

Chapter 9

PUBLIC UTILITIES

A modern city is very dependent on its public utility services—the supply of water, electricity and gas, the removal of stormwater, sewage and garbage, and the maintenance of postal, telephone and telecommunication services. Not only does their efficiency greatly influence the amenities of city life, but the cost of providing and maintaining them forms a considerable proportion of public expenditure within the city. It is important, therefore, that the growth of the city should be regulated so that no undue or excessive burden is placed on the community in providing these essential services.

The various public utility services in Melbourne are controlled by a number of individual authorities, some with Commonwealth, some with State-wide and some with metropolitan jurisdiction, as set out in Table 2.

WATER SUPPLY

Within the metropolitan area the supply of water comes from two systems under the control of the Melbourne and Metropolitan Board of Works and the State Rivers and Water Supply Commission respectively. The areas supplied by the two systems are shown in map 38. Although in recent years it has not been possible to keep pace with scattered development on the outskirts, practically the whole of the urban area and a substantial part of the surrounding rural land is supplied with a reticulated water supply.

Melbourne and Metropolitan Board of Works System: The Melbourne and Metropolitan Board of Works is responsible for supplying water to the area defined as the metropolis in the Melbourne and Metropolitan Board of Works Act 1928, i.e., the area within a radius of approximately 13 miles from the Central Post Office which, as seen by map 38, is the greater part of the metropolitan area. In addition the Board supplies water to the Shire of Ringwood under special agreement with the Council of that municipality.

As shown in Table 55 the water is drawn from four main catchment areas, which are located in virgin forest country. They are closely protected from all forms of pollution and no settlement is permitted on them. The water is soft and of high quality and does not need or receive any treatment. It is very suitable for domestic and industrial purposes.

The maximum capacity of mains and aqueducts from the storages to the city is 186 million gallons a day. In 1952 the average daily consumption was 102 million gallons a day and the maximum daily consumption 213 million gallons. At June, 1953, a total of 367,293 premises were served by this system. At the present time both the storage capacity and the capacity of the distribution system are inadequate to meet peak demands, and on a few occasions in recent years it has been necessary to impose temporary restrictions at peak periods during the summer months to avoid depleting service reservoirs. This is the result of the interruption during the war years of the normal programme of development and expansion, but with works in progress and contemplated, this position is being rectified.

State Rivers and Water Supply Commission System:

The area for which this authority is responsible is supplied from the Mornington Peninsula Waterworks System, the water being drawn mainly from an 18,600 acre catchment on the Bunyip River. Total storage capacity of this system is 1,580 million gallons, and the maximum supply available is 1,900 million gallons a year. In dry years this figure is reduced to 1,700 million gallons.

Approximately 60% of this water is consumed within the metropolitan planning area, mainly in the Dandenong, Chelsea, Frankston areas. The supply of water available is not adequate to meet the demand, and for some years, new connections for agricultural users have been restricted. Works are in hand to augment the Mornington Peninsula system by diverting water from the Tarago River, but it is probable that all areas within the metropolitan area will eventually be supplied from the Melbourne and Metropolitan Board of Works system.

The Demand for Water:

The consumption of water per head of population in the metropolitan area has been steadily increasing, mainly because of the growth of industry and the increasing proportion of water required for industrial and commercial use. During the past 20 years the per capita consumption of water has increased in Melbourne from 55 gallons a day to 75 gallons. The highest average daily consumption of water per head so far recorded was 79.24 gallons in 1944-45. The approximate proportions of water used by various classes of consumers is given in Table 56.

Table 55

M.M.B.W. WATER SUPPLY CATCHMENT AREA AND
STORAGES (1952)

Catchments			Reservoirs		
Name	Streams	Area (in acres)	Name	Available Storage Capacity (million gallons)	Output 1952 (million gallons)
Yan Yean	Silver Creek	11,500	Tourourrong Yan Yean	6,605	4,379
	Wallaby Creek	10,500			
	Plenty River				
	Yan Yean (Reservoir Catch- ment)	5,700			
Maroondah	Watts River	43,308 ⁽¹⁾	Maroondah	4,855	16,447
O'Shannassy	O'Shannassy River	32,650	O'Shannassy Silvan	930 8,823	16,418
Upper Yarra	Walsh's Creek Upper Yarra River	81, 008		(2)	
Total		184,666		21,213 ⁽³⁾	37,244

(1) Includes Coranderrk Creek catchment, the run-off from which is diverted by aqueduct to Silvan Reservoir.

(2) Upper Yarra Dam now under construction will have a storage capacity of 40,000 million gallons when completed.

(3) Not including 262 million gallons in service reservoirs.

The quality and availability of water is an important factor in the establishment of certain industries, and it is reasonable to expect that the per capita consumption of water will tend to rise with the development of industry in Melbourne.

Proposed Additions and Future Capacity

The Melbourne and Metropolitan Board of Works has adopted plans for a substantial increase in the storage capacity of its system and for amplifying its distribution system. The new Upper Yarra Dam now under construction and scheduled for completion in 1958 will more than double the present storage capacity, while the complete development of the Yarra and O'Shannassy catchments

would make the total available supply sufficient for a population approaching 2,500,000 depending on the consumption per head. By going further afield, new sources of supply could be tapped, sufficient to supply a still greater population. The proposed additions to the distribution system, involving the installation of new mains and service reservoirs, will make it possible to meet a peak daily demand of 300 million gallons or 120 gallons a head for a population of 2,500,000.

Except for some isolated areas and some of the higher land in the northern suburbs where pumping may be necessary, the whole metropolitan area can be supplied by gravitation by extensions from the existing system.

SEWERAGE

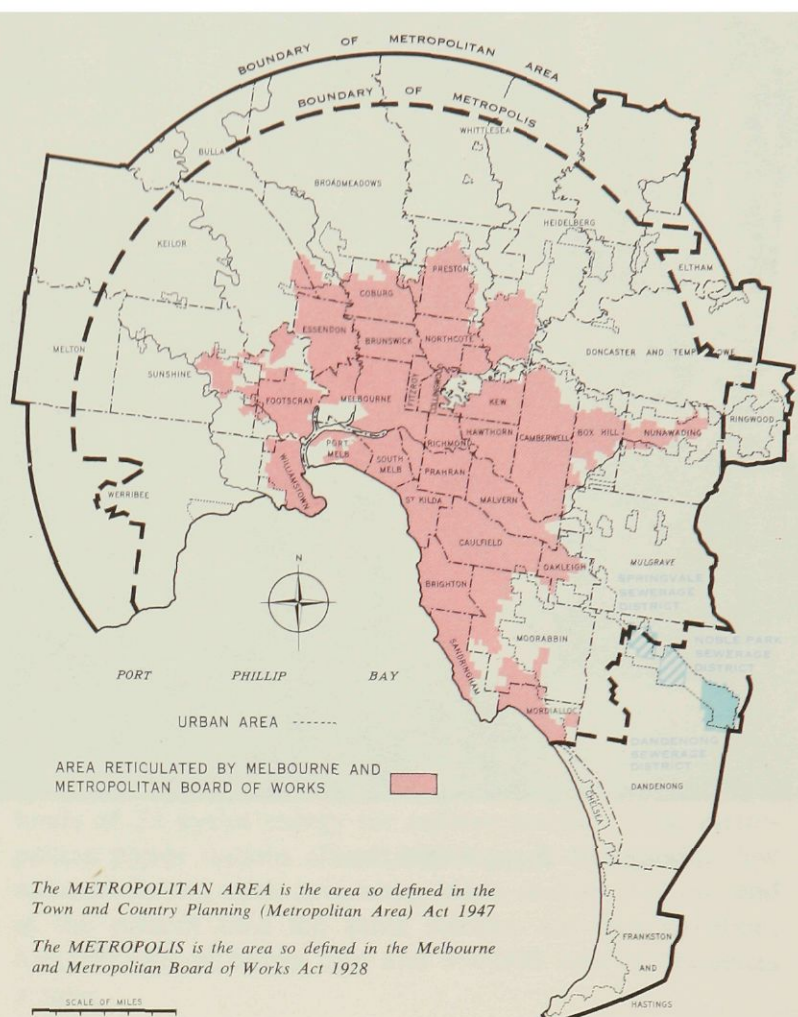
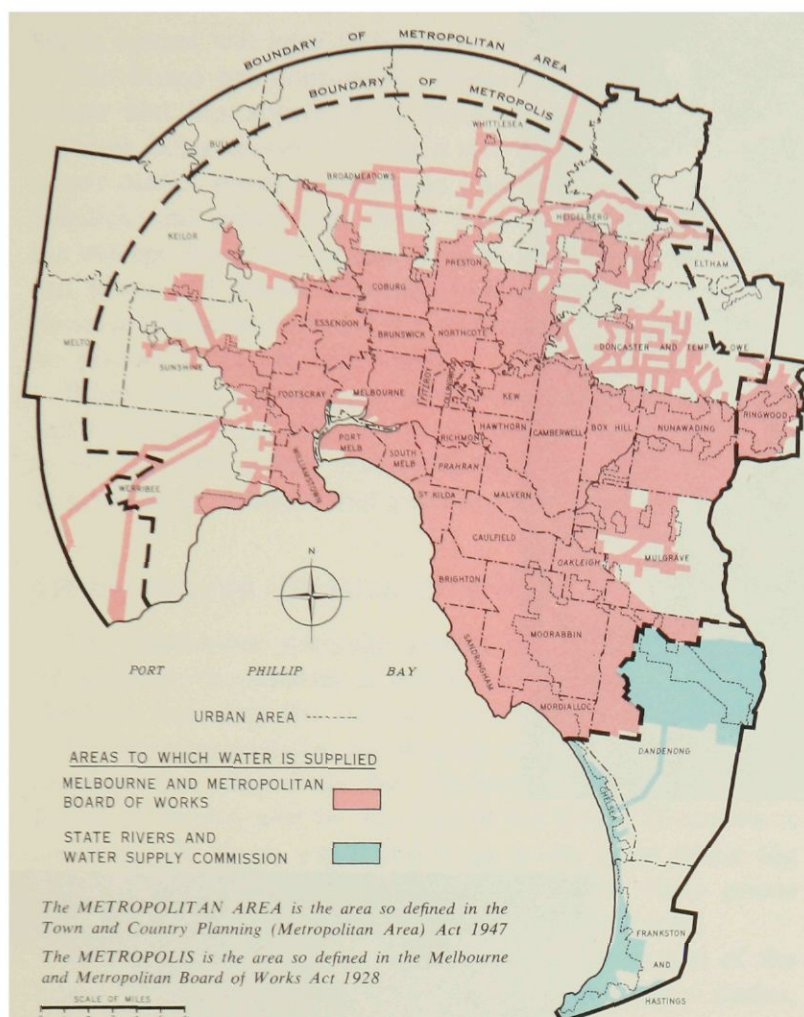
Within the metropolitan area there are four constituted sewerage authorities: the Melbourne and Metropolitan Board of Works, the Dandenong Sewerage Authority, the Springvale and the Noble Park Sewerage Authorities, but the latter two have not yet carried out any construction work.

The Dandenong Sewerage Authority provides sewerage facilities for a population of 8,500 persons in and adjacent to the township of Dandenong, the average daily flow of 250,000 gallons being treated at a local treatment plant.

Table 56

PERCENTAGE OF WATER USED BY VARIOUS
CONSUMERS

Domestic	46.5%
Industrial	28.2
Commercial	10.7
Hospitals and Institutions	7.2
Primary Production	5.0
Public Parks and Sports	2.4
	100%



The Melbourne and Metropolitan Board of Works is responsible for providing sewerage facilities within the metropolis as defined in its act of 1928. Within this area at 30th June, 1952, the number of properties provided for by the sewerage reticulation system was 329,872, representing 93% of the premises within the urban area. In 1941, the properties connected were 96% of the total, the subsequent reduction in the proportion being due to the post-war building boom and the difficulties of obtaining adequate labour and finance. Nevertheless, Melbourne has a much higher proportion of its urban area provided with sewerage facilities than other Australian capital cities.

The sewerage system under the control of the Melbourne and Metropolitan Board of Works consists of one principal system (the Werribee system) and three subsidiary systems, namely, the Sunshine system, the sewage from which is pumped to the Main Outfall Sewer of the Werribee system, the South-eastern system serving portions of the municipalities of Mordialloc and Moorabbin, and a small local system at Kew, details of which are given in Table 57.

The flow from the Werribee and Sunshine systems is purified at the Metropolitan Farm, Werribee, and discharged into Port Phillip Bay. Purification of sewage from the

South-eastern and Kew systems is effected by biological treatment plants.

In addition to domestic sewage, the Werribee system receives, under agreement with manufacturers, large volumes of polluted industrial wastes amounting to about 12,000,000 gallons a day or approximately 16½% of the normal week-day flow of 73,000,000 gallons.

The Werribee system was originally designed for a population of 1,000,000, but has proved capable of dealing with a larger population. Similarly the South-eastern and Kew systems are successfully dealing with a greater population than originally planned. However, amplification of the

Table 57
MELBOURNE SEWERAGE SYSTEMS, 1953

System	Area Served (acres)	Population Served (persons)
Werribee	69,598	1,300,000
Sunshine	1,241	12,000
South-eastern	2,490	20,000
Kew	103	760
Total	73,432	1,332,760