



Review of Supply-Demand Options for South East Queensland

Presentation to Public Meeting

On behalf of the
Mary River Council of Mayors

**Institute for Sustainable Futures &
Cardno**

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***Director of the Institute for
Sustainable Futures***

***West End
30 March 2007***



Overview of presentation

- The study (aims and objectives)
- Overview of findings
- A revised strategy

(copies of these slides available at <http://www.isf.uts.edu.au/>)



The study - aims and objectives

- Review the supply-demand balance of the SEQ region
- Analyse the impact of the emergency drought response measures currently being implemented
- Review the potential for additional demand and supply options
- Assess options (using economic, social, environmental and risk indicators) and compare to the current SEQ strategy (building the Traveston Crossing scheme)
- Outline a preferred approach

Background - short and long-term planning

- SEQWRSS set-up to find long-term planning solution for SEQ (50 years)
- However, new situation - the drought
- Emergency legislation brought in for the drought - mixture of demand management, reuse and supply options
- Drought options based on program developed for long-term (includes some options only due to be completed by 2012)
- Traveston Crossing Dam (Stage 1 - 2012) included in the legislation, yet timing cannot assist current drought by the time the dam would fill (2014 at the earliest)

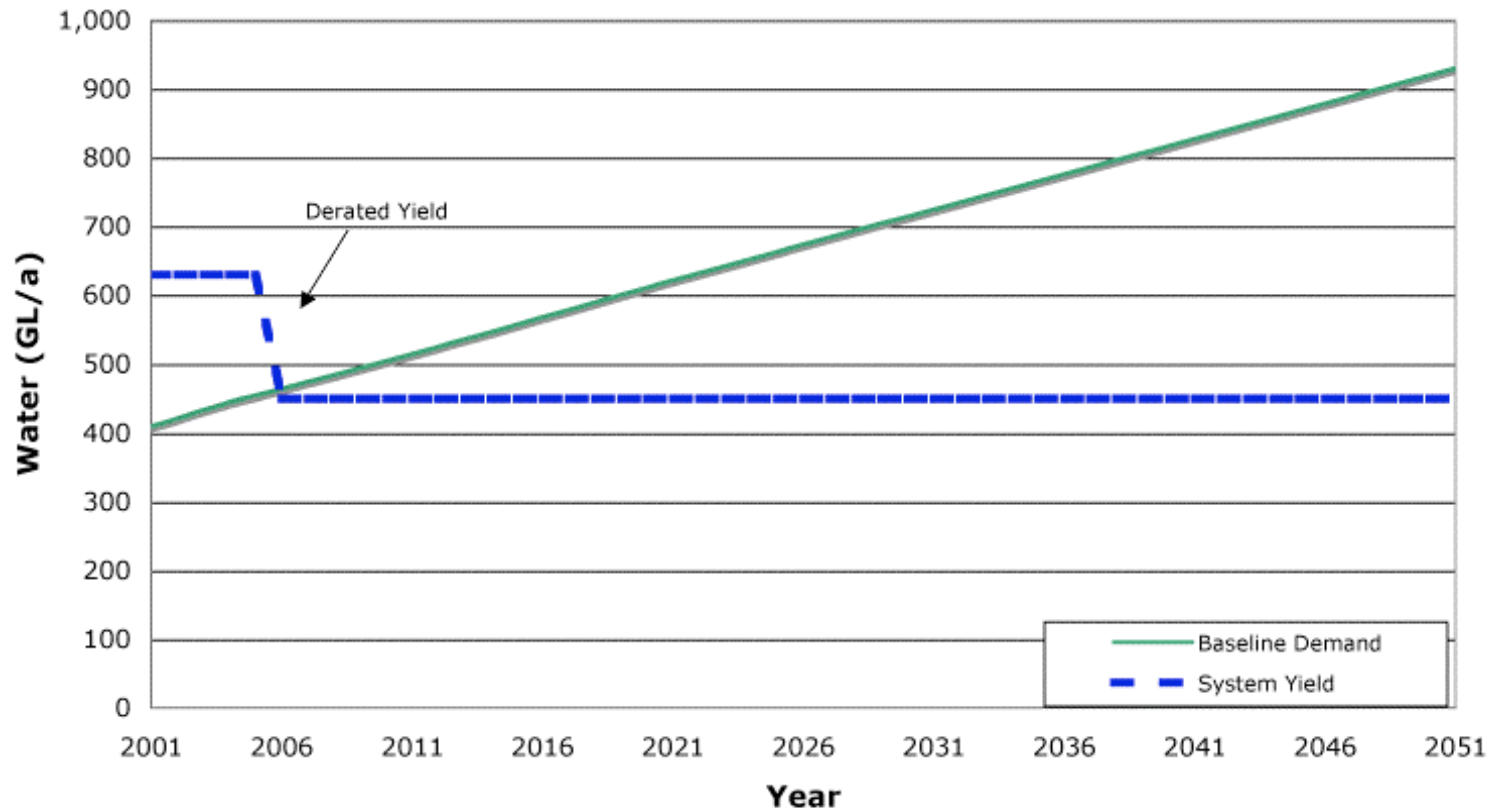
Timing - Traveston Crossing Stage 1 cannot assist the current drought

Findings - the current long-term supply-demand balance

- Current supply available - yield of system de-rated from 630 to 450 GL/a
 - A reduction of 180 GL/a, level-of-service not subject to discussion
- Water demand - 380 GL/a now and estimated to be 930 GL/a in 2050
 - 100 GL/a shift in 2050 demand estimate due to change in population projections
- Current residential demand assumed to be 300 litres/capita/day (LCD)
 - Limited available breakdown of water use in SEQ
 - Projections likely to be an overestimate (urban consolidation, more efficient appliances)
- Planning over 50 years
 - Estimates past 2020 are of limited use for forecasting, not a good basis for decision making and investment in large capital items

Supply-demand balance - systematic bias in estimates

Findings - the current long-term supply-demand balance



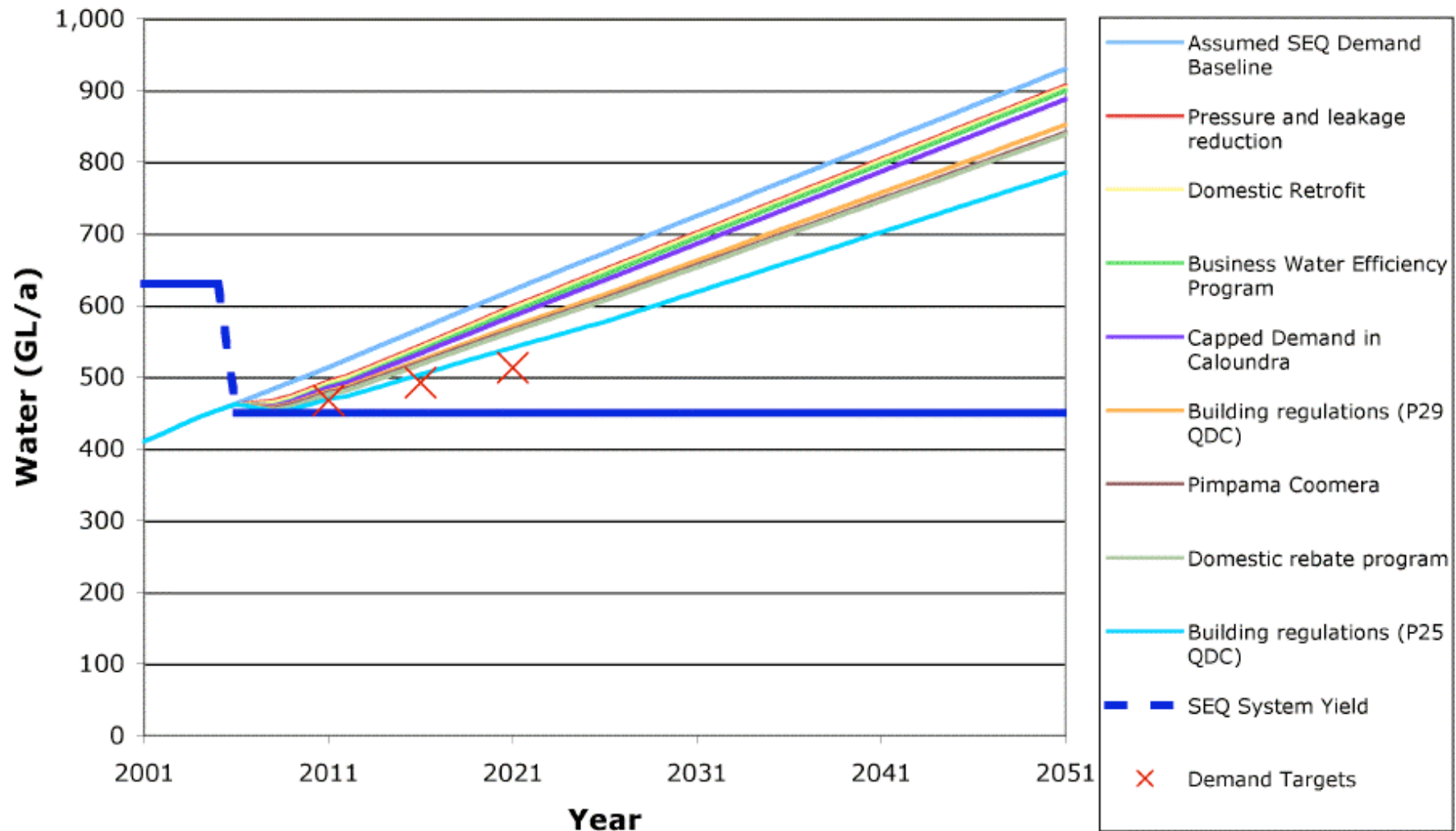
Supply-demand balance - systematic bias in estimates

Findings - SEQ proposed demand management

- Targets (residential sector only)
 - 270 LCD in 2010
 - 250 LCD in 2015
 - 230 LCD in 2020
- Demand management programs
 - Retrofits (\$22 M for an estimated 3 GL/a)
 - Rebates (\$29 M for an estimated 3 GL/a)
 - Regulations on new households - Qld Development Code Part 25 & 29, Pimpama Coomera, Caloundra (43 GL/a in 2020 and growing)
 - Business program (\$40 M for 7 GL/a)
 - Non revenue water - pressure and leakage (\$80 M for 22 GL/a)
- Current residential demand management program can be increased significantly
- Residential + business + non revenue water programs = close to targets

Targets - more can be achieved and at a lower unit cost

Findings - SEQ proposed demand management



Study findings – SEQ proposed supply

- **Current approach generally follows good practice**

Diverse portfolio of options

- demand management and
- mix of groundwater, re-commissioning, small supply, non-rainfed and reuse

- **A key exception**





The Traveston Crossing Scheme

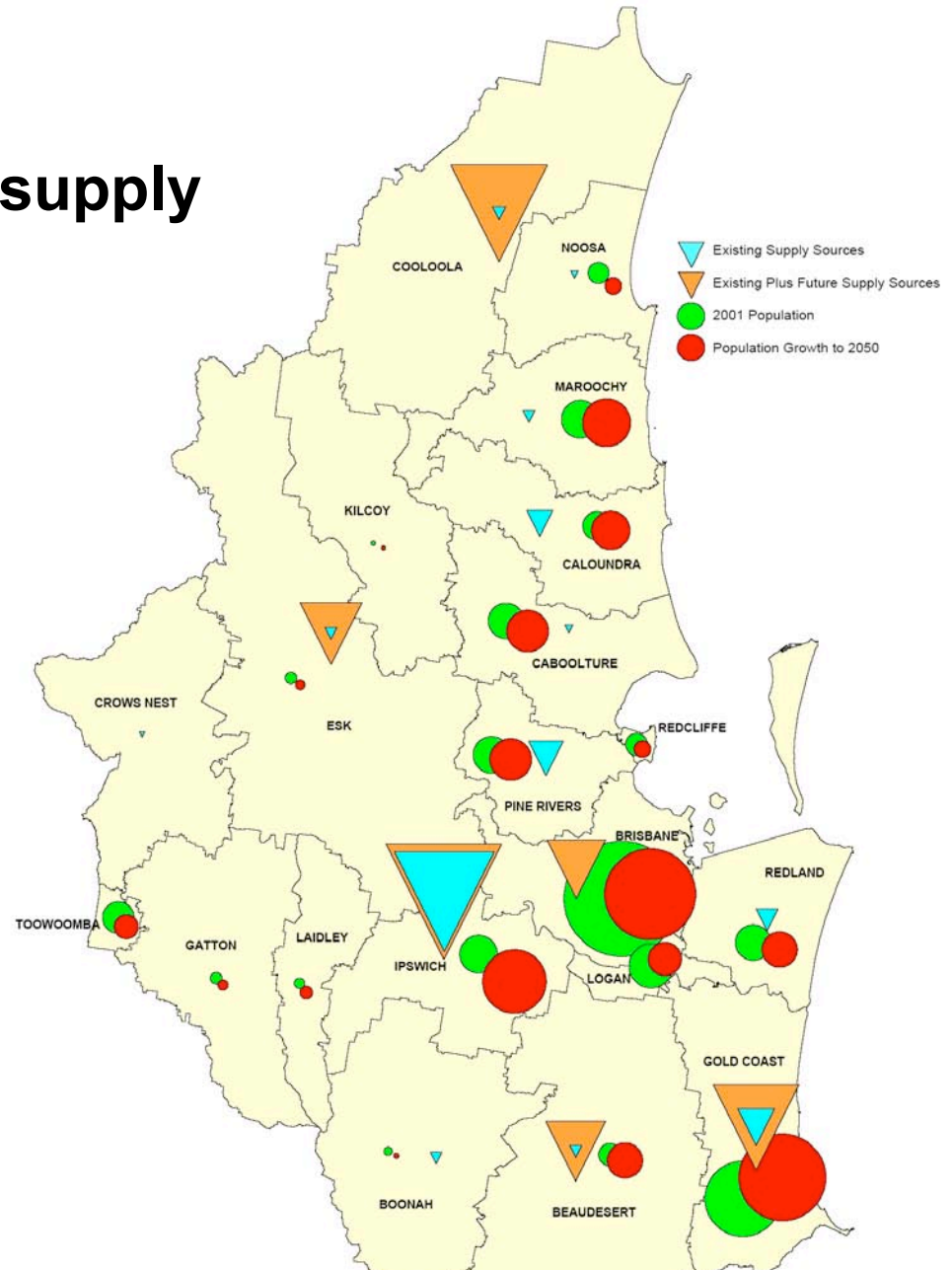
- cannot help in this drought
- is a high unit cost option
- high risk option (significant capital investment) with feasibility concerns
- has significant social and environmental impacts
- geographically disconnected from growth
- causes significant over investment in “excess yield”

Supply - Re-think Traveston Crossing Scheme for both short and long-term

Findings - SEQ proposed supply

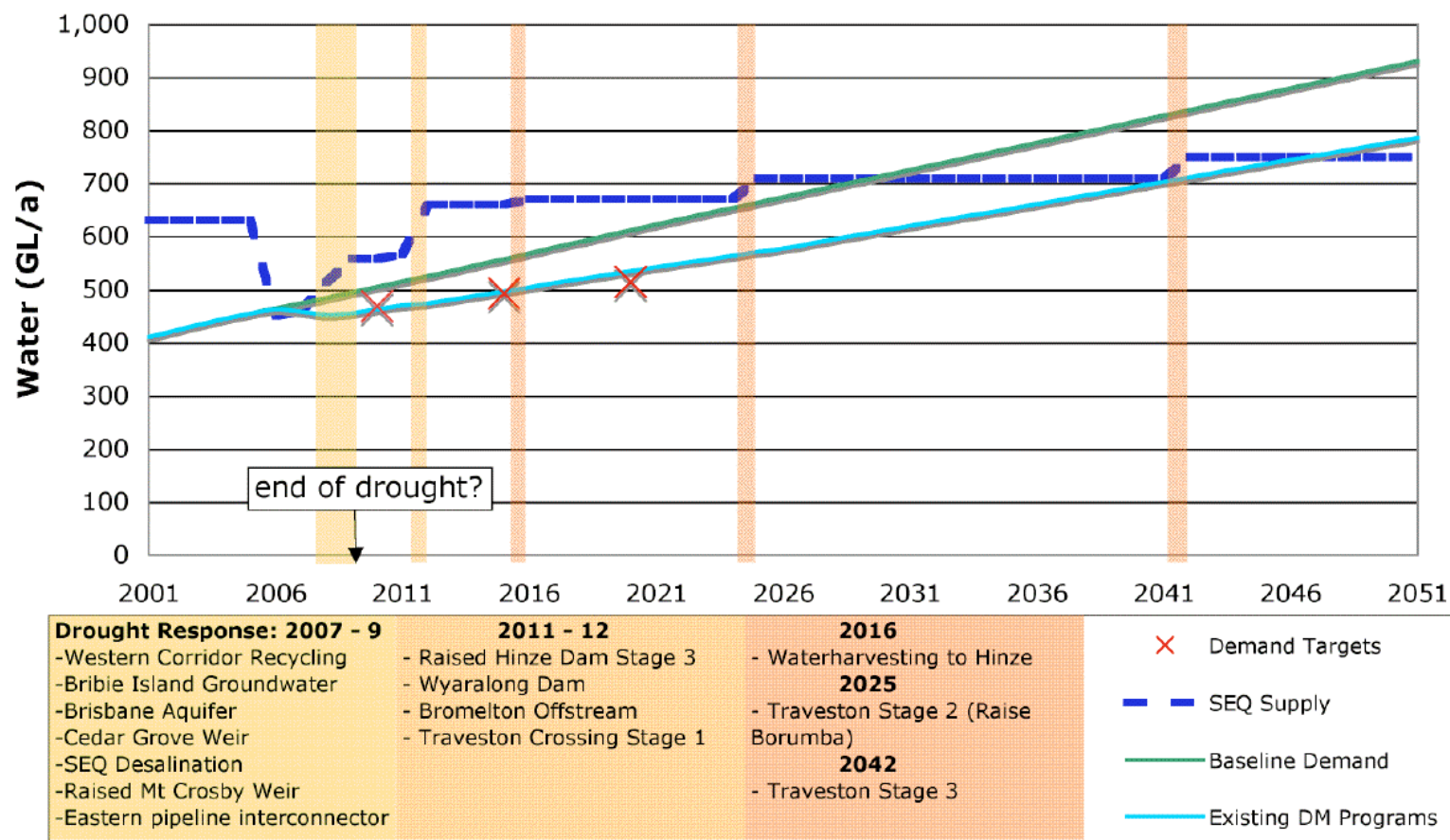
Geographical spread of available and SEQ proposed new supply versus population growth

-  EXISTING SUPPLY
-  EXISTING + PROPOSED (WATER FOR SEQ)
-  2001 POPULATION
-  POPULATION GROWTH TO 2050



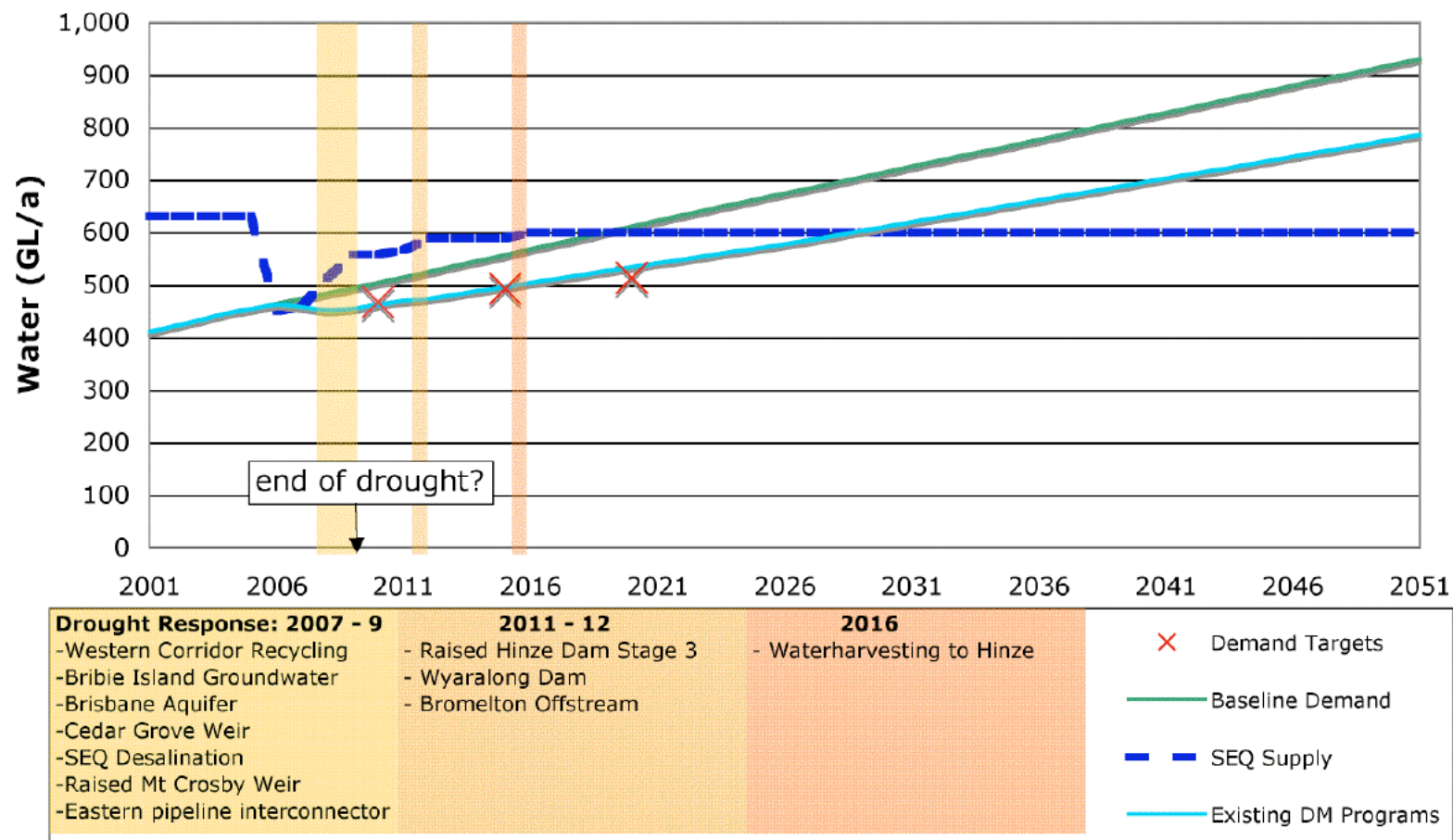
Proposed supply - Traveston Crossing far from major population growth

Findings - SEQ proposed supply-demand balance



SEQ proposed supply-demand balance - significant excess yield & over investment

Findings - SEQ balance (excluding the Traveston scheme)



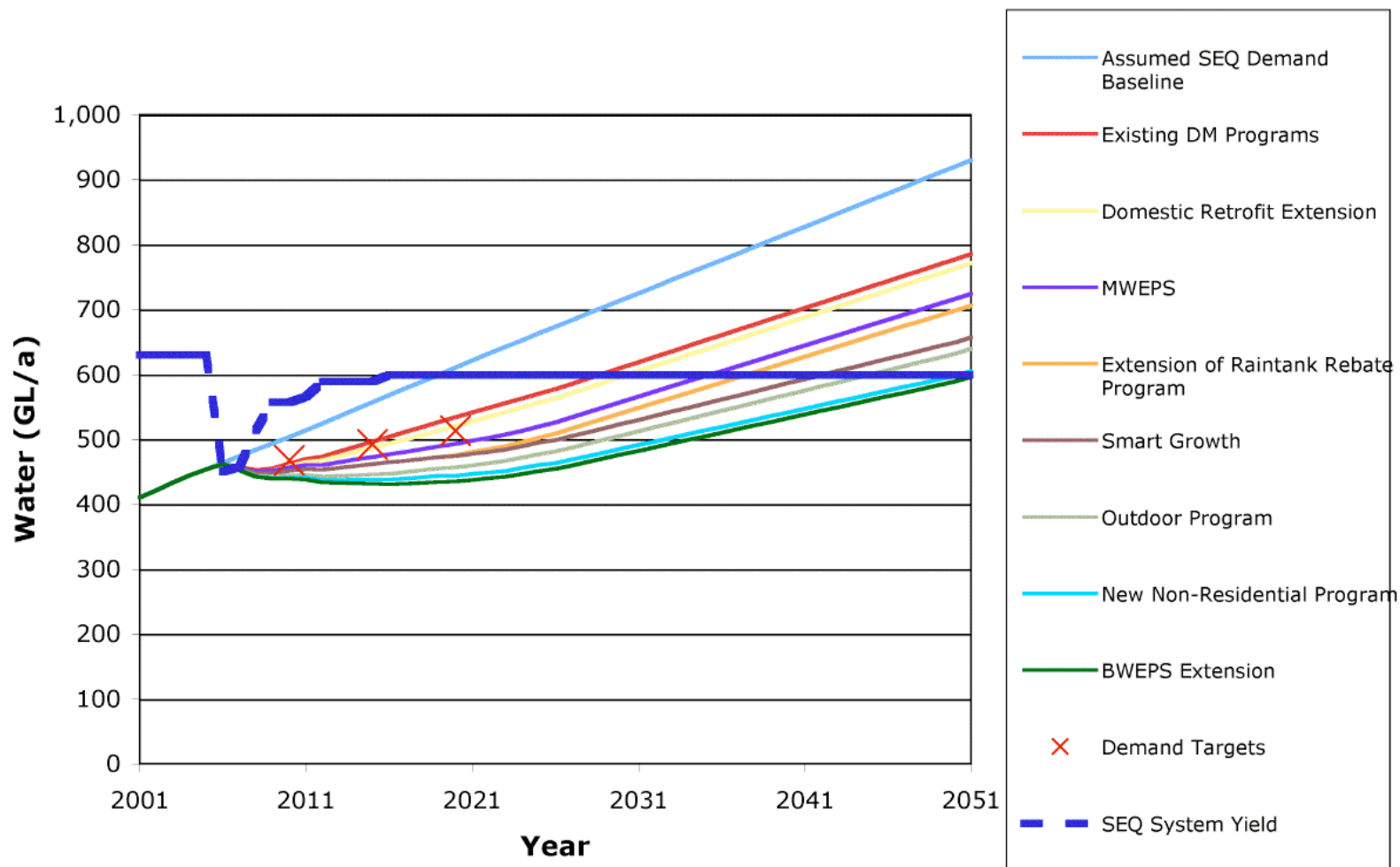
Removing Traveston Crossing - still maintain supply-demand balance out to 2030

A revised strategy - approach and considerations

- **Used Integrated Resource Planning approach to aid strategy development -**
 - **international best practice**
- **Considered:**
 - driver of demand - population growth
 - low unit cost options
 - diversity of options portfolio
 - short and long-term needs
 - readiness options
 - adaptive management
 - risk
 - social and environmental issues

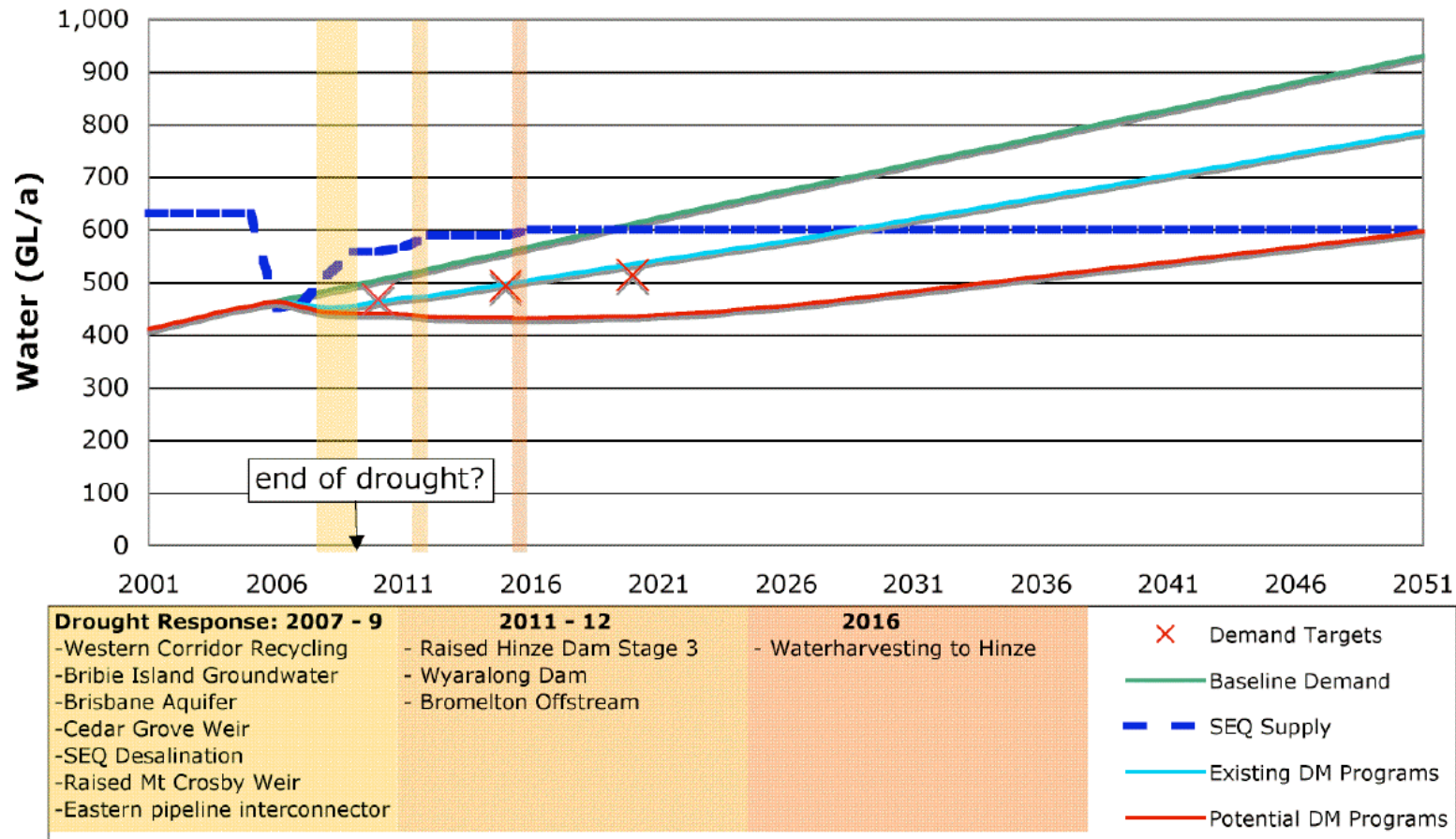


A revised strategy - new demand-side options



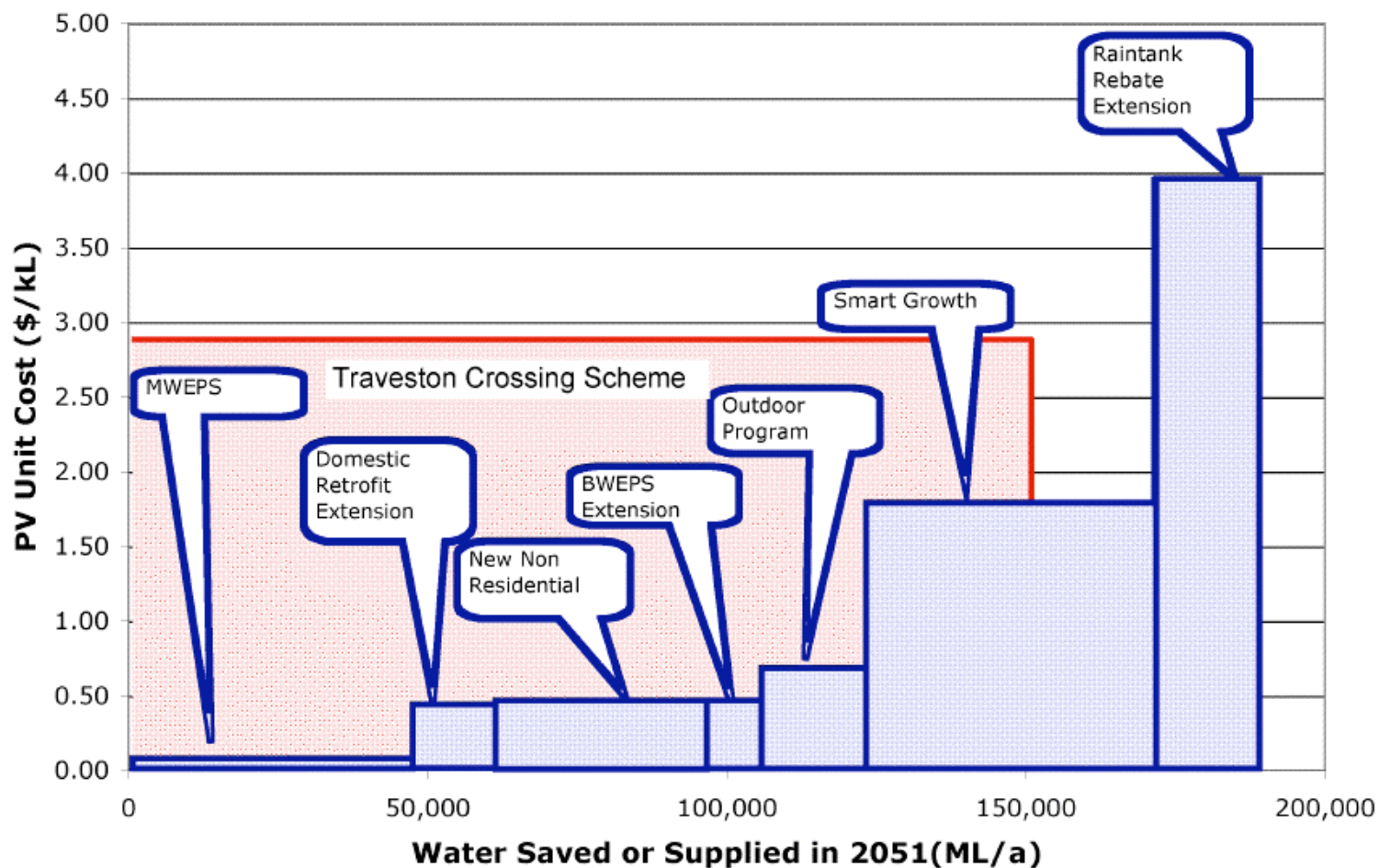
Significant potential to reduce demand in new and existing properties

A revised strategy - new demand-side options



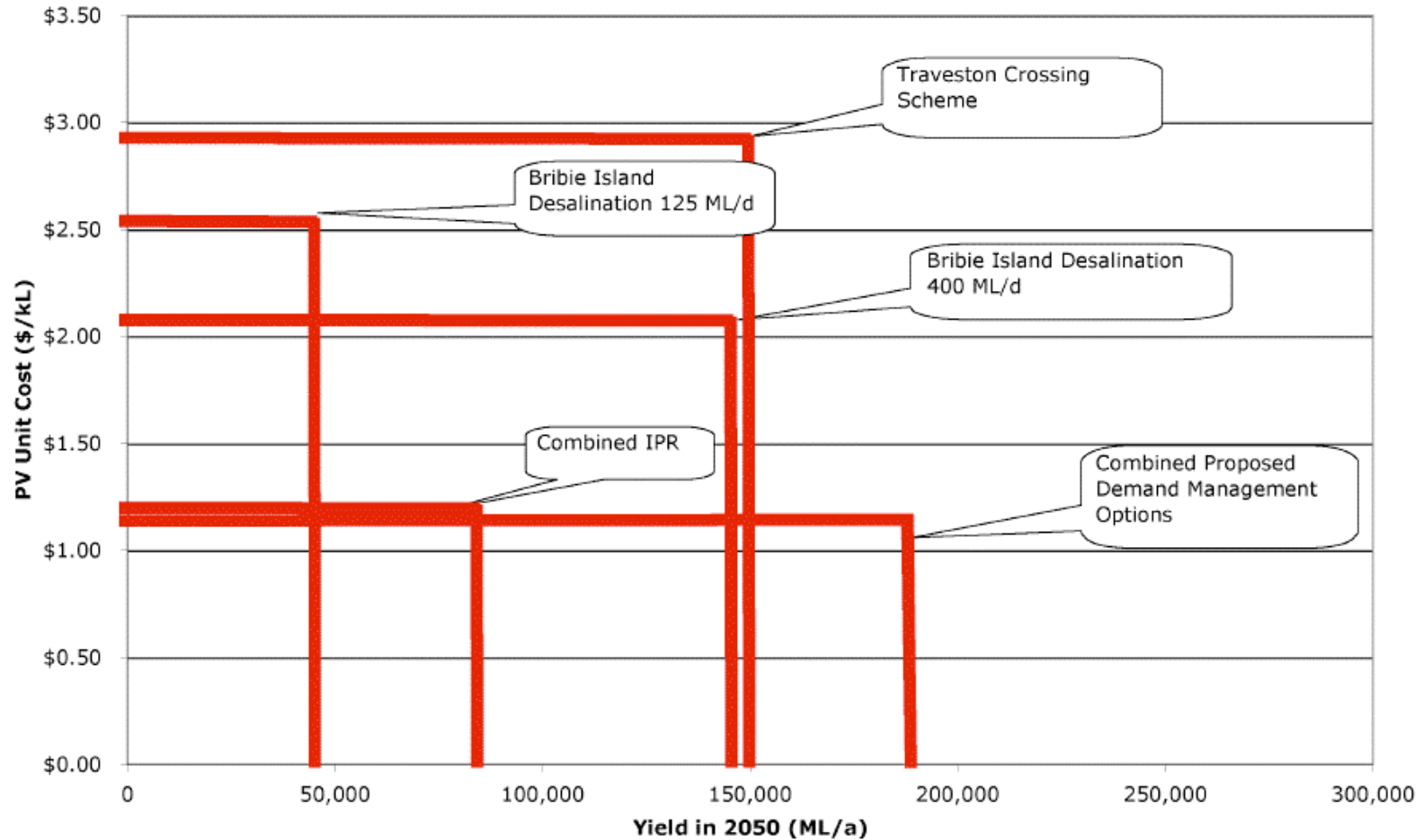
Supply-demand balance - could be maintained out to 2050

A revised strategy - new demand-side options



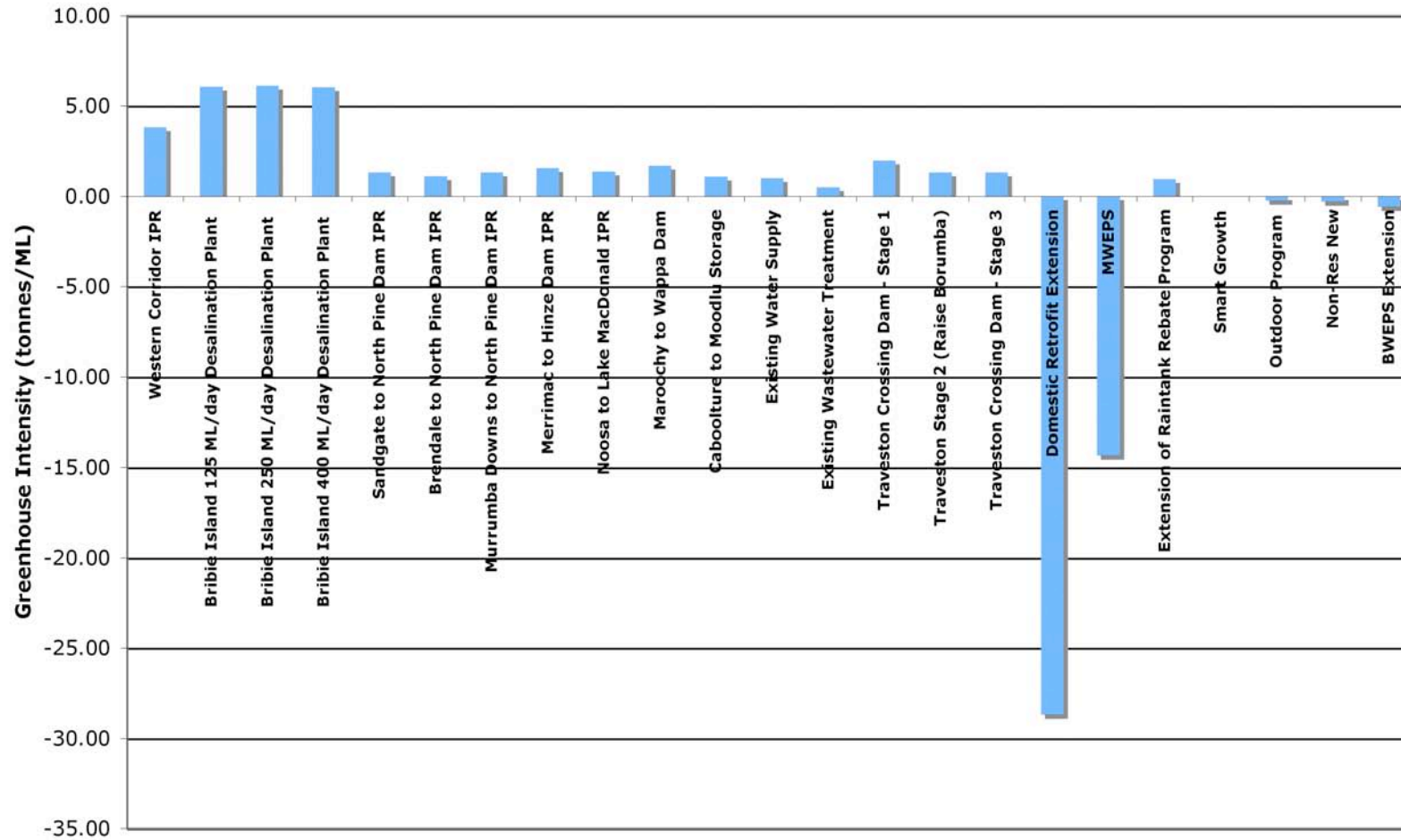
New demand-side options - generally significantly lower unit cost

A revised strategy - lower unit cost options

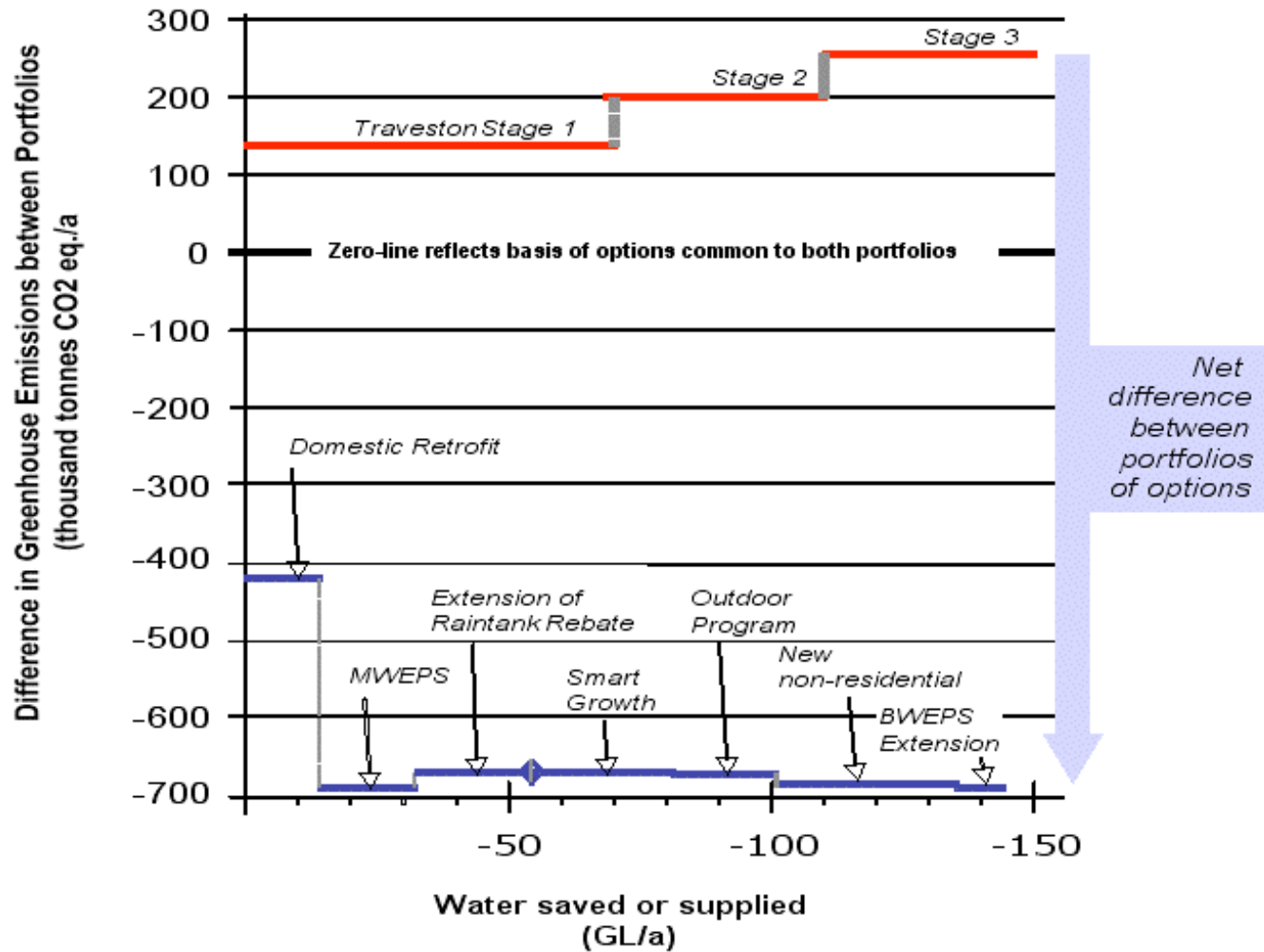


Revised strategy - suite of lower unit cost options available

A revised strategy - GHG implications



A revised strategy - GHG implications



Revised strategy - equivalent of removing over 15% of cars in SEQ

Findings – Strategy

- **Invest in additional demand-side options which are low unit cost and maintain supply-demand balance to 2050**
- **If need to deal with drought in the future have “readiness options”**
 - IPR
 - additional groundwater
 - additional desalination
- **If need additional yield in long-term have a suite of supply-side options available**
 - low unit cost
 - low risk
 - smaller yields to aid adaptive management
 - low social and environmental impacts



Further information?

<http://www.isf.uts.edu.au/>

