Strategic Water Policy and Planning in Queensland, Australia

10th International River*symposium* and Environmental Flow Conference
***3-6* September 2007**

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Department of Natural Resources and Water

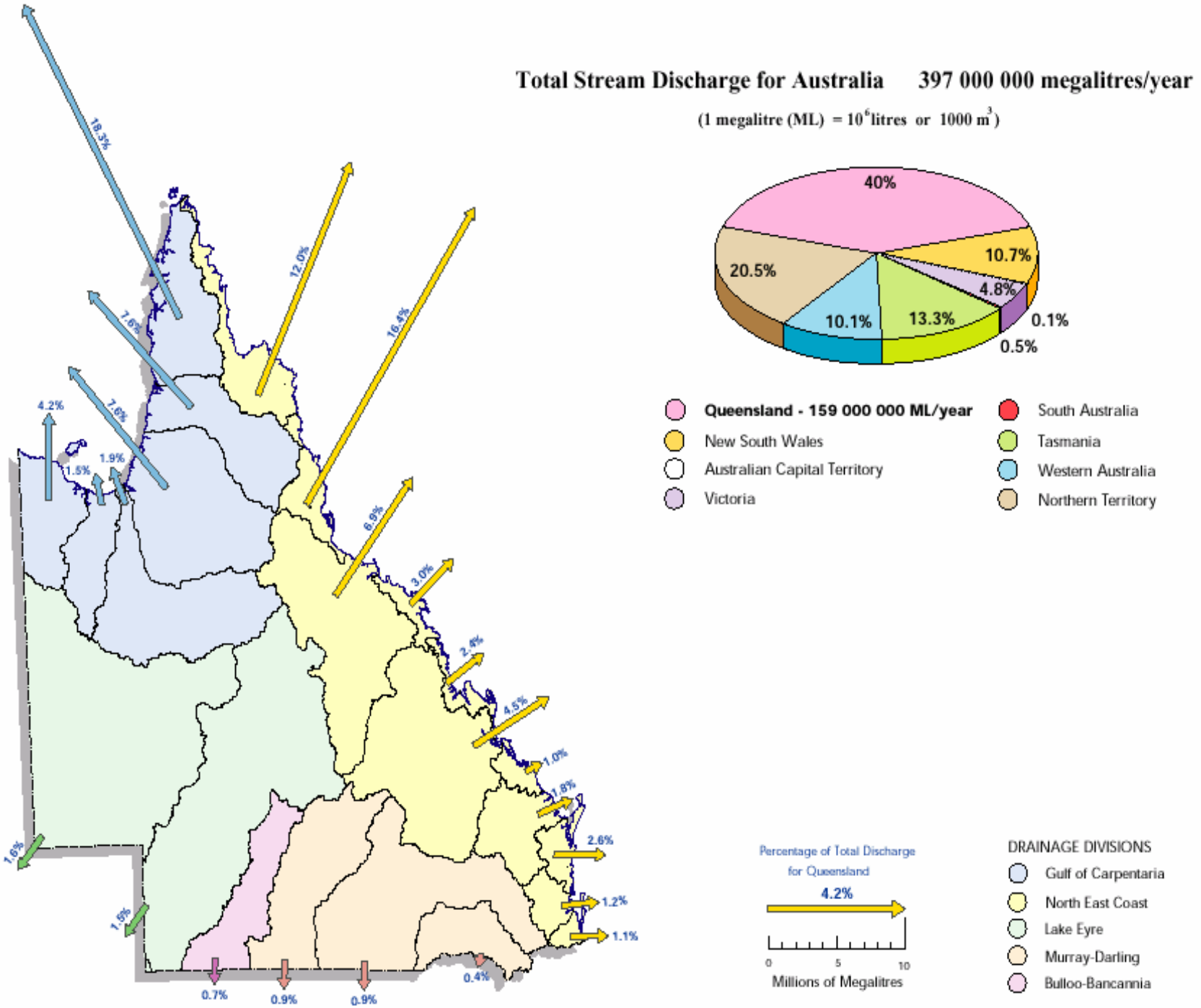
Presentation

1. Provide an overview of the strategic water policy and planning issues and initiatives in Queensland

2. Discuss key strategies and actions under the Queensland Water Plan 2005-2010

3. Introduce some challenges and work in progress


Great Barrier Reef
Darwin
Cairns
Northern Territory
Townsville
Australia
Alice Springs
Queensland
Western Australia
Brisbane
South Australia
New South Wales
Sydney
Canberra
Perth
Adelaide
Victoria
Melbourne
Tasmania
Hobart


Total Stream Discharge for Australia 397 000 000 megalitres/year
(1 megalitre (ML) = 10^6 litres or 1000 m^3)
40%
10.7%
4.8%
0.1%
0.5%
13.3%
10.1%
20.5%
Queensland - 159 000 000 ML/year
New South Wales
Australian Capital Territory
Victoria
South Australia
Tasmania
Western Australia
Northern Territory
18.3%
12.0%
16.4%
7.6%
7.6%
4.2%
1.5%
1.9%
8.9%
3.0%
2.4%
4.5%
1.0%
1.8%
2.6%
1.2%
1.1%
1.6%
1.5%
0.7%
0.9%
0.9%
0.4%
Percentage of Total Discharge for Queensland
4.2%
0
5
10
Millions of Megalitres
DRAINAGE DIVISIONS
Gulf of Carpentaria
North East Coast
Lake Eyre
Murray-Darling
Bulloo-Bancannia

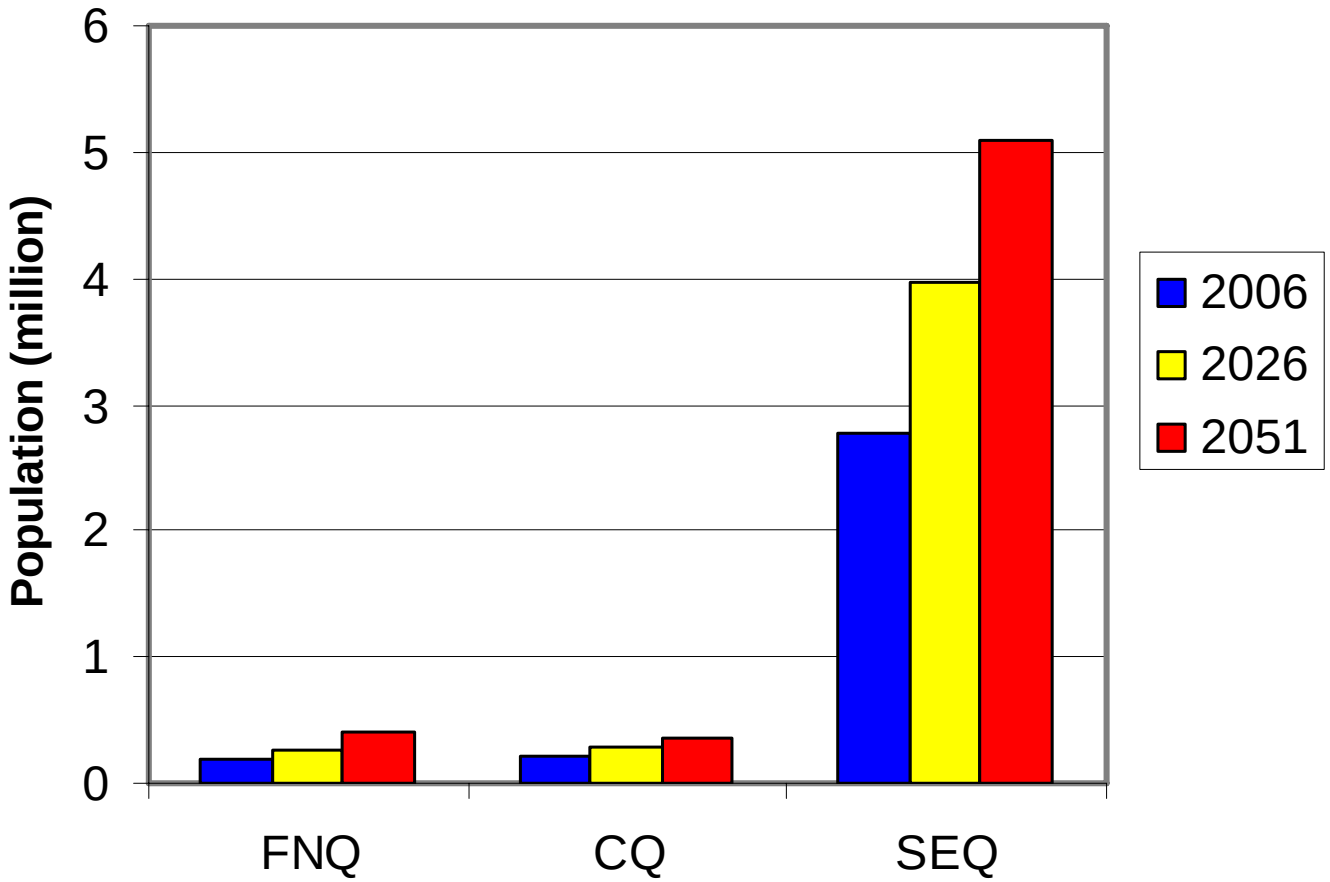
Queensland's Water Account Summary (2004-05)

- 8,000 GL was extracted from the environment (rainfall was 866,000 GL and runoff was 93,000 GL)
- 4,400 GL was actually consumed
  - agriculture industry - 67%
  - households - 11%
  - water supply and sewerage services industry - 10%
  - manufacturing, mining, electricity/gas and other industries - 12%
- 76% of use was from surface water, with the remaining being groundwater
- 45 GL of reuse water
  - parks/sporting fields - 15 GL
  - agriculture industry - 10 GL
- 168 permanent trades – 20 GL
- 1,874 temporary trades – 194 GL

Queensland's current water sector challenges

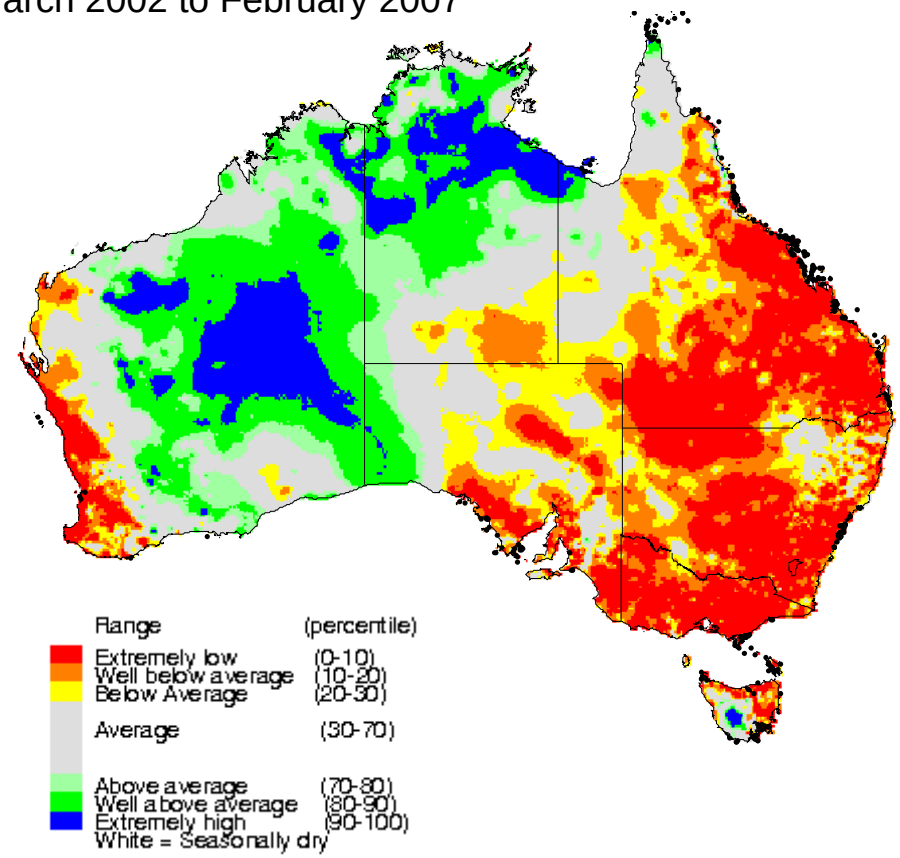
- Expanding population and economy: increasing urban, industrial and rural water demands
- Worst drought in recorded history in many parts of the State
- Emerging climate change and its impacts
- Sustainable water resource development and management
- Regional planning and coordination of water services

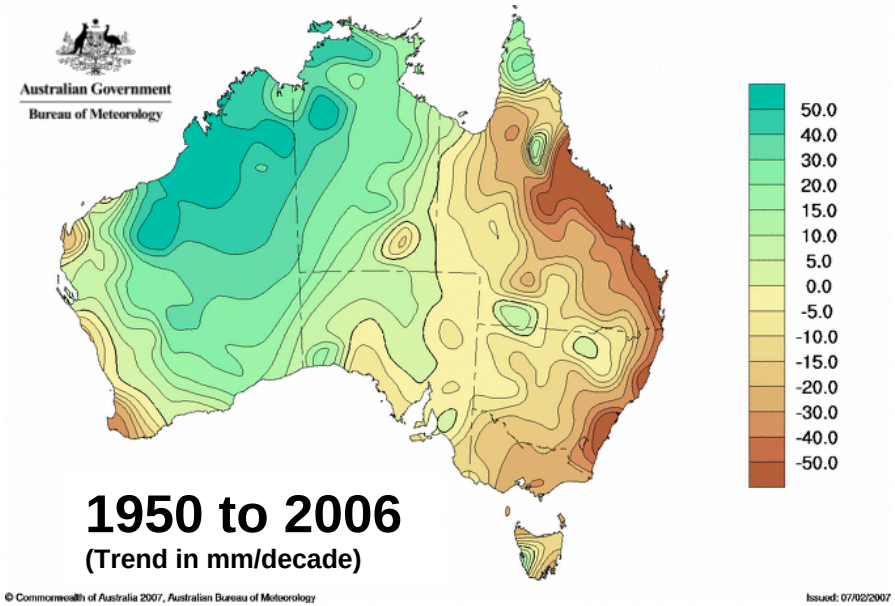
Growth in Regional Queensland

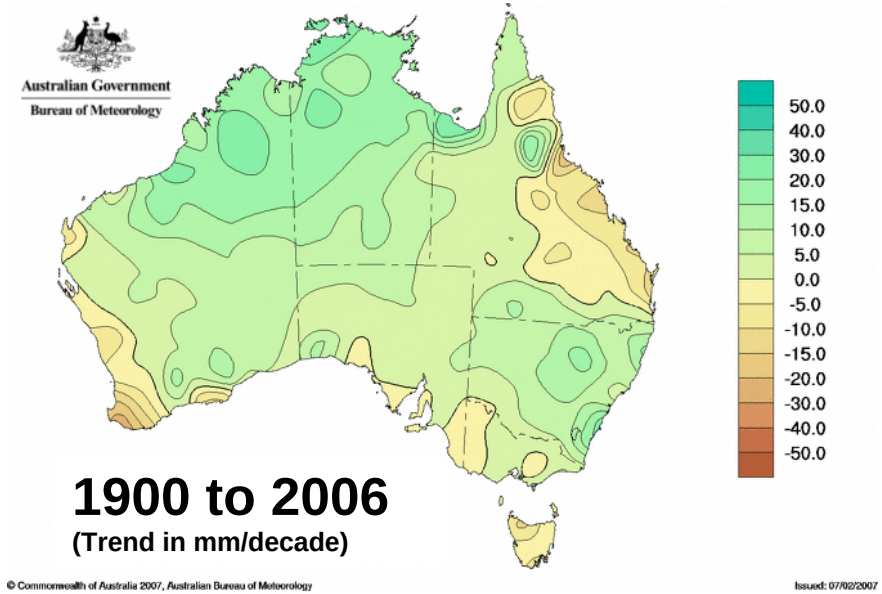


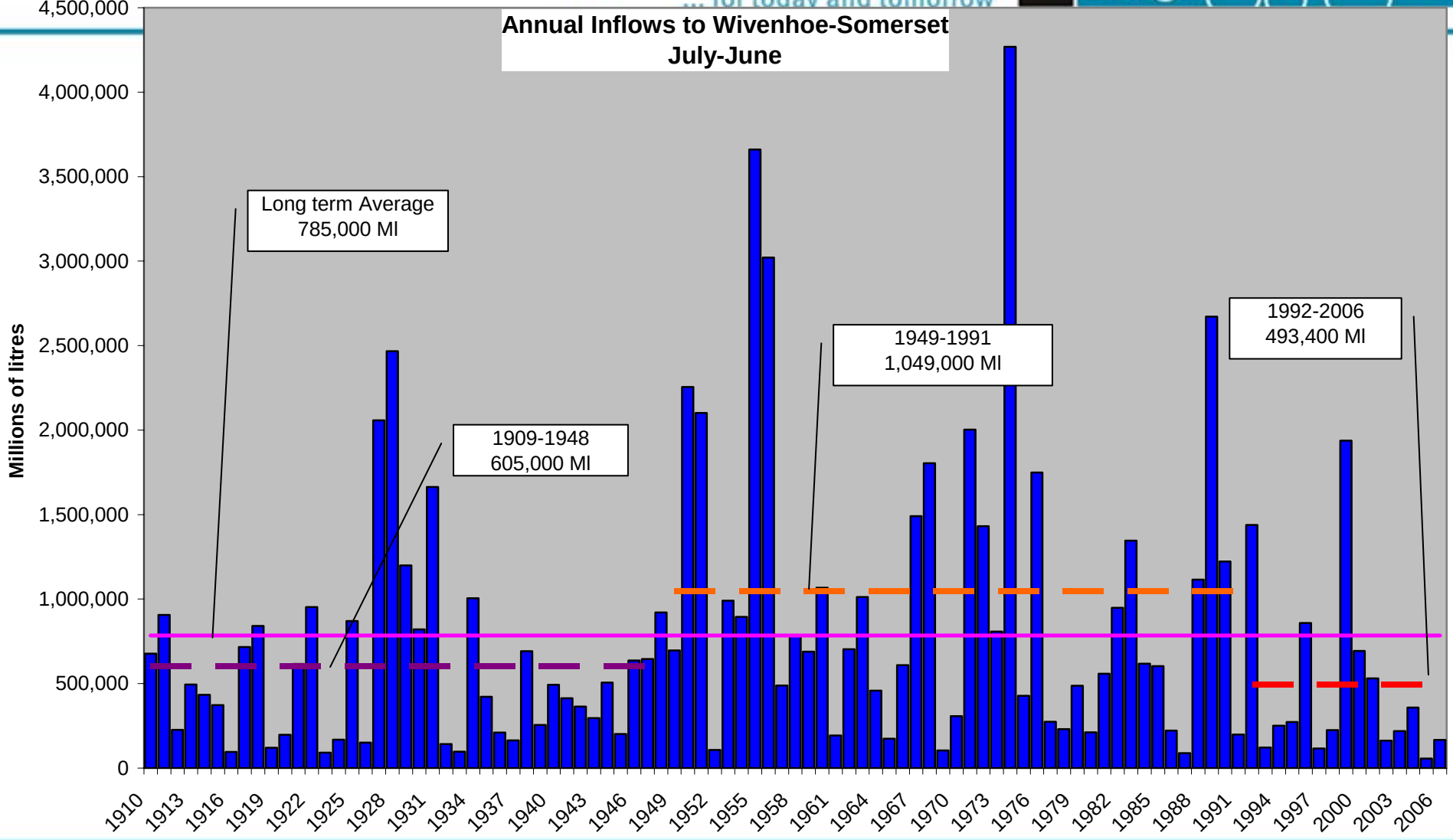
Recent rainfall & trends.

Rainfall relative to Historical Records
March 2002 to February 2007

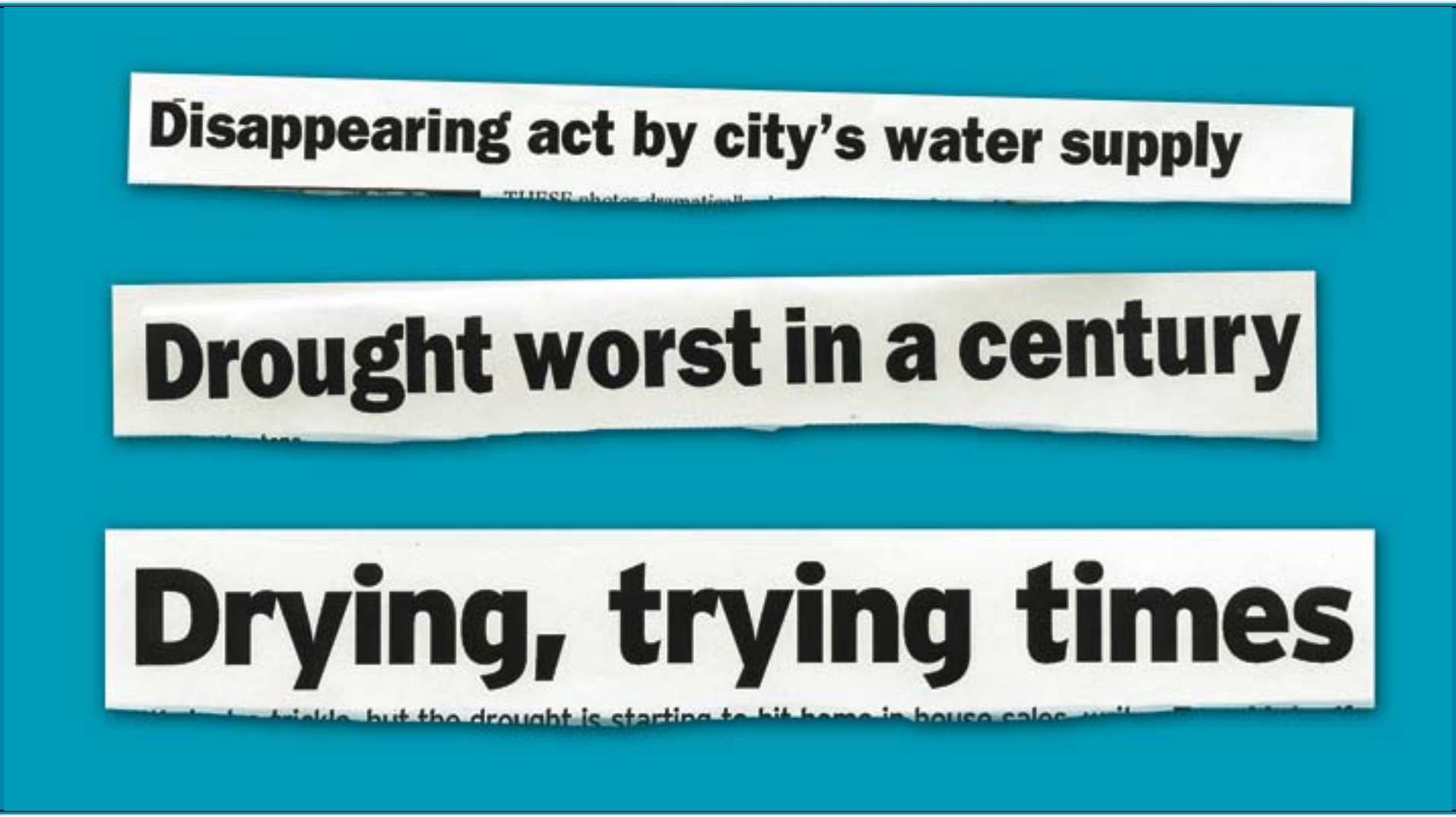








Data source: Department of Natural Resources & Water
Prepared by: Queensland Climate Change Centre of Excellence 2007


Disappearing act by city's water supply
Drought worst in a century
Drying, trying times

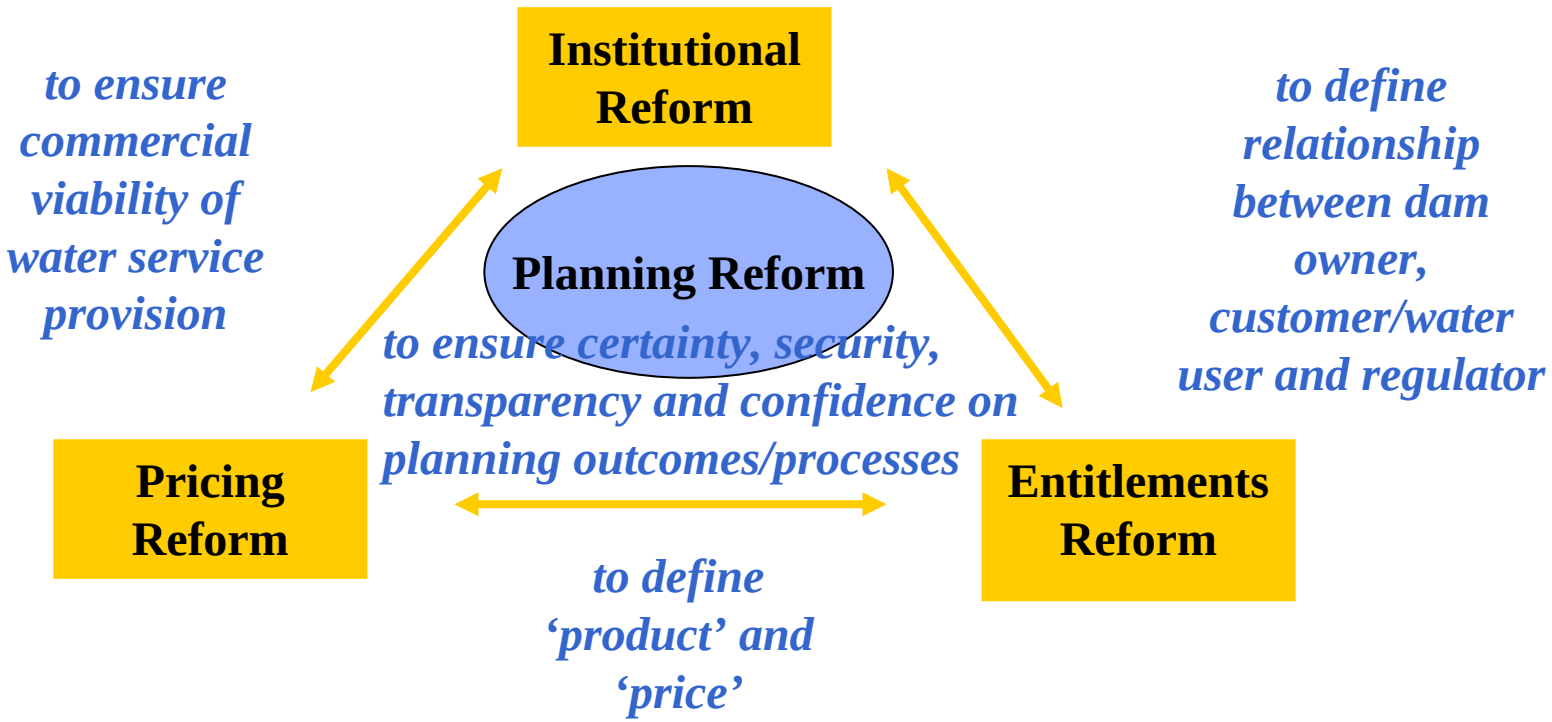
Towards more sustainable water industry

- Council of Australian Governments (COAG) Water Reform Framework - 1994
- Water Act 2000
- National Water Initiative (NWI) - 2004
- Queensland Water Plan 2005-2010
- Other National Policies – e.g. National Plan for Water Security 2007 (NPWS)

COAG Water Reform Framework 1994
National Water Initiative (NWI) 2004

- Water Access Entitlements and Planning Frameworks
- Water Markets and Trading
- Best Practice Water Pricing
- Integrated Management of Water for Environmental and Other Public Benefit Outcomes
- Water Resource Accounting
- Urban Water Reform
- Knowledge and Capacity Building
- Community partnerships and Adjustment

Water Reform Approach in Queensland



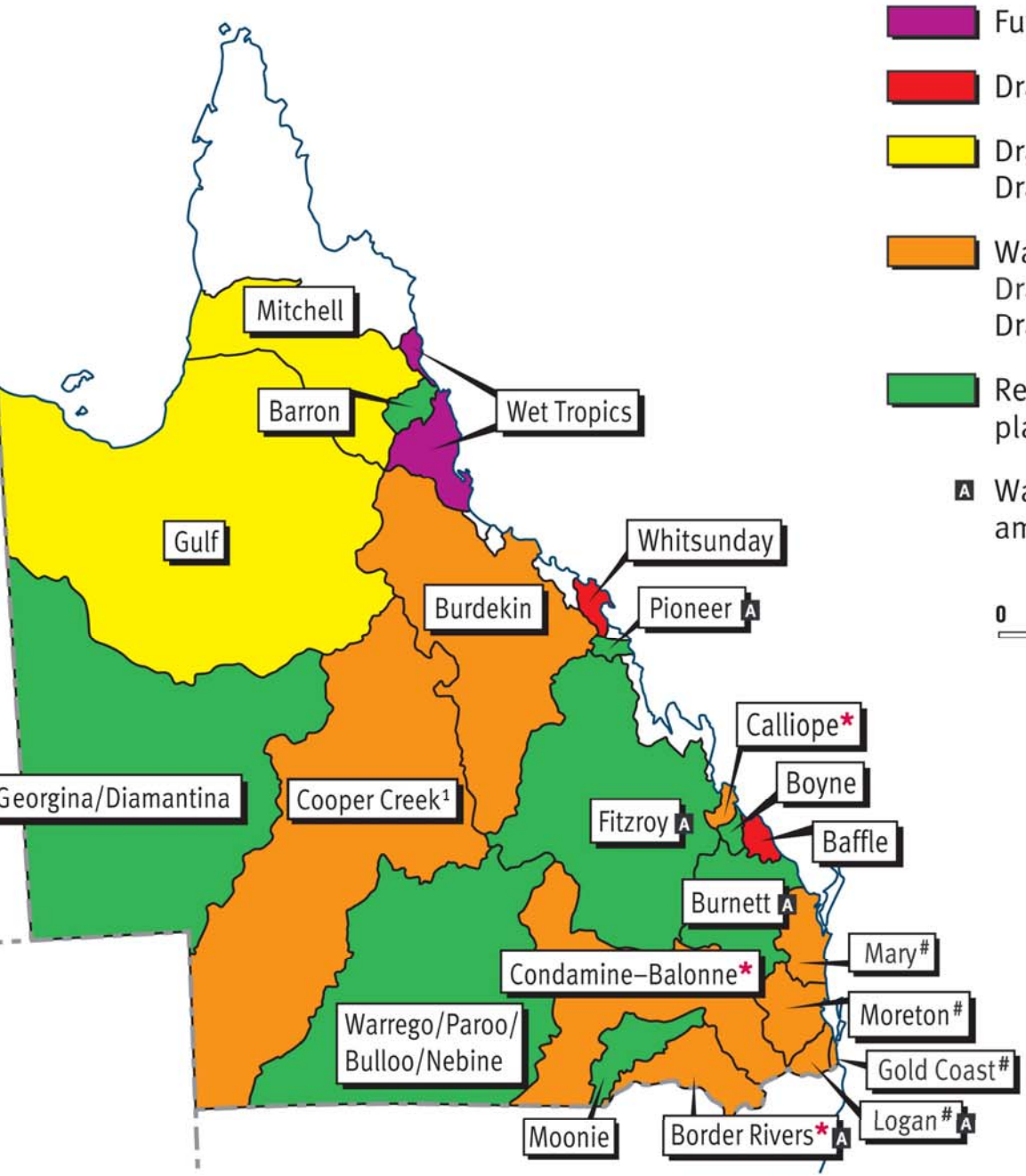
Queensland Water Plan 2005-2010

An integrated package of 7 strategies:

- Securing water for the environment and for users
- Planning for future water needs
- Smarter use of existing supplies
- Pricing water for sustainability
- Protecting water quality
- Compliance to protect users and the environment
- Investing in science and technology

Strategy 1: Securing water for the environment and users - Water Resource Planning Process

- Water Resource Plan (WRP) defines total water availability in a basin and then it defines what water is to be provided for environmental outcomes and what water is available for human needs
- Resource Operations Plan (ROP) defines how the WRP is to be implemented



Future planning activities proposed

Draft water resource plan in preparation

Draft water resource plan released
Draft resource operations plan in preparation

Water resource plan finalised
Draft resource operations plan in preparation#
Draft resource operations plan released*

Resource operations plan finalised—Water resource plan implemented

A Water resource plan or resource operations plan amendment under way

0 400
Kilometres

[1] A resources operations plan is not required for Cooper Creek.

Queensland Government
Natural Resources and Water

Water resource planning

Locality plan of activities

Current status – August 2007

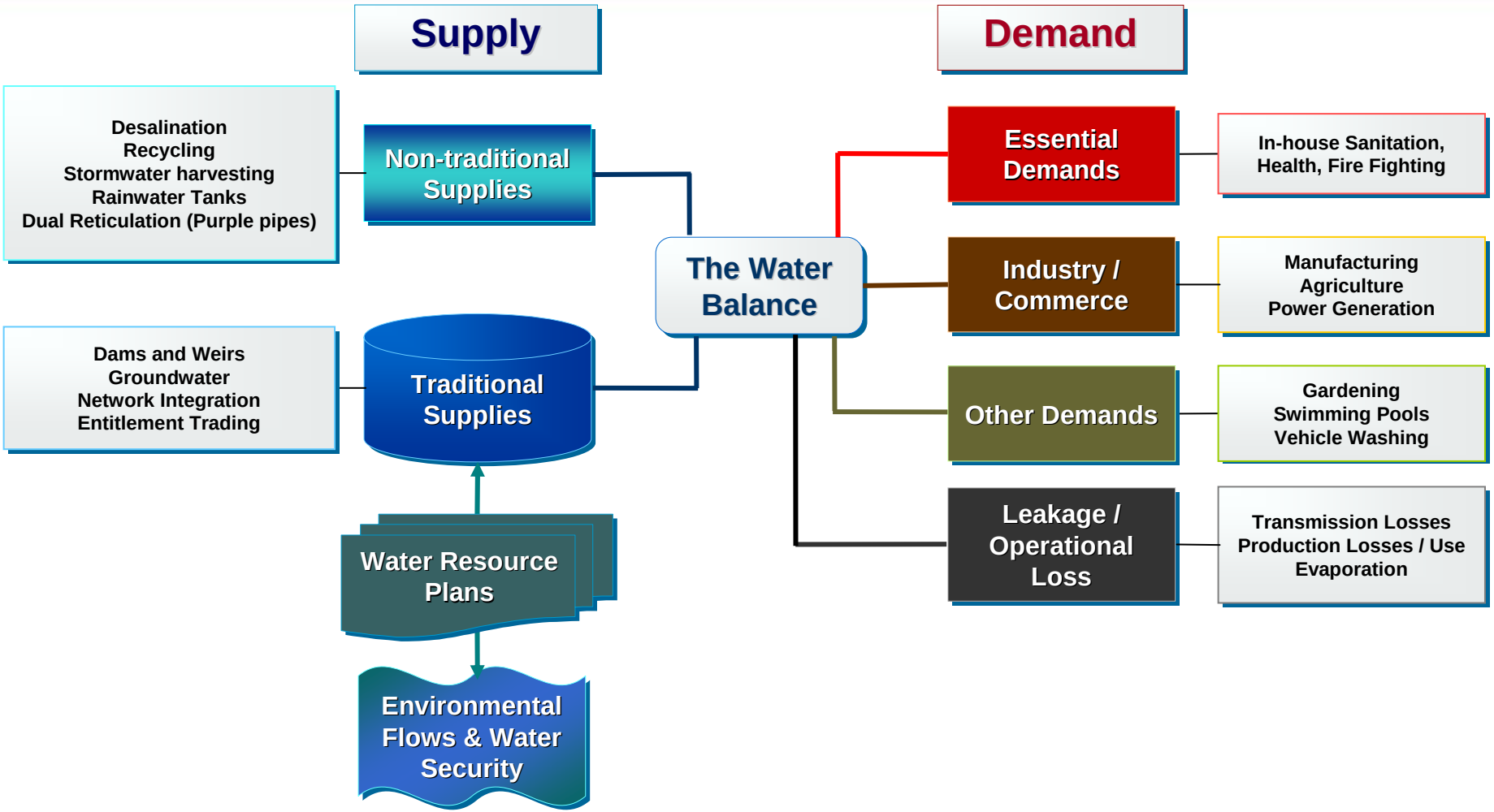
Wild Rivers Policy and Legislation

- *Wild Rivers Act 2005* – framework to declare rivers with high natural values as *wild rivers,* the first of its type in Australia
- Declaration itself does not regulate or prohibit activities – through existing acts
- Provides comprehensive policy for preservation of natural values of rivers in Qld - a coordinated approach
- A process of nominating and declaring wild rivers underway (6 rivers declared to date, mostly in North Queensland)

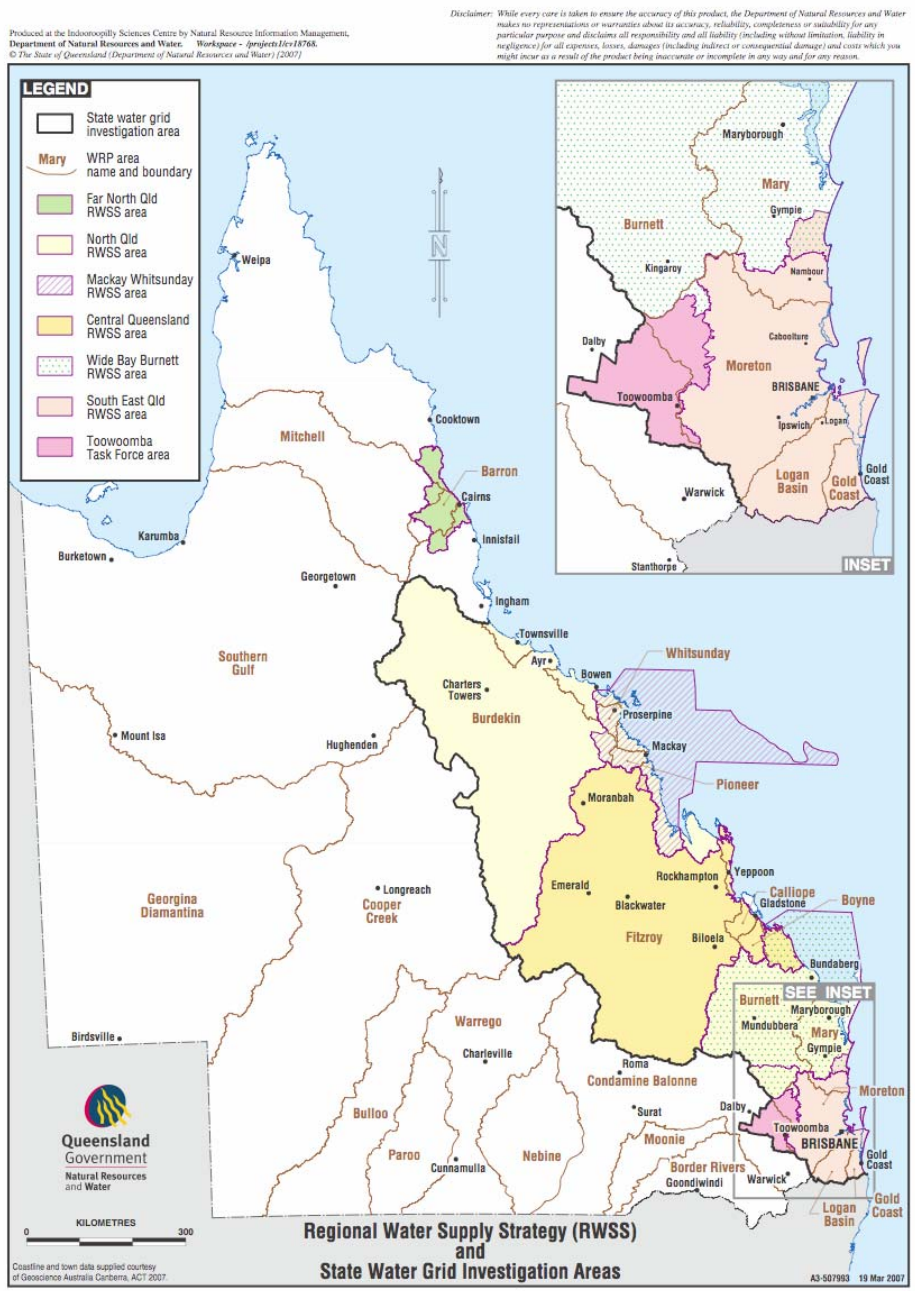
Strategy 2: Planning for Future Water Needs - Regional Water Supply Strategies

Three pronged planning hierarchy:

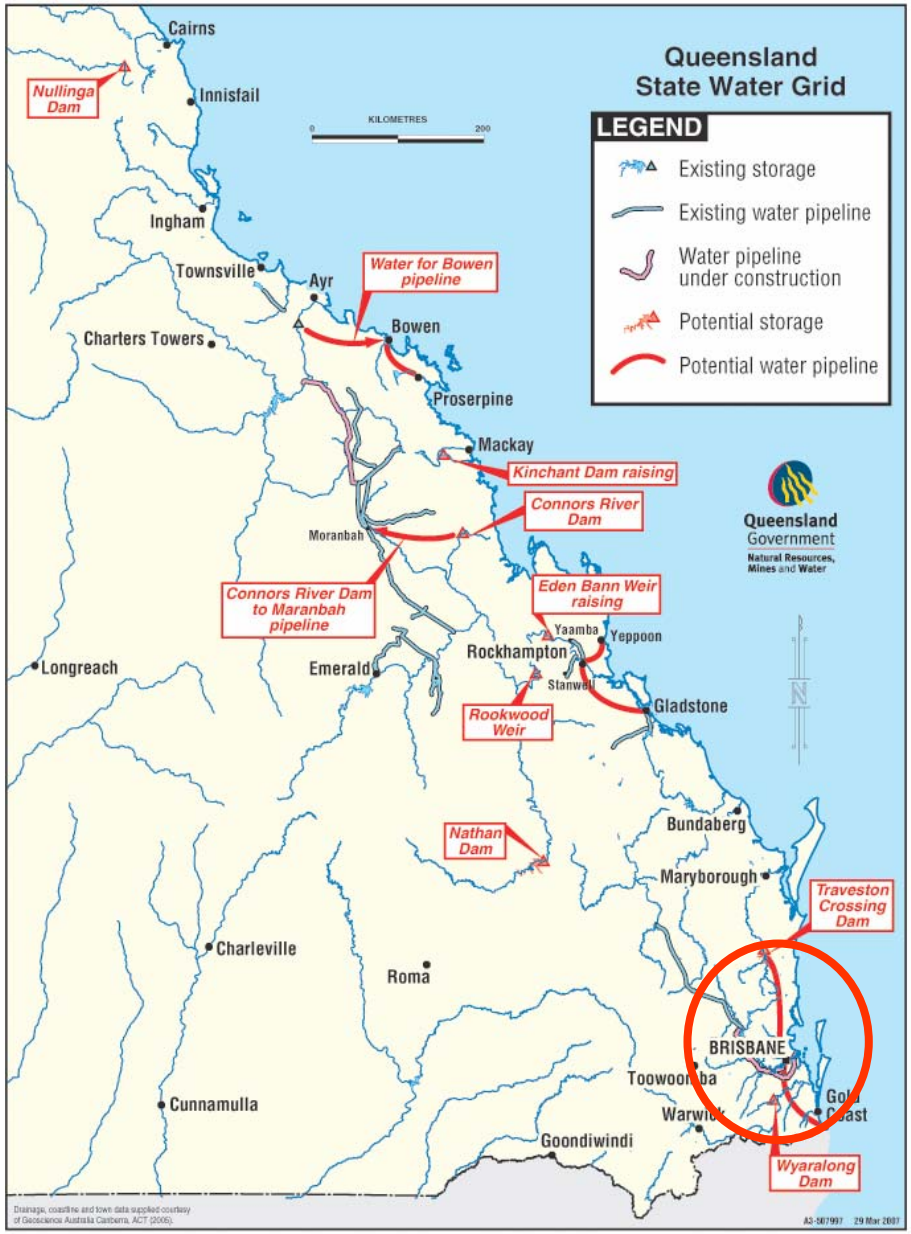
1. High value and best use of water
   - Improved specification and security of existing water entitlements
   - Water trading/markets
2. Efficient use of water
   - Reduce, reuse, recycle
   - Fit for purpose use of water
3. Develop additional water supply
   - Least cost new water infrastructure
   - Diversification of supplies


Supply
Demand
Desalination
Recycling
Stormwater harvesting
Rainwater Tanks
Dual Reticulation (Purple pipes)
Non-traditional Supplies
Dams and Weirs
Groundwater
Network Integration
Entitlement Trading
Traditional Supplies
Water Resource Plans
Environmental Flows & Water Security
The Water Balance
Essential Demands
In-house Sanitation, Health, Fire Fighting
Industry / Commerce
Manufacturing
Agriculture
Power Generation
Other Demands
Gardening
Swimming Pools
Vehicle Washing
Leakage / Operational Loss
Transmission Losses
Production Losses / Use
Evaporation

Regional water supply planning



Statewide and SEQ Regional water grids:



Strategy 3: Smarter Use of Existing Supplies

- Reduced consumption targets
- Financial assistance for local government infrastructure
- Rural Water Use Efficiency Program
- Reduce, re-use and recycle water
- Better use and management of groundwater (including Great Artesian Basin Sustainability Initiative)
- Water Sensitive Urban Design (WSUD)
- Pressure and leakage reduction

Demand management programs

1. Water restriction regimes – SEQ and elsewhere
2. Community education and behavioural change (e.g. Target 140 residential campaign)
3. Mandatory water efficiency (e.g. water efficiency management plans, usage audit)
4. Regulated efficiency (e.g. business water efficiency program, sustainable housing policy, water efficiency labelling scheme)
5. State funded programs (e.g. home WaterWise rebate scheme, home WaterWise service)

Policy and Institutional Reform

- The Queensland Government is streamlining the management of water delivery across SEQ and elsewhere
- Policy and legislation work underway to establish an updated asset management regulatory framework
- Policy and legislation work underway to establish a regulatory recycled water framework applicable to SEQ and the rest of the State
- Policy and legislation work underway to establish an Urban Demand Management Framework
- Work on a Strategy for Water Sensitive Urban Design

Strategy 4: Pricing Water for Sustainability

- Pricing of supplemented water to reflect the cost of supply
  - O&M and refurbishment only initially (lower bound)
  - Return on investment in infrastructure (upper bound)
- Water charges to recover the cost of planning and managing the resource in a sustainable manner
- Pricing to encourage water to be properly valued and therefore used more efficiently and productively
- Currently developing policy positions on urban water pricing including recycled water, storm water and wastewater
- Queensland Water Commission is providing advice in SEQ

Strategy 5: Protecting Water Quality

- Reef Water Quality Protection Plan to reduce pollution and protect the health of the Great Barrier Reef.
- Regional Natural Resource Management Plans and regional investment strategies as part of the National Action Plan for Salinity and Water Quality (NAP)
- The Healthy Waterways Initiative as part of the SEQ Regional Water Quality Management Strategy
- Environmental Protection (Water) Policy – environmental values, water quality objectives and guidelines, water quality improvement plans

Strategy 6 : Compliance to protect Users and the Environment

- State-wide Metering Program
- Regulation of water service providers to ensure they meet their service and safety obligations
- Water audits and publishing of water accounts
- Dam Safety regulation to minimise risk of infrastructure failure
- Departmental Compliance Unit

Strategy 7: Investing in Science and Technology

- Measuring and monitoring flows and quality of water – State-wide network of stream gauges and bores
- R&D to improve management and use of water and understanding of aquatic ecosystems
  - Departmental Science Group (NRSc)
  - CRC Irrigation Futures
  - eWater CRC
  - International collaboration (USA, UK, Singapore,…)
- Queensland Climate Change Centre of Excellence
- Urban Water Security Research Alliance

Some "Here & Now" Challenges - Work in Progress

- Resources and skills necessary for implementation of the strategies and reform agenda
- Developing improved water accounting systems
- Developing and implementing effective institutional, regulatory, and water market frameworks
- Implementing efficient pricing policies
- Processes to better integrate new knowledge into water planning and management

- More information on Queensland NRW activities from our Website
  - –www.nrw.qld.gov.au

Thank You!