

Do we really understand our water systems?

Have Kiwis lost the plot when it comes to valuing or even understanding the country's vital water infrastructure? Water New Zealand's technical manager

Nick Walmsley urges more connected thinking.

All the recent issues in the media makes me realise how little most of our community know about their water systems. The tragedy in Havelock North, comments about agricultural effects on rural river quality, the forthcoming Rivers Day celebrations, a recent workshop I attended on 'Healthy Waters' (the new name given by Auckland City council to their stormwater programme), all had aspects of singularity. But media questions and talkbacks I've experienced have shown little comprehensive understanding that these issues are all linked – whether we like it or not.

Keep it simple stupid (KISS) has been a philosophy for getting your message across for some years, so I guess that could be a good place to start. Simplistically we can show our water use as noted in the figure below.

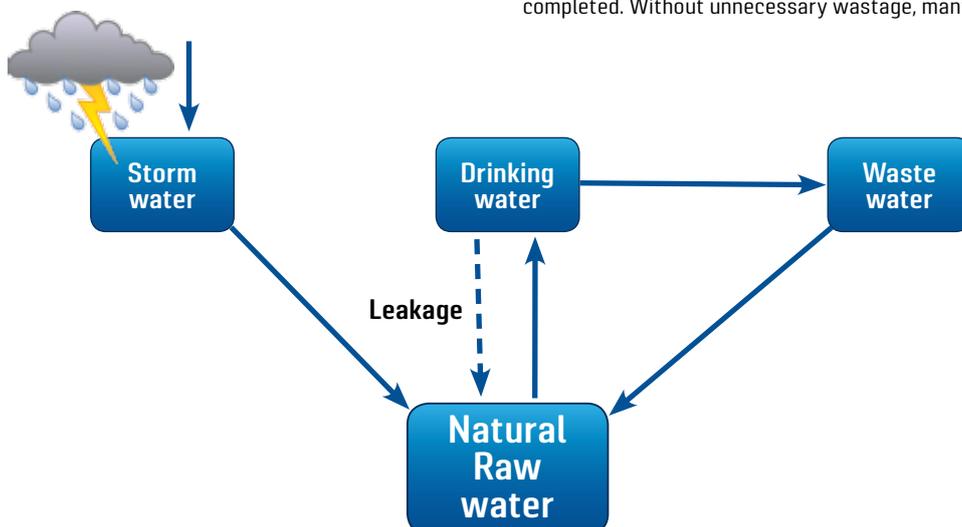
The rains come and fill our rivers, lakes, dams and groundwater reservoirs. We take that water and, with varying degrees of treatment, use that water to drink, wash and make products that we sell for a profit. The drinking water gets 'dirtied' and discharged to the sewer as wastewater, whether that is sewage (from people) or other forms of wastewater (from other human controlled activities) doesn't really matter. The point is, it is not fit to be discharged into the natural environment without treatment first.

We treat the wastewater to suit the political view of what is suitable for the local natural environment. Over the years, this level of treatment has markedly changed. Initially it was treated to protect people (remember public health engineers?). This changed to a level that protected the environmental standards of the day (now we are called environmental engineers) and then we added a layer of risk protection where we wanted barriers 'in case' of an event that may or may not occur.

Over the years, communities have become more risk adverse but, unfortunately, often without the necessary education to fully rationalise that risk. With the increased ability to communicate, (wireless media, IT systems etc) we now make, or at least influence, decisions en masse through public media, often without full or even any real knowledge of the contributing facts.

We often forget that our wastewater will eventually contribute to our drinking water. We reap what we sow, or something along those lines. How many folk flush the toilet and think that is the end of the matter? How many people realise that the 'flushable wipes' we happily buy to wipe surfaces, whether sink tops or baby's bottoms, are not actually 'flushable' in the sense of disintegrating in the sewer without causing harm? The wipes clog and tangle to cause operational problems for the stalwart folk that have to dive in to these murky waters and remove them; and the cost of this is paid for by our local body rates. The next time you complain about your rates ask yourself, "How much of that money did I cause? Did my family minimise that cost?"

Water supply also has losses, whether from a leaky piped distribution system, that constant drip from your tap at home, or the wastage when you don't turn off the cleaning hose in the workshop or factory. It is not just a matter of extra cost, although leakage of treated drinking water is certainly like putting money down the drain, but that water needn't have been taken from the river and could have allowed better flushing of sediment, better quality for the fish or more irrigation for the crops that feed the nation. There are several rivers that are likely to be seen as over-allocated when implementation of the National Policy Statement for Freshwater Management is completed. Without unnecessary wastage, many societal pressures



could be avoided or at least minimised.

In New Zealand, we are fortunate. Nationally we have enough water, although not necessarily in the correct place or time, given the increased demands from our growing population and intensified farming. Other countries have much bigger pressures with reducing rainfall and much bigger demands. We do not yet have to tap the sea for water to drink (desalination) which gradually increases the local salt concentration in the nearshore oceans at the same time as they warm up (global warming) and negatively affects fish life.

There are many disparate groups with their own agendas – for instance, promotion of waste disposal units even though it is well known that they are an inefficient way of dealing with solid wastes, or removal of chemicals from drinking water when the science clearly shows the health benefits. They may be well meaning but they do not see the issue within a balanced agenda. Life is a balance. If we do not recognise this now, we will ruin our own environment, but only future generations will know.

We, and our environment, are complex biological entities that need to live in harmony. There is no point in having laws and policies that label micronutrients as contaminants (and hence considered evil) when the reality is we need them to survive. Nature needs a small amount of many 'contaminants' to function efficiently. You will indeed be a very sick puppy if your body has either too little or too much, so labelling them as an absolute contaminant gives a false message.

Somehow we have lost the plot. We live in an environment that needs balance yet we selectively legalise and prohibit in isolation,

according to the uninformed whim of the day, or the zealots that get the most public attention. Fewer and fewer of our technical advisers have a wide range of relevant technical experience and seem more focussed on pleasing their political masters or pressure groups.

Have we lost the plot?

The value water imparts to society is immense. It is the single most important thing for our lives, yet we value and use it as if it means little. Remember, no water means no life as we know it.

The 2014-15 median charge across New Zealand to supply drinking water equated to less than 0.20c/L (National Performance Review). This compares to our increasing purchases of plastic bottles of water at \$3.50-4.50/L with throw away mentality i.e. 2000 times the bulk water cost!

In many areas, it is difficult for the community to know what they pay for water and there are few regular discussions on the levels of risk to their health. Equally, there is little public education on this topic. While Havelock North events are awful, it may have happened to the same people who wanted their rates, including charges to receive drinking water, reduced. They may well not have understood what their demands meant. Will those same residents now be willing to pay more to remove health risks from the system?

It is time that we assisted communities to understand more about some of life's basic values. Let's value water properly and understand how it underpins our basic existence. In today's world, part of valuing something includes funding for it to be managed properly. Life is our responsibility not something to be sold cheaply to others. **WNZ**