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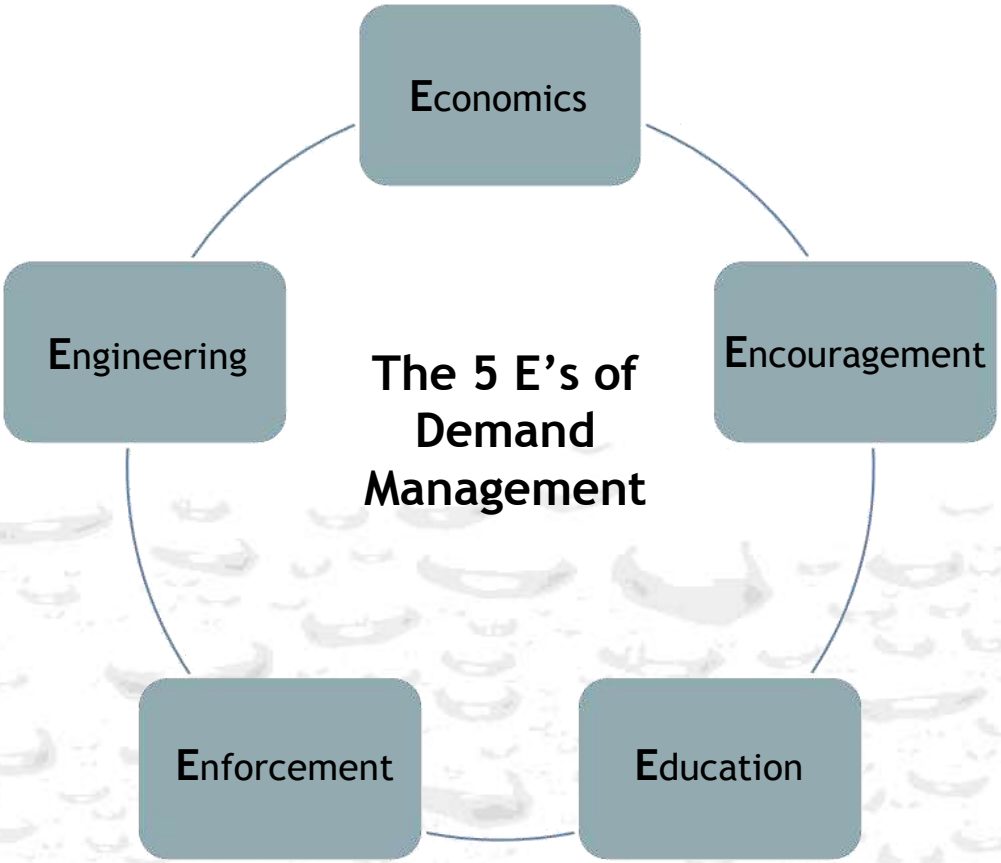

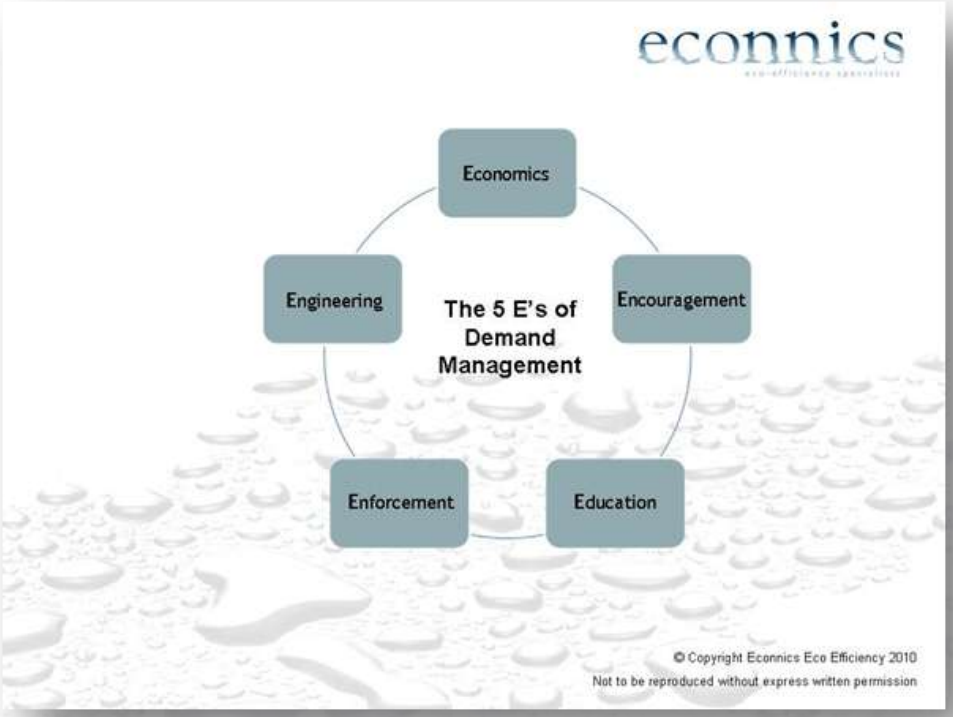

Economics

Financial incentives through effective water and wastewater pricing and other economic tools

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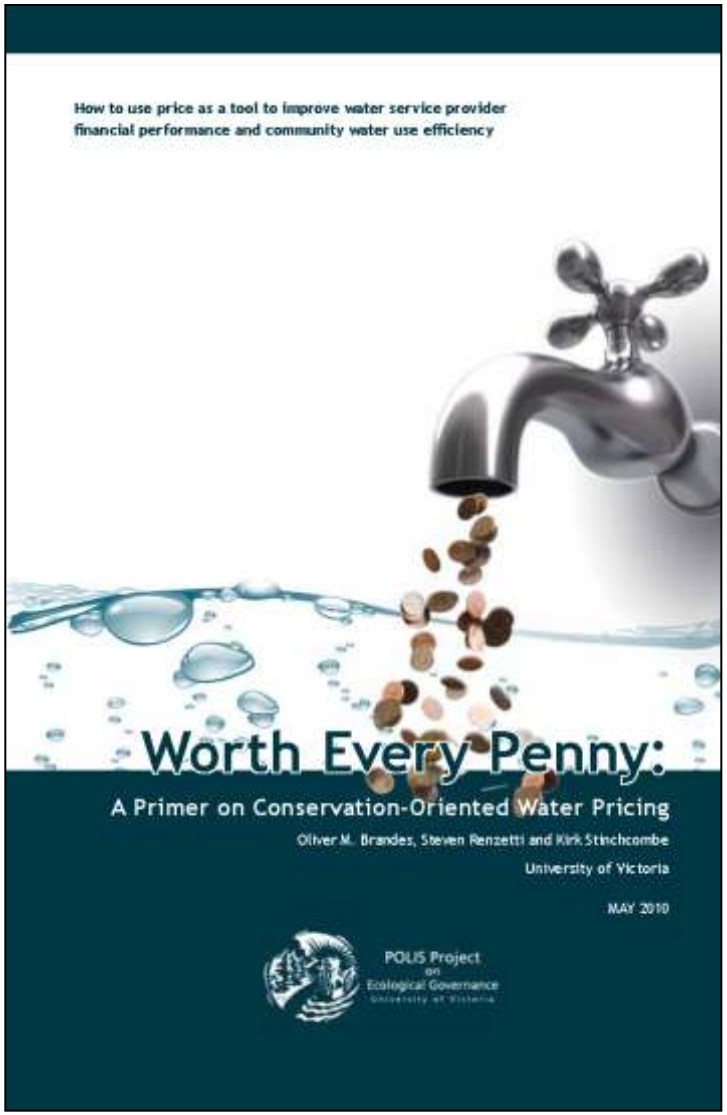
Worth Every Penny:
Conservation-Oriented Water Pricing



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What is Conservation-Oriented Water Pricing?

A rate structure adopted by a water service provider where:

1. The costs of providing the services are recovered
2. Individual customers are metered and pay for the volume of water they use
3. The price signal is sufficient to affect individual decisions and encourage conservation and efficiency

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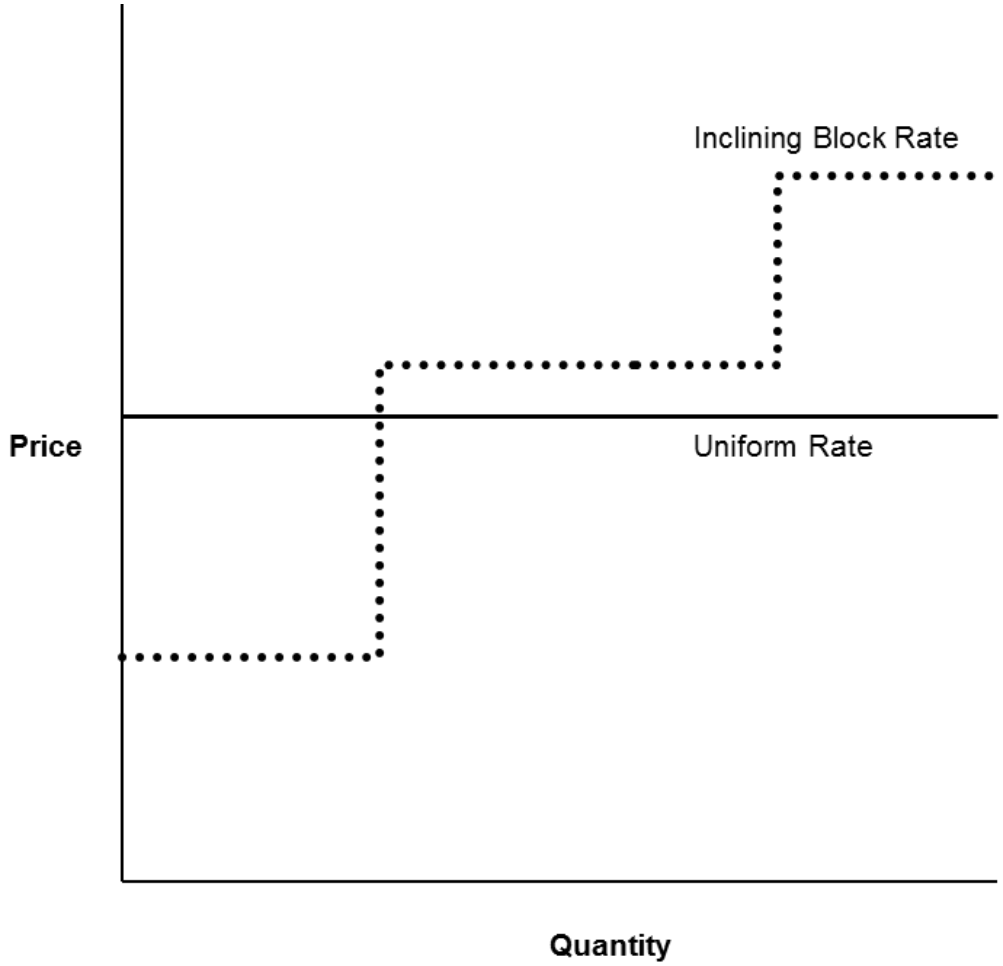

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Setting the Rate: The Key Factor

Does the price accurately inform consumers about the costs of their water use and provide a signal that is sufficient to affect their decision making?

Case Study 1: Seattle, Washington

Seattle Public Utilities Wastewater and Water Pricing Structure (US$/100 cf)

Seattle Public Utilities

	Rate
Water Rates	
Off-Peak Usage Period	
Uniform Rate (Sept 16 – May 15)	$3.50
Peak Usage Period (May 16 – Sept 15)	
First-Tier: Up to 1000 cubic feet in 60 days	$3.86
Second-Tier: Next 2600 cubic feet in 60 days	$4.49
Third-Tier: Over 3600 cubic feet in 60 days	$11.44
Sewer (Wastewater) Rates	
Uniform Rate	$8.89

Notes:

- All prices are per 100 cubic feet (2.83 m^3) and are in US$.
- Prices are for retail customers within Seattle city limits only; higher rates apply to customers living outside this boundary.
- Prices are for single-family residential customers only; different rates apply to multi-residential and non-residential customers.
- Single-family residential sewer bills are based on actual water usage during the winter period, November through April. For non-residential and multifamily residential customers, sewer bills are based on actual water usage at all times of the year.

Source: Seattle Public Utilities, http://www.seattle.gov/util/Services/Billing/Rates_Summary/SPU_001469.asp

Case Study 2: Tofino, British Columbia

Photo: pinkcanoe, Nalu Collective

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Key Steps on The Journey

1. Have a plan
2. Consider implications for billing systems
3. Get metered and charge by volume
4. Improve water use accounting
5. Fully account for expenditure
6. Consider starting with seasonal surcharges
7. Make it part of a complete program
8. Recruit the aid of senior government

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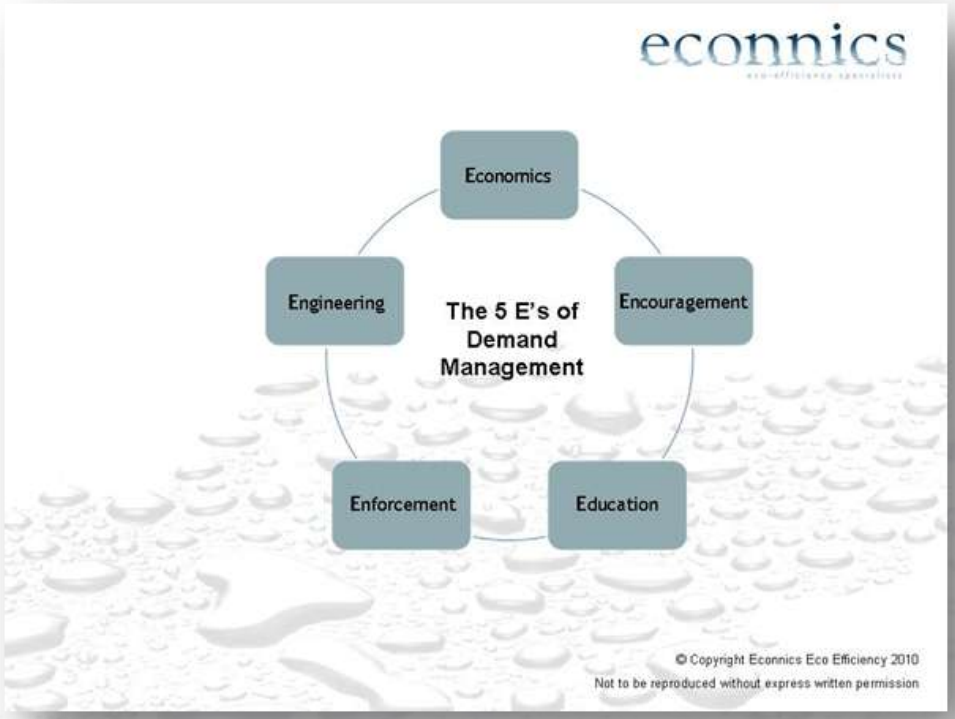
Take the Long Term View

Moving forward will take careful planning, communication and consensus building within the organization and the broader community.

And don't forget… conservation-oriented pricing makes sound sense from both economic and environmental points of view!



Encouragement

Providing customers with incentives like rebates for washing machines and toilets and tools such as shower timers and rain gauges

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Current Cowichan Valley Rebates

	Toilet Rebate
Cowichan Valley Regional District	$75 (6L/flush) (under review)
City of Duncan	$60 (6L/flush) $100 (3/6L/flush)
Town of Lake Cowichan	$75 (6L/flush)
Municipality of North Cowichan	$75 (4.8L/flush)
Town of Ladysmith	$75 (6L/flush)

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Community Based Social Marketing

Community Based Social Marketing (CBSM)

- Program design based on community willingness to engage
- Emphasis on market research
- Use of barrier and motivator analysis to identify successful approaches
- Use of tools of behaviour change that are empirically proven to work

Barrier and Benefit Analysis

Each form of sustainable behavior has its own set of barriers and benefits.

Uncovered through literature reviews and market research

may be internal to an individual (e.g. absence of motivation).

Or, may reside outside the individual, as in changes that need to be made in order for the behaviour to be more convenient or affordable

Multiple barriers and benefits may exist for any form of sustainable behavior.

Source: McKenzie Mohr and Smith (1999)

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CBSM Tools of Behaviour Change

- **Prompts –** visual or auditory aids remind us to carry out an activity we might otherwise forget
- **Incentives –** monetary and non-monetary incentives can induce people to invest in new technology or change behaviours
- **Commitment –** studies show that when people are asked to make a small commitment, they are much more likely to make larger commitments later
- **Norms –** modelling sustainable behaviour - for example by using highly credible individuals to visibly model messages - supports people to make change

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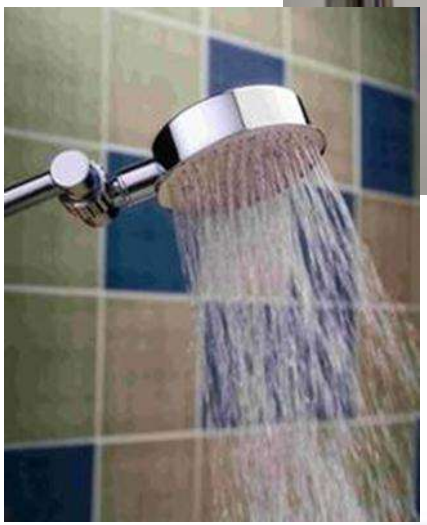

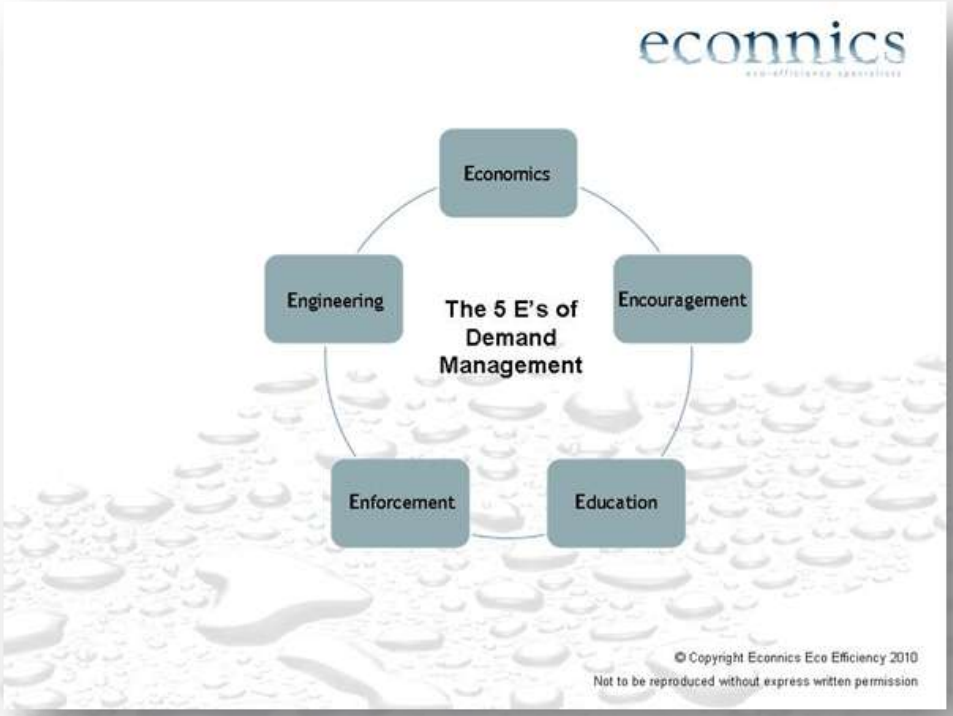

Education

Giving information to customers - from classrooms to family rooms to boardrooms - to help them understand how they use water and make changes

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Integrated Marketing Communications

Integrated Marketing Communications

"Marketing communications in which all elements of the promotional mix are coordinated and systematically planned so as to be harmonious" (Zikmund & d'Amico, 2002)

Brand

An identifying feature that distinguishes one product from another;

A name, term, symbol, sign or design or a unifying combination of these.

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Creative is Key!

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Image Courtesy Denver Water, 3 Feb 2010, used with permission

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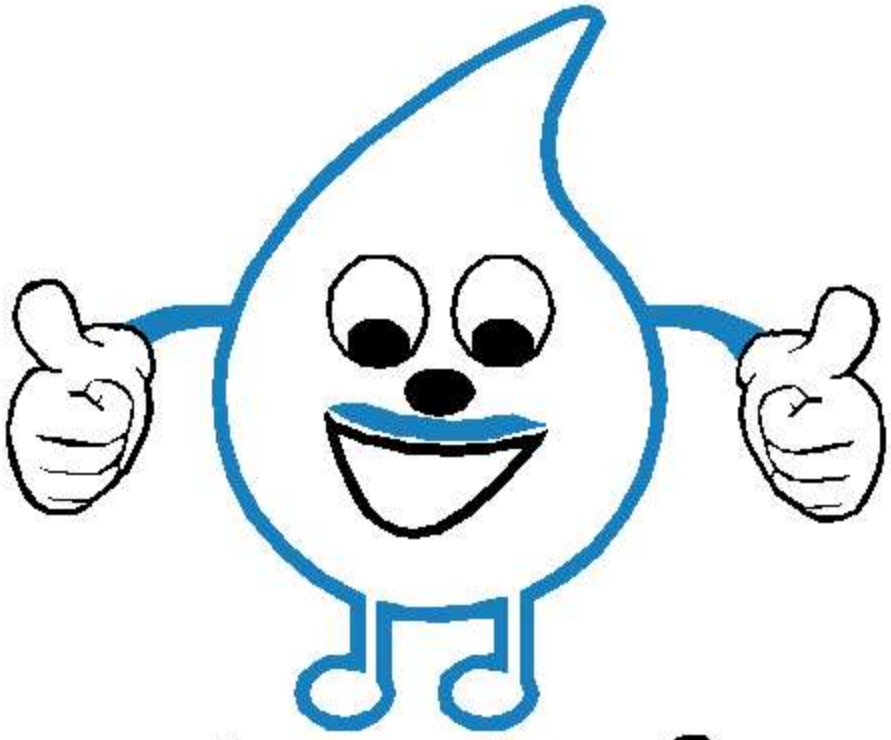

got water?

Do your part, be water smart!

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Other Elements of Good Communication

- Know your audience
- Use a credible source
- Make your message specific
- Make your message easy to remember
- Provide personal or community goals
- Emphasize personal contact
- Provide feedback

Source: McKenzie Mohr and Smith (1999)

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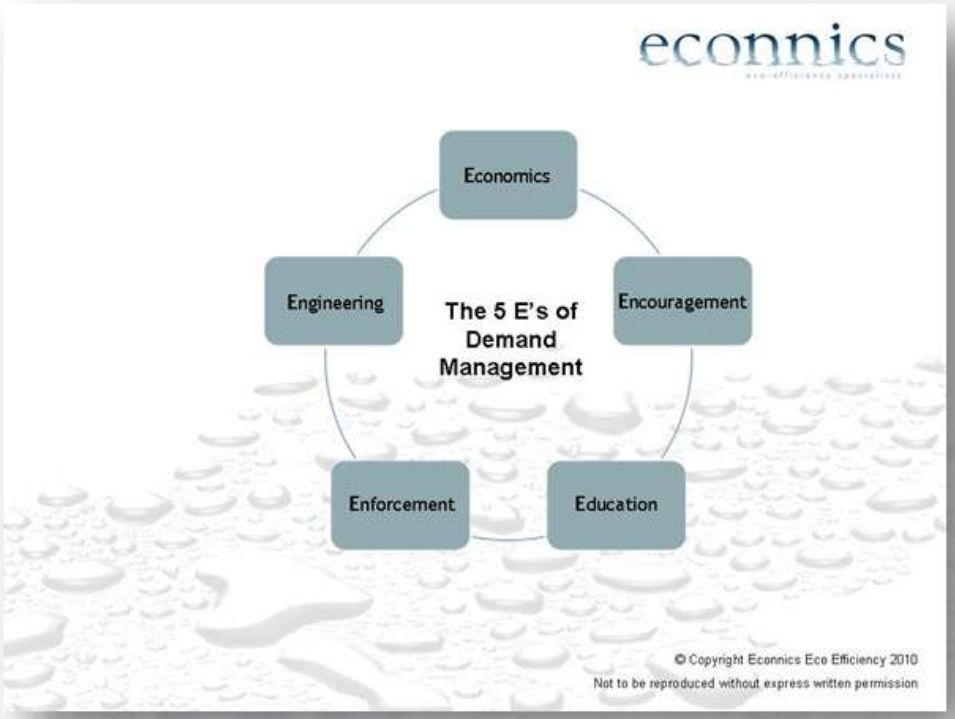

Enforcement

Judicious use of regulatory tools like watering restrictions, building and plumbing codes, and product performance standards

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Outdoor Watering Restrictions

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Current Cowichan Valley Restrictions

	Days	Hours
Cowichan Valley Regional District	Evens and Odds	6am-9am; 7pm-10pm
City of Duncan	Evens and Odds	6am-9am; 7pm-10pm
Town of Lake Cowichan	Evens and Odds	7am-10am; 7pm-10pm
Municipality of North Cowichan	Evens and Odds	6am-9am; 7pm-10pm
Town of Ladysmith	Evens and Odds	6am-9am;7pm-10pm (2 hrs max)

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Outdoor Water Use Reduction Manual

OWWA Water Efficiency Committee

June 2008

Ontario Water Works Association
A Section of AWWA

"Watering only once or twice per week provides ample opportunity for most homeowners to apply adequate water to their landscape."

http://www.owwa.com/img/content_images/Image/Outdoor%20Water%20Use%20Manual.pdf

Case Study: Region of Waterloo, Ontario

Region of Waterloo Restrictions

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Once per Week Lawn Watering

If your address ends in:	*Your lawn watering day is:*
0 or 1	Monday
2 or 3	Tuesday
4 or 5	Wednesday
6 or 7	Thursday
8 or 9	Friday

Other Watering

watering of gardens, trees, shrubs & other outdoor plants washing of car with controlled hose (shut-off valve) topping-up of permanent residential pools	odd-numbered addresses water on odd days (5:30-10 a.m. and 7-11 p.m.)
	even-numbered addresses water on even days (5:30-10 a.m. and 7-11 p.m.)

Example only; not based on current calendar year:

Sunday	Monday	Tuesday	Wedneday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

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Effective Enforcement Requires Enforcement

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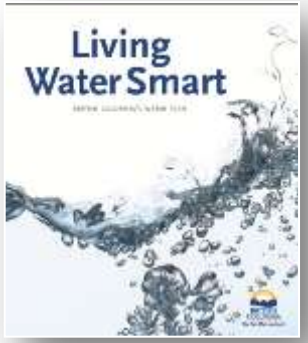
Plumbing Code Requirements

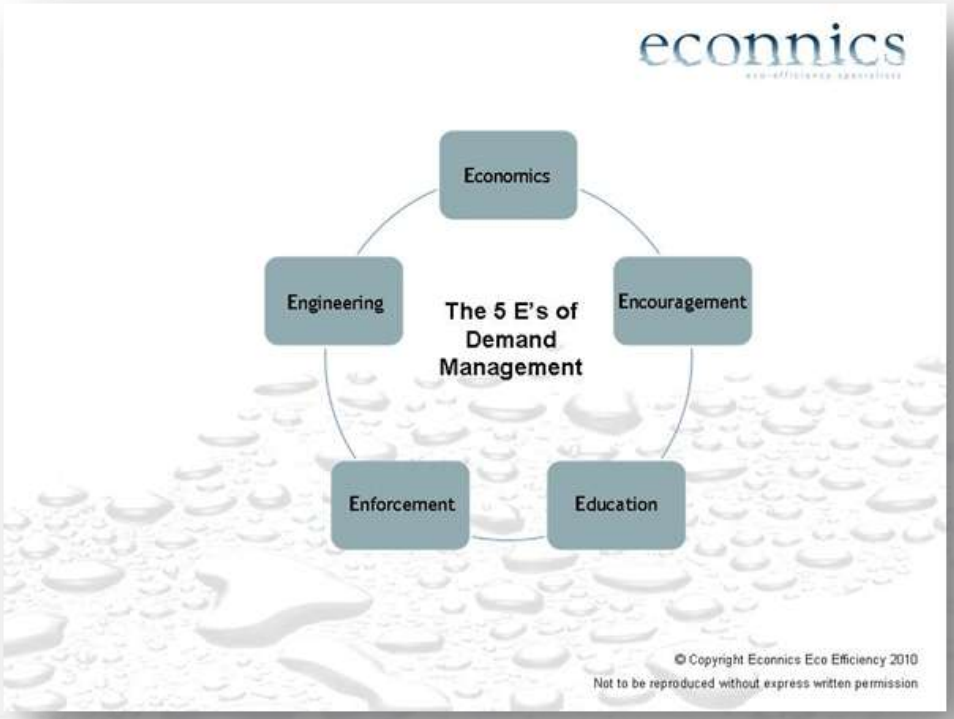


BC Building Code (Effective 2011)

Fixture	Maximum Water Use
Toilets (Residential)	Max. 4.8 L/flush
Showerheads	Max 9.5 L/minute
Bathroom Faucets	Max 8.3 L/minute
Urinals	Max 1.9 L/flush

See also Canada Standards Association CSA B125

Source: BC Housing and Construction Standards
http://www.housing.gov.bc.ca/building/consultation/het/



Engineering

Use of the latest technology and techniques - pressure and leakage management, recycling, rainwater harvesting, efficient cooling equipment, etc.

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Pressure and Leakage Management

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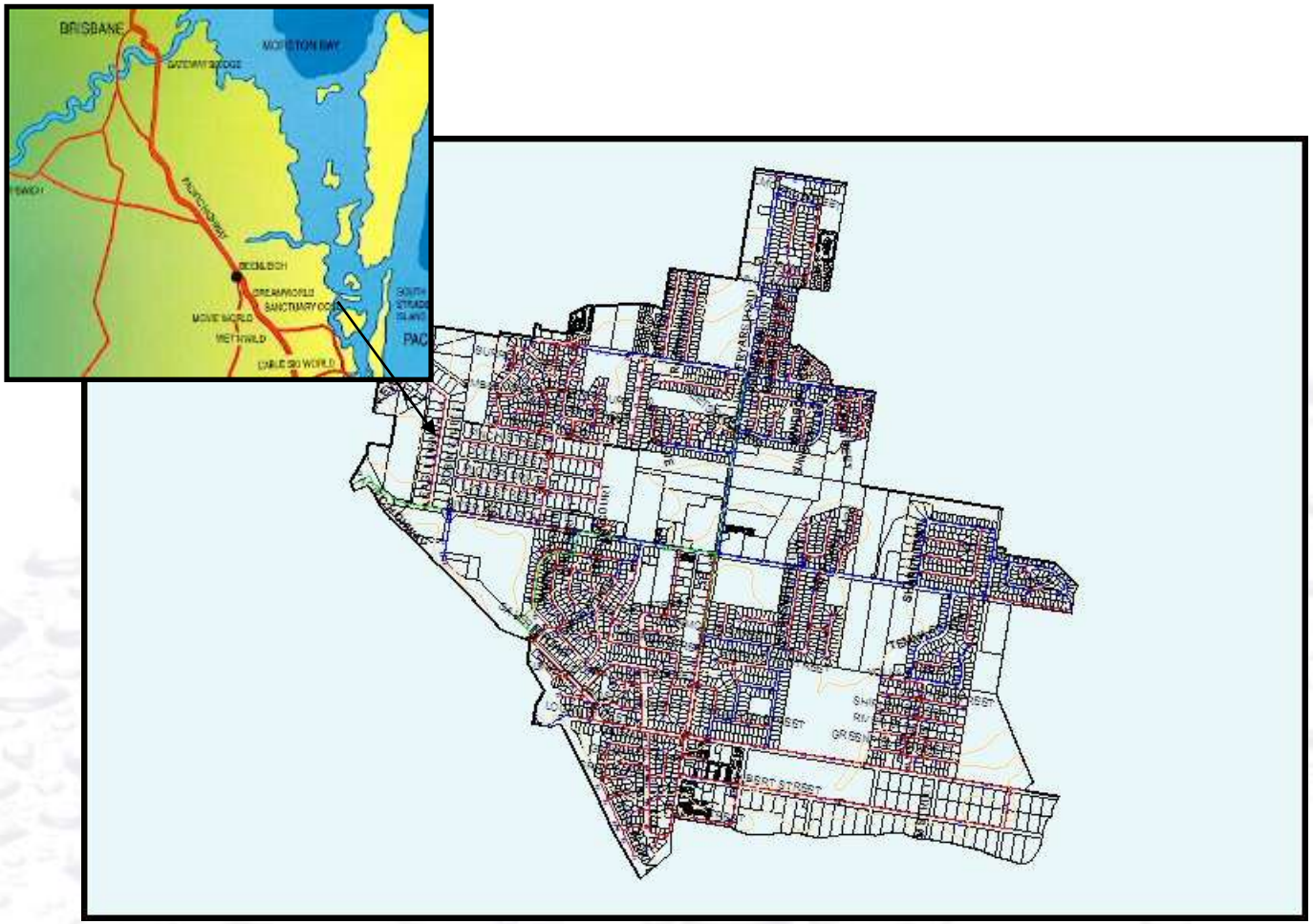
Water Pressure Management Diagram

Sectoring the Network Into District Metering Areas (DMAs)



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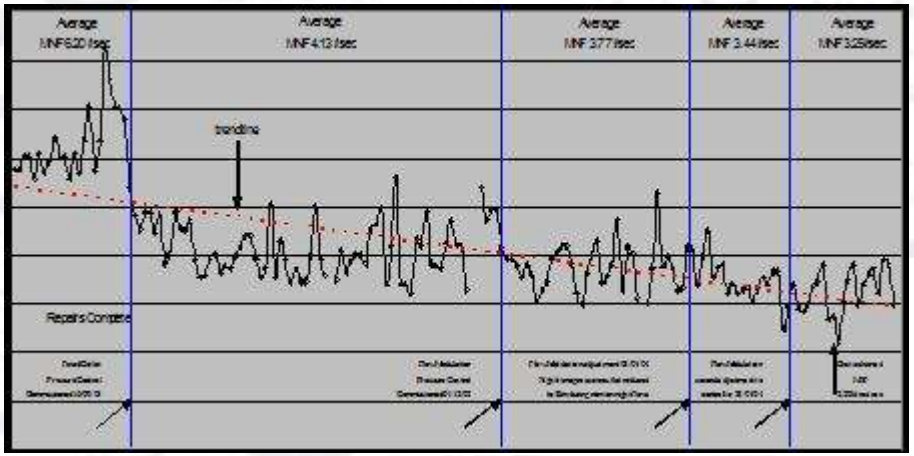
Pressure Reducing Valve (PRV) Installation



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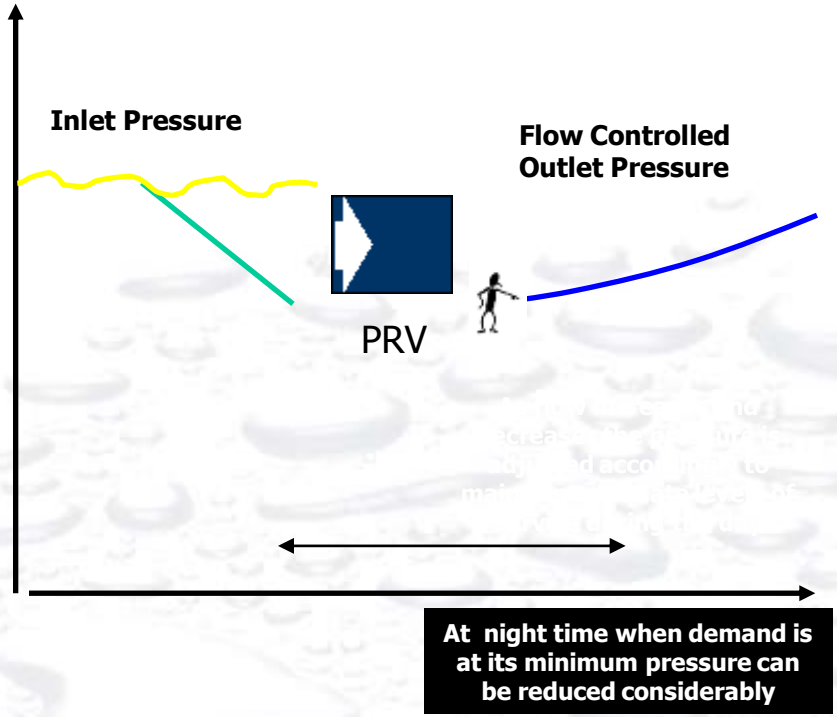
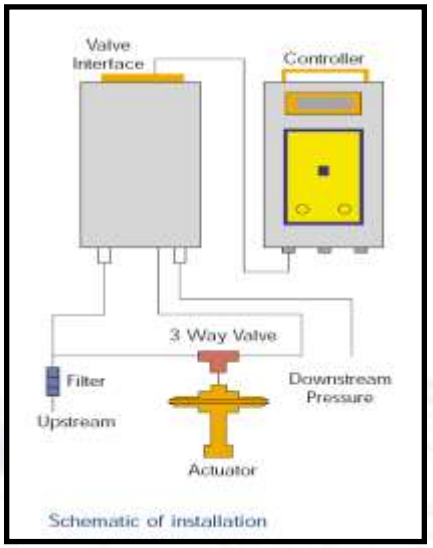
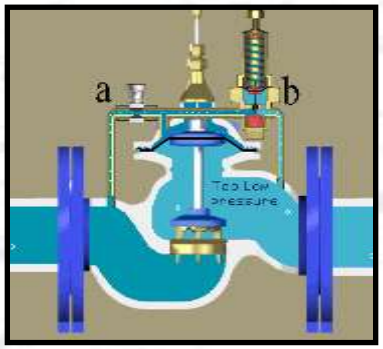
Flow Modulation Control







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Active Leak Detection and Repair

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Benefits of Water Loss Management

- Reduced water losses & more efficient use of existing supplies
- Increased knowledge of the distribution system
- Financial improvement – Increase revenue recovery
- Fewer main breaks (up to 80%)
- Service improvement
- Improved public relations

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Gold Coast Waterfuture

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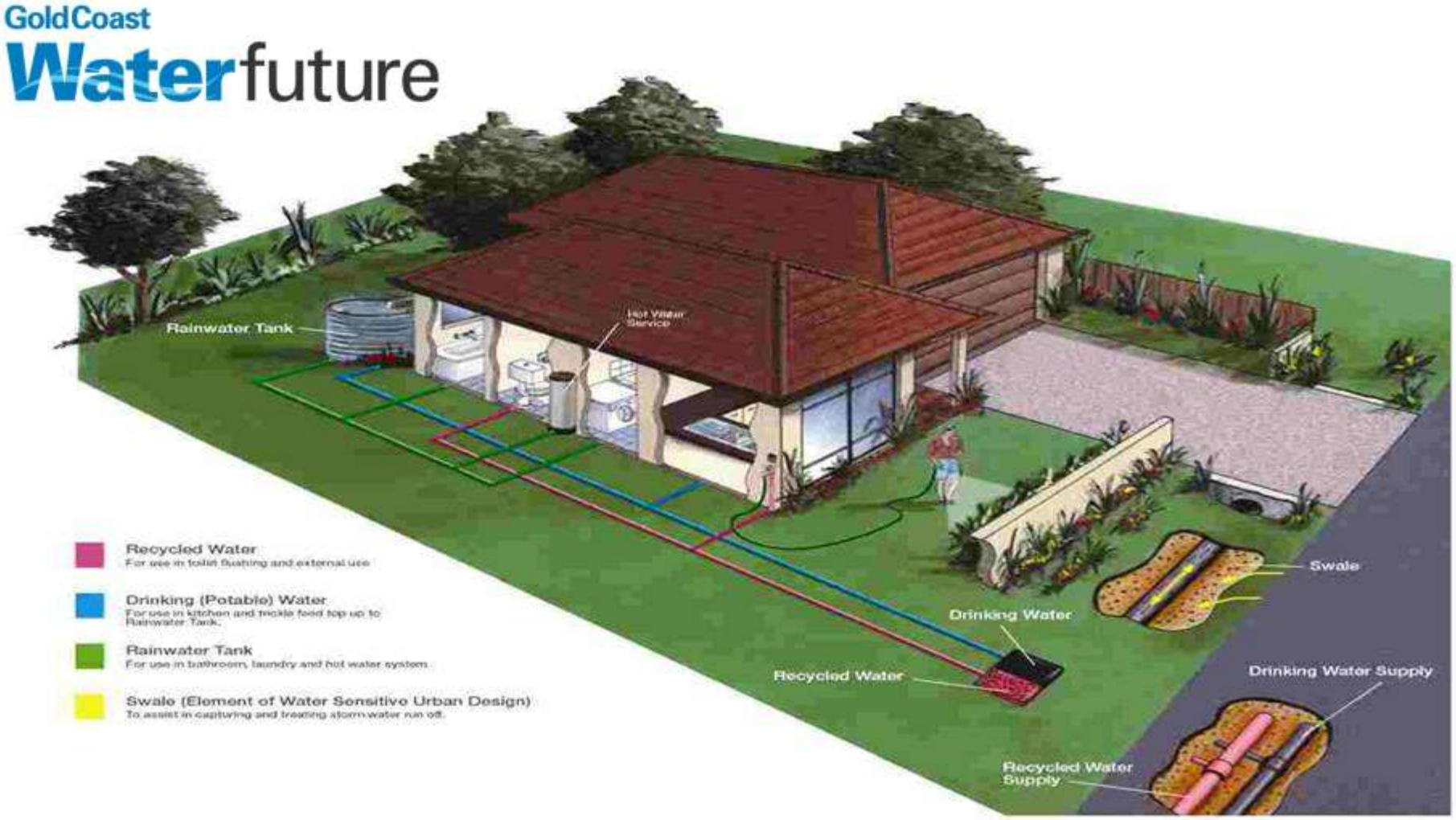
Pimpama Coomera Waterfuture Project



Gold Coast Waterfuture

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- Class A+ Recycled Water Treatment Plant (supply by 2009 to toilet & outdoor)
- Mandatory rainwater tanks (laundry cold water & outdoor)
- 3500 dual reticulated homes already built
- Growing by ~120 homes/month.
- Home to 120,000 people by 2056

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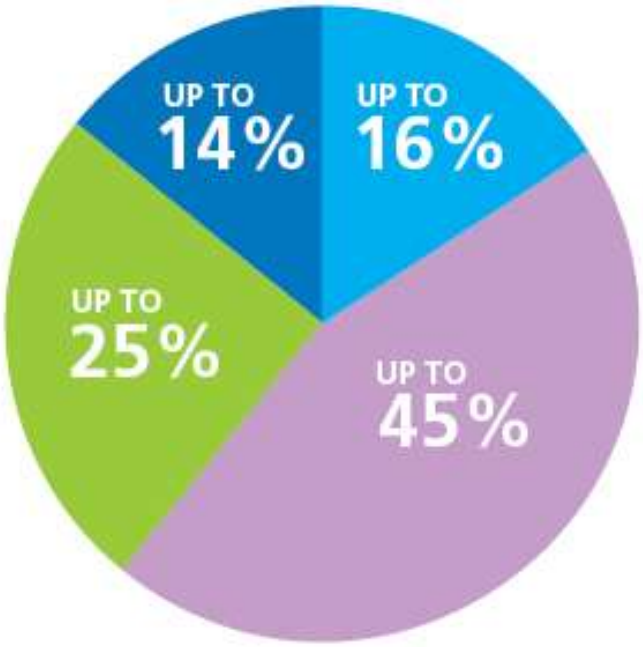
Gold Coast
Waterfuture



DRINKING WATER
Uses: kitchen

RECYCLED WATER
Uses: toilets and external use

RAINWATER
Uses: cold water laundry tap and approved uses around the home

WATER CONSERVATION
Uses: kitchen

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