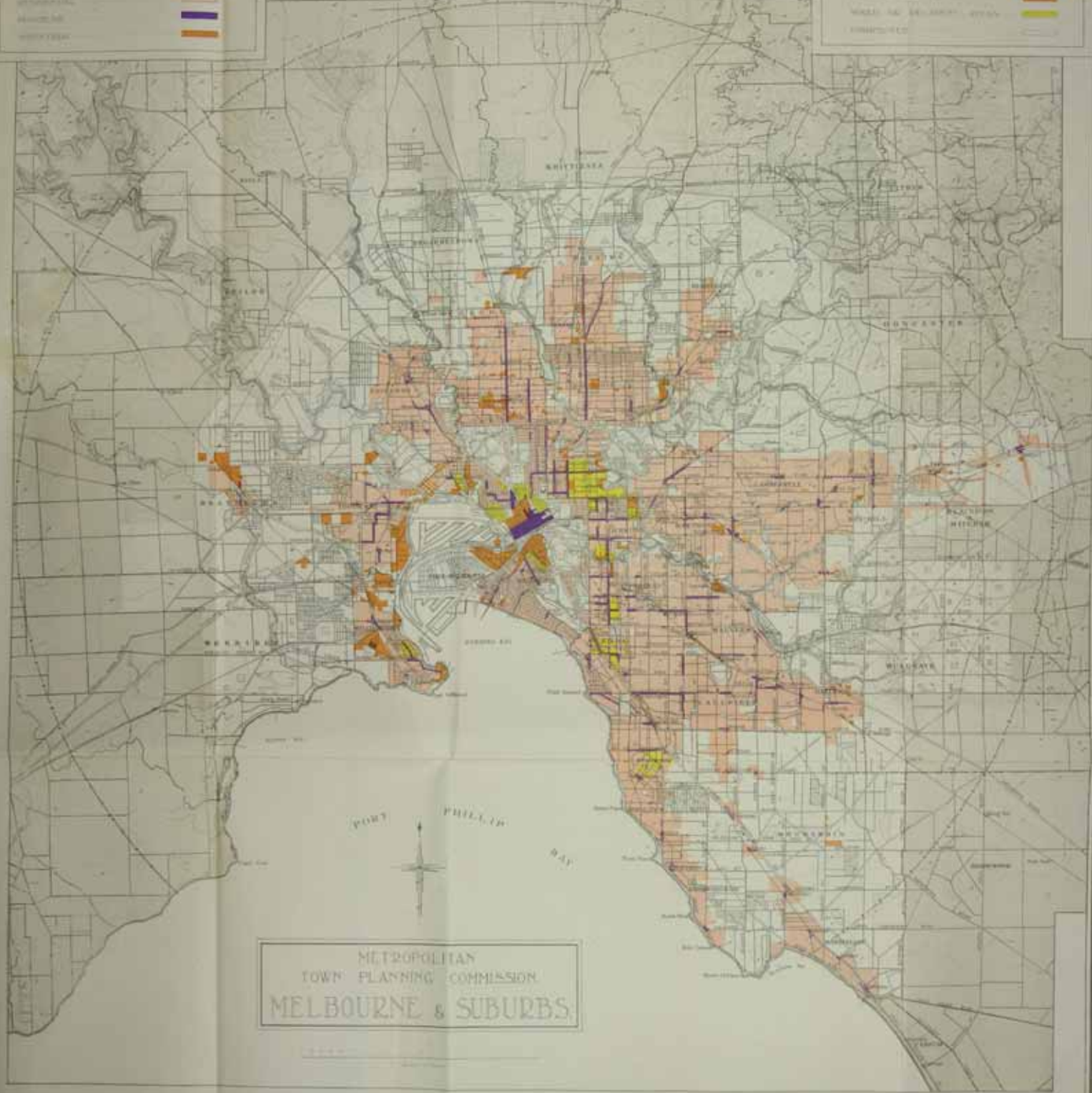


DISTRIBUTION AND USE OF EXISTING PROPERTY

INDUSTRIAL
RESIDENTIAL
COMMERCIAL

RAILWAY
WATER & SEWERAGE
UNIMPROVED



METROPOLITAN
TOWN PLANNING COMMISSION
MELBOURNE & SUBURBS

on in the business and industrial areas. 123,713 acres of the 165,805 acres included in the Commission's scheme would be devoted to residential purposes. This area is divided into three zones, in accordance with the probable future demand for houses of each class which would be allowed under the restrictions proposed for each zone. In the analysis of the residential areas which follow, the averages referred to include all streets and roads in the areas set aside for housing.

Residential "A" District.

The residential areas total 123,713 acres, of which about 2,100 acres are set aside as Residential "A" district. These districts are indicated on Map No. 7 and on the sheet plans by vertical pink lines. They are limited to the beautiful area in the vicinity of Mount Eagle, at Heidelberg, the existing high-class development in Prahran and Malvern municipalities which includes Toorak and Heyington, and an area in the Camberwell municipality which lies between Doncaster-road and Whitehorse-road, and which is capable of being developed as a high-class residential suburb under the restrictions which it is recommended should operate in the Residential "A" district.

If the present average occupancy of single family houses is maintained, the density of population in Residential "A" districts should not exceed 20 persons to the gross acre, in which case the total population which could be accommodated in this district would be about 42,000.

Although the area of the Residential "A" district is strictly limited, there would be nothing to prevent the erection of houses and the preservation of conditions in the Residential "B" district equal to those prescribed for the "A" district.

Height and area restrictions.—It is recommended that in the Residential "A" district no building should be permitted if—

1. The area of the building allotment is less than 7,500 square feet and the frontage less than 55 feet.
2. The area of the buildings would exceed one-third of the total superficial area of the allotment.
3. The height is greater than two stories; an attic shall be regarded as one story.
4. The distance between any allotment line and the building is less than 5 feet in the case of single-story houses and 10 feet for two-storied houses.
5. The distance from the street line to the building is less than 25 feet or any such greater distance required by any adopted alignment for that street.

Use Restrictions.—It is recommended that in the Residential "A" district no land shall be used for any purpose other than the following specified uses:—

1. Dwelling-house.
2. Block of not more than four flats, providing 4,000 square feet of land is allowed for each flat.
3. The office of a resident professional person, where such office is designed as a portion of the residence and where no sign greater than 1½ square feet and displaying other than the name of the person and occupation is erected.
4. Libraries, art galleries, or museums.
5. Churches and schools.
6. Parks and playgrounds.
7. Private gardens and nurseries.
8. The keeping of small animals or birds not primarily for gain in enclosures not less than 15 feet from any allotment boundary.
9. A private garage, necessary to the building and on the same allotment, in which no business or industry is carried on, and in which two cars may be garaged. Garage space for one additional car may be provided for every 2,000 square feet by which the allotment area exceeds 7,500 square feet. The above provision shall also apply to private stables, and one horse shall be considered equivalent to one motor vehicle.

10. Real estate signs not over 10 square feet in area, advertising the sale, rental or lease of the premises on which they are situated, provided that they are set back from the street line not less than 20 feet. One square foot in the area of the sign may be added for each 10 feet the width of the allotment exceeds 55 feet.
11. Electric sub-stations of approved architecture, and in approved locations.
12. Accessory uses customarily incident to the above permitted uses, not including the conduct of any business.

Residential "B" Districts.

The greater part of the residential areas set out under the zoning scheme is included as Residential "B" area, as indicated by pink colour on Map No. 7. Of the 123,713 acres which is proposed should be reserved for residential use, 112,223 acres would be subjected to the restrictions proposed for Residential "B" areas.

This would ensure that the principal housing districts in the metropolis would be of a character consistent with the Australian ideals of housing, and in accordance with the standard which has generally been maintained during recent years. While the regulations which should be framed to govern the erection of buildings in this zone would not allow conditions inferior to those prescribed, there would be nothing to prevent a much superior development from taking place. It is anticipated that many new buildings erected in the Residential "B" area will give better conditions than prescribed by the regulations. This will largely be governed by the land values. Many examples of housing conditions over large areas could be cited to show that building development which has taken place is much superior to that allowed under existing regulations.

The size of the building allotments permitted in this district under regulations proposed would, under the average conditions of house occupancy, maintain a density not greater than 30 persons per acre. It is estimated that with a density not greater than this, a population of about 3,297,000 could be accommodated in the Residential "B" districts. While it is unlikely that a density of 30 persons per acre would be increased under the provisions set down, there is every reason to believe that a density of less than this will be found throughout considerable areas of the Residential "B" district.

Within this area are included practically all of the existing suburbs where conditions are similar to that required in the regulations prescribed as suitable for this district. In zoning the Residential "B" districts care has been taken to ensure that housing development in new areas shall be allotted to the best lands in the particular localities for residential use. This is particularly noticeable in the western suburbs, where the residential districts are planned so that they lie within easy distance of the western beaches or adjacent to the Maribyrnong Valley, which the Commission advocates should be developed as park lands. In this manner the residential population would be segregated near two large open spaces, while the industrial districts would occupy the lands between them which, on account of other considerations, are more valuable for the use planned. These principles have guided the Commission when setting aside the Residential "B" districts in other portions of the metropolis in accordance with the proportional demand which is anticipated.

In this type of district, building allotments would be required to have a frontage of 50 feet and a superficial area of not less than 6,000 square feet, and it is pleasing to record that the majority of the municipalities which lie within these districts already have by-laws which require an area similar to that suggested herein.

The restrictions that should be placed on the development which may take place within the Residential "B" districts as outlined on Map No. 7, and on the various sheet plans, are as follow :—

Height and area restrictions.—In the Residential "B" district no building should be permitted if—

1. The area of the building allotment is less than 6,000 square feet and the frontage is less than 50 feet.
2. The area of the buildings would exceed one-third of the total superficial area of the allotment.

3. The height of the buildings is greater than two stories ; an attic shall be regarded as one story.
4. The distance between any allotment line and the building is less than 5 feet in the case of single-story houses or 10 feet in the case of two-story houses.
5. The distance from the street line to the building is less than 20 feet or any such greater distance required by any adopted alignment for that street.

Use Restrictions.—In the Residential “ B ” district no land shall be used for any purpose other than the following specified uses :—

1. Any use permitted in the Residential “ A ” district.
2. A detached or semi-detached dwelling for not more than two families.
3. Customary home occupations carried on in the residence of the occupant, provided that a total area not exceeding one-half the floor area of any story is devoted to such uses.
4. The keeping of live-stock and the growing of produce in undeveloped areas, subject to the approval of the controlling authority.
5. Hospitals, sanatoria, or charitable institutions, not including any correctional institution, and provided that no part of any such building shall be closer than 50 feet to any allotment line.
6. Baby health centres and crèches.
7. Buildings of approved architecture erected by public authorities, and to which no storeyard or depot is attached.
8. Boarding school.
9. Railway stations and accessory services.
10. A detached apartment or tenement house for any number of guests and accessory uses, such as restaurants, required for the use of tenants only, and conditionally on no signs being displayed to advertise such use.
11. A private garage on the same allotment to accommodate two motor cars. Additional garage accommodation may be provided equivalent to one motor for each 2,000 square feet the allotment is in excess of 5,000 square feet. Only one commercial vehicle not more than 1½ tons weight or capacity may be stored on any allotment.

A garage to provide accommodation in excess of that allowed in preceding paragraph may be permitted with the approval of the controlling authority, provided it shall not be within 20 feet of any allotment line ; that no service is provided other than to tenants of the building for which it is built, and provided that no commercial repair work is undertaken and no signs are displayed to advertise its use.

The restrictions in this paragraph shall also apply to private stables, and one horse shall be taken as equivalent to one motor car.

12. Any accessory uses usually incident to the above uses, but shall not include any business or industry. Accessory buildings may be erected on any allotment prior to the erection of the principal building, but so that they will not prevent the subsequent erection of the building.

Residential “ C ” Districts.

The residential “ C ” districts as zoned in the Commission’s scheme include those portions of older suburbs where the liberal allotment areas and regulations suggested for Residential “ A ” and Residential “ B ” districts could not be applied. The areas set aside as Residential “ C ” districts are those where the older housing conditions now predominate. Under the operation of the restrictions proposed they would be retained for residential use and be free from the intrusion of factories.

The total area that would be included in these districts is about 9,390 acres. It is considered that the size of the allotment and the open space about buildings which would be required under the provisions suggested for this area would prevent a density greater than 40 persons to the acre. Under these conditions, therefore, the Residential “ C ” district would be capable of housing 375,600 people.

The principal Residential "C" districts are located in the municipalities of Port Melbourne, South Melbourne, Prahran, Richmond, Hawthorn, Collingwood, Fitzroy, Melbourne, Brunswick, and Coburg, and it is believed that the adoption of the restrictions as proposed for these areas will preserve future development and reconstruction in conformity with a suitable standard of housing for the older and more congested districts. The present housing development in parts of Fitzroy permits a density of 60 persons to the acre to be reached, and it is believed that the Commission's scheme would, in the course of time, have the effect of reducing the density in such areas and distributing the population into areas where more open space around the dwellings could be provided.

Many of the areas included in the "C" districts are not subject to residential area by-laws, and consequently there has been an appreciable influx of factories. While the intrusion of factories would not be permitted in the residential districts, in most of the municipalities where this class of residential district is zoned, factory areas are planned contiguous to them. It is believed that this will facilitate the carrying on of industries in defined districts close to their source of labour supply, but will also ensure that the workmen shall not be compelled to live in areas where factories and dwellings are intermingled. In the absence of restrictions as proposed herein, it is believed that the indiscriminate location of factories on the poorer class residential districts, would tend to lower the living conditions for those remaining in these areas, while the demand for factory sites would be insufficient to warrant setting aside areas for this purpose in addition to those mapped on the zoning plan.

The restrictions which are recommended for Residential "C" areas are considered to be the maximum enforceable, having regard to the cost of land and the general economic conditions. It is essential, in prescribing restrictions, to ensure that the limitations imposed as to the area of the allotment that may be built on, the amount of forecourt, and the distance between houses, &c., shall not be so stringent as to preclude payable housing development. The restrictions applying to two-story and three-story dwellings, in conjunction with other limitations, will encourage the erection of buildings which will secure the admission of sunlight into all living rooms from the front or the rear. This is preferable from health and building construction stand-points to having the windows of one house opposite those of another.

It may be urged that the recommendations regarding the minimum frontage and the minimum area of allotments in these areas are either insufficiently stringent or too drastic. The Commission has given careful consideration to this recommendation and believes that in areas where lesser frontages prevail, group houses will encourage a combination of allotments so as to allow of their erection in accordance with the restrictions favoured for this district.

The restrictions recommended for all new development, reconstruction, or housing schemes in the Residential "C" districts are as follow :—

Height and Area.—In the Residential "C" district no building should be permitted if—

1. The area of the building allotment is less than 4,000 square feet and the frontage less than 35 feet.
2. The height of the building is greater than three stories or 53 feet; an attic shall be regarded as one story.
3. The distance from the street line to the building is less than 10 feet or any such greater distance required by any adopted alinement for that street.
4. The unobstructed rear yard is less than 600 square feet.
5. Any external wall of any building or group of buildings is closer to any allotment line than 5 feet.
6. The window of any habitable room has opposite to it, and within the allotment on which it is erected, a light space or court less than $7\frac{1}{2}$ feet in the case of single-story houses, 10 feet for two-story houses, and $12\frac{1}{2}$ feet for three-story houses.

Use Restrictions.—In the Residential "C" district no land should be used for any purpose other than the following specified uses :—

1. Any use permitted in the Residential "B" district.

2. A group or row of houses not more than four in each, provided that all rooms therein can receive light from either the front or rear, and that access can be gained to the rear yards of all houses by a right-of-way or passage not less than 10 feet wide.
3. Hotels, dormitories, boarding and lodging houses, including accessory services and a sign not exceeding 6 square feet in area.
4. A private garage to accommodate not more than two cars on the same allotment as the building to which it is accessory, and in which no business or industry is carried on. Garage space for one additional motor car may be provided for each 1,000 square feet of area that the allotment is in excess of 3,500 square feet.
5. Accessory uses incident to the above permitted uses and located on the same allotment with them, but not including any business or industry, and no sign or signs having a greater area than 6 square feet on any allotment.

BUSINESS DISTRICTS.

The present tendency and development of business areas were outlined on pages 159 and 160, wherein it was pointed out that the areas excluded from the residential areas and/or subdivided into shop sites was not in accordance with the probable future demands of the population. An examination of typical by-laws shows that if shops were erected on all the lands fronting the major streets excluded from the residential by-laws, there would be one shop to every ten persons in the cases of Coburg and Caulfield, and in St. Kilda one shop to every eleven persons, whereas there is at present one shop to 65·6 people in Coburg, one to every 52·1 in Caulfield, and one to every 49·5 people in St. Kilda.

So far as the suburban business areas are concerned, the Commission considers that the existing ratio of shops to population affords the most reliable guide to what should be allowed or provided, in a general scheme of zoning. The list on page 158 gives the present ratio of shops to population in all the municipalities included in the metropolis. Although the number of shops per 1,000 of population varies in different areas, there is a definite similarity in the ratios existing in comparable suburbs. Occasionally, however, a large business centre within the confines of one municipality attracts shoppers from another municipality, thereby enabling it to carry more shops in proportion to its local population in comparison with the municipality from which the shops' patrons are drawn.



Chapel-street, Prahran.

The ratios relating to the municipality of Melbourne, wherein lies the central business district, are not comparable with the suburban areas, because while the suburban centres cater for local requirements, the central business district is the place where the business and commercial life of the whole metropolis is concentrated. This will be clear from the figures of the shopping

premises alone, which show that there is one shop for every 25·1 persons within the Melbourne municipal boundaries, while the metropolitan average is one shop to every 44 persons. In addition, light industries are carried on in conjunction with wholesale and retail establishments. A considerable expansion must be anticipated in the central business district as the metropolitan population increases. So that this expansion may take place without recourse to unnecessarily high buildings or cramping of space, the Commission considers that the areas shown by purple colour in the municipalities of Melbourne and South Melbourne should be allowed to develop as business districts.

In the suburbs there is a marked tendency towards the establishment of compact local business centres which are within easy reach of the resident population and which supply general household needs. It is unlikely that huge emporiums like those in the central business district will be attracted to the suburbs. This view is strengthened by the fact that in recent years large retail houses in the once prosperous suburban centres have established city premises, presumably on account of the advantages of the central areas for business on a large scale.

There will always be a demand for local business centres, but if they are to fulfil best their principal object they must be within easy reach of the resident population they are to serve. They should be compact, and there should be sufficient shops in any group to supply the varied needs of the people, and to encourage a reasonable competition.

The number of shops required to serve the needs of any community will depend on its size and the particular local conditions operating in the area. The Commission has examined the conditions in each municipality in relation to the probable future population within the area, and has fixed three different ratios on which the prospective number of shops, and consequently the sizes of local business areas, may be decided. A ratio of 40, 50, and 60 persons per shop has been adopted according to the character of the municipality, and its distance from the central business area. In Collingwood, where there are at present 38·1 persons for each shop, a ratio of 40 has been adopted in the calculations. Similarly, St. Kilda with 49·5 persons per shop is based on 50 persons per shop as future requirements, while Camberwell with 60·6 persons per shop is allotted one for 60 people as the ratio likely to be required when maximum conditions are reached.

Although the frontages of shops vary considerably throughout the metropolitan area, the Commission considers that 18 feet is a reasonable frontage for one shop, and the business sections are computed on this basis. In the case of shops occupying a frontage of, say, 35 feet, they have been regarded as equivalent to two shops of the standard frontage.

The business centres, as indicated by purple colouring on Map No. 7, are calculated on the basis of maximum requirements. While their location is dependent on the existing shopping conditions in the areas where considerable building has taken place, their distribution on the outer areas is based on their convenience to the ultimate population, the grades of streets, the transport services existing and proposed, and areas which have been subdivided for shop sites.

Some areas, as already pointed out, have been subdivided into shop sites far in excess of the probable local demand for shops. It is essential that these be reduced to prevent wasteful development of sites which would be valuable for housing but, owing to the lack of demand, would be of little value for shops.

An illustration of the unsatisfactory development of suburban business streets is given by the existing development of Brunswick, where Lygon-street and Sydney-road provide a total of 13,860 feet of frontage, which is principally devoted to shopping. Although these two streets provide more shopping frontage than will be required by the ultimate population of the whole of Brunswick, they are more than 1½ miles from some of the residents in this suburb, and in a direction contrary to the existing transport services. In such cases, although the requisite frontage for shops exists, the need for small centres for the more distant population is apparent.

The Commission has divided the business districts into two zones which are dealt with separately.

Business "A" Districts.

The Business "A" districts are indicated on the sheet plans by the purple areas which are red hatched. Business districts of this class would be subjected to restrictions which would preserve them for retail shops necessary for the convenience of good class residential areas. They are located where it is anticipated that no light industries will be necessary, and they constitute only a small portion of the business areas zoned by the Commission.

It is considered that the following restrictions, if applied to Business "A" districts, would result in their conforming with the districts in which they are located.

Height and Area Restrictions.—It is recommended that in the Business "A" districts no building should be permitted if—

1. The area of the building allotment is less than 2,000 square feet or the frontage is less than 18 feet.
2. The unobstructed and unbuilt-on rear yard is less than 800 square feet, if the shop has a dwelling attached.
3. In the case of a shop and dwelling, the distance between any window and any allotment boundary which it faces is less than 5 feet.
4. In the case of a shop and dwelling, the distance between the window of any room and the wall of any building on an adjacent allotment is less than 10 feet.
5. The height of any building is greater than three stories or 37 feet.

Use Restrictions.—It is considered that in the Business "A" districts no land should be used for any other than the following specified uses:—

1. Any use allowed in the Residential "C" district and subject to the restrictions of height and area for that district.
2. Theatre, hall, club, or place of amusement.
3. Office, bank.
4. Fire station, police station, post office, or public building.
5. Shops, salesroom, or showroom, for the conduct of retail or wholesale business.
6. Workrooms connected with retail business in which not more than 50 per cent. of the total floor area is devoted to workrooms.
7. Garage, or petrol-selling or service station.
8. Such other accessories as the authority might determine, but shall not include any industry, trade, or manufactory.

Business "B" Districts.

Included in the Business "B" districts are those business areas which are already established, are located in close proximity to railway stations, or are in suburbs where it is anticipated a considerable number of light industries will be carried on in workrooms used in conjunction with or in addition to the shops. The whole of the central business area would be included in this district, as well as the more extensive suburban business centres, such as Sydney-road, Brunswick and Coburg; Smith-street, Collingwood and Fitzroy; Chapel-street, Prahran, and the many others which are indicated on the sheet plans.

It is desirable that buildings in which light industries are carried on in the sections of Business "B" districts that are devoted principally to retail shops should have shop fronts on the street alinement so as to preserve the character of the business street.

Height and Area Restrictions.—In the Business "B" district no building should be permitted if:—

1. It abuts on Latrobe, Spring, Flinders or Spencer streets, city of Melbourne, or lies within the area bounded by these streets, and would be higher than 132 feet or any such lesser height not being more than three times the width of the street on which it abuts. (See also pages 164 to 168.)

2. In any other part of the metropolis it would be greater in height than the width of the street on which it abuts, providing that no building shall be erected to a height of more than 80 feet.
3. Any buildings, other than those of warehouse class, cannot be adequately lighted from a yard or light court within the allotment on which the building is erected, or from a public street or open space.

Courts.—The length or width of light courts should be such as to ensure an angle of light of 1 in 3 for outer courts and 1 in $2\frac{1}{2}$ for inner courts. If the height of the building encroaches on the above limits, the upper stories must be set back so as to secure the above ratios. In buildings greater than two stories in height, inner courts should be connected directly to the outer air from the lowest level so as to provide adequate ventilation.

Use Restrictions.—It is recommended that in the Business "B" districts no land should be used for any of the following purposes:—

1. Ore reducing or smelting (excepting testing laboratories).
2. Wire, nut, bolt, and nail works.
3. Oil or petrol storage, exceeding 50 gallons, unless in accordance with Government regulations.
4. Breweries or distilleries.
5. Vinegar manufacture.
6. Yeast manufacture.
7. Brick, tile, terra-cotta, or pottery manufacture.
8. Fibrous plaster or plaster board manufacture.
9. Felt manufacture.
10. Flour milling.
11. Salt works.
12. Match factories.
13. Paper or pulp mills.
14. Enamelling, japanning, lacquering, and electroplating, except where incidental to retail store, garage, or jeweller.
15. Paint, oil, shellac or enamel manufacture, or the grinding of colours.
16. Printing ink manufacture.
17. Starch or glucose manufacture.
18. Disinfectant or insecticide manufacture or preparation on a large scale.
19. Acetylene gas manufacture.
20. Potash refining.
21. Tobacco manufacturing.
22. Saw mills.
23. Stone or monumental works (using power tools).
24. Dockyards.
25. Rolling mill, foundry, blast furnaces, or metal melting.
26. Boiler works, structural steelworks, locomotive shops, railway and tramway repair shops, noise producing electric or pneumatic tools.
27. Coke ovens or distillation of coal.
28. Gas manufacture.
29. Petroleum refining.
30. Sugar refining.
31. Dye stuff manufacture.
32. Celluloid manufacture.
33. Ammonia, chlorine, or bleach powder manufacture.

34. Tar, asphalt and tar, or asphalt product manufacture.
35. Lime cement, plaster of paris, or lime products manufacture.
36. Gunpowder manufacture or storage.
37. Chemical manure works.
38. White lead works.
39. Sulphuric, nitric, or hydrochloric acid works.
40. Arsenic recovery works.
41. Flock, shoddy or mungo factories.
42. Marine stores in which are received or stored any things which are or are likely to become offensive.
43. Rag picking or rag sorting.
44. Stores for skins, hides, hoofs, hair, or bones.
45. Stockyards.
46. Tanneries.
47. Abattoirs or slaughter-houses.
48. Blood albumen factories or blood-boiling or blood-drying works.
49. Bone boiling, burning, grinding, or milling works.
50. Bone manure depots.
51. Fat extracting, melting, or rendering works.
52. Fellmongeries, or wool-scouring or wool-washing works.
53. Glue or size factories.
54. Gut-cleaning, gut-scraping, gut-drying, or gut-spinning works.
55. Knacker yards.
56. Manure works.
57. Piggeries.
58. Soap or candle works.
59. Soup-drying works.
60. Tripe-boiling establishments.
61. Works for boiling down meat, bones, blood, or offal.
62. Any industry or use which creates offensive odours, smoke, dust, noise, or vibration.

INDUSTRIAL DISTRICTS.

The trend of factory development is shown by a study of Map No. 6, which has been the principal guide in determining the setting aside of the Industrial Districts shown on Map No. 7. An expansion of the industrial areas where they have already been found suitable for the purpose has been provided for, and is considered sufficient to meet the prospective demands of a metropolis housing over 3,500,000 people.

The *Factories and Shops Act* 1915 defines a factory as "any office, building, or place in which four or more persons are employed directly or indirectly in working in any handicraft or in preparing or manufacturing articles for sale." In accordance with this definition, 6,711 factories were registered in 1928 in the metropolitan area, and as this definition would include work-rooms, &c., attached to retail establishments, a greater number of them would be located in business districts. Under the Commission's zoning proposals, they would still be allowed in business districts, and only the heavier and more extensive class of factories is included in the Industrial Districts.

The principal districts zoned for industries under the Commission's scheme are adjacent to the docks and shipping in the Williamstown, Footscray, Melbourne, and Port Melbourne municipalities. It is within this area that a considerable number of heavy trades are being carried on at present. Many of the factories on the western side of the Yarra River and within the industrial district planned have railway sidings; and it is possible to supply many more with this facility if it is required. Lying in a north-westerly direction and practically linking the

large industrial district between the Williamstown railway and the Yarra River with the Sunshine industrial development, a large industrial area is planned on each side of the Newport to Sunshine railway. As this railway line is not used for passenger services, it is considered that the district adjacent to it will prove very attractive to those desiring to establish industries therein.

The location at Sunshine of the Sunshine Harvester Works started the development of this locality as an industrial centre. These factories draw large numbers of workmen from the suburbs of Footscray and Kensington, and, conversely, many residents of Sunshine and Albion districts travel to their employment in the Footscray, Kensington, and other suburbs nearer the City. The consequence of this outer suburban development of factories and industries is that the inward and outward movements of the public transport systems during peak hours are maintained at a more uniform volume in each direction. The economic benefits of this are obvious, and the zoning scheme recommended will encourage it in a number of other areas of the metropolis. At Albion an extensive industrial area is planned close to the recently constructed goods railway between Glenroy and Albion. This extends over the comparatively flat lands between Albion and the Maribyrnong River, but excludes the lands in the vicinity of the river which are recommended for retention as residential sites and park lands.

From the Melbourne-Geelong railway between the Kororoit Creek and the boundary of the area treated by the Commission, an industrial district is planned extending as far north as Boundary-road. Between Doherty's-road and Boundary-road this district abuts on the site recommended by the Commission as suitable for the establishment of new saleyards, abattoirs, and allied industries.

It will be evident from the above that the principal industrial districts are located in western suburbs, and it is in this region that the greatest facilities are offered for the establishment of heavy industries. The considerable residential areas planned adjacent to these districts will ensure the housing of workmen under good conditions reasonably close to their employment.

In addition to the western suburbs, considerable areas in other parts of the metropolis are planned for factory areas. Most districts will attract industries other than those allowed in the Business "B" districts, and this natural development should be regulated and not prohibited. Large local factory areas are zoned in South Melbourne, Coburg, Brunswick, Preston, Northcote, Collingwood, Richmond, Oakleigh, Moorabbin, and Mulgrave, while smaller factory areas in Brighton, St. Kilda, Prahran, and Hawthorn are planned so that trades and industries may be carried on in limited areas without destroying the general residential character of these suburbs.

With the distribution of factory areas as shown on Map No. 7, all suburbs will be within convenient distance of one or more areas in which industries may be carried on. This supplies the desirable relationship between the residential and industrial areas. 20,207 acres are zoned for industrial development, representing approximately 12·2 per cent. of the metropolitan area included in the Commission's plans.

In setting aside this area for industries it is interesting to compare the following allocations which have been made for this purpose in several cities and towns in England:—

Place.	1. Total Area of Town.	2. Approximate Area of Developed Portion of Town.	3. Approximate Area of Land Occupied by Industry.	
			—	Percentage of Column 2.
Bradford	22,880	10,054	980	9·7
Bristol	18,445	12,500	1,500	12·0
Gloucester	2,318	1,900	275	14·5
Ipswich	8,432	2,600	160	6·0
Leeds	28,090	15,300	1,680	11·0
Leicester	8,586	6,900	390	5·6
Norwich	7,923	2,050	115	5·6
Nottingham	10,935	4,265	1,050	24·6
Rochdale	6,446	2,272	320	14·0
Sheffield	31,625	10,412	1,061	10·0
	145,680	68,253	7,531	11·0

N.B.—All areas quoted are in acres.

The Commission's scheme aims at subdividing the industrial districts into three, designated :—

Industrial " A " District.

Industrial " B " District.

Industrial " C " District.

Industrial " A " Districts.

This type of district under the zoning scheme is located in suburbs where it is anticipated that there will be no great demand for other than light industries. They are indicated by brown diagonal hatching on Map No. 7, and on the sheet plans. In these areas the heavy industries would be prohibited, because it is the object of the scheme to prevent the carrying on of those industries in the " A " district which would emit dust, smoke, noise, or noxious odours, in such volumes as to affect living conditions in the nearer residential areas. In order that the heavy industrial districts may be definitely separated from residential districts, wherever practicable, provision is made for the location of a strip of light industries between them. In other cases it has been found practicable to plan a strip of park lands which could be tree planted, and which would effectively separate the residential and industrial districts.

The Industrial " A " District, as planned, covers an area of 7,058 acres, which in view of the fact that light industries (" A " class) are allowed also in the heavy industrial (or " B " class) districts, should be sufficient to meet all demands which can reasonably be anticipated.

Height and Area Restrictions.—It is recommended that in the Industrial " A " District no building should be permitted if :—

1. It would be greater in height than 60 feet or abuts on a street less than 50 feet wide.
2. It cannot be adequately lighted from a light court or yard within the allotment on which the building is erected, or from a public street or road.

Light Courts.—The length or width of light courts should be such as to ensure an angle of light of 1 in 3 for outer courts and 1 in $2\frac{1}{2}$ for inner courts. In buildings greater than two storeys in height, inner courts should be connected directly to the outer air from the lowest level so as to provide adequate ventilation.

Use Restrictions.—It is recommended that in the Industrial " A " districts, no land shall be used for any of the following purposes :—

1. Dockyards.
2. Rolling mill, foundry, blast furnaces, or metal melting.
3. Boiler works, structural steel works, locomotive shops, railway and tramway repair shops, noise producing electric or pneumatic tools.
4. Coke ovens or distillation of coal.
5. Gas manufacture.
6. Petroleum refining.
7. Sugar refining.
8. Dye stuff manufacture.
9. Celluloid manufacture.
10. Ammonia, chlorine, or bleach powder manufacture.
11. Tar, asphalt and tar, or asphalt product manufacture.
12. Lime cement, plaster of paris, or lime products manufacture.
13. Gunpowder manufacture or storage.
14. Chemical manure works.
15. White lead works.
16. Sulphuric, nitric, or hydrochloric acid works.
17. Arsenic recovery works.
18. Flock, shoddy, or mungo factories.

19. Marine stores in which are received or stored any things which are or are likely to become offensive.
20. Rag picking or rag sorting.
21. Stores for skins, hides, hoofs, hair, or bones.
22. Any industry or use which creates offensive odours, smoke, dust, noise, or vibration.

Industrial " B " Districts.

The Industrial " B " districts in which practically all kinds of industry, excepting noxious trades, may be carried on, comprises 13,149 acres of land, or 80 per cent. of the area included in the Commission's plans.

The largest Class " B " industrial district is located contiguous to the lower reaches of the Yarra River and adjacent to the docks and wharves. Others of considerable size are located west of the Kororoit Creek in the Shire of Werribee, and adjacent to the goods railway between Newport and Sunshine, in the vicinity of Sunshine and Albion, and in the Shire of Braybrook. In the Oakleigh district an area for heavy industries is recommended provided a marginal development of lighter industries is encouraged. In the Shires of Mulgrave and Blackburn and Mitcham a district of the " B " class is planned to cover an area where an underlying clay deposit of considerable value exists, which it is expected will encourage, in the future, many industries engaged in the manufacture of pottery, tiles and bricks.

The buildings which predominate in the Industrial " B " districts do not rise above one storey owing to the heavy nature of the machinery employed. The height restrictions which are suggested for this area are, therefore, liberal as they would permit structures of a height of 50 feet. The whole of the allotments could be built on, subject to the maintenance of sufficient light and air to permit employees to work under healthy conditions.

It is anticipated that the general development of the industrial districts planned will be rather sparse for many years as it is customary for those establishing industries to obtain an area which will allow for expansion. In the early stages an open space is generally found on all sides which permits a plentiful supply of light and air. The restrictions suggested herein will not prevent this natural development of the heavy industrial districts, but will prevent overcrowded and unhealthy factory areas.

Height and area Restrictions.—It is recommended that in the Industrial " B " districts no building should be permitted if :—

1. It would be greater in height than 50 feet or abuts on a street less than 50 feet wide.
2. It cannot be adequately lighted from a light court or yard within the allotment on which the building is erected or from a public street or road.

Light Courts.—The length or width of light courts should be such as to ensure an angle of light of 1 in 3 for outer courts, and 1 in 2½ for inner courts. In buildings greater than two stories in height, inner courts should be connected directly to the outer air from the lowest level so as to provide adequate ventilation.

Use Restrictions.—It is recommended that in the Industrial " B " districts no land should be used for the following :—

1. Gunpowder manufacture or storage.
2. Chemical manure works.
3. White lead works.
4. Sulphuric, nitric, or hydrochloric acid works.
5. Arsenic recovery works.
6. Flock, shoddy, or mungo factories.
7. Marine stores in which are received or stored any things which are or are likely to become offensive.
8. Rag picking or rag sorting.
9. Stores for skins, hides, hoofs, hair, or bones.
10. Any industry or use which creates offensive odours, smoke, dust, noise, or vibration.

Unless conducted
under
Public Health
Regulations.

11. Livestock markets.
12. Tanneries.
13. Abattoirs or slaughter-houses.
14. Blood albumen factories, blood-boiling, or blood-drying works.
15. Bone boiling, burning, grinding, or milling works.
16. Bone manure depots.
17. Fat extracting, melting, or rendering works.
18. Fellmongeries or wool-scouring or wool-washing works.
19. Glue or size factories.
20. Gut-cleaning, gut-scraping, gut-drying, or gut-spinning works.
21. Knacker yards.
22. Manure works
23. Piggeries.
24. Soap or candle works.
25. Soup-drying works.
26. Tripe-boiling establishments.
27. Works for boiling down meat, bones, blood, or offal.

Industrial "C" District.

Outside that area of the metropolis which it is estimated is capable of housing over 3,500,000 people a site has been selected for the Industrial "C" district. The area of this district is 2,903 acres, and it is situated south-west of Sunshine. It was the subject of the special report issued by this Commission in 1926, dealing with a site for new livestock markets, &c., and would be the one which, under the Commission's zoning scheme, would accommodate the livestock markets, abattoirs, and noxious trades.

Offensive trades are at present located in many parts of the metropolis, as may be seen by a study of Map No. 6. The principal area is on the low-lying lands adjacent to the Maribyrnong River at South Kensington, in the neighbourhood of the metropolitan saleyards and the Melbourne City Council abattoirs. Many of these trades are carried on to the discomfort of large numbers of residents in their vicinity, and of others passing through those areas. These establishments have been under threat of compulsory removal for a number of years. Consequently, there has been no incentive to owners to install more up-to-date machinery with a view to reducing the offensiveness to an absolute minimum. The uncertainty as to the Government policy in this respect has prevented the interested authorities suppressing the nuisance, and the expenditure of money on buildings and machinery might have added to the compensation to be paid if enforced removal were brought about. It is therefore most urgent that a definite policy be laid down immediately in regard to these trades.

Many of the trades classed as offensive under the Health Acts are associated with the treatment of animal by-products, and the Commission considers that they should be carried on reasonably close to the abattoirs which is their principal source of supply. A concentration of these activities on one large site has consequently been planned. The segregation of all new establishments of this kind into a defined area would give a greater security of tenure than that at present enjoyed, and would enable the health authorities to insist upon the installation of modern machinery designed to reduce offensiveness to a minimum. It is imperative that there should be no opportunity given for a repetition in a new area of any of the existing unsatisfactory conditions. It is believed that the added facilities which could be given on a new site would, in the course of time, attract many of the offensive trades now being carried on in unsuitable locations.

The Health Acts permit the Governor in Council, by proclamation, to define localities in which it shall be lawful, or localities in which it shall not be lawful, to establish offensive trades. So far no such area has been proclaimed. The Commission considers that it is essential that an area be proclaimed wherein all future noxious trades shall be established. After the proclamation of such an area, extensions or renewals, which would add to the permanency of the existing trades, should not be permitted in other than Industrial "C" district.

After a study of the areas and classifications of all existing offensive trades, their increasing business, and their numbers, it is considered that 450 acres of the 2,903 included in the Industrial "C" district would be sufficient to accommodate all trades which it is recommended should be relegated to this district. This would leave 2,453 acres for markets, abattoirs, and resting paddocks for live stock.

If, as recommended by the Commission in its special report on the site for Livestock Markets, &c., the whole of the 2,903 acres were purchased by the Government, sites for the noxious trades could be leased and thus be a source of revenue. This would also permit stricter supervision of the conduct of operations associated with the noxious trades.

Height and Area Restrictions.—It is recommended that the height and area restrictions governing the erection of buildings in the Industrial "B" districts should apply to buildings erected in the Industrial "C" area. If, as suggested in this Report, the noxious trades area or Industrial "C" district were leased by the Government to those desiring to establish offensive trades, ample open space around all buildings should be assured. It is believed that the area recommended is sufficiently large to enable this to be done.

Use Restrictions.—It is recommended that the Industrial "C" district should be reserved for the following uses:—

1. Dwellings (for use of caretakers or watchmen.)
2. Stockyards.
3. Tanneries.
4. Abattoirs or slaughter-houses.
5. Blood albumen factories or blood-boiling or blood-drying works.
6. Bone boiling, burning, grinding, or milling works.
7. Bone manure depots.
8. Fat extracting, melting, or rendering works.
9. Fellmongeries or wool-scouring or wool-washing works.
10. Glue or size factories.
11. Gut-cleaning, gut-scraping, gut-drying, or gut-spinning works.
12. Knacker yards.
13. Manure works.
14. Piggeries.
15. Soap or candle works.
16. Soup-drying works.
17. Tripe-boiling establishments.
18. Works for boiling down meat, bones, blood, or offal.
19. Any industry allied to above permitted uses or which creates offensive odours.

NON-CONFORMING USES.

Although every effort has been made to subdivide the metropolitan area into zones according to the predominating and natural development which exists, or might reasonably be expected to



Mixed development on Wellington-parade,
East Melbourne.

take place, there are within these districts many uses which do not conform to the regulations which are recommended to govern their development. The regulations or restrictions should not be made retrospective. Technically, the difficulty pertaining to the areas on which non-conforming buildings exist could be overcome by making small zones for each of them, but this would not solve the problem and would be an evasion of the principles of zoning. If such methods were adopted it would not overcome the disabilities from which the district would still suffer. The buildings still would be out of harmony with their surroundings, and under such provision could be maintained in the same location and continue to affect the neighbourhood detrimentally.

In cities such as our own, where considerable development has already taken place, the existing non-conforming use must be accepted as a factor in zoning. It is essential, however, that incongruous uses should not be allowed to interfere unduly with the general zoning scheme. **Regulations governing them are therefore necessary. The regulations should aim at the suppression of anomalies as quickly as possible, and in no case should a non-conforming use be allowed to expand at the expense of a use which conforms with the regulations framed for that district.**

In the zoning scheme outlined, the uses of buildings in the various districts are graded. The highest types of uses are those in Residence "A" districts, while the lowest are those in the Industrial "C" districts. Non-conforming uses would be gradually and definitely eliminated if the regulations under the zoning laws prescribed that no reconstruction or extensive additions to the offending buildings were permitted. Every encouragement should be given to an owner to replace an existing non-conforming use with a higher standard of use even though the latter be still not in conformity with the zone in which the building exists. The principle governing the gradual replacement of non-conforming uses should be an acceptance of every proposal involving less injury to the neighbourhood. This process of change should not apply, however, to non-conforming uses in the Residential "A" and Residential "B" districts, which should only be allowed to change to a use in conformity with the restrictions governing these areas.

The following restrictions are suggested as suitable to deal with non-conforming uses :—

1. The use of any building or premises existing at the time of the adoption of the zoning scheme, but not conforming to the restrictions of the use district in which it is located, may continue, provided that no structural alterations are made except as the authority may determine to be necessary for the safety of the building.
2. Any building remaining vacant for a continuous period of more than two years shall not be again occupied except by a conforming use.
3. A non-conforming use shall only be changed to a higher type of use. A non-conforming use in a Residence "A" or "B" district shall not be changed except to a conforming use.
4. A non-conforming use shall not be so re-constructed or altered that the cost of the structural alterations, during any ten years period, shall exceed the assessed value before the last allowable structural alterations were made.

ALTERATIONS OR CHANGES OF USE.

Any zoning scheme to be entirely satisfactory must be capable of change to meet changing conditions. This does not mean that a zoning scheme should be subject to the uncertainty of frequent or piecemeal changes. Changes in the character of neighbourhoods take place very slowly, and consequently it would not be necessary to change the zoning scheme at short intervals. It may happen that in areas set aside for industrial development, many dwellings may be erected which, if they do not interfere with the normal expansion of industries, should be granted the protection afforded by the regulations in residential areas. In other cases temporary uses of a lower class could be allowed in areas prior to their development for the higher use for which they may be zoned.

It is necessary, however, to safeguard the interests of the property owners in the vicinity of the proposed changes, and it is considered that if the zoning scheme embodied provisions on the following lines it would enable alterations to be satisfactorily effected :—

1. Any person desiring to establish a use not in conformity with the restrictions imposed by the adoption of the zoning scheme may file an application for a permit with the authority. The authority shall cause to be posted in a conspicuous place on the allotment or premises to which they refer, at least one notice giving details of the application, which shall also be publicly advertised.
2. Any aggrieved person resident or owning property in the use district with which the proposed use does not conform, may lodge a protest in writing, setting out the reasons for the protest and giving full particulars of the location of his place of residence or property. After the expiry of one month from the date of posting notices, the authority shall consider the application and grant it either with or without conditions or may refuse such application, such decision to be final.

3. An application for a change of district, or part of a district, under the zoning scheme shall be accompanied by a petition signed by not less than 70 per cent. of the owners of the property within the area, and not less than 50 per cent. of the owners of property within 300 feet of the boundaries of the area which it is desired to change.

CONCLUSION.

The recommendations included in the foregoing pages, if given effect to under the operations of a Town Planning Act, would preserve and regulate the future development of both public and private property of our city. The existing legislation under the Local Government Act which deals with residential areas, is inadequate. Additional legislation of this character should be included in a Town Planning Act, so that zoning and all other phases of town planning could be incorporated in the scheme of general development. The legislation recommended in Part X. would enable this to be done.

Although the principles of zoning are more or less common to all cities and many schemes prepared for other cities have been studied, the scheme presented in this Report does not slavishly follow them. It is adapted to meet our own local conditions, and to raise housing and working conditions to the standard which is the aim of Australian citizens.

The whole of the recommendations contained in this Chapter could be given effect by legislative action as an extension of the zoning legislation which has already been incorporated in the Local Government Act, and extensively used by the municipalities.

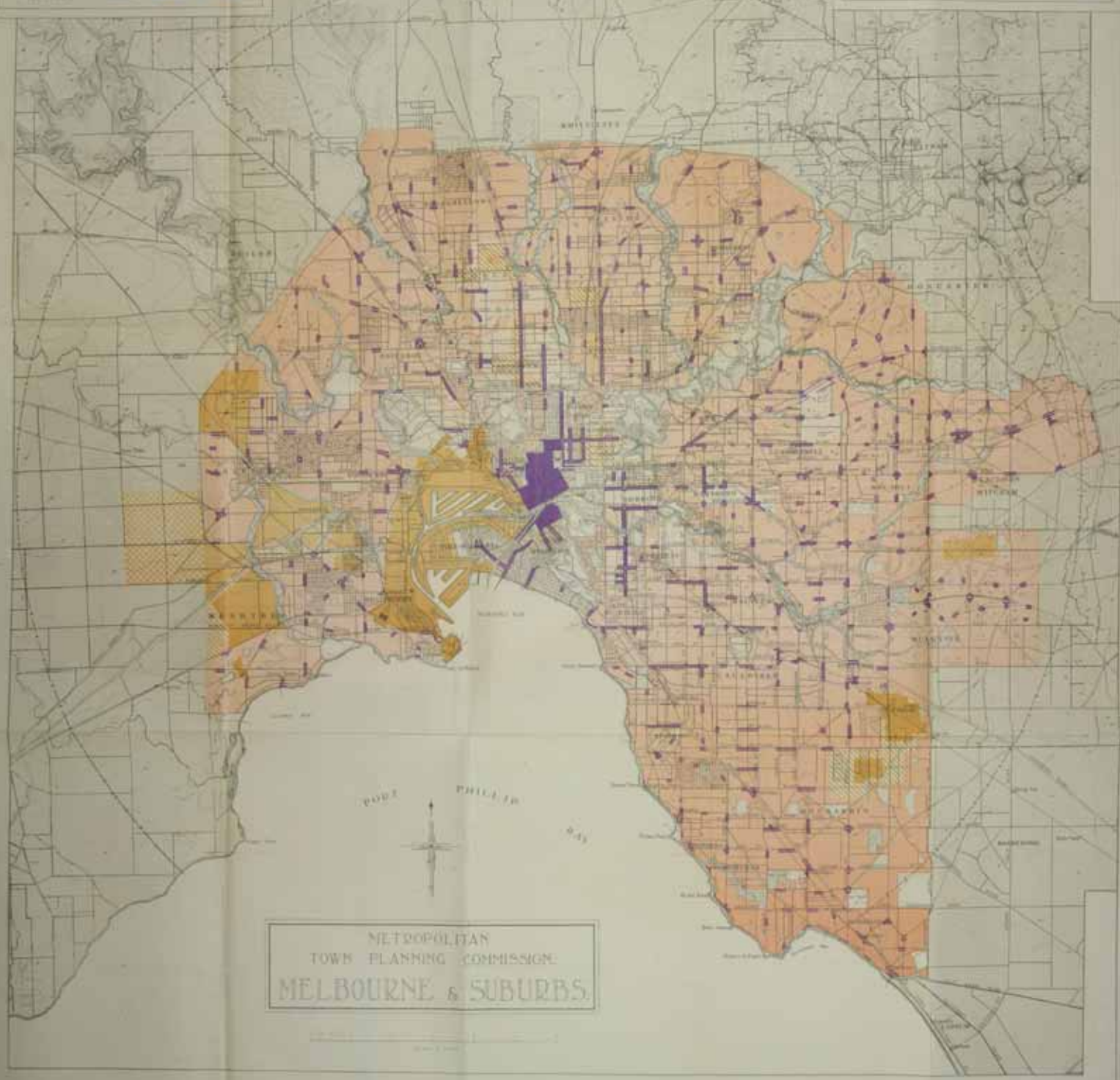
The scheme is considered to be fair and reasonable and capable of meeting future requirements for a long period. The principles have been tried exhaustively, and successfully operated in other countries, and particularly in America. The Commission is confident that the great majority of the local authorities in this metropolis would take prompt advantage of any new legislative powers.

The Commission commends the proposals outlined herein to the Government and the Municipalities as a desirable basis for the regulation of future growth and which, if given effect to, will assist greatly in overcoming the disabilities now experienced through lack of adequate control and guidance in the past.

GENERAL SCHEME OF USE DISTRICTS

RESIDENTIAL	A	B	C
RESIDENTIAL	D	E	F
INDUSTRIAL	G	H	I

NOTE.—THE LOTS FORMED ENCLOSED ARE FORMER PUBLIC AND TRUSTED VACANT LANDS AND SHOULD BE DESIGNATED AS SUCH IN THE APPROPRIATE PLAN.



NETROPOLITAN
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MELBOURNE & SUBURBS.