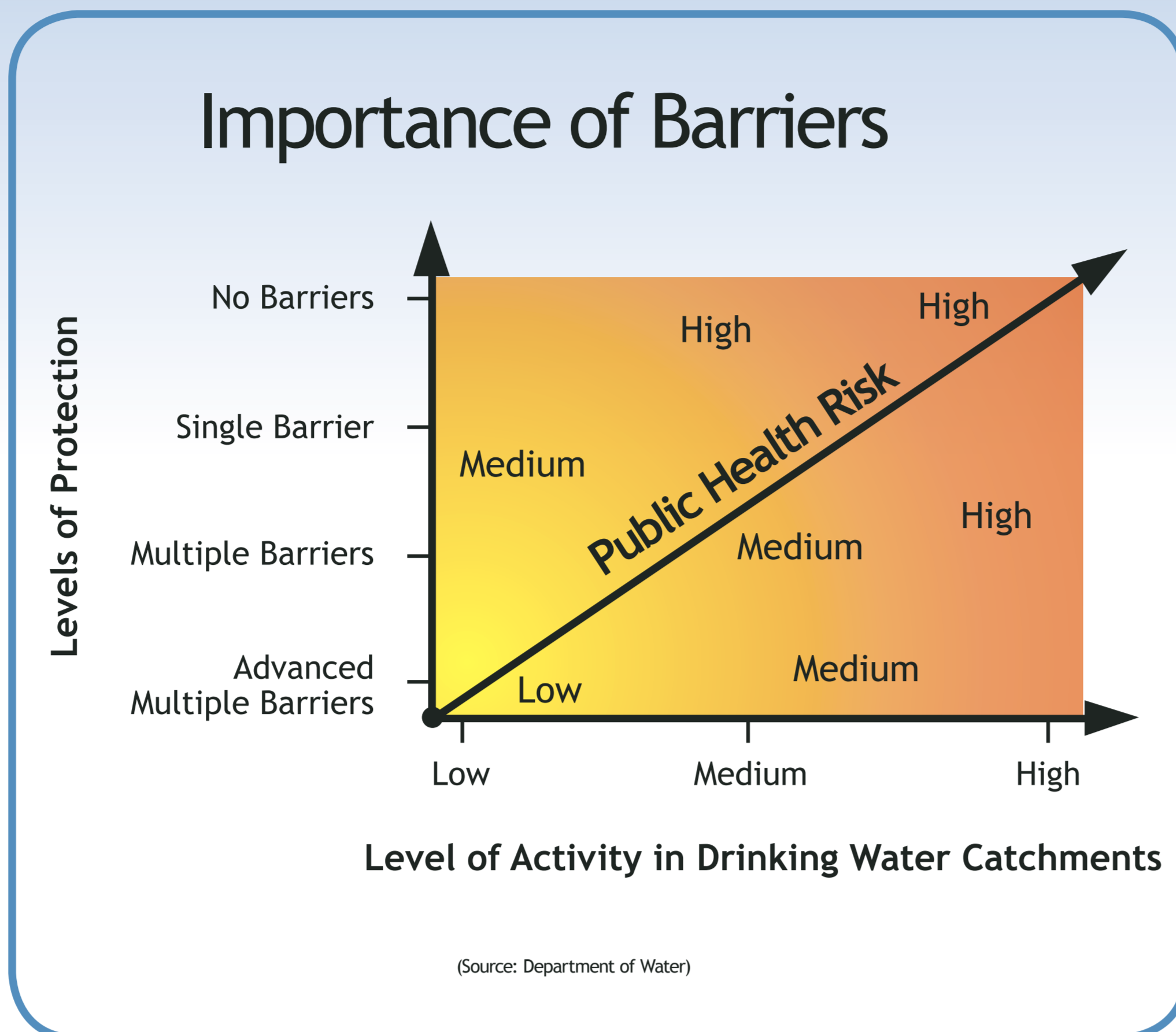


Australian Drinking Water Guidelines



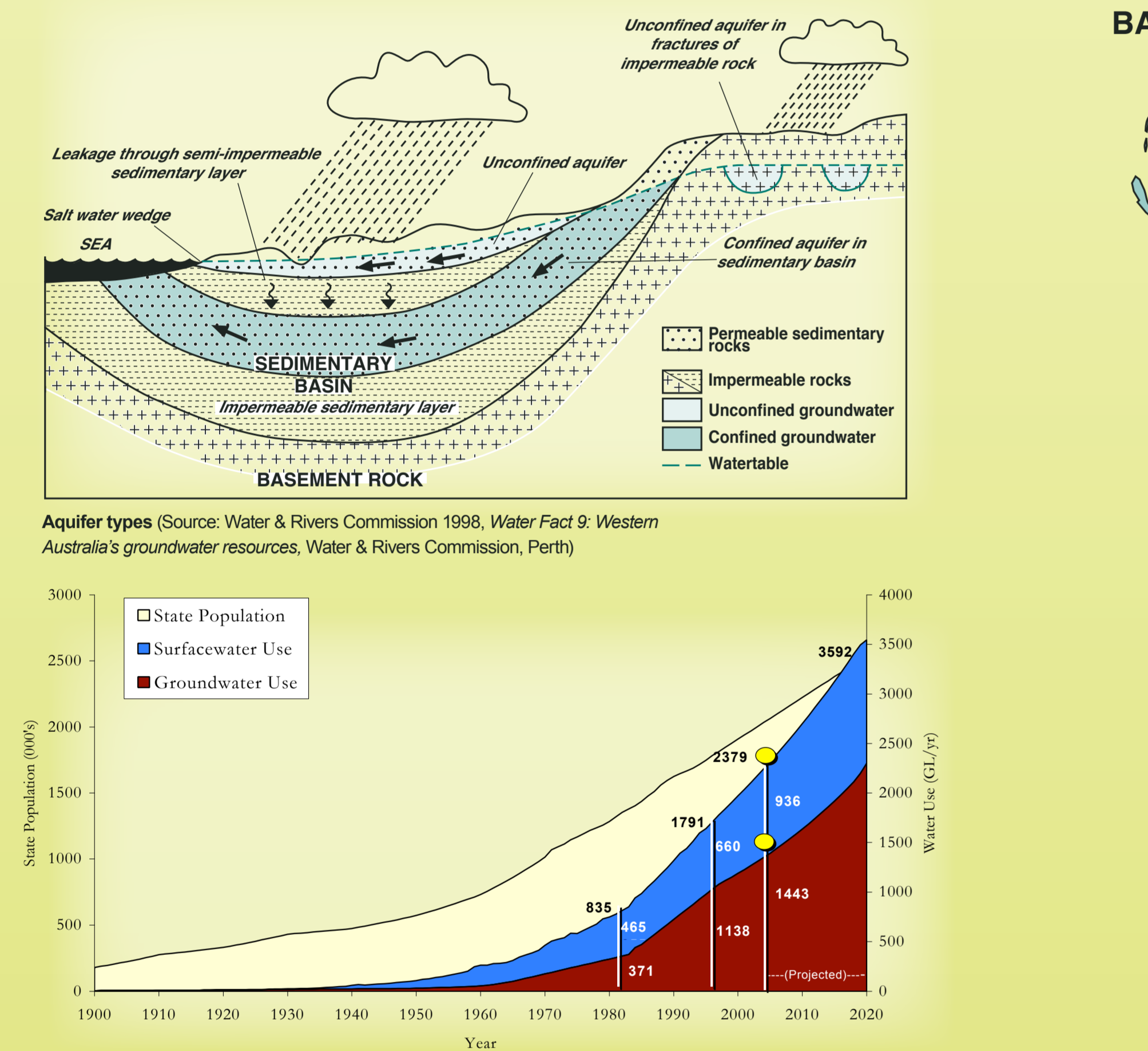
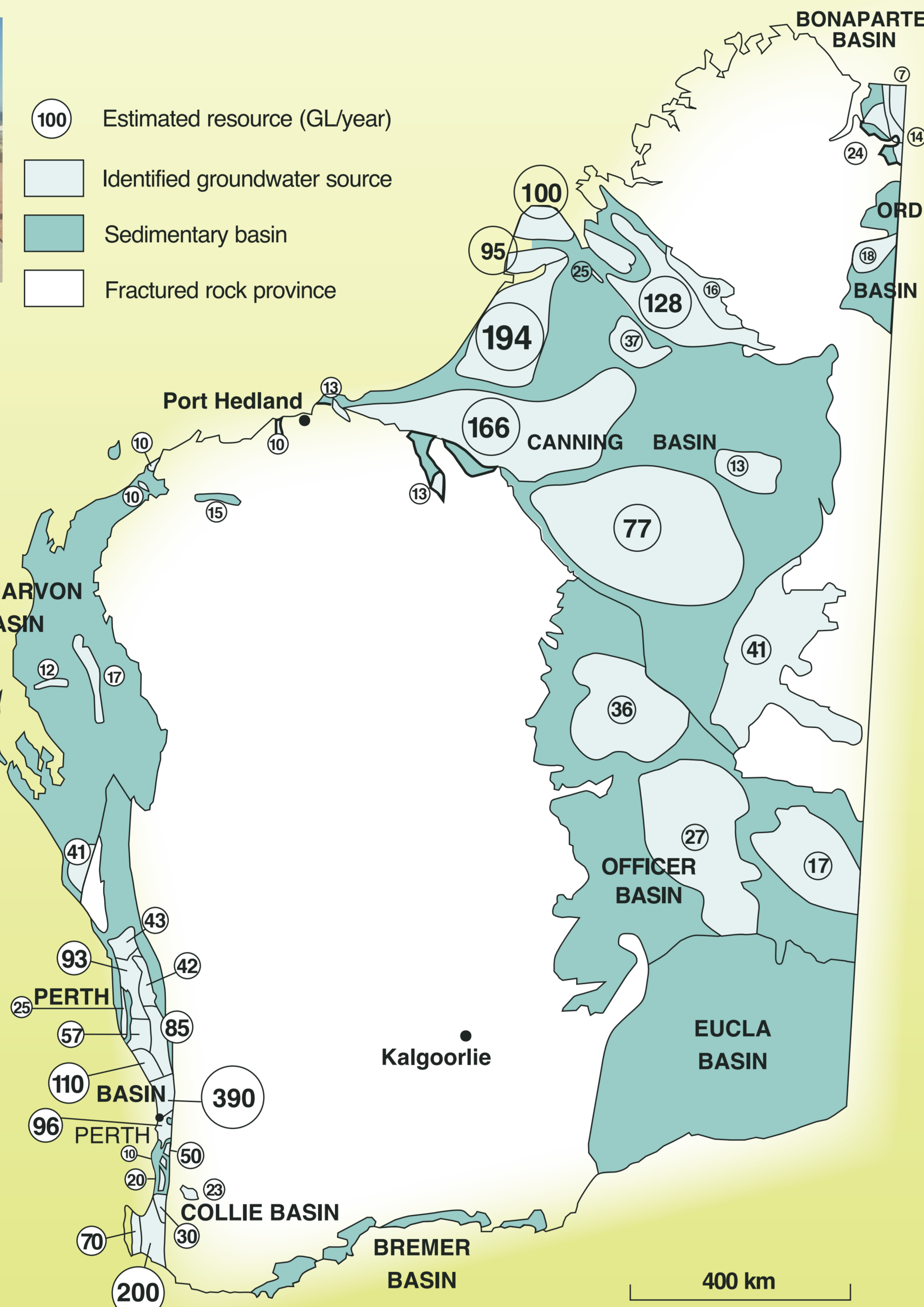
Western Australia's (WA) level of drinking water source protection is strongly influenced by its commitment to implement the Australian Drinking Water Guidelines (ADWG); most specifically the 'catchment to consumer' risk-based, multiple barrier approach to protecting Public Drinking Water Source Areas (PDWSA). Barriers include catchment protection, water storage and treatment. The importance of maintaining multiple barriers can be seen here. The guidelines outline 12 elements as part of a framework for protecting PDWSA. Elements 2 and 3 are implemented by the Water Source Protection Branch at the Department of Water.

Element 2: *Assessment of the drinking water supply system* is implemented through the preparation of Drinking Water Source Protection Assessment (DWSPA) documents while Element 3: *Preventative measures for drinking water quality management* is directly addressed via the preparation of Drinking Water Source Protection Plans (DWSP).



Groundwater in Western Australia

- Accounts for about three-quarters of all water used.
- Makes up 60% of Perth's drinking water supply.
- WA's largest bodies of groundwater are sedimentary basins covering 40% of the state.
- Perth's shallow sand and karstic limestone sediments allow an easy path for contaminants to enter groundwater.
- As Perth's groundwater demand increases, so does the potential for groundwater contamination, which may prevent economic growth in WA



Perth from Kings Park 1895



Perth from Kings Park 1955



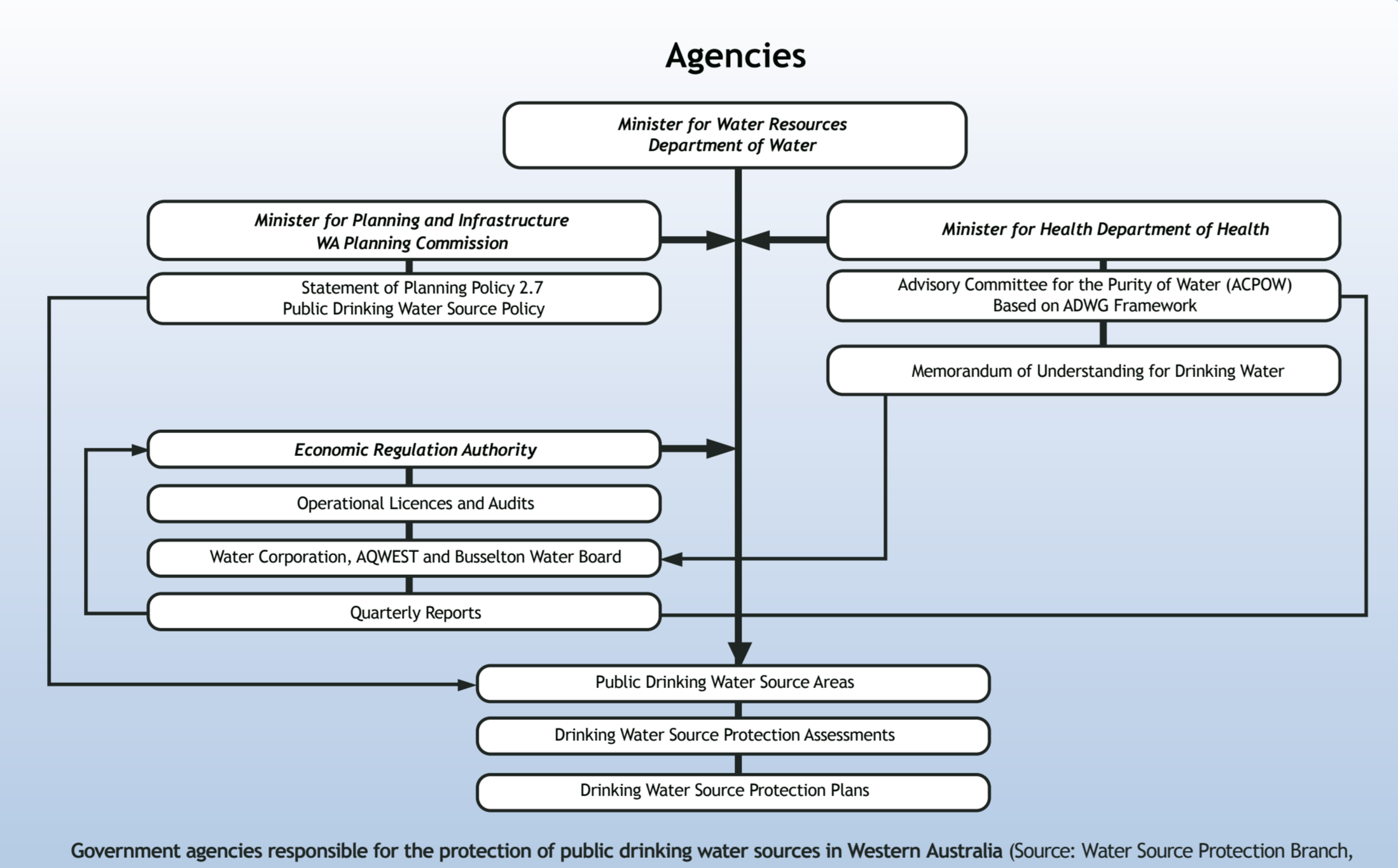
Perth from Kings Park 2007



Groundwater is a critical resource for WA. The ready availability of shallow groundwater would have been instrumental in the initial settlement of Perth in the early 1800s. In 2006 WA's population was just under two million and almost three quarters thereof was concentrated around the Perth metropolitan region. With a continued drying climate and an increasing population, there is a growing dependence on groundwater. In order to maintain safe, good quality drinking water, we need to continue to manage and protect groundwater for current and the future generations.

Legislation

The two most important acts addressing groundwater PDWSA are the *Metropolitan Water Supply Sewerage and Drainage Act 1909 (MWSSD Act)* and the *Country Areas Water Supply Act 1947 (CAWS Act)*, both managed by the Department of Water. PDWSA are proclaimed under these acts, making the relevant by-laws applicable and enforceable. Groundwater areas are proclaimed as underground water pollution control areas (MWSSD Act), or water reserves (CAWS Act).

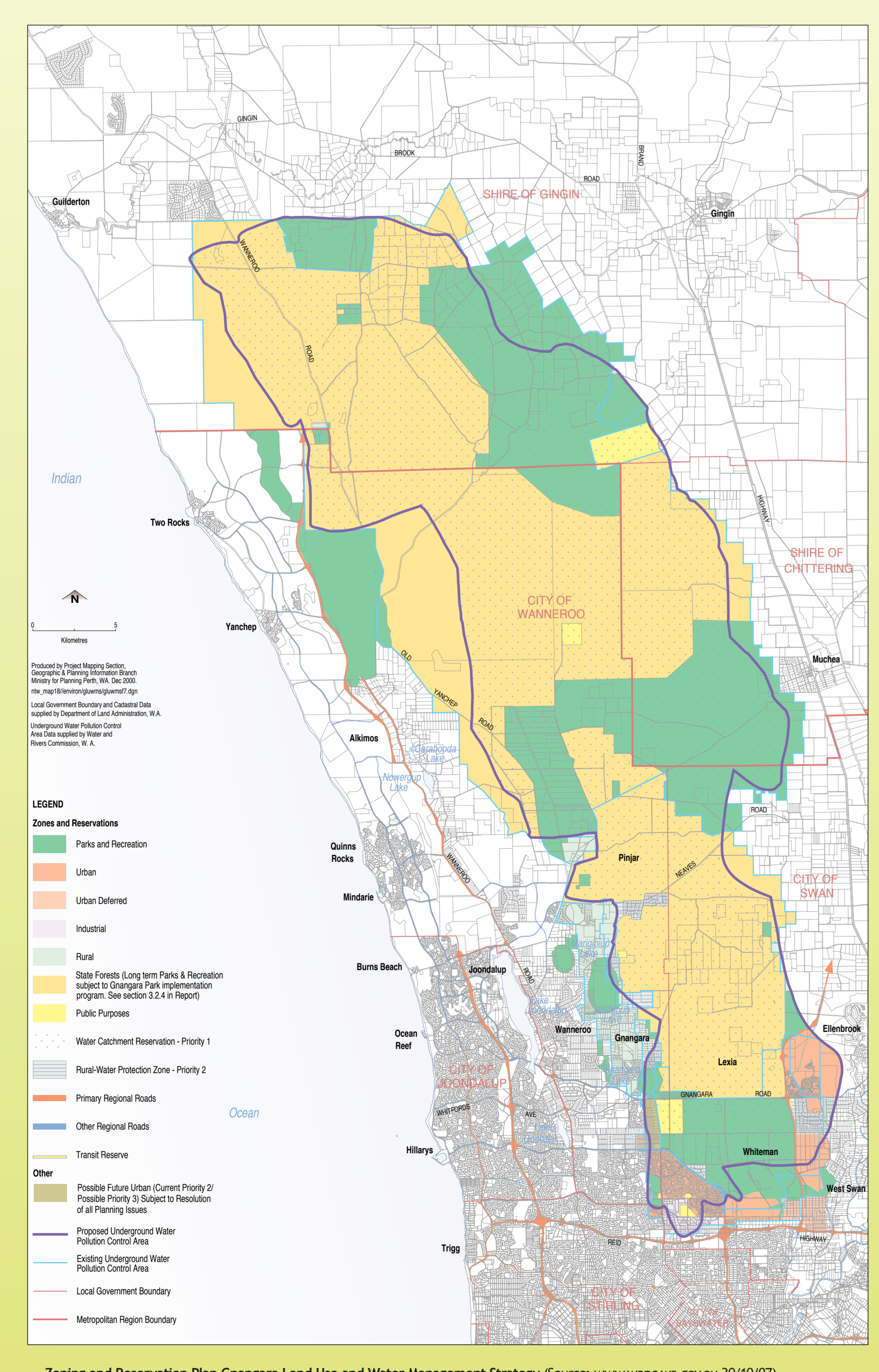
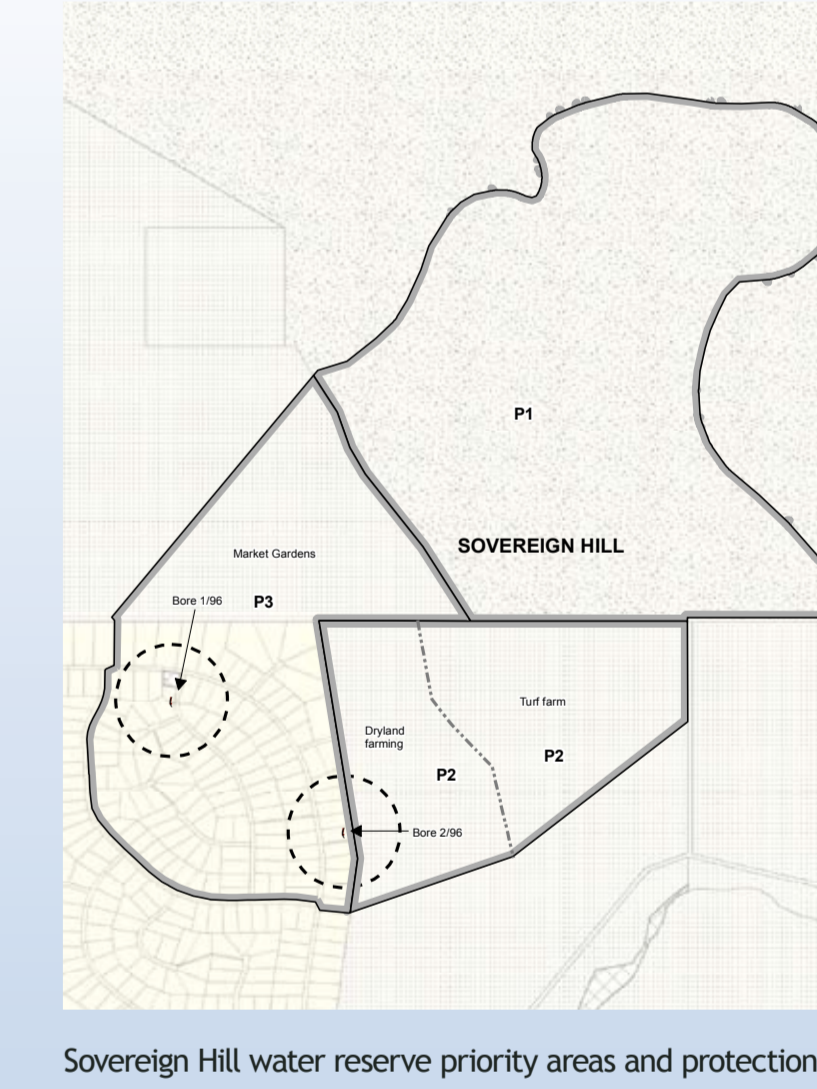


Protecting Public Drinking Water Source Areas

The Department of Water implements the ADWG with a state-wide program for protecting PDWSA. Drinking Water Source Protection Assessments and Plans provide an overview of a water source, its land uses and risks to water quality. Plans build upon the assessment documents. They propose recommendations and strategies to address water quality risks, and are produced in consultation with the public.

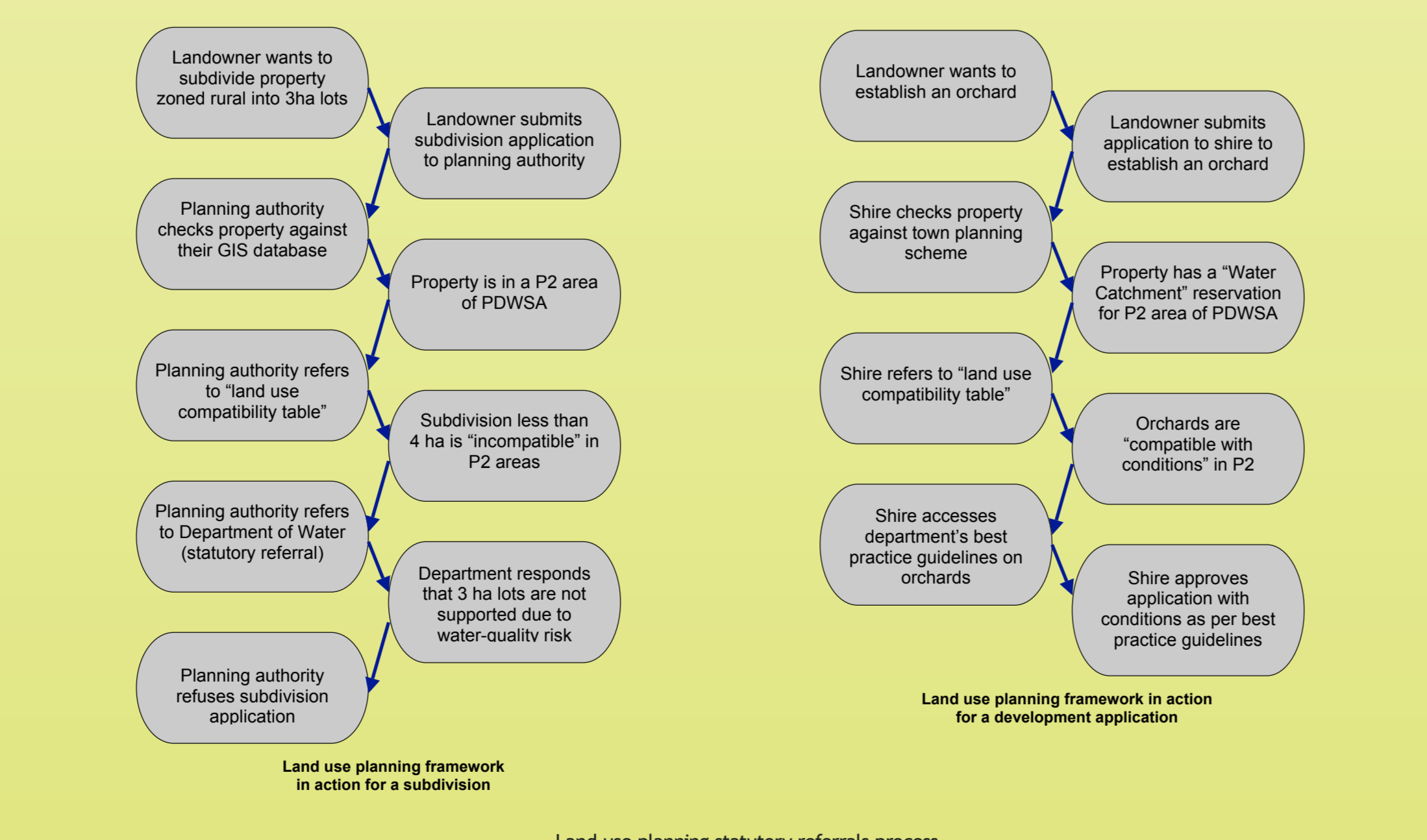
Priority Areas and Protection Zones
 Three different priority areas are declared within PDWSA:
 • Priority 1 (P1) areas are managed for risk avoidance.
 • Priority 2 (P2) areas are operated under the principle of risk minimisation.
 • Priority 3 (P3) areas are defined for risk management.

Protection zones are defined around groundwater bores that supply public drinking water. These are known as wellhead protection zones and are recognised within legislation. Priority areas and protection zones are determined through the DWSP for the particular drinking water source.



Land-use Planning

Good land use planning is essential for the protection of groundwater and relies on a solid decision-making framework for future developments. State-wide planning policies ensure that planning schemes and strategies identify PDWSA as special control areas, thus ensuring their protection by shaping land-use decisions. The Department's water quality protection note - *Land use compatibility in Public Drinking Water Source Areas* guides land use planning decision makers on activities that are considered "acceptable", "compatible with conditions" or "incompatible" within each of the priority areas (P1, P2 or P3) according to their level of water quality risk.



Challenges

Climate Change
 • WA is expected to increase its population from about 2 million people in 2007 to approximately 2.8 million people in 2030.
 • The Indian Ocean Climate Initiative predicts more hot days and less winter rainfall in the southern part of WA, where over 90% of the population resides.

These trends point to further decreases in groundwater recharge and significant increases in water use for WA.

Water Law Reform
 Due to the importance of water, a greater recognition is required for its economic, social and environmental value as well as finding ways to use it more efficiently and effectively. The WA Government is helping to achieve this through the proposed water law reforms. The reform has recently been given greater urgency and direction with WA's signing of the National Water Initiative in April 2006.

