most appropriate charging mechanisms for all of the Water Corporation's developer charges and the level of headworks charges that should apply from July 2008, or as soon as possible thereafter. In doing so, the Authority is required to consider the general principles underpinning developer charges and the approaches used across government businesses in WA and the approaches applied by regulators in other jurisdictions.

Particular areas of focus will include:

- whether standard headworks contributions are an efficient and equitable funding mechanism or whether alternative pricing structures are appropriate;
- the appropriateness of differentiating headworks charges by location;
- the method of charging for frontal and out of sequence developments;
- the method of setting developer charges for high volume customers in country areas; and
- the appropriateness of applying a headworks charge to temporary connections.

The purpose of this issues paper is to provide background information and outline the issues to be investigated. It is intended to assist stakeholders to understand the nature of the issues under review and to facilitate public comment and debate. Throughout this issues paper questions are raised, highlighted in boxes that may be of particular interest to stakeholders.

Submissions on any matters, including those raised in this issues paper, should be submitted no later than **4.00 pm Friday 14 December 2007** to:

developer.contributions@era.wa.gov.au

or addressed to:

Inquiry on Developer Contributions to the Water Corporation
Economic Regulation Authority
PO Box 8469
Perth Business Centre
PERTH WA 6849

Section 1.5 of this issues paper provides further information regarding the process for making a submission.

Interested parties and stakeholders will have a further opportunity to make submissions following the release of the Authority's draft report by March 2008. The final report for the inquiry is scheduled to be delivered to the State Government by 30 June 2008, following which the Government will have 28 days to table the report in Parliament.

I encourage interested parties to consider the terms of reference and the matters raised in this issues paper and prepare a submission to the inquiry.

LYNDON ROWE
CHAIRMAN

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1 Introduction

The Treasurer of Western Australia gave written notice to the Economic Regulation Authority (**Authority**), on 17 October 2007, to undertake an inquiry into the Water Corporation's developer contributions.

The inquiry has been referred to the Authority under Section 32 of the *Economic Regulation Authority Act 2003* (**Act**), which provides for the Treasurer to refer to the Authority inquiries on matters related to regulated industries (i.e. water, gas, electricity and rail industries).

1.1 Terms of Reference

The Terms of Reference for the inquiry are provided in Appendix 1.

In accordance with the Terms of Reference, the Authority is to consider and report on:

1) the general principles underpinning developer charges for government businesses and the approaches to developer charges adopted by water regulators in other jurisdictions and by other utilities in Western Australia, as well as the work that is done on a national level as part of the National Water Initiative Agreement;
2) whether standard headworks contributions are an efficient and equitable funding mechanism for the provision of water, wastewater and drainage infrastructure, or whether alternative pricing structures have the potential to encourage more efficient urban development through cost reflective price signals;
3) the ongoing use of special developer contribution area charges for development in areas having particular local conditions and local requirements;
4) the efficient and equitable recovery of the cost of minor works (connecting works) for frontal and out of sequence developments, having regard to the appropriate cost and risk sharing arrangements between different developers over time;
5) major customer charges for development of infrastructure for high volume customers in country areas; and
6) headworks contributions for temporary connections to Water Corporation services.

The Authority is required to make recommendations on the most appropriate method to calculate the Corporation's developer charges and, for headworks charges only, make recommendations on the appropriate level of charges to apply from 1 July 2008.

In undertaking the inquiry, the Authority recognises section 26 of the Act, which requires the Authority to have regard to:

- the need to promote regulatory outcomes that are in the public interest;
- the long-term interests of consumers in relation to the price, quality and reliability of goods and services provided in relevant markets;
- the need to encourage investment in relevant markets;
- the legitimate business interests of investors and service providers in relevant markets;
- the need to promote competitive and fair market conduct;
- the need to prevent abuse of monopoly or market power; and

- the need to promote transparent decision making processes that involve public consultation.

1.2 Background to the Inquiry

The Authority has undertaken a series of pricing inquiries into the Water Corporation's metropolitan and country water and wastewater prices. The final reports of each of these inquiries are available on the Authority's web site. As a result of previous water and wastewater pricing inquiries:

- metropolitan water usage charges are moving towards long run marginal cost, which is the marginal cost of future water sources;
- the number of steps in the water tariff schedules (both residential and non-residential) are being reduced over time;
- charges in country towns for water usage above the uniform threshold will be more closely related to the costs of providing the water service;
- all water and wastewater tariffs are being set as closely as possible to the costs of delivering the service (subject to the uniform tariff policy and caps on wastewater charges).

This inquiry into developer charges fits into the broader pricing review process.

The inquiry also fits in with the National Water Initiative process, which requires State Governments to either set or review all water charges, including charges to developers, and remove or at least make transparent any cross subsidies.

The timing of the inquiry coincides with the Water Corporation's policy of reviewing its developer charges on a triennial basis.

1.3 What are Developer Contributions?

When a new development is built, new assets and facilities are needed to deliver water, wastewater and drainage services to the new development. These investments include local reticulation infrastructure and assets to connect the new development to the existing system. They may also include enhancements to the capacity of the existing system to accommodate the additional demand associated with the new development, such as upgraded (or new) mains pipes, treatment plants, storage facilities or pumps. The extent of upstream capital expenditure prompted by a new development may be significant, depending on factors such as the size of the new development and the amount of spare capacity on the system.

Infrastructure costs for new developments may be recovered in a number of ways.

- Headworks charges are up-front payments to recover part of the infrastructure costs incurred by the Corporation to meet the demand for new developments. The Corporation defines headworks (which are also referred to as "major works") as the infrastructure assets used to provide water, sewerage and drainage services, with the exception of reticulation services and private plumbing. The establishment of a new housing development is a typical example of where headworks charges are applied. However, headworks charges apply in other cases where there is an increase in the demand for water, wastewater or drainage services. These include the addition of new residential dwellings to an existing

residential block; the redevelopment of an existing building; increases in the water supply peak flow rate, water meter size, wastewater discharge, or the number of connection points to the system; new permits for industrial waste discharge; or changes in land use or rezoning.

- Reticulation works (or "minor works"), which may include temporary works, are carried out by developers. These assets are then transferred to the Corporation, and developers recover their costs through property prices.
- The Water Corporation may also, at the request of developers, pre-fund infrastructure which is ahead of its planned development front. This is known as out of sequence development.

1.4 Review Process

The recommendations of this inquiry will be informed by the following public consultation process:

- This issues paper invites submissions from stakeholder groups, industry, Government and the general community on the matters in the Terms of Reference. Submissions are due by 4:00 pm on Friday 14 December 2007.
- Following consideration of submissions received on the issues paper, the Authority intends to publish a draft report in March 2008. Public submissions on the draft report will be invited.
- If there is sufficient public interest, the Authority will hold a public forum following the publication of the draft report.
- The Authority will consult its Consumer Consultative Committee during the course of the inquiry.
- The final report for the inquiry is to be delivered to the Treasurer by 30 June 2008 and the Treasurer will, in accordance with the Act, have 28 days to table the report in Parliament.

In accordance with section 45 of the Act, the Authority will act through the Chairman and members in conducting this inquiry.

1.5 How to Make a Submission

Submissions on any matters raised in this issues paper or in response to any matters in the Terms of Reference should be in written and electronic form (where possible) and addressed to:

Inquiry on Developer Contributions to the Water Corporation
Economic Regulation Authority
PO Box 8469
Perth Business Centre
PERTH WA 6849

Email: developer.contributions@era.wa.gov.au
Fax: (08) 9213 1999

Submissions must be received by 4:00 pm Friday 14 December 2007.

In general, submissions from interested parties will be treated as in the public domain and placed on the Authority's web site. Where an interested party wishes to make a confidential submission, it should clearly indicate the parts of the submission that are confidential.

The receipt and publication of a submission shall not be taken as indicating that the Authority has knowledge either actual or constructive of the contents of a particular submission and, in particular, whether the submission in whole or in part contains information of a confidential nature and no duty of confidence will arise for the Authority in these circumstances.

Further information regarding this inquiry can be obtained from:

Dr Ursula Kretzer
Manager Projects
Economic Regulation Authority
Ph (08) 9213 1900

Media enquiries should be directed to:

Mr Paul Byrne — Ph (08) 9385 9941
Byrne & Byrne Corporate Communications — Mb (0417) 922 452

2 What Principles Should Be Applied to the Recovery of Infrastructure Costs Associated with Land Developments?

2.1 Terms of Reference

The Authority is expected to consider and develop findings on:

1. the general principles underpinning developer charges for government businesses and the approaches to developer charges adopted by water regulators in other jurisdictions and by other utilities in Western Australia, as well as the work that is done on a national level as part of the National Water Initiative Agreement;

2.2 Introduction

This section deals with the charges associated with land developments (as opposed to major industrial or commercial customers, which are discussed in section 5). New land developments impose increased demands on utility services, and charges to land developers are aimed at recovering, in part or in full, the costs associated with those demand increases. Developers pass these charges on to the land purchasers.

The methods used to charge developers differ across utilities in the water industry and across the water, electricity and gas industries. This chapter summarises the current approaches to setting developer charges and then presents a set of principles that have been previously identified by others. This chapter draws from a range of sources, including:

- current developer charging methods of the Water Corporation, Aqwest, Busselton Water, Western Power and Alinta;
- consultant reviews of developer charges in the WA water industry, comprising the reviews of developer charges by Marsden Jacob Associates for the Corporation in 2003 and for the Office of Water Regulation in 1997;
- reviews by other economic regulators, including the Essential Services Commission (ESC) in Victoria, IPART in New South Wales and Ofwat in the UK;
- the outcomes and commitments on best practice water pricing and institutional arrangements set out in the National Water Initiative;
- reviews into related matters, such as the Productivity Commission's inquiry into first home ownership.

2.3 Current Charging Methods

In order to provide the context for a consideration of principles that should apply to developer charges, it is important to first have an appreciation of the current charging methods applying across WA and elsewhere in Australia. Given the significant variation in approaches (and even terminology), the following discussion separates developer charges into:

- charges for the cost of laying reticulation within the development;

- charges for the cost of connecting the development to the existing network and upgrading the existing network if necessary; and
- charges for the cost of developing major infrastructure (headworks).

2.3.1 Charging for the Cost of Laying Reticulation Within the Development

The general method applied by utilities in WA and elsewhere in Australia is for the developer to undertake new minor works such as laying the reticulation network. Water Corporation and Western Power generally follow this principle:

- Water Corporation requires developers to extend minor mains at their own cost to the specification of the Water Corporation.
- Western Power requires developers to install the local reticulation assets within a development, including high and low voltage infrastructure, switchgear, transformers and streetlights. For residential subdivisions, the costs of high voltage infrastructure in excess of the requirements of the subdivision are spread between developers through the High Voltage (HV) Pool, introduced in 1999. The HV Pool collects funds from developers who pay below their share of high voltage electricity infrastructure and compensates developers who pay more than their share. There is no pool mechanism for commercial and industrial subdivisions.

Busselton Water and Aqwest compete against other tenders to undertake the reticulation work.

Alinta will install gas reticulation within the development at no cost to the developer where a new residential development abuts an existing gas distribution network, as long as:

- the lot frontages do not exceed 20 metres (this is reviewed annually);
- all necessary trenches are provided by the developer; and
- any boring/drilling under established roads that may be necessary to connect the new subdivision to the existing network is provided by the developer.

Alinta may require payments from some residential customers (e.g. existing strata-titled dwellings, new and existing high-rise residential developments). Costs associated with the installation of reticulated natural gas infrastructure in non-residential developments are charged to the developer in full.

2.3.2 Charging for the Cost of Connecting the Development to the Network and Upgrading the Network if Necessary

There are significant differences in the methods used by utilities in WA to charge for connecting a development to the network.

Water Corporation pays for extensions to water supply mains that are less than 30 metres per rateable property, do not exceed a projected cost of $4,000 per rateable property, and supply no more than 10 properties. In other circumstances, the Corporation contributes towards the cost of a mains extension up to ten times the expected annual service charge revenue from the rateable properties in the extension.

Aqwest discounts the developer's costs of a mains extension by up to $3,330 per property for each property that becomes rateable as a result of a mains extension, up to a

maximum of $33,330 or the cost of the mains extension. The additional revenue to Aqwest from the land being connected is not included in the calculation of this discount.

Busselton Water's policy is that developers pay all of the costs of the minimum infrastructure required to connect their development to the system, but Busselton Water will pay for any upgrades above that minimum deemed necessary by the utility for optimal system development. Any upgrades to the network prompted by new developments are funded from the pooled headworks charges paid by developers.

Western Power's policy is that the enhancements to the network outside the subdivision to connect the subdivision to the existing network are carried out by Western Power and fully funded by the developer. However, the HV Pool mechanism results in an averaging of high voltage costs across developers.

Alinta provides up to 20 metres of gas service pipe (the line that runs from the gas main to the customer's meter) free of charge. As gas is not considered an essential service and competes with electricity, there is a commercial incentive for Alinta to connect properties at the development stage when households are making choices about their energy source. Overlength services (more than 20 metres of pipe) attract a customer contribution.

In Victoria, the water utilities currently charge a flat fee of the cost of connecting to the network. The current flat fee ($500 per lot for water and $500 per lot for wastewater) is a transitional measure as the ESC is currently consulting interested parties on approaches that could be implemented that would allow for charges that are differentiated by location.

In NSW, developer charges are estimated on the basis of development servicing plans (DSPs). The boundaries for these plans can be decided by the water business and can include its entire jurisdiction. However, the charges are not just for the cost of connecting the development to the network and can also include charges for source infrastructure.

In England and Wales, the water regulator sets a uniform maximum per property charge for the costs of augmenting the local distribution network to accommodate the development. In addition, charges for the installation of public water mains or sewers that are requested by a developer are set by the regulator.

2.3.3 Charging for the Cost of Developing Major Infrastructure (Headworks)

Water Corporation, Aqwest and Busselton Water set headworks charges to recover the costs of major (i.e. non-reticulation) infrastructure.

Western Power does not apply headworks charges to developments in urban areas, but has recently developed a headworks policy for some edge-of-grid developments in regional areas.

Alinta charges developers for headworks for non-residential developments and for residential developments that do not abut the existing infrastructure.[1]

[1] Where a new residential development does not abut an existing gas distribution network, a capital contribution towards the cost of construction of the required connecting infrastructure is required. These constructions are generally described as "headworks". This also applies to a situation where it is necessary to construct a pressure reducing station if the supply to the new development needs to be fed from a high-pressure gas main.

The method of calculating charges for major infrastructure differs across the utilities.

- Water Corporation uses a current cost approach to calculate a per lot cost of current WA-wide headworks. The resulting cost is then adjusted to share the costs between developers (Water Corporation charges 40 per cent of the current cost per lot to developers) and the final water user. A uniform charge is applied State-wide. The principle being applied is that the cost of major infrastructure is recovered partly upfront (through developer contributions) and partly over time (through annual rates and consumption charges). In addition, the Water Corporation has special developer contribution areas (such as for the North East Corridor and Eagle Bay).
- Busselton Water and Aqwest use a current cost approach to calculate a per lot cost of current headworks, and then adjust this figure to equate revenue for headworks to expected expenditure. The principle being applied is that new customers entirely fund the major infrastructure.
- Western Power is currently consulting on a proposed distribution headworks policy for major enhancements in its high voltage rural distribution system that are more than 25km from its zone substations. This is because edge-of-grid developments in rural areas often require substantial, and potentially prohibitive, capital contributions.[2] The headworks charge would spread the costs of such enhancements across developers and would apply to residential and commercial developments. The headworks charges would be based on the capacity of the new development, its impact on load, the distance from the zone substation, and the voltage of the distribution feeder to which it is connected. Headworks charges would be reduced by taking into account expected revenue from network access charges arising from that connection for up to 15 years in the future. The State Government has also determined a rebate to apply to locations with the highest headworks charges.[3]
- Alinta adopts an Economic Feasibility Test to calculate charges for developing major infrastructure.[4] The charges are determined by calculating the shortfall between the total project cost (i.e. the gas distribution network within the subdivision and associated headworks) and the expected revenue from the project. The calculation generally results in the developer contributing fully towards the headworks and Alinta fully funding the gas distribution network within the development.

In New South Wales, the charging method approved by IPART allows for the inclusion of costs associated with infrastructure that is not owned by the water business (i.e. owned by the Sydney Catchment Authority).

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[2] Under the *Electricity Network Access Code 2004,* major augmentations to Western Power's network which do not pass the New Facilities Investment Test (NFIT) require up-front capital contributions from developers. The New Facilities Investment Test (s.6.52 of the Code) requires that the costs of the New Facility Investment be minimised and at least pays for itself, through future revenues associated with the investment. Investments which pass the NFIT are rolled into the capital base, so that the costs are recovered through tariffs. The amount of the capital contribution is determined by the total cost of the new facility *minus* the costs of the new facility that are approved under the NFIT. Most developments in urban centres and regional towns pass the NFIT as charges are recovered through tariffs.

[3] For residential subdivisions, headworks charges above $1000/kVA will be subsidised at a rate of 50 per cent, up to a cap of $2000/kVA (around $11,000 per block including GST). For commercial and light industrial subdivisions, headworks charges above $500/kVA will be subsidised at a rate of 67 per cent, up to a cap of $1000/kVA.

[4] This test is consistent with section 8.16 of the *National Third Party Access Code for Natural Gas Pipeline Systems.*

The Essential Services Commission of Victoria has argued that infrastructure costs that are common to all parts of the network, such as headworks, should not be recovered from only one group of customers such as developers.

South Australia Water calculates headworks charges in a similar manner to the Water Corporation, as a uniform state-wide charge.

In England and Wales, the water regulator does not permit costs other than those incurred to enhance the local network to be charged to developers but rather be recovered through annual water and sewerage bills.

2.4 Principles

The relevant national agreements and work undertaken by the Productivity Commission provide a useful starting point for considering the general principles that could be applied to developer charges in WA.

The national agreements that are relevant to a discussion of principles include the National Competition Policy and National Water Initiative, which require that all water prices, including charges to developers, be reviewed by an independent regulator.[5] In particular, these national agreements require that any cross-subsidies that might exist either be removed or, at least, made transparent.[6] Cross-subsidies are more likely to exist where there are uniform charges, such as the Water Corporation's Standard Headworks Contribution, and arise when a customer pays more than necessary in order that another customer pays less than the direct costs associated with providing them with a service.

According to the Productivity Commission's Inquiry into First Home Ownership,[7] developer charges should be:

- necessary, with the need for the infrastructure concerned clearly demonstrated;
- efficient, justified on a whole-of-life cost basis and consistent with maintaining financial disciplines on service providers by precluding over-recovery of costs;
- equitable, with a clear nexus between benefits and costs and only implemented after industry and public input.

Further:

- investments in items of social or economic infrastructure that provide benefits in common across the wider community should desirably be funded out of borrowings and serviced through rates, taxes or usage charges.

The Productivity Commission recommended that those imposing developer charges should be subject to:

- independent regulatory scrutiny;
- provide for 'out of sequence' development if developers are prepared to meet the cost consequences;
- be open to proposals for alternative infrastructure arrangements that meet the needs of the households concerned;

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5 *National Water Initiative Agreement* , section 77.

6 Op.cit., sections 64-68.

7 Productivity Commission Inquiry (31 March 2004), Report No 28, *First Home Ownership*.

- allow appeals on the amounts charged, or their coverage; and
- be accountable for how money raised from charges is spent.

This section uses the Productivity Commission framework as a starting point to examine the principles that will need to be considered as part of this inquiry. This list of issues may not be an exhaustive list and interested parties are encouraged to offer other principles that should be included, and comment on the principles that are presented. It is important to note that any set of principles would need to be applied as a package, taking into account trade-offs between competing principles, and only implemented after a benefit-cost analysis is undertaken.

Efficiency

According to the Productivity Commission, there are four efficiency principles that will need to be considered as to whether and to what extent they should guide the recommendations of this inquiry:

- the need for the infrastructure should be necessary and clearly demonstrated;
- decision makers should only pay for the costs that are directly attributed to their actions;
- developers should be permitted to progress out of sequence developments if they are prepared to take the risk; and
- the total amount of a utility's revenue from developer charges, service charges and usage charges should be no greater than the efficient costs of providing the service.

The National Water Initiative requires movement towards full cost recovery in the pricing of water storage and delivery. In communities where CSOs are required in order to achieve full cost recovery, the NWI requires that these be made transparent.[8]

In addition, the National Competition Policy requires:

- cross-subsidies to be removed where practical or at least made transparent.

Necessity

The Productivity Commission indicated that developer charges should be "necessary with the need for the infrastructure concerned clearly demonstrated" and the utility should be "open to proposals for alternative infrastructure arrangements that meet the needs of the households concerned". An issue raised by stakeholders as part of the Productivity Commission's inquiry was whether charges were excessive because of standards that were unreasonably high (sometimes referred to as "gold plating").

The Water Corporation's Urban Development Advisory Committee's terms of reference allows these issues to be considered as part of the triennial review of headworks contributions.

For Western Power, there is a formal mechanism called the Regulatory Test that requires Western Power to demonstrate to the Authority that any proposed capital expenditure on transmission in excess of $15 million and distribution in excess of $5 million maximises

[8] *National Water Initiative Agreement*, sections 65 and 66.

the net benefit to those who generate, transport and consume electricity after considering alternative options.

IPART applies the "necessity principle" by requiring a minimum 30 day exhibition period for development servicing plans and by requiring a detailed explanation of the calculations. Stakeholders are informed 10 working days before the exhibition period commences.

Location signals

The main efficiency issue that is relevant to this inquiry is the role of developer charges in influencing the spatial pattern of housing development. Efficient pricing generally requires decision makers to pay for the costs that are directly caused by their actions. For example, if it costs $1,000 to provide you with a service, and you alone benefit from this service, you would be expected to be charged at least $1,000.

If this principle were applied to developer charges, the charges would reflect the relative costs of connecting to the network at different locations. Developments with more expensive connection costs would then become less attractive to the developer's customers in comparison to developments with similar amenity value but less expensive connection costs. It is likely that developers would take this relative demand into account when deciding which parcels of land to develop.

A complication in applying this principle arises from the practical problem of identifying the costs that are directly attributable to a development. It is clear that the local reticulation costs are directly caused by the development. Similarly, it is clear that the costs of connecting the development to the wider network are directly attributable to the development. However, it is unclear to what extent the costs of augmenting transmission infrastructure is due to a particular development and very unclear to what extent new source infrastructure is due to a particular development. These augmentation costs are generally referred to as shared costs because they can arise as a result of either new developments or an increase in average demand by existing customers.

An implication of including in developer charges costs that are not directly related to the particular development is that the developer charges are less likely to be related to costs that are valued by the developer's customers (i.e. the costs associated with providing essential infrastructure). Consequently, customers are less likely to be willing to pay for the full pass-through of these unrelated costs. This will lower the price that developers are prepared to pay the original land owners for the land.

As discussed above, IPART has required the water companies it regulates to establish development servicing plans to provide for location signals. However, the approach recommended by IPART has been questioned by the ESC because IPART allows developer charges to recover the costs of existing surplus capacity. The ESC considers that developer charges, like water usage charges, should be set in relation to marginal cost and the costs of any existing surplus capacity should not be used to calculate marginal cost, because marginal cost is a forward-looking concept. Others, such as Marsden Jacob Associates, have questioned the ESC approach by arguing:

> Where there is surplus capacity in existing infrastructure … this surplus capacity is identical to augmentation works. Accordingly, it should be future users that fund the cost of this additional capacity, not the current users.[9]

[9] Jacob and Associates (1992), p2, quoted in Marsden Jacob Associates (8 August 2004), *A Developer Charges Approach for RUWA Water Plans*, p25.

Further, the ESC has indicated that shared costs should not be included in the calculation of developer charges. According to the ESC, if a cost can be avoided, even in part, by existing customers then it is not appropriate to charge that cost entirely to new customers. The Productivity Commission shares the general concern, particularly in relation to water source costs and wastewater treatment plants, but appears less concerned about passing through the costs of transmission infrastructure to new customers. The Productivity Commission has indicated that it would prefer to see source costs paid for through other utility charges.

An issue with the recovery of water source costs is that in WA and increasingly elsewhere in Australia these costs are accounted for in the method of calculating the water usage charge. When a customer in a new development uses water, the price they pay is sufficient to fund the per kilolitre cost of future water sources. It may therefore be inappropriate to include in developer charges a component that reflects source costs.

The principle of setting developer charges to reflect the relative direct infrastructure costs of developing land differs from the current standard headworks charging approach in the WA water industry, which is uniform across each water business' customers and is calculated based on both existing and shared costs. In the case of Western Power, location signals are muted by the HV Pool, which averages the costs of high voltage infrastructure enhancements across developers. However, Western Power's proposed headworks policy for edge of grid customers in rural areas will result in stronger location signals (although costs are still capped and subsidised to some degree). As Alinta funds the development costs for most residential customers, there is no direct location signal.[10]

Provision for out of sequence development

Out of sequence developments can be an efficient way of by-passing the more orderly expansion of an urban centre as long as the decision to "leapfrog" is a commercial one incorporating all of the relevant risks and external costs associated with the decision. According to the Productivity Commission:

> Out of sequence development can help to overcome constraints that adversely affect the responsiveness of housing supply, such as fragmented land holdings, thereby reducing price pressures arising from an increase in demand. If developers bear the holding costs of infrastructure that has been provided ahead of schedule, utilities should be indifferent about meeting the infrastructure requirements of this type of development. (p170).

In WA, the Corporation has a policy on out of sequence developments whereby the developer pays the cost of extending or bringing forward the capacity of the system and is then refunded the initial payment after an agreed period if certain conditions are met.

Western Power's policy is to attribute any additional costs of bringing forward a development to the developer, net of the net present value of the future access charges associated with the development.

Cost reflectivity

Under the National Competition Policy, all jurisdictions are required to have checks and balances, via independent regulatory oversight, to ensure that the total revenue from customers, including developer charges, is just sufficient to cover efficient costs.

[10] There is an indirect signal, as Alinta only funds development that will ultimately be profitable. If a development is likely to be unprofitable, there will be no reticulated gas.

In WA, an integral part of a regulatory determination or review is the examination of whether there is over-recovery of costs. For example, when undertaking the annual reviews of the Corporation's charges, the Authority ensures that developer revenue is included in the calculations to ensure total revenue equals total cost. A similar check is undertaken when the Authority reviews the revenue to Western Power and Alinta under their respective access arrangements. However, there is currently no such ongoing independent review of Aqwest and Busselton Water's revenue.

Cross-subsidies

The National Competition Policy and subsequently the National Water Initiative each require that cross-subsidies be either removed or at least transparently identified. Cross-subsidies can exist where a customer does not at least pay the direct cost of connecting to the network. Cross-subsidies are more likely to exist where there are uniform charges and can be removed by moving to location based charges, although the administrative cost of doing so may not be justified.

Among WA utilities, cross-subsidies are most likely to exist as a result of the uniform charging arrangements in the water and electricity industries. Such cross-subsidies may not currently be transparent.

Pricing

The challenge that is pricing involves designing a charging regime and setting charges that recognise how costs are incurred on the one hand whilst also being responsive to consumer reactions to the charges set.

For a corporation, such a water service provider, there is an array of costs with significantly different characteristics that have important implications for the design of a charging regime. For example, the types of costs include: fixed costs, variable costs, marginal costs, sunk costs, direct costs, indirect costs, joint costs, once only costs, capital costs, periodic costs and overheads.

On the consumer side, there is an array of charging mechanisms that trigger different responses from consumers. These mechanisms include: once only charges such as connection fees, capital contributions, headworks charges; periodic charges such as service fees; and per unit charges such as usage charges. In addition, the various charges may be set such that the unit rates vary, for example, for different levels of consumption, at different times of the day, according to different levels of demand such as in the case of peak load pricing, or depending on the length of time over which consumption occurs.

Economic efficiency is achieved when the design of the charging arrangement and the level of charges are such that the community cannot be made any better off by any change in the design or levels of charges.

However, the design of the charging arrangement and the setting of individual charges needs to recognise the interrelationships between consumer responses on the one hand and the impact this has on costs. For example, it is likely that the greater the amount of infrastructure cost to be recovered through headworks charges the lower will be the level of infrastructure investment. This is so because the level of any headworks charge will impact on the demand for new infrastructure. Smearing the cost of infrastructure over usage charges will therefore increase the demand for infrastructure but diminish its utilisation.

Clearly, pricing is a complex matter that requires a balancing of many direct, indirect and external influences.

Equity

The main equity principles for consideration as part of this inquiry are:

- essential services should be affordable for all customers (i.e. uniform pricing);
- where infrastructure costs can be attributed to both new and existing customers, there should be a fair and reasonable approach to sharing those costs; and
- any pricing reforms that involve price increases for a subset of customers, particularly low income customers, should involve a transition path over a reasonable period of time.

Uniform pricing

An issue for consideration as part of this inquiry is whether uniform developer charges are consistent with the intent of the State Government's Uniform Tariff Policy. This policy has not been documented, but has been interpreted by the Authority as part of its Inquiry into Country Water and Wastewater Pricing as a policy that provides all households in WA, irrespective of where they are located, with access to an amount of water for their basic needs at an affordable price.

It could be argued that developer charges, if set too high, could deter access to essential services at an affordable price for those people seeking to purchase a house in a new development. However, as their alternative is to locate in an existing development the presence of a high developer charge may not preclude their access to the essential service.

Fairly allocating shared costs

The Corporation's Standard Headworks Contribution is an example of how attitudes towards fairness have influenced the design of developer charges. The Standard Headworks Contribution (SHC) is set at 40 per cent of the current cost of servicing an average property in WA. According to the Corporation, 40 per cent was initially chosen to reflect the cash flow requirements for funding major infrastructure at the time the charge was developed.

Mitigating any impacts of pricing reforms on low income customers

It is common practice by utilities and regulators to transition customers to higher charges over a number of years. For example, the current water pricing reforms are being transitioned over a period of eight years to ease the impact of any price increases on customers.

Public consultation

Water Corporation is the only utility in WA that has a formal advisory committee for setting developer charges. The Urban Development Advisory Committee (UDAC) provides advice to the Corporation's Board on policy and technical matters relating to developer charges. The Authority is not aware of a similar consultative arrangement in other water utilities in Australia. When Marsden Jacob Associates considered this in their 2003 report to the Corporation, they noted that possible reasons for the absence of high level engagement with key stakeholders in other States could be as a result of the regulatory approaches being followed, which involve public consultation. It should be noted, however, that IPART has required utilities in NSW to consult with their stakeholders as part of the process of establishing Development Servicing Plans.

Aqwest and Busselton Water have traditionally set their developer charges in relation to the Corporation's charges. As such they do not have specific consultation processes in place in relation to the level of developer charges.

Independent scrutiny

According to the NCP, NWI and the Productivity Commission, developer charges should be subject to independent regulatory scrutiny. Such scrutiny is currently only in place for the Corporation, which has its charges reviewed by the Authority in inquiries such as this one. There has been no independent scrutiny of the other utilities' developer charges, although it should be noted that the Office of Energy and the Authority have been involved in reviewing Western Power's developer charges[11] and Aqwest and Busselton Water's developer charges are agreed to by the Minister for Water.[12]

Appeals mechanism

According to the Productivity Commission, developer charges should "allow appeals on the amounts charged, or their coverage". There are no such appeals mechanisms in WA for stakeholders to contest the level of developer charges set by government businesses (there is an Energy Ombudsman but he does not have the power to resolve disputes over tariffs). In comparison, the approach used in NSW provides an arbitration mechanism under section 31 of the *Independent Pricing and Regulatory Tribunal Act 1992* for resolution of disputes. Any customer with a complaint can first ask to have their concern reviewed by the utility and, if unsatisfied, seek the appointment of a jointly-appointed arbitrator to resolve the dispute.

Accountability

The Productivity Commission has indicated that an important principle is that utilities should "be accountable for how money raised from [developer] charges is spent". In WA, the utilities that have the greatest nexus between the money raised from developers and the expenditure are Aqwest and Busselton Water, which put the money into special reserves dedicated to expenditure on costs attributed to developments. However, this approach does not appear to be followed widely by other utilities in Australia. Instead, other utilities tend to use their cash contributions from developers to partly fund their current capital expenditure programme and rely to a greater extent than Aqwest or Busselton Water on debt funding for infrastructure expenditure. As long as there are sufficient controls on expenditure, including regulatory oversight and consultation with stakeholders, there would not appear to be any benefit from using the reserve funding method over debt funding.

[11] The issue of Western Power's headworks charging policy, in relation to high-cost developments on the fringe of the network, arose as part of the consideration of Western Power's policy on capital contributions during the Authority's review of Western Power's access arrangement. While the Office of Energy does not have a formal role in the regulation of Western Power's developer charges, it may provide policy advice to Government on such matters and is currently working with Western Power to further develop its policy for headworks charges, following on from the finalisation of the access arrangement.

[12] Section 62A of the *Water Boards Act 1904* provides for the water boards to set such developer charges as are approved by the Minister for Water.

Issues for consideration

- To what extent should each of the principles discussed in this chapter be applied to the process of setting developer charges to government businesses in WA?
- Are there other principles that should influence the setting of developer charges?

3 What Method Should Be Applied by the Corporation to Recover the Headwork Costs Associated with Land Developments?

3.1 Terms of Reference

The Authority is expected to consider and develop findings on:

2. whether standard headworks contributions are an efficient and equitable funding mechanism for the provision of water, and wastewater and drainage infrastructure, or whether alternative pricing structures have the potential to encourage more efficient urban development through cost reflective price signals;
3. the ongoing use of special developer contribution area charges for development in areas having particular local conditions and local requirements;
   …..
6. headworks contributions for temporary connections to Water Corporation services.

3.2 Background

The Water Corporation charges a State-wide Standard Headworks Contribution (**SHC**), which is based on recovering 40 per cent of the average state-wide cost of providing headworks infrastructure to a typical residence on an average residential lot. The remaining 60 per cent of headworks costs are recovered through annual usage and fixed charges and Community Service Obligation payments from Government where applicable.

The Corporation has summarised the history of headworks charges:

> Headworks Contributions were first introduced in the metropolitan area as a method of funding rapid urban development in 1978 and standardised in 1981. Prior to 1978, major infrastructure capital expenditure was funded solely through borrowings, general revenue and some infrastructure contribution by developers and major mining companies in the country. However, with government restrictions on borrowings and limitations on increases to rates and charges, a new method for funding works was sought.[13]

A history of the SHC is provided in Appendix 3.

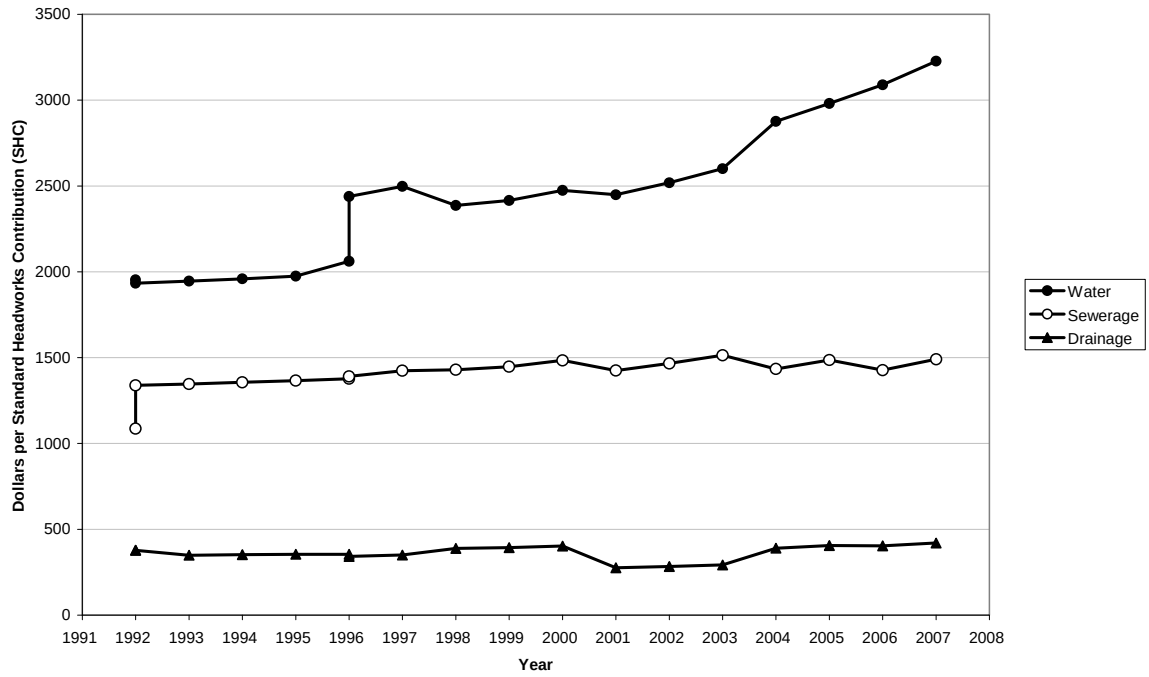
The Corporation has undertaken triennial reviews of the SHC since 1991. During each triennial review, the Corporation is guided by the Urban Development Advisory Committee (UDAC), which reports to the Corporation's Board.[14] The UDAC was established in 1994 to provide advice on policy development and process improvement.

The movement in the SHC over the last 15 years is provided in Figure 3.1.

[13] Water Corporation (2 August 2007), *Water Corporation Land Development Charges*.

[14] The membership of the UDAC includes the Department of Industry and Resources, Consulting Surveyors Western Australia (Inc), Association of Consulting Engineers Australia, Civil Contractors Federation, Landcorp, Housing Industry Association, Urban Development Institute of Australia, Master Builders Association, Western Australian Local Government Association and Water Corporation.

Figure 3.1 Movement in Standard Headworks Contributions Since 1992*



* Note: The methodology underlying the calculation of the headworks charges has changed several times over the years. These changes include amendments to the calculation of the asset base (mostly notably in 1996, where the value of land was included in the cost of the water source assets) as well changes in determining how a charge is determined at an individual lot level. The latest example of this is the recent introduction of Standard Residential Equivalents (SREs) being determined based on meter size. Due to the changes in the methodology of calculating charges for an individual lot, care should be taken in interpreting the year-on-year movements.

Source: Water Corporation

The principles underlying developer charges in the WA water industry have been reviewed a number of times. The review by Marsden Jacob Associates for the Office of Water Regulation in 1997 followed significant increase in charges in the early 1990s (approximately 50 per cent) and then another significant increase in water developer charges in 1995 (approximately 20 per cent). The 1997 review summarised the objectives of developer charges as providing:

- a method of sharing system costs between existing and new customers;
- a funding source supplementing income from annual access and volumetric charges and providing an immediate cash injection to match proposed capital expenditure; and
- a method of allocating risk between the Corporation and developers/major customers.

Further, the 1997 review recommended:

- The NPV approach should be formally endorsed and used consistently as the preferred method to calculate all infrastructure charges applied by the Corporation.

The net present value (NPV) approach recognises that a utility generates revenue from its customers via a service charge, a usage charge and a developer charge. Under the NPV approach, developer charges are set on a locational basis to reflect the costs of servicing

particular developments, and are set after taking into account all of the revenue that is expected to be received from that development, including revenue from the service charge and usage charge. The NPV approach differs to the Corporation's current approach of setting a headworks charge that does not vary across locations.

Following the 1997 review, the Corporation undertook its own review to consider whether it supported the move to an NPV approach. The Corporation did not support the NPV approach for the following reasons:

- It is costly to calculate, and very sensitive to underlying modelling assumptions and data accuracy. A substantial amount of work has already been done by the Corporation in these areas, but further work is required to assess our preparedness to adopt a NPV charging approach.
- It does not guarantee economically efficient price signals. An economically efficient developer charge would reflect the long-term marginal cost of providing additional capacity to service a development, giving developers the incentive to develop where costs are lower. To achieve economically efficient price signals, the level of other Corporation charges would also need to be reviewed so they reflect appropriate marginal costs.
- Western Australian Government policy forces average prices to encourage regional development.

The 2003 Marsdon Jacob Associates review for the Corporation explored the issues further but did not make any recommendations. However, Marsdon Jacob Associates did make some concluding observations, including:

- Water and sewerage infrastructure costs differ from other utilities (electricity, gas and telecommunications) being higher and less flexible in terms of timing.
- Developer contributions are a common method for financing infrastructure in many utilities worldwide. Developer contributions are an appropriate pricing mechanism for the Water Corporation and are seen as such.
- Discounting or abolishing developer charges in order to promote first home ownership would be a very costly and very ineffective policy option to adopt. This is so because in WA less than 20 per cent of new houses are sold to first home buyers and existing homes comprise over 80 per cent of purchases by first home buyers. Moreover, first home affordability in WA remains near historical highs and better than other states.
- In the eastern states, the requirement that developer charges be backed by a development service plan (DSP) has forced a significant investment to better understand costs. This investment is reported to have been recouped through better planning and locational decisions.
- While the Water Corporation does not set the [Standard Headworks Charge] using the concept of "net present value of capital costs with net revenue offset" (i.e., the IPART method), the Corporation's approach also ensures there is no over charging or double dipping.
- The objectives of the State Water Strategy will be promoted by water sensitive urban design, WSUD, including greater (re)use of grey water and stormwater. This requires that developers adopt innovative and thorough approaches to WSUD. One method of providing the necessary incentives to developers to save water and costs by adopting WSUD to allow them to share the gains of reduced costs, i.e., discount the developer charges. This would require the ability to set developer/headworks charges which differ explicitly by location/development.

- The WA development industry sees the logic of a more differentiated approach and would support some differentiation in levels of developer charges to promote efficient infrastructure investment in, and efficient use of, that infrastructure.
- While the development industry wishes to avoid complexity, they see sense in distinguishing the basic charges for water and sewerage infrastructure between, say, the hills and coastal plans for water and say, two to three sewerage zones running concentrically from the [wastewater treatment plants].

It should be noted that, while in electricity new land development involves developer charges in much the same way as occurs in the water industry, there is also a New Facilities Investment Test (NFIT), the effect of which is to ensure that cross-subsidies associated with new capital expenditure are minimised. The NFIT is also a feature of the National Gas Access Regime and works in essentially the same way as it does in the State Electricity Access Regime.

The NFIT requires that all new facilities investment must be covered by revenue in present value terms from current and future charges associated with the new facilities investment. To the extent that there is any shortfall, capital contributions or CSOs are required. However, there are exceptions, such as where the new facilities investment is necessary to maintain the safety, integrity or contracted capacity of services. Capital contributions or CSOs might also be avoided where it can be shown that the new facilities investment has system wide benefits that justify higher charges for all users.

3.3 Current Charging Method

Standard Headworks Contribution (SHC)

The SHC is calculated as:

- the total Modern Equivalent Asset (MEA) value of major infrastructure
- *divided by* the number of Single Residential Equivalents (SRE), and
- *multiplied by* 40 per cent (which is the proportion of headworks costs recovered through the headworks charge).

The SRE is defined as the basic annual demand for water, wastewater or drainage services for a single residence in a typical urban location, with the method of calculation agreed with UDAC.

- For water services, the SRE is defined as the average water demand for a single house receiving a standard (20 mm meter) supply. Previously it was calculated by dividing the three-year average water consumption for all houses with consumption greater than 25 kL and less than 2,000 kL, by the three-year average of the number of houses.[15] In 2004, the SRE was assessed at 343 kL per annum.
- For wastewater services, the SRE is similarly based on the meter based service. Previously, data from the Domestic Water Use Study estimated in-house water flow at 165 kL per single residential household per year, assuming an occupancy rate of 3.35 people per household.[16] The total number of SREs for the calculation of the wastewater headworks contribution was estimated as the three-year

[15] "House" is defined as in the GRANGE database, as a single dwelling on a single parcel of land.

[16] Loh, M. and Coghlan, P. (March 2003), *Domestic Water Use Study: In Perth, Western Australia, 1998-2001.*

average annual inflow to wastewater treatment plants, plus a 5.64 per cent allowance for infiltration, divided by the SRE of 165 kL per annum.

- For drainage, the SRE is defined as the drainage demand for a single residence on a lot of 450 m^2 to less than 700 m^2 (SRE factor of 1). For commercial and residential land, lots are assigned an SRE factor (greater or less than 1) depending on land use and lot size (see Table 3.1 below). For other areas (commercial, public open space, schools, shopping centres), SRE factors are assigned per hectare. The total number of SREs for the calculation of the drainage headworks contribution is estimated by multiplying the number of residential and commercial lots by their SRE factors, and total area of each type of other land uses by their SRE factors.

Table 3.1 Examples of SRE Factors for Drainage for Different Land Uses

	SRE Factor (per Lot)			
Land Use Category	**<200 sqm**	**450 to <700 sqm**	**5,000 to <10,000 sqm**	**>=10,000 sqm**
Commercial	0.70	2.60	17.10	-
Residential	0.66	1.00	1.85	-
	SRE Factor (per Hectare)			
Land Use Category	**<200 sqm**	**450 to <700 sqm**	**5,000 to <10,000 sqm**	**>=10,000 sqm**
Commercial	-	-	-	23.30
Public Open Space	1.00	1.00	1.00	-
Schools	8.00	8.00	8.00	8.00
Shopping Centres	40.00	40.00	40.00	40.00

Source: Water Corporation

Current SHCs (for the period 1 July to 30 September 2007) are $3,227 per SRE for water services; $1,490 per SRE for wastewater services; and $420 per SRE for drainage services.

The total headworks charge for a new development is then calculated as the SHC multiplied by the number of SREs in that development.

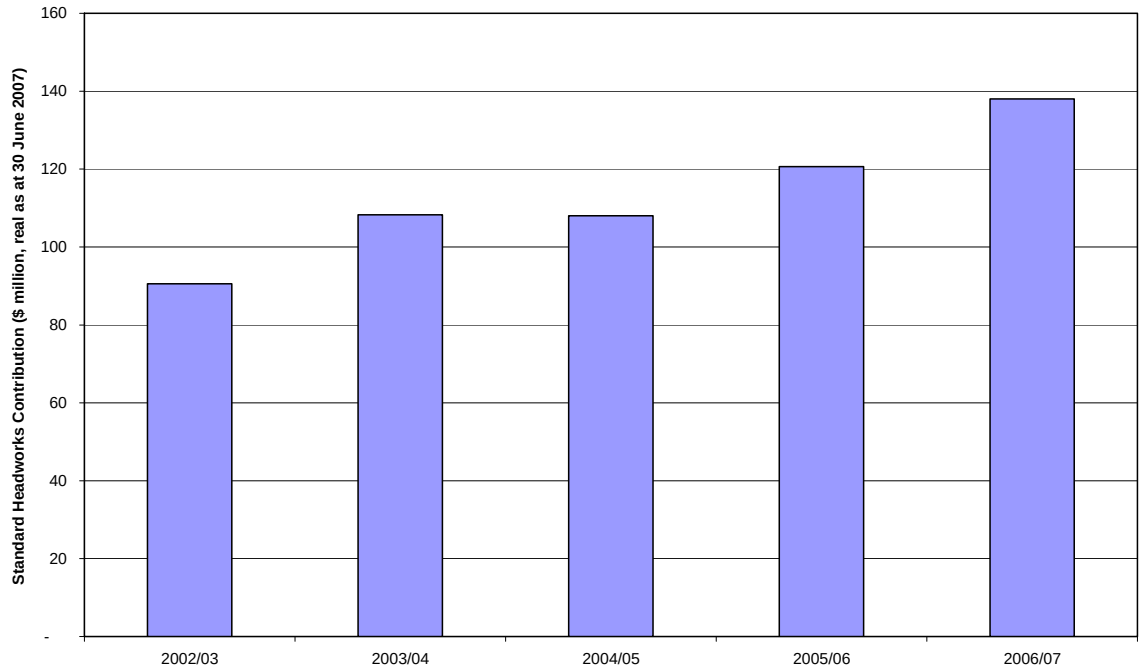
Headworks charges are payable at different stages of development. At the subdivision stage, each additional lot incurs one SHC.[17] At the building stage, customers whose demand is greater than that of the standard level of service (one SRE) are charged additional contributions.

Under some circumstances, developers may be allowed to defer payment of headworks contributions. To be eligible, lots must not be connected to water or sewerage services, have no habitable buildings, be intended for residential purposes and be less than 2,000m^2. The developer charges may be deferred until the land is sold, becomes habitable, is connected to the water or sewerage services, or one year after the approval of the subdivision. Developers meet the administrative costs of the deferral, provide a financial guarantee to secure the debt, and pay interest over the period of deferral.

[17] Additional charges may apply in areas deemed as Special Developer Contribution Areas (see following discussion) or if the development is in a high cost country area and does not receive a CSO.

Figure 3.2 below shows the revenue to the Corporation from the SHCs (in real terms) since 2002/03.

Figure 3.2 Standard Headworks Revenue ($million, Real as at 30 June 2007)



Source: Water Corporation with ERA analysis

Special Developer Contribution Areas

Some areas have infrastructure costs which are considerably higher than the average headworks costs. This may be due to local conditions, remote conditions and lack of existing infrastructure, or the need to bring forward development ahead of existing development plans ("out-of-sequence" development). These areas are known as Special Developer Contribution Areas, and attract headworks charges which are different to the SHC and are set case by case to recover the infrastructure costs associated with those areas, typically in agreement with the major developers. Two examples are Kalamunda and the North East Corridor of the Perth Metropolitan area.[18]

- In Kalamunda, because of the high costs of sewerage infrastructure in the area, customers pay a contribution, in addition to the SHC, based on the average cost of providing wastewater reticulation in the area. The contribution increases with the number of subdivisions or residential buildings per lot, and the number of major fixtures for commercial buildings.[19]
- The residential development of the North-East Corridor (including Ellenbrook, Upper Swan, Henley Brook) in the 1980s involved high costs due to its

[18] Other Special Developer Contribution Areas exist in Allanson, Australind, Balcatta, Bedfordale, Boddington, Dalyellup, Dampier, Denham, Eagle Bay, Greenough, Margaret River, Malaga, Morley (Galleria), Mount Helena, Mundijong, Paraburdoo, Port Kennedy, Thomsons Lake, Tom Price, South Busselton, Moora and Yallingup.

[19] The additional contribution for a single dwelling in Kalamunda is currently $11,415 (1 July to 30 September 2007).

> remoteness from existing infrastructure, so special developer contributions for water, wastewater and drainage apply at the subdivision stage.[20]

Temporary Services

Headworks contributions also apply to temporary services, in which water and/or wastewater services are provided for a short period (up to two years), such as for dust suppression in road works or construction, establishing vegetation in a new development, or services for a construction camp. In this case, developers make a payment prior to connection which covers the annualised headworks contribution, by-law rates, connection and disconnection fees.

Rural Headworks Contributions

Special provisions apply in the case of headworks charges for rural subdivisions for residential purposes (defined as lots greater than 1 hectare and less than 4 hectares). Developer charges in this case are determined using a net present value approach, as set out in the Corporation's policies and procedures for land servicing:

> The financial analysis should be undertaken in line with the Corporation's agreed methods of analysing new business on a discounted cash flow basis.
>
> The Net Present Value (NPV) of the incoming and outgoing cash flows should exactly balance, with the subdivider's financial contribution being the variable.
>
> The outgoing cash flow will include initial capital expenditure and all future replacements, cost of operating the scheme, inclusive of overheads. In addition, for situations where the proposed scheme will connect to an existing scheme, the expenditure for the provision of notional headworks. Notional headworks expenditure considers the "off site" headworks already placed and all future augmentation and replacement thereof.

The Corporation has indicated that as developers pay for the reticulation, there is no additional cost in supplying large lots. This charging policy has been maintained as a matter of government policy.

3.4 Issues

Chapter 2 highlighted a number of issues in relation to the Water Corporation's method of charging for headworks.

A key issue is the extent to which headworks charges reflect the costs of new developments, and thereby signal to users the costs they impose on the system by locating in a particular area. Part of this consideration is to assess, on efficiency and equity grounds, the costs that should be borne by new users.

The SHC is a uniform charge across the State, and as such does not send efficient price signals to users regarding the costs of locating in a particular new development. This results in distorted locational signals: new users in areas that are expensive to service will pay headworks charges that are below the costs of providing services, so that development of these areas would be favoured in comparison to development under a regime of cost-reflective prices. Conversely, development of areas that are inexpensive to

[20] The special developer contribution for the North East Corridor for the payment period 1 July to 30 September 2007 is $4,915 per SRE for water, $3,436 per SRE for wastewater and $809 per SRE for drainage.

service would be discouraged because headworks charges are above the costs of service provision.

Apart from the uniformity of headworks charges, there is the question of which costs should be included in the charges. There is wide agreement that the costs of minor works and local connection assets for new developments should be fully attributed to the new users, and this is reflected in the pricing practices of the Corporation and other utilities. However, the issue of who should bear the cost of major infrastructure enhancements is more controversial.

It is worth considering whether the New Facilities Investment Test (NFIT) approach used in the gas and electricity industry in Western Australia could be applied to the water industry in Western Australia.[21] Under this approach, major capital investments which meet the NFIT (which requires that new facilities investments are efficient, covered by additional revenues, have system-wide benefits and/or are necessary for the safety, integrity or capacity on the system) are added to the regulatory asset base and recovered through tariffs, and capital contributions are used to recover any additional investments which do not pass the NFIT.

As discussed in Chapter 2, the Victorian economic regulator, the Essential Services Commission, considers that developer charges should *exclude* the costs of major infrastructure enhancements. This is because it is not possible to attribute new infrastructure costs to new users alone as these may equally be needed to meet increases in demand from existing users. A related matter is that if consumption prices are based on long run marginal costs, then the costs of major infrastructure enhancements, such as new source development, will already be factored into the usage prices paid by all users. Western Australia is currently moving towards long run marginal cost pricing for water usage in the metropolitan area.

The IPART method differs from the ESC approach in that IPART permits water businesses to include shared infrastructure costs in developer charges. The IPART method is based on recovering the infrastructure expenditure on water, sewerage and drainage assets that can clearly be linked to the new development, and this expenditure may include headworks such as dams, treatment plants, ocean outfalls, pumping stations, large water and sewer mains and reservoirs.

A further consideration is the treatment of costs that have already been incurred (sunk costs). The SHC is calculated on the basis of the costs of existing major infrastructure (sunk assets) rather than forward-looking costs. The IPART approach to setting developer charges is based on the present value of existing and future assets used to service the development area. On the other hand, the ESC considers that developer charges should reflect forward-looking costs, in line with marginal cost pricing.

The uniform nature of the SHC means that it is not possible to determine the extent of any cross subsidies which exist, as the difference between the developer charges paid and the actual costs of providing services is not transparent.

A significant consideration in relation to extending location signals for developer charges is administrative cost. For example, Sydney Water is reported to have taken three years and spent $6 million on its Development Servicing Plans.[22]

[21] See sections 6.49-6.55 of the *Electricity Networks Access Code 2004*, and sections 8.15-8.18 of the *National Third Party Access Code for Natural Gas Pipeline Systems.*

[22] Marsden Jacob Associates (20 August 2003), *Infrastructure Costs and Contributions*, a report to the Water Corporation, p68.

A further consideration is whether the existing processes for periodic reviews of the headworks charges, and for appealing decisions on headworks charges, are adequate, or if there is a need for more independent scrutiny.

Issues for consideration

- Should headworks charges more closely reflect the cost of providing water, wastewater and drainage services to new developments?
- Should the New Facilities Investment Test approach used in the gas and electricity industries in Western Australia be applied to setting headworks charges to the Water Corporation?
- Should headworks charges cover any of the costs of major source infrastructure investments, particularly given that water usage prices (at least in the metropolitan area) are set in relation to long run marginal cost?
- Should headworks charges be set on the basis of forward looking costs or should they include sunk costs such as existing surplus capacity?
- Are the current review processes for headworks charges appropriate?
- Are the appeals mechanisms for decisions on headworks charges adequate?

4 What Method Should the Corporation Use for Recovering the Cost of Connecting Works for Frontal and Out of Sequence Developments?

4.1 Terms of Reference

The Authority is expected to consider and develop findings on:

4. the efficient and equitable recovery of the cost of minor works (connecting works) for frontal and out of sequence developments, having regard to the appropriate cost and risk sharing arrangements between different developers over time;

4.2 Background

This chapter considers the situation of funding the costs of connecting new developments to the wider network. The Terms of Reference require the Authority to consider two issues:

- frontal works, i.e. connection works that are required to service a development that is either within the current network or at the fringe of the network; and
- out of sequence works, i.e. connection works that are required to service a development that is not currently anticipated within planning processes.

Other inquiries have considered these issues. As discussed in Chapter 2, the Productivity Commission considers that an important principle is that developer charges provide for out of sequence development if developers are prepared to meet the cost consequences.

The Public Accounts Committee's Inquiry into Developer Contributions for Infrastructure Costs Associated with Land Development also considered this issue, and recommended:

> Greenfield developments that leapfrog the existing urban front should be required to completely fund extensions to infrastructure that would otherwise be provided by the State Government. This includes extensions to major roads and utility networks.[23]

The Marsden Jacob Associates review of developer charges for the Corporation in 2003 did not make any specific recommendations in relation to connecting works.

4.3 Current Charging Methods

4.3.1 Frontal Works

Under their current policy, the Corporation will approve extensions to mains provided that:

- the existing scheme is capable of serving the additional customers;
- the property is inside a Water Corporation operating Licence area;
- the property is not subject to a current subdivision application;
- the extension is not into an area defined as an existing community.[24]

[23] Public Accounts Committee, *Inquiry into Developer Contributions for Costs Associated with Land Development*, Report No.8, 2004, p xxvi.

As indicated previously, developers are required to pay for extensions to minor mains. However, the Corporation pays for extensions to water supply mains under certain circumstances: the mains are less than 30 metres per rateable property, a projected cost of $4,000 per rateable property is not exceeded, and no more than 10 properties are supplied.

In other circumstances, the Corporation contributes towards the cost of a mains extension up to ten times the expected annual service charge revenue from the rateable properties in the extension.

4.3.2 Out of Sequence Developments

The Corporation has a separate charging policy for developments that cannot be serviced either by the existing headworks infrastructure or by an extension of reticulation from the currently serviced area that is closest to the development. In these circumstances, the Corporation requires the developer to make an up-front contribution to cover the cost of the necessary connection works or to pay the Corporation to arrange the connection works to be undertaken. The contribution is refunded either in full or in part after an agreed time or when a certain outcome is reached (for example, after a certain number of houses are built).

In addition, if a new development is so remote that it results in a per lot servicing cost that is significantly higher than lots in the wider scheme or requires an increase in the Community Services Obligation payment, the developer is required to fund the shortfall. This charge is in addition to the Standard Headworks Contribution.

4.4 Issues

4.4.1 Frontal Works

The Corporation has brought to the Authority's attention an issue associated with having minor mains extensions entirely paid for by the first person requiring the extension even though other people might eventually benefit from the extension.

> Developers are required to extend minor mains entirely at their own cost to the specification of the Water Corporation. Other lots can connect at a later date without contributing to the initial cost of the mains extension.
>
> To overcome this inequity, the [Minor Works Contribution] was proposed to replace existing charges for reticulation mains extensions. Under this arrangement, the developer would pay for the minor works extension and is then partially reimbursed by the Corporation for the proportion of the main that will be used by future customers.
>
> This contribution would be funded from revenue collected from any development that has an impact of a SRE (or part thereof) on the scheme, and would be in addition to the SHC. The number of MWC's collected from each developer would be equivalent to the number of SHC's paid. The MWC amount would be calculated based on the estimated level of reimbursement required for minor works extensions on a State wide basis.[25]

The Authority welcomes views from interested parties on the Corporation's proposal.

[24] Water Corporation, Development Services Branch, Information Sheet No.36.

[25] Water Corporation, 2 August 2007.

It is worth noting that the capital contributions policy under the State Electricity Access Regime provides for rebates where new users subsequently connect to an extension. The same approach is adopted under the National Gas Access Regime.

4.4.2 Out of Sequence Developments

Under the Corporation's out of sequence policy, all of the risk associated with a new development is borne by the developer. As indicated in Chapter 2, the Productivity Commission considers that out of sequence developments are efficient provided that developers bear the financing costs of bringing forward developments that happen ahead of schedule. However, the private financing of such developments also requires consideration of rebates if other users also benefit from the bringing forward of developments.

The Authority is interested in views from interested parties that either support or dispute the Corporation's out of sequence policy.

Issues for consideration

- Do you support of have any concerns about the Corporation's policies for charging for frontal and out of sequence developments?
- Do you support the Corporation's proposal to introduce a minor works contribution policy, whereby developers are reimbursed at a later stage for the proportion of the main that will be used by future customers?

5 What Method Should the Corporation Use for Recovering the Cost of Infrastructure for High Volume Customers in Country Areas?

5.1 Terms of Reference

The Authority is expected to consider and develop findings on:

5. major customer charges for development of infrastructure for high volume customers in country areas; and

5.2 Background

The Corporation has the power, under its legislation, to enter into special pricing agreements with customers who would normally be liable for statutory charges.[26]

One type of special pricing agreement is a Major Consumer Agreement, which applies to high volume customers in country areas.

5.3 Current Method

For the purpose of setting headworks charges, the Corporation has two types of major customers: those with a peak demand of more than 49 kL per day and mining customers with a peak demand up to 49 kL per day.

5.3.1 Major Customers with Peak Demand Above 49 kL per Day

Major customers (typically mining and industrial customers) with a peak day demand of more than 49 kL per day do not pay standard by-law charges or developer contributions. Instead, these major customers enter into agreements with the Corporation in which their charges are based on the costs of supplying water to that customer, including any costs of augmenting the system.

Major customers pay:

- a capacity (or service availability) charge based on the customer's peak day demand and the cost of augmenting the water supply system to meet that demand; and
- a usage charge based on average scheme operating costs.

The standard major consumer agreement involves the customer paying an up-front capital contribution to secure their water entitlement for 45 years. However, the payment terms for the capital contribution are negotiated between the customer and the Corporation to take into account factors such as the size and financial risks of the project (such as the stranding of water supply assets in the event of commercial failure). Customers using

[26] *Water Agencies (Powers) Act 1984*, Part III, Division 2, s.42 (Agreements for different liability).

less than 100 kL per day may be charged on the basis of a recurring annual charge rather than a 45-year agreement.[27]

The capacity contribution for major customers is calculated using the "notional cost method", which is based on the estimated average unit cost of augmenting the system to meet a significant increase in demand. Notional costs are calculated separately for each scheme, and vary according to the average unit costs of augmenting capacity for each scheme.

Table 5.1 provides the indicative charges for various locations in WA. For example, customers in the East Pilbara region pay a unit cost of $3,328 per kL of peak day contracted demand while Kalgoorlie customers pay $17,559 per kL of peak day contracted demand.[28]

Table 5.1 Headworks Charges to Major Customers by Location (dollars of Dec 2007)

Location	Capital Cost per kL of peak day demand	Operating Cost per kL
Agricultural & Goldfields		
Cunderdin	$7,781	$0.57
Merredin	$8,906	$0.86
Southern Cross	$10,888	$1.10
Coolgardie	$16,326	$1.47
Kalgoorlie	$17,559	$1.58
Marvel Loch	$3,577	$1.34
Ora Banda	$28,629	$3.95
Mid West		
Geraldton	$2,609	$0.51
Walkaway	$786	$0.19
Dongara/Dension	$2,335	$0.63
Exmouth	$3,377	$1.28
Eradu/Mullewa	$5,536	$1.13
Great Southern		
Albany	$3,949	$0.78
Narrogin	$5,592	$0.41
Katanning	$5,784	$0.41
North West		
Dampier	$10,838	$0.97
Burrup Penninsula	$12,025	$0.97
Cape Lambert	$8,439	$0.97
East Pilbara	$3,328	$0.46

Source: Water Corporation

[27] The negotiated terms of each agreement will depend on the particular risks of that project. For example, in some cases customers with a demand of less than 100 kL/day have been required to enter into a 45-year agreement.

[28] Note that the capacity charge also includes the 30 per cent National Tax Equivalent which the Corporation is required to pay to Government.

5.3.2 Mining Customers with Peak Demand up to 49 kL per Day

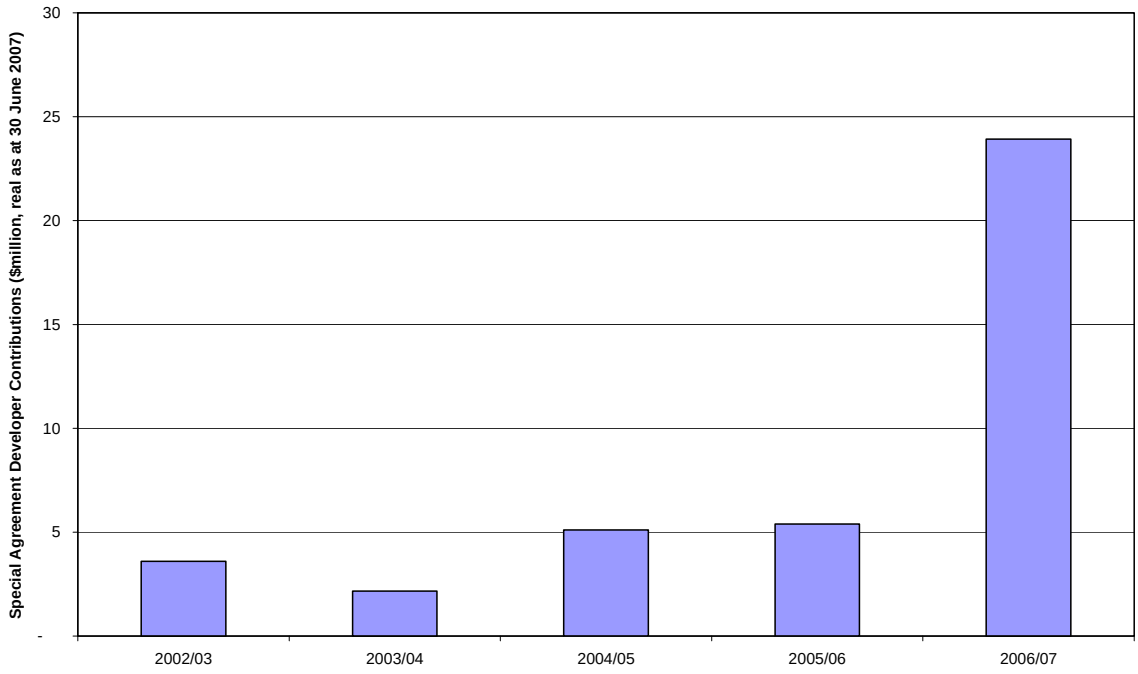
Mining customers with a peak day demand of up to 49 kL per day pay a headworks charge (in addition to a charge of 168.2 c/kL specified in the by-laws).

The headworks charge for mining customers is calculated as one SHC for each 3 kL of the peak day demand, where the current SHC is $3,041.[29] It is a one-off payment, usually paid at the start of each supply agreement, which typically apply for a period of 15 years. The methodology for calculating this headworks charge was originally developed on the basis of aligning industrial demands with peak day residential demands, which at the time were estimated to be on average 3 kL per day.

5.3.3 Headworks Revenue from Major Customers

Figure 5.1 shows the annual developer contributions received from their major customers, which as would be expected varies significantly from year to year depending on project developments. In 2006/07 headworks revenue from major customers amounted to $24 million.

Figure 5.1 Revenue from Major Customers ($ million, Real as at 30 June 2007)



Source: Water Corporation with ERA analysis

5.4 Issues

A rationale behind a notional cost approach to charging for augmentations is that there is an equalisation of costs across new users regardless of the timing of their increase in demand on the system. If customers are charged on the basis of the actual cost of

[29] Thus, a mining customer with a peak day demand of 51 kL per day would incur a headworks charge of 51/3 x $3,041 = $51,697.

augmenting the system to accommodate their demand (as was the case before the introduction of the notional cost approach in the 1970s), customers who are developing projects at a time when the system is constrained and requires major investments in capacity would face very high costs. This could prohibit the development of the project, and also delay the augmentation of the system. Conversely, other customers developing at a time after infrastructure has been enhanced (paid for by pioneer customers) would face lower costs as their demands can be more easily accommodated. Thus, there are equity and efficiency issues regarding who pays for the marginal cost of capacity expansions on the system.

The high costs incurred by pioneer customers could be offset by payments from future customers who benefit from the investment, as is the case in electricity. For example, Western Power's capital contributions policy provides for rebates to be paid to major industrial or commercial customers for their capital contributions from new users who benefit from the capacity augmentation.[30]

There is a question as to whether the 49 kL per day threshold for the application of the major customer charging regime is appropriate. A relevant consideration in this context is that in the 2006 Inquiry on Country Water and Wastewater Pricing, the Authority recommended a move towards more cost-reflective prices, and progressive removal of subsidies, for country commercial customers. The Government is currently considering these recommendations. In the event that there is a move towards more cost-reflective pricing for commercial customers, with prices based on the costs for each scheme, then the issue of the threshold between major and smaller commercial customers becomes less important.

Another issue for consideration is whether there would be benefits, in terms of increasing cost reflectivity, of extending the major customers policy to mining customers with peak day demands of less than the 49 kL per day threshold. Mining customers with a peak day capacity of 49 kL or less pay headworks charges linked to the state-wide SHC. As the charges for major customers are calculated on a scheme-by-scheme basis, they are likely to more closely reflect average unit augmentation costs than are the charges to mining customers with lesser water usage.

Issues for consideration

- What are the advantages and disadvantages of the Corporation's approach to charging high volume customers in country areas?
- What are the advantages and disadvantages of moving towards more cost reflective pricing for major customers?
- Is 49 kL an appropriate threshold for the Corporation's Major Consumer Policy?
- Is the notional cost approach which underpins the Corporation's Major Consumer Policy sufficiently flexible to deal with different projects?

[30] See Appendix 4 (Model Capital Contributions Policy) of the *Electricity Networks Access Code 2004*.

APPENDICES

Appendix 1 Terms of Reference

INQUIRY INTO DEVELOPERS CONTRIBUTIONS TO THE WATER CORPORATION

TERMS OF REFERENCE

I, ERIC RIPPER, Treasurer, pursuant to section 32(1) of the *Economic Regulation Authority Act 2003* (the ERA Act), request that the Economic Regulation Authority (the Authority) undertake an inquiry and make recommendations on the most appropriate charging mechanisms for the entire suite of the Water Corporation's developer charges.

In doing so the Authority is expected to consider and develop findings on:

1. the general principles underpinning developer charges for government businesses and the approaches to developer charges adopted by water regulators in other jurisdictions and by other utilities in Western Australia, as well as the work that is done on a national level as part of the National Water Initiative Agreement;

2. whether standard headworks contributions are an efficient and equitable funding mechanism for the provision of water, and wastewater and drainage infrastructure, or whether alternative pricing structures have the potential to encourage more efficient urban development through cost reflective price signals;

3. the ongoing use of special developer contribution area charges for development in areas having particular local conditions and local requirements;

4. the efficient and equitable recovery of the cost of minor works (connecting works) for frontal and out of sequence developments, having regard to the appropriate cost and risk sharing arrangements between different developers over time;

5. major customer charges for development of infrastructure for high volume customers in country areas; and

6. headworks contributions for temporary connections to Water Corporation services.

In regards to headworks contributions (item 2 above), the Authority is requested to make recommendations on the charging methodology and the most appropriate level of charges, with a view to implementation from July 2008, or as soon as possible thereafter.

For the remaining charges, which are applied on a case by case basis, the Authority is requested to provide recommendations on the appropriate methodology to use in calculating these charges.

The Authority is to have regard to:

- the contribution of developer charges as part of the overall efficient and equitable recovery of the total cost of the provision of water, wastewater and drainage services;

- the Government's uniform pricing policy; and

- the Government's social, economic and environmental policy objectives.

The Authority will release an issues paper as soon as possible after receiving the reference. The paper is to facilitate public consultation on the basis of invitations for written submissions from industry, government and all other stakeholder groups, including the general community.

A draft report is to be made available for further public consultation on the basis of invitations for written submissions.

A final report is to be completed by no later than 30 June 2008.

ERIC RIPPER MLA
DEPUTY PREMIER; TREASURER;
MINISTER FOR STATE DEVELOPMENT

Appendix 2 Summary of Issues for Consideration

Issues for consideration

- To what extent should each of the principles discussed in this chapter be applied to the process of setting developer charges to government businesses in WA?
- Are there other principles that should influence the setting of developer charges?

Issues for consideration

- Should headworks charges more closely reflect the cost of providing water, wastewater and drainage services to new developments?
- Should the New Facilities Investment Test approach used in the gas and electricity industries in Western Australia be applied to setting headworks charges to the Water Corporation?
- Should headworks charges cover any of the costs of major source infrastructure investments, particularly given that water usage prices (at least in the metropolitan area) are set in relation to long run marginal cost?
- Should headworks charges be set on the basis of forward looking costs or should they include sunk costs such as existing surplus capacity?
- Are the current review processes for headworks charges appropriate?
- Are the appeals mechanisms for decisions on headworks charges adequate?

Issues for consideration

- Do you support of have any concerns about the Corporation's policies for charging for frontal and out of sequence developments?
- Do you support the Corporation's proposal to introduce a minor works contribution policy, whereby developers are reimbursed at a later stage for the proportion of the main that will be used by future customers?

Issues for consideration

- What are the advantages and disadvantages of the Corporation's approach to charging high volume customers in country areas?
- What are the advantages and disadvantages of moving towards more cost reflective pricing for major customers?
- Is 49 kL an appropriate threshold for the Corporation's Major Consumer Policy?
- Is the notional cost approach which underpins the Corporation's Major Consumer Policy sufficiently flexible to deal with different projects?

Appendix 3 History of Standards Headworks Contributions

The following table summarises the changes that have been made to Standard Headworks Contributions since 1968. The table was provided by the Water Corporation.

Table A.2 History of Standard Headworks Contributions

Year	Change	Reason / Effect
1968	Introduced on an individual assessment basis	
1978	Uniform contribution set for all developments.	
1981	Major agreement with Industry. Standard Headworks Contribution Policy introduced.	
1981	New Building Stage Policy introduced – Habitable Rooms.	
1985	Amalgamation of Metropolitan Water Association and Public Works Department into Water Authority of WA	
1991	1st Triennial Review. Cabinet submission approved on 5 June: Standard Headworks in country and metro.	33% recovery in July 1991 from 22% 40% recovery in July 1992 Small lot concessions <600m^2
1992	Building Stage Headworks now also allowed to be deferred, as subdivision by bond.	
1994	2nd Triennial Review.	
1996	30th June – Deferral of subdivision Headworks by legislation.	
1996	State Government Initiative Developers were given the option of deferring their headworks contributions for a maximum of 12 months, or until the lot was sold or connected to water or sewer.	Intended to be a cost neutral revenue exercise for the Water Corporation and scheduled for review in 1999.
1997	1st Change from monthly to quarterly increment.	Industry requests, to simplify administration.
1998	3rd Triennial Review Drainage Review of 1998	Saw a small reduction in the contribution amounts for water and wastewater and a small increase in drainage. Use of Metropolitan Regional Scheme (MRS) to determine land use and drainage parameters.
1998	Use of the Water Corporation's Capital Cost Index (CCI) through the Urban Development Advisory Committee (UDAC).	Industry agreement to escalate the SHC.

Year	Change	Reason / Effect
2000	Introduction of GST	No impact on Headworks Contributions, but some confusion regarding works handed over.
2001	4th Triennial Review.	Introduced multipliers for Water, Sewerage & Drainage Specified Services introduced.
2001	SHC Allocation Review.	Introduced a metered approach based on lot size.
2002	Changes Introduced which saw all residential properties to have headworks assessed based on criteria for class 1 Buildings Code of Australia. Ancillary accommodation no longer exempt	An indexation adjustment of the SHC's was made after liaison with ACCC.
2004	5th Triennial Review.	Impact of water restrictions. Saw the use of adjusted Domestic Water Use Study (2003) wastewater figures for SRE and the use of MRS & Grange to determine lot use level derive SREs
2005	CCI make up.	Adjusted to suit Australian Bureau of Statistics (ABS) available data.
2006	In March 2006 a simplified Headworks Contributions Policy was introduced.	To replace the reliance on land use and lot size with a standard contribution at subdivision stage and a contribution based upon meter size at building stage irrespective of lot size. The policy was intended to tie in Headworks contributions more closely to the physical capacity of the services actually provided.
2007	In February 2007 a new index calculation was agreed.	Based on further changes in the composition of ABS indices which comprise the CCI.

Source: Water Corporation

Appendix 4 Glossary

ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
CCI	Capital Cost Index
CSO	Community Service Obligation
DSP	Development Servicing Plan
ESC	Essential Services Commission (Victoria)
GRANGE	Water Corporation's network system for recording all external customer contact details.
Headworks	Defined in the *Water Agencies (Powers) Act 1984* as all works necessary to provide and maintain water services, not being reticulation works.
HV Pool	High voltage pool (Western Power)
IPART	Independent Pricing and Regulatory Tribunal (NSW)
kL	Kilolitres, which is 1,000 litres
kVA	Kilovolt amps (a measure of power in electricity)
MEA	Modern Equivalent Assets
ML	Megalitres, which is 1,000 kilolitres, or 1 million litres
MRS	Metropolitan Regional Scheme
MWC	Minor Works Contribution
NCP	National Competition Policy
NFIT	New Facilities Investment Test
NPV	Net Present Value
NWI	National Water Initiative
Ofwat	The economic regulator of the water and sewerage industry in England and Wales
Reticulation	Defined in the *Water Agencies (Powers) Act 1984* as the system of works necessary to provide services to particular land, being works connecting headworks to the point at which the service is provided.
SHC	Standard Headworks Contribution
SRE	Standard Residential Equivalent, defined as the basic annual demand for water, wastewater or drainage services for a single residence in a typical urban location.
UDAC	Urban Development Advisory Committee