of the railway. This was done in order to permit a much improved replanning of certain subdivided, but unbuilt on, land to be effected. As a result of subsequent negotiations, the Government approved of the deviation as recommended by the Commission. It is now only necessary to secure the passage through Parliament of the town planning legislation which has been asked for so frequently in order that a re-subdivision of the land adjacent to the line may be carried out, thus avoiding the very undesirable conditions which will otherwise be created.

Another recommendation contained in that Report referred to the probable future continuation of the line beyond Glen Waverley, as was indicated in the Report of the Parliamentary Standing Committee on Railways. The Commission urged that any such probable extension should be determined forthwith. This would permit any works or subdivisions of land in the area beyond the proposed present terminus to conform with the route which any later extension of the railway would follow. Such action should result in the setting apart, when subdivision takes place, of a considerable proportion of the land necessary for a railway reserve free of cost to the Department, or to the Railway Construction Trust.

PROPOSED KEW TO DONCASTER RAILWAY.

Various proposals for the construction of a railway from the present terminus at Kew to Doncaster and beyond have been before Parliament on several occasions. By letter, dated 20th July, 1928, from the Parliamentary Standing Committee on Railways this Commission was invited to give evidence on a defined route for this line. The Surveyor to the Commission was instructed to comply with the request. In the evidence given it was pointed out that—

(a) The proposed railway would serve a large area, capable of first class residential development.

(b) It would not overlap any existing service.

This was demonstrated by the production of the Time Zones Map similar to Map No. 3 herein. It was pointed out that the map showed that it takes the same time to travel the 13 miles from Mitcham to the city as it takes to travel from a point in Kew only 4 miles from the city, under the existing public transportation facilities.

(c) It would be undesirable to compel all transportation from a large area of potential dense development to have only the roadways available for communication to and from the city and other suburbs.

In illustration of this it was shown that between 1924 and 1926 the population of the metropolis had increased about 10 per cent., whilst the traffic had increased 35 per cent., and that this proportion had been maintained in the eastern suburbs traffic. The population in the areas east of the Yarra normally served by Victoria-street and Studley Park-road is about 30,000, whilst there is sufficient space in the area for 310,000 people housed under the best conditions. As no service caters so effectively for mass transportation as the electric railway, the effect which would be produced on the streets nearer the city in providing facilities for such ultimate development, if a railway were not provided, would be obvious. Probably the cost of widenings and new streets would far exceed any costs involved in supplying railway facilities. The railways at present transport about 45 per cent. of the total passengers entering and leaving the city alone.

(d) Certain existing subdivisions along the new line would need to be replanned.

(e) Slight adjustments in the route of the line were desirable to avoid the creation of unsatisfactory development adjacent to it.

(f) All public authorities concerned in such a work as this should be given power authorizing the resumption of lands in excess of that required for the particular work.

This would enable those concerned to combine remnants of allotments not required for railway purposes to form saleable allotments of correct sizes with desirable aspects. Incidentally these resales would assist in defraying the costs of other resumptions.

(g) If the line were recommended by the Committee the route of it should be definitely defined.
The definition of a probable extension of the line beyond any adopted terminus for the present should be laid down, for reasons stated in connexion with the Darling to Glen Waverley railway.

The present difficulties associated with the extension of the line at the existing Kew terminus are sufficient proof of the necessity for preserving the route of probable extensions.

In the event of the Railways Standing Committee, for financial reasons, being able to recommend only part of the line at the present time, a definite complete route should be laid down.

Consideration should be given to a proposal to remove the present Kew Station, at least as far as passenger traffic is concerned, closer to the High-street shopping area.

It would also facilitate a greater interchange between railway and tramway passengers, and might well be made part of the projected High-street widening scheme.

The principle of betterment rating as a means of defraying the cost of this public improvement had the endorsement of the Commission.

The Report of the Railways Standing Committee was presented to Parliament on 13th December, 1928, and the construction of a line from Kew to Doncaster was recommended under certain betterment rating conditions. The route selected for the line is shown in detail on the plans, Sheets Nos. 3 and 9. Parliament has not yet passed the necessary Act to permit of the work being carried out. When Parliament passes an enabling Act, a Railway Construction Trust is set up composed of the municipal councillors representing the wards or areas directly affected by the line. This Trust is responsible for the acquisition of the necessary land for the railway reserve, as certified by the Chief Engineer for Railway Construction.

Consequent upon this definite recommendation by the Railways Standing Committee, the Commission has anticipated Parliamentary approval and included in its proposals the necessary planning and replanning of the adjacent areas to conform with the projected route of the line. From the commencement of the line at Kew Station as far as Burke-road, at the boundaries of the municipalities of Kew and Camberwell, the land is too densely built on to allow of any economical scheme of general remodelling.

A definite scheme of planning for the area in the municipality of Camberwell, east of Burke-road, where the land is either unsubdivided or unbuilt on, is submitted herein (see plan on page 134), and it offers opportunities for successful preplanning at least equal to those on the Darling to Glen Waverley line. The route of the railway as approved by the Railways Standing Committee has been practically adopted. Slight deviations only were made, after consultation with the Chief Engineer of Railway Construction and after ascertaining that the constructional costs of the deviation would be no greater than in the original location.

Proposal "A" shows the line as proposed and recommended by the Railways Standing Committee, and the white areas along it comprise the railway reserve which would be acquired under the present method. It will be noted that the land to be resumed is nearly all part of existing subdivisions. The present limited powers of acquisition have unsatisfactory features, as the plan shows. The railway reserve is irregularly shaped, being unnecessarily wide in places, and in other parts it is undesirably contracted. The back yards of numerous allotments will be visible to train passengers. The approaches to the stations are devious and bad, and many dead-end streets are created.

Proposal "B" is the scheme recommended by the Commission, and shows the conditions which would obtain after providing for the railway reserve and the necessary replanning. It is free from the objections to Proposal "A," whilst the general layout of the whole area must increase the values of property. The area treated by resumption and replanning is greater, and is shown by a blue border, outside which the existing subdivisions remain unaltered.

Proposal "A" involves the resumption of 163 allotments for railway reserves, whilst 36 additional allotments are partly affected, probably entailing compensation equal to the value of the whole of them, making a total of 199 allotments.

Proposal "B" makes provision within the area of resumptions for the railway reserve, and for access roads 50 feet wide on either side of this reserve, whilst new connecting streets supply...
improved access to the stations, and through the area. The remaining land may then be subdivided into 369 residential and 181 shop allotments, making a total of 550 allotments available for resale or re-allocation, as against a total of 523 resumptions; 8½ acres of unsubdivided land are also included in this proposal.

Instead of resuming 199 allotments and creating undesirable conditions, Proposal "B" would permit the sale of 27 allotments more than those resumed, and yield more return by reason of the enhanced value under that scheme. Some small park areas are also provided. The shopping sites are correctly located and strictly in accordance with the ratio decided upon for this type of residential area. Doncaster-road, between Koonung Creek and Balwyn-road, would be widened from 66 to 100 feet.

Financially, the scheme is satisfactory. By assuming the pre-railway value of the allotments at an average of £150 each, the figures are—

**Proposal "A" (Original Railway Scheme)—**

<table>
<thead>
<tr>
<th>Description</th>
<th>Lots</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resumptions</td>
<td>199</td>
<td>£29,850</td>
</tr>
</tbody>
</table>

**Proposal "B" (Replanning Scheme)—**

<table>
<thead>
<tr>
<th>Description</th>
<th>Lots</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resumptions</td>
<td>523</td>
<td>£78,450</td>
</tr>
<tr>
<td>Resales and Re-allocations</td>
<td>369</td>
<td>£55,350</td>
</tr>
<tr>
<td>Residential lots at £150</td>
<td>181</td>
<td>£36,200</td>
</tr>
<tr>
<td>8½ acres of unsubdivided land at £400</td>
<td></td>
<td>£3,400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>£81,850</strong></td>
</tr>
</tbody>
</table>

Cost of Proposal "A" .. £29,850

Profit on Proposal "B" .. £9,700

Difference in favour of "B" .. £39,550

It will be noted that the resale of re-allocated value of the residential allotments in Proposal "B" is taken at the same value as that of the acquisition, although their actual sale value would be increased both by the presence of the railway and the better conditions arising from the replanning.

In the portions of the line east of Koonung Creek, in the Shire of Doncaster and Templestowe, the unsubdivided condition of the land permits of the acquisition of a regular railway reserve, as shown on the plan, Sheet No. 9.

The Commission has urged, at every opportunity, that with legislation authorizing the construction of such railway lines as this, the necessary powers to permit of a replanning of the adjacent areas should be incorporated. The results that can be secured, as shown in the foregoing pages, should be ample warrant for giving the authorities concerned such powers. It is essential, however, for the assured success of a scheme, that the authority carrying out the replanning, rendered necessary by the construction of the railway, should have the same privileges for resuming land at its pre-railway value as is already possessed by the Railway Construction Trusts. It is believed that, if this policy were adopted, a system of wholesale exchanges between owners of reconstituted allotments could be made. This would avoid raising large loans for compensation for payment to owners dispossessed. It would also relieve the authority carrying out the work of the responsibility of selling the surplus lands.

**PORT MELBOURNE AND ST. KILDA LINES.**

In the Commission's First Report, 1925, a scheme was submitted (page 35) for the deviation of the Port Melbourne Railway so that the present railway reserve, together with the streets and gardens parallel to it, could be transformed into a park highway, thus providing a fitting approach from the overseas passenger piers to the City. The value of this boulevard approach from the Port to the City was stressed in the First Report, and further dealt with on page 62 of this Report.
The scheme also affects that section of the St. Kilda line which parallels the Port Melbourne line between Flinders-street Station and Clarendon-street. In any consideration of this scheme by interested authorities, the Commission maintains that due prominence should be given to the necessity for an improved approach from the Port to the City as a scheme of City improvement, instead of it being regarded merely as a railway diversion.

A further strong reason for the recommendation that these lines be taken across the Yarra alongside the new Batman-bridge was given in the First Report. It would allow of the southerly continuation across the Yarra of King, William, and Queen streets from the City and of a re-arrangement of the street system on the south side of the river, at a very much lesser cost, and with much greater facility than would be possible whilst the embankment remains.

While the Railways Commissioners are in sympathy with the scheme from a town planning aspect, they point out that the cost of diversion would further increase railway expenditure, and at the same time would deflect traffic from the railways. Therefore, it is claimed that for financial considerations the scheme could not be undertaken as a railway work. The Commission, when recommending this scheme, never intended that the necessary railway alterations should be carried out at the cost of the Railway Department, but that such works should be taken as a part of a metropolitan improvement scheme. It was also pointed out that the present Port Melbourne railway has several roadway level crossings which may have to be abolished in the future, and if the present location is maintained the station buildings, &c., will need to be rebuilt, and probably much other expenditure will be entailed to bring this line up to the stage of efficiency that would be given by a new line.

While financial stringency may prohibit a scheme such as this being put into operation at the present time, there appears little doubt that in the near future Melbourne will demand some far-reaching improvement of this description. The distance from Flinders-street to Port Melbourne is only 2 miles, and the Commission has doubts as to the efficacy of railways for passenger transport in areas so close to the City and where street passenger services are very frequent. That this doubt is justified appears reasonable when it is known that, although the whole of the metropolitan tramway electrification and construction scheme has not yet been completed, the passenger traffic on the St. Kilda and Port Melbourne railway lines decreased by 14·4 per cent. and 13·4 per cent. respectively between 1924 and 1928, although metropolitan population increased 13·6 per cent. in the same period. The Commission considers that, as street passenger services increase and improve, the railway passenger traffic on the Port Melbourne line will decrease. The goods traffic will no doubt be great, and the proposed direct linking of these lines with Spencer-street would be in consonance with the proposals of the Railway Department.

The original recommendation provided for the diversion of these lines into Spencer-street Station. In the event of this causing undue hardship to travellers, the connexion to Flinders-street could be maintained by increasing the width of the present viaduct from the vicinity of Batman-bridge to the Flinders-street Station. This alternative scheme should meet the Railway Department's objections as to the convenience of travellers, whilst supplying the desired town planning alterations.

The Commission therefore desires to urge that this proposal shall be viewed in the light of its advantage to the metropolis and State, and that future development along the route proposed for the railway diversions, and expenditure on the present Port Melbourne railway, should be regulated, so that the cost of carrying out the proposals in the future shall not be increased.

**FISHERMAN'S BEND RAILWAY CONNEXIONS.**

The scheme for the development of the Fisherman's Bend lands as submitted by the Commission in its First Report, which has been considerably advanced on the lines recommended, included suggestions for new railway connexions. The removal to a more westerly location of the existing Port Melbourne line was incorporated in this scheme.

The general scheme of development for Fisherman's Bend makes provision for 220 acres of industrial area which could be given direct railway connexions. Sufficient land was included in the railway reserves planned to allow for yards and connexions which might become necessary. A continuous railway loop around the whole area is planned, and a proposed connexion westerly under or across the Yarra from this area and Port Melbourne to join the existing services at Newport, would enable goods to and from Williamstown, Geelong and beyond, Ballarat, Bendigo and all northern and north-eastern lines, and the Tottenham yards, to have direct access to this terminal area without passing through Footscray, the Melbourne yards, and Spencer-street.
The Railway Department has experienced great difficulty for many years in giving satisfactory service to the metropolitan live-stock sale-yards at Newmarket, and the congestion caused on other lines in the vicinity has handicapped railway operations, particularly on the Essendon line and in the Melbourne yards. The matters associated with the existing location in populous areas and the removal elsewhere of the sale-yards and other allied industries have been amongst the most contentious and frequently debated for many years. By Government direction, this Commission has made several inquiries into this matter, and comprehensive special reports, memoranda, and pamphlets have been issued from time to time. The Commission recommended, in accordance with strong representations made by all sections of the community, as well as by the Railways Commissioners, that these activities be removed outside the built-up parts of the metropolis, and a site of 3,420 acres was selected south-west of Sunshine, as shown on Map No. 1.

This site and the Reports generally have not yet been adopted, but the Commission considers that a site in the immediate vicinity of that recommended (known as Derrimut) will ultimately be chosen. Any new site will necessitate new railway connexions.

The detailed layout of railways to serve the site would depend upon the layout of the various activities within the area. The Commission ascertained, at the time, the practicability of connecting the site selected with all main lines and with the Tottenham marshalling yards, and these connexions were diagrammatically shown on the plans accompanying the Sale-yards Report.

RAILWAY LEVEL CROSSINGS.

In outlining the relationship of level crossings to the general roads scheme on page 92, the Commission explained the means adopted in its planning proposals to render more effective those roads which cross railway lines by existing bridges or subways, and also how the proposed new roads would render unnecessary the use of level crossings of railway lines by large volumes of present or future traffic, which at present have no alternative.

Within that portion of the metropolitan area dealt with by the Commission there are 155 level crossings. The main roads, as planned by the Commission, and which would give reasonably direct access between all parts of the metropolitan area, necessitate the use of 55 level crossings, and in addition eleven occur on tram-line streets not in the main roads schedule. Therefore, in any systematic scheme of railway level crossings abolition, it appears to be desirable to concentrate on the 66 crossings which would be on main traffic or tram-line streets.

FINANCING THE ABOLITION OF LEVEL CROSSINGS.—The Railway Department for the five years 1923-27 expended £177,000 on level crossings abolition. Approximately 75 per cent. of this amount was spent in the metropolitan area, and is therefore equivalent to an annual expenditure of over £26,000. The amounts contributed by other authorities have not been ascertained, but it is expected that they would at least equal the average annual expenditure by the Railway Department. The total amount that would be available might therefore be set down at £50,000 annually, the capitalized value of which at a rate of 5½ per cent. would enable a loan of over £900,000 to be devoted to this work, the repayment of which should be spread over 20, 30, or more years. Sums from £1,000,000 to £2,000,000 have been mentioned by the Railway Department as the probable cost of the abolition of the 290 level crossings in the metropolitan electrified area. The Commission's scheme would obviously require much less expenditure, as only 66 crossings would be involved to free the defined main roads and tramway routes from the delays and dangers that are brought about where the roads and railways cross each other on the same level.

ALLOCATION OF COSTS.—The question of the allocation of the costs and contributions is no doubt the most vital aspect of this very difficult problem. Authorities have claimed that as the Railway Department has had the preferential right over the level crossings for many years, the accumulated value of the savings in original construction warrants placing the responsibility of abolition almost wholly upon the Railway Department. Conversely, the Department has claimed that if the local governing authorities were offered at the time of construction the choice between no railway or a line containing level crossings, they would gladly have chosen the latter. Another point of view is that it is only since the extraordinary growth of motor transport that a condition of things which previously was more or less satisfactory to both parties has now become such a nuisance and a hazard. A study of official opinions and decisions abroad shows the same divergence of views.
Except where extensive regradings become essential from the point of view of railway working, it is unreasonable to throw the whole responsibility on to the Railways Commissioners for the abolition of nearly 300 crossings. Several of them will cost in the vicinity of £100,000 each. The electrification of the lines has rendered any improvement in the grades of the lines less necessary, whilst the cost of regrading in conjunction with a maintenance of frequent services makes any such wholesale proposition financially impracticable.

In its Special Report to the Minister of Railways, supplied at his request, in regard to the abolition of the Clifton Hill level crossing on Heidelberg-road, the following opinions were given in reference to the allocation of cost:

“23. The Commission considers that the principal party concerned in all level crossings is the Railways Commissioners, and that theirs is the greater financial responsibility for the abolition of them. It is the Commission’s opinion that, although the Railway Department should not have to bear the whole cost, it certainly should be required to contribute substantially.

24. The Heidelberg-road and the other roads converging at this point are all arterial in character, and consequently the municipality in which the crossing is located should not be called upon to meet an undue proportion of the cost of providing an improved thoroughfare which obviously will be used by traffic foreign to Collingwood in a much greater degree than that which can be regarded as local.

26. As the roads will be used almost wholly by motor vehicles it is recommended that a substantial contribution towards the cost should be made from the motor registration fees, which are now devoted almost wholly to country roads.”

It is recommended that a single Transport Authority, as advocated on page 143, would have this matter of level crossings referred to it for decision as to the allocation of costs. The Melbourne and Metropolitan Tramways Board and any other public authority directly concerned in a particular crossing should be assessed for a just share. The wide distribution of the costs suggested should be the means of expediting the abolition of the most urgent of these crossings.

Policy at Present in Force.—Wherever the Railway Department has undertaken the construction of new metropolitan lines during recent years, or has been engaged on extensive remodellings, it has endeavoured to avoid level crossings. The Railway Department is to be highly commended for the expense it has incurred, and the installations it has made in a variety of ways, with a view to making these crossings safe for all but the most reckless people.

Order of Abolition.—The order of abolition of the 66 level crossings should necessarily be determined by their urgency, and it is suggested that a factor which combines the number and classification of vehicles with the duration of delays at crossings should be used in deciding the precedence. It is believed that the adoption of a systematic scheme dealing with this important problem would enable the diversion of traffic into these crossings of the railways with separated grades, and probably permit of the closing of the least important level ones.

The Commission’s schemes for roads in the area to be served by the Darling to Glen Waverley and Doncaster lines illustrate how a greater use can be made of fewer crossings of the line, while at the same time preserving reasonable access between lands on each side of it.

Amended Legislation Required.—One of the factors that has contributed to the large number of level crossings in existence is the fact that the Railway Department possesses inadequate powers for the acquisition of land. It is considered that if the Department had power, subject to any necessary safeguards to acquire more land than is immediately necessary for railway purposes, it would be enabled in many instances to provide one crossing which would serve two or more cross streets by the diversion of certain streets at suitable places, with consequent saving in cost. The Commission is convinced that, by judicious planning and adequate legislative powers, it should be possible to reduce the number of level crossings, the abolition of which would require heavy expenditure in the construction of subways or bridges.

Level Crossing—Heidelberg-road, Clifton Hill.

On 13th June, 1927, the Minister of Railways requested the Commission to supply him with a report and recommendation as to the best way of abolishing the level crossing on Heidelberg-road at Clifton Hill. The Special Report and plans were supplied under the date 14th October, 1927, and copies were furnished to all authorities concerned, and it is not considered necessary to report the details of the proposals herein.
The crossing is on an arterial road which feeds other arterial and main routes, and is one of those most urgently needing abolition. The scheme recommended by the Commission was as follows:

(a) Heidelberg-road to be taken beneath the railway lines, the latter to be raised 2½ feet from their present level.

(b) The subway to have a grade of 1 in 20 and be 66 feet wide.

(c) The estimated cost is £77,700.

(d) Turnbull-street (gazetted width 66 feet) to be widened to 84 feet on Mayor’s Park side, so as to provide for a north-south electric tram line, the route of which from Hoddle-street would be via Turnbull-street and directly across Queen’s-parade and the property between the parade and McKean-street, to join the latter in line with Turnbull-street, thence into Rushall-crescent, &c.

(e) That portion of Hoddle-street north of the entrance to Clifton Hill Station to be added to Mayor’s Park, as well as the portion of Heidelberg-road between Mayor’s Park and the proposed subway.

(f) The portions of Hoddle-street and Heidelberg-road gazetted as road, but now included as park, to revert to road use.

(g) The cross-sections of Queen’s-parade and Heidelberg-road to be altered to conform with that laid down for arterial roads of their width.
TRAMWAYS.

The first tramway laid in this metropolis was the cable line from the City to Richmond—in 1885. Tramway extensions followed in quick succession, and as the routes increased in number, so did the authorities controlling them. The first electric tramway was opened in 1906, the route being between North Melbourne and Essendon. Eventually, in 1918, Parliament passed the Melbourne and Metropolitan Tramways Act under which the present controlling Board of seven members, appointed by the Governor in Council, was subsequently constituted. The Board controls the whole system of street tramway passenger services operating in the metropolis to-day, excepting the St. Kilda to Brighton Beach and Sandringham to Beaumaris lines, which are operated by the Victorian Railways Commissioners. One of the first tasks undertaken by the new Board was the planning of a comprehensive general tramway scheme for the metropolis, incorporating the gradual conversion of the cable lines to electric traction. The general scheme received the approval of the Parliamentary Standing Committee on Railways in 1923, and steady progress has since been made towards its achievement. The Melbourne and Metropolitan Tramways Board now controls nearly 109 route miles of electric lines, and 30 miles of remaining cable route miles, the latter being in process of conversion.

The passengers carried on the tramways for the last financial year amounted to 211,762,137—a figure which frequently causes surprise, because of the popular belief that the railways do the greater business in metropolitan passenger services. The metropolitan population directly served by tramways exceeds 800,000.

COMMUNITY SERVICES RENDERED.

There are several features about the Melbourne tramways system, in the community services it renders, which are worthy of mention, apart from the excellence of the equipment and of the high standard of the Board’s transportation organization. Under the Tramways Acts, the Board pays into the State Consolidated Revenue each year a sum of money equal to the payments made by the Government to the Metropolitan Fire Brigades Board, the Queen’s Memorial Infectious Diseases Hospital, and the Licences Equivalent Fund. During recent years this has exceeded £100,000 per annum. This tax is a levy on gross earnings and the first charge upon the Board’s revenue. The institutions referred to have no relation whatever to the tramway passenger, and this large extortion means that either the passenger must pay more for his transport than its cost, or the Board is prevented from expending these earnings in new development. The Commission desires to endorse the recommendation of the Parliamentary Public Accounts Committee that the Board be freed from such payments. There is a strong and almost unanimous support for the removal of this anomaly, but successive Governments have shirked the responsibility.

The Board lays and maintains that portion of the street between the tramway rails and for 18 inches outside the rails. The municipalities concerned are thus saved the expense of constructing and maintaining an average of 19 feet in width of roadway, relieving them of a capital outlay of £1,500,000 in road construction and £250,000 annual charges for maintenance, renewals, interest, and sinking fund. In addition the Tramways Board pays rates to municipalities amounting to £15,000 a year.

The Tramways Board provides lighting on 80 miles of streets at a cost of £9,000 annually.

The cost of the erection of bridges, abolition of level crossings, street widenings, &c., have all been contributed to by the Board, in some instances very substantially.

THE TRAM CAR AS AN ECONOMICAL UNIT.

In Melbourne, as almost everywhere else, during recent years the advances made by motor transport have caused incursions into the public systems of street and railway transportation, and for a very long time the advocates of both trams and motor buses urged their conflicting points of view. When public attention was focussed on the relative merits of tram cars and motor buses, the Commission issued its First Report, wherein much attention was given to the subject. The Commission emphasized its view that the tram car running on steel rails was the most efficient and economical street passenger unit (see also page 54). It was urged that unnecessary duplication of services was unwarranted and prejudicial to the public interest. At the same time it was claimed that there was ample warrant for the use of motor buses as an auxiliary service to the railways and tramways. The Government set up an authority with powers to regulate motor bus transportation, so as to avoid the duplication of services such as was then occurring. Subsequent experience has strengthened the views of the Commission as previously expressed.
The tramway routes, as indicated on Map No. 4, which shows the transportation system, are largely based upon the general scheme prepared by the Melbourne and Metropolitan Tramways Board and approved by the Parliamentary Standing Committee on Railways in 1923. The original scheme has been advanced considerably towards completion. The conversion of the principal cable lines south of the Yarra, and of considerable portions elsewhere, has been completed, with consequent appreciable improvement to the service generally. As funds permit, this work will be continued until all cable lines have been replaced by electric traction. Several new electric lines and extensions and connecting links, as laid down in the Board's general scheme, have been completed.

In studying the original scheme, it must be remembered that it was based upon the then existing street system. Certain of the major proposals of the Commission for new roads and roads of increased width, if carried out, would offer considerably greater facility for a more effective location of some of the tramways which are included in the Board's general scheme. By way of illustration, it might be stated that the arterial road across Fisherman's Bend and its proposed extensions and branches through western suburbs, by reason of their greater width and directness of travel, will allow and encourage an amendment of the proposals included in the Board's general scheme for this area. Again, certain roads planned in the northern suburbs, if carried into effect, would supply more direct extensions of the tramway system and a cheaper construction in "parked" formation.

The amendments which it is considered could be brought about with advantage to the Board's general scheme by the improved road facilities as planned are indicated on Map No. 4. Although they are indicated as proposed tramways, these routes could be used for motor bus services in the initial stages until settlement is sufficient to warrant the laying down of tramways.

Recommendations were made elsewhere in regard to the advisability of locating tramways in street reserves (see page 53), whilst the recommended cross-sections of tramway streets are given diagrammatically on page 61.
PORT AND HARBOUR FACILITIES.

The Port of Melbourne is controlled by the Melbourne Harbor Trust Commissioners, and the present system of management has operated since the passing of the Melbourne Harbor Trust Act 1912. The Trust is constituted of a full-time Chairman appointed by the Government, and four others nominated to represent the interests of ship-owners, exporters, importers, and primary producers.

The various port authorities that have exercised control are to be commended for the remarkable progress made in the development of harbour facilities, which permit almost any ship afloat to berth in the port. The following figures give a clearer indication of the extent of the harbour and its present trade:

- Berthage accommodation (over 9½ miles) .. .. 50,453 feet
- Wharfage space .. .. .. .. .. 68 acres
- Depth of water available at Port Melbourne piers .. .. 37 feet

Year 1928 trade (not a record year)—

- Imports .. .. .. .. .. 3,399,701 tons
- Exports .. .. .. .. .. 1,331,049
- Gross tonnage of shipping .. .. .. .. 11,713,340
- Vessels .. .. .. .. .. 3,712

The Act of Parliament under which the present Trust operates requires the port authority to contribute one-fifth of its gross income to the Consolidated Revenue of the State. In 1927 this amounted to £148,282. In addition, all goods consigned to Government departments, including the Railways Commissioners, are exempt from wharfage dues. The average loss to the Trust's revenue as a result of this exemption has been over £20,000 per annum for the last ten years.
In the First Report of the Commission reference was made (page 46) to the plans of future development of the Melbourne Harbor Trust Commissioners, and Map No. 5 therein gave details of the scheme which it was claimed would serve for the next 50 years. The plan is included in the Commission’s plans for general metropolitan development.

The Trust is gradually extending the berthing facilities and improving the port as necessity demands, and it is fortunate that a large area of unused and low-lying land is available in the vicinity of the Lower Yarra for this purpose.

The Commission is of opinion that if it is necessary to supply additional berthing facilities, after the plans outlined herein have been completed, this can be provided by extensions and additional piers at Port Melbourne and Williamstown.
ONE TRANSPORT AUTHORITY.

In its First Report (page 21) the Commission concluded its comments on transportation matters as follows:

"The Commission recommends that the determination of the scope of the various systems of transport and the regulation and preservation of their growth on proper lines should be governed by a central public authority which, whilst preserving the integrity of each system, would prevent wasteful competition and aim at the creation of a more efficient transport service."

The intervening period has emphasized the desirability of giving effect to this recommendation, and a Bill has been announced for submission to Parliament, which is stated to contain provisions for the creation of a Ministry of Transport.

Various Ministers and private members of Parliament have advocated, during recent years, the abolition of unco-ordinated control in transportation matters. The report of the Outer Ports Commission of 30th September, 1925, issued shortly after the First Report of this Commission, drew attention to "disorganized and unhealthy rivalry in all branches of State transportation," and it was urged that a State Department should be created to deal with the problem. The Report of the Victorian Railways Commissioners for the year ending 30th June, 1924, contains an expression "of opinion that there is an imperative need for regulation, in order to ensure that extravagant competition is not carried on to the benefit of a limited section and to the detriment of the majority of the taxpayers." The 1928 Annual Report of the Parliamentary Standing Committee on Railways and the Railways Royal Commission Report, issued in the same year, both urge the appointment of a central controlling body. The City Engineer of South Melbourne, in a report on his trip abroad in 1927, states—"Complete co-ordination of transport services under one control is absolutely necessary. If all systems were geared under one comprehensive system, congestion would be reduced." Many other recommendations, both local and elsewhere, could be quoted to support the compelling need for a single transport authority.

The Commission recommends that the central transport authority should be required to study and bring into effect the best methods of organizing, systematizing, and co-ordinating all forms of transport by rail, road, water, and air.

It would be desirable to divide the administration into at least two branches—State and metropolitan. The Country Roads Board, the Railways Commissioners, the Outer Ports authorities, the Civil Aviation Department (a), the country municipalities, and the Motor Registration Branch would no doubt be linked together as State transport activities. So far as the metropolitan area is concerned, the Railway Department, the Tramways Board, the proposed roads and bridges authority, the municipalities, the Melbourne Harbor Trust Commissioners, and the Police Traffic Control Branch should form the main body of combined activities.

The operation of a Town Planning Act, as outlined elsewhere, would materially assist future transport. The municipalities and other authorities involved in such an Act would lay down the basis of development of their areas, and as these schemes, when approved, would automatically become law, the transport authority would have definite guidance in its deliberations. The necessary co-operation with the town planning authority would thus be established through the medium of the adopted municipal development schemes.

Although the Commission does not desire to set down the details of matters which should be the prerogative of the transport authority, there are several matters referred to elsewhere in this Report which need to be reiterated.

The arterial and main roads and future tramway routes, as defined in this Report, are suggested as a basis of any definition and study of future metropolitan road transportation. This would also supply a basis for the consideration of such matters as level crossings of railways. The standardizing of road design and construction could be simplified by the acceptance of the recommendations in this regard as a basis. The regulation and control of road traffic must be handled by a central body, and it seems but natural that this proposed authority should be recognized as the most suitable means of achieving uniformity and proper administration of these matters. The collection of motor registration fees, drivers' licences, &c., and the allocation of funds derived therefrom, are regarded as matters properly belonging to a central transport organization.

(a) Although it is recognized that the air services are subject to Commonwealth jurisdiction at present, and should be developed as a Commonwealth activity, there appears to be no reason why advisory State Committees, acting in conjunction with the Ministry of Transport, would not lend itself to a coordination of air with other State services.
PART III

THE EXECUTION OF IMPROVEMENT SCHEMES

A PROGRAMME OF URGENT WORKS
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A PROGRAMME OF URGENT WORKS.

NECESSITY FOR ADOPTION OF A PLAN OF DEVELOPMENT.

It is essential that a general scheme of metropolitan development should be adopted, and the Commission, on Map No. 4, has laid down a system of metropolitan main roads which, after a detailed study extending over six years, it believes will be necessary for the proper circulation of traffic within the area covered by the general scheme. It is recommended that this definite scheme for co-ordinated future development be adopted as the "official plan," and the one which should form the foundation of municipal and individual town planning schemes for the metropolitan area.

Those parts of the roads scheme which lie within developed areas should be put in hand and carried out when conditions tend to lessen the cost, or when their completion becomes urgent by reason of traffic or other conditions. The period over which such works will be carried out will necessarily be a long one, and to a large extent will be determined by the rapidity of development or by increase of metropolitan population.

The plan laid down in this Report is designed to serve a much larger population than is at present resident within the area of planning adopted, and its objects are to ensure that each completed proposal is an instalment of a general scheme of development, and to prevent wasteful expenditure on ill-advised improvements, which may be incapable of extension or wrongly located in regard to the general metropolitan development. At the present time there are certain works forming part of the complete scheme, which for a variety of reasons should take precedence over others and which, for ease of description and on account of the pressing need for action regarding them, are called "Urgent works."

CLASSIFICATIONS OF URGENT WORKS.

The Commission has given careful consideration to the various schemes which are regarded as urgent, and has subdivided them into three classes, also giving an indication of the method whereby they can be accomplished. They are shown on Map No. 5, and designated—

Class "A."—Those works located in rapidly developing areas, and which pass through subdivided lands which should be replanned to include the new road reserves, prior to more intense settlement.

Class "B."—Those existing roads upon which building lines should be established now, so that future widening may be carried out without extensive demolition of properties.

Class "C."—Those road improvements which should not be delayed and on which further obstructive buildings should not be permitted.

It is vital for the successful and economical execution of any of these works that the town planning legislation asked for in Part X. be enacted, and the recommendations made presuppose that the necessary powers are available. The powers referred to would permit the immediate operation of the whole of the schemes included in Classes "A" and "B," and would materially facilitate and cheapen the achievement of those in Class "C."
Urgent Works—Class "A."

The Class "A" urgent works are shown by a solid green line on Map No. 5. They comprise a series of lost opportunities which might have been incorporated in the original plans of subdivision had a definite plan of general development existed. In these cases a certain amount of replanning will be necessitated, but as there are practically no buildings affected, the cost of remodelling the affected subdivisions should not be large. Under the legislation asked for, they would soon be secured, so that in many cases any initial expenditure would be more than sufficient to pay for their accomplishment, leaving a surplus towards proposals included in other classes. It has been demonstrated, in the various schemes of replanning included herein, that partial resubdivisions can be carried out to secure the desired road improvements, and leave an almost equal number of allotments to satisfy the claims of dispossessed owners.

In certain parts, where these works are proposed, subdivision has not taken place, and in such instances the town planning authority should have power to compel the inclusion in the ordinary course of development of such roads as parts of subdivisional streets.

The road schemes do not involve the construction of the roads. It is only necessary for a strip of land in the correct location, and of adequate width, to be set apart to serve the districts through which they pass when they are built up. The main road is the most costly item, and its construction can be left until such time as it is necessary.

Improvements of this nature, secured in advance of development, would not prevent or delay the normal growth of the metropolis. Rather would they encourage the development to proceed, because of improved accessibility and better site planning.

Urgent Works—Class "B."

The works shown in broken red lines on Map No. 5 require only administrative action under a town planning Act. The definition of building lines would not involve any immediate costs. Action which would prevent the subsequent erection of buildings too close to the existing building lines would be the means of saving a considerable expenditure in the future. With the funds available, as shown later, the central authority would be able to reduce to a minimum the costs of acquisition of the additional road widths by opportune purchases from time to time. (See also pages 58 and 59.)

Expenditure such as that which must be incurred in the "C" Class works, which are really only the results of the errors of the past, will be avoided. It is certain that all "B" Class works will become "C" Class in due time unless remedial action as suggested is taken immediately.

Urgent Works—Class "C."

The "C" Class works are located in the built-up areas, more centrally situated, and comprise the expensive undertakings which have become necessary to meet the demands arising from the extraordinary growth of metropolitan street traffic. Action in the majority of these proposals is long overdue, whilst in the Commission's opinion all of them warrant urgent attention. Their total completion within the next ten years should be aimed at. These works are scheduled separately on page 149, and the statement gives a carefully prepared analysis of the approximate costs involved in the schemes, individually and collectively. The statement includes estimates of property resumptions as supplied by the municipalities concerned. The estimates of returns from resales have been obtained in co-operation with municipal valuers, and as far as possible they are based on actual sales recently made in the immediate vicinity. In all these estimates care has been taken to be liberal in costs figures and conservative in returns figures.
# Estimated Costs of Urgent Works—Class “C.”

## Table of Estimated Costs

<table>
<thead>
<tr>
<th>Reference to Report No.</th>
<th>Scheme</th>
<th>Property Costs</th>
<th>Net. Land Returns</th>
<th>Constructed Costs</th>
<th>Total Cost of Scheme</th>
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<tr>
<td></td>
<td></td>
<td>Resumption Cost</td>
<td>Re-sales</td>
<td>Loss</td>
<td>Profit</td>
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<td>1</td>
<td>Bridge-wide widening</td>
<td>£122,700</td>
<td>£135,600</td>
<td>£12,300</td>
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<tr>
<td>2</td>
<td>Yarra Park road</td>
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<td>3</td>
<td>Swan-street-Alexandra-avenue Bridge</td>
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<tr>
<td>4</td>
<td>150 feet New Road—Queen’s Bridge</td>
<td>£511,820</td>
<td>£570,700</td>
<td>£358,800</td>
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<td>5</td>
<td>William-street bridge</td>
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<td>6</td>
<td>Resumptions to Clarendon-street, South Melbourne</td>
<td>£108,000</td>
<td>£55,900</td>
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<td>7</td>
<td>Roy-street improvement</td>
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<td>8</td>
<td>Victoria-street to Dyson-road</td>
<td>£25,300</td>
<td>£100,922</td>
<td>£19,266</td>
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<td>9</td>
<td>Ballarat-road widening</td>
<td>£88,705</td>
<td>£37,280</td>
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<td>10</td>
<td>Mt. Alexander-road improvement</td>
<td>£477,191</td>
<td>£207,395</td>
<td>£299,795</td>
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<td>11</td>
<td>West Coburg-West Brunswick Arterial Road</td>
<td>£46,804</td>
<td>£26,815</td>
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<td>12</td>
<td>Victoria-street widening and Victoria Bridge</td>
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<td>13</td>
<td>High-street, New improvement</td>
<td>£38,145</td>
<td>£63,860</td>
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<td>14</td>
<td>Hawthorn Bridge</td>
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<tr>
<td>15</td>
<td>Canterbury-road-Barker’s-road connection</td>
<td>£70,380</td>
<td>£23,700</td>
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<td>16</td>
<td>Fun-street bridge</td>
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<td>17</td>
<td>Harcourt-parade improvement</td>
<td>£37,695</td>
<td>£10,406</td>
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<td>18</td>
<td>Williams-road Bridge</td>
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<td>19</td>
<td>Wellington-street, St. Kilda</td>
<td>£209,600</td>
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<td>High-street, St. Kilda</td>
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<td>21</td>
<td>Foreshore-road, Brighton</td>
<td>£161,062</td>
<td>£52,720</td>
<td>£108,342</td>
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<td>22</td>
<td>Point Nepean-road widening</td>
<td>£365,727</td>
<td>£112,070</td>
<td>£153,657</td>
<td>£109,620</td>
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<td>23</td>
<td>New movable bridge over Yarra at Bay View Avenue</td>
<td>£80,000</td>
<td>£80,000</td>
<td>£80,000</td>
<td>£80,000</td>
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<td>24</td>
<td>New main road to western suburbs across Fisherman’s Bend</td>
<td>£46,520</td>
<td>£46,520</td>
<td>£87,000</td>
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<td>Totals</td>
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<td>£2,137,222</td>
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<td></td>
<td>Grand Totals</td>
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### Remarks

- Item No. 1.—From First Report—1925 Estimates. Not likely to be materially altered.
- Item No. 2.—From First Report—1925 Estimates.
- Item No. 4.—Part of Port Melbourne Highway Scheme.
- Items Nos. 6 and 7.—From First Report. Reconstruction and regrading of Hanna-street in existing wide section is not included.
- Item No. 9.—From Summerhill-road to Parkview Park.
- Item No. 11.—Dawson-street to Park-street section remodelled—(a) Cost of construction from Dawson-street to Park-street.
- (b) Cost of construction through Royal Park.
- Item No. 13.—Includes all land embodied in Council’s scheme for improvement.
- Item No. 14.—See remarks on next page.
- Item No. 16.—From First Report—1925 Estimate.
- Item No. 17.—Includes subway under railway.
- Item No. 18.—Church-street bridge cost £101,727.
- Item No. 19.—From First Report—1925 Estimate. Not likely to be materially altered.
- Item No. 20.—From First Report—1925 Estimate. Not likely to be materially altered.
- Item No. 21.—This scheme includes 14 acres of foreshore parks and substantial buildings thereon, some of which may have value as places of public entertainment. Portion of cost of this scheme (£26,196) should be allocated to Park System.
- Item No. 23.—Movable bridge of Bascule type with about 220 feet clear opening and roadway for trams and vehicles.
- Item No. 24.—Extension includes bridge over railway at Spotswood and bridge over Kororoit Creek, but road widening is an "A" Class and "B" Class work.

### Hawthorn and Victoria Bridges

The reconstruction of these bridges is included in the schedule of “C” Class works, but no estimate of their cost has been given because the Government has recently authorized the Melbourne and Metropolitan Board of Works to undertake the work, and they are arranging for these bridges to be rebuilt out of available funds.