PART VI

PUBLIC UTILITIES
WATER SUPPLY.

The water supply of the metropolis is controlled by the Melbourne and Metropolitan Board of Works, and consists of three main branches, viz.:—

The Yan Yean System.

The Maroondah System.

The O'Shannassy and Upper Yarra System.

These are all located in the Great Dividing Range, which runs from east to west, and, as its name implies, divides the State of Victoria.

The Yan Yean system lies almost due north of Melbourne, and the total area held for water supply purposes is about 33,962 acres. The available capacity of the storage reservoir is 5,400,000,000 gallons. There is also a smaller storage reservoir known as Toorourrong in this catchment, with a capacity of 60,000,000 gallons.

The Maroondah system is located north-easterly, and has a catchment area of about 40,000 acres, the available capacity of the Maroondah reservoir being 4,855,000,000 gallons.

Beyond the Maroondah system, and east of it, lies the O'Shannassy River Watershed of 32,650 acres, which supplies a storage reservoir with a capacity of 930,000,000 gallons. This system also includes the Silvan Dam, now in course of construction, about half-way between O'Shannassy and Melbourne. This reservoir will have a capacity of 8,800,000,000 gallons.

The total capacity of all of these storage reservoirs amounts to 20,045,000,000 gallons. In conjunction with the perennial stream flow, these reservoirs are capable of supplying the requirements of a population of about 1,430,000. Having regard to the future requirements, the Government has been asked to vest in the Melbourne and Metropolitan Board of Works a further large area of 90,000 acres bordering on the east of the O'Shannassy Watershed, on which area the source of the River Yarra exists, with its many tributary streams. This area is expected to be capable of supplying the requirements of about 970,000 people additional.

General view of watershed areas.
In order that those responsible for the future water supply may be assured of ample catchment area, the Melbourne and Metropolitan Board of Works has urged that the Baw Baw Plateau of 36,500 acres be made available to them. It is estimated that this area would be capable of supplying the needs of a further 600,000 people, thus ensuring a plentiful supply for about 3,000,000 people.

In addition to the Baw Baw Plateau, there is a very large area known as the Thomson and Aberfeldy Rivers Watershed, comprising about 184,000 acres lying east of the Upper Yarra and Baw Baw Watersheds, which the Melbourne and Metropolitan Board of Works has also asked should be reserved for water supply purposes. All these areas are mountainous, are covered with timber, inaccessible, and generally unsuited for settlement. The Thomson River Watershed is the only unalienated Crown land which could be drawn upon for the water supply of Melbourne without conflict with other important industries. During recent years the Forests Department has vied with the Melbourne and Metropolitan Board of Works for the rights to certain timber in the additional areas sought for water supply purposes. The Board has strenuously opposed any licence of any kind being given to the Forests Department or to any other authority which will allow entrance for any purpose whatever into such splendid natural pure water catchment and conservation areas.

The population of the metropolitan area is now in excess of 1,000,000, and the existing water supply services are stated by the Melbourne and Metropolitan Board of Works to be capable of supplying the requirements of a population of 1,430,000. This takes into account the capacity of the Silvan Dam now under construction, which will not be completed for some years. As a maintenance of a 3 per cent. per annum increase in population would mean that there would be 1,430,000 people in the metropolis in 1940, the Commission hopes the metropolitan water supply will be kept well in advance of the requirements of the population, and that the provision of adequate reservations for safeguarding a supply in the future will receive the necessary attention of the authorities concerned.

The Commission has given consideration to the opposing arguments, and believes that nothing should be permitted which may have the slightest detrimental effect upon areas so suitable as a potential water supply. The Commission is of opinion that no other use should be considered when the objective is so vital. As the competent water supply authorities have so strenuously opposed any other policy, it is recommended that the whole of the Upper Yarra, Baw Baw, and Thomson River Watersheds be forthwith vested in full control of the Melbourne and Metropolitan Board of Works.

Reafforestation of Catchment Areas.

In certain parts of the watersheds, denudation of timber both complete and partial has resulted, principally from cutting timber and later by successive forest fires. The Commission is of the opinion that this condition discloses the gravest danger to the water supply. It is, therefore recommended that further timber cutting should not be allowed, and that areas denuded should be replanted without delay, and a systematic reafforestation policy maintained. The timber and undergrowth on the watersheds are of the greatest value in conserving the water supply.

Main Drainage.

The Commission does not consider it necessary to make detailed reference to the question of surface drainage in its relationship to the plan of future development. It has been stated under "Public Recreation" (page 212) that the banks and beds of the various well-located streams and watercourses in the metropolis should be secured and retained as public property, and that the best method of utilizing the land in the immediate vicinity of these streams is as public reserves. It is most desirable from the points of view of drainage and sanitation that these reservations should be made.

The Metropolitan Drainage and Rivers Acts, 1923 and 1926, vested the control of the beds and banks of all metropolitan streams in the Melbourne and Metropolitan Board of Works, who have made much progress in improving the drainage facilities.

A well-conceived zoning scheme should prevent the extension of built-up areas into new sections that cannot readily be drained into the common outlet. It should also provide definite information whereby the run-off from particular areas may be estimated with more accuracy than is possible under conditions of variable development.
SEWERAGE.

The sewerage of the metropolis is also the responsibility of the Melbourne and Metropolitan Board of Works. Practically the whole of the metropolis, except on the fringe of development, is connected with an underground sewerage system. All sewage flows to a pumping station at Spotswood on the bank of the Lower Yarra, from whence approximately 40,000,000 gallons of sewage are pumped daily into an underground rising main for about 3½ miles, to near Brooklyn, after which the sewage gravitates to the Metropolitan Sewage Farm at Werribee—a distance of nearly 16 miles.

The purification of the sewage of Melbourne and suburbs is effected by filtration and aeration through the natural soil of the farm at Werribee, the sewage being applied to the land by broad irrigation. The farm now consists of an area of 22,633 acres. The total length of all sewers, excluding house connexions, is 2,253 miles. There are 230,000 buildings connected with this system.

The Sewage Farm property produces high-class fat cattle, and during recent years the Melbourne and Metropolitan Board of Works has carried off many prizes at the Melbourne Royal Agricultural Show in all sections of cattle exhibits. The turnover of this farm for the year ending 30th June, 1928, amounted to £116,063, the trading profit being £44,289.

The present outfall sewer can only take the sewage of a population of 1,100,000. Its enlargement to meet the requirements of double that population is, however, quite practicable. The Engineer of Sewerage of the Melbourne and Metropolitan Board of Works, who has given evidence before the Commission on two occasions, has advised that it will shortly be necessary to provide a system on the south-eastern side of the metropolitan area so that many eastern and southern suburbs now being served by the Werribee system can have their sewerage directed to the south-east. These diversions would enable the Werribee system to cater for the increasing population of the inner and western and northern suburbs.

With this object in view, the Board recently purchased an area of 1,158 acres at Braeside, several miles east from Mentone and Mordialloc. It is not practicable to have a similar scheme, on the south-eastern side of the metropolis to that on the south-west. The Melbourne and Metropolitan Board of Works has stated its intention of installing at the Braeside area a system of treatment which will result in supplying an almost pure effluent.

The Braeside scheme is estimated to be capable of treating sewage from a population of 700,000, allowing for a daily flow of 32 gallons per head.

BACTERIAL TREATMENT.

There are certain areas in the Municipalities of Essendon, Coburg, Preston, Heidelberg, Camberwell, and Kew which cannot be connected to the schemes outlined above, and which the mains referred to would not be large enough to serve. There are 12,300 acres altogether, most of which are now served by the pan system referred to below. An area at Kew is at present being successfully dealt with by bacterial treatment, and it is proposed that all of these areas should be similarly dealt with.

UNSEWERED AREAS.

Notwithstanding the extensive sewerage system in operation in this metropolis, there are a large number of unsewered properties, the majority of which are on the outskirts. The Commission considers that every possible effort should be made to reduce the number of unsewered properties. With this objective, it is recommended that no further building be permitted in the metropolitan area unless a water supply exists on to the property, and that, pending connexion with the general sewerage scheme, it shall be obligatory to install a septic tank or other system according to standards laid down by the Commission of Public Health. The Commission desires it to be understood, however, that these systems should not be regarded as a substitute for sewerage facilities as generally supplied, but a necessary interim convenience and health precaution.
The Commission is of opinion that the provision of septic tanks, advantageous as it will be in improving the sanitary condition of the metropolis, should go hand in hand with outer suburban development on town-planning lines. This would avoid in the future the present unsatisfactory haphazard and scattered development which brings in its train undesirable and uneconomic conditions.

The pan system of nightsoil disposal is fraught with dangers to health, and perhaps the only complaint that can be substantiated in regard to an otherwise excellent sewerage system in this metropolis is the fact that uncontrolled development has been allowed to advance to such an extent as to give to the Melbourne and Metropolitan Board of Works the unpleasant responsibility of some 24,000 or more cess-pans, with the attendant troubles and objections which are necessarily associated with such obsolete disposal methods.

The present law which provides that buildings shall not be erected on lands subject to inundation has not been sufficiently enforced. Apart from the health aspect, this often causes difficulties in sewer ing the buildings. In such areas the erection of buildings should not be permitted unless they can be effectively and economically sewer ed.

OTHER PUBLIC SERVICES.

GAS, ELECTRICITY, LIGHTING, TELEPHONES.

It is only necessary to make passing reference to other services, which are of relatively minor consequence from a town-planning point of view.

Gas.

The gas supply for the city and suburbs is in the hands of a public company operating under an Act of Parliament, and two private companies, whilst the Municipalities of Heidelberg and Mordialloc have taken advantage of the powers conferred upon them in the Local Government Act to manufacture gas for supply to their own ratepayers. Gas services are being continually installed in outer areas as the metropolis expands.

Electricity.

The principal source of electric power supply for the State of Victoria, including the metropolis of Melbourne, is controlled by the State Electricity Commission, which operates under the State Electricity Commission Acts, 1918 to 1922. It generates its supply principally at the extensive brown coal deposits at Yallourn, in Gippsland. Practically the whole of the metropolitan requirements are supplied by it, there being several distributing authorities, mostly municipal councils, which purchase their energy in bulk from the State scheme. The Commission controls the distribution in four metropolitan districts within the area of planning adopted by the Town Planning Commission, and in 1930 will take over the undertaking of the Melbourne Electric Supply Company Limited, which at present retails in most of the southern and eastern suburbs the energy it purchases from the Commission in bulk. The Commission also supplies 140 centres throughout the State by means of a transmission system, which extends for distances of 300, 294, and 280 miles in various directions, from Melbourne.

The Melbourne City Council supplies the greater part of its own area with electric power obtained for the major part from the State Electricity Commission, supplemented by its own generating plant.

The Victorian Railways Department generates its own power at Newport, where it has a very large plant.

Lighting.

Very great improvements in the lighting of the streets of this City have been made in recent years, nearly all of which are now lit with electricity. St. Kilda-road, certain beach areas, the main shopping centres in the city and suburbs, the principal bridges, &c., are all splendidly lighted. As the importance of streets and localities is increased by development, it is to be expected that the lighting system will be improved.
All telephone, telegraph, postal, and wireless services are controlled as a Commonwealth activity by the Postmaster-General, who is a member of the Federal Cabinet.

RELATIONSHIP TO ZONING.

Some references to the relationship of zoning to the public services have already been made in the Zoning chapter (pages 155 and 156), but there are certain phases of this matter which should be more particularly mentioned in this Part. The past uncertainty as to the trend of building has resulted in replacements of small mains with large mains, and the removal of pipes which might have served for much longer periods if the original type of development had remained as was anticipated. Conversely, large mains have been installed before the requirements warranted the heavier expenditure involved.

Where the development of a city is controlled and regulated as to the limits of its industrial sections, its areas for high buildings, for apartment houses, for single, double, or three storied houses, &c., the requirements of the various services can be estimated with reasonable accuracy. At present, in Melbourne and suburbs, there must be a certain amount of conjecture as to the capacity of the mains to be installed in respect of water, drainage, sewerage, telephone, and other public services, a considerable amount of which might be avoided if a definite zoning plan were adopted. It would then be possible for the authorities concerned to estimate the demand upon those services for a reasonable period in advance. They would also be able to determine with greater confidence the financial outlay which would be reproductive.

An aspect of the water supply services which does not apply to the same extent in other services is the necessity for having adequate pressure in all types of areas so that fire fighting may be effectively carried on. Zoning the height, bulk, and use of buildings would permit the necessary water facilities to be determined.

Most of the services referred to must be installed in nearly all buildings, and to that extent the authorities concerned are able more easily to plan their mains and plant, but the position of the telephone services is by no means similar. Not only is there a vast difference in the ratio of telephones to area in different types of districts, but the installation of this service is entirely a matter of individual choice. It is obvious that any conditions of development which will give some form of permanency to a locality and an indication of its likely future development must be of great service to the postal authorities. The zoning scheme upon which the Commission has been working during the last two or three years has been made available to the Postal Department, and it is known that the preparation of data and the formulation of their plans have been aided materially thereby.

The costs of public services.

One of the principal contributing factors to the relatively high cost of rates, public services, transport, &c., in this metropolis is the tendency of development to spread unreasonably over large areas. There are few, if any, cities of a population of 1,000,000 or more which occupy such a large area as does Melbourne and its suburbs. The relatively low average density of population in Melbourne, however beneficial it has been in other respects, has presented many problems to those charged with the responsibility of supplying the various public services. The statement appended hereto shows that the provision of these services in this metropolis is more expensive than in most other cities of similar or greater population.
POPULATION DENSITIES.

Compiled from Latest Information Available.

<table>
<thead>
<tr>
<th>City</th>
<th>Area Square Miles</th>
<th>Population</th>
<th>Average Density Per Acre</th>
<th>Densest Portions</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>London—Greater</td>
<td>693</td>
<td>7,809,963</td>
<td>17.6</td>
<td>163 in Southwark, but up to 500 in places 300 to 400</td>
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<td>County</td>
<td>117</td>
<td>4,550,000</td>
<td>60.8</td>
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<tr>
<td>Glasgow</td>
<td>30</td>
<td>1,200,000</td>
<td>62.5</td>
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<tr>
<td>Birmingham</td>
<td>68</td>
<td>922,800</td>
<td>21.8</td>
<td></td>
</tr>
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<td>Liverpool</td>
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<td>872,900</td>
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<td>Europe</td>
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<tr>
<td>Berlin—Greater</td>
<td>339</td>
<td>4,924,165</td>
<td>18.5</td>
<td>Averages 118 on 29 square miles</td>
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<tr>
<td>Paris</td>
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<td>4,567,000</td>
<td>38.6</td>
<td>Averages 148 on 30 square miles and reaches 400 per acre</td>
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<tr>
<td>United States</td>
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<td></td>
</tr>
<tr>
<td>New York—Greater</td>
<td>297</td>
<td>6,017,500</td>
<td>31.6</td>
<td>Averages 133 on the 22 square miles of Manhattan Island, and reaching 650 per acre on the Lower East Side</td>
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<td>3,157,400</td>
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<tr>
<td>Philadelphia</td>
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<td>Detroit</td>
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<td>Cleveland</td>
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<td>St. Louis</td>
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<tr>
<td>Baltimore</td>
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<td>830,400</td>
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</tr>
<tr>
<td>Montreal</td>
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<tr>
<td>Sydney</td>
<td>185</td>
<td>1,200,000</td>
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<td>87—Darlinghurst</td>
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<td>MELBOURNE</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Area of existing development</td>
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<td>1,007,000</td>
<td>14.3</td>
<td>60—Fitzroy</td>
</tr>
<tr>
<td>Commission’s area of planning</td>
<td>257</td>
<td>1,020,000</td>
<td>6.2</td>
<td></td>
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</tbody>
</table>

It is obvious that the cost of transport, water, sewerage, power, lighting, road construction, and maintenance generally must fall much more heavily upon those residing in a metropolis where the density of population averages about 6 to the acre, as compared with a city where there are 20, 40, or more people to the acre. The Commission has been careful in its zoning proposals to plan for the relatively low densities of 20 to 40 people per acre as compared with many older cities, but this is because of the necessity for preserving modern and hygienic conditions of development within the economic capacity of the community.

Under the present system there is little to discourage the person who desires to erect a new home in a new area, more or less isolated from the built-up areas. He is only directly and financially concerned with the payment of the costs of half the road construction opposite his own frontage and of the reticulation of the services from the street mains into his own allotment. In order that he and such others as may be located there in the first place can be supplied, the services are provided to them mainly at the expense of the citizens generally. The vacant lands become enhanced in value by reason of the new services, but the rates paid on vacant land under the present system of rating by no means compensate for the outlay by the public authorities.

The Commission is of the opinion that its zoning proposals and its recommendations as to the necessity of making water and sewerage available before any new house is erected should
assist in achieving the objective of avoiding indiscriminate and unsatisfactory new development. The costs of services would thereby be reduced, because of their more intense use by a greater number of ratepayers and consumers per acre or per mile, as the case may be.

In its First Report, the Commission urged strongly that further outer suburban development by the erection of houses in scattered positions without the provision of the necessary services, should be curtailed. With a view to assisting in securing this corrective, and a more gradual accretion on the perimeter of the more densely built-on areas, it was recommended (page 54) that legislation be enacted to ensure that municipal councils, before sealing plans of new subdivisions, insist that—

(a) the streets be formed to the permanent levels, and

(b) a complete drainage system, including street channels, be installed,
such work to be carried out at the expense of the subdivider.

There can be no doubt that the scattered development, combined with the extraordinarily large area on which Melbourne's 1,000,000 people are housed, have contributed substantially to the high cost of living and of overhead business expenses.
PART VII

HOUSING AND LAND SUBDIVISION
HOUSING.

The housing of the people is a subject involving tremendous detailed investigation. To deal with it exhaustively would require a much longer period of investigation than the Commission has been able to give. While Housing and Town Planning are intimately related, they are being treated more and more as separate studies. Earlier legislation in various countries included Housing and Town Planning under the one Act, but subsequent legislation has coupled Town Planning and Development Schemes, while Housing is often the subject of separate legislation.

RELATIONSHIP OF HOUSING AND TOWN PLANNING.

The term "housing" is generally used in relation to the methods whereby the actual buildings for the domestic accommodation of the people can be built to meet the varying demands of those for whom they are to be provided. The scope of the Commission's inquiry has not been directed towards this end, but the subject has been considered from the standpoints of open spaces around dwellings, the number of people who should be housed on each acre, and the layout and zoning of areas for housing purposes, whether by public authorities or private enterprise, all of which phases of housing come within the purview of Town Planning.

In the chapter on Zoning, the housing areas of the metropolis are dealt with at some length, and regulations are suggested which would have the effect of preserving a suitable density of housing in the three types of district into which the residential areas of this metropolis should be subdivided. If the zoning provisions outlined were given effect, housing areas would be protected against the overcrowding and insanitary conditions which unfortunately are to be found in isolated parts of this metropolis. The zoning scheme will also protect residential areas from the intrusion of incongruous uses which at the present time, in many of the older suburbs, make bad housing conditions worse on account of the dust, smoke, odours, or noise which usually accompany many industrial operations.

CAUSE OF INFERIOR HOUSING CONDITIONS.

The subdivision of land into allotments too small to permit the erection of houses with rooms large enough to ensure the health of the occupants, and yard space sufficient to maintain adequate circulation of air around the houses, has contributed largely to the undesirable housing conditions which exist in certain parts of this metropolis. Fortunately—as pointed out in the chapter on Zoning—these conditions in the older suburbs have to a large extent been lessened.
by the industrial encroachment which has expelled the residents, who have found better conditions in other localities. The subdivision of land into such small allotments has not taken place to anything like its former extent, since the municipalities have had a certain measure of control over plans of subdivision and the power to pass by-laws declaring minimum frontages and areas.

The improvement of the existing unsatisfactory housing conditions can be gradually brought about by the strict enforcement of existing legislation, combined with the proposals outlined in Part IV.

**EXISTING LEGISLATION.**

The Health Act enables local authorities to exercise control over the housing conditions within their municipal boundaries. Upon receipt of a certificate from the Health Officer, Medical Officer, Surveyor, or Engineer, the Council may declare houses, or parts of houses, unfit for human habitation, compel owners to repair, or take down and remove them, and also prevent their occupation until the necessary improvements have been carried out. Powers are also conferred to prevent the overcrowding of houses, and the use of cellars, vaults, or underground rooms as dwellings is prohibited. The Health Act also debars the erection of dwellings on land liable to flooding.

Such legislative enactments, together with the standard of living sought in this country, have combined to bring the great majority of dwellings in this metropolis up to the standard of good housing conditions.

The problem of providing for those of small means, who are the usual inhabitants of the more unsatisfactory type of house, has also received attention, and “An Act relating to the providing of Dwellings for Persons of Small Means, and for the Reclamation and Improvement of Insanitary Low-lying or Overcrowded Areas,” was passed in 1920, intituled The Housing and Reclamation Act. This Act empowers the State Savings Bank Commissioners to buy land and build houses, borrow money for such purposes, and to sell the houses to purchasers on extended terms.

Councils are also given authority under this Act to carry out housing schemes for persons of small means, and they may borrow money up to £100,000 in excess of the amount authorized by Local Government Acts for general purposes. The cost of houses erected under these provisions is limited to £800.

For the purpose of reclaiming insanitary, low-lying, or overcrowded areas, or for the improvement of areas abutting on streets less than 33 feet wide, or where land was subdivided prior to the Local Government Act of 1914, in such a manner as to become an insanitary or overcrowded area, the municipality was empowered by the 1920 Act to carry out the necessary works, erect buildings, and sell or let them.

No council has availed itself of the powers granted, the extremely unwieldy and complicated nature of the Act having largely contributed to the unwillingness of the municipalities to carry out housing or reclamation schemes in accordance with the procedure which the Act sets out. In many cases where small subdivisions have been approved by the councils in portions of these undesirable areas, the powers conferred by the Housing and Reclamation Act prevent any action being taken in respect of these new subdivisions. In consequence, a general scheme for the whole area cannot be carried out even if the Act referred to could be operated in other respects. This difficulty is particularly in evidence in the Maidstone area.

**ENCOURAGEMENT OF HOME OWNERSHIP.**

The problem of providing housing accommodation for the poorer classes will always remain a problem while high standards are maintained. It is a matter of building suitable accommodation at a price within the reach of the thrifty basic wage man, when such price is largely governed by the high cost of labour, materials, and land which prevail. These factors have contributed elsewhere to the building of multiple family dwellings and tenements, and housing schemes for building houses of standard design, in large numbers to lessen the cost. Tenement houses are hardly likely to be accepted in this new country where the conditions are not comparable with those of older cities. Nevertheless, a modification of them under the safeguards laid down in the legislation recommended for residential districts in the Zoning Scheme would allow of much better housing in some of the overcrowded areas in this metropolis, at a cost which would ensure a reasonable return on the money expended.

The State Savings Bank of Victoria has been empowered by State Savings Bank Acts and the Housing and Reclamation Act, to erect or purchase houses, and give liberal repayment terms in order to encourage purchases by individuals not already possessing homes. The
popularity of the terms offered by the State Savings Bank Commissioners is apparent, as from 17th December, 1910, to 30th June, 1929, loans amounting to £23,648,365 in respect of 47,951 houses and shops have been made under Crédit Foncier terms, by far the greatest proportion of which are houses, and from 1st January, 1921, to 30th June, 1929, 7,370 advances amounting to £4,824,841 under the Housing and Reclamation Act. It is estimated that 80 per cent. of the number of these loans and advances are on properties situated in the metropolitan area.

The average cost of the houses erected under the Housing and Reclamation Act is £843. The amount of the deposit varies with the distance of the property from tram or train. The minimum deposit is £50, but concessions may be made to applicants with children, provided the house is within three-quarters of a mile from a tram or train. In the latter cases the deposit may be as low as £25, and the balance of the purchase money, with interest at a low rate, is payable by monthly instalments over a period of 26½ years.

Considerable progress has been made in that part of Fisherman’s Bend, Port Melbourne, which this Commission recommended should be utilized for housing. Seventy-two dwellings have been erected, and 134 more are in course of construction. In this section the high cost of the land and foundations necessitated a departure from the single-story, single-family house. Semi-detached houses of two stories have, therefore, been erected, and they are being sought eagerly because of their satisfactory design and of the easy repayment terms. The average cost of the dwellings already occupied, including land, road-making, drainage, and other expenses was £909 19s. The cash payment by purchasers averaged £87 7s. 1d. The balance of purchase money and interest at 6½ per cent. is payable by weekly instalments of £1 4s. 6d., and the home thus becomes the unencumbered property of the purchaser in 26½ years. In the latest area to be developed, the cost of the houses is estimated to reach about £1,050 in all. After the necessary deposit has been paid, the weekly payments will be £1 7s. 6d., but the term of repayment has been extended to 32½ years.

In addition to the foregoing, the State Savings Bank now builds and purchases houses for returned soldiers under War Service Homes Acts. From 1st July, 1922, to 30th June, 1929, 4,145 advances were made to returned soldiers (under the provision of this Act) amounting to £3,032,208. In this case also it is estimated that 80 per cent. of the number of advances are made on properties situated in the metropolitan area.

The State Savings Bank Commissioners are to be commended for the efforts they have made to provide cheap houses and for increasing the number of home owners who, in the absence of the concessions granted by the Bank, would have been unable to purchase their dwellings.
The State Savings Bank scheme has supplemented the housing accommodation by better class homes to such an extent that many people have changed into improved conditions. The cost of the homes in the Fisherman's Bend area, however, is beyond the means of many, but it is believed that houses could be constructed at a cost which would permit their purchase by many persons now living in undesirable dwellings. Although the accommodation would not be as elaborate as that provided in the Fisherman's Bend group of houses, a considerable advance could be made on the conditions now obtaining in parts of the older suburbs.

An indication of the existing conditions of housing in this metropolis is given in the Victorian Year Book 1927-28, page 134, which shows that at the last census (1921) 44.5 per cent. of the houses in the metropolis were occupied by owners who had completed their purchases or were buying on terms. This proportion is likely to have increased in more recent years, because the erection of houses has proceeded at a rapid rate, and the more liberal terms offered to prospective purchasers have enabled many to commence buying their own homes.

PREVAILING HOUSING CONDITIONS.

The average housing conditions, more particularly in the newer suburbs, are entirely satisfactory from a health stand-point. The predilection for single-family dwellings on liberal allotments of land is demonstrated by the marked increase of this class of dwelling. Private enterprise and the State Savings Bank appear to be able to satisfy the demands made for dwellings of this type, and at present there is no apparent shortage of houses for those able to purchase or pay rentals which will ensure a reasonable financial return. The assistance rendered by the State Savings Bank and the increasing proportion of home buyers have also had the effect of increasing the numbers of houses available for letting, with consequent reduction in rents. There is no doubt that the shortage of houses experienced in the years immediately following the Great War has now been overtaken, and the numbers of flats which are "To Let" is evidence that many people have changed from this mode of living to the favoured single-family dwelling.
of houses of a superior type, and given very careful thought to the architecture and street amenities. Apparently, the experiments have been successful, because this type of development is increasing. From a town-planning point of view, this high class housing is commendable, and has again proved that those who can afford better homes in better surroundings are ready and anxious to change.

**UNDESIRABLE HOUSING SITES.**

Attention was drawn to the fact that the unsatisfactory subdivision into small allotments of areas in our older suburbs has contributed to the unsatisfactory housing conditions which are to be found therein. Most of these areas, which are close to the central area, are densely built upon, and unless reclamation schemes are undertaken, the betterment of the conditions will be a slow process, brought about by the operation of zoning schemes.

In the outer portions of the metropolis there are areas which were subdivided prior to the development of an Australian standard of housing, and which were copied from the layout of old world cities. Fortunately, however, in the municipalities in which these areas occur, by-laws are in operation which prevent the erection of houses on allotments which do not comply with the liberal standards prescribed. Such subdivisions are to be found in the Municipalities of Carrum, Oakleigh, Mulgrave, Blackburn and Mitcham, Ringwood, Northcote, Braybrook, and Footscray. The size of the allotments and the layout of these areas are entirely unsuitable for the housing development which should naturally take place.

The most noteworthy and extensive illustration of the type of subdivision referred to is situated in the shire of Braybrook, at Maidstone. The fact that it is on the fringe of the developed area of the metropolis, and is already being dotted with houses conforming to some extent to the old unsatisfactory layout, has caused the Commission to give it special attention and prepare a resubdivisional scheme.

The legislation required for this scheme would deal with other unsatisfactory subdivisions prior to the erection of buildings. Suitable provisions are outlined in Chapter X., which deals with legislation, and the following description of the Maidstone scheme is typical of such areas.

**THE MAIDSTONE REPLANNING SCHEME.**

**Locality and Existing Conditions.**

The area to which this scheme relates is shown on the Plan on page 252. It comprises about 1,020 acres in the Shire of Braybrook, as shown on the Plan—Sheet No. 6. Some of the existing subdivisions date back to 1852, and they include large numbers of allotments with dimensions of 20 feet x 50 feet and 26 feet x 68 feet.

Interspersed, however, with these old subdivisions are comparatively recent ones where the allotments are laid out with an area of 5,000 square feet in accordance with the Council's by-law, which prescribes a minimum of 5,000 square feet on which dwellings may be erected. This by-law has no doubt retarded the settlement in this area in recent years. The by-law has had the desirable effect of requiring at least three of the original small allotments of 26 feet by 68 feet to be combined before the necessary building area was reached, and in many cases four allotments have been combined to make a better-conditioned building site.

The area is at present sparsely built upon, there being approximately 250 houses on the section east of Ashley-street, while practically the whole of the section west of Ashley-street is vacant land.

As so many of the original allotments measure 26 feet x 68 feet the streets in a considerable portion of the area are only 136 feet apart, and as the combination of allotments has usually resulted in the new allotments having a depth of 136 feet, it has allowed owners the choice of building to either street. As a consequence, many houses have for their aspect the backyards of houses across the street. The conditions in this area will become aggravated if the existing unsatisfactory layout is not remedied.

**Total Replanning Scheme.**

Investigation showed that the difficulties involved in a scheme of total replanning were no greater than those in a scheme of partial replanning; in fact, the latter would probably occasion dissatisfaction among the owners of allotments having frontages to roads which it was decided to close.
The total replanning scheme for the whole area is shown on the Plan on page 252. This plan incorporates the Commission's proposals for main roads in the western municipalities so far as they affect this area, and includes—

(a) Ballarat-road.—Width increased from 66 feet to 132 feet by widening on northern side between Summerhill-road and Ashley-street, and from 99 feet to 132 feet between Ashley-street and Boundary-street (or Duke-street).

(b) Ashley-street widened from 66 feet to 99 feet between Ballarat-road and the Tottenham Station, and forming the southern continuations of Lyons-street, Braybrook, which is 99 feet wide.

(c) A new parkway road 132 feet wide in a direct line between the intersection of Ballarat-road and Summerhill-road to link with Durham-road at Duke-street.

(d) A new diagonal road from Hampstead-road to Sunshine, 84 feet wide, to connect with the new 132-feet parkway road across the area, and, in conjunction with it, to give direct access between Sunshine and the Maribyrnong-road Bridge and thence to northern suburbs.

(e) From Ballarat-road at Northumberland-street a new road 84 feet wide, in a direct line to Ashley-street, Tottenham, at Barkly-street.

Residential Development.

After providing the main roads system, the areas lying between are planned to make a residential suburb. The streets are laid out so that houses erected in them will be within easy access of the various main roads, but the minor streets are so arranged as not to provide direct routes of travel for through traffic. By eliminating through traffic from the residential streets a less noisy, less dusty, and less expensive street is made possible, thus assisting to increase the comfort of residents in such streets. As far as practicable the residential streets have been designed to ameliorate the natural monotony of the landscape by providing angles and terminal features, thus affording a variety of outlook.

Within the residential area planned, it is estimated that 23,475 people could be provided with homes on allotments of not less than 5,000 square feet each.

Business Areas.

Business areas to serve the ultimate population are shown in selected locations in the replanning scheme. The length of business frontages set aside would provide one shop for every 50 of the estimated total population, which is considered to be a reasonable allowance for a suburb of this class. The principal shopping centres are planned along the proposed tram route in Ballarat-road, at its intersection with other roads, thus ensuring that the planned business areas will be readily accessible to the neighbouring residential area.

As the Tottenham Railway Station will be used by a considerable number of the residents, a business centre is planned in Ashley-street from Barkly-street to the Station.

Another business centre is located at the intersection of the three new roads across the area. It lies approximately in the centre of the area west of Ashley-street, and may become the community centre for a large portion of the area replanned.

Parks, Playgrounds, and Plantations.

Seventy-seven acres are set aside for open spaces, including 17 acres of road plantations, in the widened Ballarat-road and the new parkway road, which forms the direct approach to Sunshine from the Ballarat-road. The remaining 60 acres are distributed in such a way that they will be conveniently accessible to the future residents. Two reserves are planned of sufficient size to accommodate full-sized ovals and still leave a considerable space for other recreation. Others, although not large enough to accommodate full-sized ovals, are sufficiently large to allow cricket, football, &c., to be played and leave sufficient space for games such as tennis and bowls.

These large parks, which should become the principal ones, are located away from the main traffic routes, but the street system in the vicinity of them is so designed that they are easily accessible.

Smaller open spaces are provided in areas away from the main traffic routes so as to minimize the risk of accidents to the children using them.

The open spaces and road plantations have been arranged so that trees planted thereon will provide protection from winds and afford a great number of home sites the advantage of overlooking parks.
School Sites.

When the scheme is being carried out arrangements should be made with the Education Department for the purchase of areas for educational requirements. The parks and playgrounds are so spaced as to serve the prospective population with the least amount of walking, and educational sites can be allotted in their vicinity so that children will have the added advantage of the open spaces near the school grounds.

Services.

The nature and extent of services such as water supply, sewerage, lighting, &c., can be investigated at a later stage. Ordinarily, these are matters which the various controlling authorities would carry out, and they should be conferred with as the scheme was proceeded with.

Comparison of present and future conditions in the most difficult section of scheme.

The following figures show the distribution of land in the area of about 360 acres within that portion of the scheme east of Ashley-street, as compared with the existing conditions:

<table>
<thead>
<tr>
<th>Land included in allotments</th>
<th>254 acres</th>
<th>244 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of roads and streets</td>
<td>106 acres</td>
<td>(a) 95 acres</td>
</tr>
<tr>
<td>Area of open spaces</td>
<td>Nil</td>
<td>(b) 29 acres</td>
</tr>
</tbody>
</table>

(a) The 95 acres absorbed by roads includes the widening of Ballarat-road to 132 feet, and the new 132-feet parkway road direct to Sunshine, which are together 13 acres more than if Ballarat-road were retained 66 feet wide, and the new parkway road only a 50-feet street. The actual road space required to enable the planning of allotments only is 29 acres less than that under existing conditions. The wider roads through the area in cop. with the prospective increases in traffic requires 11 additional acres.

(b) The 29 acres of recreational area includes 8 acres of road plantations.

The above comparative figures show that in the most unfavorable section of this scheme, after supplying the necessary amount for main traffic routes and recreational needs, 244 acres are left to meet the claims of the original holders of 254 acres. In comparing these figures it should not be overlooked that at least 23 acres of land included in the 254 acres is at present held in parcels too small to allow of buildings being erected in conformity with the municipal by-law.

The Economy of Replanning.

Owing to the unsatisfactory conditions now prevailing in this area, the value of the land is considerably below that of similar land within the same, or even a greater radius of Melbourne.

An enhancement in value of upwards of £1 per foot of frontage subdivided may be expected if a complete scheme of replanning is carried out. If, however, instead of £1, a conservative estimate of only 10s. per foot increase in value is adopted, it would represent a sum total of £84,000. Further, it is estimated that if no replanning were carried out, the area wasted by unnecessary roads and streets and remnant parcels of land would be equivalent to 500 allotments of 5,000 square feet each. As these allotments will have the advantages planned in the new layout, it is considered that they may be valued at £150 each, or a total of £75,000.

The execution of the scheme includes the removal of about 200 houses, but as many would be shifted only a few yards on to the new allotments, the cost of their removal and re-erection, construction of chimneys, fencing, &c., should not average more than £100 per house, or a total sum of £20,000.

These figures are sufficient to show that the cost of the scheme can be wholly met by a comparatively small portion of the increase in value within the area and leave a substantial portion of the increment to the former owners, providing the scheme is carried out on the basis of re-allocating the replanned areas among former owners and compensating with cash those former owners holding areas too small to be of use for home-building, or who otherwise cannot be allotted an equivalent area.

Alternative Method of Treatment Examined.

Having in mind the number of houses that would be interfered with under any scheme of total replanning, consideration was given to a scheme for a partial replanning of the area by a system of closing alternate streets. This involved the removal of 50 per cent, less houses than the complete replanning scheme, but it necessitated the inclusion of allotments considered to be too large for this particular area, and provided 17 per cent, less number of home sites than the comprehensive scheme. This loss in home sites for a section of 238 acres east of Ashley-street and south of Ballarat-road, was estimated at £27,300, while the saving in the removal of the reduced number of buildings was estimated to be £6,600 only. The scheme of complete replanning would result in greater monetary advantage in the remainder of the area where fewer buildings require removal than could be obtained by partially replanning the area.
The closing of alternate streets would cause the long straight streets to be retained, and this is to be deprecated, having in mind the monotonously level character of the locality.

Although this area is naturally uninviting, by correct planning this condition can be considerably improved, thereby causing a large enhancement in value of the whole area.

The Housing and Reclamation Act is too cumbersome and unnecessarily involved to be of assistance in carrying out the scheme planned. It is quite unnecessary for the Council or any other authority to be compelled to resume the whole of the land, although powers of compulsory acquisition are essential as to parts.

The Legislation Required.

If carried out under the provisions of the Town Planning legislation referred to in Part X., which incorporates provisions for the replotting and re-allocation of the land among former owners, the determination of compensation and the necessity for the raising of short-period loans of considerable sums will be largely avoided.

It has been suggested that there are difficulties in the way of securing legislation which will permit of a compulsory pooling, replanning, and re-allocation of the whole of the allotments. These difficulties are principally associated with the freehold titles. In the Commission's view there should be no reason for giving undue weight to this negative point. Beyond all reasonable doubt, the people with interests in the area will benefit materially from a scheme of replanning such as is submitted, and no individual need suffer financial loss under the operations of the legislation asked for in Part X. It is, therefore, considered that as it is the supreme authority in such matters, Parliament should pass the enabling legislation for the benefit not only of the area itself, but of the people generally. There is no reason for following the expensive procedure of compulsory acquisition of the whole of the properties in the district. A large number of the owners of small allotments cannot be traced. It is not a question of acquisition—it is merely a matter of adjusting boundaries of existing titles.

Legislation on the lines recommended have been in existence in many countries for years. The Town Planning Act of British Columbia is a notable illustration of the type of legislation that has been successfully operated under similar conditions to those obtaining at Maidstone. Further references to this legislation are made in Part X.

The Commission considers that the municipality, in conjunction with a Town Planning Department, should be given the necessary powers to carry out this scheme, and it could enlist the services of the State Savings Bank Housing Department in the building or remodelling of dwellings.

Need for Early Action.

The undesirable layout of this area, if allowed to remain, will have extremely uneconomical and unsatisfactory results. Although the conditions are so uninviting, its location on the fringe of the developed areas and the cheapness of land, have attracted many dwellings. Approximately 250 houses are erected, and there is sufficient land in the area to permit the erection of a total of 5,170 houses and shops. The two plans on page 252, which illustrate the existing conditions and the replanning scheme, emphasize the need for early action to avoid any increase in the number of houses erected.

Sufficient data are given in the foregoing pages to illustrate the benefits of the scheme from the economical town-planning stand-point. Many details would need to be finalized before it could be put into operation in accordance with the procedure allowed by the legislation referred to. Full details of the procedure which the Commission considers should be followed have been supplied to the Public Works Department and to the municipality concerned.

The Commission first urged this scheme upon the Government on 9th April, 1926, and has since frequently stressed the need for immediate action. The Municipality of Braybrook is in favour of it, and the only bar to its achievement is the lack of legislative powers.

Housing Area and General Development at Fisherman’s Bend.

The First Report of the Commission, issued in 1925, contained proposals for the development of Fisherman's Bend. The various authorities interested were communicated with during the preparation of the scheme which was subsequently recommended to the Government. The proposal embodied in the First Report aimed at the creation of an industrial suburb, of which 340 acres were planned for residential development, 420 acres for industrial purposes, and over 80 acres for open spaces and playing fields.