

Draft Submission to the Parliamentary Commissioner for the Environment on “Ageing Pipes and Murky Waters.”

1. The Wellington Regional Council is commenting on the paper as a wholesale water supplier to the four metropolitan cities in the Wellington area. Additional comments are provided on the ecosystem approach to urban water systems.

2. **Comments as a Wholesale Water Supplier**

The paper raises nine issues. A response to each is as follows:

Issue 1. Urban water systems and tikanga Maori

- a) *How can the values of tangata whenua be given greater recognition, and provided for, with the sustainable management of urban water systems?*
- b) *How can tangata whenua, as kaitiaki, be more involved in the management of urban water systems through partnerships, co-management and other approaches?*

The tangata whenua of the Region will consider the report at the next meeting of Ara Tahi, the joint iwi-Council forum. It is appropriate for the iwi to determine at that stage how they wish to respond to the paper.

Issue 2. The legislative framework

- a) *Does New Zealand need a consolidated Water Services Act for the provision, management, and delivery of water services? This Act would address utility, service provision, supply and demand management, and accountability and transparency issues. It would not replicate the Resource Management Act 1991. Alternatively, can incremental changes be made to the existing legislative framework to bring required improvements?*

At present there seems to be an unwillingness by Central Government to create major legislative change. Wholesale water delivery in Wellington is provided for by the Wellington Regional Water Board Act WRWB (1972), administered by the Wellington Regional Council (WRC). In due course some changes may be required to this Act. This will involve the WRC, its four city customers and other stakeholders.

The type of reforms likely to proceed in the Wellington area are not hindered at present by lack a Water Services Act. In the longer term a Water Services Act would be useful. Possibly based on the other recent utility type acts but including the required health provisions. It is agreed that water services are

mentioned in to many acts at present. Rationalising the situation though is seen as a longer term objective.

Issue 3. Pricing and charging for water services

- a) *How can better pricing and charging systems for the provision of water services be developed and implemented ie what community processes need to be developed?*
- b) *What changes are required to the current system for establishing and charging financial contributions from new subdivisions in order to fund new infrastructure?*
- c) *What research is needed to assist the implementation of better pricing and charging systems?*

The WRWB provides a reasonable amount of flexibility as to how water is charged. At present our customers' pay a share of the total cost that is directly related to each city's metered consumption at the points of supply. Pricing was reviewed in 1999 and our customers decided they did not want a change in the methodology.

Issue 3b does not directly concern the WRC.

Issue 3c assumes that the present pricing and charging systems are deficient. It is believed that the paper has not shown this to be the case. Local authorities can charge according to metered quantity, uniform annual charge or rate according to property value, or a mix of these. Private suppliers are not able to rate.

Issue 4. Risk Management

- a) *Do we have adequate understanding of what are the risks to urban water systems and the nature and inter-relationship of these risks?*
- b) *Is there adequate risk management for urban water systems and water services?*
- c) *Are there appropriate contingency plans to respond to the range of environmental and public health risks to urban water systems?*

The WRC has a risk management policy for water supply, which includes quality and quantity. The Water Group of the Council is accredited under ISO 9002 and 14001 for its major activities. Contingency plans exist to cover a wide range of eventualities. Resourcing these plans, for example in the event of a major earthquake, could pose some problems. This though is not unique to water supply and comes about as a result of a small population base in New Zealand.

Issue 5. Urban ecosystem management

- a) *How can integrated management of urban water systems be improved, particularly issues relating to growth management and the adequate provision of water services?*
- b) *What changes are required in legislative functions and/or policies/practices to improve the management of urban water catchments for water supply purposes?*
- c) *How can water service providers be encouraged to develop and report on sustainability indicators?*

The Wellington area is fortunate in having large bush clad pristine catchment areas for surface water collection and a major artesian resource providing secure groundwater. In addition, two large catchments are reserved for future use. Growth in potable water usage is low. Current resources, apart from possibly some peaking capacity, are adequate for at least another 20 years.

Water catchments in the Wellington area are protected through the WRWBA.

Technology improvements over the next few years, particularly membrane filtration, are likely to ensure a wider range of waters can be treated in future to provide potable water.

Issue 6. Integrated management of water services

- a) *How can more water services providers be encouraged to take an urban water cycle strategy approach to the management of urban water systems with integrated management of all waters?*
- b) *How can greater priority be given to demand management responses including preparation of a demand management strategy?*
- c) *What are the opportunities for increased 'water harvesting' and reuse of reclaimed water in New Zealand given the need to manage a range of public health, cultural and environmental issues?*
- d) *How can the management of stormwater be improved through the use of the full range of onsite and offsite solutions?*

The WRC and its water supply customers have an active programme to encourage water conservation during the summer period. This relates to trying to limit peak demand by encouraging wise garden watering. National and international research suggests that installing water meters in the Wellington area would reduce demand by 20-25 percent. At present most commercial and industrial properties are metered, but there are very few residential meters.

Universal meter installation would cost about \$30M. This has to be compared with developing another water source at \$3-\$4M in about 20 years.

Territorial authorities could be required to prepare a water management plan similar to the Waste Management Plans the Local Government Act requires them to prepare. In these plans, they could be required to establish how they

will promote (or ensure) the efficient storage, reticulation, and use of water provided for water supply, and demonstrate the means they investigated to utilise water from impermeable surfaces like rooftops.

The management of stormwater can be improved by **using** the full range of on-site and off-site solutions that are currently available. Ways to reduce the effects of stormwater discharges are widely under utilised. Examples of offsite ecologically inspired solutions that could be more widely used are:

- reducing impervious surfaces (through incentives or district plan requirements), thereby reducing stormwater volumes, and
- requiring less kerb and channelling and more roadside swales in new subdivisions.

On-site solutions on urban properties can require more management than on larger rural properties where roof top water can be used for water supply, gardening or discharged to soak holes without adverse effects. Most urban properties in the Wellington Region, however, are too small to completely accommodate the excess water. This is a fundamental problem for the ecosystem approach to water management because, whilst the ecologically sound thing to do is to return the water to its natural pattern, the level of development in most urban catchments prohibits this. This does not mean the ecosystem approach is flawed. Only that it is not **simple** and requires creative thinking.

Issue 7. New Solutions

- a) *As a contribution to water services reform, how can New Zealand research and examine the costs and benefits and potential applications of new and alternative urban water services technologies and solutions?*
- b) *How can we identify and price the environmental externalities of different systems as part of the provision of water services?*

We are fortunate in NZ that the United States EPA puts hundreds of millions of US dollars each year into water research. The results from this research and that of other major developed countries can be accessed through publications and products. For example a computer programme (hydraulic model) produced with US EPA assistance to understanding potable water systems is one of the best available. And it's free via the internet!

Research in New Zealand should be limited to problems which are unique to our circumstances.

Issue 8. Recognition and valuation of ecosystem services

- a) *How can the concept of ecosystem services be better applied to the management of urban water systems with enhanced recognition and valuation of these services?*
- b) *How can asset management planning be enhanced to recognise, value and incorporate the roles provided by ecosystem services resulting in more appropriate financial charges and incentives?*

Comments on this issue are covered in section 3.

Issue 9. Linkages between the reviews

- a) *Despite the substantial number of reviews and policy developments, what consideration is being given to addressing broader sustainability issues, for example, resource efficiency and ecosystem services?*
- b) *What is the degree of integration between the various water-related reviews?*
- c) *How will the Local Government New Zealand national water services review promote more sustainable water systems by improving ecological efficiency and economic efficiency?*
- d) *While addressing local water quality and health issues, how can any future national sewage subsidy address broader sustainability issues and also address ecological efficiency? New systems address broader sustainability issues and also address ecological efficiency? New systems and management processes may allow small communities to meet a range of economic, environmental, social and cultural goals.*

The recent government decision for incremental reform of the water industry has partly superseded this issue. The Hutt and Wellington City Councils, together with the WRC, are considering the integration of their various water services. This is within the framework of continued public ownership and accountability. The objectives include greater efficiency, improved customer service, improved quality and security of supply.

3. Comment on the Ecosystem Approach to Urban Water Systems

- 3.1 This paper asks how urban water systems can be managed in a more sustainable way. Its main argument is that water and waste water should be managed as part of the wider water cycle, rather than in the “linear” form which is now the norm. It contains a number of very good ideas but it is at times confusing and unclear in its prescription for a better future.
- 3.2 The Wellington Regional Council supports much of this discussion paper’s emphasis on ecosystems and their functions. The Council favours an ecosystem based approach to resource management. It has

objectives, policies, and methods, to this end in its Regional Policy Statement. For the Council, adopting an ecosystem approach means managing a resource so that, as far as possible, it can play its proper role in an ecosystem, or managing activities so that ecological processes are supported. The Council's various departments have been gradually adopting this approach over the last two years.

- 3.3 An ecosystem approach to managing "urban water systems" is a laudable goal but how to do this is unclear. As the document points out, this is new ground and much needs to be worked through before a clear way forward will emerge. For example, how can we implement such concepts as "closing the loop", and "the urban water system life-cycle"? The valuation of ecosystem services is also a vexed issue. This paper will stimulate discussion and will be useful in this regard, but its weakness is that it asks the ecosystem paradigm, which it says is the way forward, to do too much.
- 3.4 The key question is, is it useful to think of the delivery of urban water services using a life cycle approach based on ecological principles? The answer is probably "yes", but not necessarily all at once, because ecosystems are notoriously complex, whilst human management of the environment needs to be simple to be effective.
- 3.5 It would be more useful and instructive to split up this complex notion of an urban ecosystem, with water cycling through it in its various forms, into three parts, whilst still retaining an ecosystem focus. These parts would be:
- Natural ecosystems within urban areas that have some water component (such as streams and wetlands, harbours);
 - The water supply function and its relationship to the ecosystem in which it sits and which it affects (i.e. supply catchments,);
 - The waste water function and its relationship to the ecosystem in which it sits and which it affects (storm water and its connection with receiving environments – either, land, stream, groundwater, or coast – and sewage).
- 3.6 Whilst this differentiation splits up the ecosystem "wholeness", it nonetheless helps with working out how to actually put the ecosystem approach into practice for such a complicated meta-system as the urban-water interface. Each of these three parts of the water cycle is fundamentally different from the other and requires differing management responses. Water managers at each stage in the water cycle would still need to couch their management questions in ecosystem terms, e.g., what is the effect of our management of a particular part of the water collection process on the ecosystem of which it is a part? Or, how can we manage runoff so that as much as possible it mirrors the natural hydrological processes of an area? But it would be helpful in thinking of what to do where, when, and in what way.

- 3.7 The Council also recognises the need to educate the public in how to care for its water, both in terms of how much is consumed, and in reducing pollution. The Council has commenced an environmental education programme directed at communities, businesses, and school children, which promotes reduced water use and the avoidance of the pollution of natural systems by stormwater. In particular, the programme promotes communities and individuals taking personal responsibility for how they use water.