FIRST ANNIVERSARY OF THE TRAVESTON CROSSING DAM ANNOUNCEMENT ON 27.4.06.

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27.4.07

THE SECRETARY
SENATE RURAL REGIONAL AFFAIRS & TRANSPORT
PARLIAMENT HOUSE CANBERRA ACT 2600

PLEASE INCLUDE THIS LETTER AS A SUBMISSION

RE: REAL FACTS ABOUT TRAVESTON DAM

THE ATTACHED GRAPH COMPARES THE PROPOSED TRAVESTON DAM STAGE 1 & STAGE 2 TO MAJOR DAMS IN S.E. QLD. THIS GRAPH DEFINITIVELY SHOWS THAT THE TRAVESTON DAM IS NOT COMPARABLE TO ANY OF THE OTHER DAMS IN S.E. QLD. CONTRAST THIS GRAPH WITH THE QLD. GOVERNMENT SUBMISSION PAGE 137.
IT IS WORTH EXAMINING WHY THE QUEENSLAND GOVERNMENT CHOSE TO COMPARE TRAVESTON DAM TO THE TWO NORTH QUEENSLAND DAMS, ROSS RIVER AND THE BURDEKIN FALLS DAM WHICH HAVE COMPLETELY DIFFERENT CLIMATIC CONDITIONS.

IT IS DEFINITELY WORTH COMPARING THE THREE S.E.Q. WATER DAMS TO TRAVESTON DAM THOUGH, AS THEY ARE ALL RAPIDLY DRYING UP WITH THE EFFECTS OF CLIMATE CHANGE. THE QUEENSLAND GOVERNMENTS SUBMISSION ON PAGE 123 CONFIRMS THAT TRAVESTON DAM WOULD BE FOLLOWING THE WIVENHOE DAM, IF IT HAD BEEN BUILT BY 2000 AS CLAIMED BY THE DEPUTY PREMIER ANNA BLIGH IN PARLIAMENT ON 19.4.07.

TRAVESTON LIKE WIVENHOE WOULD BE RAPIDLY RECEDING WITH MORE & MORE MUDFLATS EXPOSED AS RAINFALL DIMINISHES.

WIVENHOE DAM IS CONSIDERED TO BE A RELATIVELY SHALLOW STORAGE (10.6 M AV. DEPTH) AND IS PERFORMING AS PREDICTED.
REFER TO THE ATTACHED STORAGE AND CATCHMENT CHARACTERISTICS - TABLE 1 PREDICTED VARIATIONS IN WATER BODY. WHERE AREA OF MUDFLATS INCREASED DRAMATTICALLY WITH % OF TIME.

UP TO 26% OF THE TIME — 1470 HA. OF EXPOSED MUDFLATS

UP TO 67% OF THE TIME — 6,620 HA. OF EXPOSED MUDFLATS

IN OTHER WORDS IT WOULD BE 1/3 FULL FOR UP TO 2/3 OF THE TIME. CLIMATE CHANGE IS EXACERBATING THE PREDICTED PERFORMANCE CRITERIA. TRAVESTON DAM WILL BE EVEN WORSE DUE TO THE CLIMATE CHANGES PREDICTED IN THE FUTURE.

THE TWO BEST PERFORMING DAMS IN S.E. QLD ARE THE TWO DEEPEST DAMS — BARCOON POCKET AND HINZE II BOTH CURRENTLY AT OVER 70% FULL.

ONE OF THE WORST PERFORMING DAMS IS THE PARADISE DAM WHICH HAS A CAPACITY OF 300,000 ML. WHEN FULL AND IT COST (2005) 300,000 MILLION DOLLARS, IT IS CURRENTLY UNDER 10% OF ITS CAPACITY & FALLING RAPIDLY. THE QUEENSLAND GOVERNMENT INTENDS TO SPEND 1.7 BILLION DOLLARS ON TRAVESTON STAGE 1 AT 153,000 ML. HALF THE SIZE AND MORE THAN 5.6 TIMES THE COST, JUST 2 YEARS LATER.

IT IS RELEVENT TO REMIND THE QUEENSLAND GOVT THAT THEY CHOSE TRAVESTON DAM BECAUSE IT WAS THE HIGHEST YIELD AND THE 4th. CHEAPEST ON GH & D's SHORT LISTS. [REF. TABLES 4.2 & 4.3 PAGES 685 & 687 RESPECTIVELY IN GH & D REPORT - JUNE 2006.] WHY DOES THE QUEENSLAND GOVERNMENT REFUSE TO SUPPLY THE DETAILED COSTING FOR TRAVESTON DAM STAGE 1 — COULD IT BE THAT THE CAPITAL COST HAS ALREADY RISEN DRAMATICALLY FOR LAND AQUISITION, THE INFRASTRUCTURE RELOCATION COSTS AND THE DAM CONSTRUCTION COSTS.

IN THE ABSENCE OF THEIR COSTS WHY NOT ASSUME THEY HAVE INCREASED BY 30 to 50% IN THE 12 MONTHS SINCE THE ANNOUNCEMENT IN APRIL. LAST YEAR.

COMBINE THIS COST WITH THE REDUCED YIELDS ALL EXPERTS PREDICT WILL RESULT FROM CLIMATE CHANGE, AND WE WILL SEE HOW ENORMOUS THE COST OF ANY TRAVESTON DAM WATER WILL BE:-

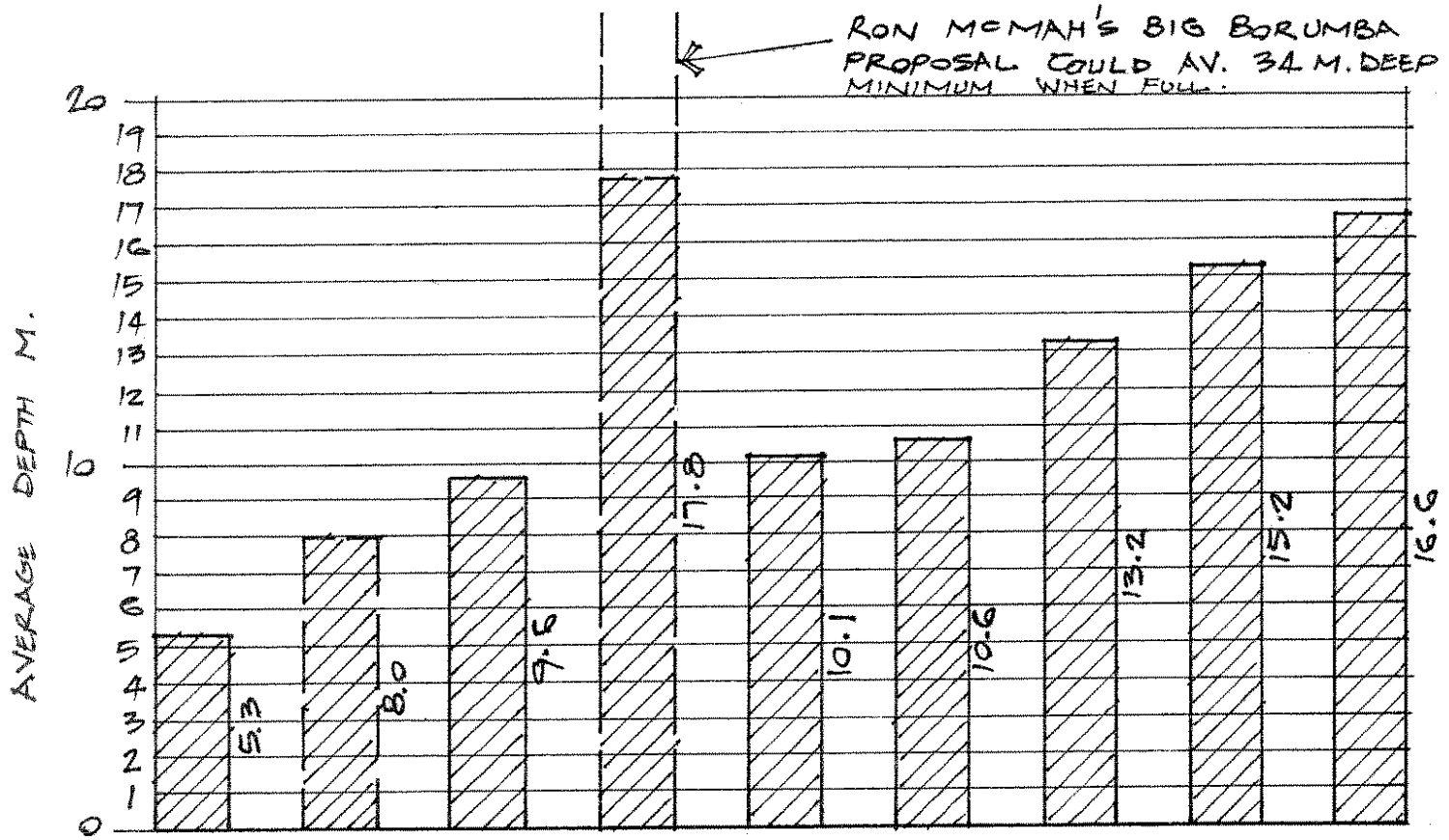
1.7 BILLION x 1.3 = 2.21 BILLION ÷ 40,000 ML/ANNUM (REVISED COST, REVISED YIELD)
= $55,250/ML. COMPARED TO $4,695/ML. LAST YEAR — 12 TIMES THE UNIT COST IN A YEAR

MR. BEATTIE & MS. BLIGH SHOULD IMMEDIATELY PRODUCE THEIR DETAILED COSTINGS FOR THIS MASSIVE PROJECT OR CANCEL IT BEFORE THEY WASTE ANY MORE SCARCE PUBLIC FUNDS.

D. MILLIGAN

THE AVERAGE DEPTH OF THE PROPOSED TRAVESTON DAM IS CERTAINLY NOT COMPARABLE WITH THE OTHER MAJOR DAMS IN SOUTH-EAST QUEENSLAND.

THE TWO BEST PERFORMING DAMS IN S.E. QLD ARE THE TWO DEEPEST DAMS - BARROON POCKET AND HINZE DAM II BOTH CURRENTLY AT OVER 70% FULL, AND WHEN COMPLETED HINZE III WILL BE EVEN DEEPER.



	TRAVESTON ST.1	TRAVESTON ST. 2	BORUMBA EXIST.	BORUMBA ST. 3	NORTH PINE	WIVENHOE	SOMERSET	BARROON POCKET	HINZE II
CAPACITY	153,000	570,000	46,000	260,000	215,000	1,165,000	524,000	61,000	161,000 ML
SURFACE AREA	2,900	7,100	480	1,455	2,120	10,940	3,967	400	970 HA
AV. DEPTH	5.3	8.0	9.6	17.8	10.1	10.6	13.2	15.2	16.6 M.

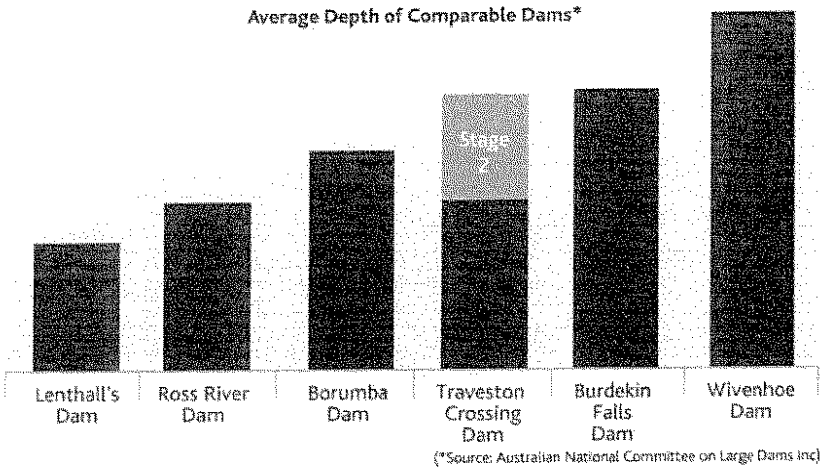
AVERAGE DEPTHS OF MAJOR DAMS IN S.E. QLD.

SOURCE : SUNWATER, SEQWATER, AQUAGEN, GOLD COAST WATER

WHY DID THE QUEENSLAND GOVERNMENT SUBMISSION ON PAGE 137 CHOOSE NOT TO COMPARE THE PROPOSED TRAVESTON DAM WITH THE MAJOR DAMS IN THE REGION. THIS GOVERNMENT SUBMISSION COMPARED TRAVESTON TO 2 DAMS IN NORTH QUEENSLAND WITH COMPLETELY DIFFERENT CLIMATIC CONDITIONS AND ANOTHER DAM NEAR BUNDABERG.... LENTHALL'S DAM WHICH IS NOT EVEN A MAJOR DAM AT ALL. IT HAS A CAPACITY OF 17,800 ML WHEN FULL. — VERY INTRIGUING TO SAY THE LEAST.

The overall average depth of the Traveston Crossing Dam is 5 metres at Stage 1 and 8 metres at Stage 2 and is comparable to other major dams in Queensland as shown in the accompanying table. The depth of the dam wall is 24 metres and the average depth in the river channel is 12 metres at Stage 1.

Figure 8.6: Average Depth of Comparable Dams



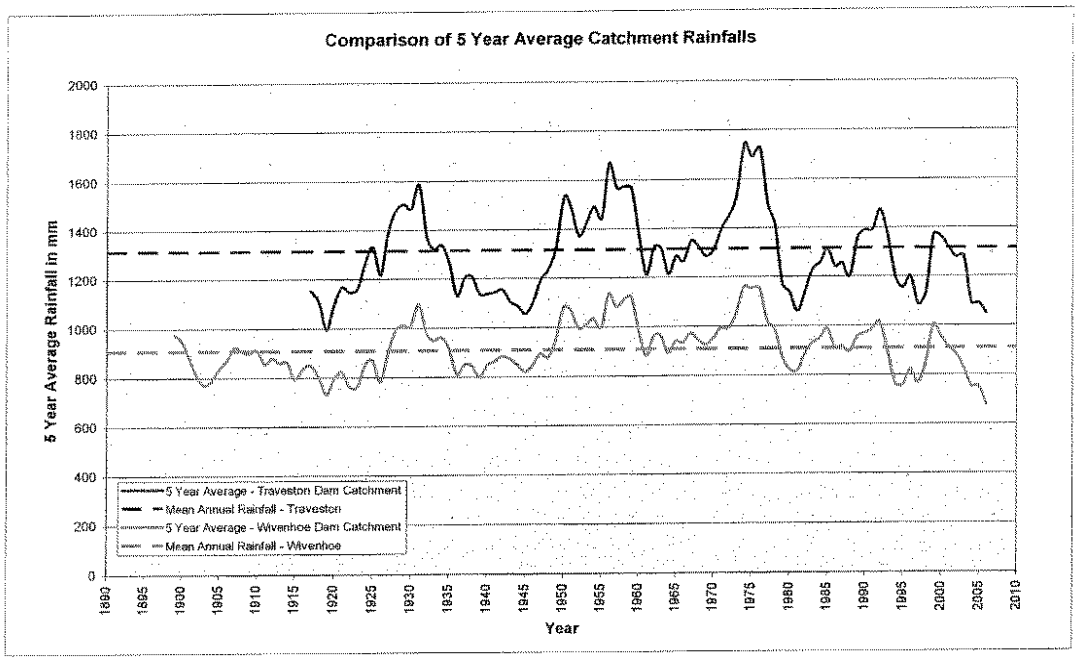


Figure 8.1 – Comparison of 5 year Average Catchment Rainfalls for Traveston Crossing Dam and Wivenhoe Dam (SunWater data, 2007)

(c) Potential Impacts

The following potential impacts identified are provided as a high level and preliminary summary only at this time. The EIS process will involve the undertaking of significant further assessments to fully determine the potential impacts of the construction and operation of the Traveston Crossing Dam. It is anticipated that the EIS process will interact with the development of dam design and routes for relocated roads and other infrastructure, thereby optimising either potential design or impact management solutions.

Property affected

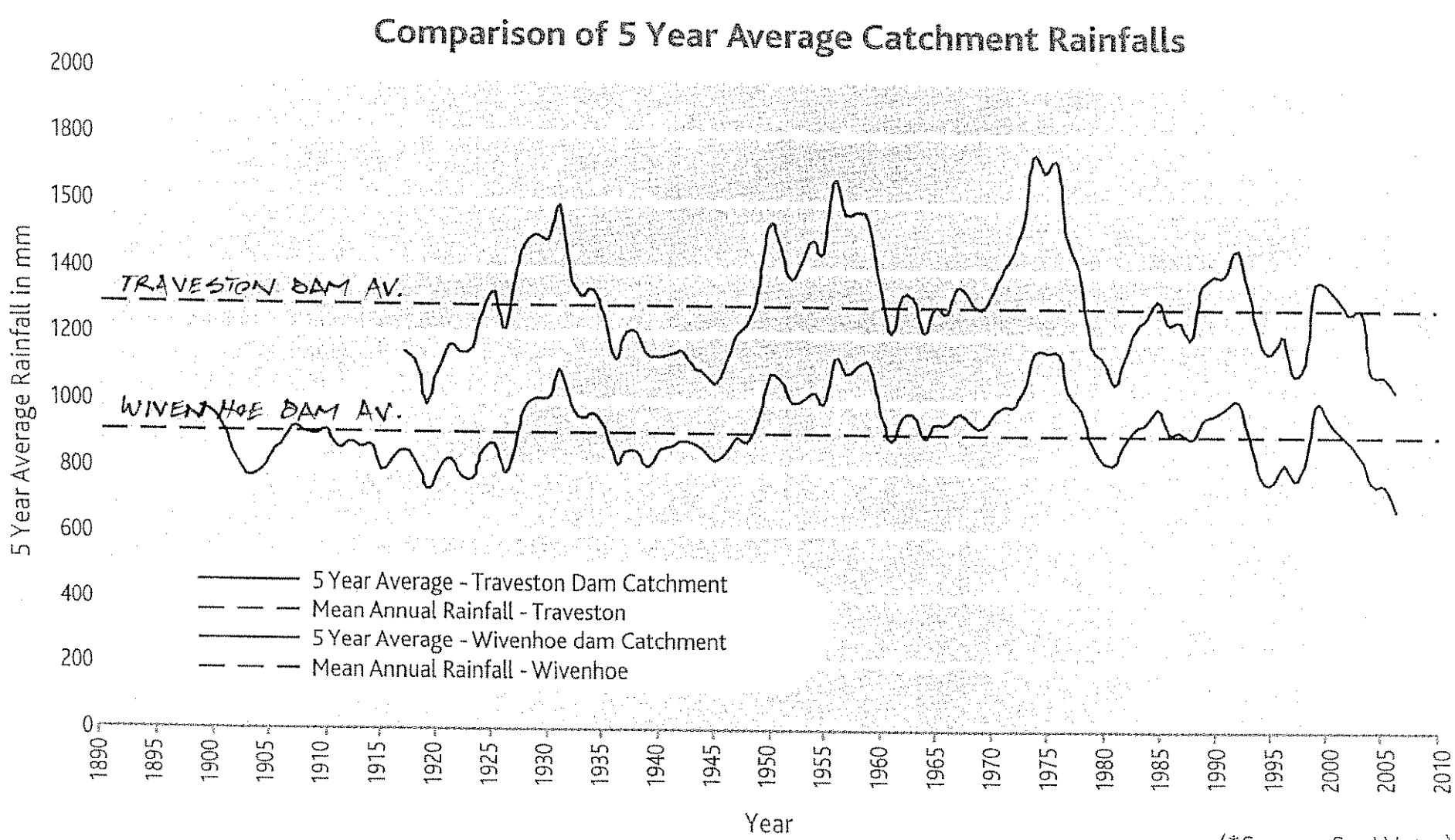
Stage 1 inundation will affect about 3,000 hectares of land at FSL, including 76 houses on 332 properties. The townships of Imbil, Brooloo, Federal, Carter's Ridge and Amamoor will not be affected at FSL for Stage 1.

The modelling shows that a large proportion of the Kandanga township will not be affected by Stage 1 of the dam. Community facilities not affected include: the Kandanga Hall, Bowls Club, swimming pool, school, railway station and railway line, and the hotel. The cemetery will not be affected in Stage 1.

TRAVESTON DAM CATCHMENT = 2,110 KM²

WIVENHOE DAM CATCHMENT = 7,000 KM²

WIVENHOE IS 3.3 TIMES SIZE OF TRAVESTON CATCHMENT



(*Source: SunWater)

GRAPH PRODUCED BY Q.W.I. - MARCH 2007 UPDATE

RECREATION PLANNING AT LAKE WIVENHOE

David J. Pitts and Dale R. Anderson, Directors, Environment Science & Services, Brisbane

INTRODUCTION

Comprehensive planning for Lake Wivenhoe and its environs commenced in 1971 when the Queensland Government decided that the next source of water supply for Brisbane and surrounding urban areas would be a dam on the Brisbane River at Wivenhoe. The dam site is located approximately 150 km upstream from the mouth of the Brisbane River and 80 km by road north-west of Brisbane.

Lake Wivenhoe has been planned as a multi-purpose storage with the following three primary functions:

Water Supply

Lake Wivenhoe will have a storage capacity at full supply level of 1,140,000 Ml. Water released from Lake Wivenhoe flows down the Brisbane River for a distance of approximately 60 km before it is drawn off at the Brisbane City Council's existing treatment works at Mt. Crosby. In terms of its water supply function Lake Wivenhoe is a regulating storage rather than a direct supply storage.

Flood Mitigation

An important factor in the choice of Lake Wivenhoe as south-east Queensland's next major water storage was the potential flood mitigation benefits it could bring to the City of Brisbane, the City of Ipswich and the Shire of Moreton. Lake Wivenhoe is designed to have a flood compartment storage of approximately 1,400,000 Ml.

Electricity Generation

In 1976 the Queensland Government decided to use Lake Wivenhoe as the lower storage for a pumped storage hydro-electric scheme. This scheme involved the construction of an upper storage at Split-Yard Creek (a small tributary of the Brisbane River) and an automated hydro-electric power station with a generating capacity of 500 MW.

The completed project will produce major changes in the landscape and scenery which will provide the potential for Lake Wivenhoe and its environs to be developed for a range of secondary functions such as recreation and outdoor education.

The Queensland Government has approved the provision of opportunities for recreation and outdoor education subject to stringent management controls and the restriction of activities that are incompatible with other storage functions.

Resumption of land for the Wivenhoe project commenced in 1973 and the first contract for the construction of permanent works was awarded in March 1977. The pumped storage hydroelectric scheme was commissioned in 1984, and works at the dam wall are expected to be completed in the first half of 1985. The first recreational facilities are also expected to be available for public use in the first half of 1985.

In terms of recreation planning, Lake Wivenhoe is of particular interest because it represents an example of comprehensive storage planning in which recreational needs have been considered at an early stage of the project and integrated into the overall decision making framework as it affects management of the catchment and water body. In this respect Lake Wivenhoe probably represents the exception rather than the rule in Australian water resources planning. There has been a conscious attempt on the part of responsible agencies to set overall objectives and standards for recreational use and management and to avoid ad-hoc, incremental and unco-ordinated responses to recreational demand pressures.

The aim of this paper is to briefly review the recreation planning process at Lake Wivenhoe and to highlight some particular issues and planning techniques that may be of interest to practitioners involved in the management of urban water storages.

STORAGE AND CATCHMENT CHARACTERISTICS

The Storage

Some important characteristics of the storage from a recreational point of view are:

• Full Supply Level (FSL)	EL 67 metres
• Maximum Water Level	EL 77 metres
• Limit of Flood Reserve around storage	EL 75 m with min. width 200 m.
• Maximum Depth at FSL	44 metres
• Inundated Area at FSL	10,820 ha
• Length of Shoreline at FSL	400 km

While Lake Wivenhoe will be an extremely large waterbody at full supply level, it will also be a relatively shallow storage. The Brisbane Valley above the dam wall is broad and gently sloping with extensive river terraces.

The combination of these factors means that even relatively minor reductions in water depth will result in rapidly receding shorelines and noticeable decreases in the ponded area. One of the difficulties from a catchment planning point of view is that water levels within the storage are expected to fluctuate considerably under the proposed operating procedures.

The extent of the changes in ponded area is illustrated in Table 1. In this table the maximum water depth, the inundated area and the area of mudflats exposed are presented for five different supply levels between Full Supply Level (EL 67) and the Minimum Operating Level for the pumped storage hydro-electric scheme (EL 49). The percentage of the time that the storage is expected to be at or above each of the supply levels is also presented.

In recognition of the flood mitigation role of the storage, a flood reserve has been declared above Full Supply Level. The flood reserve extends from EL 67 to EL 75 with a minimum width of 200 metres. The area of the flood reserve is 10,700 ha.

The storage characteristics affect recreational use of Lake Wivenhoe and environs in a number of important ways. For example:

- there are relatively few sites available where adequate water access is available over the full range of expected water levels,
- the shallow nature of the storage presents difficulties for certain types of boating activities,
- aesthetic and public health considerations restrict the levels and styles of recreation that can be accommodated adjacent to large periodically exposed mudflats, and
- only flood tolerant development is permitted between full supply level and flood level.

The Catchment

The physical catchment area of Lake Wivenhoe covers some 702,000 ha which represents approximately 50 per cent of the total Brisbane River catchment. The Lake Wivenhoe catchment has been extensively modified with the majority of land being used for non-intensive rural pursuits such as grazing and forestry. Limited areas are used for more intensive rural production such as dairying and agriculture. The towns of Kilcoy, Esk, Toogoolawah and Woodford lie within the catchment, together with a number of smaller centres servicing the local rural population. Remaining natural vegetation within the catchment primarily consists of eucalypt open forests.

All land within approximately 5 kilometres of Full Supply Level has been declared as the Wivenhoe Dam Catchment Area under the Irrigation Act 1922-1977 and the Water Act 1926-1979. The purpose of the Declared Catchment is to protect water quality and in this context provides for exercise of control over subdivision and land use.

As part of the Wivenhoe project all lands below Full Supply Level and within the flood reserve have been compulsorily acquired. An additional area of approximately 16,000 ha of mostly adjoining land was also acquired. This additional land consists of farmland that either became economically non-viable or was otherwise adversely affected by the scheme.

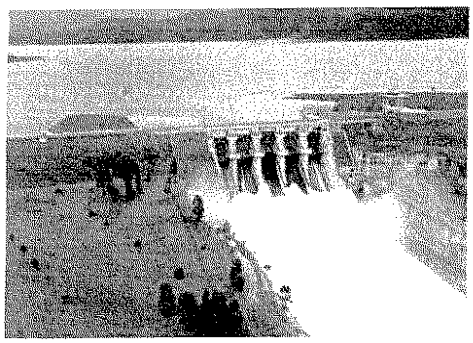
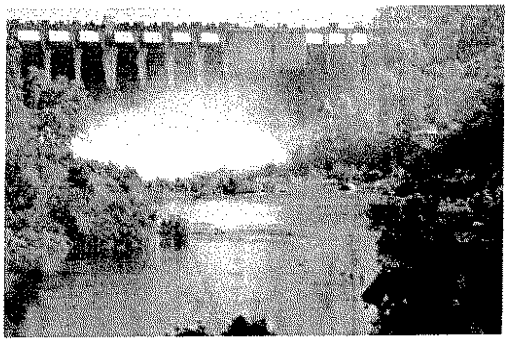
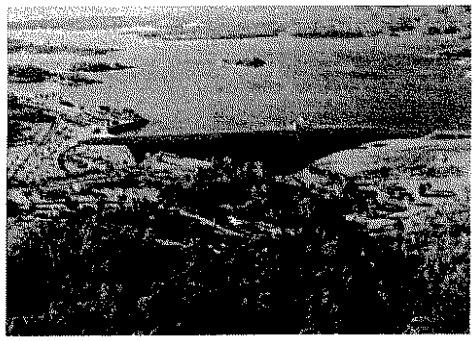
The flood reserve and additional acquired lands together formed the land holdings that were potentially available for recreation and outdoor education. Within these holdings there was only one area surrounding Split-Yard Creek Dam and the hydro-electric power station that was excluded from consideration as a possible public area on the grounds of safety and security.

Table 1: Predicted variations in waterbody

Supply Level (m)	Max. Water Depth (m)	Area Inundated (ha)	Area of mud flats Exposed (ha)	% of Time Storage at or Above this Level
EL 67	44	10,820	0	8%
EL 65	42	9,350	1,470	26%
EL 60	37	6,250	4,570	52%
EL 55	32	4,200	6,620	67%
EL 49	26	not available	not available	100%*

Source: Queensland Premier's Department

* Subject to policy

SOUTH EAST QUEENSLAND WATER CORPORATION LTD

KEY FEATURES OF DAMS AND STORAGES

	Wivenhoe Dam	Somerset Dam	North Pine Dam
Catchment Area (sq km	5,554	1,503	348
Capacity – Water Supply (ML)	1,165,000	380,000	215,000
Capacity – Flood Storage (ML)	1,450,000	524,000	N/A 214,960 ML
Submerged Area (ha) at Full Supply Level	10,940	3,967	2,121
Stream Bed Level at Structure (AHD)	23.0	60.4	4.3
Full Supply Level (AHD)	67.0	99.0	39.63
Spillway Level (AHD)	57.0	100.45	32.01
Embankment or Crest Level (AHD)	79.0	107.45	43.2
Type of Structure	Embankment - 4 million m^3 Concrete 140,000 m^3	Concrete 203,000 m^3	Embankment 275,000 m^3 Concrete 175,000 m^3
Year of Completion	1985	1959	1976
Design	Water Resources Commission	Bureau of Industry Stanley River Works Board	Department of Local Government
Length of Wall (m)	2,300	305	1,375
Shoreline (km)	462	237	166
Spillway Gates	5 of 12.0m x 16.6m	8 of 7.97m x 7.01m	5 of 12.2m x 8.3m
Sluice Gates	N/A	8 of7.97m x 7.01m	N/A
Regulator Valves	2 of 1.5m diameter	4 of 2.3m diameter	2 of 1.4m diameter
Average Evaporation (mm/year)	1,872	1,775	1,375
Average Rainfall (mm/year)	940	1,230	1,175
Average Water Supply Yield (ML/year) With 1% risk of depletion	Currently Under Review		54,750
SEQWater's Allocation	345,000 Megalitres		
Hydro Electric Station/dam structure	4.5 megawatts	4 megawatts	N/A
Major Water Supply Customers at 30/6/04	Cities of Brisbane, Ipswich , Logan, Gold Coast, Shires of Beaudesert, Esk, Gatton, Laidley, Kilcoy and Nanango, Tarong Energy, CS Energy		Cities of Redcliffe & Brisbane Shires of Pine Rivers & Caboolture

4.2 Comparison of Options

Each of the options in Table 4.1 were reviewed to identify the full supply level that results in the lowest unit cost (total capital cost /annual HNF yield) bulk water supply.

The project options in Table 4.2 have been ranked to indicate the projects with the maximum yield at the point of lowest unit cost.

Table 4.3 indicates the lowest unit cost project options sorted on the basis of unit cost of supply.

Table 4.2 Bulk Water Supply Options Ranked by Potential yield

Bulk Water Supply Project Option	Potential Yield (ML/a)	Storage Required (ML)	Full Supply Level (m)	Cost ($Million)	Unit Cost ($/ML/a)
Mary River Traveston Dam	215,340	1,130,000	85	1,011.1	4,695
Logan River/Cedar Grove Dam	78,346	295,136	40	768.9	9,814
Wyaralong 104,000 ML and Tilley's Bridge 110,000 ML Dams + Cedar Grove Weir	59,000	-	0	356.7	6,046
Mary River/Cambroon Dam	52,930	127,247	130	206.3	3,898
Wyaralong 104,000 ML and Tilley's Bridge 50,000 ML Dams + Cedar Grove Weir	50,000	-	0	301.3	6,025
Logan River/Tilley's Bridge near Rathdowney	42,714	100,000	110	223.1	5,223
Coomera River/Coomera Dam	42,688	110,678	64	503.9	11,804
Yabba Creek/Borumba Stage 3 with Coles Crossing Weir	39,236	475,581	170.5	266.7	6,797
Obi Obi Creek Kidaman Dam	36,883	172,898	130	172.5	4,677
Maroochy River/Raising Wappa Dam	30,004	81,230	77.5	238.0	7,932
Albert River/Glendower Dam acting in conjunction with a barrage on the Albert River	30,000	111,800	79.17	261.5	8,717
Wyaralong/Logan River Teviot Brook with Cedar Grove Weir	26,674	97,025	63	127.8	4,790
Amamoor Creek/Amamoor Dam	26,654	218,685	145	162.2	6,085

Table 4.3 Bulk Water Supply Options Ranked by Unit Cost at Source

Bulk Water Supply Project Option	Potential Yield (ML/a)	Storage Required (ML)	Full Supply Level (m)	Cost ($)	Unit Cost ($/ML/a)
Mary River/Cambroon Dam	52,930	127,247	130.00	206.3	3,898
Flood Harvesting into a raised Hinze Dam: Coomera (Threshold 20 ML/d)	11,000			46.9	4,266
Obi Obi Creek Kidaman Dam	36,883	172,898	130.00	172.5	4,677
Mary River Traveston Dam	215,340	1,130,000	85.00	1,011.1	4,695
Wyaralong/Logan River Teviot Brook with Cedar Grove Weir	26,674	97,025	63.00	127.8	4,790
Logan River/Tilley's Bridge near Rathdowney	42,714	100,000	110.00	223.1	5,223
Flood Harvesting into a raised Hinze Dam: Coomera (Threshold 20 ML/d) + Canungra (Threshold (90 ML/d) + Mudgeeraba (Threshold 5 Ml/d) + Tallebudgera (Threshold 5 ML/d)	22,600			129.1	5,712
Wyaralong 104,000 ML and Tilley's Bridge 50,000 ML Dams + Cedar Grove Weir	50,000			301.3	6,025
Wyaralong 104,000 ML and Tilley's Bridge 110,000 ML Dams + Cedar Grove Weir	59,000			356.8	6,046
Amamoor Creek/Amamoor Dam	26,654	218,685	145.00	162.2	6,085
Flood Harvesting into a raised Hinze Dam: Coomera (Threshold 20 ML/d) + Mudgeeraba (Threshold 5 ML/d)	12,500			77.7	6,215
Yabba Creek/Borumba Stage 3 with Coles Crossing Weir	39,236	475,581	170.50	266.7	6,797
Maroochy River/Raising Wappa Dam	30,004	81,230	77.50	238.0	7,932
Albert River/Glendower Dam acting in conjunction with a barrage on the Albert River	30,000	111,800	79.17	261.5	8,717
Logan River/Cedar Grove Dam	78,346	295,136	40.00	768.9	9,814
Coomera River/Coomera Dam	42,688	110,678	64.00	503.9	11,804