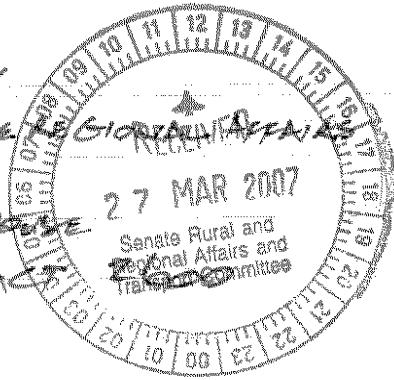


THE SECRETARY
SENATE RURAL & REGIONAL AFFAIRS
& TRANSPORT
PARLIAMENT HOUSE
CANBERRA ACT



D. MILLIGAN
14 GODFREYS AVE.
BLI-BLI QLD. 4560
TEL 54 422294
FAX 54 422257
23.3.07

RE: INQUIRY INTO TRAVESTON DAM

DEAR SIR, MADAM

FURTHER TO MY SUBMISSION DATED 19.3.07 AND AS ADDITIONAL PROOF THAT NO PRIOR PUBLIC CONSULTATION TOOK PLACE PRIOR TO THE OLD.

PREMIERS SHOCK ANNOUNCEMENT ON THE NIGHTLY NEWS ON THUR. 27th. APRIL 2006, TO WHICH I KNOW I HEARD HIM SAY AFTER ANNOUNCING THE GOVT'S DECISION TO BUILD THE TRAVESTON DAM

QUOTE "AND THE PEOPLE OF CONONDALE

CAN REST EASY" CH 7 OR 9 SHOULD HAVE

PETER BEATTIE ON ^{THEIR} FILE RECORDS WITH THIS THROW AWAY LINE.

→ THIS REPORT S.E.Q.R.W.S.S. - STAGE 2 INTERIM REPORT

COPY CLEARLY IN NOV. 2005 DURING THE WORST DROUGHT ATTACHED EXPERIENCED WITH THE WINENHOE SYSTEM AT 35% AND ON LEVEL 2 RESTRICTIONS - NO DAM PROPOSED ON THE MARY RIVER & CERTAINLY NO TRAVESTON DAM.

SEVERAL PROPOSALS IN PLACE FOR THE MARY RIVER SIX MILE CREEK DAM, CEDAR POCKET DAM, A NEW DAM ON ANAMBOOR CREEK, AND A WEIR AT GOLES CR. ON THE MARY RIVER. (REF. MAP 2 PT) THE WATER BALANCE FIGURE 2 (P9) SHOWS "ENVIRONMENTAL FLOWS" MUST BE MAINTAINED IN ACCORDANCE WITH THE WATER RESOURCE PLANS AND THE MARY WRP NEVER MENTIONED DAMMING THE MARY RIVER.

CLEARLY AS OF WRITING THIS REPORT THE DROUGHT & THE EFFECTS OF CLIMATE CHANGE WERE EXPECTED TO WORSEN. (REF. P12)

THE GOVT WAS ALSO DOWN GRADING THE EXPECTED YIELDS TO ABOUT 75% OF THEIR HISTORICAL YIELDS (REF. SEQ R WSS STAGE 2 REPORT) INTERESTING "ENCRPTION" ON GRAPH 2 P13.

THIS INTERIM REPORT LINKS WITH THE SEQ REGIONAL PLAN AND THE SEQ INFRASTRUCTURE PLAN AND PROGRAM — NONE CONSIDERED OR RECOMMENDED A DAM ON THE MARY RIVER.

THE SEQ R WSS STAGE 2 REPORT WAS DUE TO BE COMPLETED AT THE END OF 2006.

WAS IT EVER COMPLETED?

OR WAS IT GAZUMPED BY THE PREMIER'S ANNOUNCEMENT ON 27th. APRIL 2006, AND DUE TO THE PUBLIC BACKLASH RESULTING FROM THIS HALF BAKED DECISION, WAS THE REPORT TITLED "WATER FOR SOUTH EAST QLD. A LONG TERM SOLUTION" DRAFTED AND MODIFIED TO CAREFULLY CRAFT THE PROPOSED TRAVESTON DAM INTO THE MIX.

WHEN WAS THIS REPORT WRITTEN AND WHERE ARE THE SUPPORTING DOCUMENTS — NOT THE GHEO DESK TOP REVIEW WHICH WAS BIASED TOWARDS TRAVESTON DAM.

TABLE 2 P16 SETOUTS THE SHORT MEDIUM & LONG TERM ACTIONS WITH THE MARY RIVER WEIR COMPLETED BY 2009, AND ON P17 UNDER POSSIBLE LONGER TERM MEASURES 2021-2050 INVESTIGATE MARY RIVER WATER STORAGE IMPROVEMENTS

WHICH IMPROVEMENTS — CHECK THE FILE RECORDS IN NRM LIBRARY FOR ^{THIS PERIOD UP TO} NOV. 2005.

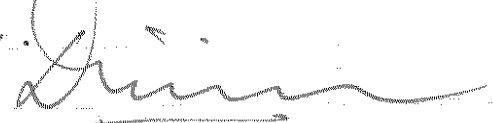
WE KNOW FROM PREVIOUS REPORTS SINCE 1977, THAT FROM 1979 ONWARDS THE PREFERRED DAM SITE ON THE MARY RIVER WAS NEAR KENILWORTH AT 270 KM — THIS SITE WAS NOT INVESTIGATED BY GH&O — WHY?

AND WHAT DEAL WAS STRUCK TO ELIMINATE IT AND THUS LEAD TO THE PREMIERS "THROW AWAY LINE" ON THE NIGHTLY NEWS 27th. APRIL 2006.

THERE WILL BE AN INTERESTING & DAMNING REPORT / DOCUMENT WHICH THE PREMIER RELIED ON FOR HIS DECISION TO PROCEED WITH TRAVESTON — THIS SHOULD BE ON RECORD WITH ^{THE DIRECTOR} MR. BOB MCCARTHY. [PRECEEDING THE 27th. APRIL 2006.]

I STRONGLY SUGGEST YOU REQUEST IT AS PART OF YOUR SENATE ENQUIRY, AND THEN SUBPOENA THE AUTHORS.

SINCERELY


D. MILLIGAN



South East Queensland Regional Water Supply Strategy

Stage 2 Interim Report

COPY ATTACHED TO SUBMISSION BY
D. MILLIGAN DATED 23.3.07 TO
" SENATE ENQUIRY INTO TRAVESTON DAM "

WEBSITE FOR THE REPORT : —

WWW.SEQWATERSTRATEGY.QLD.GOV.AU/PROJECTS/SEQRWSS_STAGE_2.PDF

2nd edition

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Foreword

As South East Queensland is home to one in seven Australians, a secure water supply is essential.

The region is the fastest growing in Australia, which reflects the tremendous opportunities and great lifestyle we have on offer. Sustaining this success presents a challenge both for the government and the community.

It's a big job to balance growth with continued prosperity, while retaining our high standard of living. This has been tackled at a strategic level by the *South East Queensland Regional Plan* and the *South East Queensland Infrastructure Plan and Program*.

Successfully managing future development and maintaining our liveability will hinge on how well we secure water supplies and address the challenges posed by climate change and an increasing population.

Water supplies have been under enormous pressure because of continued drought conditions.

The Council of Mayors (SEQ), representing the 18 councils of South East Queensland, and the Queensland Government are working together to address the water needs of South East Queensland for the next 50 years. The *South East Queensland Regional Water Supply Strategy—Stage 1 Report* was completed in 2004 and provided important baseline data upon which to build the strategic plan for regional water supply.

The *South East Queensland Regional Water Supply Strategy—Stage 2 Interim Report* articulates the Council of Mayors' (SEQ) and the Queensland Government's approach to ensuring that water supplies meet our short and medium-term needs. In particular, it lists the projects that will be fast tracked to address future needs.

The strategy's early release in interim form, demonstrates our commitment to meeting regional, urban and industrial water supply needs, by addressing the immediate challenges of the current drought.

While there is scope to address some rural water supply issues, these will primarily be considered through broader water resource planning processes, and a comprehensive strategy will be outlined in the final report due in 2006.

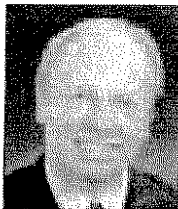
The *Stage 2 Interim Report* recognises that action taken now, in partnership with the region's main stakeholders, will help us achieve our goals.

Our partnership approach is essential. All of us have a part to play—from those who are passionate about water conservation, to the consumer, and those who supply water to our homes and businesses.

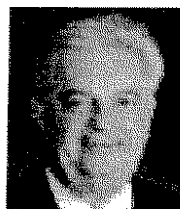
The Queensland Government provides the framework necessary to manage our water resources, establish water supplies and support the implementation of innovations.

Concurrently, water service providers such as SEQWater, SunWater, AquaGen and local governments will have a critical role in ensuring that water needs are equitably met throughout the region, irrespective of jurisdictional boundaries.

With this in mind, the *Stage 2 Interim Report* is a significant step towards achieving coordinated and sustainable growth. Importantly, it addresses short and medium-term water supply issues, which are essential for enabling our region to prosper.



Hon Peter Beattie MP
Premier and Treasurer



Hon Henry Palaszczuk MP
Minister for Natural Resources
and Mines



Campbell Newman
Chairman,
Council of Mayors (SEQ)

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Executive summary

Since the 1980s, South East Queensland has experienced unprecedented growth with its population now increasing at around 50 000 people each year. This growth has coincided with the second worst drought on record. If significant inflows to the Wivenhoe, Somerset and North Pine dams are not received by around February 2006, South East Queensland will be in the grip of the worst drought in recorded history.

On the basis that the use of water is properly managed and the area's major dams receive minimum recorded inflows, the region has about three years of supply remaining. Only about 75 per cent of water supplies estimated to be available, based on historical rainfall records, are currently being used. Had consumption been more than this, the area's remaining water reserves would be lower than they are.

The current drought has exposed the vulnerability of continuing to use historical approaches to determine available supplies in a region that experiences significant climate variability, and where there is now evidence that climate change is occurring.

The provision of secure water supplies is essential to support the long-term growth in the region as detailed in the *South East Queensland Regional Plan*. To this end, the Queensland Government in partnership with the Council of Mayors (SEQ) has developed this *South East Queensland Regional Water Supply Strategy—Stage 2 Interim Report (the Interim Report)* to outline what is being done to address the challenges associated with population growth, climate variability and climate change.

The *Interim Report* draws on previous planning to develop a long-term water supply strategy for the region. It also considers contingency planning undertaken to address the current drought. The focus on drought contingency measures has been to extend the time over which urban and industrial supplies may be provided by Wivenhoe, Somerset and North Pine dams and to provide additional supply as needed.

The *Interim Report* provides details of shorter-term priority projects and contingency planning initiatives to be commenced in the period 2005–2009 and lists likely medium-term (2010–2020) and possible long-term (2021–2050) initiatives. The medium and long-term initiatives will be

explored in greater detail before formulating the final South East Queensland Regional Water Supply Strategy—Stage 2 Report due at the end of 2006. The shorter-term and priority contingency planning measures are being overseen by a high-level steering committee to fast track project delivery.

The significant short-term initiatives involve measures to reduce the demand on our existing supplies; increase supply as necessary; and better manage the operation of existing supplies. They include:

- water restrictions, water conservation, pressure reduction and leakage management to reduce consumption and water losses
- recycled water substitution to industry and power stations to reduce demand from the Wivenhoe and Somerset dams system
- recommissioning a number of small dams no longer used since the construction of Wivenhoe Dam
- development of minor aquifers
- construction of Cedar Grove Weir on the Logan River and a weir on the Mary River
- investigation of regional desalination facilities
- optimised distribution and management of water supplies.

The *Interim Report* does not address Toowoomba's water supply needs, which are being progressed through the Toowoomba Water Futures initiative, nor does it address rural water supplies. These will be incorporated in the development of the final regional water supply strategy.

Developing the final regional water supply strategy for South East Queensland is a significant task. The area covers 22 420 km² and incorporates 18 local government areas. It stretches 240 km from Noosa in the north, to the New South Wales border in the south, and 140 km west to Toowoomba. The strategy will continue to be developed under existing partnership arrangements between the Queensland Government, the Council of Mayors (SEQ) and a dedicated project team whose work started early in 2003.

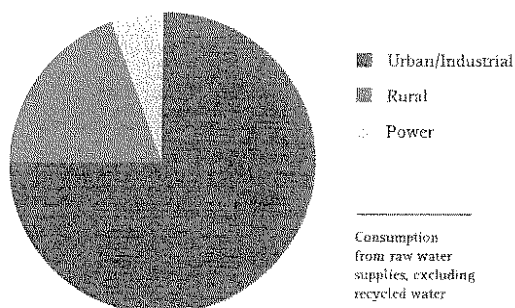
Water planning and management in SEQ

The SEQ water supply area extends from Noosa, south to the New South Wales border and west to Toowoomba. It includes a number of other shires reliant on water from the Wivenhoe-Somerset dam system and the Mary River. The major surface water sources in SEQ are shown in Map 2.

Approximately 2.6 million people—64 per cent of the state's population—live in SEQ.

Total urban and industrial consumption in SEQ is about 460 000 ML/a, or about 450 litres per person per day. This includes commercial and industrial use, with about a tenth of total use unaccounted for—mostly through water losses and unmetered use. Domestic consumption accounts for about two-thirds of urban consumption, while rural water use amounts to 150 000 ML/a. About 40 000 ML/a is consumed by power industries in the study area.

Figure 1—Breakdown of current water use in SEQ



Who manages and supplies our urban water in SEQ?

Local governments and SEQWater are generally responsible for providing water to homes, businesses and industry. SunWater, a government-owned corporation, supplies most of the region's irrigation and rural water and some water to industry including power stations. The State Government currently oversees water supply and management arrangements through:

- catchment planning and preparation of water resource plans, which provide for environmental and consumptive use
- legislative requirements on water service providers to ensure continuity of supply and that environmental, public health and service delivery standards are met.

SEQ urban communities rely on water from 19 surface water storages (dams and weirs) with limited use of groundwater (see Map 2). The 19 major urban surface water storages are operated by 12 separate owners. These are SEQWater, SunWater, local governments and a local government cooperative. The region's major water sources are detailed in Table 1. The largest sources of urban water supply are the:

- Wivenhoe, Somerset and North Pine dams (owned by SEQ Water)
- Hinze and Little Nerang dams (owned by Gold Coast City)
- Baroon Pocket Dam (owned by AquaGen)
- Cressbrook, Perseverance and Cooby dams (owned by Toowoomba City Council)
- North Stradbroke Island groundwater bore system (owned by Redland Shire).

The systems above represent about 95 per cent of total available urban water supply in SEQ with the bulk of supply coming from Wivenhoe, Somerset, North Pine, Hinze and Baroon Pocket dams.

Water planning and management in SEQ

Map 2—SEQ surface water sources

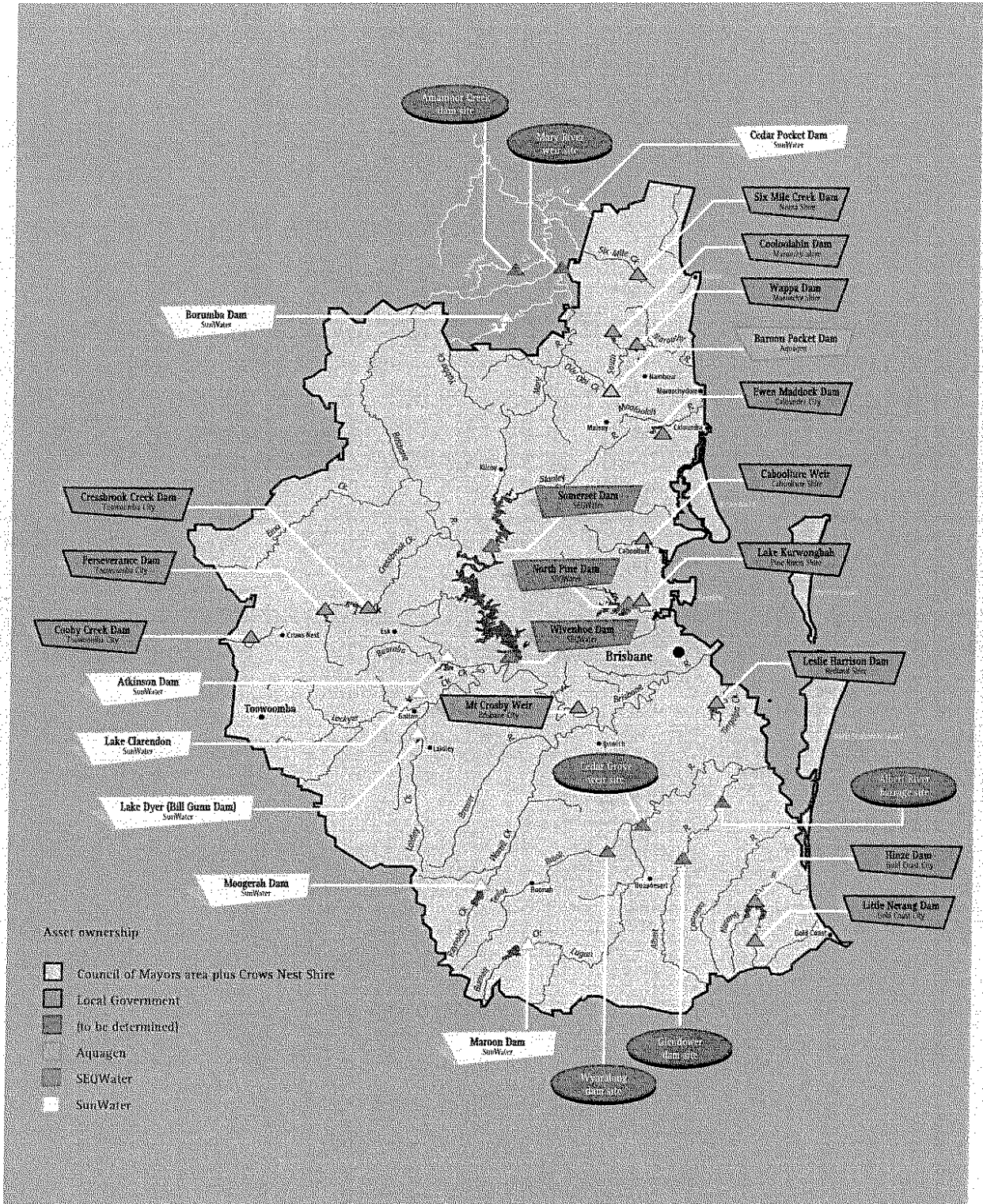


Table 1—Major urban water sources in SEQ

Source	Storage yield / water allocations # (ML/year)	Owner/operator	Council area currently serviced from source
Surface water			
Caboolture Weir	3 600 ** HP	Caboolture City	Caboolture
Cressbrook Dam / Perseverance Dam	9 500	Toowoomba City	Toowoomba, Crows Nest, Jondaryan, Rosalie
Cooby Dam	3 180	Toowoomba City	Toowoomba, Crows Nest, Jondaryan, Rosalie
Lake Kurwongbah	4 100 ***	Pine Rivers Shire	Pine Rivers
Moogerah Dam	9 400 HP 20 700 MP	SunWater	Boonah
North Pine Dam	61 000*	SEQWater	Brisbane, Redcliffe, Pine Rivers, Caboolture
Wivenhoe Dam/ Somerset Dam	374 000*	SEQWater	Kilcoy, Gatton, Laidley, Esk, Nanango, Ipswich, Brisbane, Logan, Gold Coast, Redcliffe, Pine Rivers, Caboolture
Baroon Pocket Dam	34 750	AquaGen	Caloundra, Maroochy
Borumba Dam	10 200 HP 21 900 MP	SunWater	Noosa, Cooloola, Maryborough
Lake MacDonald	4 210	Noosa Shire	Noosa
South Maroochy (includes Wappa Dam and Cooloolabin Dam)	9 100	Maroochy Shire	Maroochy
Ewen Maddock	5 160	Caloundra City	Currently not in use
Hinze/Little Nerang Dam	69 800 ****	Gold Coast City	Gold Coast
Leslie Harrison Dam	7 600	Redland Shire	Redland
Maroon Dam	9 900 HP 13 600 MP	SunWater	Beaudesert
Groundwater			
Bribie Island	2 000	Caboolture Shire	Caboolture
North Stradbroke Island	37 900	Redland Shire	Redland

Figures in table are yields unless a HP or MP allocation is shown.

HP High Priority water allocations (usually urban water supply)

MP Medium Priority water allocations (usually rural water supply)

ML/year = Megalitres per year

Storage yields are subject to review in the water planning process and do not provide for reserves for droughts worse than those recorded historically.

Yield is the volume that can be extracted on an annual basis at a particular reliability. The yields shown in the table are where possible historical no failure yields exclusive of any buffers unless otherwise stated.

* The combined allocation from North Pine, Wivenhoe and Somerset Dams to SEQ Water is 345 000 ML/annum, which includes 59 000 ML/annum coming from North Pine Dam.

** Council expects to be able to access up to 3000 ML/year following augmentation.

*** Council expects at times to extract up to 7000 ML/year.

**** This figure incorporated a buffer capacity which Gold Coast City Council has adopted for hydrologic and supply security reasons. Exclusive of the buffer the yield of Hinze Dam is estimated at 76 000 ML/year.

Water planning and management in SEQ

How we plan for water Water resource planning and management

The surface and groundwater supplies listed in Table 1 with associated water allocations and yields were developed over many years. The water entitlements associated with the water supplies are established in law. However, the rivers involved have not yet been subjected to modern sustainable water resource planning.

Water resource plans (WRPs) are now being developed in consultation with communities in all areas of SEQ and involve robust assessment of a catchment's hydrology and the water needed for environmental and consumptive purposes. The plans allow water availability to be more precisely defined than in the past.

They also provide a framework for specification of water entitlements. Map 3 shows the plan areas for water resource plans in SEQ. The planning process establishes the appropriate balance between water consumption and water retained for environmental health.

Water resource plans are implemented through resource operations plans (ROPs), which, among other things, specify operational and management rules for water service providers and allow for water trading.

Commencement of a WRP for the Moreton area was officially announced in May 2005 and the Gold Coast WRP was announced in October 2005. WRPs are well under way for the Logan and Mary basins.

Planning for ROPs for the Logan, Mary, Moreton and Gold Coast is due to begin in 2006.

Water supply planning

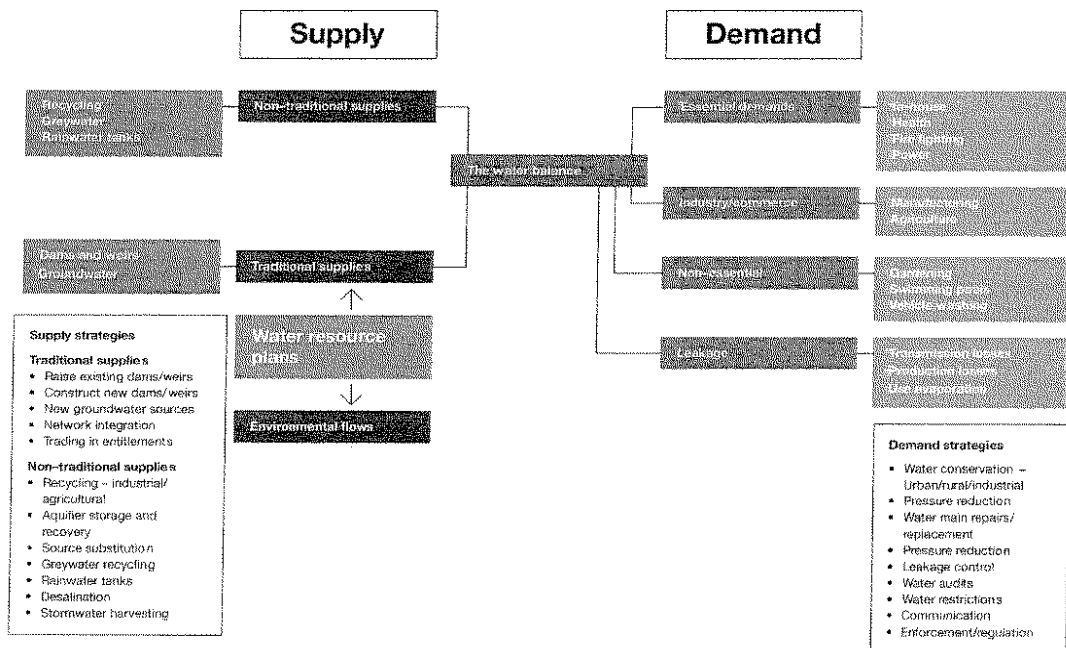
Effective water supply planning requires the balancing of supply and demand including requirements for the environment. It requires the assessment of the magnitude of gains possible through demand management so that the new supply arrangements necessary to meet any shortfall can be implemented as the need arises.

The balancing occurs by way of:

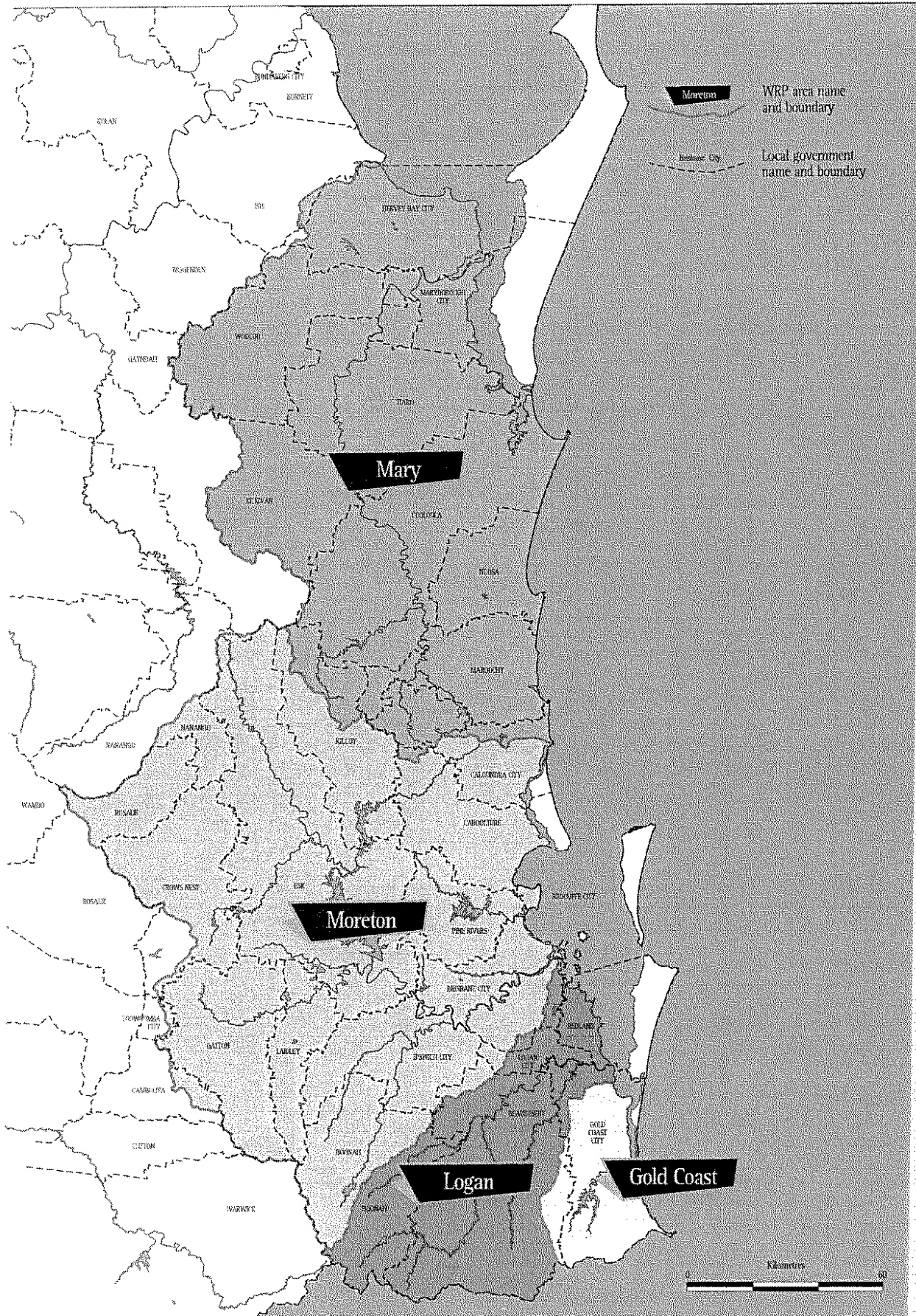
- Supply initiatives—through construction of infrastructure, to lift the total volume of water available
- Demand initiatives—through greater efficiency in water use.

The water balance diagram (Figure 2) summarises the supply and demand strategies readily available to address future water needs.

Figure 2—The water balance



Map 3—Water resource plan areas in SEQ



Water challenges in SEQ

SEQ is the fastest growing region in Australia and the second fastest growing region in the western world. It is the powerhouse of the Queensland economy, supporting the majority of the state's population and the broader state economy. The region's social and economic security is inextricably linked with urban water availability.

Without significant action, rapid population and economic growth coupled with climatic variability and change could well outstrip the ability of our water supplies to cater for demand.

The current challenge—drought

Under past approaches to water supply planning, the worst droughts on record were used as a basis for establishing water infrastructure requirements and how well supplies would cope with the perceived climatic cycle. Restrictions were applied in times of severe drought. The current drought, the second worst in the region's recorded history, has encouraged a more cautious approach for the following reasons:

- Without substantial inflows to regional storages by about February 2006, it will become the worst drought on record.
- Wivenhoe, Somerset and North Pine dams, which supply more than 70 per cent of regional supply south of Caloundra, were last full in February 2001 and only minimal inflows occurred in 2004.
- Wivenhoe, Somerset and North Pine dams total storage (at the time of writing) was below 35 per cent, and Level 2 water restrictions were in effect (refer page 18 for definition of level 2 water restrictions). Toowoomba's dams are less than 28 per cent full and strict water restrictions are in force.

- Rural water shortages have resulted in some irrigators being without surface water supplies for four years.
- Unseasonably heavy rainfall in some parts of the region in late June produced only minimal inflows, with Brisbane metropolitan area dams rising on average only 0.5 per cent, highlighting that prolonged and significant rainfall will be needed to generate the runoff storages need if dams are to recover.
- If the drought continues and water restrictions are our sole means of moderation, available water supplies could become severely depleted in 2008 in many parts of the region.

The current water consumption across the region amounts to only about 75 per cent of the long-term annual volume that can be extracted from the storages based on the historical assessment approach used. This highlights the concerns with utilising traditional planning approaches to secure water supplies. In very recent times the Water Service Association of Australia and other agencies have published discussion papers to deal with this issue.

If the current conditions endure well beyond the length of the worst drought on record, severe water shortages could be experienced. At this point, in the absence of any way of predicting when the drought may break, it is essential that we are prepared for a less favourable outcome. The *Regional Drought Strategy* addresses the current drought.



The longer-term challenges—population and climate

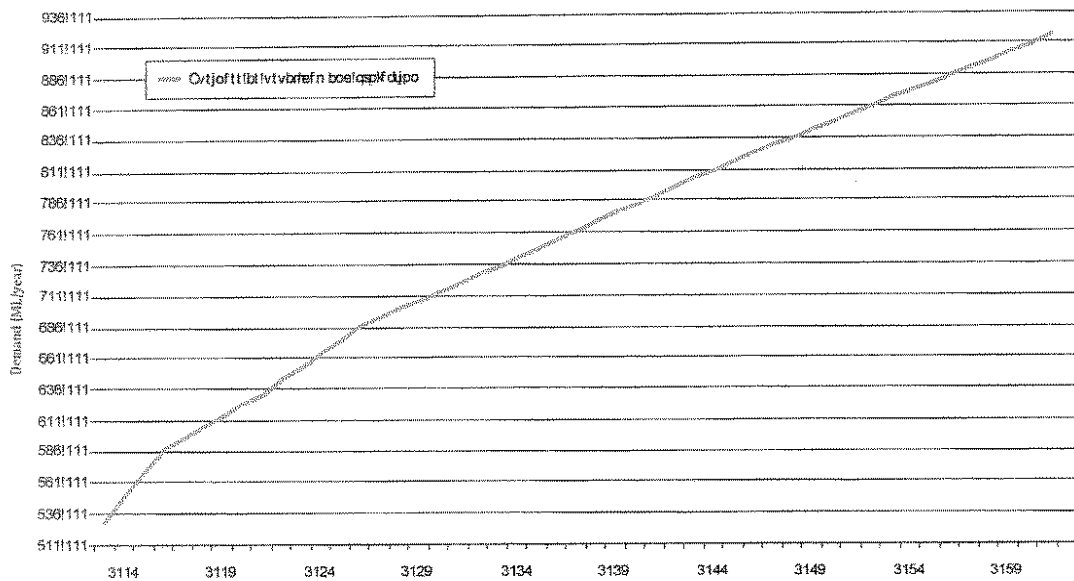
For the longer term, the effects of population pressure, protracted increased demand, and climatic variability and change must be addressed if regional water supply provision is to match our needs. While assessing the effects of population and demand is comparatively easy, those of climate variability and change are far less certain.

Climatologists cite a clear downward trend in regional rainfall over the past 30 years as evidence of climatic change. While the magnitude and nature of the change are far from certain, we need to be prepared for the eventuality that our dams may yield less water than has been the case in the past. Adding to the uncertainty is the prediction that climate change will bring higher temperatures and evaporation, resulting in increased demand for water.

Regional growth has accelerated to the point where an additional 50 000 new South East Queenslanders must be accommodated each year. Under this pressure, the current population of around 2.6 million will swell by more than 1 million by 2026, bringing the total to about 3.7 million.

The future water demand projections for SEQ on a 'business as usual' (i.e. current water use practices continue and no water restrictions are in place) basis are represented in Graph 1. These figures are based on returns in Stage 1 of the Regional Water Supply Strategy. Stage 2 will review both the population projections (to align them with the *SEQ Regional Plan*) and the likely demands to take account of trends in water consumption.

Graph 1—SEQ urban and industrial demand projections



Water challenges in SEQ

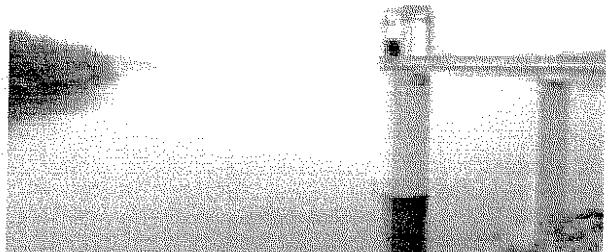
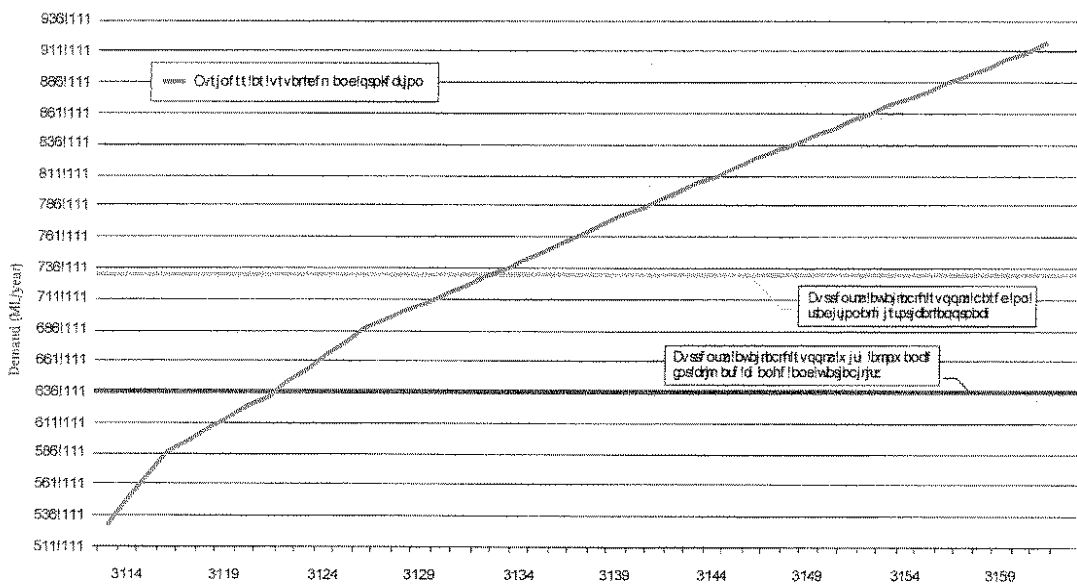
Recent assessments indicate that the region will need additional urban and industrial supplies by about 2021. This is based on a comparison of demand projections and water availability (refer Graph 2) assessed using historical data to determine yield. Some parts of the region will need to be augmented before 2021.

As part of the water resource and regional water supply planning activities in South East Queensland, the yields of all storages are being reassessed. The assessment will take account of the environmental flow requirements and the effects of climate variability and change.

It is possible that the review may result in a reduction in the estimates of water made available for consumption. Alternatively, the review could result in the development of new contingency plans to meet the water supply needs of the region during droughts worse than those experienced historically.

If yields are reduced, it will be necessary to augment supplies at an earlier date than previously assessed. The impact of a preliminary 15 per cent reduction in available supplies below historically determined yields is shown in Graph 2, this being set aside for contingency purposes. Any adjustments to water availability will be determined in the final SEQRWSS Stage 2.

Graph 2—SEQ urban and industrial supply and demand projections
Effect of reducing storage yields



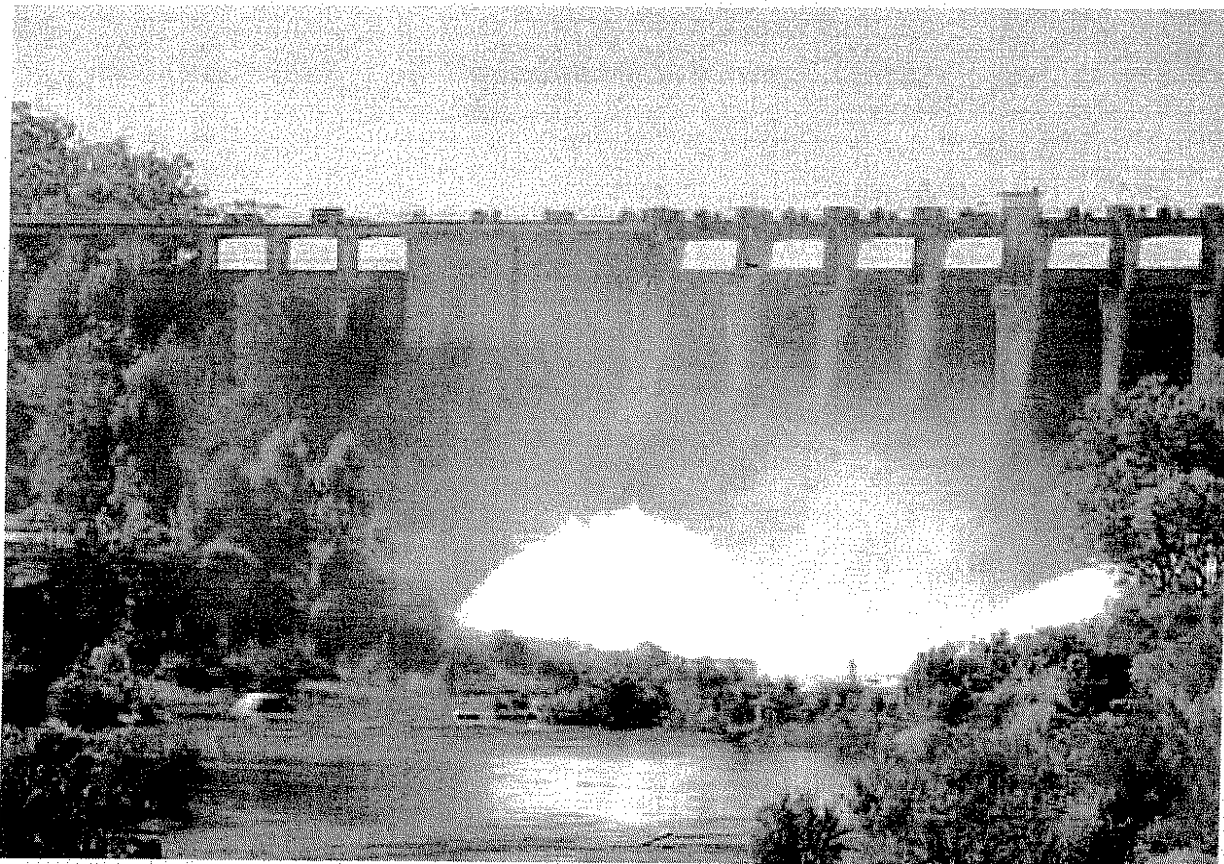
The challenge of institutional arrangements in SEQ

Coordinated investment in regional water infrastructure is currently complicated by the existence of several schemes operated by different water service providers. Rivers and aquifers rarely align with local government boundaries, and there is a pressing case for viewing the regional water needs as a whole so that all sub-regional needs can be addressed equitably.

The existing institutional arrangements constrain the potential for equitable water supply sharing arrangements to be implemented throughout the region. Further, the fragmentation of responsibility for supplying water across the region complicates planning for the development of water supplies on a regional basis, and sub-optimal plans may be the result.

Altogether, 19 major water supply storages are owned by 12 different entities. A total of 18 local governments deliver water to their respective ratepayers. Additionally, several adjoining local governments obtain their supplies from SEQ. Presently, SEQ water supplies are bounded by Borumba Dam owned by SunWater on the Mary River to the north, Toowoomba City's dams in the west, and dams owned by the Gold Coast City Council in the south. In addition, Redlands Shire draws much of its water from the aquifer on North Stradbroke Island.

The State Government has initiated a review of institutional arrangements for water service provision.



Interim Report

The *Interim Report* is intended to accelerate urban and industrial water supply provision throughout the region to address immediate and short-term challenges, and establish a planning framework for long-term supply security.

The *Interim Report* is based on the considerable water supply planning which has been undertaken by state and local governments over the last few years. The *Interim Report* applies what is already known from the SEQRWSS Stage 1. It includes strategies to meet the current water supply challenge in SEQ, while building capacity to meet longer-term water supply challenges.

The *Interim Report*:

- is a companion to, and builds upon the *SEQ Regional Plan* and *SEQ Infrastructure Plan and Program*, the three documents being an integrated approach to dealing with the major issues facing SEQ
- lists projects that will address short, medium and long-term issues particularly for urban and industrial water
- provides indicative balances of supply and demand of water for the period 2005–2050
- addresses the contingency planning needs identified in the *Regional Drought Strategy*
- complements the *Queensland Water Plan 2005–2010*.

Contingency planning under the *Regional Drought Strategy* for urban water supply in SEQ has been undertaken to alleviate the potential low probability future shortfalls in supply to the Wivenhoe, Somerset and North Pine dams supply area. A two-pronged strategy (supply side and demand side) has been developed to lengthen the availability of supply from existing sources and establish new sources should the drought continue beyond this summer. These strategies are aimed at preventing the combined supply of the Wivenhoe, Somerset and North Pine dams dropping below 10 per cent. This assessment is based on the unlikely event of repeated in-flows at April 2004–March 2005 levels to the dams.

Four levels of restrictions have been proposed with level 4 restrictions applying when the combined supply of the Wivenhoe, Somerset and North Pine dams is less than 25 per cent. The targeted reduction in consumption under level 4 restrictions is 25 per cent. Depending on the time of year, this will result in reduced consumption of between 230 ML/day and 280 ML/day.

In addition to the restrictions, it is proposed to implement a range of other measures to either reduce the take of water from the Wivenhoe, Somerset and North Pine dams system or increase supply to the area serviced. The anticipated net benefit of reduced take and increased supply proposed over the next three years is:

Year	Approximate total Additional benefit (ML/day)
2006	60
2007	330
2008	550

The implementation of the drought contingency measures will be overseen by an Executive Infrastructure Implementation Steering Committee and progress on some initiatives will depend on whether the drought continues or breaks.

The finalisation of the SEQRWSS Stage 2 Report, due at the end of 2006, will continue under existing arrangements negotiated between the state and Council of Mayors (SEQ). It will, among other matters:

- clarify the timing and sequencing of medium-term infrastructure previously announced by the state
- identify other medium and longer-term infrastructure requirements
- identify where further assessments will be necessary for the preservation of lands for future water supply including desalination sites, recycled water schemes and dams
- establish a regional drought strategy for the medium and longer term, and an appropriate policy framework for droughts and other contingencies
- identify how the consumption targets outlined in the *SEQ Regional Plan* will be achieved
- provide a basis for clarifying water sharing arrangements and distribution infrastructure necessary to deliver on the proposed *SEQ Regional Plan* development outcomes
- clarify policy to be applied at the regional level for the use of water so that future development is not inhibited by inefficient or inappropriate use
- investigate options to improve rural water supplies
- establish a consistent system for water accounting, monitoring and reporting.

Summary of short, medium and long-term actions

Table 2—Summary of short, medium and long-term actions

Short-term initiatives	Anticipated date	Estimated ML/day	Lead agent
Water restrictions incorporated in the <i>Regional Drought Strategy</i>	Immediate - level 2 restrictions currently in force	Level 1 - 46-57 Level 2 - 137-170 Level 3 - 183-227 Level 4 - 230-284	Local governments and SEQWater
Recommissioning Lake Manchester and Enoggera dams	Complete by end 2005	30-40	Brisbane City Council
Regional pressure reduction and leakage management (three stages)	Commence 2006	50-75	Local Government with State Government financial support
Stage 1 Recycled water substitution to industry (including industry in the Western Corridor, Swanbank Power Station, possibly Tarong Power Station and Australian TradeCoast)	Commence design and corridor work immediately with view to construction in 2007	up to 110	State Government in partnership with SEQWater, Brisbane City Council and Ipswich City Council
Minor aquifers	Commence immediately with a view to implementation by Mid 2007	20	Primarily Brisbane City Council
Inter-catchment water distribution e.g. <ul style="list-style-type: none"> • Gold Coast offtake • Southern Regional Pipeline • Nth Stradbroke augmentation and possible Redland interconnection 	Investigate with view to implementation as soon as practicable	35-60	State Government in partnership with SEQWater and relevant councils. A subsidiary company of SEQWater has been established to lead the Southern Regional Pipeline project
Indoor water efficiency	Investigate with view to implementation by Mid 2007	10-15	State and local governments and SEQWater
Cedar Grove Weir	Complete by 2008	11	State Government
Regional desalination (Gold Coast)	Investigate immediately with view to implementation by early 2008	55-110	Gold Coast City Council and SEQWater
Mary River Weir	Complete by 2009	20-25	State Government

Interim Report

Table 2 continued

Short-term initiatives	Anticipated date	Estimated Ml/day	Lead agent
Additional drought contingency options (for supply zones of Somerset, Wivenhoe and North Pine dams)			
Groundwater supplies	Preliminary analysis complete Feb 2006	Sustainable quantities are yet to be defined	State Government in partnership with the relevant councils
Other regional desalination	Preliminary analysis complete Feb 2006	To be defined	State Government in partnership with the relevant councils
Medium to longer-term options 2010–2020			
Detailed investigations for the raising of Hinze Dam	Commence investigations 2005	12–24	Gold Coast City Council
Stage 2 recycled water	Commence investigations of extension of Stage 1 recycled water substitution to industry 2006	up to 140	State Government in partnership with SEQWater, Brisbane City Council and Ipswich City Council
Detailed investigations for Wyaralong Dam	Commence investigations 2006	55	State Government in partnership with relevant water service provider
Investigate recommissioning of Ewen Maddock Dam and upgrade South Maroochy supply system	Investigate as part of SEQRWSS and beyond	To be defined	Local Government
Possible longer-term measures 2021–2050			
Investigate Mary River water storage improvements	Investigate as part of SEQRWSS and beyond		
Investigate Glendower Dam and downstream Albert River Barrage	Investigate as part of SEQRWSS and beyond		
Investigate raising of Wivenhoe Dam	Investigate as part of SEQRWSS and beyond		
Investigate groundwater supplies	Investigate as part of SEQRWSS and beyond		
Investigate other regional desalination	Investigate as part of SEQRWSS and beyond		
Subsequent stages of water recycling	Investigate as part of SEQRWSS and beyond		

Note: Medium and longer-term actions are subject to the outcomes of more detailed investigation as the South East Queensland Regional Water Supply Strategy is further progressed. Project design and delivery will depend on outcomes of technical, social, economic and environmental investigations.

Detailed description of short-term and drought contingency planning projects

The following provides more detail on the short-term and drought contingency projects being urgently progressed. The medium and longer-term measures require more analysis. Further explanation about these proposals and actions relating to rural water supplies will be provided in the Final SEQRWSS Stage 2 Report.

Short-term projects

Regional water restrictions

To save water during the drought, SEQWater and the local governments in the SEQ region have agreed on certain water conservation practices to be implemented across the region. Water restrictions will apply to all consumers. Trigger levels for regional water restrictions are implemented when:

Level 1- Combined regional water capacity falls to 40 per cent

Level 2- Combined regional water capacity falls to 35 per cent

Level 3- Combined regional water capacity falls to 30 per cent

Level 4- Combined regional water capacity falls to 25 per cent

Level 1 restrictions targeted a five per cent reduction in water consumption, and eight per cent reduction was achieved. Level 2 restrictions currently in force target a 15 per cent reduction. Levels 3 and 4 restrictions are anticipated to target 20 per cent and 25 per cent reductions respectively. Beaudesert Shire may be subject to different restriction regimes because its supplies are provided mainly via the Logan River and the Maroon Dam system.

Recommissioning Lake Manchester and Enoggera Dams

A priority short-term project is the recommissioning of Enoggera Dam. Lake Manchester is now operational. These reserves were once a supply for Brisbane but have not been used since Wivenhoe Dam was built. Given the current drought, they are now a very useful back-up supply. While these reserves are small, being more coastal, the storages are likely to replenish through summer storms.

Regional pressure reduction and leakage management

The State Government will subsidise approved projects to reduce losses by reducing pressure in water pipes to minimise breaks and leakage. This is expected to save 50–75 ML/day across South East Queensland. Initial trials on the Gold Coast have had positive water saving results without a loss of service standards to residents and industry. In addition, pressure reduction in 10 zones in Brisbane since 1993 have shown significant water and maintenance savings.

Stage 1 Recycled water substitution

In recent times, Ipswich City Council, Brisbane City Council, SEQ Water and the Lockyer Water Users Forum developed, as a joint project, a western corridor recycled water proposal. The initial concept was to collect the wastewater of Ipswich and western Brisbane and recycle it to industry (including Swanbank), residential (dual reticulation) and the rural sectors (including irrigators in the Lockyer Valley).

More recently, this proposal has evolved to give priority to the supply of recycled water to the Swanbank and Tarong Power Stations as a drought contingency and long-term supply measure as well as considering the provision of additional supply to irrigators. The proposal is to first pipe recycled water from Oxley, Wacol, Goodna and Bundamba to the power stations. Subsequent stages will explore the option of recycling from Luggage Point and Gibson Island to rural areas and other potential users in the western corridor.

The Queensland Government has taken a lead by financing preliminary activities to facilitate design, easement acquisition and business case development for the project. SEQWater is now the project manager and a business case will be prepared to assess the viability of supplying recycled water to meet industrial, rural and urban demands.

Brisbane City Council has been working with industry in the Australia TradeCoast area to implement a number of projects that substitute recycled water for existing potable water supplies. This scheme, when completed, will be one of the largest recycled water schemes in Australia and provide a key flagship for the future sustainability of water supply in South East Queensland.

Interim Report

Minor aquifers

Brisbane City Council and the Queensland Government are currently investigating groundwater for emergency supplies in mainland areas near Brisbane. These still need to be fully evaluated and developed and would be subject to all the necessary environmental assessments, approvals and project feasibility.

Inter-catchment water distribution

An Inter-catchment Water Distribution Group will be established to investigate and recommend ways to optimise the use of water from SEQ sources of supply. For example, small storages in higher rainfall areas may be emptied more quickly to take advantage of their greater probability of filling, and some water users with adequate alternative supplies may be able to discontinue taking water from the Wivenhoe, Somerset and North Pine dams.

The Coordinator-General has declared the Southern Regional Water Pipeline proposal a 'significant project' and will coordinate all approvals necessary to ensure timely progress on the project. This includes land acquisition, environmental impact and cultural heritage assessments.

The proposed pipeline will enable efficient transfer of water between Wivenhoe Dam, the proposed Wyaralong Dam and Cedar Grove Weir, and possible future desalination facilities and existing supplies on the Gold Coast. These transfer arrangements would enable the SEQ corner to respond efficiently to drought shortages and supply the booming growth corridors linking Brisbane, Ipswich, the Gold Coast, Logan and Beaudesert. The project, if it goes ahead,

will create a network of water pipes between Wivenhoe and Hinze dams and connection points to the planned Wyaralong Dam through to the Cedar Grove Weir. The project is expected to cost \$250 million and be completed over 10 years.

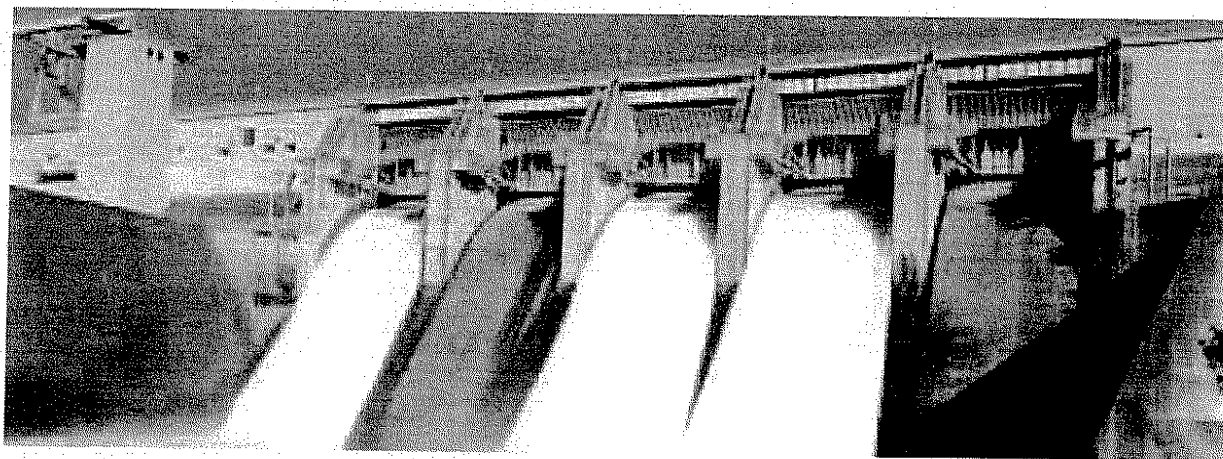
Indoor water efficiency

Targeted financial assistance programs by local governments will continue to be directed at improving water use efficiency. The Queensland Government's Sustainable Housing Policy will improve the greenhouse performance, energy and water efficiency of new housing, through measures such as requiring the mandatory installation of AAA rated water efficient shower heads, dual flush toilets, and pressure limiting devices in all new residential buildings and major renovations approved from 1 March 2006.

The Building Code will also be amended so local governments can mandate rainwater tanks in new houses for toilet flushing and external uses. Using rainwater tanks for gardens, toilets and laundries could save about 25 per cent of household water use. The savings can be higher or lower depending on location, size of rainwater tanks and climatic conditions.

Cedar Grove Weir

The Queensland Government will expedite the construction of the Cedar Grove Weir on the Logan River to improve security of supply for Beaudesert. The weir will ultimately become a regulating structure for the proposed Wyaralong Dam and is anticipated to be completed by the end of 2008. This is a component of the *South East Queensland Regional Infrastructure Plan and Program*.



Regional desalination

As with other Australian metropolitan city regions, desalination is now under active investigation for SEQ. Desalination of seawater involves taking seawater and treating it in a desalination plant most likely using reverse osmosis to remove the salt and other impurities. Issues requiring consideration include development and operating costs, cost of water produced and possible impacts, including additional draw on energy supplies.

The Gold Coast City Council has previously investigated site options and has been fast tracking assessments for the possible construction of a 55–110 ML/day desalination plant. This would provide the Gold Coast's additional water needs for the immediate future.

Mary River Weir

The Queensland Government will expedite construction of a weir on the Mary River to improve security of supply for Gympie and Noosa. The weir will be a regulating structure for Borumba Dam and is anticipated to be completed by the end of 2009. Ultimate ownership and operation of the weir will be determined as part of the review of institutional arrangements.

Additional drought contingency option

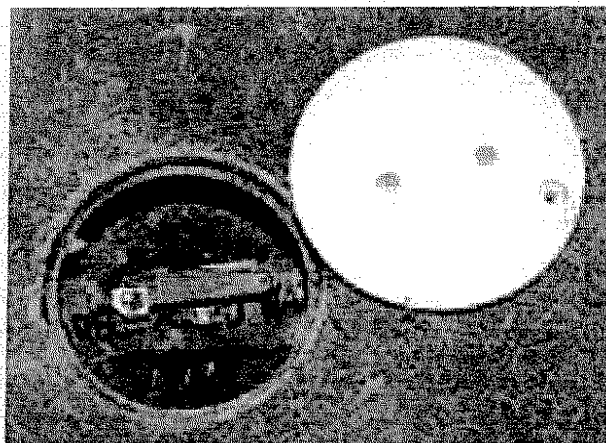
Groundwater supplies

The Redlands and Caboolture Shire Councils already extract groundwater from North Stradbroke Island and Bribie Island.

Small quantities of additional supply may be available from North Stradbroke Island. However, more investigations are required to confirm the volumes which may be available. The feasibility of any additional supply will be dependent on whether it can be developed on a sustainable and cost-effective basis.

Other regional desalination

In addition to the desalination facility being considered for the Gold Coast, there is a need to evaluate options for desalination elsewhere in the region. Investigations are being fast tracked to identify suitable sites for desalination facilities and to assess the feasibility of desalination as a drought contingency measure and a possible permanent supply measure. For each potential site, energy use and environmental impacts will be fully investigated and reported.



Interim Report—implementation plan

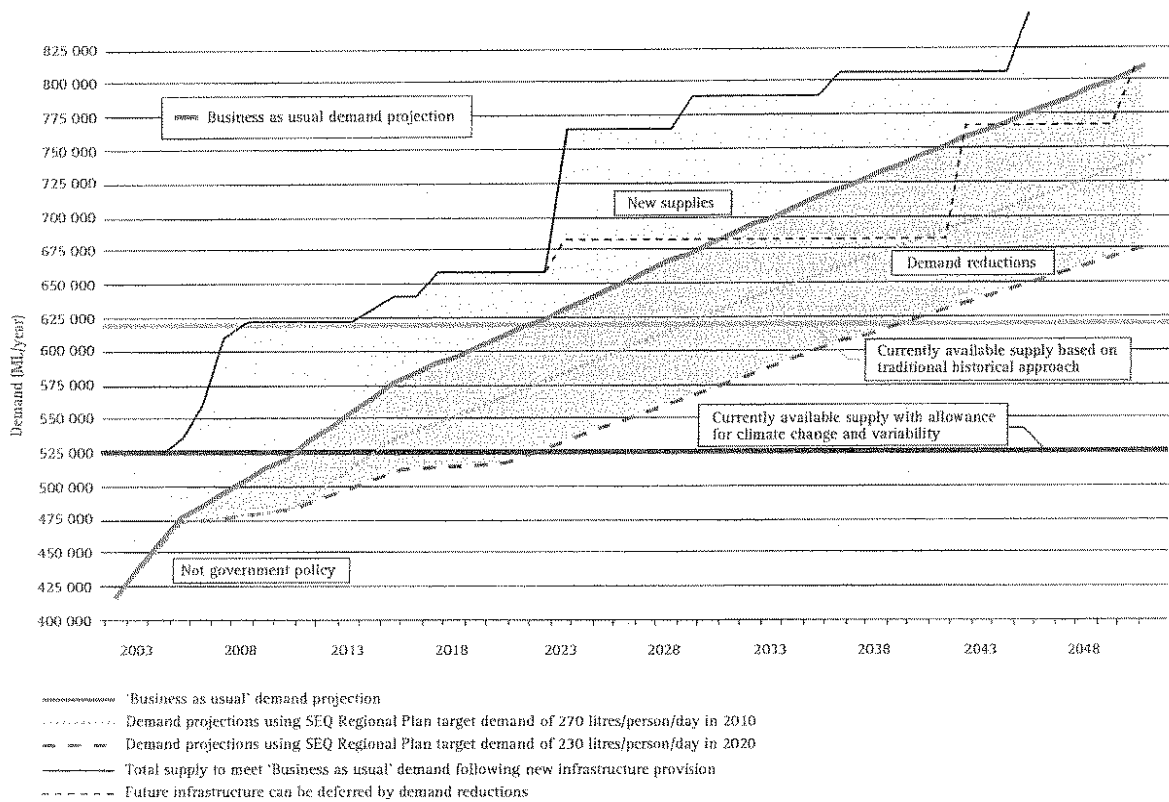
Governance arrangements progressing the Interim Report

An Executive SEQ Infrastructure Implementation Steering Committee has been established to oversee the implementation of projects identified in the *Interim Report*. The committee is jointly chaired by the Coordinator-General and the Director-General of the Department of Natural Resources and Mines and includes local government and water service provider representatives.

Finalising the SEQRWSS—Stage 2 Possible infrastructure program to meet future demand

Graph 3 illustrates a possible infrastructure program, subject to further investigation, to meet future demand. It also illustrates that the demand targets set in the *SEQ Regional Plan* provide considerable scope to extend the period over which existing supplies can meet demand.

Graph 3—Possible infrastructure program to meet future demand



Possible infrastructure program subject to SEQ Regional Water Supply Strategy

Short-term projects (2005–2009)

Recommissioning of Lake Manchester and Enngatta Dam, recycling to industry, optimisation of intercatchment water distribution, Cedar Grove Weir, minor aquifers, desalination plant (subject to further investigation), Mary River Weir.

Medium-term projects (2010–2020)

Subject to investigation – Raise Hinze Dam, construct Wyaralong Dam, recommission Ewan Madduck Dam, and upgrade South Macleay supply system.

Possible longer-term measures (2021–2050)

Pending investigation – construct Glendower Dam and Mary River water storage improvements, augment desalination capacity and recycling of water, provide additional mainland groundwater supplies, and raise Wyvenhoe Dam.

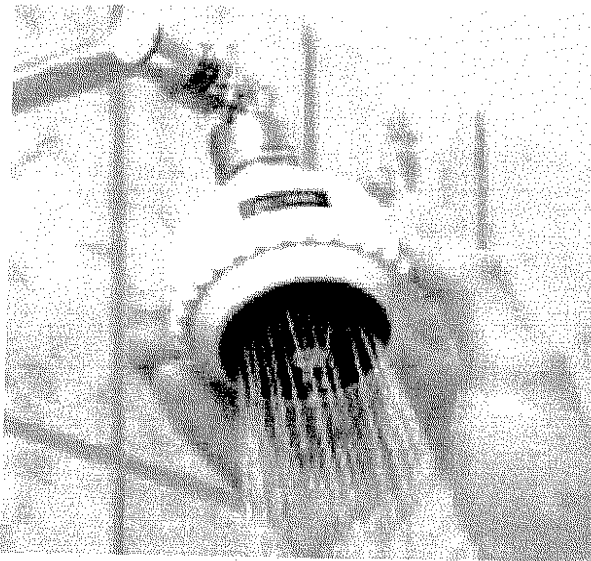
All surface water yields have been reduced by 15 per cent as an allowance for contingency purposes. Rural water supplies are still under investigation.

Table 3—Effect of reducing consumption

Domestic consumption (litres/person/day)	Period existing supplies meet demand based on historical record approach	Period existing supplies meet demand allowing for climate variability and change
'Business as usual' 300	2021	2011
Year 2010 target 270	2030	2015
Year 2020 target 230	2040	2022

These targets could be expected to see the adequacy of existing supplies extended as indicated in Table 3 above. This can be viewed schematically in Graph 3 (page 21), which assumes these targets are achieved. Assuming that a consumption target of 270 litres per person per day is achievable, Graph 3 indicates that existing supplies could be extended for about eight or nine years based on historical supply assessments, or about four years when a reduction in storage yield is allowed for to address the risk of climate variability and change. The achievability or otherwise of the consumption targets is currently being assessed, with the results being incorporated in the final SEQRWSS Stage 2 Report.

Graph 3 also indicates possible increases in cumulative totals of water availability across the region assuming a preliminary 15 per cent reduction in historically determined yields to provide some contingency for worse than historical droughts. This reduction in yield has been assumed based on consideration of probability assessments and the likelihood of worse than historical droughts. The possible program of supply augmentation incorporates some of the infrastructure proposals being investigated and indicatively the potential improvements to supply availability. As indicated earlier, this will be reviewed in the preparation of the final SEQRWSS Stage 2 Report.



Interim Report — implementation plan

It is envisaged that finalisation of the SEQRWSS Stage 2 Report will be progressed under the existing project management arrangements. In developing the final strategy and addressing the appropriate balance between supply and demand, there will be particular regard to:

Demand

- The significant short-term, low-cost gains available through pressure reduction to lower consumption and water distribution system losses.
- The potential gains available through water restrictions and effect of demand hardening as water use efficiency improves.
- The time it will take to implement demand initiatives other than restrictions which have the potential to provide the best long-term community returns e.g. installation of water efficient appliances.
- The need to establish new policy and legislative frameworks to support integrated water management to address the full water cycle.
- The need for the state to lead by example in improving water use efficiency in its own buildings.

Supply

- The relatively high cost of all new water supplies for SEQ compared to the cost of existing supplies.
- Adverse environmental, social and economic costs that may reduce the benefits of new infrastructure.

Opportunities

- There are few surface water storage sites left that could be developed with acceptable social, environmental or economic impacts. Therefore, those sites that exist must be protected for future development.

- The limited major surface water development opportunities already identified in southern areas include the proposed Glendower and Wyaralong dams and the raising of Hinze Dam. There may be some cost-effective opportunities to improve the efficiency of existing dams with water harvested from smaller, undeveloped catchments. The environmental issues associated with inter-basin transfers will have to be assessed.
- Some major water storage improvement opportunities in the Mary River catchment are being assessed.
- Raising existing dams offers a way of minimising the environmental impacts of water resource development by not inundating pristine aquatic environments.
- There are risks associated with heavy reliance on a few major storages in this relatively small and dry region. It is essential to explore the opportunities and gains to be made by matching water quality with use—so called 'fit for purpose' strategies—and supply diversification both geographically and in terms of source types, especially those that are least impacted upon climatically. This requires further assessment of opportunities associated with desalination; water recycling; integrated urban water management; aquifer storage and recovery; rainwater tanks; and stormwater harvesting.
- Desalination is a potential future supply source that has energy, water, environmental and cost implications. Significant investigations are underway to identify and secure the most appropriate sites for desalination facilities.
- Water recycling to industry can reduce the demand on our potable water supplies. Recycling opportunities often are not in the most suitable locations and hence, can be expensive. The major opportunities are for substituting existing power station supplies, at Brisbane Airport and the Australia TradeCoast areas of Brisbane.

Limitations and risks

- Any future supply strategies that may be adopted will have advantages and disadvantages, including different limitations and costs. Dams; groundwater extractions; desalination; water recycling; integrated urban water management; aquifer storage and recovery; rainwater tanks; and stormwater harvesting all require careful consideration from an environmental, health, operational complexity and cost perspective.
- There are very few dam sites or aquifers available where new water supplies can be developed cheaply. Under these circumstances, urban requirements could be expected to be predominant and it is unlikely that significant additional surface and groundwater supplies will be able to be made available for rural purposes. Given these limitations and the few opportunities available, new and raised storages will tend to be developed to the maximum limits possible allowed through water resource planning processes.
- The high level of water resource development that has already occurred in the Brisbane River catchment limits the prospect of increasing water allocations. Any further infrastructure development in the Wivenhoe catchment area would reduce the yields of the Wivenhoe Somerset dams system. Future growth in western areas of SEQ will need to be largely serviced from water supplies in existing large storages such as Wivenhoe, Somerset, Cressbrook, Perseverance and Cooby dams.
- Because of the environmental sensitivities, the future development of island groundwater supplies are likely to be limited, except perhaps as an extreme drought emergency measure. Smaller mainland groundwater supplies may be developed as a drought measure.

AFRICA FRAMERS / ANNOUNCEMENT 17.1.06

SUNSHINE COAST ENVIRONMENT COUNCIL 54-4-95-747
SCOTT ALDERSON
Sunshine Coast Daily

Friday, April 28, 2006

New dam will lead to major resumption

ALMOST 900 properties are to be resumed outside Gympie to accommodate the new dam to be built on the Mary River.

The State Government yesterday announced the dam, one of the biggest in Queensland, would be located in the Traveston Crossing, south of Gympie.

But the development means 882 properties would be resumed to accommodate the development which would span 7600 hectares when it was completed by 2012.

It's not known how many owners, or residents, will be affected but the government has promised to make compensation payments.

The dam, which will have a maximum capacity of 660,000 megalitres, was one of two announced on Wednesday in a bid to solve south-east Queensland's water crisis.

The dam, to cost about \$150 million, will be funded by the sale of the retail arm of Energex and parts of Ergon Energy.

Cooloolah Shire mayor Mick Venardos, who toured the



THE MIGHT MARY: Prolonged dry periods can lead to the Mary River - seen here at Conondale - almost drying up, leaving a big question mark over the effectiveness of dam downstream.

proposed site in a helicopter with Premier Peter Beattie and Water Minister Henry Palaszczuk yesterday, backed the dam despite the disruption to potentially hundreds of residents.

He said the dam would serve the "greater good". "There certainly will be people who will be disrupted from their homes and certainly they want certainty in what is going to happen," he said. "The government has assured me that once they have made a firm decision on the site they're going to make sure that proper compensation is paid to them so they can get on with their lives." "There are over two million people in south-east Queensland and people in the urban and agricultural areas must be given a guaranteed water supply," he said.

But more environmental concern has been raised over the proposal. Scott Alderson from the Sunshine Coast Environment Council said the river could not sustain such a massive drain on its resource. He predicted the dam would divert as much as 20% of the river's natural flow. "A mega dam on the Mary River will be both an environmental and economic disaster," he said.

PHOTO: WARREN LYNAM/ISA5786

Council refuses estate

IT'S been a long and anxious wait for residents of Chevalum.

Neumann Developments Pty Ltd had lodged an application for a proposed industrial estate on Robert's Turf Farm on Chevalum Road.

It was an estate which many felt would have potential flooding impacts upstream and downstream and would also create serious traffic issues. While they knew Maroochy Council's planning staff had recommended refusal, that did not always mean council would follow suit.

But this week they had some relief with council following the advice of planning staff and refusing the application in its current form.

Ms Austin said residents felt there were still concerns regarding traffic issues. "That Main Roads finds a single set of traffic lights on Morns and Chevalum Roads sufficient would be laughable if it wasn't such a deadly issue."