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Is it time to estimate what we are willing to pay for drinking water free of contamination?

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Costanza et al. (1997). The value of the world's ecosystem services & natural capital. *Nature, Vol 387,* 253-260

Photo: PlanetWare

Use & non-use values and non-market valuation

- We totally undervalue value natural resources
- We frequently ignore scarcity & the need to leave resources for future generations; existence value (of the resource or the habitat of many species)
- What value do we place on returning a degraded water body back to an unpolluted state?
- What is the value of avoiding that change in the first place?
- Techniques:
  - Revealed Preferences
  - Stated Preferences - done via survey
    - Choice Experiments – respondents make trade-offs, demonstrating preferences
- Studies in NZ have focused on surface water quality
  - Usually around nutrient loss from agriculture – too many cows; too much fertilizer

Attribute levels (water quality measures vs jobs and hsehld cost)

Attribute	Future situation 'Do nothing'			
Suitability for swimming & recreation	Every summer 50% chance health warnings 1-2 weeks			
Water clarity	Usually see up to 1m underwater			
Ecological health	Less than 40% readings excellent			
Jobs in dairying	Stay about the same			
Cst to househld/yr (10yrs)	Stay about the same			

Marsh, D. (2012). Water resource management in NZ: jobs or algal blooms? JEM 109, 33-42

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Attribute levels (water quality measures vs jobs and hsehld cost)

Attribute	Future situation 'Do nothing'	Option 1	Option 2	Option 3
Suitability for swimming & recreation	Every summer 50% chance health warnings 1-2 weeks	20% chance	10% chance	2% chance
Water clarity	Usually see up to 1m underwater	Up to 1.5m	Up to 2m	Up to 4m
Ecological health	Less than 40% readings excellent	50% are excellent	60% are excellent	> 80% are excellent
Jobs in dairying	Stay about the same	Reduce by 5%	Reduce 10%	Reduce 20%
Cst to househld/yr (10yrs)	Stay about the same	$50, $100, $300, $600, $1000		

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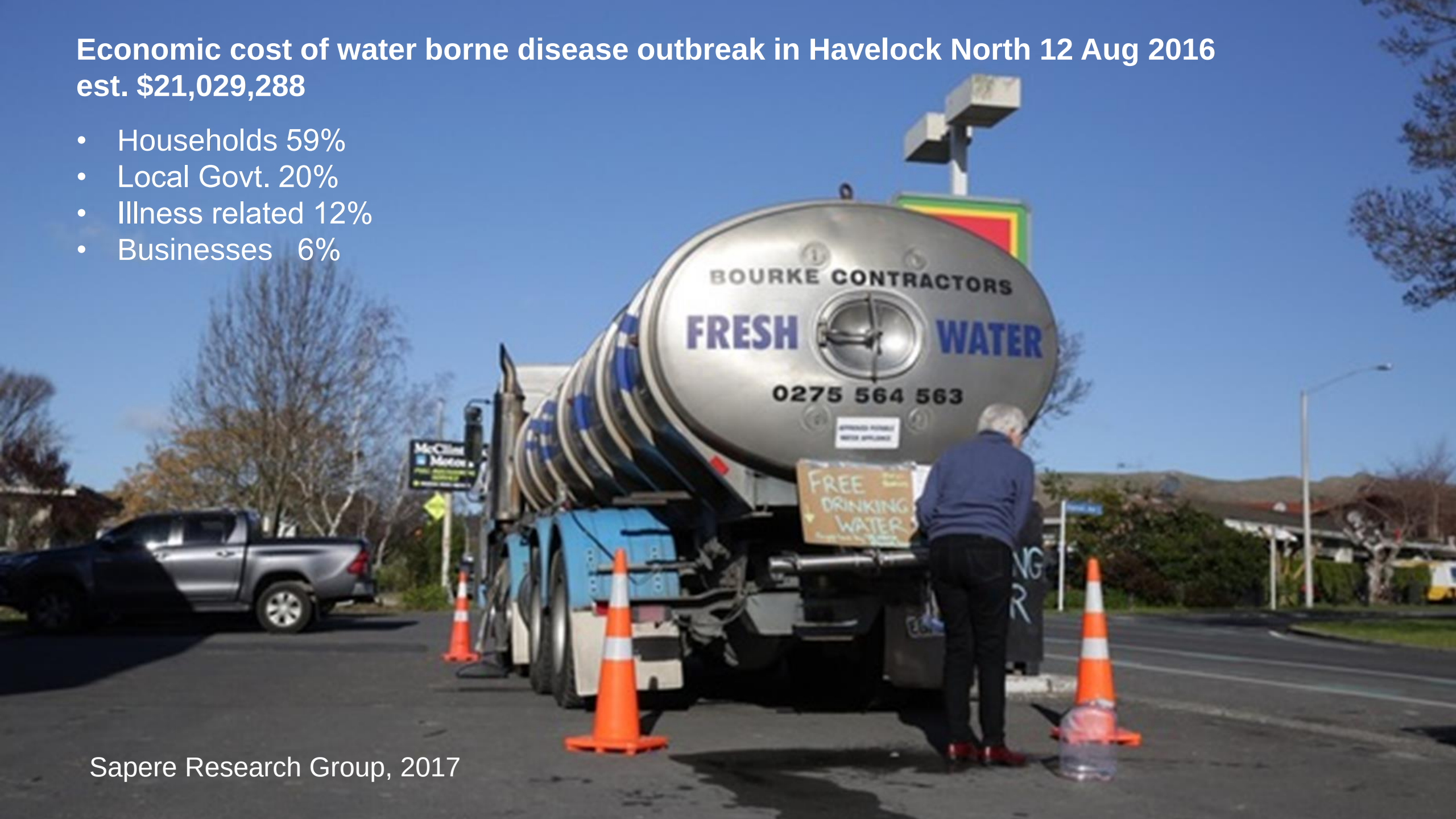
New Zealand drinking water

- Annual Report on Drinking-Water Quality 2016 – 2017
  - Almost 20% of monitored drinking water supplies do not meet the specified standards
  - And a further ~ 20% of us drink water sourced from outside these monitored sites
  - Achievement of protozoal standards ~ 83% of the monitored drinking water supplies
- What is the cost of those monitored drinking water supplies?
  - Storage (in some cases), reticulation, maintenance, testing & monitoring
- Is that the real cost?
  - Residents of Havelock North would say ‘No’
  - The Havelock North campylobacter outbreak resulted in 5,500 cases from the town’s 14,000 residents; 45 hospitalisations & 3 deaths

Economic cost of water borne disease outbreak in Havelock North 12 Aug 2016 est. $21,029,288

- Households 59%
- Local Govt. 20%
- Illness related 12%
- Businesses 6%



Sapere Research Group, 2017

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What is the value of an uncontaminated drinking water supply?

- Dynamic
- Households respond to poor quality tap water by buying alternatives – bottled water, filters
  - Not cost effective
  - Equity issues
- Related to
  - risk perceptions
  - confidence/trust in authorities
  - cultural values
  - experienced health concerns
  - those vulnerable in our community
- Are we asked if we are OK about the level of spend of our rates & taxes on our water supplies?

What are we willing to pay?

Thank you