



NEED FOR TRANSPORTATION PLAN

- 6 JUL 1978

Melbourne is the fastest growing State capital in Australia. Predictions show that the Melbourne metropolitan urban area will expand from 450 square miles in 1964 to 670 square miles in 1985 to accommodate a total population of some 3,700,000.

Because of the expected population growth and increased prosperity, travel demands are expected to increase sharply, further congesting roads and public transport systems in the metropolitan area.

To assist in obtaining a balanced approach to the transport problem, the Victorian Government appointed the Metropolitan Transportation Committee, comprising all major land transport authorities under the Chairmanship of the Minister of Transport. The committee began its work with a detailed study on various aspects of future transport demands expected up to 1985.

Based on the 1964 conditions, the Committee made a survey of existing transport services, private motorists' trips, truck transport capacity and usage, and, after consideration, predicted traffic demand up to 1985.

In recent years in Melbourne it has become increasingly apparent that the key to the transport problem lay in improving present public transport services and the building of a network of roads to facilitate the movement of vehicular traffic throughout the 1985 design area, covering 1,264 square miles.

Melbourne's long established fixed rail transport (trains and trams) have provided an efficient service for their designed task—moving large numbers of people during peak hours to and from the central city area.

These two services constitute a very large public investment of capital totalling millions of dollars. The Committee decided that trams and trains still have a future in Melbourne's overall transport system.

By 1964, Melbourne was experiencing problems resulting from the upsurge and wider use of cars and the desires of people to live in the outer suburbs and drive wherever they wished in their own vehicles.

At this time it was estimated that 2/3rds of the population lived within nine miles of the central city area. By 1985 it is predicted that this same proportion of the population will be living within 12 to 14 miles from the central city.

Many will be living further away in places like Berwick, Cranbourne, Frankston, Eltham, Hurstbridge and Werribee.

Melbourne's development had been influenced by the extension of public transport facilities — rail, tram and bus — along "corridors" radiating from the centre of the city. Freeways designed to link inner and outer suburbs had not been built.

As a result, traffic which was forced to pass through the centre of the city created congestion in some of the main city streets, such as Swanston and Spencer Streets, and slowed down tram and bus services in the central city area.

With continued population growth and prosperity and attendant expansion of housing, the increased number of motor vehicles is expected to reach 354 per 1000 persons, compared with 239 cars per 1000 in 1964, or a total of some 1.5 million motor vehicles in 1985—an increase of some 177% on 1964.

also

The Committee believes that by improving and extending Melbourne's public transport services, the public can be induced to make greater use of the systems, and by the construction of an integrated freeway network, traffic will be able to move more freely and with a considerable reduction in the frequency of road accidents.



To ascertain the transportation requirements of Melbourne 1985 two areas were surveyed by the Metropolitan Transportation Committee: the 1964 cordon inside the dotted line covered about 583 sq. miles; the unbroken line shows the 1985 design area of 1,264 sq. miles which will accommodate a total population of some 3,700,000.

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MELBOURNE METROPOLITAN TRANSPORTATION PLAN

This report deals with a modern phenomenon—urbanisation of life on a scale not previously known.

It is 200 years since Captain James Cook discovered the east coast of Australia. There were no cities in Australia then. What has since happened in our country is written into our history and it is a fascinating story. What will happen in the next 200 years will depend a great deal on all of us alive today—by that time everyone of us will be part of Australia's history.

When man began his civilisation process, urbanisation also began. The production of a surplus food supply introduced a new form of community life; an administrative centre was now possible and this was the embryo of the city. And so it went on over the centuries until the Industrial Revolution caused a great upward surge in the development of the modern city.

However, by the end of the 19th century only eleven cities around the world had more than one million inhabitants; well before the end of the 20th century—indeed in 1985, the design year of the Plan—it is estimated that Melbourne will have a population of 3.7 million people.

Like other cities Melbourne is involved in the urban population explosion. This is something new and, consequently, all around the world people have not yet worked out what to do about it. This is not a situation in which we can stand by and simply "wring our hands". History shows that cities will not get smaller and, therefore, we must plan.

Although town planning occurs in many places, I believe that few cities, if any, have devoted as much money, time and effort to such a comprehensive transportation study as Melbourne. From this study comes the Melbourne Metropolitan Transportation Plan.

The Metropolitan Transportation Committee was formed after legislation was enacted by the Parliament of Victoria in 1963 to advise the Government on planning development, co-ordination, control and improvement of transport facilities in Melbourne and its environs.

The Committee decided that, to carry out its task, detailed and comprehensive information about Melbourne's transport system was required. Consequently, it began the most detailed survey of Melbourne's transport system ever undertaken to provide a basis for the preparation of a Transportation Plan. The Plan would, if approved, be a basis for future transport planning.

The survey was carried out by American consultants, Wilbur Smith and Associates in conjunction with the Melbourne firm, Len T. Frazer and Associates. Both firms acted under the guidance of Study Co-ordinator Sir Louis Loder, C.B.E., and the Hon. E. R. Meagher, M.P., the then Minister of Transport. The survey was completed by the consultants in 1965, and they submitted the results of their work to Mr. Meagher who was Chairman of the Committee from its inception until May, 1967.

Since the completion of the survey in 1965 the Committee has been engaged in analysing the considerable volume of data collected in the survey and preparing a plan for Melbourne's future, with the year 1985 as the basis for planning. It has now produced a plan which recognises that there is a place for all forms of transport in attempting to solve the problem—in other words, it believes that balanced transport is the only hope.

In this regard we have the opportunity to learn from experience in the United States of America that urban transport problems cannot be solved by emphasis on one form of transport alone. In that country emphasis on roads alone has not solved the problem and now city after city is looking to fixed track rapid transit to help solve its problem of moving people.

It is necessary to look at the Melbourne Plan as a whole and in so doing I feel it is important to keep three matters well in mind. Firstly, the Plan contains recommendations which can only be implemented progressively over a number of years. A series of procedures are laid down by law. The necessary reservations of land are required to be made by the planning authority—the Melbourne and Metropolitan Board of Works. This would require amendments to the metropolitan planning scheme; before amendments can be made, there must be public exhibition, notice to those likely to be affected must be given, objections can be made and must be heard.

Secondly, there must be flexibility when dealing with the complex problems of urban congestion and urban renewal. For any plan to be successful it must have the ability to meet and reflect the changing needs of the community.

Thirdly, the need for flexibility leads me to people because it can only be through people that changing needs are expressed and, after all, that is what the Plan is designed to meet—the needs of people.

People are what it is all about. People wish to move from place to place or they wish to have the goods which they use moved from place to place. But they are also subject to their environment. We must remember that cities like Melbourne exist because people live in them and in implementing the Plan, the relationship between environment and the quality of individual lives must be well considered—for example, great care will have to be taken to preserve those aspects of Melbourne which have character and distinction, such as our outstanding parks and gardens.

If a capital city has an efficient transport system, this efficiency will not only benefit the area served by the capital city, but will automatically bring substantial improvements to the transport system of the whole area concerned—in our case both Victoria and Australia. So we need planning, co-ordination of present and future transport facilities and leadership. The Government has given a lead by setting up the Committee; the Committee seeks to do so by this Plan.

We also need acceptance of the lead by a community which has taken the trouble to understand what is involved and is prepared to act.

Lenon S. Walcott
Chairman.

RAILWAYS

The public transport demand expected in 1985 necessitates improvement of Melbourne's suburban rail network and tram and bus services.

The Committee attaches great importance to the public transport proposals because, unless positive action is taken to improve these services, in terms of travel time and comfort, the requirements for additional road space will inevitably have to be substantially increased.

Melbourne's existing comprehensive network of public transport is a valuable community asset which many other cities lack.

The suburban rail network, mainly electrified, comprises a multi-track system which radiates from the city and extends 26½ miles to the south and south-east suburbs.

On many lines the system has considerable reserve capacity to handle more people. Other lines can be greatly expanded without enlarging rights-of-way except at the terminals.

The Committee recommended proper upgrading of all these services, providing faster, more comfortable, more frequent services, better parking facilities at points of modal inter-change, improved feeder bus services linking rail and tram networks with residential areas and the maintenance of a high standard of safety.

By 1985 the metropolitan rail system is expected to be handling 663,000 passengers a day compared with 381,679 in 1964. This big increase is expected to follow the predicted rise in population in the metropolitan area.

The most important role played by the rail network is in handling peak commuter traffic. In 1964, two-thirds of the total passengers carried travelled during the morning and evening peak hours.

To carry out its 1985 traffic task effectively and to develop the necessary potential for further expansion beyond that date, the Committee recommends the construction of an underground loop terminal in the central city area and several new lines — East Doncaster to the City; Huntingdale to Ferntree Gully and Frankston to Dandenong.

Other recommended improvements include: increased service frequencies on peak services, with the addition of 73 extra trains, the laying of 33 miles of new express tracks mostly in existing rights-of-way; extension of electrified services; duplication of some single track lines, replacement of all out-of-date rolling stock, extension of automatic signalling, construction of new stations, substantial extension of car and bus parking facilities at suburban stations; and grade separation of 80 road-rail crossings.

Before many of these services can operate safely and successfully, the Committee agreed that improved city terminal facilities are essential. Because of the radial nature of the system, the capacity of the central terminal tracks and stations govern the capacity of the whole system to carry larger peak hour volumes. Congestion of both trains and passengers in the Flinders Street-Princes Bridge area is now a serious problem.

A recent work study showed that congestion could reach an intolerable level and

endanger passenger safety if these stations were to handle the expected increase in passenger traffic and the 181 trains required in 1985.

The proposed loop will consist of four single tracks designed to operate in both directions. Trains from lines feeding the Flinders Street-Princes Bridge complex will have direct access to the loop tracks and the five stations — Parliament, Museum and Flagstaff as well as Spencer and Flinders Streets. With the increased frequency of service no passenger will have more than a few minutes to wait for a train. Inter-change facilities will be provided at Jolimont, Richmond and North Melbourne to allow passenger transfer from a Flinders Street-Princes Bridge bound train to a loop bound train or vice versa.

The big advantage of the loop to commuters will be the enormous savings in travel times.

A person boarding a peak hour express from Mordialloc and wishing to go to the corner of Swanston and La Trobe Streets will take 35 minutes, saving 10 minutes compared with 1964 times; from Ringwood to the corner of William and La Trobe Streets, 25 minutes, saving 20 minutes; from Box Hill to Lonsdale-Elizabeth Streets, 20 minutes, saving 10 minutes, and from Broadmeadows to the corner of Spring-Collins Streets, 20 minutes, saving 20 minutes.

The Committee report indicates that by 1985, 63% of city bound passengers will be using one of the three new underground stations, which will mean that passenger congestion at Flinders Street-Princes Bridge will be eliminated and city bound passengers will be delivered closer to their destinations.

Alternative proposals have been examined in detail and their capabilities of handling peak services assessed, but none of them offer the same combination of advantages as the recommended plan, including the capacity for expansion beyond the design year — 1985.

To cater for the improved services and schedules required to meet the needs of commuters in 1985, the Committee recommends that all out-of-date rolling stock to be replaced by trains of the most modern design and that an additional 73 trains be added to the existing fleet.

The higher recommended speeds will require substantial upgrading of signalling installations to ensure that maximum safety standards are maintained. Automatic signalling will play an important part in reduction of headways between trains.

NAMES OF NEW STATIONS ARE FOR STUDY IDENTIFICATION ONLY
AND HAVE NOT YET BEEN REFERRED TO THE PLACE NAMES COMMITTEE
AS REQUIRED BY ACT 7360 OF 1965

IMPLEMENTATION

The Metropolitan Transport Committee's plan is based on an assessment of transportation requirements for the design year or, alternatively, for the year in which the population reaches about 3.7 million at the levels of service described in the report for each mode of transport.

Implementation of the proposals will be made over a number of years and follow a series of procedures.

The routes of the proposed freeways, the arterial network and the rail lines will have to be safeguarded by incorporating them as reservations in the metropolitan planning scheme.

This will require the Melbourne and Metropolitan Board of Works, as the planning authority, to draw up an amending planning scheme showing the reservations. By law this scheme must be placed on public exhibition to allow citizens the opportunity of examining what is proposed and lodging any objections they may have.

After considering objections the Board will submit the amending scheme with objections to the Minister for Local Government. The Minister then refers the matter to the Town and Country Planning Board for report before final submission to the Governor-in-Council.

When the process of public examination and the hearing of objections has taken place, final decision as to reservations will be made, and the reservations approved will become a permanent part of the Metropolitan Planning Scheme.

Reservations for public purposes, such as these, carry the right of compensation under the Town and Country Planning Act.

In producing the Transportation Plan for 1985, the Committee has of necessity made a number of predictions into the future. For this reason, the Committee believes that the plan must be a matter of continuing study and assessment if it is to retain its relationship to conditions and needs within the Melbourne area and still remain flexible.

The detailed investigations carried out have resulted in producing a vast amount of information of considerable value, not only to the authorities responsible for implementing the transportation plan directly, but particularly to municipal councils which will have a big part to play in Melbourne's Transportation Plan for 1985.

The text of this brochure follows closely Volume 3 of the Metropolitan Transportation Committee's Report. But for more detailed information, Vol. 3 is available from the M.T.C., cnr. Lygon and Princes Streets, Carlton, 3053; price \$15.

Any of the three underground stations planned for the Melbourne loop could look like this one on the Rotterdam metro.

COST OF PROPOSALS

	Million \$
1. Rail	
Underground rail loop	80
New lines on new alignments	60
Extension of electrification along existing lines	8
Route capacity improvements on existing lines	42
New stations on existing lines	2
Additional suburban trains	35
Modal interchange	15
	242
2. Street Public Transport	
New vehicles	105
Bus depots	8
	113
3. Highways	
Freeways	1,675
Major divided arterial roads	64
New arterials	28
Widening arterials and bridges	359
Grade separation (rail/road)	95
	2,221
4. Parking	
CDB financed by M.C.C. and private enterprise	40
TOTAL COST:	2,616



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METROPOLITAN TRANSPORTATION COMMITTEE



The Hon. V. F. WILCOX, M.P.
Minister of Transport
— Chairman



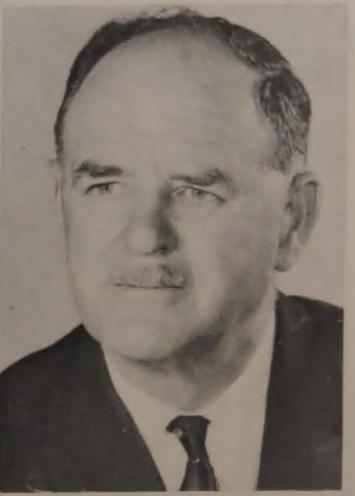
The Hon. R. J. HAMER, E.D.,
M.L.C.
Minister for Local Government
— Deputy Chairman



Cr. I. F. BEAUREPAIRE, C.M.G.
City of Melbourne



Mr. A. G. BROWN
Co-ordinator of Transport



Mr. G. F. W. BROWN
Chairman, Victorian Railways
Commissioners



Mr. E. W. COATES , C.M.G.
Director of Finance



Mr. A. H. CROXFORD
Chairman, Melbourne and
Metropolitan Board of Works



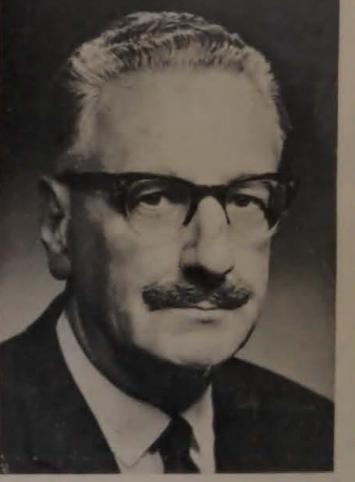
Mr. E. V. N. FIELD
Chairman, Transport
Regulation Board



Mr. J. A. HEPBURN
Chief Planner, Melbourne and
Metropolitan Board of Works



Mr. I. J. O'DONNELL, O.B.E.,
E.D.
Chairman, Country Roads
Board



Mr. R. J. H. RISSON, C.B.,
C.B.E., D.S.O., O.St.J., E.D.
Chairman, Melbourne and
Metropolitan Tramways Board



Mr. J. G. WESTLAND
Chairman, Traffic Commission

Dewey & barcode
See very back page



Off-street car parking, similar to the one above, is planned for many suburban railway stations.

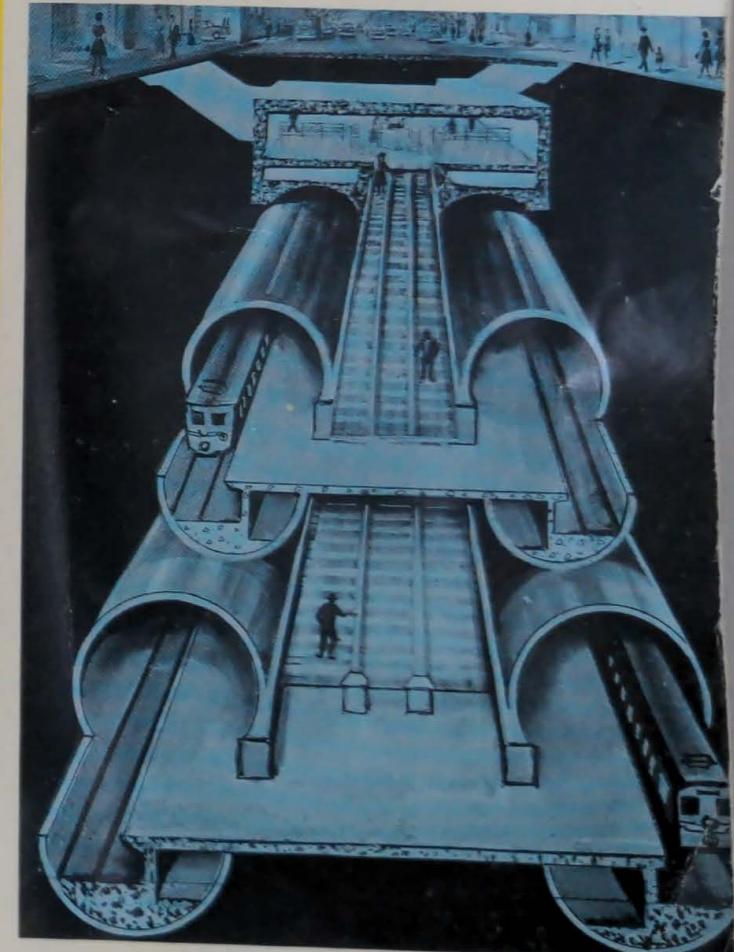


Diagram showing cut-away section of proposed underground stations in the Melbourne loop.

STREET PUBLIC TRANSPORT

An extensive tram and bus public transport service, operated by the Melbourne and Metropolitan Tramways Board, covers about 200 miles of tram routes and 222 miles of bus routes in the metropolitan area.

The trams radiate up to eight miles from the city through the highly populated suburbs. The Board's buses operate on 31 routes.

Complementing these services is an extensive private enterprise bus network. With the exception of a small number of routes which penetrate the city, Melbourne's private bus services operate mainly on inter-suburban routes, providing services to local shopping centres and schools, and more importantly feeder services to railway stations and to a lesser extent the tram network.

In 1964 the tram/bus networks were catering for 888,000 person trips a day and by 1985 it is expected to rise to 1,093,000 trips; an increase of 23%. Average passenger trip lengths are expected to rise from 3.0 miles to 3.5 miles; and person miles travelled from 2.4 million to 3.5 million miles a day — an increase of 46% on 1964.

The Committee believes it would be unrealistic at this time to scrap the tramways network as part of the street public transport system. The majority of tram tracks are in excellent condition, but many of the trams, though well maintained, are obsolete in design and becoming increasingly expensive to maintain in good operating condition.

The tram car is regarded as an efficient vehicle for shifting big loads for distances up to about eight miles, but it is impeded in its task where it has to share the existing road space with other traffic.

In Europe and elsewhere, where trams are being retained, the congestion problem has been overcome by putting trams underground in the inner city areas and elsewhere by giving trams their own reserved tracks as at St. Kilda Junction, Kingsway, Victoria Parade and other areas.

Up to 1985 and beyond, the Committee believes trams will play an important role in street public transport services. In the longer term it considers that continued operation of trams must ultimately depend on providing separate rights-of-way in heavily built-up areas.

Where reserved rights-of-way for trams cannot be provided, continuing studies will determine if tram services should be replaced by buses.

Recommended routes: The recommended plan provides for 746 additional route miles to be added to the existing street public transport network of 1,328 miles by 1985.

By 1985 trams are expected to be carrying 120,000 passengers to and from the city in the morning and evening peak hours, compared with 90,000 in 1964.

The number of bus routes will be increased and the length of route miles will increase by 64%. The buses will serve an area of 850 miles, or nearly double the area in 1964.

The new bus routes will provide a greatly improved service in suburban areas and as feeder services to the fixed rail system, operating on closely co-ordinated time-tables.

The street public transport system is designed to form a grid pattern over the

whole area, spaced at varying distances from half to one mile, and more than 80% of all people in the design area will reside within 10 minutes' walk of a tram or bus service.

Express bus routes: To provide rapid transit for people living in outer suburbs to rail stations, a number of new express bus routes will be incorporated into the public transport system. Two of these will be from Sunbury to Essendon and Keysborough to Oakleigh. Additional services will use the Tullamarine Freeway to the city and another from Altona via the Westgate Bridge to the city.

Better rolling stock: To ensure higher standards of passenger comfort and achieve the improved schedule speeds a substantial programme of replacement of vehicles will be required as well as increased numbers.

This will involve a combined fleet of 3,450 vehicles, and it is expected these vehicles will be catering for an increase of 46% in person miles travelled each day by street public transport.



Given their own right-of-way, as seen in the picture of St. Kilda Junction, trams are the most economical mode of street transport for moving large crowds in densely populated suburbs.



THE CITY RING ROAD

PROPOSED FREEWAYS
PROPOSED FREEWAYS TO ARTERIAL ROAD CONNECTIONS
DIVIDED ARTERIAL ROAD
SCALE IN MILES (TENTHS)

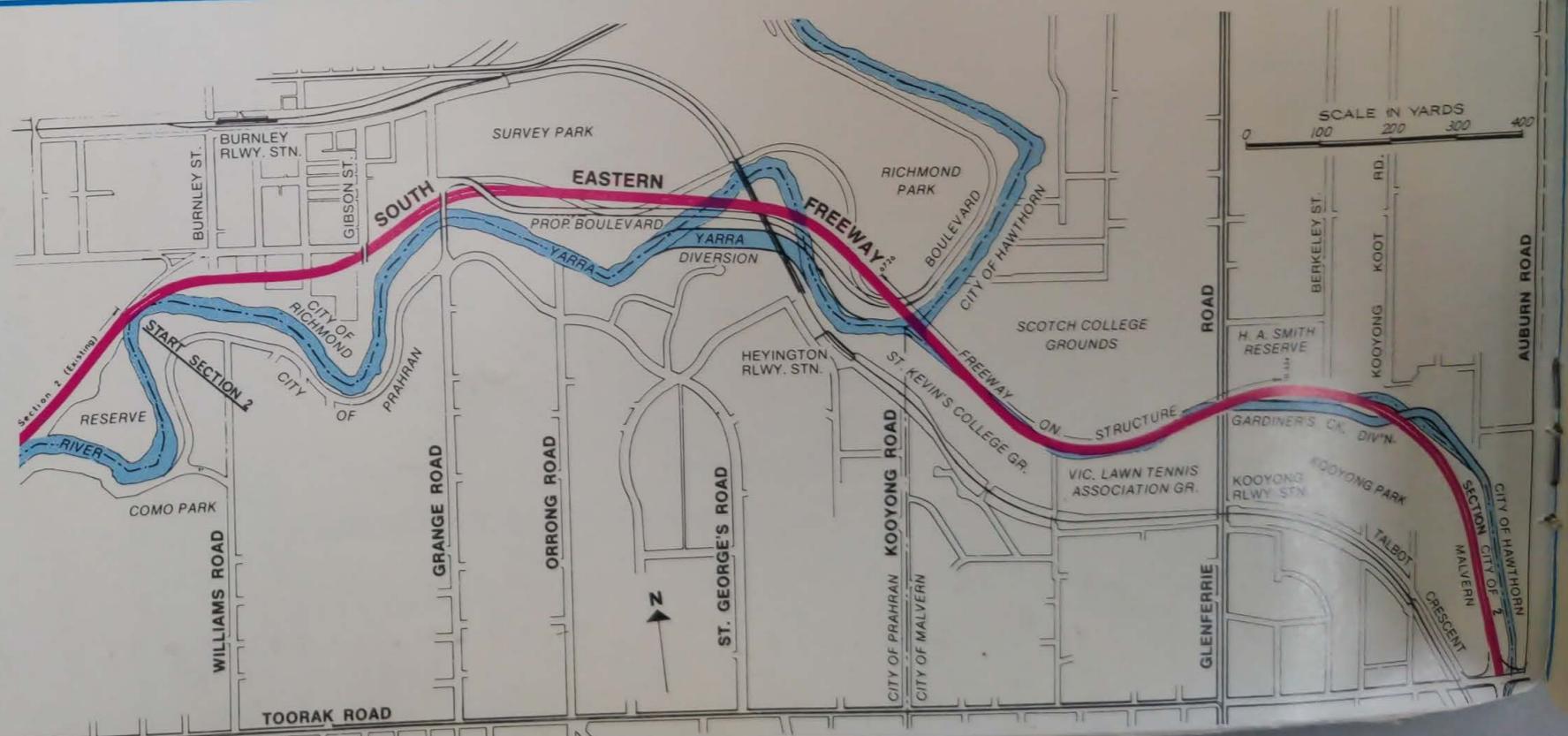
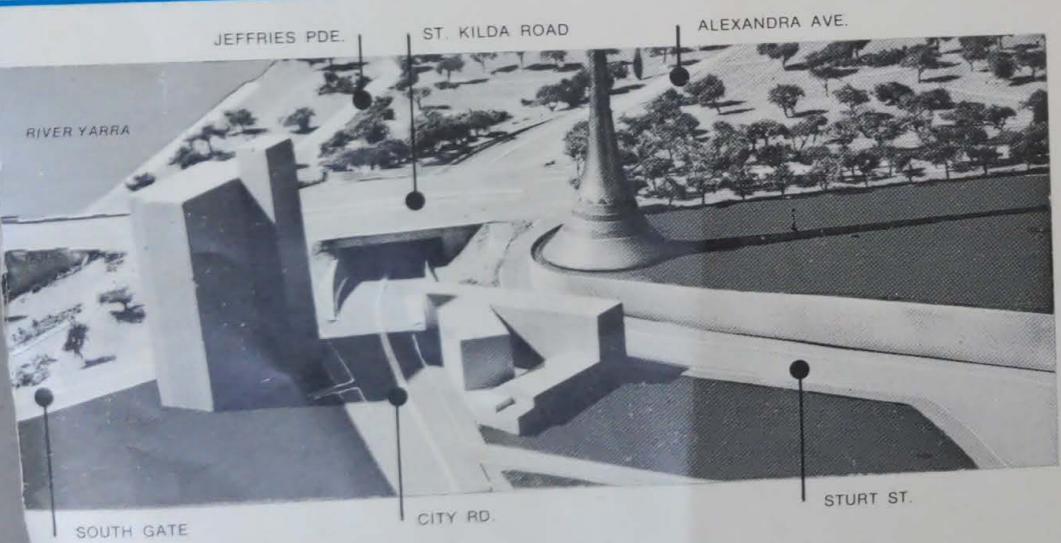
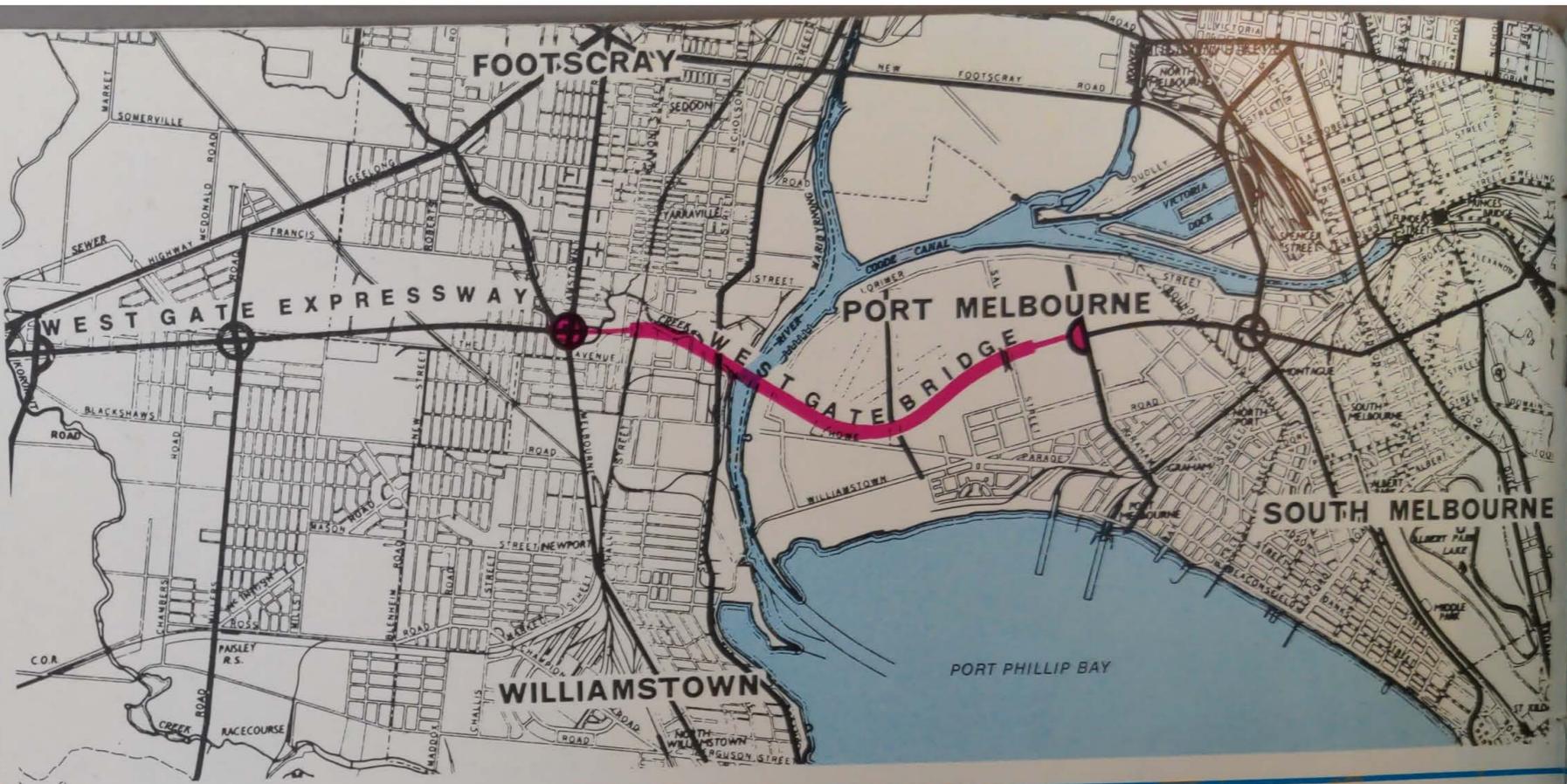


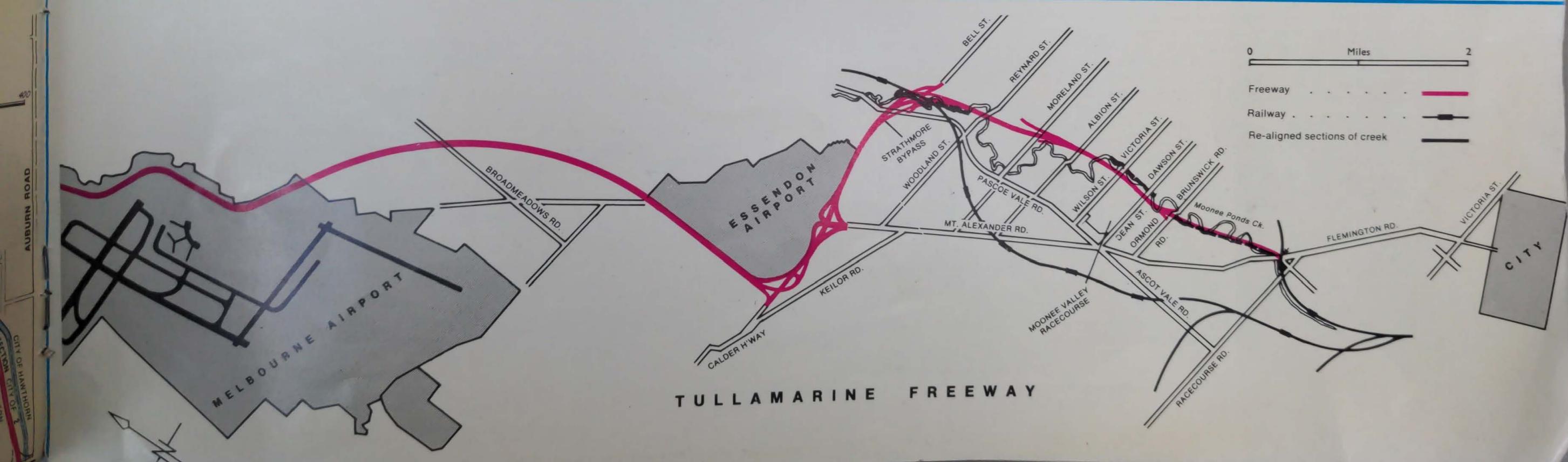
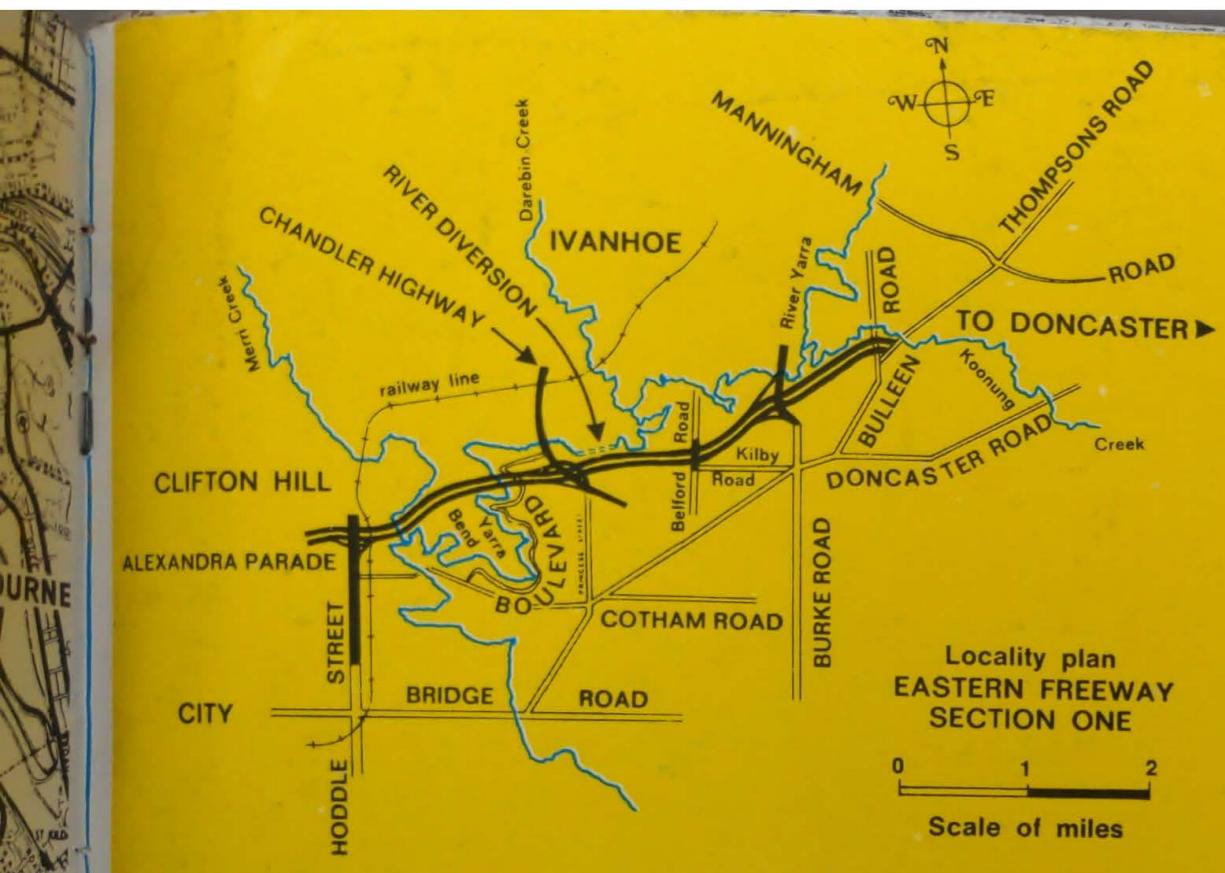
Feeder bus services to rail terminals are a vital part of the balanced transport system envisaged for Melbourne. Here is a typical modal exchange station of the future.



Modern high-speed trams are planned for Melbourne. They could look similar to this one in Zurich, Switzerland.

FREeways





HIGHWAYS

The motor car has brought mixed blessings to most developed communities in the world.

In 1985 it is expected there will be 1.5 million motor vehicles (cars and trucks) on roads in the metropolitan area — 2½ times the 1964 total. The total number of person trips each day — about 6,367,000 — will be three times the number of trips as formerly. The average distance travelled will also rise about 50%. The mileage travelled by private cars in the design area alone could reach 37 million vehicle miles a day.

At the same time, the demand for street public transport — buses and trams — is expected to increase substantially, and the number of passenger miles travelled daily will rise from about 2½ million in 1964 to 3½ million in 1985.

The Transportation Committee, realising the importance of improved roads in the overall transport plan, has recommended the construction of 307 miles of freeways, 103 miles of new arterial roads, and 189 miles of widened arterial roads.

Already some action has been taken and the various freeways now in use have shown the community how freeways and arterial roads speed up the movement of traffic from one area to another.

The recommended plan not only makes provision for the expected trebling of the 1964 volume of vehicular traffic, but also additional means of handling this increased traffic and providing the higher standards of service required.

Freeways will provide vital links for suburban traffic, relieving the city of possible increased congestion as well as spreading traffic flow to the outer suburban regions.

Arterial roads will also carry relatively high traffic volumes, but their main function is for mid-distance trips, or as feeders to the freeway system.

Freeways will be four, six or eight lanes with medians dividing traffic moving in opposite directions. Access ramps are designed to allow traffic to enter and leave freeways without impeding traffic flow. Drivers using the freeways will be able to reduce significantly travel times while maintaining a high level of safety.

Traffic volumes on the various freeways are expected to range from 60,000 to more than 130,000 vehicles a day. The freeway system will allow goods traffic to move at higher speeds for relatively longer distances and to by-pass areas where traffic movement is much slower; thus achieving significant economies in the cost of goods movement by road.

In 1964, commercial goods vehicles operating in the 1964 survey area were averaging 20 m.p.h. On freeways it is expected vehicles will average 35/40 m.p.h.

With the maintenance of the even speeds, savings in operating costs of between 20 to 25% will be possible. These savings will be reflected throughout the economy of the State.

Of 45 million vehicle miles expected to be travelled daily on the design area roads in 1985, the freeways are expected to be carrying 51% of the load, arterials 38%, with the balance of the traffic on local roads.

Benefits of the freeway network: The simplest way to assess the value of the freeway system in terms of savings is to consider likely effects which would be incurred without them based on the predicted volume of traffic.

In the city and inner suburbs there would be so much congestion that many car owners would be unable to use their vehicles very often.

The proposed freeway system envisages that even with a three-fold increase for travel considerable reductions in travel time will be achieved. A trip from Frankston to the city during peak hours by the shortest route in 1964 would have taken 62 minutes, but in 1985, with the freeways operating, this could be reduced to about 39 minutes. Other examples, 19 minutes instead of 32 minutes from the city to Tullamarine, and 29 minutes instead of 42 minutes from Eltham to Dandenong East.

The freeway system has been designed also to give quick access to and from interstate and country highways. Each of the eight major highways will be linked with the freeway system, as will all the other major routes leading into the city.

An essential feature of the proposed roads system is the city ring road designed to relieve the city of "through" traffic; clearing the roads for vital city traffic.

One of the most important benefits of the freeways will be increased road safety. During the first year of operation, the South-Eastern Freeway carried an estimated ten million vehicles covering a combined distance of thirteen million vehicle miles.

The accident rate was six personal injury accidents per ten million vehicle miles compared with 45 serious accidents per ten million vehicle miles in Toorak Road, 19 in Alexandra Avenue, 74 in Swan Street and 54 in Bridge Road.

A similar reduction in road accidents could be expected to result from the construction of more freeways, even though traffic will be travelling at higher speeds and the volume will be three times greater than in 1964.

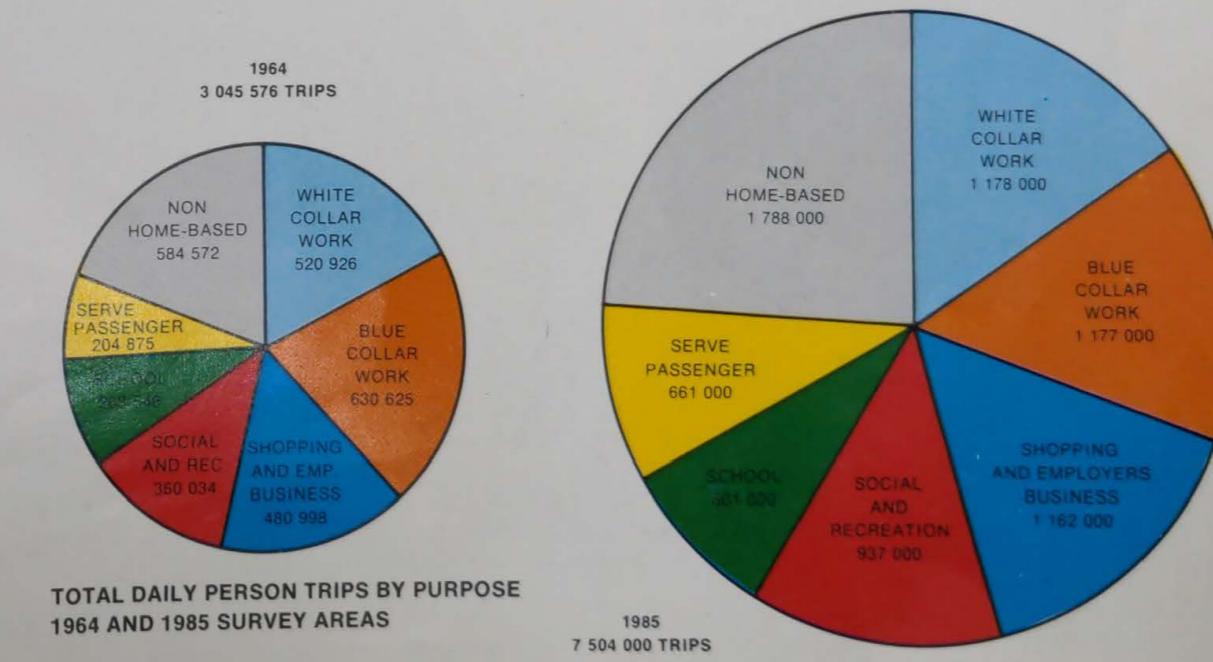
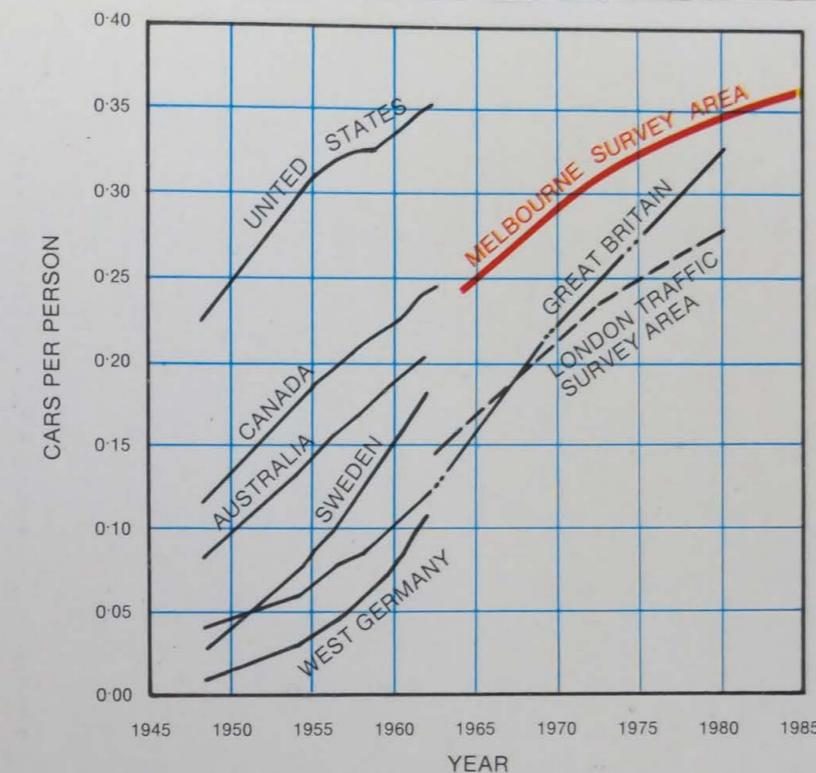
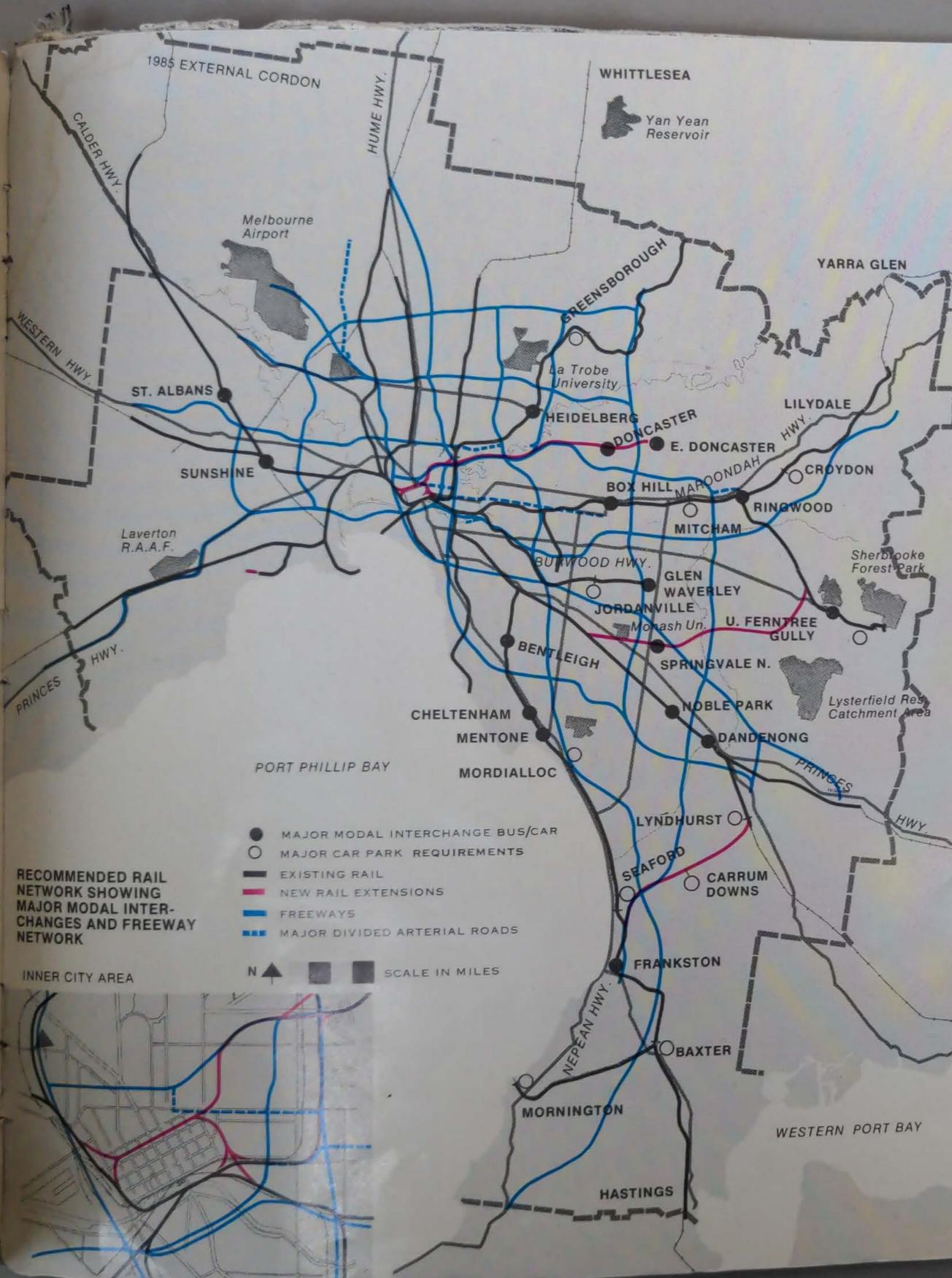
Rail crossings: Because of the combined increase in road and rail traffic in the design area, preliminary studies indicate that 80 road-rail level crossings require grade separation.

Local roads: The committee believes it will be necessary that there should be close co-operation and consultation between the municipal councils and road authorities for the development of the local roads system.

Land acquisition and reservations: The proposed highway network, comprising freeways and arterial roads, will total 2,214 miles, of which 307 miles will be freeways and 1,907 arterial roads. The freeways will be new works while 1,615 miles of the arterial roads will remain basically as they exist except for maintenance and 292 miles will require new construction or widening.

It is impossible to build a new highway system in a built-up area without affecting both publicly and privately owned property. The highway proposals will require acquisition of property over a period of years. It is estimated land required for arterial roads will amount to 1,600 acres and for the freeway system about 12,300 acres.

In the freeway proposals close attention has been paid to the reservations for main road purposes already existing in the Metropolitan Planning Scheme and a substantial proportion of these will be used. Preliminary feasibility studies have indicated that about 56% of the land required for freeways will follow the same alignments, and some will be rural land not yet built on. Many of the proposed widenings for arterial roads have already been acquired and approximately one-third of the remainder are reserved under the planning scheme.



TRAVEL PREDICTIONS FOR 1985

The number of jobs, car-owning households and students attending schools and universities will be substantially increased, while the number of trips for business and shopping will rise.

Daily trips by residents in the design area in 1985 are expected to be two-and-a-half times greater than in 1964, with trips per person increasing from 1.56 to 2.05. The existing networks are not capable of handling the increasing volumes of traffic at a desirable standard of service.

Travel by private car is expected to show the greatest increase — about 203% — and is the reason additional road construction is so vital.

A 74% increase in rail and a 23% increase in tram/bus travel is also predicted. However, because of the predominance of car travel, public transport trips are expected to comprise only about 22% of all week-day trips. In 1964 public transport accounted for 38% of all daily trips.

Trips to the central city area are expected to show an increase of some 31% over 1964 figures; car trips will rise by 53%, rail by 55% and tram-bus will remain approximately the same.

Trips associated with worker travel to the city in 1985 are expected to rise by 34% over 1964. Private transport trips for work will increase by 55%, rail by 62% and tram/bus are expected to remain about the same.

The number of light commercial trucks on the roads will rise by 117% and heavy vehicles by 75% in 1985.

Because of the spread of industry to the suburbs, the average length of trips by commercial vehicles will be longer, and trips will increase by about 132%.

With the expansion of urban development, it is expected improved transport services will increase trip lengths for all modes, with the average journey by car rising from 4.8 to 7.1 miles and train from 9.2 to 10.9 miles.

Two surveys on parking in the central city area and at the modal interchange terminals at railway stations and bus/tram terminals were made to cover the needs of public transport and private motorists.

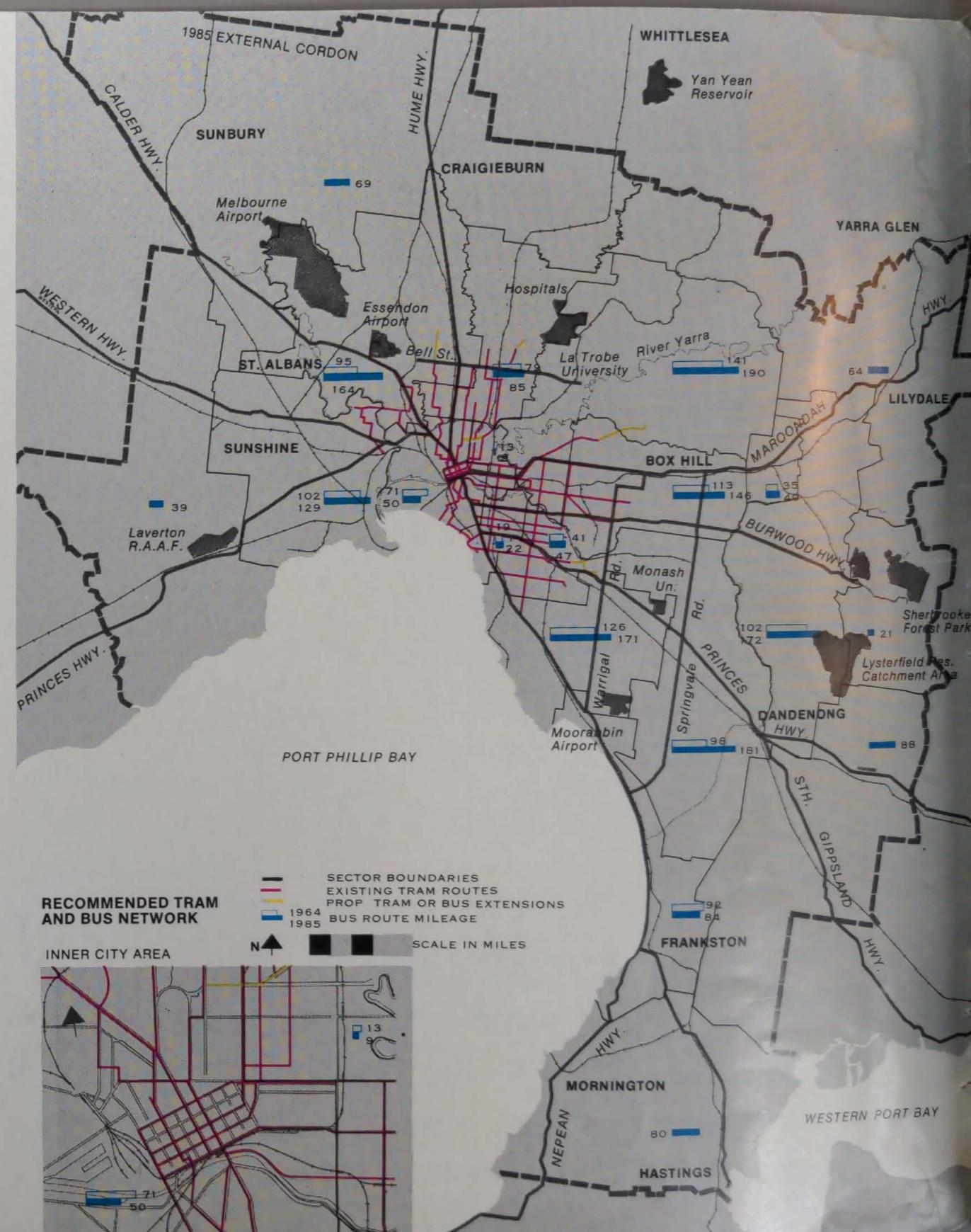
To provide a base for estimating 1985 parking space demand, the 1964 space demand for trips to work, business and shopping and other purposes in the city was tabulated for each of 20 zones.

The total demand for parking in 1985 in the city area is expected to be 55,600 spaces, compared with 38,000 in 1968.

In order to meet the demand of motorists who drive their cars to the local railway station and complete their journey by rail, the Committee recommends that more parking facilities be provided at many suburban stations. In 1964 nearly 13,000 cars were parked at railway stations each day, with about half of these parked in off-street facilities at 98 stations. By 1985 morning-peak commuters using the railways will require 25,000 car parking spaces at stations.

Inter-change facilities at stations like Frankston, Box Hill and Dandenong and many others will be improved to meet the needs of travellers from outer suburban areas.

Buses will provide rail travellers with quick and easy access to railway stations.



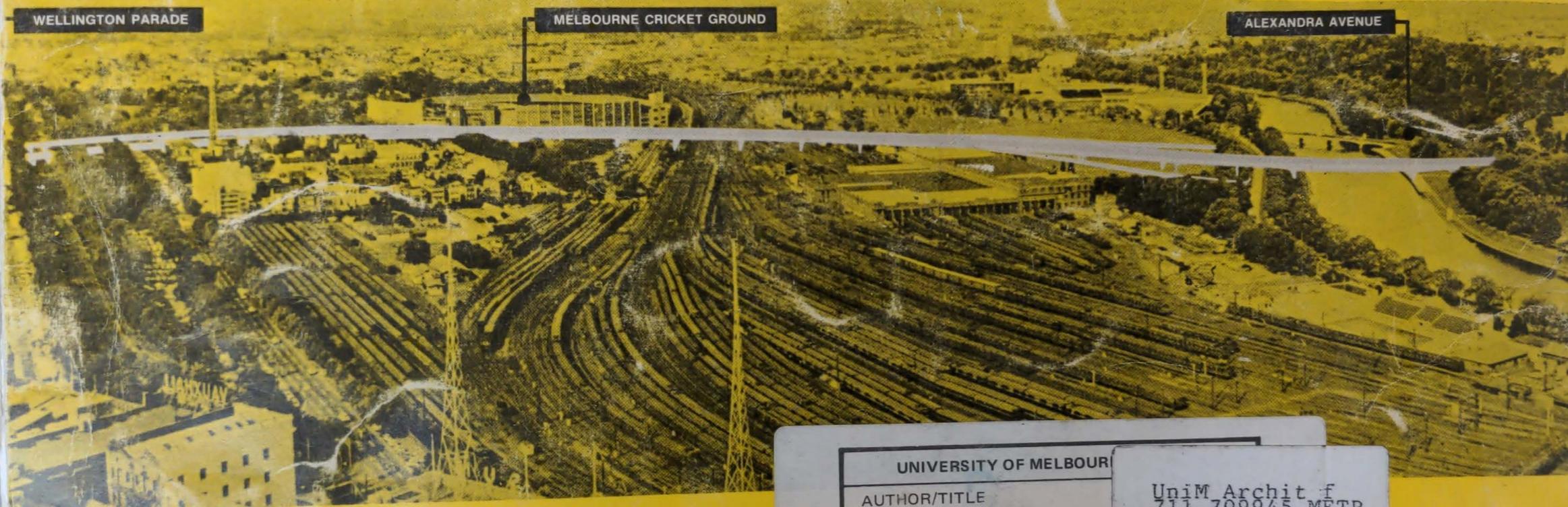


CITY RING ROAD

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The city ring road, an essential part of the proposed road system, is designed to relieve the central business district and all its access streets of "through" traffic, freeing these streets for use by vehicles destined for the CBD.

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METROPOLITAN / MELBOURNE



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Issued by the Metropolitan Transportation Committee, cnr. Lygon & Princes Streets, Carlton, 3053.

Printed by Academy Press Pty. Ltd., 19-47 Jeffcott Street, West Melbourne, 3003. Phone 30 1011.