

Utility Services

Utility services may be divided into two types, those such as electricity, telephone and gas, which are not dependent on topography, and the services which are gravity operated.

Utility services are important factors in determining location of urban development and in the case of gravity based services such as sewerage, drainage and to a lesser extent water supply, may actually offer definite constraints to development.

Most services have common parts which may be divided into headworks or points of disposal, (e.g. power stations, dams and treatment works) and major trunk and reticulation services.

In general, the non-gravity utilities do not, in themselves offer any constraint on development. The telephone and gas supply services, for instance, do not impose any substantial visual disturbance likely to affect location of development. For this reason these services are not shown on any map or overlay in this report.

The supply of electricity presents a different problem. At present the bulk of electricity is generated outside the metropolitan area, principally in the Latrobe Valley but with peak load requirements being drawn from various hydro electric sources.

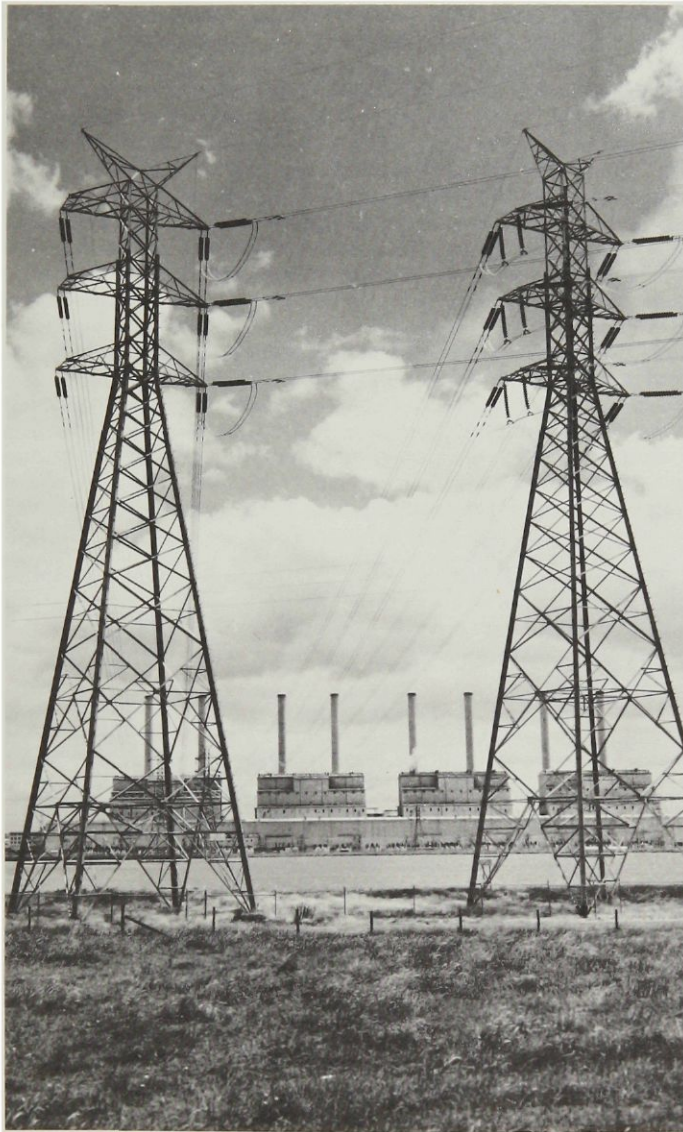
With increasing demands for electrical power it is likely that additional power stations will be required, some of which may be within the metropolitan region. They will need careful siting particularly if large areas of cooling ponds are associated with them, in which case consideration should be given to an additional use of the ponds for recreational purposes.

In the distribution of electricity, the major transmission lines and terminal stations required can cause visual disharmony in the environment and particular care is needed in siting these lines to minimise intrusion into the landscape.

Existing lines and installations and current proposals are shown on overlay 4.

Water supply, sewerage and drainage services affect development in a number of ways.

There is no one authority wholly responsible for each of these utilities in the metropolitan area and there are large areas for which there is no existing authority. Some of these areas lie in the path of development which will occur in the near future. The Board of Works supplies the bulk of the population with water, but in addition, the State Rivers and



2 Structural Elements

Water Supply Commission supplies some areas and there are a number of local water trusts. The S.R.W.S.C. also controls an irrigation water supply in the Werribee district. Similarly the Board is the largest sewerage authority, but there are also a number of local bodies servicing substantial parts of the region. The Board and the Dandenong Valley Authority cover most of the developed parts of the metropolitan area for drainage services.

While there are good reasons why the Board should be the servicing authority for water and sewerage and drainage for the whole of the planning area, there are a number of reasons why this is unlikely to occur in the foreseeable future. These include the fact that there is a feeling of local participation when a local scheme is being implemented, and that in local schemes interest rates on borrowings are subsidised by the Government and therefore lower rates are possible.

In some cases lower standards are applied because this means lower capital will be required and lower rates can be charged. The Dandenong Valley Authority operates under an Act which has stronger provisions than the Board's Act and which enables it to obtain funds from owners directly benefitting by any improvements carried out. A similar provision in the Board's Act appears desirable.

With the increasing population creating a demand for extension of these water, sewerage and drainage services, these services have now become an important influence on the direction of growth.

Being a pressure system, water supply is not as affected by topography as sewerage or drainage. However, difficulties are experienced in broken country because of the variation in pressure and this type of country is better avoided. Again when it is necessary to provide high level systems involving pumping to keep a water tower or service reservoir full, additional costs are involved, and for this reason it is desirable to restrict high level systems to a minimum.

It is not envisaged that lack of water will be a barrier to development in any part of the metropolitan area. While most sources of supply are located to the north or east of the main urban area, water can be fairly readily distributed to any part of the metropolitan area and supply is mainly a matter of adequate finance.

Sewerage and drainage are much more restrictive factors in determining urban form, and because of their importance in

determining these land use patterns, services are discussed more fully in the following sections of the report.

Physical and Economic Constraints

In addition to the aspects already mentioned, there are a number of physical and economic constraints which influence the shape of metropolitan development. Some of these are quite positive and preclude urban development. Others are not so positive and the areas in which they occur could appropriately be included in either urban or non-urban use.

The more important determinants are listed in the following sub-sections and illustrated in the accompanying transparent overlays.

The overlays and the base plan can be used to study the interaction of one set of constraints with others.

It will be seen that certain parts of the region are unsuitable for urban development because of the high level of constraints imposed. Others have no constraints or ones of lesser significance. Generally the overlays only cover that part of the region not yet committed to urban development.

Committed Lands

Plan 4, which is a base to the accompanying overlays shows the lands that are considered to be already committed for various public or private purposes and therefore are not available for future urban development. They fall broadly into two categories:

First, land which is already developed for urban purposes or is within an urban zone in an approved planning scheme has been taken as committed and excluded from consideration.

Second, is land which is already in public ownership or is reserved or proposed to be acquired for some public purpose.

Generally these are areas of an open character such as airfields, treatment plants and reservoirs.

They can often affect adjoining land because of their particular use, as in the case of airfields. The committed lands, therefore, positively reduce the area available for urban development but may also inhibit it beyond their actual area.

Flood Control: Overlay 1

Urban development generates increased run-off from any catchment and can have serious consequences on downstream development unless protective measures are taken for flood control. This may be by providing adequate floodways

along streams to carry peak flows or by constructing drains and retarding basins to keep flood flows within defined limits. The cost of these works may be such as to severely limit the amount of development that should be permitted in particular catchments.

On the other hand natural conditions or existing protection works may be such that full development can be carried out with only minimal costs for drainage works. The catchments of Skeleton Creek, two small ones adjoining it and the Moonee Ponds Creek are examples.

As shown on the flood control overlay, the drainage system of the metropolitan area can be divided into a number of categories to illustrate these concepts.

In the catchments of streams to the west and north of the metropolitan area and those located west of, and including Diamond Creek, development can proceed generally without undue effect on existing development, providing major controlling works are carried out in the right place at the right time.

In the Yarra River catchment the cost of flood control works is likely to be extremely high and for this reason development should be curtailed and be closely integrated with the construction of services. This aspect is dealt with in the section of this report relating to the Yarra valley.

In the area controlled by the Dandenong Valley Authority, development can generally take place without detriment to existing downstream development, provided adequate floodways, combined with drainage improvement works are provided. However, in areas north and east of the South-Eastern Purification Plant at Carrum and in areas to the west of Cranbourne, high cost drainage works would be required before development could be permitted, and from the community viewpoint it is undesirable that these areas be developed.

Although the extent of floodways in all flood prone areas is not necessarily known, all important streams have been classified as to their relative importance and a defined floodway set aside sufficient to enable mitigation works to be carried out. It is likely that further investigation will show that by setting aside greater areas for floodways, expensive works can be avoided. The final constraint involves the reserving of retarding basins, often of considerable extent, to assist in controlling runoff and these can also serve as recreation areas.



PHOTO: SUN NEWS-PICTORIAL

Water Quality: Overlay 2

As part of the amplification of water supply systems, it has become necessary to provide major reservoir sites in close proximity to the urban area, at Greenvale and Cardinia Creek. These are service reservoirs only which are supplied not from their own catchments but from elsewhere in the metropolitan system. However, unless protected, these catchments could be a source of pollution. In each case, parts of the catchment is freehold land so it will be necessary in these parts to restrict development. Thus the whole of the catchments of both reservoirs will be a major determinant of land use.

The Government has requested that the Board preserve the opportunity to provide for water storages at Yarra Brae, Watsons Creek and Sugarloaf Creek and some land acquisition has already taken place in these areas. If ultimately reserved, most of the Watsons Creek catchment area (except for parts in the Kinglake National Park) and the whole of the Sugarloaf Creek catchment could be purchased and kept free of pollutants but this will not be possible for the catchment of Yarra Brae.

This is located directly on the Yarra River and most of the upstream catchment has been alienated and in some places is used intensively for urban purposes.

These three sites are either in broken ground or subject to flooding and will be major elements to be considered in determining land use in the general area.

In addition, should Yarra Brae be required for a potable water supply, then this may require very severe restrictions on development over large areas of land otherwise suitable for development. While installation of a sewerage system would remove all human and household wastes, it would not solve the problem of surface drainage entering the storage which would then have to be treated before the water could be made available for human consumption.

The above aspects are illustrated on the water quality overlay.

Water Pollution Control: Overlay 3

The principal means of controlling water pollution arising from urban settlement is the provision of an adequate wastewater disposal system, including the disposal of treated waste waters so as not to impair the beneficial use of the receiving waters.

