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Report to Utility Services Committee
from Murray Kennedy, Strategy and Asset Manager

Wholesale Water Supply in an Emergency

1. Purpose

To obtain approval for development of an emergency water supply plan.

2. Introduction

The Water Group has a comprehensive Incident Management system in place for events that may happen from time to time. It includes loss of communication, interruptions to supply, detection of *giardia/cryptosporidium*, contamination, earthquake, tsunami and other incidents.

Over the past few years, the Water Group has spent up to \$300,000 a year on seismic protection works and other works to reduce the possible damage from unexpected events. Examples include earthquake couplings on pipelines crossing bridges, tying down pipelines in tunnels, restraining tanks and equipment at water treatment plants and flood protection works at stream and river crossings. Two major projects currently being investigated are the Hutt River crossing at Silverstream and the pipeline from SH2 near Silverstream to SH58.

The Water Group is also active in the activities of the Lifelines Group in the Wellington area.

It is difficult though, to plan for some events. For example, an earthquake associated with the movement of the Wellington fault. This event has a return period of several hundred years. When it does occur, major disruption can be expected to the water supply system. While it is not possible to be precise about the extent of the damage, evidence from earthquakes overseas provide some pointers. It is likely pipelines will fracture in

many places. Production at the water treatment plants will be disrupted and even temporary repairs will take many weeks. Water production and distribution will resume progressively as the system is restored.

3. **Contingency Planning**

The present incident management system is based on continuing to use the existing infrastructure, or at least having it available within a short period of time after an incident. It had been assumed that collection and delivery of water while the infrastructure was not available, would be undertaken by others. Recent discussions with our customers indicates this is not the case. Planning is therefore required for the situation where water cannot be delivered by pipelines to the four cities for an extended period.

3.1 **Supply Quantities**

What quantity of water should be made available on an ongoing basis during the emergency? United Nations disaster relief minimum standards are:

- 3 litres per person per day. This requires 1,050 cubic metres a day, or 70 x 15 tonne truckloads to supply a population of 350,000.
- 20 litres per person per day, after the first 3 days. For the same population, 470 x 15 tonne truckloads or 7,050 cubic metres are required each day.

The greater the quantity of water that can be made available, the lower the risk of public health problems.

As the recovery operation progresses, greater quantities of water will be delivered by pipeline to our customers' reservoirs. Hence, more resources are then available to deliver water by road to areas that are not yet reconnected. Public tolerance to not having a connected water supply will lessen as days after the event roll into weeks.

This suggests the emergency quantity of water made available per person per day should be increased, the longer the time a property is without a connected supply.

3.2 **Self Reliance**

After the third day of the emergency, the quantities of water to be delivered could be substantial. For this reason anything the public can do to help themselves will reduce the pressure on the delivery resources and will be worthwhile. This could require an ongoing education programme. An example is the Accident Compensation Corporation advertisements encouraging people to ensure their hot water cylinders are secure.

Initial self reliance may include:

- usage of water already at a property
- bottled water
- toilet cisterns
- hot water cylinders
- other storage

Ongoing

- collection of rainwater
- tapping into downpipes and adding water treatment tablets to the water collected

4. **Responsibilities**

Several areas of responsibility have to be decided. For example:

- Development of the emergency plan
- ongoing revision of the plan
- ensuring infrastructure is available when an emergency arises
- training
- putting the plan into action once an emergency arises
- who pays

These issues have been discussed in broad detail with our four city customers. Their responses are included as attachment 1.

The legal position regarding water supply in an emergency is not clear. The Wellington Regional Water Board Act (1972) governs the Water Group's activities. Section 38 of the Act requires the Wellington Regional Council (WRC), as successor to the Water Board, to supply water on such terms and conditions it chooses after consulting with the customers. Supply is required though only when water is available. The Act is silent on emergency situations of the type outlined in this report.

No doubt the public will expect the local authorities to arrange an emergency supply. Rather than taking a legislative view of responsibility, a better approach is to consider who is best placed to arrange supply in an emergency. The answer is probably the Water Group of the WRC, in conjunction with Emergency Management personnel of the WRC and the City Councils. Involvement of the Water Group would end once water has been taken to a point for distribution.

5. **Next Steps**

The next step is to prepare an emergency supply plan for water delivery when pipelines are not available. This can be carried out by the Water Group staff with a small amount of external assistance. Once a draft plan is prepared, it would be discussed with the four city customers before being brought before the Committee. Implementation costs can be included as part of the reporting back process.

6. **Communications**

There is no immediate need for a media communication.

7. **Recommendations**

It is recommended that the Committee approves the preparation of a draft plan to supply water during an emergency when delivery by pipeline is not possible.

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Approved for Submission

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Attachments

Attachment 1 : Letters from our four city customers