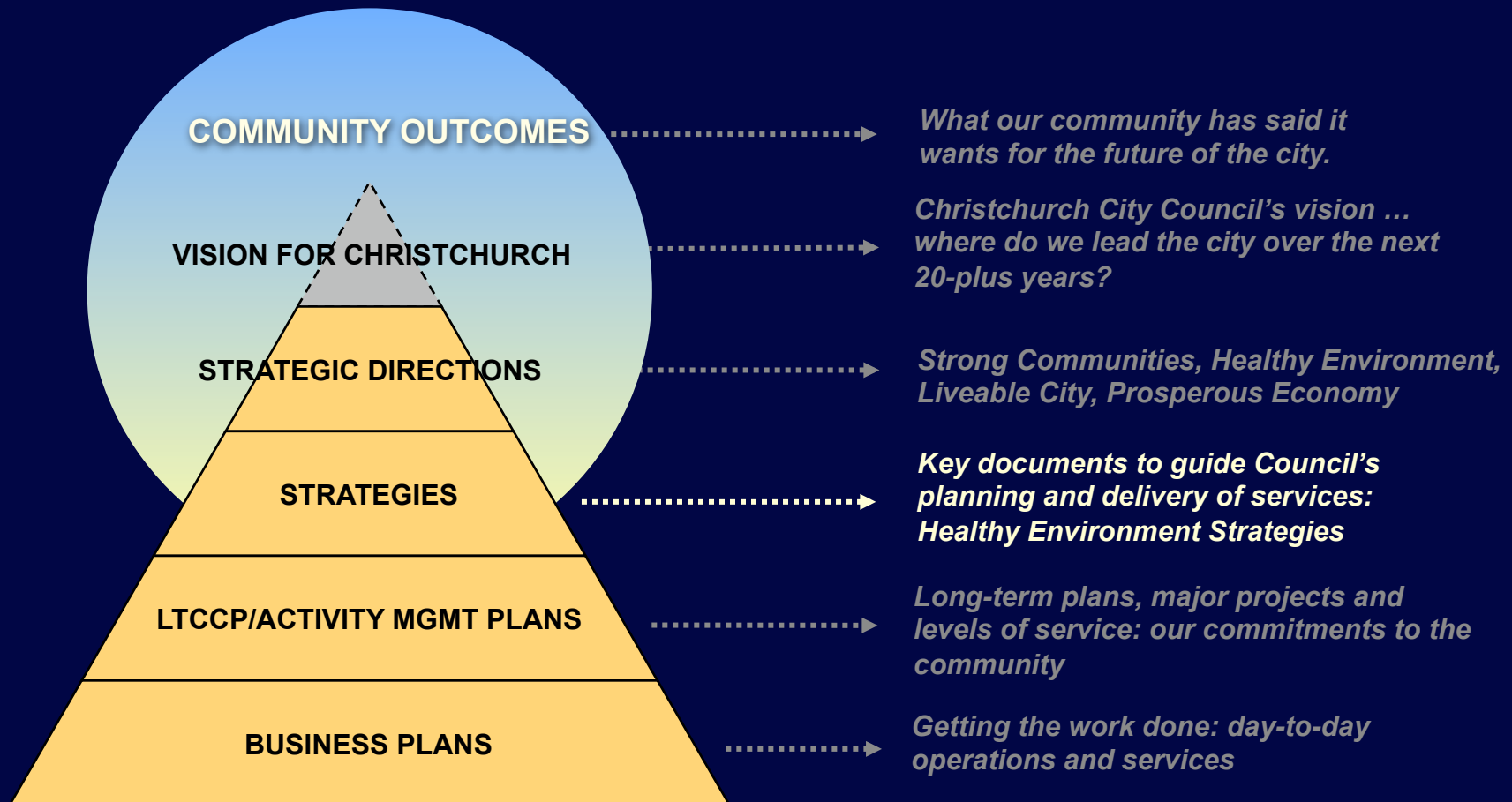


A Water Supply Strategy for Christchurch

NZSSES Seminar
29 August 2008



Context

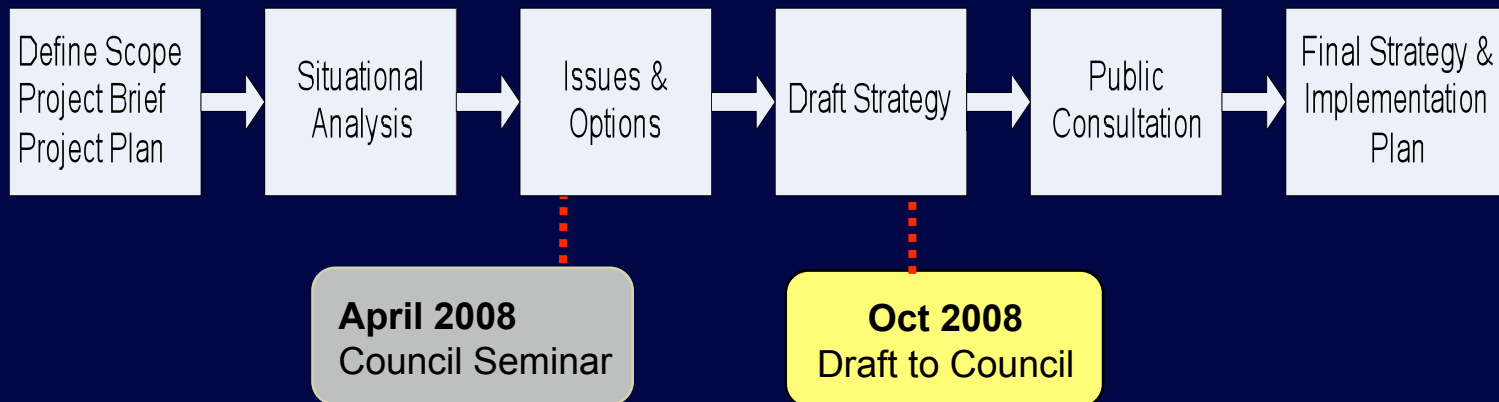


Context

Healthy Environment Strategies

Sustainability Policy

- Sustainable Energy Strategy
- Water Supply Strategy
- Surface Water Strategy
- Biodiversity Strategy
- Open Space Strategy
- Climate Change Strategy



Process

Early steps

- August 2007 stakeholder workshop
 - top level issues and concerns identified
- Situational analysis report prepared
- Water Charging Options study - March 2008
- Councillor workshop - April 2008

Where are we now

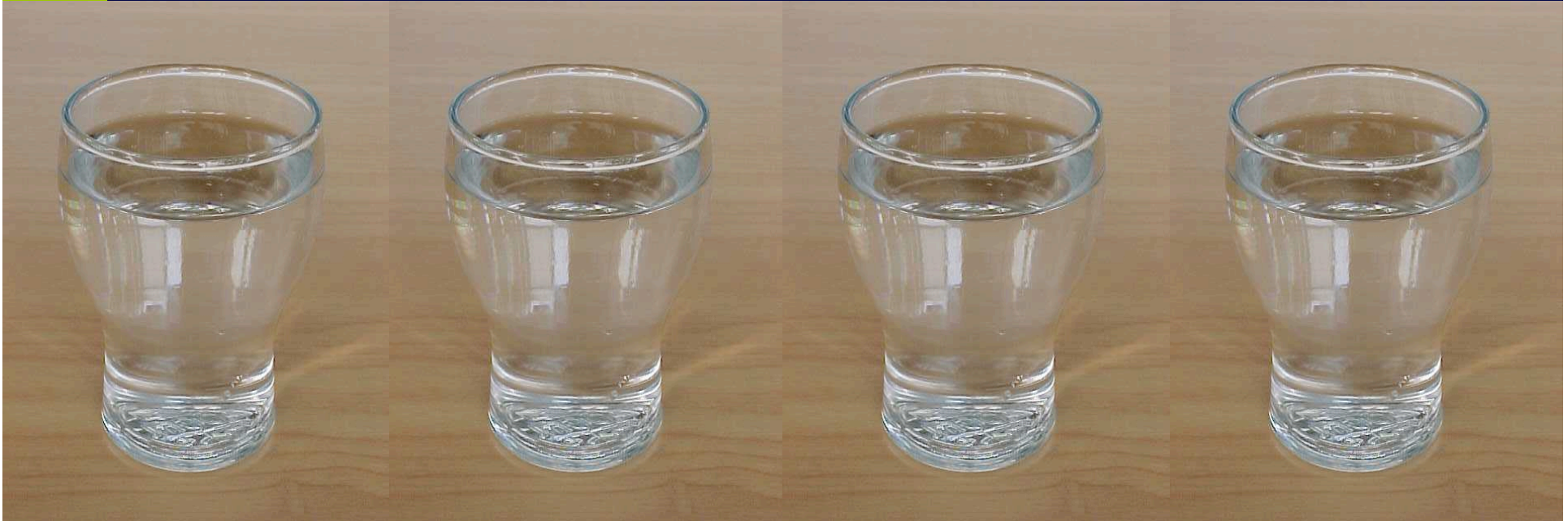
- Draft issues and options report prepared
 - Draft suite of options
 - Preliminary staff evaluations
 - Early consultation with key stakeholders



Background

Key objective for strategy:

- Sustainable management of drinking water now and into the future



Key challenges for water supply planning

- finite resource
- growing City
- high per capita use
- lack of incentives to use water efficiently
- alternative sources limited & costly
- water quality impacted by land use
- service standards vary



Main issues

- Availability
- Water quality
- Demand and use
- Service standards, costs & regulations



Issue: Availability

- Bucket analogy - water resources are limited, not a bottomless bucket
- Possible cap under PNRRP of 75 million m³/year for CCC drinking water supply
 - Health of surface water linked to adequate aquifer levels
- Seasonal variability of surface water sources (e.g. Takamatua Stream in Akaroa Harbour)
- Effects of climate change, sea level rise



Alternative sources

- more distant (pipes, pumps and reservoirs)
- likely to require treatment
- already at risk of over-allocation

... which makes them difficult to secure and very expensive

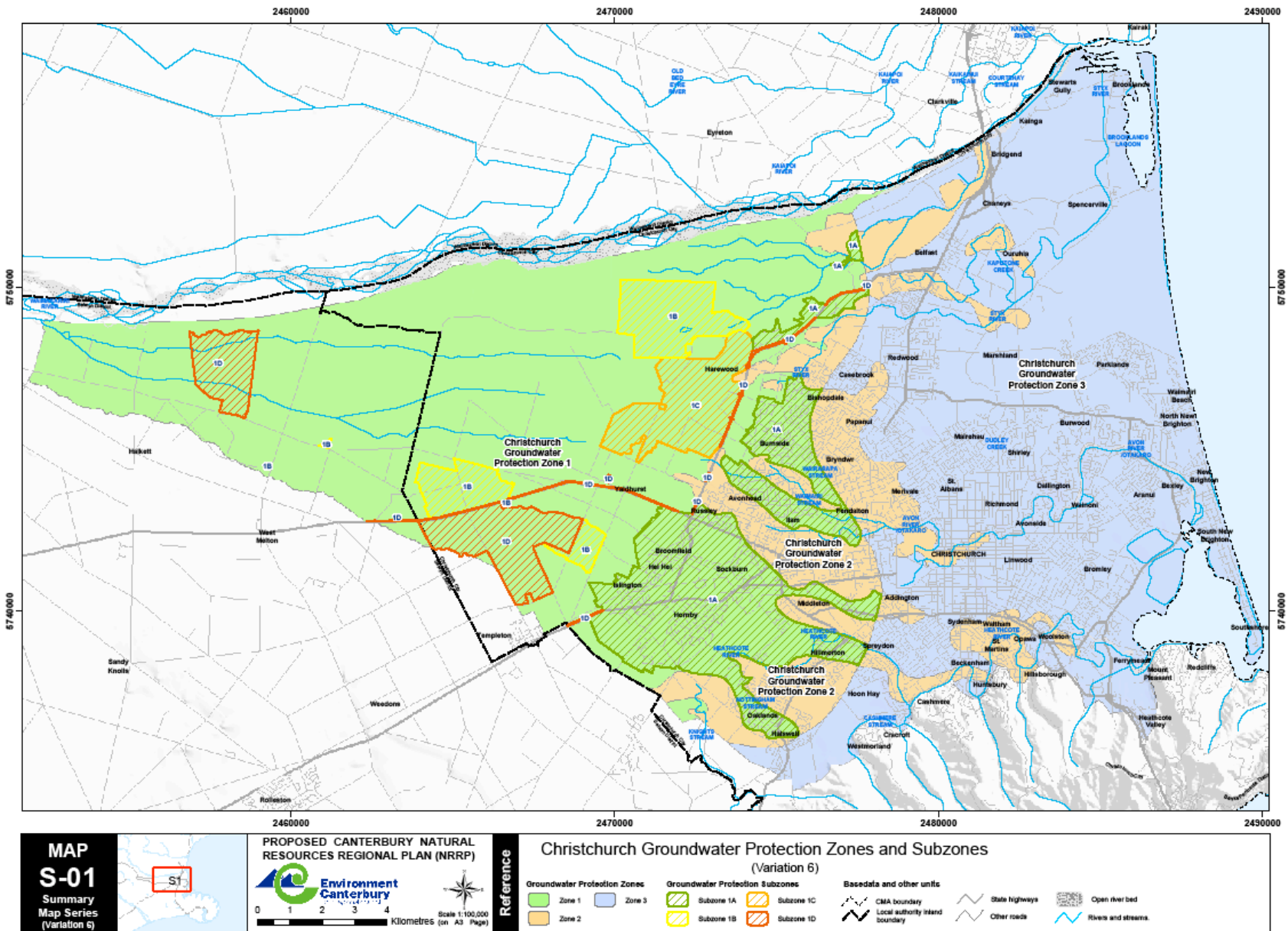


Issue: Water quality

- Risk of contamination of groundwater and surface water sources from
 - Land use activities (Variation 6)
 - Backflow
 - Saltwater intrusion
- Risk of contamination post-abstraction from
 - Asset condition
 - “aggressive” water
- Potential from “non-secure” source (MoH grading scheme)



Variation 6: Groundwater Recharge Zones

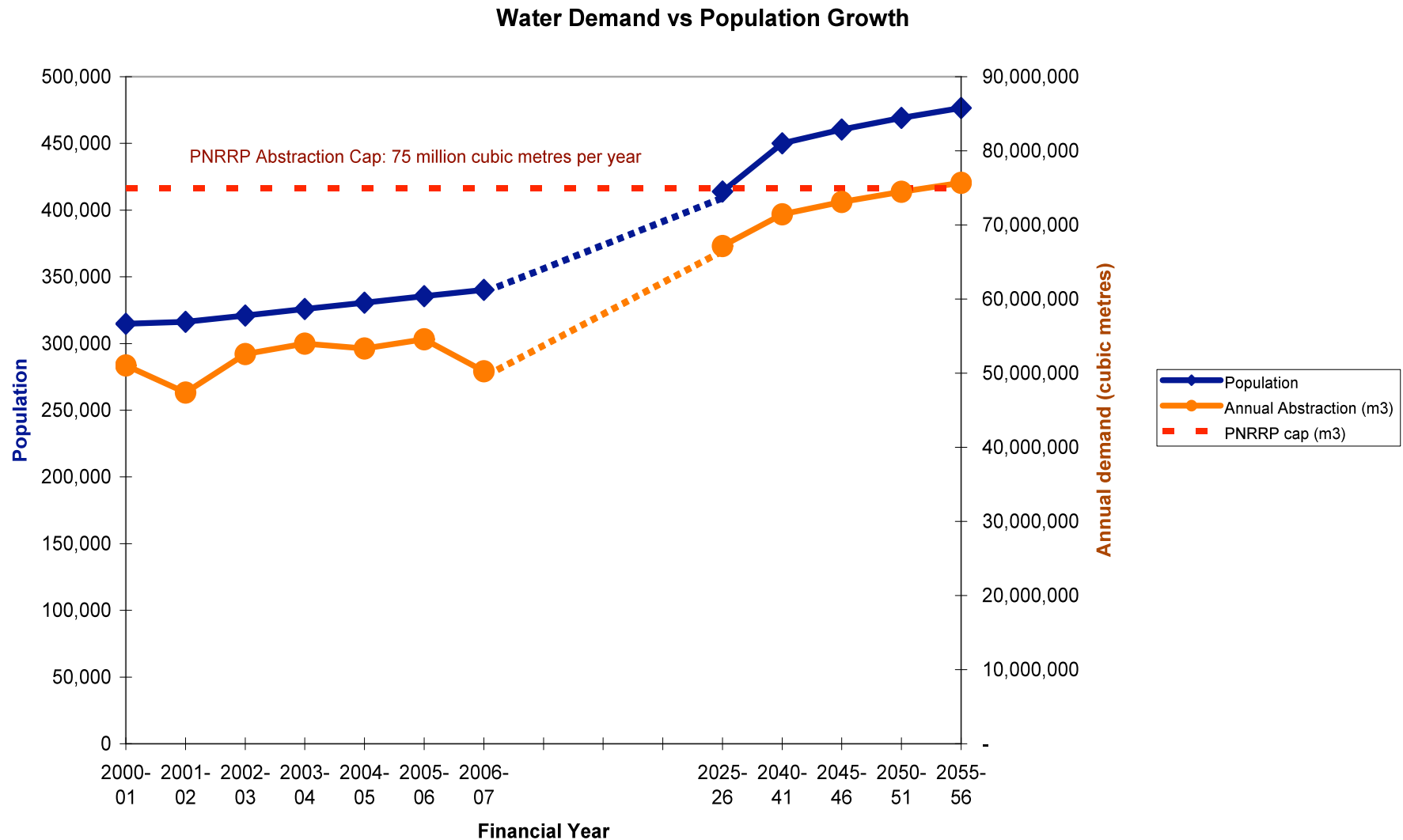


Issue: Demand and use

- Relatively high per capita use compared to other cities
- Population growth (UDS: 120,000 more by 2041)
- Drinking water used for all types of water uses
- Impact of additional customers coming from private suppliers

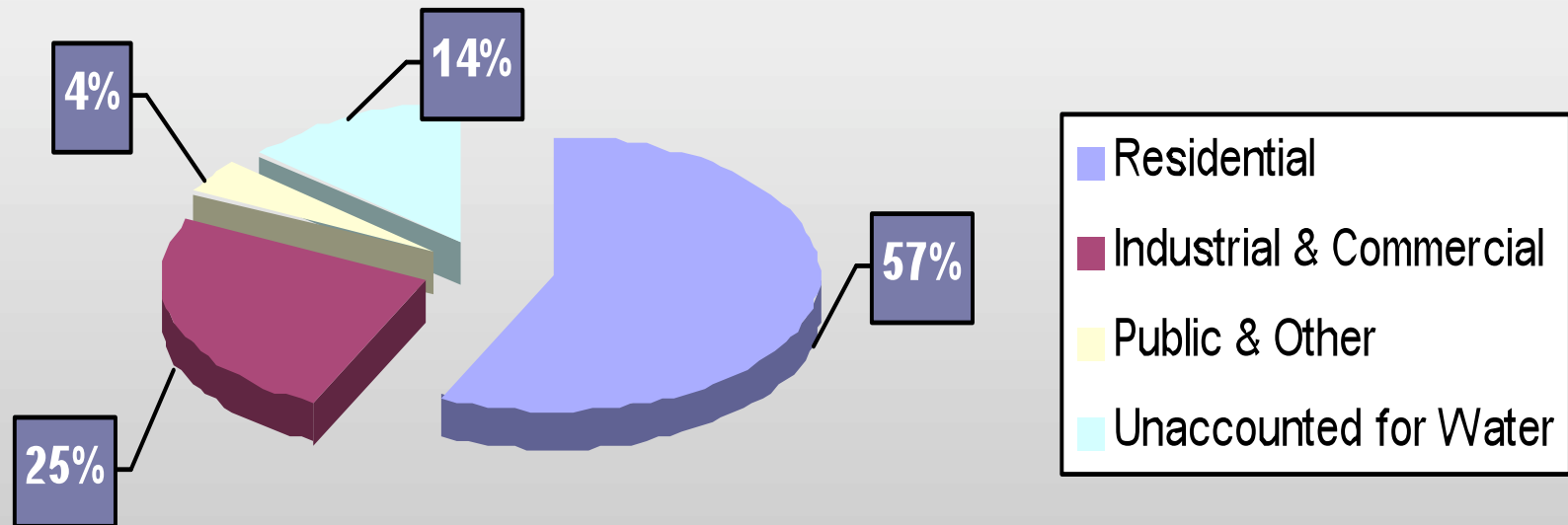


Availability and Demand



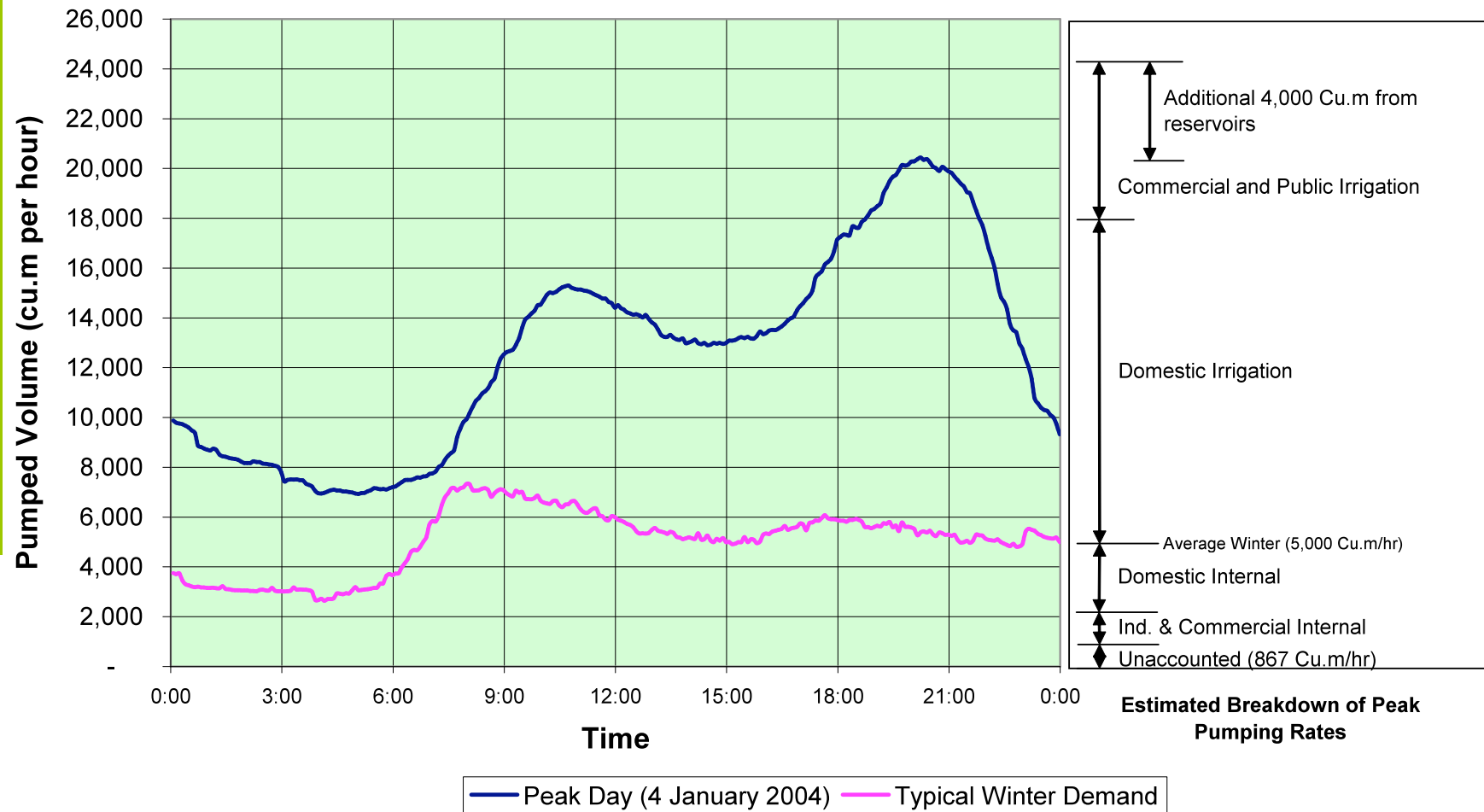
Who uses the water

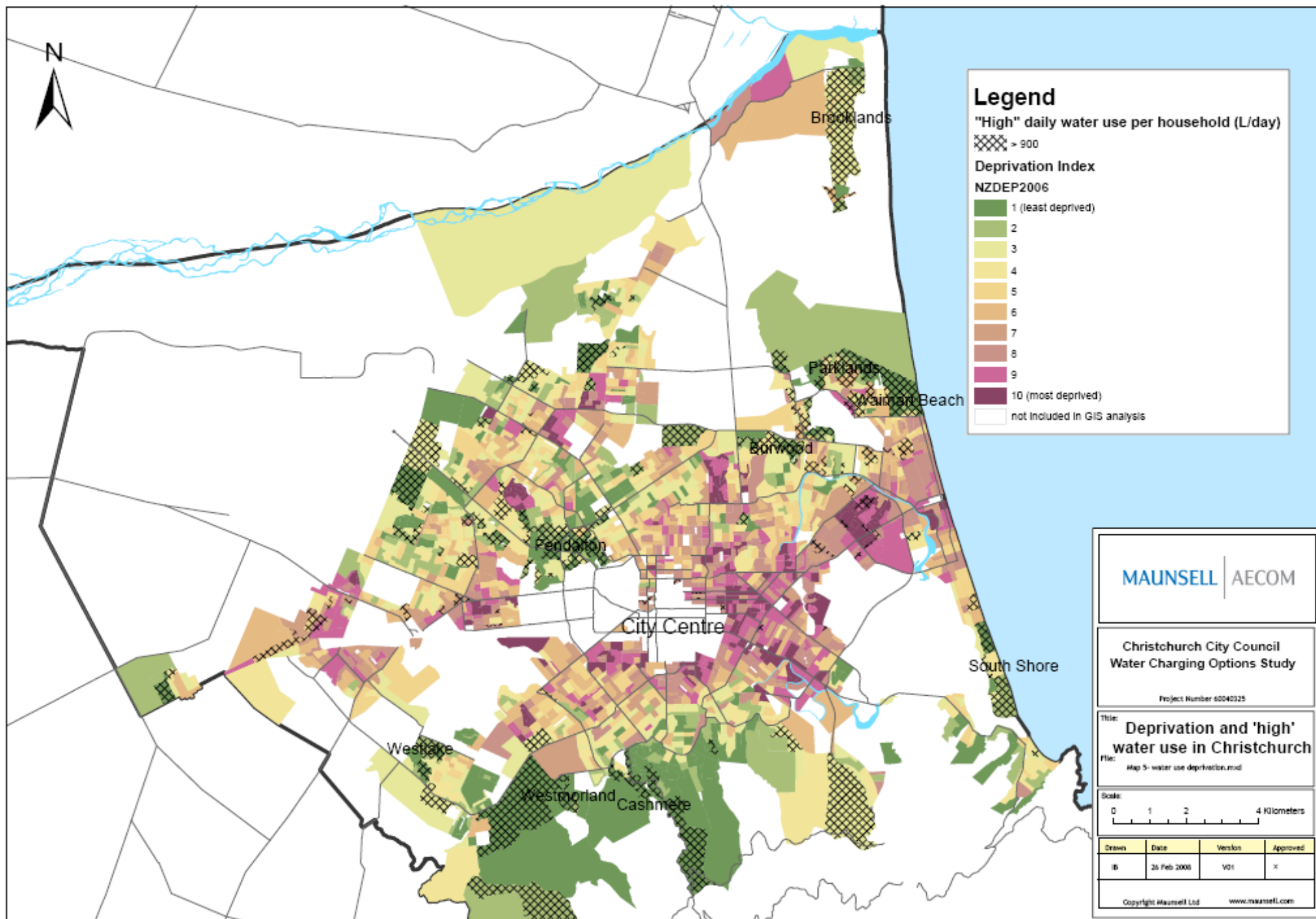
Demand per Category



Christchurch “The Garden City”

Peak Summer Compared to Average Winter Day





Efficient use

Benefits not just in conserving water

- better use of infrastructure
- energy savings – due to reduced pumping
- ecological values – reduced impact on spring-fed water bodies such as Avon and Heathcote Rivers
- protecting the resource – reduced risk to water quality from over-abstraction



Issue: Service, costs, regulations

- Variable service standards within Christchurch and between urban and rural areas
- Water in Christchurch is relatively inexpensive (\$0.45c/m³)
- Strict regulatory environment subject to change
- Response to “Da” grading for North West Christchurch (deeper wells vs. treatment)
- Changing fire protection requirements



Options

Highly ranked options:

- Pressure zone management to optimise equalised pressure management zones
- Valuing water campaign
- Water re-use in appropriate new Council facilities or major refurbishments
- Installation of water efficient devices in City Housing
- Rainwater or rainwater/greywater combined systems (BP/rural)
- Securing rights to additional takes
- Alternative sources – Waimakariri, Ellesmere

Options

Medium ranked options:


- Enhanced water loss reduction programme – including cost/benefit study
- Review of water charging approach (economic & legal)
- Water efficient devices initiatives
- Green Plumber/Green Gardener programmes



Where to from here

- Key stakeholder meetings
- Take draft strategy to Council (Sept/Oct 08)
- Public consultation – end of 2008
- Preparation of final report and strategy for Council consideration - 2009





Thank you

Questions?