



Creating homes and neighbourhoods
that work well into the future
and don't cost the Earth

Water use efficiency: what's required to up the ante?

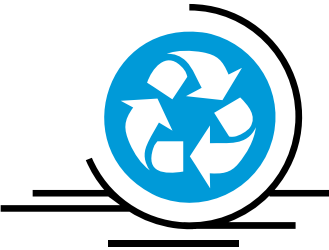
Beacon Symposium 2008

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Beacon Pathway Limited

Why we need to conserve water

\$s



BEACON WATER TARGETS

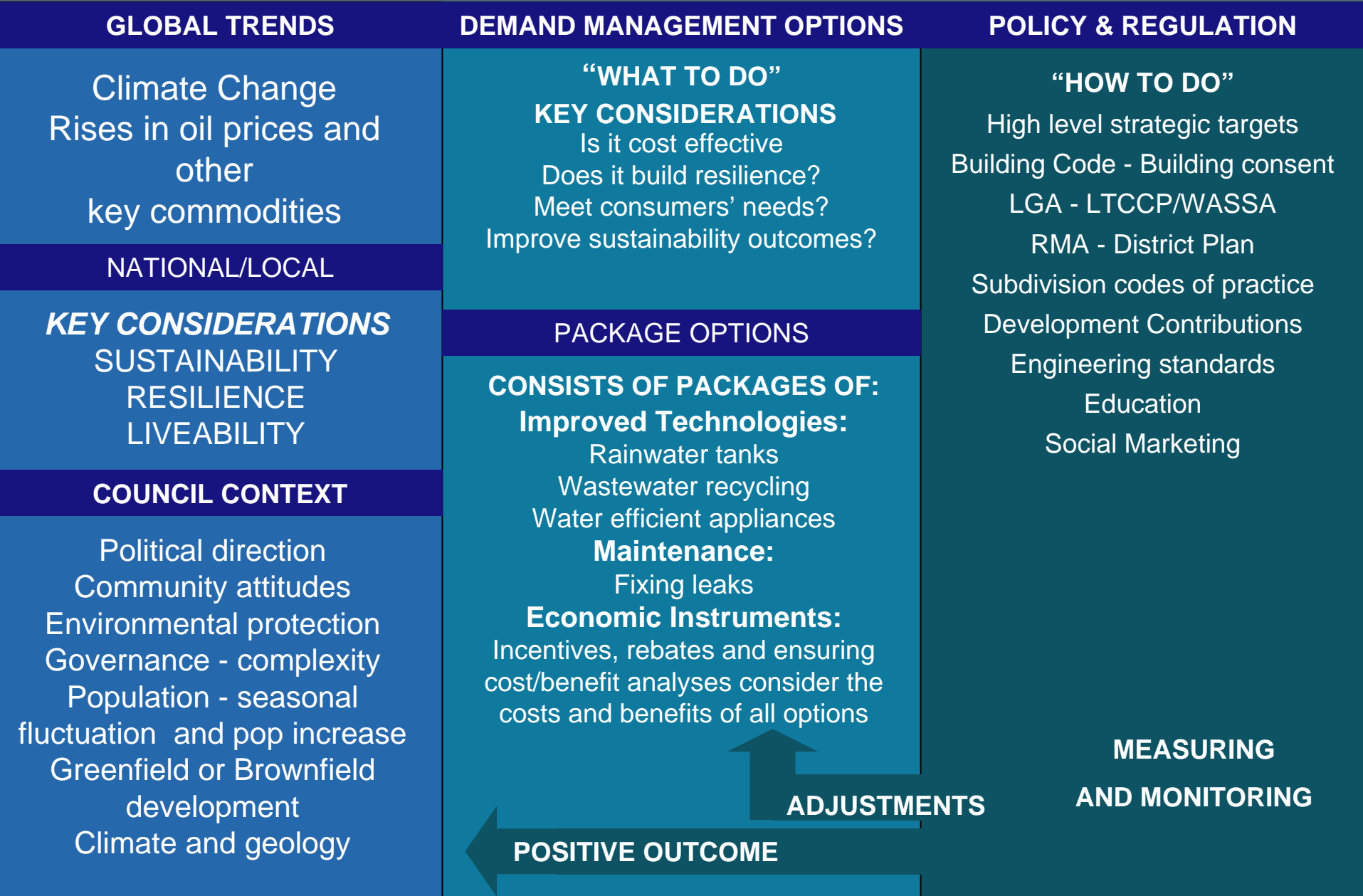
1. All Homes - reducing per capita demand for reticulated water by 40% and council mains supply by 50%.
2. All Homes & Neighbourhoods – Effective management of three waters to create a more resilient water system



Research components



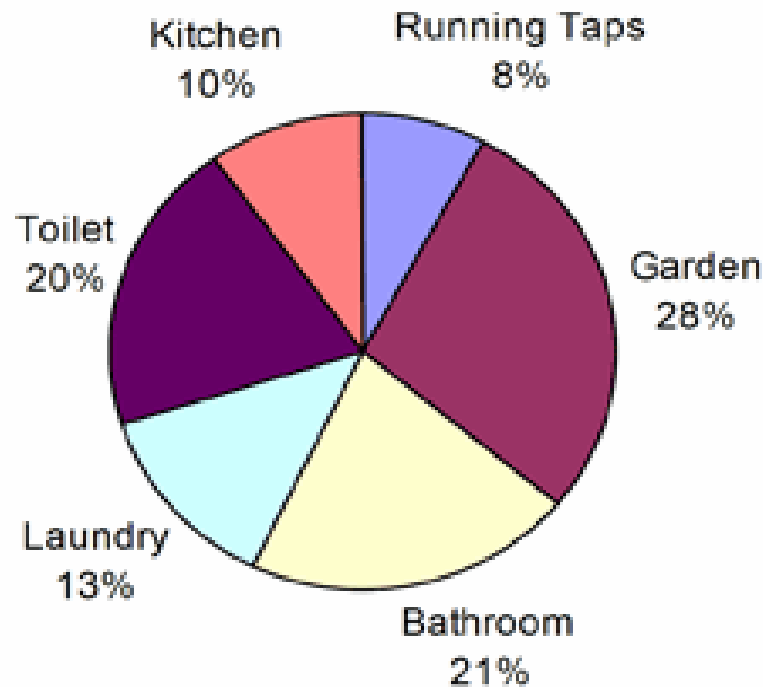
- Systematic review of international literature on demand management policies
- Survey of all water supply organisations and case study of the demand management practices of four councils
- Development of a framework of policy pathways for demand management through a synthesis of the information above
- A specific study of key policy intervention points to achieve high uptake of rainwater tanks
- Workshop Demand Management interventions and policy approaches with a number of councils and contribute to their initial DM strategy
- Publish a comprehensive report on demand management and a concise resource guide for councils



Products	Costs \$s	Costs with installation	Water savings % of total use	Accumulative water savings % of total use
Gismo	2		5-10	5
Tap Aerators	10		5-10	10
Outdoor hose washers	2		2-5	12-15
Low flow shower head	75	150	10-15	22-30
Dual Flush Toilets (<5l)	225	300	10-15	27-40
4 star rated washing machine	1200		10	37-50
Rain barrel 400 litres or	300		10-15	47-60
Rain tank 4500 litres or	4000	4500	40-60	75 plus
Wastewater recovery system	3000	4000	20-40	60 plus

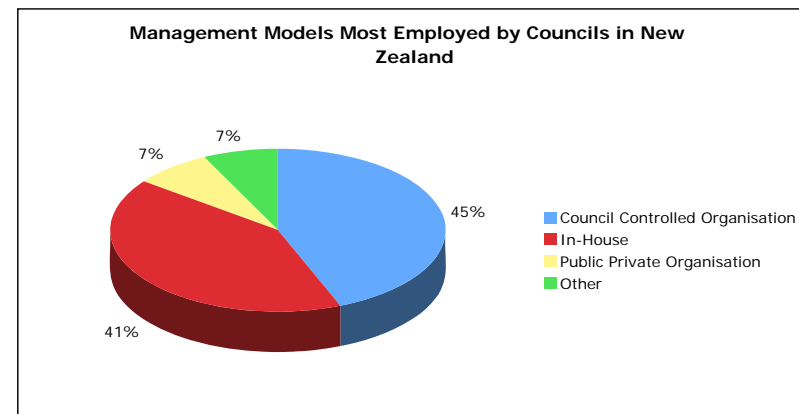
Typical breakdown of domestic water use (based on Christchurch figures)

Average usage of water around the home



Questionnaire results

- 55% response rate - 41 responses out of 75
- Mixture of management models being used - CCO's, in-house, PPP, other.
- 68% of councils have used or are using water conservation methods, the majority are voluntary
- Range of drivers for water conservation programmes but highest priorities - water supply constraints, wish to lower infrastructure costs, minimise environmental impacts
- Estimate about 40% of New Zealand homes have water meters



Case Studies

- Metering reduced water use by 25% in Tauranga
- Nelson considering demand management as alternative to contributing to new dam
- Wastewater charging considered the most significant demand management intervention in Auckland City
- KCDC have a District Plan change underway



Waitakere's Twin Streams Programme



Community Planting Days = Community Celebration

Comparison of daily per capita water uses

* =metered with volumetric pricing



<u>Council</u>	<u>Daily Per Capita Water Use Figure</u>
Nelson	160*
Waitakere	167*
Rodney	179*
Metrowater (Auckland City)	184*
Manukau	189*
Papakura	190*
Tauranga	214*
Upper Hutt	227
Christchurch	333
South Taranaki	450
Kaikoura	648
Kapiti	650
Queenstown Lakes District	750

NOW THAT YOUR
SPRINKLER IS
REPAIRED, YOU
REALLY SHOULD DO
SOMETHING ABOUT
THE WATER PRESSURE

SQUIRT-SKA-
SQUIRT-SKA-
SQUIRT

?



VOTEL

International Experiences

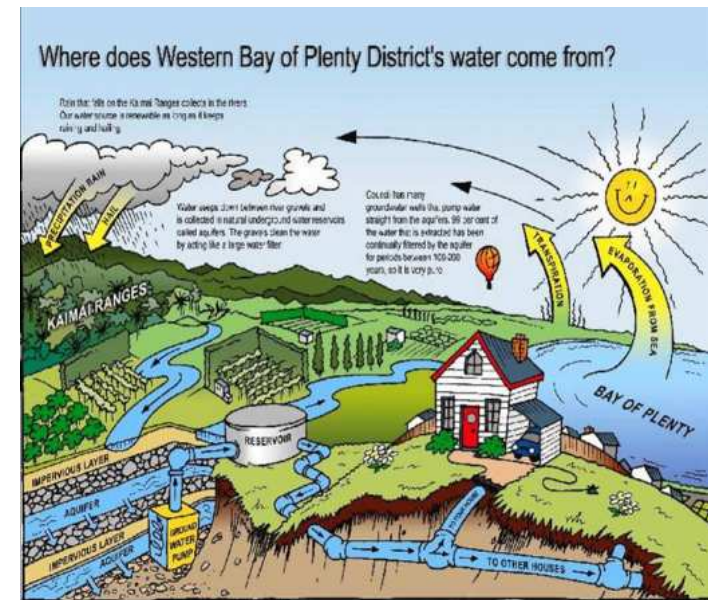
Seeking policy approaches that were suitable for transfer to New Zealand

- UK has strong national framework
- USA; conservation accepted, state funding available for customers, automated meters, mandatory policy more effective than voluntary
- Canada; Have the Soft Path, based on modeling scenarios and backcasting, community involvement and political review
- Australia; National Water Initiative; strong multi-pronged approach, low hanging fruit taken and now more regulatory measures



Workshops

- Christchurch, Kaikoura, Nelson, Tauranga, Queenstown, WBoP
- Provided
 - case studies and information, sharing examples
 - Discuss demand management across council departments,
 - Consider initial strategy for each council
 - Practical situations and constraints for us to consider



Observations from council workshops



Allan Dale is just
a phone call
away.



Views and attitudes:

- Recognition that DM is desirable, generally on financial terms
- Long term resilience not explicitly stated, little sense of urgency
- Desire to network and learn from others
- Concern and some confusion over health issues and maintenance issues especially with on-site water supply and recycling
- New staff and champions provided impetus for change

Techniques:

- Strong emphasis on education but recognition that brochures, websites alone was not enough
- Little exploration of economic tools or low cost options
- Need for market to be ready
- Mgt options like pressure reduction still under-utilised

Rules and Regulations

Water saving tips...



Shower in a bucket.



Get your teenager to shower in a forty four gallon drum.

27/10



NATIONAL

REGIONAL

DISTRICT

SUBDIVISION AND SITE

BUILDING ACT AND CODE

RMA

HEALTH ACT

LGA

NPS

RPS

Regional Plans

DISTRICT

District Plans

Codes

By laws

Other policies and plans

SUBDIVISION AND SITE

Building consent

Resource consent

Development contributions

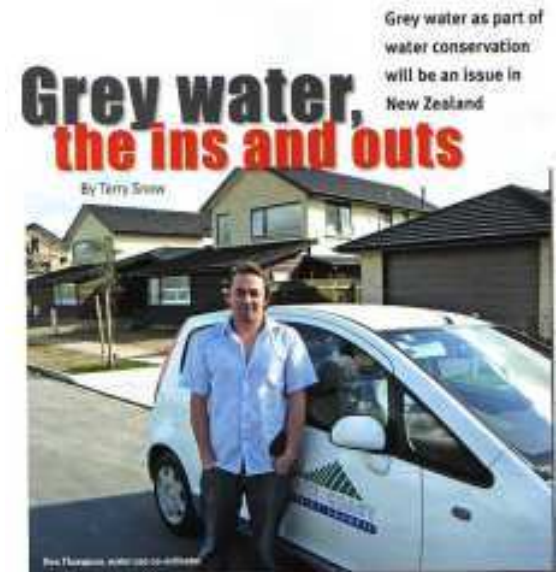
General conclusions



- There are universal attempts to limit water use
- We could be using far less water with current technologies and management of systems
- A focus on policy and technologies to reduce outdoor use would provide the biggest gains in some areas
- Some form of financial recognition of the cost/value of water is required, the better that is defined the more effective it is
- There are national benefits from saving domestic water supply and national policy /coordination would be very helpful
- Our current legislation is not helpful in encouraging demand management

Some specific lessons

- Metering generally shown to have immediate long-lasting impacts on reducing water use.
- Outdoor water use is key differentiator in New Zealand, also shown to be more price elastic in overseas studies
- Good water savings through retrofitting but moderate to high level of subsidy needed
- A multi-pronged approach required at council level
- Levelised costing of alternatives essential so demand management isn't simply seen as a cost.
- Importance of creative education but supported by other policies



“We can’t solve problems by using the same kind of thinking we used when we created them”

Albert Einstein.

Our current water management systems are based on century old systems; it’s time for a smarter way

