Chapter 3

Traveston Crossing Dam and Wyaralong Dam

3.1 The majority of evidence received during this inquiry related to the proposed Traveston Crossing Dam. The Wyaralong Dam proposal was the subject of much discussion during public hearings and was also raised in some submissions. This chapter provides a description of each of these proposals including evidence received relating to the decision making process, the technical aspects of the dams, such as site suitability, and the cost of the dams.

3.2 Chapter 4 discusses the social impacts of these two proposals and chapter 5 discusses the environmental issues relating to both dam proposals.

Proposed Traveston Crossing Dam

3.3 The proposed Traveston Crossing Dam is located 16 kilometres south of Gympie in the Mary River catchment and will be completed in two stages. Stage 1 is due for completion in 2011 and plans to deliver an additional 70,000 megalitres of water a year. The project will only proceed to Stage 2 if the additional water storage capacity is required to meet expected demand for water based on rainfall and usage patterns. The Queensland Government established a company, Queensland Water Infrastructure Pty Ltd (QWI) to develop the dam and obtain the approvals required.

Stages of the proposal

3.4 The Queensland Government proposes to develop water infrastructure in the Mary River catchment in three phases to provide 150,000 ML/a by 2035. The three phases are:

- construction of Stage 1 of the Traveston Crossing Dam by the end of 2011;
- raising the existing Borumba Dam by a maximum of 30 metres by 2025; and
- construction of Stage 2 of the Traveston Crossing Dam by 2035, as required by demand.

3.5 The Queensland Government provided the statistics for the Traveston Crossing Dam which are detailed in Table 3.1 below:

Table 3.1 – Traveston Crossing Dam – Statistics for Stage 1 and Stage 2

	Stage 1	Stage 2
Anticipated annual yield	70,000 ML	110,000-150,000 ML (includes 70,000 from Stage 1)
Elevation above sea level	71 metres	79.5 metres
Water depth at dam wall	24 metres	32.5 metres

Average depth (in river channel)	12 metres	16.25 metres
Average depth	5 metres	8 metres
Full supply area	3,000 ha	7,135 ha (includes Stage 1 area)
Total capacity	153,000 ML	570,000 ML (includes Stage 1 capacity)
Length of Mary River inundated	36.5 km	50.7 km
Properties affected	332	597 (includes 332 from Stage 1)
Houses required for dams and roads	76	204 (includes 76 from Stage 1)
Highway relocation	11.94 km	-
Road relocation	37.29 km	69.63 km (includes 37.29 from Stage 1)
Rail relocation	-	3.99 km
Scheduled completion	2011	2035 (subject to SEQ demand)

Source: Queensland Government, *Submission* 166, p. 121.

The decision and announcement

3.6 The Queensland Government stated that the initial announcement made by Premier Beattie on 27 April 2006 nominated the Traveston Crossing Dam as a preferred site subject to further investigation, not as a confirmed site at that time. The announcement which confirmed the Traveston Crossing Dam as a preferred site occurred on 5 July 2006.

> The Traveston Crossing Dam proposal stood out as being vastly superior to all other options in terms of hydrological performance and ability to generate additional water supplies. Consequently, the Queensland Government announced on 5 July 2006 that Traveston Crossing Dam was the preferred site for construction of a dam in the Mary Valley.[1]

3.7 The basis for the decision to consider the Traveston Crossing Dam proposal was the report titled *SEQ Regional Water Supply Strategy - Desk Top Review of Identified Dam and Weir Sites* (the GHD Report), written by GHD Pty Ltd, commissioned by the Queensland Government as part of the South East Queensland Regional Water Supply Strategy.[2] The GHD Report was a desk top review which considered existing reports and data available on dam and weir sites that had previously been identified in the South East Queensland (SEQ) region. The report

1 *Submission* 166, pp 116–117 and p. 124.

2 GHD Pty Ltd. (June 2006) *South East Queensland Regional Water Supply Strategy - Desktop Review of Identified Dam and Weir Sites.*

included 'detailed estimated costs to construct dams for a selected number of sites based on information in earlier reports and estimated indicative costs based on conceptual designs for a number of other sites or alternative development levels'.[3] The report then ranked potential development options in terms of potential yield and unit cost of the dam per megalitre of water delivered.

3.8 The GHD Report identified eighty dam and weir site options which had been studied in the past. Short listed options were then identified for further consideration and were reviewed in more detail. The Traveston Crossing Dam ranked first in terms of potential yield (and storage capacity) being more than 2.5 times greater than the second rating dam and ranked fourth in relation to the unit cost per megalitre of delivered water.[4]

3.9 The Queensland Government explained why it considered the Traveston Crossing Dam was a logical source of supply:

> …potential yield is not the only factor which must be taken into consideration in making a final decision on dam location. However, the assessment of dam options undertaken by GHD showed that there were no other significantly sized storages other than Traveston Crossing Dam that could meet the identified requirements. As such Traveston Crossing Dam was identified as a logical single source to supply the amounts of water required once the other measures such as demand management initiatives and alternative sources were considered.[5]

3.10 The committee received some evidence questioning the information contained in the GHD Report relating to the Traveston Crossing Dam.[6] Mr Alan Sheridan, a professional civil engineer and Secretary of the Save the Mary River Coordinating Group, commented on the costing information included in the GHD Report and stated that the unit cost per megalitre detailed in the report is not accurate:

> …the table in that report is being referred to by the government as the justification. I have highlighted the proposed Traveston Dam on that table and it appears as No. 4 on that list. You will see that the yield listed on there is 215,000 megalitres. We know that it is 110,000. The cost is listed as $1 billion, we know it is $2.5 billion. When you combine those figures, the unit cost is $22,727 per megalitre of yield not $4,695, which is listed in that report. So the report is fundamentally flawed on two accounts, specifically in relation to the Traveston Dam and more generally in relation to the fact that it is just a report on dam sites, not a report on providing water. Using

3 Queensland Government, *Submission* 166, p. 74.

4 *Submission* 166, p. 110.

5 *Submission* 166, p. 111.

6 For example, see *Submission* 8; *Submission* 92; Mr Steve Burgess, *Committee Hansard*, 17 April 2007, p. 13.

> the correct figures, makes the proposed Traveston Crossing dam the most expensive of any of the dam options considered by the state government.[7]

3.11 The Queensland Government confirmed that the figures for the Traveston Crossing Dam contained in the GHD Report have since changed and commented:

> Storage wise, it is less; from yield it is actually smaller. So the GHD report, from a volumetric size, is smaller and the yield in the GHD report is less than the yield we are now taking. GHD was a desktop study and applied a historical no-failure type, as we have talked about before. We have now applied a yield from this dam using the new approach, which takes a stochastic analysis et cetera.[8]
>
> …
>
> Subsequently, more detailed survey information has indicated that the maximum capacity at the dam site is 570,000 ML. The costings for the proposed Traveston Crossing Dam provided in the "Water for South East Queensland: A long term solution" are based on a 660,000 ML dam.[9]

3.12 Many submissions received from the community questioned the basis of the decision to consider the Traveston Crossing Dam and indicated that it was purely a political decision. Ms Margaret Bunce commented:

> The decision to build this dam seems to be a political one; a grand gesture made quickly to cover up for lack of planning and proper research and the failure to implement suitable infrastructure to cope with a rapidly growing population. This is a problem that has been many years in the making but has been bought [sic] on by the failure of rainfall in the Wivenhoe catchment area.[10]

Concerns regarding site suitability

3.13 On 27 April 2006, the Queensland Government announced that the Traveston Crossing Dam was chosen as a site for further investigation. These further investigations were 'to be completed within two months and [were] to confirm that dams could be constructed at these sites and that there were no insurmountable technical issues'.[11] The Queensland Government stated that these investigations included:

- geological investigations;

---

7 *Committee Hansard*, 17 April 2007, p. 63.

8 Mr Barry Dennien, Queensland Water Commission, *Committee Hansard*, 18 April 2007, p. 117.

9 Queensland Government, answer to question on notice, 31 April 2007 (received 31 May 2007).

10 *Submission* 98, p. 1. For other examples, see *Submission* 58; *Submission* 96; *Submission* 113; *Submission* 114; *Submission* 117; *Submission* 121; *Submission* 134.

11 *Submission* 166, p. 112.

- a concept design for the Traveston Crossing Dam site;
- review of environmental factors;
- environmental comparison; and
- transport infrastructure assessment.

3.14 The committee received evidence from submitters on their inability to access technical reports and information on the analyses undertaken by the Queensland Government.[12] Ms Shirley Edward commented:

> To date, the Qld Govt has failed to provide sufficient information on geological and geotechnical conditions throughout the dam area. I have been trying to get information regarding these issues since the announcement was made.
>
> …
>
> The Queensland Government continues to reiterate that it has nothing to hide. I have repeatedly asked to be provided with a copy of the Golders Drilling Summary Report. Further, I wish to be provided with answer to questions that I asked about the geological and geotechnical investigations and planning processes for the proposed Traveston Crossing Dam.[13]

3.15 Evidence received during the inquiry, questioned the suitability of the Traveston Crossing Dam site. These questions appear to have been exacerbated by the unavailability of analysis information and technical reports. Dr David Williams detailed the ideal characteristics for selection of a dam site and indicated that you would want: an adequate catchment to supply the storage, a deep valley to minimize evaporation, a suitable location for the dam wall and a base of low permeability to minimise potential seepage beneath or under the dam walls.[14]

3.16 Submissions indicated the following concerns with the suitability of the site:

- the presence of arsenic cattle dips;
- the dam will be shallow and would have high evaporation;
- the alluvial floodplain would result in high seepage and permeability;
- whether there would be adequate catchment of supply given the variability of rainfall; and
- stability of the dam floor given the existence of fault lines.[15]

---

12 For example, see *Submission* 106; *Submission* 113; *Submission* 142; *Submission* 148; *Submission* 154.

13 *Submission* 142, pp 1 and 5.

14 *Committee Hansard*, 18 April 2007, pp 2–3; see also *Submission* 64, pp 1–2.

15 For example, see *Submission* 4; *Submission* 29; *Submission* 31; *Submission* 82; *Submission* 144; *Submission* 185.

Mr Alan Sheridan stated that:

> …Associate Professor David Williams, from the University of Queensland, who is the individual whom I believe SunWater uses to do their assessments of seepage and evaporation losses from water storages and who is very well respected in that field, publicly advised that the level of seepage from the proposed Traveston Dam, because it is on an alluvial flood plain, could be anywhere between 0.3 and three metres in depth per year. If the evaporation losses in that area are 1.4 metres and the dam is an average depth of five metres, it does not take much of a rocket scientist to work out that there is a very big risk for a shallow dam in this location.[16]

3.17 QWI requested that SunWater provide an assessment of the anticipated evaporation and seepage from the proposed Traveston Crossing Dam storage, and compare the net average evaporation with other storages. The report prepared by SunWater provided a comparison of net average annual seepage, this is detailed below as provided by the Queensland Government:

> To determine the nett [sic] average annual evaporation from a storage, the lake evaporation, seepage and rainfall on the storage must all be accounted for, using the following equation:
>
> Nett [sic] Evap = Pan Evap * Lake Factor + Seepage – Rainfall on Storage[17]
>
> This has been carried out for a number of storages in Queensland, using the closest recorded weather data only.

Table [detailing]: Nett [sic] storage loss

STORAGE	Evaporation	Rainfall	Nett [sic] Evap (mm/a)	Period
Hinze Dam	1493	1280	319	1995 - 2005
North Pine Dam	1522	1219	375	1972 - 2005
Traveston Dam	1448	1097	521	1975 - 2005
Borumba Dam	1448	1079	539	1976 - 2005
Wyaralong Dam	1287	843	574	1967 - 2005
Lenthalls' Dam	1448	944	674	1976 - 2005
Ross River Dam	2606	1044	950	1970 - 2005
Coolmunda Dam	1678	642	1052	1974 - 1984

16 *Committee Hansard*, 17 April 2007, p. 17.

17 Equation is based on the Water Budget Determination Method, as described in Linsley,J.R., Kohler,M.A., Paulus,J.L.H., *Hydrology for Engineers, Third edition.* Note: Seepage allowance is commonly 300 mm/year for large storages in Queensland, unless better local information is available.

Wivenhoe Dam	2045	740	1150	1993 - 2005
Burdekin Falls Dam	1825	573	1388	1994 - 2005
Beardmore Dam	2067	536	1480	1996 - 2006

Note: Care should be taken in comparing nett [sic] storage losses that have been derived with different periods of record.

Source: Queensland Government, answer to question on notice, 30 April 2007 (received 31 May 2007).

3.18 Mr Graeme Newton, CEO of QWI, commented on the evaporation figures for Traveston Crossing Dam and stated that the net evaporation figure is 520 millimetres per year and the pan evaporation figure is 1.4 metres and explained the difference between these two figures. The net evaporation figure 'takes into account the pan evaporation and the lake factor which is attributed to that and the seepage that is involved and then it includes the rainfall that actually falls on the impoundment itself. It is a method that has been used over 20 or 30 years for determination of evaporation under that term 'net evaporation''.[18]

3.19 Mr Phillip Moran, Vice-president of the National Aquatic Weed Management Group provided information on a range of aquatic weeds and specifically commented on water hyacinth and salvinia which are present in the Mary River and the risk of creating a river environment that would encourage the growth and spread of these weeds. Mr Moran commented:

> Aquatic weeds are most likely to occur in large slow moving or stationary water bodies. Areas with high nutrient input are especially susceptible. If the water is in full sun, and [r]elatively shallow, you are guaranteed to get aquatic weeds.[19]
>
> …
>
> Earlier today I heard some people talking about the average depth of this proposed water body and the evaporation rates, and they were quite scary. If you add a weed such as water hyacinth you can multiply that result by a minimum of three because it sucks out the water. It is like a pump.[20]

3.20 The fact that the site of the dam wall was moved after the original announcement caused concern in the community.[21] Dr David Williams, academic, stated '[t]he first location chosen to locate the dam wall turned out to be not a good site, and subsequent land investigations have continued at other potential sites. The first site had of the order of 30 metres of permeable alluvium overlying rock, which

18 Mr Graeme Newton, QWI, *Committee Hansard*, 18 April 2007, p. 101.

19 *Submission* 94, p. 3.

20 *Committee Hansard*, 17 April 2007, p. 79.

21 For example, see *Submission* 150.

would create all sorts of problems in trying to seal it off to stop seepage coming under the wall. The second site, I understand, is a much better site but still far from ideal'.[22]

3.21 The Queensland Government provided the following technical evidence addressing the concerns relating to the alluvial floodplain, an adequate solid rock foundation and the potential for seismic hazard:

> Based on extensive preliminary geotechnical investigations, the proposed site of the Traveston Crossing Dam is considered suitable for a design comprising a roller compacted concrete centre section, an earth embankment on the northern bank and concrete spillway on the southern bank (refer to Section 8.4 of this Submission). It is proposed that a fish passage device will also be incorporated into the dam design.[23]
>
> …
>
> In the vicinity of the site, the Mary River flows within a broad alluvial floodplain. Within the floodplain the river has a meandering habit although there are several straight sections that are interpreted to reflect bedrock structures. The straight northwest trending section immediately downstream at the damsite appears to be one such control. Alluvial terraces are well-developed along this section of the Mary River. At AMTD 207.6km three alluvial terraces are present across the left bank. The surrounding topography consists of dissected ridges with many gullies reflecting the dominant northeast structural trend.[24]
>
> …
>
> To date a total of seventy-six geotechnical boreholes have been drilled across the sites. This includes forty-six across the AMTD 207.6km alignment and nineteen across the AMTD 206.7km alignment. Eleven boreholes have been drilled to investigate the AMTD 207.6km groundwater hydrology. All drilling data are being incorporated with all available data to construct a comprehensive damsite geological model. Preliminary reports for forty-one of the boreholes have been completed and are attached in Appendix B. The remaining reports are in the process of being completed. The investigations completed to date, confirm the initial assessment that the foundations along the dam alignment are suitable for the proposed dam structure and that there are good rock foundations…[25]
>
> …
>
> A seismic hazard (Earthquake) assessment of the site has been carried out. This is a probabilistic assessment which employs a seismotectonic model

---

22 *Committee Hansard*, 18 April 2007, p. 2.

23 *Submission* 166, p. 121.

24 Queensland Government, answer to question on notice, 30 April 2007 (received 31 May 2007); Queensland Water Infrastructure Pty Ltd. (2007) *Traveston Crossing Dam Overview Geotechnical Investigations - As At 12 February 2007*, p. 3.

25 Queensland Government, answer to question on notice, 30 April 2007 (received 31 May 2007); *Traveston Crossing Dam Overview Geotechnical Investigations - As At 12 February 2007*, p. 4.

> that considers the seismology (earthquake activity) and geology of the area in order to estimate seismic activity and frequency. The seismotectonic model allows for calculations of expected ground motion recurrence at the site, including peak ground acceleration and response spectra. These parameters allow the stability of the dam to be checked under earthquake loading. The peak ground acceleration for the site has been calculated as being slightly above 0.05g for a return period of 500 years when considering earthquakes of Richter magnitude ML4 and above. This value is below average by Australian standards. With these peak ground accelerations earthquake loading will not be a concern to the dam. The seismic assessment has been reviewed by the Expert Peer Review panel who have concluded that earthquake loading should not be a concern to the dam or spillway structures.[26]

3.22 Many submitters and witnesses commented on the fact that the proposed dam area contains arsenic cattle dips and the potential exists for this to cause harm when the construction of the dam takes place and water is stored.[27] Mr Alan Sheridan commented:

> It is quite common knowledge that there are hundreds of arsenic cattle dips, and there were other sorts of chemicals used in them. Most of them would not be registered. The area has been a dairy industry area for well over 100 years. When the dam is impounded, the water will cause those chemicals to come to the top and they will end up in the dam. But I do not know whether, when diluted in that amount of water, that would have any impact. I just do not know.[28]

3.23 The committee received evidence of an incident on a property where five cattle died unexpectedly in an area in which drilling activity had been undertaken. Mr Newton discussed this incident and stated that they undertook testing of the soil and also commissioned a further study by Golder Associates who conducted sampling both upstream and downstream of the paddock where the cattle died.[29] Mr Newton provided the following comments regarding the soil testing of the site, the results of the testing and a payment of financial compensation to the owner of the cattle:

> We were focusing on what our activity had been on the site and whether we had brought anything on to it or created any environment that would have killed the cows. We were doing soil sampling and testing the drillers' mud, which is an inert substance. We tested the soil. We know for a fact that it is clear, because we have the documentation in relation to it. The testing was

---

26 Queensland Government, answer to question on notice, 30 April 2007 (received 31 May 2007); Queensland Water Infrastructure Pty Ltd. (2007) *Traveston Crossing Dam Overview Geotechnical Investigations - As At 12 February 2007*, p. 5.

27 For example see, *Submission* 4; *Submission* 15; *Submission* 29; *Submission* 31; *Submission* 51; *Submission* 62; *Submission* 144; *Submission* 152.

28 *Committee Hansard*, 17 April 2007, p. 66.

29 *Committee Hansard*, 18 April 2007, p. 107.

> done. It came back with similar results to those DPI obtained. We notified the landholder of those findings, saying that we had not found anything in the soils.[30]
>
> …
>
> Prior to the completion of the investigations, QWI worked towards a swift conclusion of financial compensation to the owner of the cattle to ensure their immediate financial welfare was considered. The settlement was based on a 'no admission liability' that was undertaken as a measure of goodwill. At no stage did QWI seek to restrict any public comment by the landholder or the owner of the cattle.
>
> The Golder & Associates investigations found that it was 'unlikely' that there was a link between livestock deaths and mineral accumulation.[31]

Cost of the dam

3.24 Many witnesses and submitters have questioned the true cost of the Traveston Crossing Dam and have asked for the Queensland Government to provide a cost/benefit analysis for the proposal.[32] The Queensland Government, in response to questions relating to the full cost of the proposal, has continually stated that the cost of Stage 1 of the Traveston Crossing Dam proposal will be $1.7 billion and the cost of Stage 2 is approximately $800 million. Table 3.2 below provides a breakdown of the estimated costs of the dam.

Table 3.2 – Traveston Crossing Dam Cost Estimates

	GHD Desktop Report	**Water for SEQ – A Long Term Solution**		
	Traveston Crossing Dam (EL 80m)	Traveston Crossing Dam Stage 1 (EL 71m)	Traveston Crossing Dam Stage 2 (EL 79.5m)	Traveston Crossing Dam – Total (EL 79.5m)
Dam	313.4	500	30	530
Land	416.4	660	290	950
Roads and rail relocation	74	460	20 (rail) - 480	480 - 940
Other (power, telecommunication etc)	55.5	80		80
TOTAL	**$ 859.3 M**	**$ 1,700 M**	**$ 800 M**	**$ 2,020 – 2,500 M**

Source: Queensland Government, answer to question on notice, 30 April 2007 (received 31 May 2007).

30 *Committee Hansard*, 18 April 2007, p. 108.

31 Queensland Government, answer to question on notice, 30 April 2007 (received 31 May 2007).

32 For example, see *Submission* 7; *Submission* 8D; *Submission* 29; *Submission* 95; *Submission* 97; *Submission* 175; *Submission* 185.

3.25 Mr Jeff Seeney, Leader of the Queensland Coalition, when asked by the committee if any estimations had been made in Parliament of the sorts of costs incurred in the replacement of roads, resumption of land and replacement of the railway line, responded 'we think that the $1.7 billion that they [the Queensland Government] talk about to build this dam will end up being closer to $3 billion before it is constructed, when all of those associated costs are taken into account'.[33]

3.26 The Queensland Government outlined the elements involved in Stage 1 and the stated cost of $1.7 billion:

> Stage 1 of the dam includes the construction of the infrastructure itself and the relocation of any associated infrastructure within the valley—powerlines, roads and so forth— and it includes the land purchasing associated with that. That is a very broad description.[34]

3.27 The Queensland Government confirmed that the cost of $1.7 billion does not include Stage 2 of the proposal, the Borumba Dam increase, the relocation of the railway line needed in Stage 2, the pipeline and the relocation of the Bruce Highway.[35]

3.28 The *Review of Water Supply-Demand Options for South East Queensland – Final Report* (the Review Report) estimated the additional cost of the delivery system for the Traveston Crossing Dam at approximately $900 million bringing the estimated cost to $2.6 billion. The Review Report stated:

> Costs for stage 1 of the dam are estimated to be $1.7 billion. This does not include the delivery system (pump stations, pipelines, and balancing storages) from the dam to the Pine Rivers area. The cost of this connection is estimated to be of the order of $900 million, giving a total cost for the stage 1 including delivery network of $2.6 billion.[36]

3.29 Mr Bob Fredman, Director of Engineering, Council of Mary River Mayors commented on the relative cost of the Traveston Crossing Dam:

> The relativity of cost is becoming a more and more difficult equation. If you look at the true cost—the full cost—of the Traveston Crossing dam water in Brisbane, it starts to mean that there are more options on the table that are of equal or lower cost, that we would not have looked at previously. There is no doubt, given the true cost of Traveston water in Brisbane, that indirect recycling and desalination come into their own all of a sudden. We have not had this situation in the past, but all those options are now on the

33 *Committee Hansard*, 18 April 2007, p. 76.

34 *Committee Hansard*, 18 April 2007, p. 111.

35 *Committee Hansard*, 18 April 2007, pp 111–115.

36 A.Turner, G.Hausler, N. Carrard, A. Kazaglis, S. White, A. Hughes, T. Johnson. (2007) *Review of Water Supply-Demand Options for South East Queensland*, Institute for Sustainable Futures, Sydney and Cardno, Brisbane, February, p. 27.

> table and they are all necessary for the future. Basically, the dam answer is a dinosaur answer. It will be extinct within a short period of time.[37]

The economic impacts

3.30 The committee received many submissions commenting on the prime agricultural land that the dam will inundate.[38] Dairy farming represents the largest proportion of farming businesses, however ginger farming, fruit and vegetable farming and horticulture will also be affected. The Queensland Dairyfarmers Organisation confirmed that approximately 24 dairy farms will be inundated by the dam which represents approximately 5 per cent of Brisbane's milk supply.[39] Mr John Cherry, CEO of the Queensland Farmers' Federation (QFF) indicated that:

> Our estimate at this stage is that there is around $20 million of production that will be impacted on by the dam immediately in stages 1 and 2. Roughly half of that is in dairy…but there is also around $5 million in horticulture. We are not sure of the exact figure but there has been a lot of horticultural growth in the Mary Valley and that figure is probably an underestimate. There is also beef and some other industries in that area'.[40]

3.31 Mr Alan Kirkegard is involved in the grazing industry in Imbil commented:

> We are a clean green agricultural belt, we have rich soils, and we can grow anything and in large quantities. We are close enough to Brisbane to make transport costs economical.[41]

3.32 Growcom, the peak representative body for the fruit and vegetable growing industry in Queensland, requested that industry stakeholders be involved and consulted by the Queensland Government on issues affecting agricultural businesses and recommended that:

> Growers affected by any new water infrastructure developments must be fully compensated for any damage or loss to land, crop and business investments, water or earnings. In addition, the existing water supplies and reliability for growers outside the inundation area must not be impacted by the new dam.[42]

---

37 *Committee Hansard*, 17 April 2007, p. 55.

38 For example, see *Submission* 16; *Submission* 35; *Submission* 38; *Submission* 50; and *Submission* 177.

39 *Committee Hansard*, 18 April 2007, pp 48–49.

40 *Committee Hansard*, 18 April 2007, p. 47

41 *Submission* 38, p. 1.

42 *Submission* 91, pp 1–2.

3.33 The committee received some evidence expressing concern for irrigators and the impact of the dam on abilities to maintain access to water allocations.[43] Mr John Schroder and Mrs Rosalind Schroder, owner operators of a 280 acre dairy farm which is situated to the north of Gympie and the dam site, stated:

> As owners of a 100 megalitre water licence which allows us to pump from the Mary River (sourced from Borumba Dam), we have grave concerns about our continuity of water supply for irrigation purposes.[44]

3.34 The Tiaro Shire Council outlined their concerns:

> Tiaro and Woocoo, as mainly rural shires rely heavily on irrigated crop production. If the river is not allowed to flow, crop production will be drastically affected to the extent of making some properties economically unviable. Apparently, SunWater have assured some groups of irrigators that their water allocations will be fully maintained. Their allocations may well be maintained, but that does not mean that they will be able to use those allocations.[45]

Proposed Wyaralong Dam

3.35 The Wyaralong Dam is located on the Teviot Brook in the Boonah/Beaudesert region of South East Queensland (SEQ), approximately 14 kilometres north-west of Beaudesert within the Logan River Basin. Projects involving the Wyaralong Dam were first considered by the government of the day in 1990 and possible dates for construction have changed over time and include 2060, 2026 and 2015.[46] In April 2006, the Queensland Government announced the Wyaralong Dam as the 'second major dam project as part of the suite of measures to ensure a safe and sustainable water supply for the SEQ region'.[47]

3.36 The Queensland Government have appointed Queensland Water Infrastructure Pty Ltd (QWI) to progress the design and construction of the dam. QWI will undertake geotechnical investigations; assess likely environmental, social and economic opportunities; and potential impacts of the project, ahead of commencing the formal assessment and approval processes.[48] The Queensland Government stated:

> The Wyaralong Dam is an integral element of the storage system comprising the Cedar Grove Weir and the Bromelton Offstream Storage, and will be operated in conjunction with those assets. The Wyaralong Dam (in conjunction with the Cedar Grove Weir) will contribute 21,000 ML/a of

---

43 For example, see *Submission* 16; *Submission* 28; *Submission* 139; *Submission* 160; *Submission* 177 and *Submission* 185.

44 *Submission* 139, p. 1.

45 *Submission* 105, p. 2.

46 J. Taylor and C. Taylor, *Submission* 116, pp 1 and 3.

47 *Submission* 166, p. 148.

48 *Submission* 166, p. 148.

the projected additional need for SEQ region by 2051, and its construction is due for completion by 2011 at a cost of $500 million.[49]

3.37 The Queensland Government provided the statistics for the Wyaralong Dam, which are detailed in Table 3.3 below:

Table 3.3 – Wyaralong Dam – Statistics

	Completion
Anticipated annual yield:	21,000 ML in conjunction with Cedar Grove Weir
Elevation above sea level:	63.6 metres
Water depth at dam wall:	28 metres
Average depth: (in river channel)	14 metres
Average depth:	8.3 metres
FSL Area:	1,230 ha
Total capacity:	103,000 ML
Scheduled completion:	By Dec 2011
Total Project Cost:	$500 million
Properties affected:	18
Houses required:	Nil
Road relocation:	10.7km

Source: Queensland Government, *Submission* 166, p. 149.

3.38 The committee received a significant amount of evidence from Dr Bradd Witt, Ms Katherine Witt and Mr Andrew Taylor who state that they are primarily Wyaralong landholders with relevant experience in environmental management, environmental change and construction management.[50] All submissions received which commented on the proposed Wyaralong Dam questioned the value of the

49 *Submission* 166, p. 148.

50 Evidence includes *Submission* 155; *Submission* 155A; *Submission* 155B; *Submission* 170.

Wyaralong Dam in supplying water to SEQ in terms of proposed yield and the cost relative to the amount of megalitres supplied.[51]

The announcement and the decision making process

3.39 The committee received evidence suggesting that the government's announcement of their decision to proceed with the Wyaralong Dam was unexpected by members of the affected community who had thought that Tilley's Bridge Dam at Rathdowney was the likely choice for the dam site.[52] Claims were also made that requests to the Queensland Government for information have not been responded to:

> There has been a complete lack of transparency in the Government's decision making process and information which would clarify the situation, although having been requested on numerous occasions, has never been supplied. It has been impossible to find out details of the suitability factors which were used to determine the choice between the two sites Tilley's Bridge on the Logan River and Wyaralong on Teviot Brook as the preferred site for a dam.[53]

Concerns regarding site suitability

3.40 The Logan and Albert Rivers Catchment Association Inc (LARC) commented that the Wyaralong Dam proposal is based upon a modelled surplus of water in the Logan River basin at the Cedar Grove Weir and that 'the data used in the modelling…relies upon inaccurate data to make this assessment'. LARC put forward a number of relevant points on various assumptions that they have identified as flawed:

> The past 10 years of the rainfall record are significantly drier than at any time in the preceding 100 years of rainfall data. The modelling uses data preceding this period and has not run scenarios based on the recent climate change influences.
>
> The current Maroon Dam has been unable to supply irrigators with their current allocation. The water resource plan cannot possibly deliver over and above what has been coming down the river for the past 3 years without further restrictions upon existing water users.
>
> The hundreds of unsupplemented licence holders do not have meters and they have not been monitoring their use and there is no checking of dam licence provisions to assess the level of water use by unsupplemented irrigators. The model uses rates of application approximately 60% of the locally estimated actual use rates.

---

51 For example, see *Submission* 116; *Submission* 136; *Submissions* 155, 155A and 155B; *Submission* 162; *Submission* 170.

52 Mrs Christine Taylor, *Committee Hansard*, 18 April 2007, p. 20.

53 J. Taylor and C. Taylor. *Submission* 116, p. 5. See also, *Committee Hansard*, 18 April 2007, pp 20–21; *Submission* 162.

> The groundwater data used for the modelling does not takes into account the significant increase in the use of groundwater bores across the catchment. There has been no systematic audit of the number, depth and volume of bores in the catchment.[54]

3.41 Dr Bradd Witt summarised the reasons why he believes the Wyaralong Dam 'is not a solution; it is a problem':

> First, Wyaralong Dam is not viable or efficient, either economically or from a water supply point of view; second, the decision to construct a dam at Wyaralong was fundamentally flawed due to the use of inaccurate, inconsistent and outdated data, regardless of the politics; and, third, there are numerous vastly cheaper, more flexible and efficient alternatives to the Wyaralong Dam.[55]

3.42 The committee received some evidence questioning the yield of the Wyaralong Dam.[56] Mr Newton, stated that the 'Wyaralong will operate in conjunction with the Cedar Grove Weir and basically the yield of the system is 21,000 megalitres at the Cedar Grove Weir, when the two are operated as a system'. Mr Newton indicated that the basis for the system yield of 21,000 megalitres is:

> …hydraulic modelling that has been undertaken. This hydrograph shows basically the performance of Wyaralong, this being the storage capacity and basically the performance of the dam during that time, using a reliability and yield of what we are talking about—so a draw of 21,000 megalitres at Cedar Grove Weir.[57]

3.43 The Queensland Government provided the following evidence confirming the suitability of the site for the Wyaralong Dam:

> Extensive geotechnical investigations have identified the existence of solid rock foundations on both abutments and in the river channel. These foundations are suitable for all types of dam construction.[58]

Cost of the dam

3.44 The Queensland Government has projected that the cost of the Wyaralong Dam is $500 million and includes costs for infrastructure relocation and land acquisition. Mr Newton stated that this does not include any cost associated with the construction of Cedar Weir Grove.[59] Dr Bradd Witt commented on the cost of the project:

---

54 *Submission* 136, p. 1.

55 *Committee Hansard*, 18 April 2007, p. 13.

56 For example, see *Submission* 170, pp 3–5.

57 *Committee Hansard*, 18 April 2007, pp 99–100.

58 *Submission* 166, p. 152.

59 *Committee Hansard*, 18 April 2007, p. 134.

> By way of comparison, everyone acknowledges the expense associated with Traveston Crossing dam, at $2.5 billion for about 70,000 megalitres per year. However, Wyaralong dam's woeful contribution of 10,000 megalitres per year, at a cost of half a billion dollars, is 1½ times more expensive per unit of water than Traveston.[60]

Alternatives to the Wyaralong Dam

3.45 Ms Prudence Firth, a Wyaralong landholder, outlined some alternatives to the Wyaralong Dam:

> There are many options for replacing the small yield of the Wyaralong Dam (something under 17,000-18,000 ML/a): more demand management initiatives, recycling, catching stormwater, off-stream storages, water harvesting into existing dams, desalination, allowing Maroon Dam to fill to capacity, building Glendower Dam. All of these are more cost-effective than building the Wyaralong Dam, and they do not have the major social impacts that it has.[61]

3.46 Dr Bradd Witt, Ms Katherine Witt and Mr Andrew Taylor provided the committee with a report titled *Alternative supply options to the proposed Wyaralong Dam*, which identified potential supply options to achieve the contribution identified by the proposed dam at lower social, economic and environment cost.[62] The options identified included:

> Option 1: Potential increase in the operational full storage level of Maroon Dam (up to 76,000ML)
>
> Option 2: Recycled water diverted to Cedar Grove weir or Logan River via wetland or stored and reused for industry in addition to rain and storm water capture
>
> Option 3: Intermittent supplementary utilization of water via the 'water grid' from either Hinze Dam and/or the proposed Gold Coast desalination plant
>
> Option 4: Water harvesting from the upper Teviot Brook at times of high flow into Moogerah Dam
>
> Option 5: Intermittent use of ground water
>
> Option 6: A reduced scale Glendower Dam on the Albert River to provide 10,500ML/yr

---

60 *Committee Hansard*, 18 April 2007, pp 12–13.

61 *Submission* 162, pp 4–5.

62 Witt, G. B. Witt, K. J. and Taylor, A. (2007). *Alternative supply options to the proposed Wyaralong Dam: Preliminary analysis and presentation of potential supply options to achieve the proposed Wyaralong Dam contribution (to the proposed Cedar Grove weir) at lower social, economic and environmental cost.* Report prepared for the Deputy Premier of Queensland and Minister for Infrastructure Anna Bligh.

Option 7: A reduced scale Wyaralong Dam[63]

Conclusion

3.47 The committee received substantial evidence relating to the Traveston Crossing Dam from members of the communities, farmers, landholders, business owners and other interested groups, professionals and individuals. Concerns were raised on a number of issues relating to the dam including the basis for the decision, the technical aspects of the dam site and the cost of the dam. The evidence relating to Wyaralong mainly concentrated on the ability of the dam to provide the stated yield and the modelling data used in making the decision to proceed with the dam. The social and environmental impacts of both dams are discussed in chapters 4 and 5.

63 Dr B. Witt, Ms K. Witt, Mr A. Taylor, *Submission* 155, Attachment, p. 11. For other alternatives, see *Submission* 170, pp 6–12.