2. The Land Use Determination

2.1 General

A Land Use Determination is made by the Soil Conservation Authority pursuant to section 23 of the *Soil Conservation and Land Utilization Act* 1958. Briefly, the Authority is empowered to determine the most suitable use in the public interest, other acceptable uses and appropriate management of all or any land in a Water Supply Catchment. The Determination may also be amended as provided for in the Act.

Land Use Determination are implemented by the Authority subject to the provisions of the Act, and by other Government Departments and Local Government to the extent allowed by relevant legislation.

The Determination provides guidelines to the owners or managers of land in the catchment for the management and care of their land. It aims to allow for a range of land uses and management such that water quality or quantity is not jeopardized by the utilization of the land. The Authority at all times seeks the co-operation of land owners in implementing the Determination.

Managers of Public Land are obliged by the Act to give effect to the Determination insofar as it affects the land under their management. The Determination becomes binding on owners or managers of freehold land only through the imposition by the Authority of Land Use Conditions on the use of any such land (under Section 23(4)(a) of the Act); the Authority is required to determine costs arising from compliance with these conditions and apportion such costs between itself and the land owner/occupier.

2.2 Objects of the Land Use Determination

The general objective of a Land Use Determination is:

> **To provide guidelines for the use and management of the catchment based on the sustained use of and production from the land, and the maintenance of acceptable quality and quantity of water harvested from the catchment.**

Because of the diverse nature of the land use and tenure in the catchment, a number of subsidiary objects have been identified:

i) **to provide guidelines to individual landholders for the use and management of their land, such that catchment values are not jeopardized;**

ii) **to initiate the preparation or revision of management plans for the development and use of public land such that catchment values are recognised and protected; and**

iii) **to influence the determination of appropriate conditions under which various proposed developments should be permitted to proceed such that the needs of sound catchment management are met.**

A Determination aims to achieve a balance between the interested of owners and managers of catchment lands and the requirements of the consumers of the water harvested from the catchment. In so doing, the Determination must distinguish between the many different interactions occurring between a wide range of land uses and variety of land types. The Determination establishes the mechanism for regulating land use activities should the need arise.

2.3 Explanation of the Determination

The Determination consists of two items.

i) The Table of Land Use Categories (section 2.5). **Part A** contains a number of general provisions which apply to the use or management of all land in the catchment. **Part B** categorises the various areas of land and identifies the most suitable use of each and may list a number of Provisions or Uses applicable to that use. **Part C** identifies acceptable Other Uses and Provisions of Use for each.

ii) The Map. This is presented as a number of mapsheets at a scale of 1:25 000 for freehold land and at 1:100 000 for public land, and shows the Determined Land Use Categories for all land in the catchment (section 2.6).

The following land uses have been considered as appropriate for various parts of the catchment.

Grazing is an extensive use of the land. Soil disturbance is intermittent, with cultivation limited to pasture renovation (weed control and re-sowing of pasture species).

Grazing land is frequently contiguous with land allocated in this Determination to water protection, and the movement of stock into such land and their continued presence may interfere with that use.

The Determination defines two categories of grazing used based on the capability of the land to sustain rural residential use. The first of these categories includes land with significant limitations to residential development due to limiting site or soil characteristics (Category 4a), and the second, land where there are few such limitations to residential development (Category 4b).

The limiting site or soil characteristics relate mainly to conditions for on-site effluent disposal, ad include the presence of seasonal water-tables or soils of low permeability. Other considerations may be more important in determining appropriate densities of development under Statutory Planning procedures.

Hardwood production is limited to land supporting stands of native trees. Most timbered areas of economic significance in the catchment are in the public land; some are excluded from logging by government decisions (creation of National Parks, Education Areas, etc).

Harvesting of timber may be through selective logging or by clear felling. An extensive network of roads and tracks is required for harvesting, fire protection and forest maintenance.

The use poses an intermittent hazard to water quality during harvesting and regeneration procedures due to the exposure of extensive areas of soil The associated road access network also exposes and compacts considerable areas of soil and increases the surface runoff, while the drainage system may direct polluted drainage water into the stream system.

Softwood production in the catchment is limited to plantations of Pinus radiata. The use requires an extensive network of permanent roads and tracks and involves substantial soil disturbance and large areas of unprotected earth during preparation of the land for each crop, and to a lesser extent, during thinning and harvesting.

The hazards to water quality are greater than those associated with hardwood harvesting because there is greater disturbance during the development phase, longer exposure of bared earth and a shorter rotation period between drops.

Horticulture production (perennial crops) is a moderately intensive land use requiring moderately deep to deep, well structured soils and an adequate moisture regime. Such conditions are found in certain northern parts of the catchment.

The initial soil preparation may vary from bare fallow to cultivation of narrow rows only. Fertiliser and agricultural chemical application varies according to crop requirements. The use relies on a network of tracks for access. Cultivation is often used for weed control, however slashing of excess growth may be more appropriate in water supply catchment areas in order to minimise soil disturbance. Typical crops may range from traditional orchard fruits (apples, pears, etc)., bramble and berry fruits (blueberries, strawberries) to nuts.

The extent of hazard to water quality varies directly with the extent of soil disturbance and the volume and type of agricultural chemicals used. Soil loss can be minimised by applying specific management techniques.

Horticulture production (annual crops) requires a moderately deep to deep and strongly structured soil with an adequate moisture regime. These conditions are generally found in the basaltic areas in the central and northern portions of the catchment.

The use involves extensive land preparation, frequent and heavy use of fertilisers and agricultural chemicals, and hard surfacing in the form of access tracks or sheds. Typical crops in the catchment are potatoes and carrots; climatic conditions limit the range of potential crops.

Hazards to water quality are similar to those associated with perennial crops, but are significantly greater due to more frequent cultivation and use of agricultural chemicals. Soils in the catchment derived from parent materials other than basalt are prone to decline in structure under repeated cultivation for annual crops. However, even soils derived from basalt are prone to erosion at certain stages of such use, therefore the steeper slopes have been excluded from the category.

Urban use is a highly intensive residential use involving the development of housing on small allotments such that provision of a reticulated water supply and a community waste disposal system is necessary. Community recreation facilities are also often provided. Development generally involves extensive modification of the environment through soil disturbance during construction activities and through the creation of hard surfacing. The introduction of large numbers of people and domestic animals generally results in the production of substantial quantities of highly polluted runoff water.

Control and treatment of urban drainage water and wastewaters before discharge, and the use of erosion control techniques on construction sites are generally adequate to control the hazard.

Low-intensity, non-urban **Residential use** (as referred to in the Determination) is a dispersed use, almost exclusively on freehold land and as part of a normal farming enterprise. Provided adequate setbacks from the stream system are observed, suitable wastewater treatment techniques are used and sediment management during construction is achieved, there is normally little hazard to water quality associated with low intensity residential development.

It should be noted that Statutory Planning requirements may preclude development at a greater intensity than is normally associated with traditional farming land uses. The Determination supports these requirements when based on the needs of catchment protection.

Extractive activities – extractive industry and mining refer to the intensive use of relatively small parcels of land, either for sand or gravel extraction, or for mining (generally for gold). **Mineral exploration** may be extensive or intensive, the latter relating to site disturbance for proving of ore body sizes and grades.

Such use may readily cause deterioration in water quality due to extensive soil disturbance and the need to dispose of waste water. However, as it may produce a commodity of particularly high value, intensive management techniques to reduce adverse off-site effects are often economic and may be used to good effect.

Provision of Utilities – this use varies greatly in its intensity and may, if not managed property, contribute to significant reductions in water quality. Road construction extensively and permanently alters the landscape, while power or gas transmission requires an initial period of disturbance and only limited access facilities subsequently.

Road drainage systems produce the major hazard to water quality associated with the use. Poor design may result in the channeling drainage water directly into the stream system.

Conservation of natural environments involves the use of land for conservation, education or recreation purposes, with conservation of the natural flora and fauna a major consideration. The use generally poses few hazards to water supply, however the disposal of wastes from facilities associated with recreational or educational use in close proximity to the stream system may adversely affect water quality if inadequate design or construction standards are employed.

Flora and Fauna Conservation implies minimal active use the land; rather it is 'managed' so as to maintain or enhance the native floral and/or faunal values of the land. The use poses little hazard to water supply.

Catchment protection implies that management has the express purpose of achieving and/or maintaining soil stability, or of protecting or improving (through settling of suspended solids or reinfiltration of contaminated surface water) the quality of stored or transmitted water. Specific earth stabilization works, the maintenance of a stable vegetative cover, or merely a reduction in the intensity of other uses may be required to reach the desired level of protection.

Protective forest involves the retention or re-instatement of tree cover on land to prevent or control erosion or mass movement. The areas of land allocated to this use are few, small and steep, are frequently close to streams and may be forested or cleared.

While re-afforestation of such cleared land is, in the Authority's view, the best use of that land, there would be no insistence on re-afforestation for as long as the land remains stable and vegetated.

Recreation (Type A) is a low-intensity use of the land (such as bushwalking, picnicking, swimming bird watching, fishing, etc, which requires little structural development beyond a basic access network. Activities are frequently dispersed as partial isolation may be one of the objectives of the form of recreation.

The use generally poses only a low to moderate hazard to water quality. Moderate hazards may arise through inadequate waste disposal because of the attractiveness of water bodies to participants.

Recreation (Type B) is a high intensity use, where residential use or public gatherings are part of the use. Extensive structural development (residential facilities, effluent disposal, barbeque/picnic facilities, road and other hard surfaced areas, etc) is involved, necessitating specific management for rubbish and waste disposal and control of drainage water.

The use generally poses a greater hazard to water quality than recreation (type A) because of the greater soil disturbance involved, greater concentration of activities and greater volumes of wastes to be disposed of in limited areas.

2.4 Implementation of the Determination

Determinations are generally implemented through con-operation rather than through enforcement. The Department of Conservation, Forests and Lands (which includes the Soil Conservation Authority) provides an advisory service to landholders, Local Government and other government bodies with respect to the prevention and control of soil erosion, the use and management of land, and the capability of land to sustain various uses.

Statutory powers relating to land use and management in water supply catchments (the making of the Oland Use Determinations and imposition of Land Use Conditions) reside with the Soil Conservation Authority. The Authority therefore seeks the co-operation of all land owners and managers in the implementation of the Determination to ensure the continued productive use of the land for the various needs of the community.

Generally, existing land use within the catchment conforms to the provisions of the Determination. However, where it does not and the Authority is of the opinion that there is a need for change in

use or management of the land to protect the water supply, the Authority may impose Land Use Conditions in conformity with the Determination.

There are some forms of land use or management which are not the direct responsibility of the Authority, such as the regulation of subdivision of land for development for residential use. In such cases the Authority would wish to advise the Responsible Planning Authority during the preparation of planning controls (such as a Planning Scheme) and at the stage of permit applications, insofar as matters relating to the Determination are concerned.

It is recognised that certain provisions of the Land Use Determination may be of particular concern to some landholders in the catchment; specifically, those relating to limiting stock access to stream areas, re-afforestation, or intensive animal industries.

In order to minimise uncertainty and unnecessary concern, the Authority has adopted the following polities regarding these land uses in the Tanjil River Water Supply Catchment.

2.4.1 Limitation of stock access to streams

It is frequently part of normal farm practice to allow stock free access to a stream running through or adjacent to the property. However, in gaining access to the water, stock may initiate or exacerbate stream bank erosion resulting in a reduction in water quality. There is also evidence that stock tend to defaecate and urinate disproportionately in and around the stream, thus contaminating the water. There are circumstances where this is highly undesirable and alternative watering points may be required to protect a domestic water supply from biological contamination and nutrient enrichment.

It is Authority policy that, where the Authority if of the opinion that stock are causing a significant and preventable decline in water quality through inappropriate access to stream or spring areas, Land Use conditions may be imposed. The Conditions may require the stabilization of existing access areas, or the complete exclusion of stock from the problem area by fencing and, where necessary, the provision of alternative water supplies. Such conditions would only be imposed after consultation with the landholder and after consideration of the alternatives.

If such Conditions are imposed, the Authority is required to determine and apportion the costs of compliance with those conditions. This involves consideration of the cost of the changes in production from the land, the capital costs (such as fencing) and the provision of alternative water supplies.

2.4.2 Re-afforestation of cleared areas

A number of cleared areas in the catchment have been determined as most suited to re-afforestation. These areas are, in the Authority's opinion and irrespective of present conditions, inherently erosion prone and are likely to contribute significantly to a decline in water quality if a stable cover of vegetation is not maintained.

It is Authority policy that Land Use Conditions requiring re-afforestation of this land will only be imposed when, as a result of investigation, it is clear that current management cannot maintain an acceptable level of soil stability, and then only after consultation with the landholder(s) affected. Re-afforestation is not a short term solution and due consideration during the investigation will be given to alternative methods of maintaining adequate soil cover.

If such Conditions are imposed, the Authority is required to determine and apportion the costs of compliance with those conditions. This involves consideration of the costs of changes to production from the land, the capital costs (such as fencing) and the costs of the supply and planting of suitable trees.

2.4.3 Intensive Animal Industry

Intensive animal industries (such as piggeries, feedlots and milking sheds) have the capacity to generate large quantities of animal wastes which, if allowed to enter the stream system, may result

in a marked decline in water quality. Disposal of such waste is usually to land. However, a breakdown in this system can result in effluent contaminating the water supply, which in turn may result in increased levels of pathogenic micro-organisms, elevated levels of nutrients and/or objectionable tastes and odours.

If the water has been contaminated by human and certain animal wastes, a risk to public health may arise. It is important to note that stock may carry some disease organisms capable of infecting humans. In addition, the accession of nutrients to the stream system may result in excess growth of algae and other aquatic plants either in the streams, the storage or the water distribution system.

Therefore, the operation of existing or proposed intensive animal industries must not jeopardize the quality of water harvested from the catchment.

It is Authority policy that the operation of existing intensive animal industries in the Tanjil River Water Supply Catchment shall be in accordance with the published 'Guidelines for the conduct of intensive animal industries' (Department of Agriculture, Victoria; Environment Protection Authority, 1978).

It is Authority policy that there should be no further establishment of intensive animal industries in the catchment unless it can be satisfactorily demonstrated that waste disposal will not jeopardize water quality.

2.5 Table of Land Use Categories

TANJIL RIVER WATER SUPPLY CATCHMENT

PART A: GENERAL PROVISIONS applying to all Categories.

1 Proposals for the following activities require assessment by the Soil Conservation Authority before such activities commence:
- (a) recreational developments;
- (b) hardwood production;
- (c) softwood production;
- (d) extractive industry;
- (e) road or track construction;
- (f) subdivision of land titles;
- (g) mining or mineral exploration; or
- (h) intensive animal industries

2 The treatment and disposal of wastes is to conform to the requirements of the *Environment Protection Act* 1970, the *Health Act* 1958 and the Shire of Narracan.

3 The conduct and management of intensive animal industries are to conform to requirements specified in "*Guidelines for the conduct of intensive animal industries*", Environment Protection Authority and Department of Agriculture, Victoria, 1978

4 Grazing and earthworks on land over 1,220 m above sea level are under supervisory control of the Soil Conservation Authority, proposals for such activities require early consultation with and subsequent approval by the Authority before commencement.

5 The use of agricultural chemicals is to conform to the requirements of the *Agricultural Chemicals Act* 1958, the *Environment Protection Act* 1970, and various Guidelines published by the Environment Protection Authority.

6 The Soil Conservation Authority may, after consultation with the Land Conservation Council determine any conditions pursuant to Section 23(1)(c) and impose such conditions pursuant to Section 24(4)(a) of the Soils Conservation and Land Utilization Act 1958 with respect to the use or management of all or any land in any Category specifying any of the "Provisions of Use";
- (a) implementation of the "Provisions of Use";
- (b) preventing or limiting soil erosion or reclaiming eroded sites; or
- (c) preserving or improving the quality or yield of water supply.

Such conditions may relate to:
- (a) the stabilization or revegetation of exposed or disturbed earth;
- (b) the location of, or design or construction standards of roads, tracks or stream crossings;
- (c) the disposal of road drainage water;
- (d) implementation of Guidelines approved by the Authority for this catchment; or
- (e) other matters as appropriate.

Land Use Category			Most Suitable Use	Provision of Use	
No.		Land Affected			
1					
	1a	land surrounding Blue Rock Lake, as specified on Plan No. S-14.1.	Protection of the Moe water supply offtake, the Tanjil Bren water supply offtake, the Mt Baw Baw Alpine Village water supply offtake, the Blue Rock Lake, The Tanjil River, creeks and water courses from the effects of soil erosion and from pollution	**1**	The Authority may specify conditions which relate to: (a) provision or location of facilities for administration for maintenance of the Blue Rock Dam or Blue Rock Lake; (b) provision of location of recreation facilities; (c) stocking rates; (d) exclusion of stock from particular areas; (e) exclusion of particular watercourses or areas from construction of water storages; or (f) re-afforestation of particular areas.
	1b	land within 200 m upstream of the offtake for the Moe Water Board, and within 200 m of the offtakes supplying Tanjil Bren and Baw Baw Alpine Resort.			
	1c	land comprising the river bed and banks, and other land within 40 m or such greater distance as has been specified by the Authority, of the Tanjil River downstream of Tanjil Junction, as shown on Plan No. S-1401.			
	1d	land within 20 m of watercourses, drainage lines, springs or perennially wet areas, as shown on Plan No. S-1401.			
	1e	land as specified on Plan No. S-1401, generally being land of high erosion hazard due to slope and/or soil factors.	……. to be retained as, or returned to protective forest.		
2		land of the Baw Baw National Park, the Moondarra State Park, the Boggy Creek Education Area, the Bull Beef Creek Flora and Fauna Reserve and the Gooding Bushland Reserve.	Conservation of the natural environment (including flora and fauna conservation, and catchment protection).	1	The land may be used as recommended by the Land Conservation Council and accepted by the Governor-in-Council: recommendations A1, A9 and M15*, and recommendations E2 and F1•.
				2	Management is to be in accordance with a Management Plan approved by the Responsible Management Authority and prepared in consultation with the Soil Conservation Authority.

* Land Conservation Council, 1977. Final Recommendations, Melbourne Study Area

• Land Conservation Council, 1983. Final Recommendations, Specific Investigations, Melbourne Area – Hill End

Land Use Category			Most Suitable Use	Provision of Use	
No.		Land Affected			
3					
	3a	land as specified on Plan No. S-1401.	Hardwood timber production	1	All forest operations are to be in accordance with management guidelines approved by the Soil Conservation Authority.
				2	The Authority may specify conditions which relate to: (a) location, timing or means of clearing operations for more intensive uses, such as grazing or pine plantation; or (b) exclusion of particular areas from the clearing of native vegetation for other acceptable uses.
	3b	land as specified on Plan No. S-1401.	Softwood timber production	1	Clearing and preparation of land for plantation establishment, and all forest operations are to be in accordance with management guidelines approved by the Authority.
				2	The Authority may specify conditions which relate to: (a) the timing, method or extent of clearing operations; or (b) particular areas to be excluded from clearing and plantation establishment
4					
	4a	land as specified on Plan No. S-1401, generally being land identified as having significant limitation to residential use due to site or soil characteristics.	Grazing.	1	The Authority may specify conditions which relate to: (a) stocking rates; (b) temporary exclusion of stock from particular areas; (c) pasture improvement
	4b	land as specified on Plan No. S-1401, generally being land identified as being potentially suitable for low-intensity, non-urban residential use, having few limitations to such use due to site or soil characteristics.			

Land Use Category			Most Suitable Use	Provision of Use	
No.		Land Affected			
5					
	5a	land as specified on Plan No. S-1401, generally being land with strongly structured reddish soils derived from dominantly basaltic parent materials.	Horticultural production (annual crops)	1	The Authority may specify conditions which relate to: (a) crop rotation; or (b) temporary exclusion of particular areas from horticultural production.
	5b	land as specified on Plan No. S-1401, generally being land with strongly structured reddish soils derived from dominantly non-basaltic parent materials.	Horticultural production (perennial crops)		
6	**Special Purposes**				
	6a	land of the township of Willow Grove	Urban residential use and associated activities.	1	The Authority may specify conditions which relate to: (a) disposal of urban drainage water.
	6b	land of the Baw Baw Alpine Village	Recreation (type B), including passive forms of recreation, and development of extensive access, toilet and accommodation facilities	1	Management is to be in accordance with a Management Plan approved by the Responsible Management Authority and prepare in consultation with the Soil Conservation Authority.
	6c	land as specified on Plan No. S-1401	Recreation (type B), including passive forms of recreation, and development of extensive access, toilet and accommodation facilities.	1	The Authority may specify conditions which relate to: (a) location of building or effluent disposal area

PART C: OTHER USES

Other Uses	Land Use Categories affected	Provisions of Use	
Flora and fauna conservation	1a, 1b, 1c, 1d, 1e, 2, 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b, 6c	1 2	The intensity of use of such land is to be in accordance with the intensity of use provided for by the 'most suitable use'. Management of land of Categories 2 and 6b is to be in accordance with a Management Plan approved by the responsible Management Authority and prepared in consultation with the Soil Conservation Authority.
Utilities	1a, 1c, 1d, 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b, 6c	1 2	The advice of the Authority must be obtained prior to the commencement of earthworks. The Authority may specify conditions which relate to: (a) provision of access; (b) the conduct, timing or extent of operations; (c) the disposal of drainage water; (d) the rehabilitation of disturbed areas; or (e) the exclusion of particular areas from operations.
Residential Use	3a (freehold land), 4b, 5a, 5b, 6c	1	Advice of the Authority must be obtained prior to siting or construction of houses or access roads.