

SHORTAGE OF FUNDS FOR CONSTRUCTION AND MAINTENANCE OF STATE ROAD SYSTEM

The Country Roads Board is experiencing increasing difficulty in financing essential works on roads throughout the State. The primary causes of this situation are the general problems of inflation and the increasing demand for the improvement of roads to meet the needs of modern road transport and increasing traffic volumes.

Labour costs make up approximately one-third of the cost of roadworks. Recent years have seen large increases in wages and salaries. Since 1965 wages and salaries have increased by approximately 60%.

Steady increases in the prices of roadmaking materials and the costs of servicing roadmaking machinery have also taken place in recent years.

More and heavier vehicles require wider and thicker pavements and for safer travel improved visibility has to be provided — this often requires increased earthworks and land.

In all, the costs of road construction and maintenance have increased by approximately 35% since 1965.

Until now the Board has been able to absorb a significant proportion of these cost increases through increased productivity, but the direct impact of recent wage and price increases cannot be overcome by improved efficiency. Consequently, the volume of work the Board is able to perform is less than it should be to cater for the needs of the motoring public. The backlog of work is causing grave concern.

Two Sources of Funds

The two main sources of funds available to the Country Roads Board to enable it to

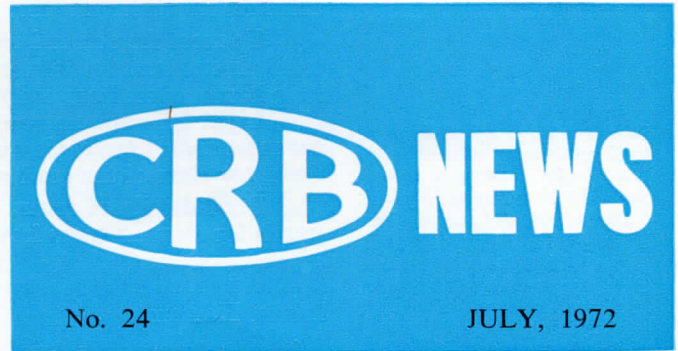
carry out its statutory responsibilities are part of grants made to the State under the Commonwealth Aid Roads Act (\$45.3M in 1971/72) and money received from State sources (\$47.7M in 1971/72). In addition funds are made available to the Board by the Treasurer from the Roads (Special Projects) Fund; in 1971/72 this allocation was approximately \$5.4M.

The bulk of the funds available to the Board from Victorian sources consists of approximately two-thirds of the receipts from motor car registration fees and the full amount of the ton mile tax paid by commercial vehicle operators.

Originally, the full amount of road user taxes levied under the Victorian Motor Car Act was specifically set aside for use on the construction and maintenance of roads, and, for this purpose, was paid into the Country Roads Board Fund.

At present however, as shown in the following table, only 66% of the net amount raised under the Motor Car Act in financial year 1971/72 was available to the Board for expenditure on roads and bridges.

The number of motor vehicles registered in Victoria rose from 1,068,000 as at 31st December 1965 to 1,357,000 as at 31st December 1970, a rise of 27%. This resulted in a rise in re-



VICE-REGAL INSPECTION OF C.R.B. ROADWORKS IN EAST GIPPSLAND



Sir Rohan and Lady Delacombe with Patrolman H. Goudie (left), Mr. W. H. Dolamore, Divisional Engineer, and Mr. R. E. V. Donaldson, Chairman (right) at Tambo Crossing, Omeo Highway.

The Governor of Victoria, Sir Rohan Delacombe and Lady Delacombe, accompanied by the Board's Chairman Mr. R. E. V. Donaldson, visited East Gippsland on 15th, 16th and 17 May, 1972, to inspect roadworks being carried out by the Board.

On the afternoon of Monday, 15th May, 1972, the party visited the Board's Bairnsdale Divisional Workshop and store. The party then travelled to Sars-

field via the Omeo Highway and to Paynesville and Raymond Island. On this trip time was taken to look at the geologically unique Mitchell River Silt Jetties — reported to be the second largest of their type in the world.

Works inspected included sealing operations on the Omeo Highway at Sarsfield, construction of the new Nicholson River Bridge and intersection treat-

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REVENUE UNDER THE MOTOR CAR ACT IN 1971/72

ESTIMATES ONLY

Fees (motor registration, drivers' licences, etc.)	\$000	\$000
less cost of collection	57,375	
Fines	2,000	59,375
Less paid to —		
Level Crossings Fund	1,130	
Municipalities Assistance Fund	1,670	
Roads (Special Projects) Fund	16,130	
Drivers' Licence Suspense Account	900	
Transport Regulation Fund	10	
Consolidated Fund	5,240	25,080
Amount paid to Country Roads Board Fund		34,295
Less Statutory Payments to —		
Tourist Fund	658	
Transport Regulation Fund	534	
Traffic Authority Fund	329	1,521
Net income available to C.R.B. from fees and fines under the Motor Car Act		32,774
Add —		
Grant to C.R.B. in lieu of fines under Motor Car Act	679	
Allocation to C.R.B. from Roads (Special Projects) Fund	5,375	6,054
Net amount available for use by Country Roads Board		38,828

ceipts from motor car registration fees. However, because of the increasing proportion of funds being diverted away from the Board, and the general problems of inflation, the average contribution from each registered vehicle to funds available to the Board has fallen from \$60.60 per vehicle in 1965/66 to \$51.50 per vehicle in 1970/71 in terms of 1965/66 purchasing power.

The Board's present financial position has caused:

(a) many urgent works to be deferred because of shortage of available funds. Urgent construction works which have already had to be deferred because

of shortage of available funds include:

In the Melbourne Metropolitan Area

Construction of the Calder Freeway by-passing Keilor to the north;
Construction of the Greensborough Freeway;
Duplication of Stud Road;
Reconstruction of Doncaster-Mordialloc Road;
Extension of duplication of Springvale Road;

In Country Areas

Reconstruction of the Lincoln Causeway (Hume Highway);

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SHORTAGE OF FUNDS CONTINUED FROM P.1

Construction of the deviation of the Princes Highway West at Allansford;

Reconstruction of the Princes Highway East at Morwell.

Other necessary works for which it has not been possible to allocate funds include:

Scoresby Freeway, Ringwood to Dandenong;

Healesville Freeway, from Scoresby Freeway to Lilydale;

Calder Highway, duplication between Melbourne and Bendigo including by-passes of Gisborne and Kyneton;

South Gippsland Highway, Sale to Longford, elimination of flood-prone conditions;

(b) severe difficulties in maintaining the Board's rural workforce. In the past two years the Board has been forced to reduce the number of its direct labour personnel by over 150. At a time when the rural economy of the State is depressed, this is a disturbing trend;

(c) the postponement of a programme of reconstruction of roads in rural areas which were reconstructed and sealed in the early post-war years;

(d) a complete standstill in the declaration of additional State highways, tourists' roads, forest roads, (on which the Board under its Act provides all the funds required for construction and maintenance) and main roads. The Board has on hand a large number of applications from municipalities throughout the State for the declaration of additional roads under the Country Roads Act. Many of the applications on hand are worthy of declaration but the Board is not able to accept the additional financial commitment involved;

(e) only marginal increases being possible in providing financial assistance to municipal councils for works on main roads and unclassified roads. Municipal councils are facing similar financial problems and are looking to the Board for further assistance by the provision of increased grants year by year.

Applications for funds submitted annually by municipal councils to the Board for works on main and unclassified roads always greatly exceed the amount of funds available. In 1971/72 the Board received applications from municipal councils totalling almost \$90 million for works on main and unclassified roads. The Board was only able to allocate \$52 million for this work, including the amounts required to be contributed by the councils;

(f) the deferment of additional office space urgently needed to house staff at the Head Office site. Accommodation for administrative and engineering staff at Head Office is so inadequate that some divisions and sections are now located in

THE 1972 SNOW SEASON

Because of the growing popularity of ski-ing, the clearing of snow from access roads to mountain resorts in the Victorian Alps is an important part of the Board's activities in winter months.

To meet the demand for clear roads, snow clearing teams are stationed in the mountains throughout the winter. Operating from well equipped quarters these teams work long hours, often from early morning to late at night, to keep alpine roads open.

Light falls are cleared by graders with suitably designed blades, but heavier falls are most satisfactorily cleared by the use of Swiss-made Rolba snow blowers which throw the snow clear of the road surface.

Brief details of recent improvements to roads leading to the snow areas and proposals for clearing snow from these roads during winter are given below.

ALPINE ROAD

Mount Hotham

On the approach from Omeo a new high level bridge has been built over the Victoria River at the Foot of Cobungra Hill. The approaches to this crossing have also been widened and straightened.

A sharp bend has been eliminated near the "Meg" about 3 miles from Harrierville and the road widened to facilitate the passing of cars.

Two Rolba 1500 snow blowers, two graders and a radio equipped four wheel drive vehicle will be used for snow clearing at Mount Hotham.

BOGONG HIGH PLAINS ROAD

On behalf of the Falls Creek Tourist Area Committee of Management the Board has constructed a further sealed parking area approximately 1300 feet long by up to 54 feet wide above the main car park at Falls Creek.

The snow clearing gang on this road will be working from a new plant shelter and operator's quarters at Howmans Gap.

They will be clearing snow on the Mount Beauty approach with two power graders. Snow is not cleared between Falls Creek and the Omeo Highway.

MOUNT BUFFALO ROAD

On the Mount Buffalo plateau the section of road between Dingo Dell and the Cathedral (1.7 miles) has been sealed. It is expected that the section from Cathedral to Cresta will be reconstructed during the coming summer.

leased premises in five buildings throughout Kew and Hawthorn. Preliminary planning is proceeding for a new building at Kew, but the Board's current finances do not permit a construction date to be set;

In view of the severe shortage of funds the Board is preparing a detailed case for additional funds to be submitted to the Government for consideration.

Snow clearing will be carried out using a Rolba 400 snow blower plus a power grader. Access will be maintained on both forks of the road as far as the Chalet and Cresta.

MOUNT BULLER ROAD

A further 2 miles of the Mount Buller Road has been sealed. The road is now sealed to the day car park at Tip Corner.

A Rolba 400 snow plough and a power grader will maintain vehicular access as far as the day car park about half a mile from the village.

MOUNT BAW BAW

From Melbourne road access is via Noojee and Tanjil Bren. Beyond Tanjil Bren, the steep and previously narrow section between the Gallows and Newlynnes Mill has been widened. This work has been carried out by the Board in conjunction with the Ministry of Tourism over the last two years.

Car parking facilities are available at Newlynnes Mill and a privately owned four wheel drive vehicle and chair lift operates during the winter months to take visitors to the Mt. Baw Baw village. Snow is not cleared from this road.

OMEO HIGHWAY

Mount Wills

The 10 mile section of the highway in the Mount Wills area is subject to snow and will be kept clear by a power grader operating from snow patrol quarters at Mount Wills.

A new culvert and approaches are being constructed at Cemetery Creek near Glen Valley — motorists should take care at this location.

MOUNT DONNA BUANG ROAD

The Mt. Donna Buang Tourist's Road is sealed for its full length from Cement Creek to the summit.

From the Warburton side, a power grader will clear snow to the summit. Snow will not be cleared between Pantons Gap on the Healesville side and the

summit turn-off. This section of road is closed following the first substantial fall of snow until the Spring.

MARYSVILLE - WOODS POINT ROAD

Lake Mountain

Sealing of the section between Nicholl's Lookout and Tommy's Bend has completed the provision of a 20 ft. wide sealed pavement over the full length of the road from Marysville to the Lake Mountain turn-off. Minor widening has also been carried out between the Buxton turn-off and the "Kerami" guest house.

The 1½ mile section of the Lake Mountain Road in the Lake Mountain Alpine Reserve between the Berry Higgs Playground and Ski-Run 21 has been reconstructed and widened. It is unsealed but will be kept free of snow through to Ski-Run 21 by the use of a power grader to ensure access to skiable snow at Ski Runs 11 and 21.

Extreme care was taken during this reconstruction to ensure that minimal damage occurred to roadside vegetation and hence the effect of the roadworks on the rugged beauty of the alpine landscape has been negligible. On completion of the work the Forests Commission sent the following letter to the Board:

"Dear Sir,

The Committee of Management for the Lake Mountain Alpine Reserve in the Marysville Forest District has requested that the Board be advised of its complete satisfaction with the manner in which roadworks were carried out on the section of new road from Berry Higgs Playground to Skin Run 21.

The Committee has particularly asked that gratification be expressed for the care which was taken to ensure that minimal damage occurred to roadside vegetation during the course of construction."

Yours faithfully,
(SGD.) D. J. LENNE,
SECRETARY.



The Premier, Sir Henry Bolte, officially opening the Western Freeway (Bacchus Marsh Section).



The Minister for Local Government, the Hon. A. J. Hunt, M.L.C., addressing the gathering at the official opening of the Calder Freeway at Niddrie.

PROGRESS ON MAJOR WORKS

As at the 30th June, 1972, the Board was engaged on a number of multi-million dollar projects. The progress on some of these projects is set out below. At present day costs the total estimated cost of the projects listed is in the order of \$80 million.

FRANKSTON FREEWAY

The Frankston Freeway will extend from Armstrong's Road, Seaford, to the Frankston-Cranbourne Road at Frankston, a distance of approximately 4 miles. 2.5 miles of the freeway between the Frankston-Cranbourne Road and Klauer Street has been completed and earthworks are in progress on the 1.5 mile section between Klauer Street and Armstrongs Road, Seaford. The dual carriageway should be opened to traffic by Christmas, 1972.

HUME FREEWAY

Wallan-Broadford Section

This section of the Hume Freeway is a 22 mile deviation from the Hume Highway between Wallan and Broadford.

Earthworks are well advanced on the 7 mile section south of Wandong.

MULGRAVE FREEWAY

The Mulgrave Freeway will provide dual carriageways from Waverley Road, Chadstone to the Princes Highway East at Hallam, a distance of 13.5 miles.

From Springvale Road to Stud Road earthworks have largely been completed, pavement materials are being placed and bridges are under construction.

From Stud Road to the Princes Highway East all bridges have been completed and other work is well advanced. It is expected that this section will be opened to traffic in November, 1972.

MORNINGTON PENINSULA FREEWAY

Dromana Section

When completed, the Mornington Peninsula Freeway will extend from the Dingley Freeway at Keysborough to Canterbury Jetty Road south of Sorrento — a distance of approximately 43 miles. The Dromana Section now under construction will provide 5 miles of four-lane freeway from the Nepean Highway at Dromana to Eastbourne Road near Rosebud.

At present, earthworks and drainage installation are being carried out between McCulloch Street, Dromana and Jetty Road, Rosebud.

It is expected that traffic will be able to use the section of the freeway between McCulloch Street and Lonsdale Street by Christmas, 1972.

PRINCES HIGHWAY WEST

West Footscray Overpass

The northern half of the new overpass will be opened to traffic early in July, 1972, and the remainder of the old bridge will be demolished. Completion of the southern half of the new structure is planned for October, 1973.

WESTERN FREEWAY

Pentland Hills Section

Work is well advanced on the construction of this 4 mile section of freeway between Korkuperrimul Creek and Myrning. The first section, between Korkuperrimul Creek and the Lion Park interchange, should be open to traffic later this year.

THREE FREEWAYS OPENED

In April, May and June this year three sections of freeway were opened to traffic, providing motorists in Victoria with a further 13 miles of freeway.

WESTERN FREEWAY

Bacchus Marsh Section

The Premier of Victoria, The Honourable Sir Henry Bolte, G.C.M.G., M.P., officially opened the Western Freeway (Bacchus Marsh Section) at a ceremony at Bacchus Marsh on Friday, 30th June, 1972.

By-passing the township of Bacchus Marsh to the north, this 5.9 mile length of freeway is carrying approximately 5,000 vehicles per day — with the increased safety and economy provided by freeways. Each freeway carriageway has two 12 feet wide traffic lanes. Five bridges have been built to serve local traffic movements across the freeway.

To enhance the appearance of the freeway, work has commenced in the planting of approximately 1,600 trees along the outer edges of the freeway and 8,000 shrubs along the median. The trees have been selected to match and complement existing stands of timber.

The total cost of the project was approximately \$4.3 million, which was charged to the Roads (Special Projects) Fund.

CALDER FREEWAY

Keilor Section

The opening of the 1.2 mile section of the Calder Freeway at Niddrie represents the first stage in the development of the Calder Freeway (Keilor Section). The freeway will eventually be extended westerly by-passing Keilor Township to the north.

At a ceremony on Friday, 21st April, 1972, the Hon. A. J. Hunt, Minister for Local Government, officially opened the new freeway. The cost of the freeway was \$3,007,000.

WESTERN FREEWAY

Gordon Section

By-passing the township of Gordon to the north, the 5.75 mile Western Freeway (Gordon Section) was opened to traffic by the Board's Chairman, Mr. R. E. V. Donaldson, on Friday, 5th May, 1972.

This section of freeway leaves the Western Highway about 4 miles east of Gordon, and rejoins the highway about 2 miles north-west of Gordon. The freeway route is approximately 1 mile shorter than the old route through Gordon.

The cost of the project was \$2.2 million.



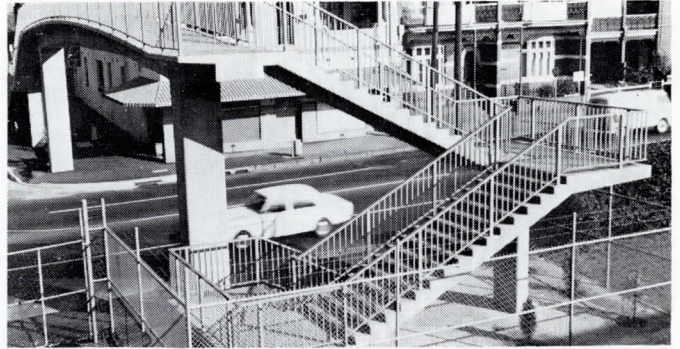
The Board's Chairman, Mr. R. E. V. Donaldson, officially opening the Western Freeway (Gordon Section) in the company of Mr. J. D. Thorpe, Deputy Chairman (left), Mr. W. F. Stephen, M.P., and Mr. T. H. Russell, Board Member (right).

PEDESTRIAN OVERPASSES

Under the State Government's scheme for the replacement of at-grade school crossings, two pedestrian overpasses built by the Board were completed in May, 1972.

The two overpasses are in

Johnston Street, Collingwood and in Canterbury Road, Box Hill South. The cost of these structures is shared equally by the Country Roads Board, the State Government and the municipal council concerned.



Pedestrian overpass of Johnston Street at Clarke Street, Collingwood.



Pedestrian overpass, Canterbury Road, Box Hill South.

VICE-REGAL INSPECTION from p.1

ment at the Princes Highway East/Omeo Highway intersection. In meeting the men on these jobs Sir Rohan and Lady Delacombe showed keen interest in the Board's activities.

The following morning the Vice-Regal visitors travelled north on the Bairnsdale-Dargo Road, stopping for morning tea with the Divisional Engineer, Bairnsdale, Mr. W. Dolamore, and the construction gang work-

ing on the realignment being carried out at Peter Long's Corner.

After inspecting the work in progress the party continued north towards Bright and had lunch at the Mount Smythe plant operators' quarters with the Divisional Engineer, Benalla, Mr. R. Patterson and the snow clearing gang.

The visitors then travelled to Harrietville, Bright, Mount Beauty and Bogong — where

the party stayed for the night at the State Electricity Commission's Lodge.

As 6 to 12 inches of snow had fallen on Tuesday night Sir Rohan and Lady Delacombe were able to see the Board's snow clearing graders in operation between the Bogong Village and the Omeo Highway.

Passing through Langford's Gap and then turning south into the Omeo Highway, His Excellency stopped to meet two patrol gangs working between Blue Duck and Omeo. A diversion

was made from the Omeo Highway to enable the party to visit Mount Blowhard. After meeting another patrol gang at Tambo Crossing the Vice-Regal party arrived back in Bairnsdale in the afternoon.

During the inspection, Sir Rohan and Lady Delacombe showed great interest in the work being carried out by the Board in improving roads in this area and missed no opportunity to meet the men working on the job.

THE 1972 SNOW SEASON continued from p.2

WARBURTON - WOODS POINT ROAD

Matlock Area

The resheeting of an 8 mile section of the Warburton-Woods Point Road terminating at Monty's Hut was completed earlier this year.

A power grader will remove snow during the winter.

CAUTION

By adopting a few common-sense practices motorists travel-

ling in snow areas can avoid possible delays, inconvenience and the chance of vehicular damage. These practices are:—

- always carry chains,
- park only in designated car parking areas,
- obey any directions given by a ranger, parking attendant or police,
- avoid the plume of snow ejected by a snow blower,
- do not leave litter such as cans, bottles, etc., on the road as solid objects can damage snow blowers.



His Excellency meets members of a CRB construction gang at Peter Longs Corner, Bairnsdale-Dargo Road.

IMPROVING MELBOURNE'S ROAD SYSTEM

THE MOTOR VEHICLE IN THE COMMUNITY

The motor vehicle is the only form of mass transport which can provide a door to door service as and when required.

This flexibility is readily appreciated by every section of the community, is largely the reason for the ever increasing use of the motor vehicle in moving goods and people daily, and has made it possible to build up a prosperous society and city where people have almost complete freedom to work and live where they please.

Two or more people can generally travel by car more cheaply than by public transport, but the value of the private motor car to a typical family cannot be measured only in monetary terms. The family's use of the car is as varied as its activities and interests. On a normal working day most private cars are used for part of the journeys to work and school, for shopping, or meeting appointments. During leisure time the car is again used as transport for recreation, social, or entertainment purposes.

Constant demands such as these are partly the reason why ownership of a car is often considered to be of higher priority than home ownership, and when finances will permit, the ownership of more than one car is regarded as important to many families.

Industry and commerce rely on road transport to move products between points in city areas, between the city and the country, and to pick up and deliver materials at railway yards, shipping terminals, and airports.

With continued population growth and prosperity, and attendant growth of housing, the number of motor vehicles in the Melbourne metropolitan area is expected to reach 440 per 1,000 persons in 1985 compared with 350 vehicles per 1,000 in 1970. The population in 1985 is expected to reach 3½ millions compared with 2½ millions in 1970 resulting in an increase from 0.8 million to 1.5 million motor vehicles by 1985.

The Melbourne Metropolitan Transportation Plan published by the Metropolitan Transportation Committee in 1969 put forward a number of recommendations for balanced improvements to Melbourne's transport system. The plan calls for improved rail and street public transport systems, an improved highway network, and additional parking areas — all based on forecast patterns of growth.

The estimates accompanying the Metropolitan Transportation Committee's plan suggested that some \$400 million would be required to upgrade public transport and \$2,200 million to upgrade roads, including the provision of right-of-way for trams and road/rail grade separations. These figures reflect the inadequacy of the road system, and the overwhelming proportion of the urban transportation task which falls on the road network.

In October 1971 the Government asked the Metropolitan Transportation Committee to investigate substantial modification of the proposed freeway network with a view to minimising its sociological impact and overall cost, and measures to upgrade and attract custom to the public transport system rather than road traffic.

The future importance of road transport in Melbourne is further indicated by some of the predictions made by the committee. In 1985 the number of person trips each day will be

three times the present number, and the average distance of each trip will rise by about 50 per cent. The mileage travelled by private cars alone is anticipated to reach 37 million vehicle miles per day.

THE TRANSPORTATION PROBLEM

Melbourne is a city with no serious terrain problems to interrupt its surface communications network. There are no large inland waters or mountain ranges to be traversed.

The development of the road and street system has followed the pattern of land use. Today we have many miles of arterial roads which are not nearly wide enough to carry the volume of traffic which seek to use them.

A single storey dwelling on its own area of land suits the mode of living chosen by the majority, and therefore Melbourne's suburban area has spread out greatly as population has increased.

Few people in outer suburban areas would hesitate to travel 15 or 20 miles to visit friends

or enjoy an evening at the theatre. A considerable portion of any such journey is now made on roads which are no wider than when designed for low volume horse traffic last century.

Road travellers using the inner suburban roads in the morning and evening peak hours are already experiencing the type of delays which are predicted for ever increasing areas of Melbourne's suburbs in the years ahead. In traffic engineering terms the increase in delays becomes extremely large as the capacity of the road is approached.

Delays to a motorist using a road which is running at say 60% capacity can be annoying.

In the future, as road capacity is approached, delays will be vastly greater, and in fact intolerable. Many of the advantages of the motor vehicle in moving goods and people when and where desired will have been lost, but current experience both in Australia and overseas indicates that most people will still find road travel the most attractive choice.

• Continued p.2



Sydney Road, Brunswick — traffic congestion because of inadequate road width, frequent intersections and adjacent commercial development.

From p.1

If nothing is done to provide extra road capacity for the anticipated traffic growth, morning and evening peaks will extend and result in congestion throughout the working day. Full demand on the road system will obtain for most working hours. At present, special provision is made for peak flows by banning parking, banning turns at intersections, providing special cycles at intersections, operating roads off centre, and police control of many critical points. These provisions cannot be enforced all day if the commercial transport needs of the city are to be met.

SOLVING THE PROBLEMS

(a) Improving the Existing Street System

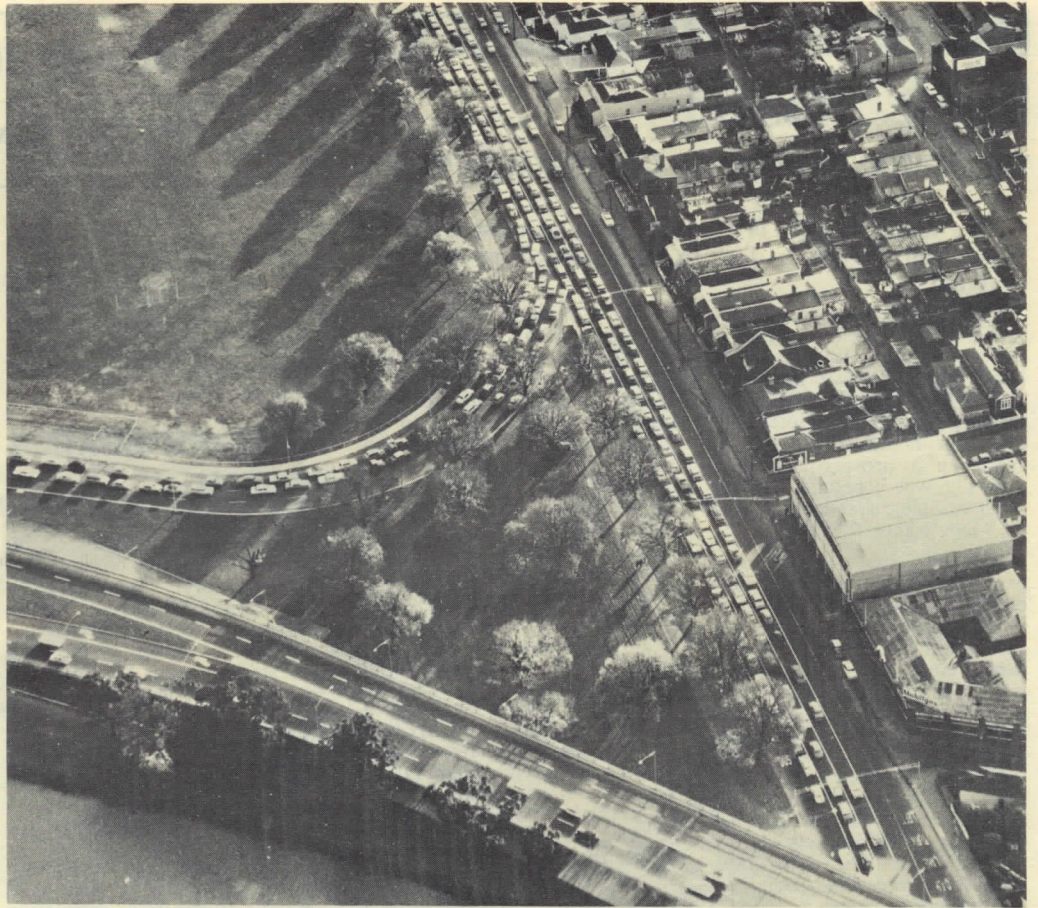
A major disadvantage of Melbourne's present street system is its limited capacity because of frequent intersections and inadequate widths of streets. The majority of intersections are at right angles, and when these comprise major arterial roads there is a conflict between traffic streams passing through the intersection. The flow of traffic between intersections is further limited on the many narrow sections of arterial routes. Well known examples of these conditions are found along Sydney Road, Victoria Street, and Bridge Road, where in each case a wide road reserve suddenly narrows to a width completely inadequate to cope with large volumes of traffic.

These problems are further compounded by the multipurpose use of streets to provide direct access to residences and businesses fronting them and to provide through passage for vehicles destined for other areas.

It is not surprising to find that high accident rates are recorded on routes which suffer from such gross inadequacies. The accidents involve many casualties despite the low vehicle speeds and they are costly to the community.

Some degree of relief can be given by imposing restrictions. The operation of clearways, banning of certain turning movements at intersections, the implementation of off centre operations, and the regulation of cross traffic flows by traffic lights and signs assist the main flow of traffic; but the cost in terms of freedom of movement is often considerable to local residents or business interests.

Some work has been done in recent years to increase the capacity of intersections. Generally this has involved the acquisition of corner properties to enable more traffic lanes to be constructed through the intersection. Many of the most crucial intersections, such as Cam-



Morning peak hour traffic in Punt Road.



Dual carriageways each of three lanes have been provided for through traffic on the Princes Highway at Oakleigh.

• Continued p.3



Reconstruction of the intersection at Kew Junction has commenced. In order to provide additional traffic lanes it has been necessary to acquire expensive commercial property, including properties on the left side of this photograph.

berwell and Kew Junctions, are surrounded by commercial development, the acquisition of which is extremely costly and disruptive.

One form of improvement to existing roads is the development of dual carriageways which are separated by median strips. As each carriageway is used by traffic travelling in one direction, the risk of head on collisions is greatly reduced. The hazard to pedestrians is reduced as they cross one direction of traffic flow at a time, using the median as a pedestrian refuge. Ideally the median should be wide enough to permit the planting of shrubs which will form a screen against headlight glare at night. If a median of this width can be provided, then it will also give a greater safety margin for remedying a situation involving a vehicle crossing the median.

Dual carriageways with wide

medians bring other advantages. Cross movements of traffic from side streets can be regulated by the median, with openings in the median being provided only at predetermined intervals. Vehicles slowing for a right turn movement can be stored clear of the through lanes in specially constructed "sheltered" turning lanes. More efficient intersection layouts can be developed at complex intersections.

The cost of obtaining sufficient road width to provide for dual carriageways in developed areas of Melbourne is virtually prohibitive. Properties with frontages to arterial roads tend to be the most highly developed as industrial or commercial sites, and consequently are the most valuable.

Improvements to Melbourne's existing road and street system by the application of traffic engineering techniques will continue to be carried out, but in

general these can provide only marginal additional traffic capacity.

(b) Providing New Routes

Only the development of entirely new arterial road routes can provide the capacity which will be required to meet the demands of traffic in the next few years. By starting afresh, the limitations due to adjacent development and frequent intersections can be avoided.

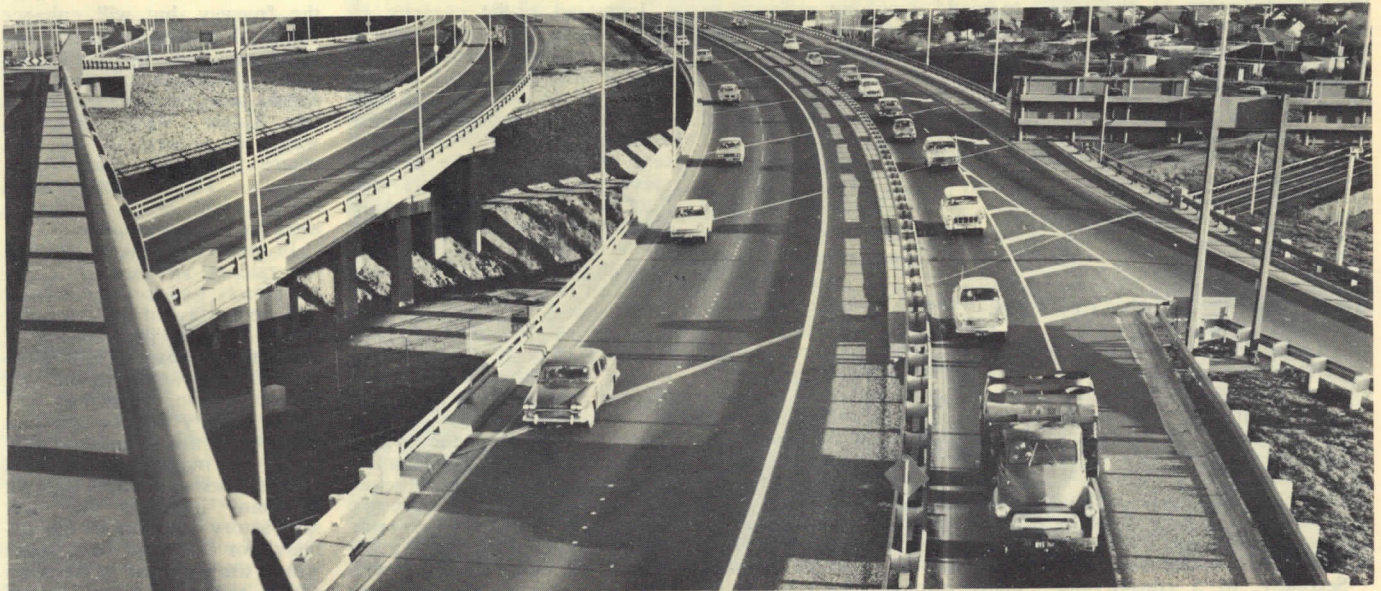
The Metropolitan Transportation Committee's highway improvement plan provides both for upgrading major roads and constructing freeways. Some of these such as the Tullamarine Freeway, and the South Eastern Freeway have been built, are much used, and have conferred immense benefits by way of cheaper, safer, and more rapid transportation while taking a considerable amount of heavy

traffic out of residential and shopping streets. These benefits have been conferred even though these freeways are not yet fully effective at their terminals, as they form only a small part of a complete system.

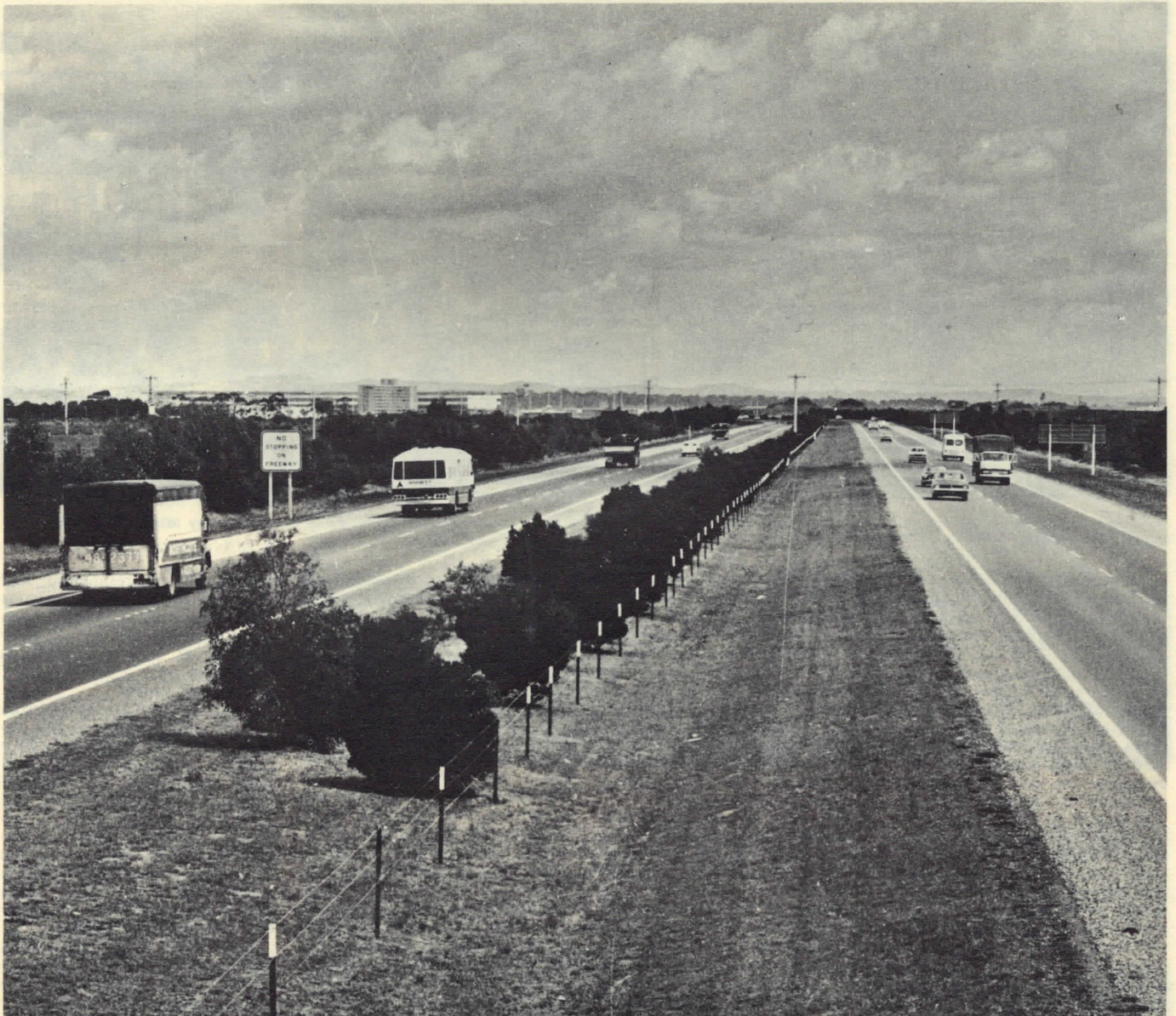
Two most important factors can be incorporated in the development of new freeway routes — access control and grade separation. In practical terms this means that entry and exit from the roadway is restricted to points which are designed to allow streams of traffic to merge or part with a much greater degree of safety. Cross streets are taken over or under the new route by bridges.

The traffic capacity of such freeways is dramatically greater because their intended purpose is the movement of people and goods in vehicles. As there is no access function provided to adjacent properties and no cross movements of traffic at the same

• Continued p.4



The Tullamarine Freeway at the Bell Street interchange. Streams of traffic are separated by dual carriageways and grade separation.



The Tullamarine Freeway provides a safe direct route between the city and Melbourne's international airport.

From p.3

level, impediment to the free flow of traffic is reduced to a minimum. The combined effect of these features reduces the accident rate to a level of one-third or less when compared with existing arterial roads.

In general, freeways are a more economical means of providing for increased road traffic than widening arterial roads. Firstly, this is because per lane they have three times the capacity of an ordinary arterial road. Arterial roads other than freeways can satisfactorily carry about 650 vehicles per lane per hour through intersections. This compares with a satisfactory freeway capacity of 2,000 vehicles per lane per hour anywhere on the freeway system. At complex junctions like Camberwell Junction where three roads cross, peak hour flows are only in the order of 350 to 400 vehicles per lane per hour.

Secondly, to a considerable extent freeways can be located

to avoid acquiring property in heavily developed areas along existing arterial roads. Acquisitions along existing arterial roads are expensive and can completely disrupt an existing commercial centre.

Thirdly, new freeways mean totally added capacity in that the capacity of existing roads is still retained when the freeway is built, while a widened arterial road must still also carry the traffic using it before widening.

Freeways take through traffic out of streets now serving abutting residential, shopping, commercial and industrial developments. The freeway concept is to provide a modern road designed solely to carry motor traffic. As would be expected, freeways carry not only more traffic faster than surface streets, but more safely. Freeways are an example of specialist provision for a specialist task.

Increased traffic capacity in turn results in lower vehicle operating costs. Smooth traffic flow greatly reduces the adverse effects of stop-start conditions on fuel consumption, exhaust emission, and vehicle wear and tear (raising vehicle travel speeds from $7\frac{1}{2}$ to 15 miles per hour reduces carbon monoxide emission by 80%). The operations on commercial traffic are economically tied to the time spent on the road between factories, stores, customers' premises, etc. New routes of high standard offer a means of reducing travelling time and attendant transport costs.

The development of a new freeway route gives the opportunity to plan and implement a programme of visual improvement to the landscape through such measures as tree and shrub planting, and the grassing of slopes. In many cases this will not only provide pleasant surroundings for motorists using

the freeway, but will enhance the total landscape of the surrounding areas. In recent years many thousands of trees and shrubs have been planted along the Lower Yarra Freeway, which is located in an area where few trees existed previously. These plants, when mature, will be a permanent asset to the community.

In many ways the wealth and the rate of advance of a city are closely tied to the efficiency and versatility of its transport system. Unless the capacity of Melbourne's road system is increased very rapidly in the next decade or so, economic and social activity will be impeded because of the increasing difficulty of moving goods and people when and where desired. In many instances the most satisfactory solution to the demand for increased road space will be the provision of freeways which are part of a planned road network.