

# 11 Water

Water is an essential resource within the LGA and is required to meet the demands of households and industry. Within rural areas of the Yass Valley LGA, generally there are no reticulated supply systems and households are responsible for ensuring their own supply of water from rainwater capture or groundwater extraction.

However, some rural residential areas around Yass and Murrumbateman have community title reticulated water systems.

For the town of Yass and villages of Bowning and Binalong, potable water is obtained from the Yass River, via the Yass Water Treatment Plant. The current storage capacity of the Yass Dam is an 850ML.

The Yass Water Supply is dependent on the flows in the Yass River. Under extreme drought conditions without the implementation of water restrictions, the capacity of the Yass Dam is only sufficient to supply average summer demand for a period of three to four months.

The village of Murrumbateman has an independent water supply that was developed in 1984 and is sourced from groundwater. Water is untreated and is drawn from a bore located within the grounds of the Murrumbateman Recreation Ground. Murrumbateman water supply capacity is insufficient to meet the current maximum peak day demand.

Agriculture is a major industry in rural areas and many enterprises require a secure water supply for production. Livestock and irrigated crops, including viticulture, form the major demand for water, which is supplied by direct access to rivers and creeks, farm dams that capture surface run-off, and bores which extract groundwater.

## 11.1 Water Resource

The Yass Valley LGA is located primarily within the Murrumbidgee Catchment, with its northern tip in the Lachlan Catchment. The major rivers and creeks in the LGA are shown in Figure 11.1.

Groundwater flow is from local groundwater flow systems, mostly within Palaeozoic rocks or Mesozoic intrusives and intermediate flow systems within Precambrian rocks (Bureau of Rural Sciences 2000; Beale et al. 2004) in sedimentary aquifers and some fractured rock aquifers (Sinclair Knight Mertz 2003; Ife and Skelt 2004).

Both surface and groundwater supplies are influenced by rainfall which varies across the LGA. Figure 11.2 shows that average annual rainfall in the Yass Valley LGA is roughly 1,300mm in the south west, reducing to about 650mm in the east and north west. The average annual rainfall data does not show the variability that can occur between seasons and years, and the occurrence of drought.

For example, from January 2005 to December 2007, the Yass Valley LGA was judged to have a serious or severe deficiency in rainfall (refer to Figure 11.3).

Figure 11.1 Major Rivers and Creeks in the Yass Valley LGA

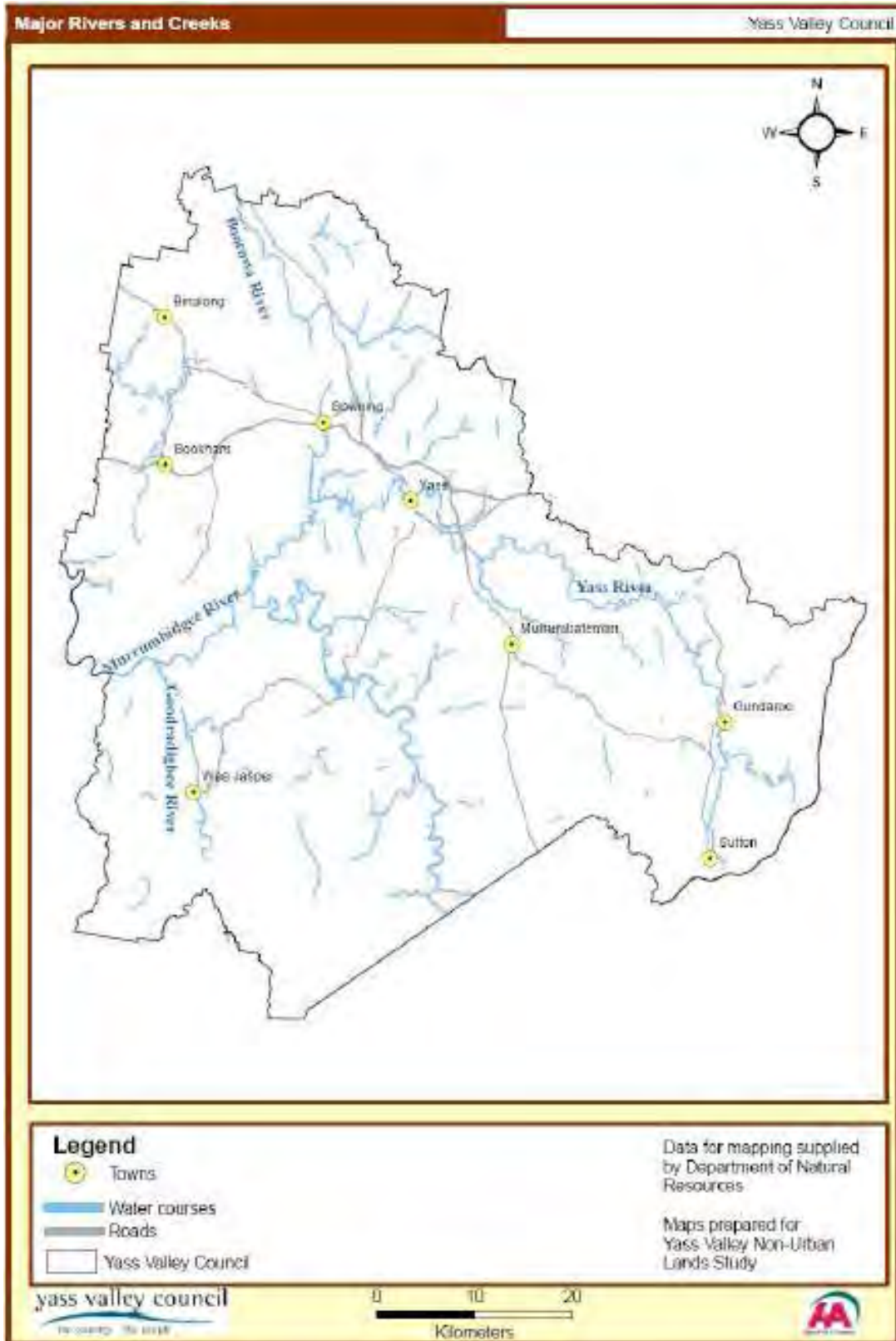
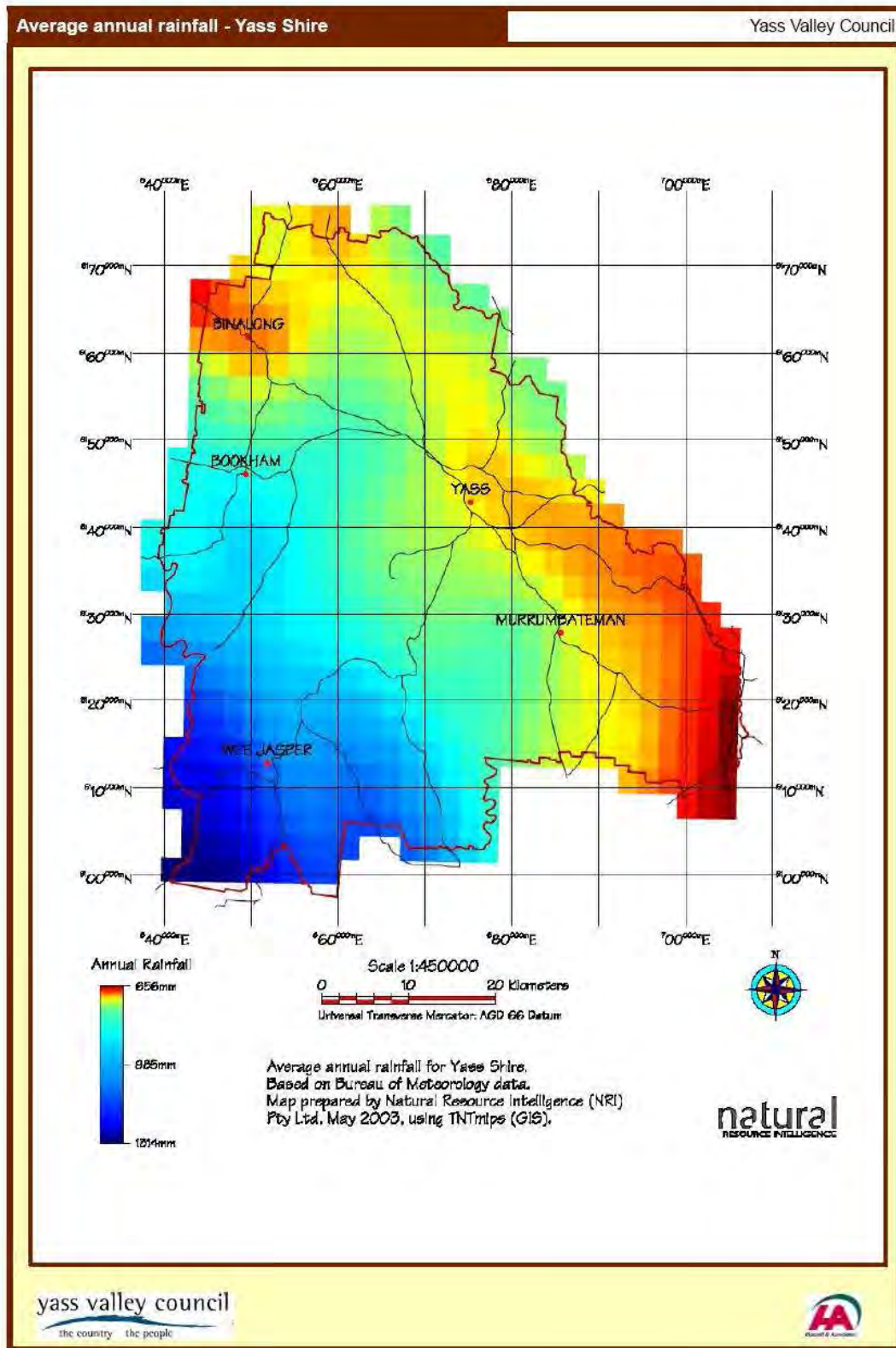
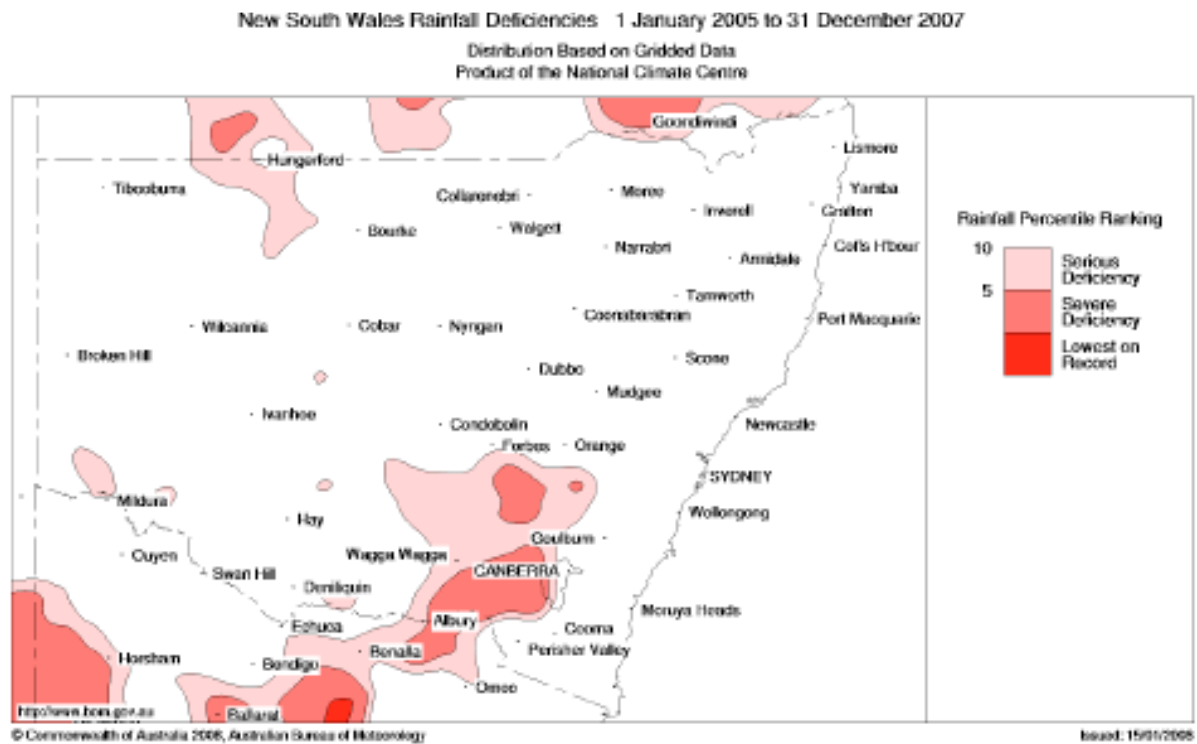


Figure 11.2 Average annual rainfall in the Yass Valley LGA



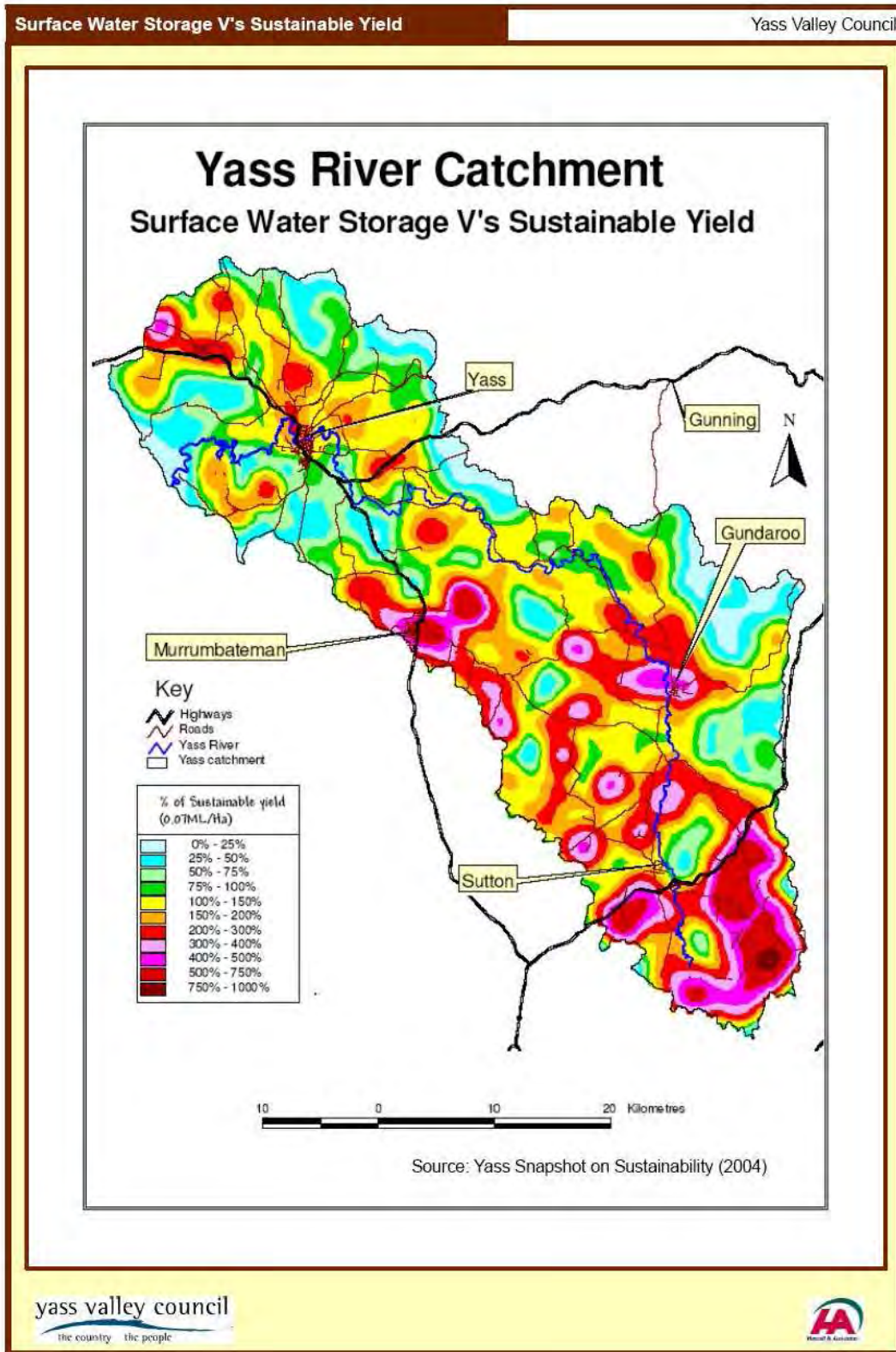
**Figure 11.3 NSW Rainfall deficiencies**



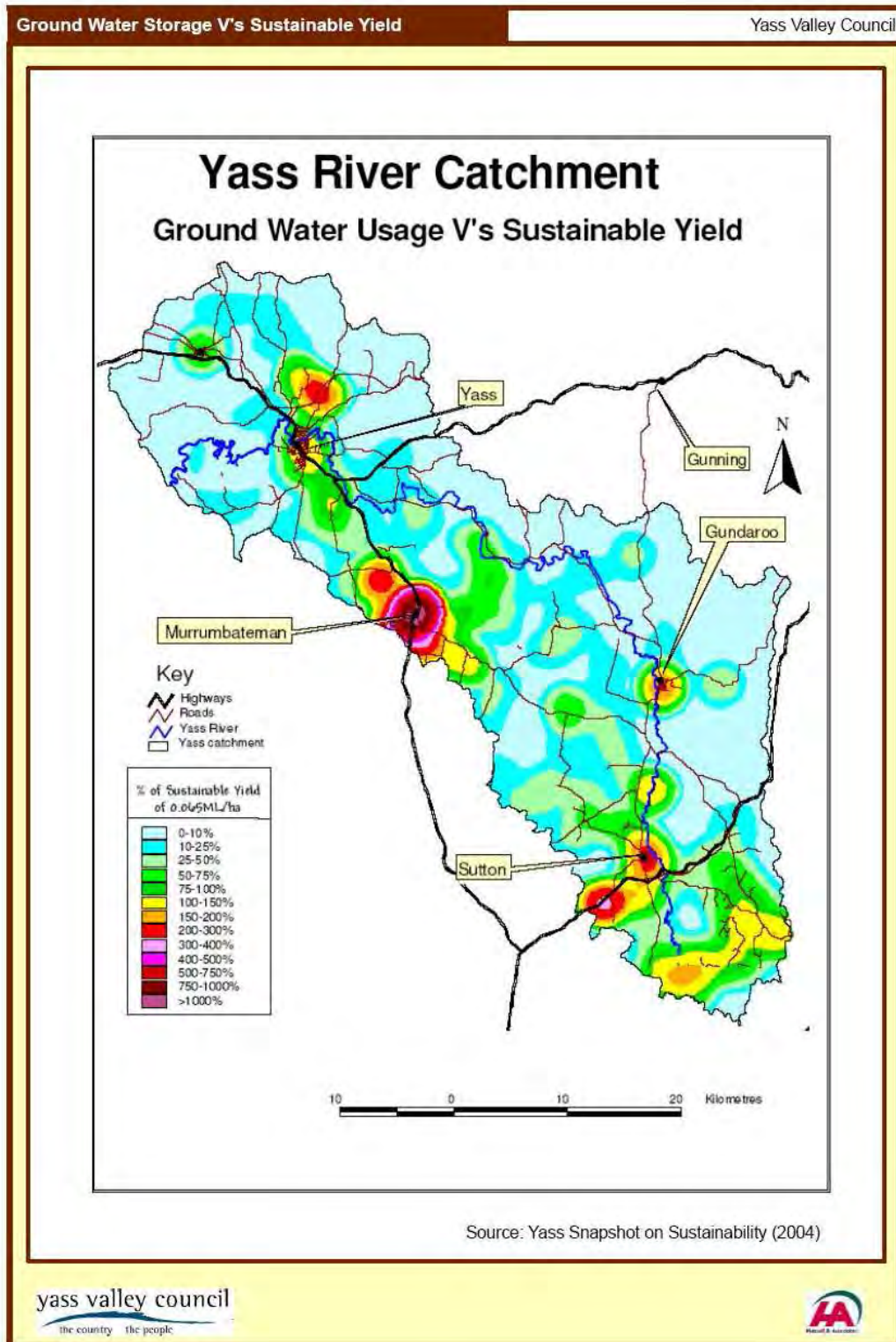
Franklin and Parker (2004) provided a comprehensive analysis of the current surface and ground water usage in the Yass River catchment and compared this with sustainability benchmarks. Although the study area did not include the total YVC area as now constituted, it provides relevant data particularly for the locations that are highly stressed.

The situation is best illustrated by both Figure 11.4 and Figure 11.5 which show current usage compared to sustainable yield for surface and ground water. The information from these is summarised in Table 26.

Figure 11.4 Yass River Catchment - Surface Water Storage versus Sustainable Yield



**Figure 11.5 Yass River Catchment - Ground Water Storage versus Sustainable Yield**



**Table 11.1 Yass River Catchment Water Use versus Sustainable Yield**

Water resource	Estimated Sustainable Yield (ML)	Current Level (ML)	Current % of Sustainable Yield	Potential Development	Total Unrestricted Development	Potential % of Sustainable Yield
Surface Water	11,130	21,000	189	1,440	22,400	201
Ground Water	10,335	4,009	39	7,419	11,428	110
<b>Total</b>	<b>21,465</b>	<b>25,009</b>	<b>116</b>	<b>8,859</b>	<b>158</b>	<b>158</b>

Source: Franklin and Parker, 2004

In summary, surface water is currently heavily over utilised (189% of sustainable yield) and it is predicted that the extent of over utilisation will increase to 201% with unrestricted development. The situation for current and predicted ground water use is 39% and 110% of sustainable yield respectively. Surface water sustainability is likely to be under more stress in the south-east of the LGA and also around Murrumbateman and Gundaroo. Groundwater sustainability shows severe stress at Murrumbateman, Sutton and Gundaroo and to the north of Yass.

The report states that the current situation has arisen because of the extent of farm dam development mainly associated with more intensive land uses including rural residential developments. In addition, the imposition of an embargo on the issuing of new surface water irrigation licences in the Murray Darling Basin has resulted in a proliferation of groundwater licences for bores.

Franklin and Parker (2004) also assessed water quality parameters including salinity, pH, turbidity, suspended solids and nutrients. Salinity was considered to be moderately high and nitrogen concentrations often exceeded recommended guidelines, while suspended solids and turbidity were reasonably low. Hardness due to high levels of calcium carbonate (with associated elevated pH levels) was a major concern for the Yass water supply area.

In general water quality from dams and ground water is not expected to be a major constraint to the selection of agricultural enterprises. However, effluent disposal from septic tanks, which is the dominant form of sewage treatment in the rural areas, has the potential to contaminate water resources if not sighted correctly. Risk of contamination from effluent could be increased if the density of septic tanks is too high.

## 11.2 Water Legislation

Water use in the Yass Valley LGA is governed by the Water Act 1912. The Water Management Act 2000 does not currently apply as there is no water sharing plan in place. Currently a “macro” water sharing plan is being prepared for the region by the Murrumbidgee Catchment Management.

For rural areas within the LGA, the Water Act 1912 provides basic landholder rights to take water for certain purposes without having to obtain a licence, including:

- domestic and stock rights to take water from a river or an aquifer for household domestic and for stock watering purposes (but not for intensive livestock purposes or for any commercial irrigation); and

- harvestable rights which allow the capture of rainfall runoff in a farm dam up to a set maximum capacity. This water can be used for any purpose, including irrigation.

The harvestable right allows landholders to capture a portion (up to 10%) of the rainfall runoff from their land. The location and size of a holding determines the total capacity of all farm dams on the property and is known as the Maximum Harvestable Right Dam Capacity (MHRDC). There is no requirement for a water licence or a works approval for a farm dam as long as it is within the harvestable right for your property.

Under the Act, water use for basic landholder rights does not require a licence except when extracting groundwater. For all uses beyond basic landholder rights a licence is required.

The MHRDC for the Yass region is based on a harvestable right of 0.07 ML/ha (DNR 2006). Based on a recommended minimum non-potable water supply of 1.1 ML per allotment in the Yass region, the area of land required to capture this volume of water is about 16 ha (DNR 2006).

Based on the information presented in Table 11.1 above, it can be concluded that the MHRDC is being exceeded in the Yass Valley LGA and this issue needs to be considered in the future development of the LGA.

### **11.3 Response of Department of Water and Energy**

In response to these issues, the Department of Water and Energy has enforced an embargo on bore licences and surface water irrigation development over much of the Yass Valley LGA.

### **11.4 Issues arising**

The issues arising from this section which require further consideration are:

- Both the surface and groundwater supplies are highly stressed and this is expected to continue due to decreasing rainfall and increasing water extraction.
- Both the embargo and harvestable right policy for water will have an impact on land use in future and could potentially limit intensification of agricultural production and/or plans to value add.
- Future rural residential development must be self sustainable with regard to domestic water supply.