TANJIL RIVER CATCHMENT

A description of land & its capability for development.

Volume 1: Method and Results

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FOREWORD

This report forms part of a two year study into the capability of land in the Central Gippsland Region to sustain further development for residential purposes in the light of expanding mining and industrial development of the La Trobe Valley.

The study undertook to provide information on the capability of land for urban and rural residential purposes in those ares within the region that were largely outside the existing coal protection and industrial zones. The La Trobe Valley Strategy Plan Interim Task Force, the Soil Conservation Authority, the regional office of the Department of Planning, and local Shire planners were involved in the selection of areas for the study. The bulk of the work was conducted within the Shires of Narracan, Morwell and Traralgon during 1980 and 1981.

The study is intended as an aid to land use planning. The report does not recommend particular forms of development in any areas and does not take account of socio-economic considerations which must also influence planning decisions. The report does, however, provide an interpreted land data-base onto which these other considerations can be imposed to derive suitable plans. For example the information presented here on land resources and their physical capability for development is a major input to the preparation of a Land Use Determination * for the Tanjil River Catchment. The determination of land use and the specified conditions to accompany that land use will result from a consideration of the land capability information in conjunction with other data including existing land use and 'off site' effects on the water supply.

This work was carried out with the support of the Environmental Studies Division, Ministry for Conservation, Victoria. The contents of this publication do not necessarily represent the official view of the Ministry and no material may be extracted for publication without the permission of the Secretary, Soil Conservation Authority.

* The Soil Conservation Authority has statutory responsibility under section 23 of the Soil Conservation and Land Utilisation Act 1858, for the determination of appropriate forms of land use within proclaimed water supply catchment areas. The document outlining these appropriate land uses and their associated conditions is known as Land Use Determination.

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ACKNOWLEDGEMENTS

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The initial broad-scale study was greatly assisted by the provision of draft mapping and field records from the 'Catchments of the Gippsland Lakes land systems study' headed by john Aldrick. Some block diagrams from that study have also been used in this report. These were drawn by Lyn Matthews.

Greg Dunnet and Draga Gelt were responsible for the large amount of draughting work involved, particularly for volume 2.

The author is grateful for the editorial criticism and suggestions put forward by David Howe.

SUMMARY AND CONCLUSIONS

The study was undertaken to provide information on the land resources of the Tanjil River Catchment for use as an aid to land use planning including the preparation and implementation of a Land Use Determination by the Soil conservation authority. The report describes and maps the nature of the land within the catchment. A broad-scale overview of the area is provided and in area of freehold land where there is likely to be increased pressure for development, the land has been described and mapped in more detail into a total of 27 individual map units. The capability of this land to support rural residential subdivisions has been assessed. In particular three main areas of capability have been examined:

1. constrains on general construction activities;

2. on-site effluent disposal by soil absorption – the risk of failure and difficulties of installation;

3. erosion risk associated with soil disturbed during and after development.

The assessment rating values are interrupted in terms of the level of management (or associated costs) required to overcome any physical limitations to land use imposed by the land features (e.g. steep slopes, shallow soils, poor drainage).

CONCLUSIONS

The assessment of land capability on freehold land in the catchment is shown on a series of maps in volume 2 of this report. Summaries of the assessment ratings for map units and of the amount of land with particular ratings are provided in section 5 of this volume. Recommended soil conservation management practices are given in Appendix 1.

The main conclusions and recommendation are summarised below:

1. ***The map units which are most capable*** of supporting rural residential subdivision and development are Crla, CR2, SS3b, CR4, SS3c, SS4c, and TR2. These units represent some crest areas, high-level river terraces and moderate to gentle hill slopes, all of which occur most commonly in the lower part of the catchment south of Willow Grove. These area in capability class 1 or 2 are regarded as having no significant limitations to rural residential development. For housing and roading, standard construction and design techniques are appropriate, and for effluent disposal average size soil absorption trenches (approx. 50m length) should be suitable. These areas occupy approximately 19 sq km of land or 17.2% of the catchment freehold areas.

2. ***Land with capability class 3*** for rural residential development occupies approximately 26.5 sq km or 24% of the freehold land. A variety of map units occurring on crests, moderate hill slopes and terrace areas throughout the catchment are involved. Map units CRl, SS3a, SS4a, CR2b, SS2b, CR3, CR5, SS3b and TR1 have moderate physical limitations to land use. Development of these areas without adversely affecting the catchment soil and water resources is generally possible however, provided careful management techniques which take account of the natural characteristics of the land are adopted. For effluent disposal, soil absorption trenches in the range 50 – 120 m length are likely to be needed.

   For areas of erosion risk, recommended conservation management practices are outlined in appendix 1. Further site specific advice on soil suitability for effluent disposal or the need for any specialized design and construction techniques, and follow-up management to minimize soil erosion, can be obtained from the Soil Conservation Authority (SCA)[*].

3. ***Land with capability class 4*** for rural residential development occupies approximately 39 sq km or 36% of the catchment freehold land. These areas include moderately steep slopes and minor watercourses throughout the catchment and some drainage flats in the lower reaches.

[*] Both the Soil conservation and Authority and the Environment Protection Authority have responsibilities and expertise relating to the provision of advice on aspects of domestic wastewater disposal to soil. Within proclaimed Water Supply Catchment areas, such as the Tanjil River Catchment, the SCA has been nominated as the 'lead agency' with the obligation to co-ordinate the response to requests for such advice. Elsewhere within the state the EPA is the 'lead legacy'.

The map units SS2a, SS2c, SS2d, DC2, and DF2 have severe physical limitations to development. Subdivision of these areas would extensively modified housing and roading construction techniques and exceptionally careful preparation and management to minimise the impact on land and water resources of the catchment.

It is generally recommended that intensive small lot subdivision be made discouraged in these areas in favour of more capable land in classes 2 and 3. Where this land is related class 4 for reasons of possible effluent disposal problems, soil absorption trench lengths in the range of 120 – 250 m (over an area of 540 – 1000 sq.m.) are likely to be needed. Subdivision proposals in class 4 areas should be referred to the SCA for site specific advice on soil suitability for effluent disposal and on soil conservation requirements.

4. ***Land with capability class 5*** has very severe limitations to rural residential development and occupies approximately 25 sq km or 23% of the freehold areas. Generally this comprises areas of very steep slopes with a high erosion of landslip hazard, and low lying drainage flats and major waterways which are either flood prone or severely restricted with respect to drainage and effluent disposal problems.

   Any development of land in map units SS1a, ss1b, ss1d, DC1 and DF1 is considered highly hazardous and likely to result in severe deterioration of the catchment land surface or in the quality of its runoff water.

   It is recommended that subdivision of land in class 5 should not be permitted unless the developer can demonstrate to the satisfaction of the responsible authority that the development will not result in increased soil erosion from the area.

5. It should be noted that although a substantial proportion of the freehold land appears to have a low to very low capability for rural residential development, a significant portion of this area represents rivers, creeks, drainage channels and their immediate surroundings which are generally excluded from development.

6. Provided future planning and management of land within the Tanjil River Catchment is undertaken with due care and consideration of the natural characteristic of the land, areas of freehold land are capable of supporting a substantial amount of further rural residential development. A decision on the desirability or suitability of such development is beyond the scope of this report and can only be made by planners after due recognition of the many other socio-economic factors which must determine rational land use.