

Water and Wastewater Review: Submission to Ministry of Commerce

1 Introduction

This submission has been prepared by the Wellington Regional Council (WRC). The WRC is the wholesale water supplier to the cities of Hutt, Porirua, Upper Hutt and Wellington. Our position is unusual in New Zealand; Watercare Services in Auckland is the only other wholesale supplier of note. Watercare and the WRC supply water to 40 percent of the nation's population through our retail customers.

In 1980 the WRC succeeded the Wellington Regional Water Board which had been established in 1972. The Regional Water Board, which took over the activities of the Wellington City and Suburban Water Supply Board, carried out its activities in accordance with the Wellington Regional Water Board Act 1972. This Act still governs WRC's wholesale water supply activities. To some extent it also enables the WRC to manage Regional Parks and to manage exotic forestry activities on Council land.

2 Background

Development of the water supply infrastructure in Wellington started in 1874. Since then it has been developed to a stage where water comes from two major catchments and an aquifer. It is a network system. Water from any source of supply can be pumped to any of the points of sale to the four cities. This provides for security of supply.

The fact that Metropolitan Wellington now consists of four cities creates a wholesale water separation which produces, in our view, an unnecessary and inefficient segmentation of a network catchment defined operation.

3 Questions

The Ministry of Commerce, in its letter of 4 February 1999 has raised several issues by styling them as questions.

The questions and our responses are as follows:

3.1 *What issues currently arise in the management of infrastructure, and how does this influence the approach you take to charging for service delivery?*

The Water Board Act provides for all costs to be funded through the sale of water, or through borrowing. This means the wholesale water accounts within the WRC are ring fenced and transparent. As such, infrastructure replacement, enhancement or expansion is not competing with WRC rate funded expenditure.

This independent approach to funding and operations by the WRC and the previous Water Board has resulted in the following:

- A modern water supply infrastructure with over half the assets built or replaced since 1975. Very few assets still in use were constructed before 1950.
- No deferred maintenance.
- The WRC being entirely responsible for security of water supply.
- Appropriate use of debt funding for the construction of long life assets.
- Treatment plants with an A, B, or C grading under the Ministry of Health classification system. When next assessed the Council expects an A grading for surface water treatment plants and a B grading for treatment plants sourcing water from a secure groundwater source.
- An integrated system which allows all customer supply points to receive water from any of the four main treatment plants.
- Owning the catchment land and there being able to influence the quality of the raw water.

By taking a long term approach to maintenance, operations and asset management it is possible to price water so that there are no price shocks between years. This approach has largely been possible through the framework provided by the Water Board Act and in particular the express exclusion of obtaining revenue through rating. It also allows appropriate inter-generational pricing.

3.2 *Do you consider that you are meeting the demands of your customers? If not, what types of barriers prevent you from being more responsive to customer demand.*

Our four customers are to be surveyed every two years. Specific information from the customer survey last year is as follows:

Strengths of the WRC Water Group

- The organisation and its people
- Water supply (reliable, quality, quantity)
- The information the organisation provides
- Systems and infrastructure

Areas for Improvement

- Customers feel captive (sole supplier/monopoly issue)
- More customer focused
- Transparency in pricing

Since this survey was completed greater attention is being paid to customers. A marketing position was created 18 months ago. Wholesale pricing is already reasonably transparent. Information in excess of that required for local authority reporting is made available to customers, for example, some of the results of the industry benchmarking survey. A Business Report was produced last year for the first time (copy attached). This supplements the Council's Annual Report.

Customers are being encouraged to enter into a service agreement but they have not given this high priority. Negotiations have so far taken over a year but there is a reasonable chance these will be concluded for the agreement to start on 1 July 1999.

The comment about feeling captive is a typical response when the purchaser only has one supplier. A standard business solution to this problem is to integrate. The issue of integration is expanded in response to question 2.4. In summary the only barrier at present is the lack of agreed performance standards. These are included in the draft Customer Contract.

3.3 *Are there any issues confronting service providers that frustrate the ability to achieve positive health and environmental outcomes when delivering water and wastewater services?*

As mentioned in response to question 2.1 the WRC expects a B grading for the treatment plants sourcing secure ground water. This is because of Hutt City's request that chlorine is not added to this water. A grading higher than B is not possible without chlorine. The WRC has adopted a policy that targets an A grading for all water treatment plants, where it is practical to do so.

Apart from this issue there are no other issues constraining the WRC from achieving appropriate health or environmental outcomes for its water business.

By July this year it is expected that all water from WRC water treatment plants will be fluoridated (97 percent at present).

Work is currently underway to achieve ISO 14001 certification (environment) for the wholesale water supply system. The WRC currently holds ISO 9001 certification for quality.

3.4 *Do you find the existing legislative framework for the delivery of water and wastewater services difficult to work within? Does it prevent you from undertaking any activities that may improve your ability to deliver quality services at least cost?*

The WRC has long held the belief that an integrated water supply system in the Wellington metropolitan area could deliver lower costs and better customer (end user) service.

In 1997 the WRC and the four city councils engaged Ernst and Young consultancy to review the water supply in the Wellington Metropolitan area. Ernst and Young estimated the potential savings from integration at \$55 M NPV over a 15 year period. This equates to savings of about \$6 M a year after three years. They also assumed a LATE was formed. Under a "competition" model, with two LATEs, the NPV was \$13 M less at \$42 M. A significant portion of the savings can be achieved through

eliminating the interface costs and efficiency barriers between the WRC and its customers.

A survey by the WRC, subsequent to the Ernst and Young report, showed that 77 percent of the public wanted public ownership and operation for their water supply system. A revised integration proposal has been put to the four city councils by the WRC. It involves an asset lease agreement, a policy committee with representatives of the four cities and the WRC, and service delivery by the WRC. The WRC believes this arrangement could deliver similar benefits to the Ernst and Young LATE proposal though Ernst and Young have reduced the maximum savings to \$41 M NPV.

A key advantage of the integration proposal is the provision for a sole provider from source to tap in line with what happens in most other local authorities.

Although integration of the service delivery can take place under the lease proposal it would be desirable to make a minor amendment to the Water Board Act. Retail pricing is one area not adequately provided for under the Water Board Act.

Working under the Water Board Act has provided the WRC with a sound framework, which is not available under other legislation. Although the Water Board Act could be enhanced by some specifics with regard to pricing options, it is still viewed as essentially supportive as opposed to restrictive.

One aspect not covered by the Water Board Act is the ability to export water. This is probably a national issue as it may have Treaty of Waitangi implications. Any industry reform though should consider this issue. Water is likely to be the “oil” of the 21st Century and the considerable winter surplus in the Wellington region is a resource of high potential value.

3.5 *Do you face any difficulties related to charging for water and wastewater services? Do these issues prevent you from improving the efficiency and effectiveness of service delivery?*

This question has been partly answered in response to some of the earlier questions.

Under the Water Board Act pricing has to be uniform to all customers and based on water consumption, either total or peak, or a combination. Removing this constraint would allow a more economic basis to pricing.

In the event that integration did take place, the WRC is not able to use rating type pricing (percentage of capital value or land value) to charge end users. Three of our four customers use meters or uniform annual charges. Wellington City uses a mixture of meters or part uniform charge and part capital value.

One of the issues for the Government to decide in any industry review is whether or not there should be constraints on the type of retail price. In particular, the use of a property’s capital or land value to determine the payment amount for water.

A true user pays system would probably involve universal metering. The WRC has considered whether or not it should support the introduction of this in the Wellington Metropolitan area. At this stage it does not have general territorial Council support.

The final decision, under current arrangements, must be made by our four city customers.

The reason for the WRC not supporting universal metering at present is the installation cost of approximately \$20 to \$25 M. This together with meter reading costs, administration and maintenance costs would exceed the marginal cost savings from producing less water. Experience of other water utilities indicates universal metering will reduce demand by 20 to 25 percent.

Support for universal metering is possible once the requirement for a new water source draws nearer. For the WRC this is about 20 years away under current growth projections.

3.6 *What type of governance structure is likely to be the best to achieve the efficient and effective delivery of services? What factors influence the choice of governance structure?*

An appropriate governance structure is one which will deliver appropriate outcomes; these include:

- Recognition that above all else water supply is about the preservation and enhancement of public health.
- Efficient service delivery against an agreed set of objectives, including the issues of universal and equitable access driven by the overriding public health outcome.
- Excellent customer service.
- The water supplied is of an appropriate quality and there is a continuing adequate supply.
- Security of supply in the event of adverse circumstances.
- Pricing mechanisms which assist long term sustainability.
- Funding mechanisms take account of inter-generational issues and long asset life.
- Funding for water supply infrastructure is accorded the priority it requires as an essential service with a public health outcome.
- Public participation in policy issues.

There are several governance structures which can be used to meet these key objectives. However, achieving the right blend is not easy.

A LATE tends to place too much emphasis on achieving a commercial return. One of the criticisms in the Sydney Water incident report was the equal weighting Sydney Water was required to give to; acting commercially, delivery of public health and environmental issues. The Inquiry Head highlighted the conflict between these under some circumstances.

Governance through a Council committee can provide a high level of public accountability but may not deliver the most efficient outcome, particularly if water supply is funded from normal rate collection.

Some flexibility in governance structure for water supply is probably appropriate given the wide range of operations in New Zealand.

However, the following are seen as desirable:

- Financial ring fencing of water supply operations.
- The ability to raise debt and secure it against water supply assets.
- Charges for water supply are transparent and separate from the normal local authority rates.
- Vertically integrated organisations.
- Encouragement for amalgamations to achieve economies of scale and retain specialist staff.
- Encouragement to achieve best practice in service delivery.

The Council believes that the artificial creation of so called “competition” adds nothing to the effectiveness of what, in the Wellington Region, is a natural monopoly. The balance between efficiency and other community needs, given the primary public health objective of water supply, would be grossly distorted if community and equity issues were subordinated to the goal of maximum efficiency, as it is popularly understood. There are other mechanisms to ensure the reverse does not occur in a publicly owned natural monopoly.

- 3 Are there any issues confronting service providers that frustrate the ability to achieve positive health and environmental outcomes when delivering water and wastewater services?**
- 4 Do you find the existing legislative framework for the delivery of water and wastewater services difficult to work within? Does it prevent you from undertaking any activities that may improve your ability to deliver quality services at least cost?**
- 5 Do you face any difficulties related to charging for water and wastewater services? Do these issues prevent you from improving the efficiency and effectiveness of service delivery?**
- 6 What type of governance structure is likely to be the best to achieve the efficient and effective delivery of services? What factors influence the choice of governance structure?**

It is not expected that the questions or the background information will cover all areas of service delivery where difficulties are being experienced. Nor is it expected that all questions will be relevant to all service providers. Rather, the intention of the questions is to provide a starting point for discussion.

As officials are unable to meet with all local authorities, those who are not visited may wish to contact the Ministry of Commerce with any written comments they have on the above questions or any other issues currently facing them in the delivery of water and wastewater services. Feedback should be sent to:

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Resources and Networks Branch
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The feedback obtained will help to guide the development of a public discussion document intended for release in March/April 1999.

I look forward to your contribution to the water and wastewater review.

Yours sincerely



M R Lear
Deputy Secretary
Resources and Networks Branch

WATER AND WASTEWATER SERVICES IN NEW ZEALAND

This paper provides background information on water and wastewater services in New Zealand (stormwater services are included where relevant), and sets out some preliminary thoughts on the issues.

THE NATURE OF WATER AND WASTEWATER SERVICES

The delivery of water, wastewater, and stormwater services is something that many New Zealanders take for granted. Over time, consumers of these services have become accustomed to simply turning on a tap for water supply, and flushing wastewater down the drain.

Although the day-to-day delivery of water, wastewater, and stormwater services may be taken for granted, the general public, service providers, and policy makers often show strong interest in matters of service delivery when they arise. This is because these services play an important role in the functioning of society, and their delivery can create a variety of benefits and costs. For example:

- Potable water is necessary for human survival.
- Water and wastewater services play a key role in the economy and in achieving economic growth and development.
- The infrastructure involved in service delivery makes up a large proportion of New Zealand's infrastructure, and involves substantial capital expenditure.
- Water and wastewater have significant overhead costs for many industries.
- Significant public health concerns can arise where services are not delivered appropriately.
- Significant environmental and cultural concerns can arise where services are not delivered appropriately.
- Water and wastewater play a large role in normal day-to-day household activities and in many peoples 'enjoyment of life'.

The majority of New Zealanders rely on territorial authorities (city and district councils) to provide these services. Some exceptions to this exist, particularly in water use by industry, where 66% of water requirements are obtained from private water supplies. Other exceptions include private community water supplies¹, and individual household supplies².

SERVICE DELIVERY

The delivery of water, wastewater, and stormwater services includes the following:

- **Water Services:** The delivery of water services begins with the collection of water from its natural source. The water may be stored and then treated before it is pumped through a pipe network and distributed to customers.
- **Wastewater Services:** The delivery of wastewater services generally involves a network of pipes which collect effluent (sewerage and tradewaste) from properties, pipe it, and in some cases pump it, to treatment plants, where it is treated and then discharged into the

¹ Private community water supplies are provided to approximately 4% of the population by individuals or bodies such as schools, motels and hospitals.

² Individual household supplies include rainwater collection and the use of bores. Approximately 11% of the population receive water supply in this way.

environment. Some isolated communities store sewerage in septic tanks, and sludge is periodically removed and treated.

- **Stormwater Services:** Stormwater services are the drainage facilities provided to dispose of stormwater run-off from properties, streets, roads, and public areas. Treatment of stormwater is generally not undertaken before it is discharged. In some cases, stormwater services are combined with wastewater services.

Other aspects of the delivery of water, wastewater and stormwater services include management and investment in infrastructure, management of human and financial resources, compliance with health and environmental regulation, management of the customer interface, and resolving issues of funding and charging for service delivery.

IMPORTANT ASPECTS OF SERVICE DELIVERY

Some aspects of the delivery of water, wastewater and stormwater services are listed below. This list does not cover all aspects of service delivery, and some of the aspects listed may be inter-related.

1. OWNERSHIP OF ASSETS

Most territorial authorities own the component parts of their water and wastewater systems. Ownership of drainage assets depends on the legislation constituting different schemes, and territorial authorities may or may not own these assets. Communities can also be regarded as 'owners' of these assets.

In some cases, the owners of the assets are not involved in the delivery of services (for example, owners are separate from service providers under Local Authority Trading Enterprises (LATEs) and franchise arrangements). The delivery of services may not require the owners of the assets to be the managers of service delivery. However, it is likely that the relationship between the owner and manager will have to be such that managers face the correct incentives to deliver the appropriate services. Also, asset owners are likely to require an assurance that the value of their assets will be maintained.

2. INFRASTRUCTURE MANAGEMENT

Prior to recent amendments to the Local Government Act 1974,³ management of water, wastewater, and stormwater infrastructure was variable⁴. However, the requirement for asset management planning has resulted in greater consistency in the management of assets. Other pressures that may be leading to improved management of infrastructure include compliance with the Resource Management Act 1991 and New Zealand Drinking Water Standards.

Even though there is a direct requirement for infrastructure management, service providers may still face difficulties in achieving the on-going safe and secure supply of services at least cost. For example, there may be barriers to implementing or achieving the objectives of asset management plans. It is important that the right incentives are provided for appropriate investment and maintenance of infrastructure assets, and that those responsible for the management of these are able to respond to those incentives.

³ Local Government Amendment Act Number 3, 1996.

⁴ *Review of the Powers and Responsibilities of Local Authorities to Provide Water and Wastewater Services:* The Bridgeport Group for Department of Internal Affairs, Wellington, April 1998.

A further issue is that the delivery of water and wastewater services can require a large capital investment in infrastructure. The costs associated with establishing this infrastructure can result in natural monopolies because the costs of duplicating the infrastructure are such that it would be uneconomic and inefficient to do so.⁵ Other parts of the delivery of services can potentially be supplied by more than one provider (eg water treatment).

Where natural monopolies occur, important issues arise such as market power, and how to promote efficient operation in the absence of competition from alternative providers. It is important that the legislative framework for water and wastewater is able to adequately address these issues.

3. LEGISLATIVE FRAMEWORK

The key pieces of legislation surrounding the delivery of water, wastewater, and stormwater services are the Local Government Act 1974, the Health Act 1956, the Rating Powers Act 1988, the Resource Management Act 1991, and the Building Act 1991.

The legislative framework for the delivery of water, wastewater, and stormwater services may create difficulties in the delivery of services. For example, a framework consisting of many different pieces of legislation may be cumbersome to work within and result in a lack of clarity over service delivery roles and functions. Also, some pieces of legislation may inhibit or prevent service providers from improving service delivery.

4. THE GOVERNANCE STRUCTURE

Governance structure refers to the legal and institutional constraints surrounding an organisation delivering water, wastewater, and stormwater services. Examples of governance structures include council departments, business units, LATEs, franchises, and private ownership.

There are a range of factors that have given rise to various types of governance structures. It is important to consider what structures are best suited to the delivery of water and wastewater services. In particular, the kinds of incentives different structures create for the effective delivery of services will be important.

5. MEETING CUSTOMER NEEDS

Water and wastewater services are delivered to a variety of customer groups, including residential, business and industry, and rural and urban customers. To provide an effective and efficient service, providers should be able to respond to the varying demands of these customer groups. This may include differences in the quantity and quality of water received or the treatment of a specific type of tradewaste.

Where a lack of responsiveness to customer needs exists, it may be because service providers are unable to respond to demand. This may be caused by restrictions imposed by policies, legislation, and/or regulation, the inability to interpret customer demand due to inadequate channels of communication, and/or lack of a clear client/service provider relationship. Natural monopoly issues, in particular a lack of alternatives, may also be a factor.

⁵ The entry costs are too high for alternative providers, and a single provider is potentially able to deliver the services more efficiently.

6. 'VALUE FOR MONEY'

'Value for money' relates to the link between the price paid for services and the quality of the service provided. It is important that customers are able to obtain value for money when consuming water and wastewater services. It is also important that service providers are able to provide value for money. In addition, it is important that the real cost of providing the service is identified. Existing legislation may inhibit this.

7. HEALTH AND ENVIRONMENTAL ISSUES

The environmental and health objectives for the delivery of water, wastewater, and stormwater services are reflected in environmental and health legislation⁶. In some cases, there is evidence to suggest that these objectives are not being adequately achieved. For example, research by the Ministry for the Environment indicates that in some areas there may be problems with the level of toxic discharge to the environment from sewerage. Also, a recent survey by the Ministry of Health on drinking water estimates that 15%, 21% and 25% of the population surveyed do not receive drinking water that complies with faecal coliform, Giardia, and Cryptosporidium criteria respectively⁷.

It may be that current environmental and health regulation does not fully address the issues arising in the delivery of water, wastewater, and stormwater services. It may also be that, in some instances, poor quality of infrastructure or pricing are limiting the achievement of environmental and health objectives. This could result from inadequacy of the overall legislative framework for the sector.

8. PRICING OF SERVICE DELIVERY

The delivery of water, wastewater, and stormwater services involves a range of costs which may be recovered by charging for services. These include the costs of investment in the required pipe networks and storage facilities, treatment of water and wastewater, pumping of water, wastewater and stormwater, meeting environmental and health standards, and a number of administrative costs.

At present, a variety of methods exist for charging for these services. Water services may be charged for through property rates, uniform annual charges, and/or through the use of water meters. Wastewater services may be charged for through property rates, uniform annual charges, pan charges - local authorities can reach agreement with trade waste dischargers on prices for reception and treatment of tradewastes. Finally, stormwater services are generally charged for through rates.

The ability for service providers to price services appropriately is important in ensuring the ongoing provision of safe and secure services that are provided in an efficient, effective, and environmentally sustainable manner. Charging methods that do not take into account the nature and cost of the services provided, may lead to customers not paying a charge that relates to the value of the service.

⁶ The main pieces of legislation embodying this regulation are the Resource Management Act 1991 and the Health Act 1956 respectively. Both Acts are currently subject to review.

⁷ *Annual Review of the Microbiological Quality of Drinking-Water in New Zealand*, 1997. New Zealand Ministry of Health, 1998.