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Beacon Pathway Limited
PO Box 11 338 Auckland
FreePhone 0508 beacon
www.beaconpathway.co.nz
www.nowhome.co.nz

PR205

Making Policy and Regulations Rain Tank Friendly

Final

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About This Report

Title

Making Policy and Regulations Rain Tank Friendly

Authors

Dr. Maggie Lawton, Braidwood Research and Consulting Ltd (Beacon Research Team Leader for Water)
Damon Birchfield, independent researcher for Beacon Pathway Ltd;
Dr. David Kettle of D & B Kettle Consulting Ltd

Reviewer

Lois Easton, Research Team Leader, Homes

Abstract

This investigation reviewed the legal and policy pathways for mandating to include rain tanks for water conservation in new homes in the Auckland Region. It recommends the steps that would be most effective in making policy and regulation rain tank friendly.

Reference

Lawton M., Birchfield D. and Kettle, D. (2007) - Making policy and regulation rain tanks friendly. Report PR 205 for Beacon Pathway Limited.

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Executive Summary

This report outlines the findings from an investigation into the legislation and policy relating to water conservation measures in the home and in particular the ways in which the inclusion of rain tanks in new residential developments can be required as a mandatory measure. The research indicates that there is unlikely to be one straightforward approach and that a number of activities may be required to achieve that goal. It is clear that any new regulatory action needs to be undertaken in parallel with a well resourced options analysis and awareness raising campaign around the imperative for water conservation in the Auckland Region, in order for any of the proposed approaches to have traction. Currently a water conservation imperative is not widely understood within the Auckland community. Watercare is well placed to take a lead in the awareness raising process but the level of water saving signalled in its current framework document "From the Sky to the Sea" is poorly framed to support strong water conservation measures. The proposed gross per capita water use reduction of 5% by 2024 needs to be revised to reflect the need for better water conservation.

In terms of the regulatory and policy processes, Watercare could influence the application of the three main Acts which impact on the provision of water supply as follows:
The Building Act: The most efficient way of achieving water conservation approaches nationally would be through revisions to the Building Code, giving some effect to the high level sustainability principles of the Building Act. There is an immediate opportunity to make a submission to the revision of the Building Code in support of performance targets for water demand (currently not anticipated) and carbon levels (anticipated [not sure what this anticipated means here?] and reticulated water considered as an energy issue with associated carbon emissions). The case could be made for the use of a water tank as a supplementary supply to be an "acceptable solution" within a compliance document. This would be triggered in the Building Consent process.

The Resource Management Act: The Government currently has a focus on water through the Sustainable Water Programme of Action which could develop a national policy statement around water conservation for domestic supply. Watercare should explore the issue of water conservation with MfE and whether a national policy statement could be considered.
At the regional level Watercare should, in consultation with Auckland Regional Council (ARC), make the case for water conservation to have a far greater focus in the revised Auckland Regional Policy Statement (ARPS). The ARPS could identify that District Plans of Territorial Authorities (TA's) in the Auckland Region should make provision for the mandatory inclusion of rain tanks as a "rule". A Section 32 cost benefit analysis and public notification would be required with a public consultation process under the RMA. The ARC is currently reviewing the ARPS (transport and land use underway but other aspects yet to be revised) with a new Policy Statement due for release in 2009.

Alternatively, or additionally, Watercare could work with the TA's in the region to develop individual Plan Changes to their District Plan, or initiate Private Plan Changes to include

policies and a rule around the requirement for rainwater tanks. This process similarly would require a Section 32 cost-benefit analysis to be undertaken.

The Local Government Act: There is a good opportunity for Watercare to influence water conservation under the LGA which has the requirement for a Water and Sanitary Assessment (and related asset management plans) to be carried out by each TA. If these signal the need for water conservation to avoid or push out further infrastructure development then such measures can be considered under the Long Term Council Community Plan (LTCCP) and considerably shorten the public consultation process required for inclusion in the District Plan. This approach has been successfully employed by Kapiti Coast District Council, the only TA in New Zealand requiring rainwater tanks in residential areas specifically for water conservation as a supplement to reticulated supply.

Practice Notes Guidelines and Engineering Standards: There are a plethora of non-statutory documents administered by councils. They can carry considerable influence even though they are not legislated for. Engineering standards apply to council infrastructure and as such they may not be a legislative route to apply the private infrastructure of rain tanks. Hence influencing the uptake of rain tanks through the less formal practice notes and guidelines may be a better mechanism. Financial incentives such as a rebate on development contributions should also be considered. Full details of recommendations are given in section 4.4. In addition the more certainty of technical details that can be given to ease the consent process, the better.

Health Act: There are no obvious health issues with supplementing water supply in urban areas if the supplementary supply is for non-potable uses. Health infrastructure issues, such as contamination from back-flow, are relatively simple technical issues to address.

Additional Issues: The key to paving a smooth passage for water conservation using the take up of urban rain tanks for non-potable uses, involves a mix of policy instruments. Education and information on the need for this and other water conservation interventions must be scaled up. Financial drivers need to be considered along with higher water saving targets set by Watercare, councils and local network operators.

1 Introduction

This research has been undertaken as a joint project between Beacon Pathway Limited, a sustainable building research consortium, and Watercare Services Limited, the bulk supplier of water and wastewater services within the Auckland Region.

The project explores the gap between the aspiration and the current situation for the mandatory installation of a rain tank to supply non-potable uses in all new residential buildings. It attempts to identify the optimum process that can be applied across the Auckland region for removing impediments and amending policy, legislation and regulations to provide for rain tanks mandatory provision. This has included consideration of relevant legislation, regulations and policy at all levels.

On-site water supply can augment a reticulated supply through harvesting of water in rain tanks or recycling water after use in showers and laundries. Of the two options we anticipate that using a rain tank as an auxiliary water source would be the easier option to apply widely and would save the greater amount of reticulated water. It is estimated that using tank water for non-potable uses such as toilets and laundries would save up to 45% of household demand. If garden hose or sprinkler use was also taken from rain tanks that amount could be even higher.[1] For example the Beacon NOW Home® uses 66% less potable water than the average in the Auckland region, due to the inclusion of a rain tank to supply non-potable uses, accepting that the NOW Home® tank is larger than that being suggested in this study.[2]

The goal is to have the provision and use of urban rain tanks included in all new homes so that there is a strong signal to the market that there is certainty around the need for this product. It is anticipated that this will in turn drive some innovation in this product sector in New Zealand, similar to the situation in Australia.

2 Background

2.1 Research scope

This project is aimed at increasing the uptake of rain tanks in new residential developments in urban areas of the Auckland Region. It focuses on identifying the process for removing impediments and amending legislation/regulations to provide for their mandatory provision and use of a non-potable supplementary water supply.

The following features of rain tanks have been assumed for the purposes of this research:

- Tanks are providing supplementary supply for non-potable uses only.
- The tanks shouldn't be buried, to enable ease of access and maintenance.

[1] Pers Comm. Watercare, February 2007.
[2] French et al (2007) Waitakere NOW Home®. First Year of Performance Monitoring. Unpublished Draft Report NO102 for Beacon Pathway Limited

- Innovation in design should be encouraged.
- Tank capacity should be up to 5000 litres.
- Tanks would be primarily for water collection rather than stormwater attenuation.
- Reticulated water must be available to provide for potable uses.

Some issues required to be considered were;

- Consideration of the producer statement and whether it should be managed through the builder or plumber.
- Any Building Consent implications regarding the electricity supply for the pump.
- Issues around the potential need for labelling of non-potable source taps in the laundry.
- Installation and maintenance requirements for backflow prevention pump and switch devices as TLA retailer and Building Consent requirements.
- Health issues that may arise despite the separation of potable and non-potable usage.

The research has been prepared in association with Watercare Services Limited and is to inform their "Three Waters Strategy", due for release in mid 2007.

2.2 Research Method

Research was carried out through an examination of relevant legislation, policies and regulations; discussions with council officers, planners, engineers and other people involved in related legislative processes. Key considerations were the ease of implementation and rapidity of take-up.

The result of this analysis is presented in the body of this report. Beacon's recommendations for possible pathways forward have also been made.

2.3 Overarching goals

For Beacon the work responds to its stated objective of addressing water demands at the household level to help achieve its strategic water goal.

For both parties, this research has been undertaken in recognition that there is a growing imperative for Auckland to adopt water conservation practices, already a growing trend in metropolitan areas overseas. New Zealand does not have the same legislative environment as Australia, nor the same degree of imperative with respect to water shortages, however there are still many other primary drivers for greater water resource conservation in the Auckland and New Zealand context, being:

- The anticipated need to upgrade to accommodate, for example, in Auckland alone by 2026, a further water resource capacity of 80,000m^3/day to 100,000m^3/day. With water conservation measures the cost associated with those infrastructure developments could be substantially delayed despite impending population growth.

- Reducing energy requirements associated with providing water to potable standard, only about 3% of which is used for drinking
- Water security caused by weather perturbations and climate change
- Managing times of peak use and low rainfall, building further resilience into the system.
- A need to show leadership in moderating resource use, being a good global citizen in times of increasing global water scarcity.

Watercare also has a stated strategic goal to "promote the sustainable, efficient, and wise use of reticulated water resources in the Auckland region"[3]. Its current water savings objective is to "reduce gross per capita demand for reticulated water resources in the Auckland region by 5% by 2026. Improve water efficiency of commercial and industrial customers. Reduce leaks within the networks."

Water conservation measures have the potential to:
- Provide greater water conservation capacity.
- Reduce the carbon footprint of the region.
- Lower energy use.
- Provide an in-situ stormwater infrastructure, and
- Deliver higher resilience to households by providing access to a secondary supply for non-potable applications.

All of these benefits accord with the wider strategic ambitions of both the Auckland Region and the New Zealand Government as it seeks to significantly improve resource efficiency across all sectors while reducing environmental and social impacts. These ambitions are reflected in a wide range of statutory legislation including of particular relevance to water conservation interventions, the RMA 1991, the LGA 2002, and the Building Act 2004. All of these pieces of legislation make direct reference to promoting greater sustainable management and/or development outcomes as their principle purpose.

At a strategic level, documents such as the New Zealand Government's Sustainable Development Programme of Action outline the expectation that a shift to more sustainable behaviour must be reflected in the way resources are managed and needs to be made mandatory across all levels of government activity, with the expectation that this will flow out into all other sectors and areas of economic activity. Relevant to this work are the policies and principles for decision making which include:

- Seeking innovative solutions that are mutually reinforcing, rather than accepting that gain in one area will necessarily be achieved at the expense of another.
- Decoupling economic growth from pressures on the environment.

3 Watercare Services Limited, 2004. "From the Sky to the Sea – the Auckland Water Management Plan".

- Respecting environmental limits, protecting ecosystems and promoting the integrated management of land, water and living resources[4].

There are a wide range of more localised strategies seeking to procure sustainable city/regions. One such example is the Auckland Regional Council led START (Sustaining the Auckland Region Together) initiative, a collaborative partnership between local and central government which attempts to provide Auckland with a long-term strategic framework for more sustainable decision making and will be used to inform future polices and plans such as the Regional Growth Strategy and the Regional Policy Statement.

2.4 Current Behavioral Context

It is worthwhile commenting on the behavioral and political interactions pertaining to water conservation issues as the development of policy and regulations in New Zealand is a highly consultative process and inextricably informed by community concerns.

With a few exceptions New Zealand communities have minimal concern about shortages of water supply for domestic use. In Auckland the implementation of the Waikato river pipeline has been seen as a long-term panacea for whatever water needs a growing Auckland region may have. Water conservation does not feature strongly in legislation or mandated regulations although it has occasional mention in non-mandatory guidelines and plans. Even the Water Programme of Action has until recently, shown little interest in domestic water supply, concentrating primarily on the rural allocation issues with a public campaign heightening that aspect of water awareness. This and considerable media debate means that New Zealanders are aware of the issues relating to rural water use and conflicts between key stakeholders in relation to water abstraction uses but domestic water supply remains an issue that the average citizen is not concerned about. This lack of public awareness is a critical issue in introducing any mandatory or even highly recommended requirement which relates to resource use and needs to be addressed for any regulation to gain wide-spread acceptance, let alone favour. In the case of the Auckland region a public awareness campaign is required to demonstrate:

- That on-site water supply can be a safe, easy to use and cost effective alternative to reticulated supply.
- That with current water use levels there will need to be an additional supply to the existing Waikato pipeline in due course; that there will be substantial public and private costs associated with both the delivery infrastructure and treatment required to bring the water to a potable standard.
- That there are costs associated with other environmental drivers involved in the delivery of reticulated water supply, e.g. energy and carbon which may further increase additional supply costs.
- On-site water collection and storage in addition to access to the reticulated supply offers more resilience in times of anticipated climate perturbations.

4 Department of Prime Minister and Cabinet, 2003. "Sustainable Development for New Zealand - Programme of Action". Source: http://www.beehive.govt.nz/hobbs/30199-med-susined-developm.pdf.

- Public versus private cost issues.

In addition, Beacon's recent unpublished market survey[5] investigation states that "the market for water-related sustainability products and services does not appear well developed, with little supply or demand compared to the energy area. Information needs, particularly around use of grey and rain water, were "high" and "international evidence points to a need for regulation to drive sustainability responses. Therefore in New Zealand low regulatory pressure to provide more sustainable services may be a factor which reduces the motivation for businesses to justify investment in environmental credentials and certification".

3 Relevant legislation, policy and regulation

3.1 Building Code/Building Act

3.1.1 Background

The Building Act 2004 is the legislation that governs the building industry in New Zealand. The Act aims to improve control of, and encourage better practices in, building design and construction. The Building Act 2004 repealed the Building Act 1991 and dissolved the Building Industry Authority, which had regulated the building industry under the 1991 Act. Administration of the Building Act then shifted to the Department of Building and Housing, which was established on 1 November 2004. The Act's new purpose and principles includes requirements for sustainable development and for buildings to help people stay safe, healthy and comfortable. Clause 4(2)(o) states "the need to facilitate the efficient use of water and water conservation in buildings. No specific detail is given within the Act on how the sustainable development principles would be achieved - that would be expected to become more apparent in the Building Code.

The Building Code is being reviewed to take account of the Building Act's requirements for sustainable development and for buildings that help people stay healthy and comfortable. A report on the recommendations from the review must be completed and provided to cabinet by 30 November 2007. Currently input is being sought into the review process. The review must ensure performance standards for buildings are clear and meet community expectations. It must also ensure "that buildings are designed, constructed and used in ways that promote sustainable development."[6]

Incorporation of specific sustainable development interventions in the Building Code would be the most comprehensive way to address issues of sustainable development in homes throughout the country. The Code requires performance standards to be achieved rather than specific approaches to be taken. It will, however, within the Building Code Compliance and Handbook documents (Section 22 of the Building Act), indicate "acceptable solutions" which could

5 Marquartd et al 2007, Housing Industry Survey: towards sustainable products and services Draft Unpublished Report MT104 for Beacon Pathway Limited
6 http://www.dbh.govt.nz/bcl-building-code-review

include a specific intervention that if followed will assist or ensure compliance, depending on the circumstance.

Any building design must obtain a Compliance Document, the provisions of which are stipulated within the Building Code. The Department of Building and Housing may amend or replace the whole or any part of, any Compliance Document at any time. Present Code Compliance Documents relating to water includes clause G12 covering requirements for water supplies and the performance required to primarily provide for water to safeguard against illness or injury. Compliance Document's are not the only means of stipulating controls or suggesting desired outcomes while working within the Building Code. There may also be alternative ways to promote water conservation measures within the Building Code. For example, "Alternative Solutions" enable designers the freedom to come up with a proposal for an innovative solution that provides the best outcome for the project.

Given the above approach and process, a direct reference to the use of rain tanks would only be included within the provisions of the Building Code if it was an acceptable solution to meet a performance standard. Presently there is no expectation that limiting the need for reticulated water supply will be specifically mentioned in the revised code. However if there was sufficient pressure from stakeholders to do so, then it may get onto the agenda. Indications from the Department of Building and Housing (DBH) staff are that water efficiency measures have been supported in submissions made to the Code review so far[7]. This may mean that ultimately some requirements around water efficiency may be included in the new Code but further supporting submissions would be of considerable assistance.

One area that the DBH have signaled they will develop is a carbon footprint as a performance standard for buildings. They have identified that energy/emissions associated with potable water supply could be targeted as an easy area to reduce emissions through the use of a rain tank. Hence a rain tank could be included as an acceptable solution to reduce the carbon footprint. While this would not provide any mandatory approach to the use of rain tanks in new homes it may provide a strong and over time accepted way of achieving a performance target, especially if there were other drivers or incentives as well at the local scale. Before this occurs, research is required to provide robust information on the relative energy/carbon/financial costs associated with cumulative on-site pumps versus one reticulated supply.

3.1.2 Conclusions and suggested actions

The Building Act and Building Code have potential for the adoption of performance standards which could have the inclusion of rain tanks as an acceptable solution to reduce the carbon footprint of a building, or possibly to meet water performance standards relating to the level of supply of potable water or alternatively supplementary supply from a non-potable source. While this would not provide for mandating the use of rain tanks in new homes, it would gave

7 Department of building and Housing (2007) Building for the 21st Century. Review of the Building Code Synopsis of Submissions

considerable encouragement for their uptake across the country. To achieve these performance standards there would need to be immediate (given the Code review timeframe) and concerted effort to:

- Raise the debate about the need for water conservation performance standards to be explicitly included in the revised Building Code, in line with the Act's purpose and principles relating to sustainable development.
- Contribute to the discussion on the development of methodologies for determining and ensuring performance standards for a carbon footprint for buildings and ensure that the link with carbon emissions associated with reticulated water supply is made.

3.2 Resource Management Act

3.2.1 Purpose of the RMA

The purpose of the RMA is given in Section 5, Part II as tabulated below.

Table 1 The Resource Management Act 1991 *(RMA 1991)*

Section 5, Part II
5. (1) The purpose of this Act is to promote the sustainable management of natural and physical resources.
5. (2) In this Act, "sustainable management" means 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 well being 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; and
(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The RMA (1991) is a means of planning how people use, develop and protect natural and physical resources. These resources include rivers, lakes, coastal and geothermal areas; land, including soils; forests and farmlands; the air; the constructed environment of buildings, bridges, and other structures in cities and towns. The Act places emphasis on the effect a proposed activity will have or might have on the environment (Standards NZ 2001).

The Act is strongly effects based and much of the policy considers impacts on environmental quality. Water issues tend to be focussed on ensuring water quality in contributing and receiving waters. Hence the traditional focus has been on stormwater issues and the allocation, mainly rural, of freshwater resources as opposed to municipal water supply and demand management. Consequently in the Auckland region where rain tanks have been proposed, it has mainly been related to stormwater detention rather than to supplementing supply. The issue of water

conservation and how that will be addressed, if it is to be considered under the RMA (1991), needs to be subjected to a Section 32 analysis which assesses benefits and costs with a focus on environmental outcomes. Generally RMA measures such as District Plan Changes can be a long, time consuming and often costly process and to be successful a good case must be made.

The RMA lays out a guiding principle that must be applied in all resource management frameworks, including:

- National Policy Statements – e.g. the NZ Coastal Policy Statement.
- Regional Policy Statements and the Regional Coastal Plan.
- Optional Regional Plans – on water, land and air.
- District Plans – which are also not to be inconsistent with the regional policy statement and plans.

For the Auckland region they inter-relate as shown in Figure 1.

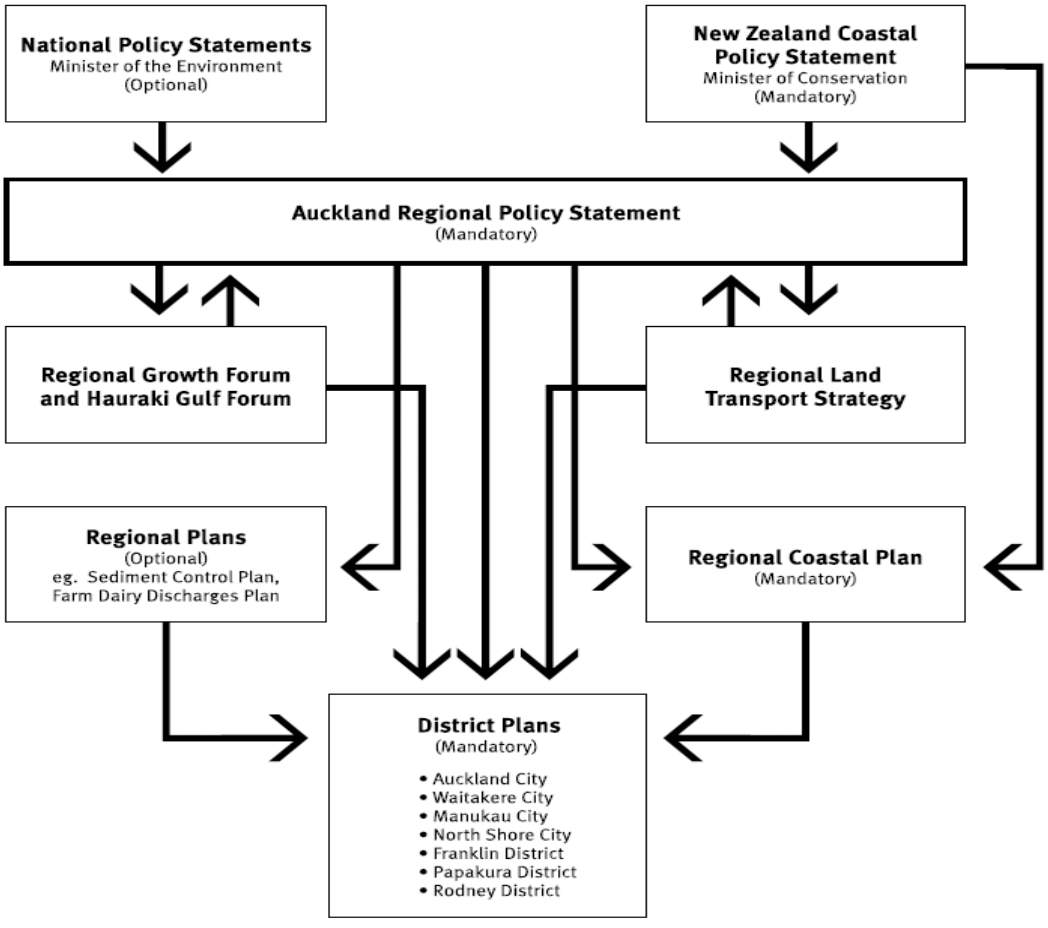

Figure 1 Policy Statements and Plans in the Auckland Region

3.2.2 National Policy Statements

3.2.2.1 Purpose

"A national policy statement (NPS) is a document prepared under the Resource Management Act 1991 (refer to sections 45-55 of the Act). The Minister for the Environment can prepare a national policy statement to provide direction to local authorities on a matter of national importance however this[8] is optional under the Act.

If water conservation was high enough on the national agenda and if conservation methods through restricting domestic reticulated supply were considered sufficiently material then a national policy statement could be used to ultimately require the use of rain tanks. However the National Policy Statements currently under consideration have been years on the drawing board and have required extremely complex processes for them to be developed. The New Zealand Government's Sustainable Development Programme of Action has made water issues a priority but as yet the document has a strong focus on water quality and rural water allocation only, primarily because domestic urban water use is estimated as being only 8% of the total water use in New Zealand[9]. However, when the Auckland region's water use is considered, a much higher proportion is used to supply urban reticulated water supply than is the case for other parts of New Zealand.[10]

3.2.2.2 Conclusion

While there has a been a lack of national policy statements so far, it would be worthwhile to enter into discussion with MfE into the likelihood of one being developed for domestic water conservation as the need for more national direction on water issues has recently been signaled. If a NPS was developed it would serve to encourage the use of rain tanks.

3.2.3 Regional policy statements

3.2.3.1 Purpose

Section 30 (1a) of the RMA (1991) states that a Regional Council's function under the Act is "the establishment, implementation and review of objectives, policies and methods to achieve integrated management of the natural and physical resources of the region".

A Regional Council does this initially through the regional policy statement (RPS) by providing an overview of the resource management issues of the region and policies and methods to achieve integrated management of the natural and physical resources of the whole region. It is mandatory under the Act and for Auckland it is the highest level of mandatory legislation that could be applied across the region. District Plans can not conflict with the RPS.

The Auckland Regional Policy Statement (ARPS) became operative on 31 August 1999 and is due for review in 2009. This provides a strong opportunity to state a requirement for water

8 http://www.mfe.govt.nz/issues/biodiversity/initiatives/nps.html#what
9 http://www.stats.govt.nz/products-and-services/Articles/phys-stock-accts-water.htm.
10 Statistics New Zealand (2004) Physical Stock Accounts for Water

conservation measures to be considered in District Plans. There is a requirement in the RPS to comment on managing the use, development and protection of the natural and physical resources of the region. It sets in place the policy for promoting the sustainable management of these resources. It also clarifies the respective roles of the agencies with responsibilities under the Resource Management Act (RMA) in the Auckland region. Chapters 9 and 10 of the Act deal with water quality and water allocation but do not currently have any reference that would allow for the mandating or even strong recommendation of rain tanks. Given that the ARC is about to embark on a review of the ARPS, it would be timely if Watercare was to raise water conservation and efficiency with the Council as an issue of significance to the region which needs to be better addressed within the ARPS review.

3.2.3.2 Recommendation and Conclusion

ARC is currently preparing amendments to the Regional Policy Statement but they do not include issues of water supply. They are also required to do a full review of the RPS every 10 years and are in the process of scoping the review which is an opportunity to raise the issue of water supply and urban water use. If water conservation was considered under the RPS the case would need to be made under section 32 of the RMA (1991). The benefit of influencing the ARPS is that the requirements will filter down into District Plan revisions where rules which could include the use of rain tanks could be made. Section 32 requires a five step process as shown in Fig 2A. A good case would need to be made relating to the management of a progressively scarce resource and the impacts of future further abstraction for domestic use. Watercare should be proactive in seeking input into the RPS and indicating the need for water conservation.

3.2.4 District Plans

3.2.4.1 Purpose

Each Territorial Authority produces its own Plan under the RMA (1991) which is the over-arching planning tool under their jurisdiction. All Auckland Councils have their Plans in place but a number are considering Plan changes, requiring a section 32 analysis and being subject to public consultation. The key steps under the RMA Section 32 analysis[11] are shown in (Table 2).

Kapiti Coast appears to be the only Council that has introduced the mandatory requirement for rain tanks **for water conservation**. Others have introduced rain tanks for stormwater management; a more frequently considered issue with more obvious local environmental effects. In May 2001 the PCE published "Whose water is it? The sustainability of urban water systems on the Kapiti coast".[12] The report summary stated "Low rainfall, very high per capita usage and a heavy reliance on a single source of supply, the Waikanae River, have created a water crisis on the Kapiti Coast. Simple engineering solutions, such as tapping into new and more remote sources of supply, are no longer appropriate - the solutions must meet the public

[11] Ministry for the Environment 1994; Ministry for the Environment 2003f
[12] http://www.pce.govt.nz/reports/allreports/0_908804_98_9.shtml

health needs of growing communities, support commercial development and provide for the ecological health of the environment." Since then Kapiti has introduced the mandatory requirement for rain tanks for water conservation through a Section 32 analysis and Plan Change notification and consultation process where the mandatory inclusion of rain tanks as a water conservation measure is being included as a "Rule" in the District Plan. This is triggered when there is an application for land use change or sub-division. To achieve that Plan Change Kapiti Coast District Council has had a high level of public consultation processes, identification of the issues in the LTCCP, a Sustainable Management of Water Strategy, newsletters and fact sheets, all of which have prepared the community for mandatory water conservation measures within the District Plan. In making their case for a plan change the council primarily considered resiliency of the system, especially in the light of climate shocks and water use efficiency, using non-potable water where appropriate. Current water supply can meet potable and hygiene requirements but cannot always supply outdoor needs. The message is clearly that using rain tanks will help decouple demand from growing population and provide more surplus of supply during dry events.

Table 2 *Key steps under RMA Section 32 analysis.*

Issues	Identify the environment issues that are relevant to the area. An issue is an existing or potential problem that must be resolved to promote the purpose of the RMA.
Objectives	Setting objectives concerning the issues. An objective is a statement of what will be achieved through the resolution of the issue. Every issue should have at least one corresponding objective that clearly states the aim, intention, purpose or target for the issue being addressed. It is assessed whether the objective is the most appropriate. These statements provide the framework that establishes what policies must achieve.
Policies	Setting policies to achieve the objectives. The definition of "policy" is widely debated. Any statement of a local authority's intended action or attitude towards an issue is a policy, regardless of how specific that statement is. However, depending on the context and the local authority, a policy in one context may be a method, or even an objective, in another.

Methods/Rules	Establishing methods (rules) to give effect to the policies. A method is the way a policy is implemented. Methods can be distinguished from policies by the fact that their purpose is purely explanatory. They provide no decision-making guidance, and merely state how the relevant policy will be implemented. These 'rules' provide the basic framework which enables people to undertake activities with certainty and minimal encumbrance. The selected method(s) must be assessed for effectiveness with an analysis of the benefits and costs. The efficiency of each selected method(s) should be established. The risks of acting or not acting identified and the appropriate method chosen.
Environmental Results Anticipated (ERAs)	Establishing a benchmark for monitoring results. ERAs are closely related to objectives. They reflect what might be achieved from the combined effect of the objectives, policies and methods.

3.2.4.2 Recommendation and Conclusion

Objectives, policies methods/rules for addressing sub-division and development activities should be contained in the District Plan. Watercare could prepare a Private Plan Change and submit it to each of the local Councils within the region. Watercare would however bear the cost of the process.

However there are other documents such as Codes of Practice or Engineering Standards (see Section 4) which are outside of the Plan but describe "acceptable solutions" for engineering works associated with sub-division or development activities. The council will impose conditions on the resource consent using the Code of Practice as a reference document which then become enforceable through the consent process. While this gives a way of introducing rain-tanks into the consenting process their application would still need justification within the District Plan for them to be an acceptable solution within a Code of Practice and associated Engineering Standards, that could sustain legal challenge. This approach has been expanded on in the section on Engineering Standards and design guidelines, Section 4.3.2.

3.3 Local Government Act

3.3.1 Purpose

The Local Government Act 2002 (LGA) could address urban rain tanks via the wider sustainability issues of the four well beings of cultural, social, environmental and economic.

Section 10 of the Act states that the purpose of local government is to:

- *Enable democratic local decision-making and action by, and on behalf of, communities; and*
- *Promote the social, economic, environmental and cultural well-being of communities, in the present and for the future.*

Under the LGA, there is a requirement for territorial authorities to undertake regular Water and Sanitary Services Assessments (WASSAs). This is an assessment that once prepared requires public consultation for feedback. The LGA explicitly integrates water, wastewater and stormwater issues in new "Water Assessment" provisions.

Part 7 of the Act contains some specific obligations and restrictions on local authorities and other persons including obligations to assess water and sanitary services, as well as obligations and restrictions in relation to the delivery of water services. Note that "Water Supply" within the Act means "the provision of drinking water to communities by network reticulation to the point of supply of each dwelling house and commercial premise to which drinking water is supplied" (s124).

Although the Act states that the assessment must be undertaken from "time to time", it appears that generally Councils have included it as part of their LTCCP preparation (thus subject to a three yearly review). However it is possible for territorial authorities to undertake the assessment at other times so long as they use the "special consultative procedure" stipulated in the Act.

The WASSA requires councils to describe the means by which water is obtained by residents and communities and also the extent to which water will be supplied by the territorial authority. The assessment must take account of:

- the quality and adequacy of supply of the drinking water available within the community;
- the quality and quantity of wastewater discharged from reticulated sewerage or a sewage treatment system; and
- a statement of current and estimated future demands for water services within its district.

Councils are also supposed to provide a statement of the options available to meet current and future demands and an assessment of the suitability of each option for the district and for each community within it. There must also be a statement of the territorial authorities intended role in meeting future demands and proposals for meeting current and future demands - including proposals for any new or replacement infrastructure13.

Section 124 defines some key terms for the purposes of Part 7. Definitions are:

- Assessment – means
  a) an assessment of water services and other sanitary services available to communities in the district of the territorial authority; but
  b) does not include assessments in relation to individual properties.

Section 128 of the LGA provides specific clauses relating to how the assessment should be undertaken. Section 128 (2) states:

13 See for example: http://www.waitakere.govt.nz/abtcnl/pp/draft-policies/wtrsanitary.asp

In making an assessment of current and future demands for water services and options to meet those demands, a territorial authority must consider –

a) the full range of options and their environmental and public health impacts, including (but not limited to):
   i. on-site collection and disposal; and
   ii. grey water and stormwater reuse or recycling; and
   iii. demand-reduction strategies, including public education, information, promotion of appropriate technologies, pricing, and regulation; and
   iv. the full range of technologies available

The step by step guide to sanitary service assessments is set out in the "Know How Guide to Assessing Water and Sanitary Services" published by Local Government New Zealand.

WASSAs appear to have a close connection to councils' Asset Management Plans (AMP's). The AMP's, which are updated regularly, describe practices and costs associated with asset portfolios capable of delivering the agreed service levels usually during a period of up to 20 years. The asset management plans are large documents, and set out how the council will maintain, renew and build its assets. They are also required to demonstrate how they are assisting the council to fulfil their Community Outcomes.

Therefore, if the issue of water supply demand and approaches, such as the use of rain water tanks, is to be acted upon by territorial authorities, they will need to start addressing this issue more strongly in the Water & Sanitary Assessments. For instance the current Auckland City Council Water & Sanitary Assessment does not signal a sufficient imperative as it states, "Water supply quantity and quality issues are adequately provided for the region up to year 2025 through staged upgrades of the Waikato water supply source, together with programmed asset renewals and enhancements. Promoting water conservation and reuse opportunities could be further encouraged." Clearly, this statement would need to be updated to give further imperative for policies that could include the use of rain water tanks to reduce demand.

3.3.2 Bylaws

Councils are empowered by the Local Government Act 1974 and Health Act 1956 to make bylaws, mainly which relate to public health issues. Security of public water supply is within the domain of by-laws but that would not be a widely accepted way of addressing a longer term issue of sustainability.

3.3.3 Conclusion and Recommendation

Working under the LGA through the Water and Sanitary Assessment (and related asset management plans) and by inclusion of that analysis in a consultative process in the LTCCP, the scene could be set for dealing with the need for future water conservation measures and the methods/rules, including rain tanks, to address that issue. Water conservation could then be addressed in District Plan changes with a significantly reduced requirement for public

consultation, having already been subject to consultation under the LGA. Watercare would need to be proactive in identifying the issue with territorial authorities so that it was reassessed and then discussed under the LTCCP which would in turn be used to inform relevant policies and rules within the District Plan. It is unlikely that the full process would take less than five years.

3.4 The Health Act

3.4.1 Relationship to rain tanks

Discussions with the Ministry of Health and the Auckland Regional Public Health Service (ARPHS) indicate that the Health Act (1956) is unlikely to offer any legislative barriers relating to a policy of mandating for rainwater tanks for non-potable uses.

Reference was made to the Health Act's stipulation of councils' need to provide an "adequate supply of wholesome water" along with the Building Act's requirement to provide an "adequate supply of water" and that the proposed supplementation of non-potable water would not be an issue as long as their was also access to a reticulated supply. Because the drinking water standards (DWSNZ) only apply to reticulated supply they have no bearing on rainwater tank quality.

From a Ministry of Health perspective there were two potential issues that should be avoided:

- The possible misuse of the water – ie people drinking it if for some reason if reticulated supply stops for a while, and
- The backflow issue - in particular concerns around dual plumbing of systems and the one contaminating the other.

A spokesperson at ARPHS, generally agreed with the Ministry's viewpoint.

3.4.1.1 Plumbing and Building Codes

A recent amendment to the AS/NZS 3500.1:2003 Plumbing and drainage, Part 1: Water services, AS/NZS 3500.1:2003/Amdt 1/2005-11-29, Clause 9.5.2 contains information about non-drinking water services and outlets and also states that all outlets must be clearly marked to the NZ Building Code requirements of NZBC G12/AS1. For instance, the amendment states that all non-drinking water pipes should be coloured purple. An example of a symbol as per NZBC G12/AS1 is given below.

The NZBC G12/AS1 also contains information on Backflow Protection (Clause 3.4), Air Gaps (Clause 3.5) and Backflow Prevention Devices (Clause 3.6).

3.4.2 Conclusion

Using rain tanks for non-potable uses only, through keeping reticulated and rainwater supplies separate with adequate signage, would not pose any problems under the Health Act.

4 Engineering Standards

4.1 Introduction

There are several “levels” of engineering standards and different types of engineering guidelines and manuals used throughout the Auckland region and other parts of New Zealand. They give guidance on “how to build”. They are not RMA or Building Act documents but local council infrastructure standards and can be changed by resolution of council. They are normally referred to in the District Plan (e.g. the development must comply with the Council engineering standards) but the standards themselves are not part of the Plan. In general, the different levels of engineering type standards can be summarised as:

- Council Engineering Manuals/Standards
- Verification Methods and Acceptable Solutions
- Information Pamphlets and Brochures
- Practice Notes/Design Guidelines

Details and examples of the types of engineering standards at these different levels are given in the following sections.

4.2 Council Engineering Manuals/Standards

These manuals have several names, such as Code of Subdivision and Development Practice, Water and Wastewater Connection Standards and Infrastructure Design Standards Manual. They are generally large documents (100+ pages) and define Council's engineering design and

compliance requirements for their infrastructure assets such as; Geotechnical, Transportation, Stormwater, Water Supply, Wastewater, Parks and Reserves. Not many of the Auckland Councils' design standards manuals have specifics on rain water tanks, except for North Shore City Council's Infrastructure Design Standards Manual which has included standard rain tank drawings in their stormwater section on "dual purpose" and "single purpose" rain tanks.

These engineering manuals/standards lay out standards for council public infrastructure. Councils' have the right to accept or deny infrastructure to be vested in them based on whether it meets the engineering manuals/standards or not. For example, North Shore City Council (NSCC) did have a lot of criteria about on-site stormwater infrastructure (such as rainwater tanks and raingardens) in their previous Infrastructure Design Standards Manual, but on legal advice, have taken it all out of the most recent version and are including the on-site, private infrastructure details in separate practice notes and guidelines (see Section 4.3 below) **because the manuals/standards are only for public infrastructure.**

The Regional Councils also often have design guidelines. For instance, the Auckland Regional Council has a series of Technical Publications. The one technical publication that includes information on rain water tanks is their Technical Publication No. 10 (TP10), 'Design Guidelines Manual: Stormwater Treatment Devices, 2003". As the name suggests, this document focussed primarily on the stormwater design criteria and benefits rather than water supply issues.

4.3 Practice Notes/Design Guidelines

4.3.1 Introduction

This is the level that contains the majority of the existing design engineering information on rain tanks. These are less formal guidelines/manuals than Council Engineering Manuals/Standards and generally have a collection of design guidelines for specific technologies such as rainwater harvesting, stormwater rain gardens, swales, etc. These are generally less than 50 pages and often contain 2 to 5 page information sheets on each different technology. In the Auckland region most of these practice notes are focussed around stormwater technologies and include details on rain water tanks primarily for stormwater design but also include associated water supply aspects.

Practice Notes/Design Guidelines have no legal status unless they are made reference to through a District Plan. Although, even then they have limited status because as long as the system meets the Building Act/Code then Council do not have the right to turn it down. The Practice Notes/Guidelines lay out acceptable solutions to inform developers what is desired by Council for easy consenting.

4.3.2 Examples of notes/guidelines

Auckland City Council: Manual for Development Contribution Rebate Programme for Rainwater Tanks (Stormwater): A 44 page document. Primary rationale is to encourage

water conservation/reuse with an additional benefit of stormwater retention for flow attenuation. The development contributions policy (adopted in June 2006) provides for rebates of development contributions for stormwater to be claimed for developments that have installed rainwater tanks that meet the requirements of this manual. The manual closely follows the City's 'On Site Stormwater Manual', it contains all information needed for an applicant to design and implement a compliant tank and make requisite submittals to Auckland City Environments (ACE). As at July 2006 the rebate which is driven by stormwater management is set as $1,000 plus GST on developer contributions.

North Shore City Council: Rain tank Guidelines for North Shore City, June 2006, Draft. This is a comprehensive guideline specifically focused on rain tanks for both water use and stormwater solutions. It is a 54 page document and looks at four types of rain tanks:

- Rainwater Harvesting Tanks for non-potable use only
- Rainwater Harvesting Tanks for total water supply (potable and non-potable)
- Rainwater Detention Tanks
- Dual-purpose Rainwater Tanks.

North Shore City Council: Practice Notes for Long Bay Structure Plan and District Wide. The Long Bay Structure Plan Practice Notes are published on the North Shore City Council website. The District wide Practice Notes are not publicly available yet as they are still in draft stage. This is a collection of some 35 practice notes, primarily around stormwater but includes water supply, riparian planting, ecological stream health, sediment control and wastewater. Up to four of these practice notes contain information on rain water tanks.

Waitakere City Council: Countryside and Foothills Stormwater Management Code of Practice & Stormwater Solutions for Residential Sites. These two codes of practice contain a number of sections on stormwater, wastewater, water supply and riparian margins. These documents are 50+ pages. They contain a separate section on Water Supply Public Health Guidelines. Rain water tanks are one of the devices covered in both the stormwater and water supply sections.

Rodney District Council: Management of Stormwater in Countryside Living Zones (Rural and Town) – A Toolbox of Methods. This document was produced along with the Waitakere City Council's Countryside and Foothills Stormwater Management Code of Practice.

4.3.3 Verification Methods and Acceptable Solutions

Verification Methods and Acceptable Solutions are contained in the Department of Building and Housing's Compliance Documents (The Building Code), and often quote other documents such as New Zealand Standards. The Verification Methods and Acceptable Solutions provide one way of establishing compliance with a particular clause of the Building Code. If followed correctly Compliance Documents (Building Code Clauses) must in law be accepted by building consent authorities as demonstrating code compliance. Designers and builders are not obliged to use Acceptable Solutions, and may put forward their own alternative solution proposal,

however if construction conforms to an acceptable solution, granting of the consent is more straightforward. As mentioned in 3.1.2 water conservation measures including rain tanks could be identified as acceptable solutions for reducing a carbon footprint or conserving water.

4.3.4 Information Pamphlets and Brochures

4.3.4.1 Local Examples

Most councils have several information pamphlets/brochures which are given out over the counter to inform the general public on all sorts of issues, some of which relate to the use of rain water tanks. For instance, Rodney District Council has two fold out pamphlets called "Rainwater Tanks for Non-drinking Water Purposes" and "Rainwater Tanks for Drinking-water Supply".

One good pamphlet/Code of Practice document which is referenced both by Auckland City and Rodney District Councils is the 5-page Southland District Council "Code of Practice, Private Rainwater Supplies". This document applies to the installation of private rainwater supply systems intended for human consumption, food preparation, utensil washing or oral hygiene. Southland also has an associated Council pamphlet called "Caring for Your Rainwater Supply" which has information on the maintenance of these supplies.

4.3.4.2 Australian Examples

Australia has similar sets of documents. For example, Sydney Water[14] has the following information available off their website:

- 'Buying a Rainwater Tank', brochure 4 pages of pictures, text and calculations for sizing.
- 'Installing a Rainwater Tank', brochure, 3 pages of pictures and general text.
- 'Fact Sheet: Rainwater Tanks: Information for Plumbers', 1 page text for plumbers
- 'Guidelines for Rainwater Tanks on Residential Properties, Plumbing Requirements, Information for Rainwater Tank Suppliers and Plumbers', 16 pages, text and pictures (similar to NSCC Long Bay Practice Notes)
- 'Plumbing Requirements, Guidelines for rainwater tanks on residential properties, Amendment 1', (amendment to 16 page guideline above), 4 pages, good 'schematic' drawings of plumbing set up for four options:
    - For direct interconnection to drinking water supply & providing rainwater for all outlets for all purposes
    - For direct interconnection to drinking water supply & providing rainwater to the garden, washing machine & toilet only
    - With air-gap and pump bypass interconnection to drinking water supply & providing rainwater for all purposes.
    - With air-gap and pump bypass interconnection to drinking water supply & providing rainwater to outdoor, toilet & washing machine only.

14 www.sydneywater.com.au/publications

4.4 Conclusions and Suggested Actions

It can be seen from the above summary of documents available, primarily in the Auckland region, that there are quite a number of engineering type guidelines and standards in the market place. While most guidelines/standards follow similar themes, their sizing and installation details do vary. While they can't of themselves provide for the mandatory use of rain tanks they can positively influence their use. Hence to ease the take up of rainwater tanks and for overall consistency, especially in Auckland, it is recommended that:

- For consistency across the region, one common urban rainwater tank guideline is produced from the existing Waitakere, North Shore, Auckland and Rodney Council Practice Notes/Design Guidelines documents (Section 4.3.2 above). However, it is noted that councils will still need to have their own specific documents for individual issues such as the Auckland City Councils Development Contribution Rebate Programme for Rainwater Tanks.

- Feedback from councils indicates that they prefer to keep these rainwater tank guideline documents outside of the more formal "Council Engineering Manual/Standards" (Section 4.2) for ease of altering them and using them as a working document. Also, the Engineering Manual/Standards are only for public infrastructure and do not apply for what will probably be individual privately owned infrastructure (household rain water tanks).

- The legal and practical issues around installation, inspection/approval and ongoing maintenance of private infrastructure (individual household rain tanks) be closely examined in the light of risks to Council in planning their own public infrastructure system based on performance of private infrastructure. (This is an issue several councils are currently trying to address. The answer is not simple. How does the council ensure maintenance of private infrastructure?)

- From examination and discussion with local and Australian examples, it is suggested that the one area lacking in New Zealand documents is the area specific to plumbing requirements. Most of the guideline/design documents produced to date have been produced by engineers for engineering design issues. However, the installation of rain tanks is primarily a plumbing issue rather than a design engineering professional task. (The design sizing of the rain tank is more of an engineering issue, especially when trying to incorporate both stormwater and water supply benefits to get maximum value). For instance, Sydney Water has a specific guideline just for plumbers. Hence, it is recommended that:
    i) An assessment is made of the different approval processes such as the "Producer Statements – Construction Review", PS4 by Chartered Professional Engineers, the PS3 drain layer approval or Council in-house building inspectors. (NSCC experience to date has been that the requirement for a PS4 has not worked well), and
    ii) To aid the plumbers approval process, a plumbing information guideline/practice note be produced, in association with the Master Plumbers Association.

- Such plumbing guidelines are developed to sit outside the AS/NZS 3500 Plumbing and Drainage (2003) Standard for the near future, similar to plumbing guidelines produced by Sydney Water. This is because any formal changes to the AS/NZS standard would need to be done in agreement with both Australian and New Zealand bodies and is a formal time consuming exercise. Changes to the AS/NZS standard could be a subsequent stage of the rainwater tank guidelines development process.
- Note that all electrical work, such as connecting of the pump, needs to be carried out by a registered electrician and needs a "Certificate of Compliance" from a registered electrician.

5 Consenting Process

5.1 Introduction

There are two types of consents which are relevant to the residential built environment, resource and building consents.

5.2 Resource Consents

Resource consents are required when development infringes a rule set down in the district plan. Some ways to avoid the need for resource consents in relation to rain tanks are:

- Installing a rain tank which does not contravene Maximum Building Coverage, Height-to-Boundary, Outdoor Living Space, Stormwater management Area, Front Yard or other Yard Rules.
- Ensure plans avoid modifications to a watercourse.
- Ensure rain tanks are not installed within 20m of a stream.
- Avoid rain tanks on steep slopes.
- Avoid the need to remove vegetation.

In practice this means it is easier to install rain tanks on larger sites. Previous work undertaken by Beacon Pathway Limited[15] has identified the desirability (and relative ease) of amending District Plans to exclude rainwater tanks (within certain size constraints) from basic District Plan provisions such as Building Coverage, Yard and Boundary rules – in the same way that generally garden sheds are currently excluded from these rules.

5.3 Building Consents

One of the issues identified in previous Beacon research was the occasional lack of synergy between various departments within councils. It is critical that the consenting arm of the council with a strong focus on building quality does not work against the strategy arm which may have a greater focus on sustainable development. It is critical that all the required technical documents are easily available to ensure support of the consent process.

That being the case:

- Rain tanks for new builds would be included as part of the overall building consent in the plumbing and drainage requirements. Hence there does not need to be a separate building consent for rain tanks.
- We recommend managing the Building Consent process for urban rain tanks through "plumbing & drainage" rather than "producer statements" as rain tanks are a plumbing issue rather than an engineering producer statement issue. The plumber would take responsibility for that aspect of the building consent.

[15] Easton et al (2006) Local Council Barriers to Sustainable Building Auckland City Council Case Study. Report PR200 for Beacon Pathway Limited

6 Innovation and the market

There is a currently a “chicken and egg” situation between the need to get a higher level of take up for urban rain tanks and the ability to supply demand with rain tanks which will not contravene height or other boundary or ecological limits. The market needs to be stimulated for urban rain tanks to provide a greater range to the consumer: currently tanks are mostly large concrete or plastic tanks. The selection is limited to tanks designed for rainwater storage, originating from rural use, or those designed primarily for stormwater detention, albeit sometimes with a rain water use option. There are many urban options in Australia which would enable developers and home owners to maximize space utilization on small sections.[16] On offer are rain tanks which include first flush options and deal with potential issues of backflow prevention, basic technical issues which can easily be overcome and should not be any barrier to the use of urban rain tanks.

7 Concluding comments and recommendations

Watercare Services Ltd has identified that there will be a need to provide for extra water provision for Auckland in the medium term. This will be costly and the costs will be impacted on by unknown factors such as the price of “carbon” associated with the energy required in the delivery and treatment of water to a potable standard, only a small percentage of which requires treatment to that level. There are also climate uncertainties and sound sustainability issues associated with the need to conserve water. Supplementing supply through the use of rain tanks is a safe, effective way of dramatically reducing the need for extra reticulated systems, at least pushing out the need for them well beyond the present anticipated date.

In order to achieve a greater uptake of rain tank use, there needs to be a far greater awareness and appreciation - both fiscal and ecological - within the community of the need for water conservation issues. There is a strong case to take the issue through the various legislative processes under the RMA and LGA. In addition the principles relating to sustainability in the Building Act needs to be given effect by a Code which specifies “acceptable solutions” which drives sustainability, including water conservation. There is also a raft of non-statutory design guidelines which are often used successfully to promote certain approaches and which achieve them without statutory backing if employed with the understanding that these can be challenged. Ultimately the approach that Kapiti has taken provides for most certainty, in their case identification of the issue and consultation through the LTCCP, strategic and operational documents which identify the benefits and demonstrate the technical requirements for rain tanks in new builds and then incorporates rain tanks as a rule under the District Plan, triggered by an application for a sub-division.

16 http://www.bluescopesteel.com.au/

Other policy instruments will also need to be included: for example economic incentives should favour the use of rain tanks, and there should be sufficient education and information about the benefits of water conservation.

The maintenance of rain tanks, given that they are private rather than public infrastructure, needs to be addressed. Mechanisms similar to those employed by some local councils to ensure the regular maintenance of private septic tank systems should be investigated for suitability in their application to rainwater tanks.

Key regulatory processes for Watercare to influence to aid the take up of rain tanks are:

Table 3 Key regulatory processes for Watercare to influence uptake of rain tanks.

Process	Scale of Influence	Likely Timeline	Priority	Likelihood of success
Building Code	National	12 months in current review	High	High but entirely dependent on involvement in code review and degree of interaction with DBH.
National Policy Statement	National	1-3 years	Medium	Low to medium but dependent on the strength of interaction with MfE.
Regional Policy Statement	Auckland Region	Revised RPS due in 2009 but would take several more years to filter through to implementation	High	Medium to high, needs good collaboration with ARC.
District Plan Changes	Local or potentially pan-regional	2-3 years but would benefit from RPS or other policy work to set the scene	Medium	Needs community backing so success would require education and good consultation
LGA	Local	Next CCP revisions are in 2 years. They would set the scene for District Plan changes, may take 5+ years for take up	Medium	Strong consultation and education required
Non-statutory approaches such as Codes of Practice	Local or Regional	1+ years	Medium to High but generally in addition to regulatory backing	Medium but eventually require regulatory backing to sustain and ensure legal challenges can be withheld.

This issue is much like a jigsaw where several components need to fit together. No one step will give the certainty that urban rain tanks will be mandated for within the Auckland region for water conservation. The different components include:

- Making it easy through standardised guidelines
- Approaching the legislative process through a Building Code imperative with stated acceptable solutions
- Finding the appropriate interception of RMA levels of statements and plans, strengthened through LGA assessments and consultative processes

To succeed, Watercare will need to take a strong lead in the case for water conservation and develop consensus across the region.