

Submission on the Proposed Regional Policy Statement for the Wellington Region

We recommend that greywater is promoted as a source of water for irrigation purposes.

We have used our professional experience, research and our ongoing dialogue with the Kapiti Coast District Council in their Plan Change 75 process to outline our support for the change as detailed below.

Context

Growing populations, changes in climate and ageing infrastructure have all provided a strong imperative for regulatory bodies across the world to investigate and adopt alternative water technologies.

An unwillingness and/or an inability, especially given current economic conditions, to invest in the building of new infrastructure to support the wasteful use of water has led to authorities as far spread as New South Wales and Montana to look at the better management of water as the preferred alternative to increasing capacity.

As you have already identified in New Zealand this desire is very much aligned with the sustainable management requirements set out in Section 5 of the RMA:

- Managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while - (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations;

Core issue

- Much of the total water use during the peak day is comprised of domestic garden water use (for example 42% in Kapiti).
- It is simply unsustainable to continue to store, treat and supply potable water only for it to be used for garden irrigation.

Recommended solution

Make the following changes to the Regional Policy Statement:

1. Policy 15: Promoting discharges to Land – add (c) *promote greywater re-use for irrigation purposes*

2. Policy 18: Using water efficiently – regional plans– add *(c) promote greywater re-use for irrigation purposes*

Benefits – environmental

- The benefits of greywater recycling are a very effective tool to assist with Water Demand Management.
- Using shower, bath and running tap water to irrigate gardens can save up to 42% of potable water that is currently used to water gardens.
- Hence savings of up to 42% can result in any new home that utilises this simple but effective technology.
- Other potential ecological benefits of greywater recycling include:
 - Lowering fresh water extraction from rivers and aquifers
 - Less environmental impact from septic tank and treatment plant infrastructure
 - Topsoil nitrification
 - Reduced energy use and chemical pollution from treatment
 - Increased plant growth
 - Reclamation of otherwise misdirected nutrients.

Benefits – economic

As a conservative estimate, we have used 50% water savings to illustrate the effect of retrofitting 1000 houses/year with the Plan Change 75 solution vs Business as Usual (BAU) on the future water demand for Kapiti – see Fig. 2.

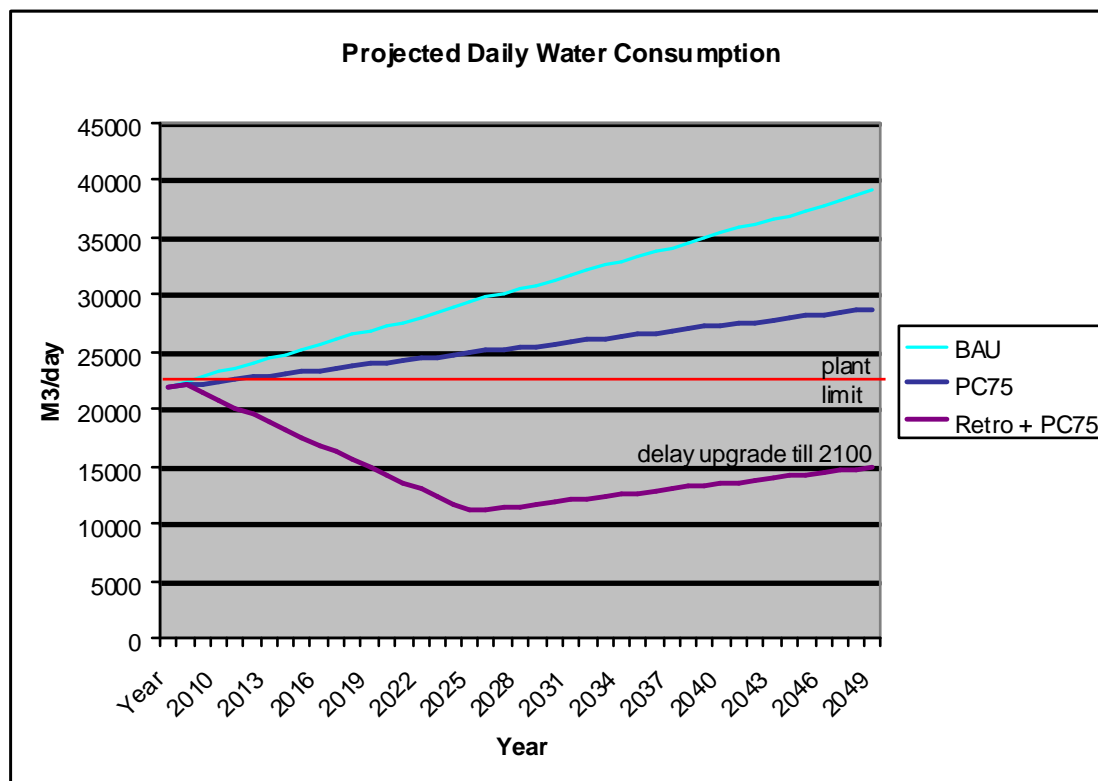


Figure 2: The effect of utilising raintanks and greywater on the Future Water Demand for Kapiti.

This demonstrates that a retrofit program would result in:

- A huge interest savings by deferring capital expenditure on new plants (for example \$1.4 million for every year delayed building the \$23 million dam project).
- The savings in capital expenditure on plant upgrades of up to \$23 million.
- The delay in reaching the immediate consent limits until the year 2100.
- Significant savings in stormwater and waste treatment operating costs.

In addition and as further evidence, our local research indicates that:

- The yearly rainfall in Kapiti is about 1500mm
- The average total water available to recycle in Kapiti per day is 586l
- Therefore if everyone recycled this amount it would result in saving of nearly 10 million litres per day
- Leading to an over all saving of in excess of \$1.5 million/annum of operating cost for Water and Waste Treatment.

Benefits – social

- According to research from SPARC gardening was the second most popular recreational activity in New Zealand last year, with over 1.4 million kiwis taking part
- A sprinkler uses 1200 litres an hour and as previously indicated garden water use is the root cause of peak water use
- Therefore it is logical that a switch in source for garden irrigation will not compromise ratepayers' ability to tend to their gardens and avoid a potentially unacceptable social cost as well as leading to considerable overall conservation
- Evidence from the Waterstone development in Kapiti (of which 99 out of the 102 sites had greywater systems installed) indicates that the systems are seen as adding value to the properties and acting as an incentive for buyers

Safety

- Concern has been raised in some quarters about the potential negative health side effects from greywater use but it is now recognised and accepted by an increasing number of regulators that the microbiological risks of greywater reuse at the single dwelling level are in reality an insignificant risk, when properly managed by measures including:

- limiting the use to outdoor sub-surface irrigation;
- no storage of the greywater;
- ability to divert the greywater to sewer at any time if required;
- failsafe overflow to sewer.

These are all measures which have been included in the Kapiti Coast Rainwater and Greywater Code, which has been introduced to provide performance solutions to meet the statutory requirements of the Kapiti Coast District plan and the New Zealand Building Code.

- There has not been one documented case of greywater transmitted illness in the USA
- ESR report for the Kapiti Coast District Council showed zero levels of e-coli in the soil, at all of the sites where a Watersmart greywater garden irrigation system had been installed (*Monitoring greywater irrigation systems for the survival and persistence of microbiological contaminants after application to household gardens, by Dr Jacquie Horswell and Dr Tom Speir - August 2008*).

Conclusion

In order to reduce the peak demand, it is essential that greywater be promoted as an irrigation source. As was clearly shown by the modelling work by SKM Wellington (attached as appendix ii), for Kapiti Coast District Council (see Fig. 3), greywater recycling to the garden reduced the peak residential usage by over 50%, whereas a raintank had minimal effect on this

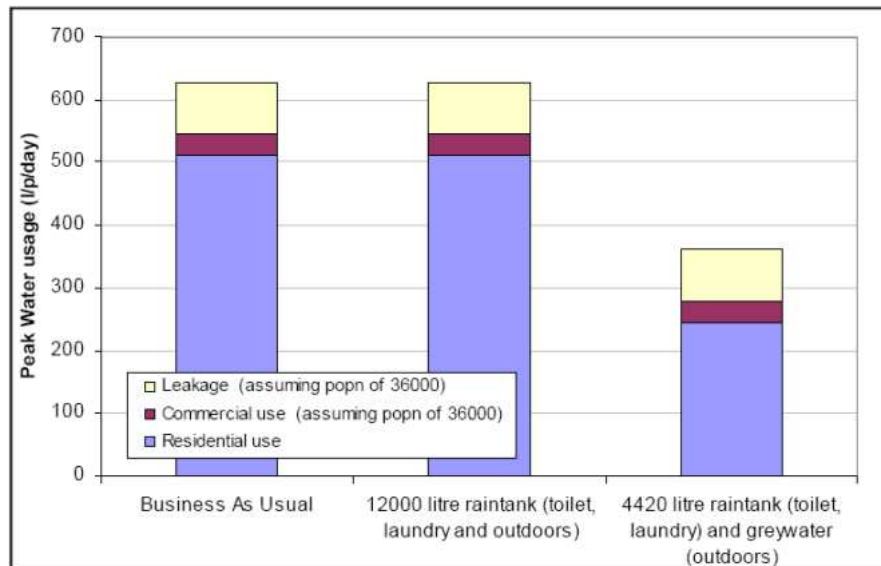


Figure 3: Peak Watermain Usage SKM 2008 (used with permission by Craig Martell- SKM / Ben Thompson- KCDC)

Recommendation

- To bring about a reduction in the demands placed on the regions water supply, greywater re-use for irrigation purposes should be heavily promoted in the Regional Policy Statement

I am willing to discuss the issues raised in this submission or supply additional information, but in the meantime thank you for the opportunity.

Yours sincerely,

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