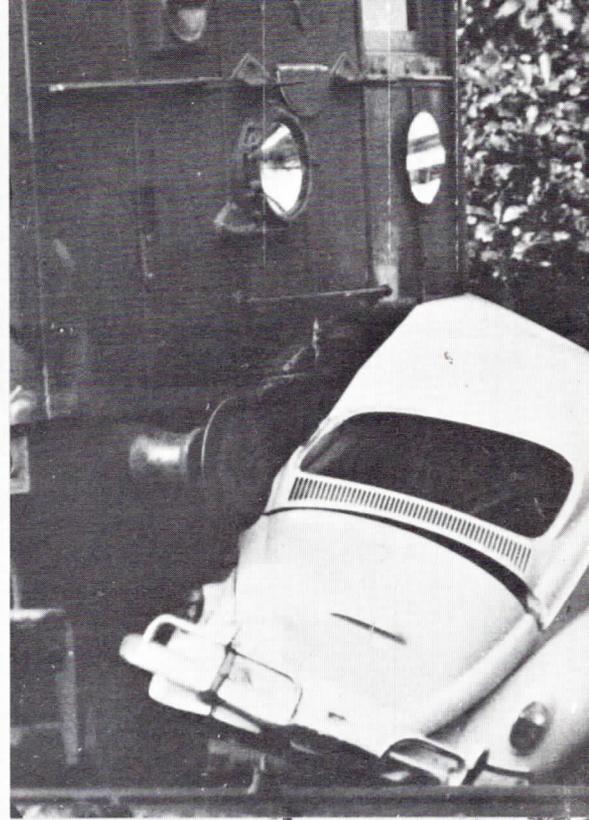




news



Special Feature, p8:

**Elimination of Railway
Level Crossings**



T.S. 1045

THE CRB

The CRB is the State Road Authority of Victoria. There are about 160,000 kilometres of public roads in Victoria, of which 23,700 km comprise the CRB's network of the State's principal roads. The lengths of roads declared or proclaimed under the Country Roads Act are State Highways

7056 km, freeways 206 km, main roads 14,605 km, tourists' roads 801 km, forest roads 1039 km. The CRB's aim is to create an efficient road system within the context of the overall transportation needs of the community.

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Motoring Bulletin

CRB'S NEW SERVICE FOR THE MOTORIST

In March the CRB launched a new service for Victorian motorists in the form of a regular Motoring Bulletin.

The bulletins, which are sent to the media, police, fire brigade, and other service organisations using the roads, contain information on matters that could affect the traffic flow on particular roads or sections of roads.

Snow and flood reports, routine maintenance, reconstruction works, and minor new works are covered.

Examples of motoring bulletins issued by the CRB during the initial month of the service were the installation of new traffic signals at the intersection of Burke Road and the Boulevard at Balwyn North, resurfacing of the Princes Highway at Officer, a new bridge on the Great Ocean Road near Port Campbell, and the closure of the Nell Street level crossing at Greensborough.

The aim of the Motoring Bulletin is to advise motorists that work is being carried out at a particular location on a CRB road to allow the driver the opportunity of seeking a temporary alternative route.

The more effectively the Motoring Bulletin's message is conveyed to the public, the more efficiently the CRB crews can do their work, and delays are reduced for everyone concerned.

A typical example of the type of material covered in the bulletins during the first month was the final resurfacing of Kew Junction, which completed major improvement work there.

The junction carried in excess of 40,000 vehicles between 7 am and 7 pm on an average week day. This number was reduced during the work, in part due to the media's support in informing the drivers of the work.

Organisations or individuals with a particular interest in receiving the Motoring Bulletins on a regular basis can arrange a free subscription by contacting the CRB's Public Relations Section on 860-2584.

FOR FURTHER information relating to articles in this publication, or other matters concerning the CRB, contact the Public Relations Section, tel. 860-2160 or 860-2584.

David E. Webb, Public Relations Officer.

Steve J. Parsons.

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Cabinet approves Ringwood roads plan

Recommendations proposed in the Eastern Corridor transport study to meet present and future transport requirements have been accepted by State Cabinet.

The recommendations approved by Cabinet provide for the retention of the existing planning scheme road reservation, basically following the Koonung and Mullum Mullum Creeks.

This road reservation, with some minor amendments, is required to meet the expected travel demand generated in the future.

The Ringwood Road Impact Study was commenced in September 1974 with the objective of investigating the effects of four alternative road proposals on the environment, the community structure and aesthetic enjoyment of the Ringwood-Donvale-Mitcham area.

The management committee for the study included representatives of the Ministry of Transport, Ministry of Planning, Ministry of Conservation, Melbourne and Metropolitan Board of Works.

Investigations included an extensive study of alternative transport modes and the specific problems of protection of the environment and residential streets from the adverse effects of traffic.

The study had to consider whether it was desirable to reduce travel demand by dampening urban development, to cater for the demand or to accept that congestion was inevitable.

During all stages of the investigations, interested people and community organizations were encouraged to put forward their ideas so that the solution recommended would best meet the needs of the community as a whole.

After considering all views, and analysing the consultant's report, the recommendations presented to Cabinet covered both short term and long term concepts to meet the transport needs of the corridor.

Short-term recommendations

- Extension of Eastern Freeway to Doncaster

Road as a four lane arterial road. This will reduce traffic on Thompsons and Manningsham Roads and lessen the infiltration of traffic through neighbouring residential areas.

- The co-ordination of traffic signals on the Maroondah Highway through the Ringwood area to improve traffic flow.
- The construction of a road along the Bushy Creek drain in the Planning Scheme Secondary Road Reservation to connect Springfield and Belmore Roads, Box Hill.
- Reservation of land for the future extension of Reynolds Road from Templestowe to the Maroondah Highway via Wonga and Plymouth Roads, Croydon North.
- The railway level crossing eliminations programme should continue along the Ringwood railway line to improve north-south traffic movements.

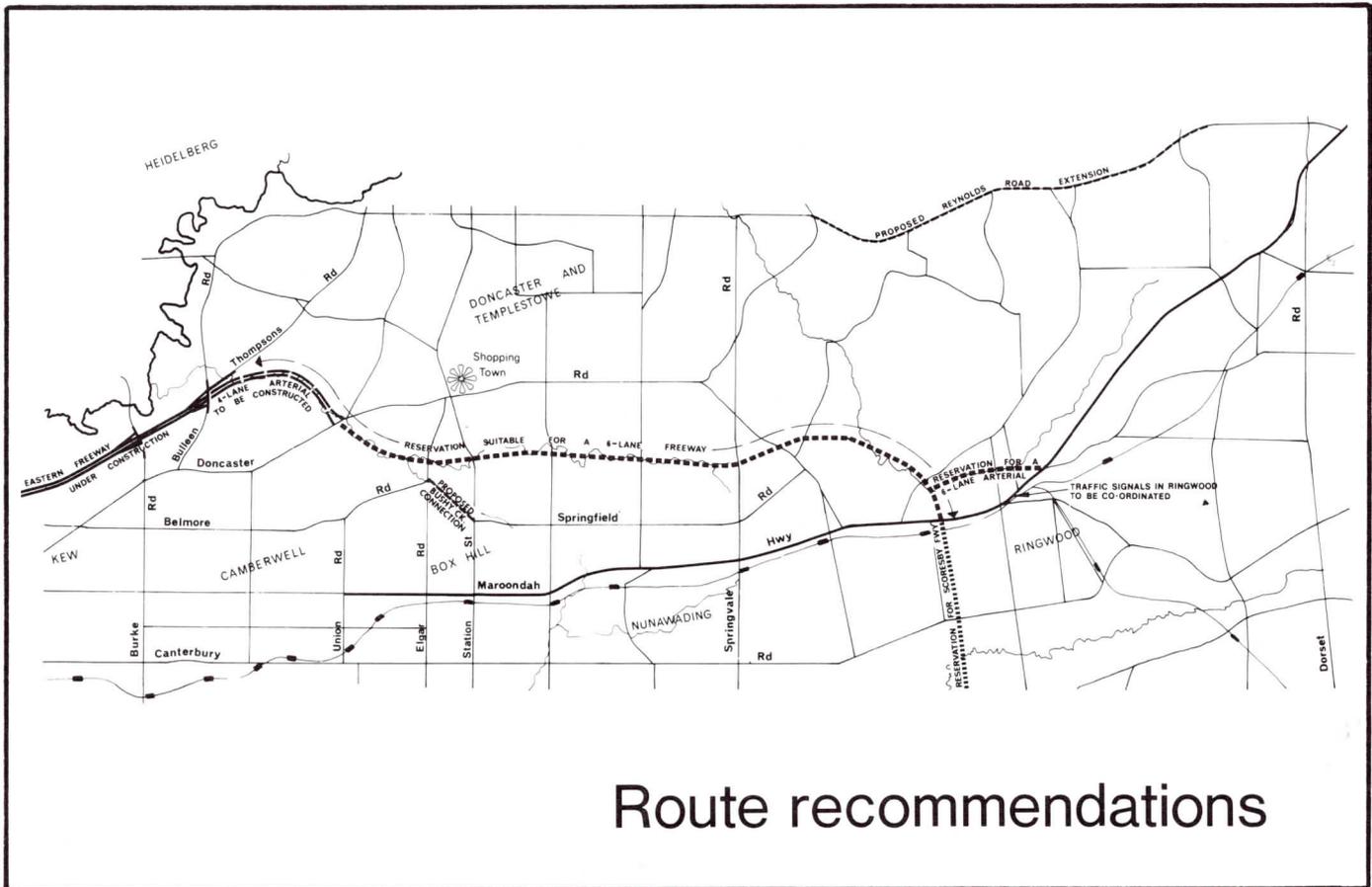
Arterial road discontinuities exist between Mont Albert Road and Barkers Road at Burke Road, and between Blackburn Road and Surrey Road at Blackburn. They are not major urban projects and while they are not specifically recommended, the study did recommend that their priorities should be reviewed.

The short term recommendations arising out of the study were formulated to meet the immediate requirements in the Eastern transport corridor until the long term solutions are needed and implemented.

Investigations have shown that a six lane freeway from the Eastern Freeway, at Doncaster Road, to the proposed Scoresby Freeway, at Maroondah Highway, Ringwood, plus a six lane arterial road by-pass of Ringwood is warranted.

Long-term recommendations

The route would best be located generally within the existing Planning Scheme Reservation, along the Koonung and Mullum Mullum



Route recommendations

TOP: The major recommendations from the Eastern Corridor Study. RIGHT: The eastern terminus of works in progress on the Eastern Freeway. The section from Colingwood to Bulleen is due for opening late 1977.

Creeks, or what is locally known as "Concept A".

Ideally this route would need to be constructed in three sections.

The section between the Eastern Freeway and Doncaster Road forms part of the short term recommendations and would act as a temporary terminal for the Eastern Freeway.

Secondly, an arterial road by-pass of Ringwood, along the Mullum Mullum Creek, will relieve traffic congestion on the Maroondah Highway through the Ringwood shopping centre.

Both these sections of the route are required to meet existing traffic demands. In the longer term the section between the Eastern Freeway and the Ringwood by-pass will need to be constructed as a six lane facility to meet predicted traffic volumes.

The development of the short term and long term recommendations will provide a well balanced road system and are in accordance with urban development under current Government policy for the Lilydale Corridor.



FOCUS ON THE SOUTH

The CRB has conducted a traffic study which will be instrumental in the development of a better road system in the South Melbourne area.

It will provide information to ensure that the character of communities is preserved, by making the best use of existing facilities and preventing unrestricted use of residential streets by through traffic.

As those who live and travel in South Melbourne and Port Melbourne well know, there exist significant traffic problems because of the large number of vehicles, both private and commercial, which travel to and through this part of Melbourne.

The opening of the West Gate and Johnson Street Bridges will cause an increase in the traffic passing through the area.

The CRB with the co-operation of South Melbourne, Port Melbourne and St. Kilda City Councils, has conducted the traffic survey, which is one of the largest ever undertaken in Australia.

The survey will determine the existing traffic patterns, and establish future traffic requirements, including those of traffic associated with the new bridges.

Origin and destination

The type of survey is called an Origin-Destination survey involving the participation of the motorist.

During the period of the survey motorists were handed postage-paid questionnaires at checkpoints located throughout the study area.

These checkpoints were clearly marked with signs and fluorescent traffic cones to guide traffic through the hand-out area with the minimum of delay.

Motorists were asked to answer the questions on the cards pro-

vided, and then to simply drop the postage-paid portion of the card in a letter box.

The study area comprised the entire 'cities' of Port Melbourne and South Melbourne and a portion of the City of St. Kilda. Survey points were set up at various times on all major access routes into the study areas. Some locations in the City of Melbourne were also used to help predict traffic that will use the new bridges across the Yarra-West Gate and Johnson Street Bridges — both due to be opened in the next few years.

During the survey period 300,000 postage-paid cards were handed out at the distribution points. The information from the returned cards will be analysed by computers to determine traffic flow through the study area.

In addition to the Origin-Destination survey, the CRB will also carry-out:

- (i) turning movement counts;
- (ii) vehicle classification counts;
- (iii) axle counts using automatic counters;
- (iv) interviews with truck drivers, and the management of major traffic generators.

All the information collected from the traffic study will be used to evaluate the best means for directing traffic on the existing road system.

Furthermore, the information will give an indication of the numbers of vehicles wishing to use the West Gate and Johnson Street Bridges over the Yarra River.

Both these bridges are scheduled to open in the next few years.

The F9 connection

The determination of traffic flow patterns is a vital part in the CRB's programme to improve

the road system in the area so that after the West Gate and Johnson Street bridges are open traffic will be able to flow through the area without unduly affecting the local community.

To meet the expected traffic volumes using the bridges the CRB has developed proposals for Freeway F9 connecting the West Gate and Johnson Street bridges to Kingsway and then by a ground level arterial road along Grant Street to St Kilda Road.

Proposals are generally for a six-lane elevated freeway that will pass over major arterial roads and the Port Melbourne and St Kilda railway lines.

Connections will be provided to the existing street system at Graham Street, Johnson Street, Kingsway (to the south, away from the city) and to the South Eastern Freeway (via City Road, the St Kilda Road underpass and Alexandra Avenue).

As the design of Freeway F9 progresses the traffic study figures will be used to assist environmental planning of land adjacent to the freeway, under council control.

The construction of Freeway F9, is considered to provide the best solution to cater for traffic wishing to travel across either the West Gate or Johnson Street bridges.

The completion of the project is, however, some years away. To best meet the traffic and community requirements until that time the CRB will improve selected existing arterial roads, and improve traffic management systems such as traffic signals and signing.

It was to assist in the design of Freeway F9, in addition to the short term improvements, that the CRB undertook the traffic survey during February/March.



The study progresses



- *The South Melbourne traffic study in progress.*

TOP : Opposite the Arts Centre in St. Kilda Rd., with the city skyline in the background.

CENTRE : The Queens Bridge city exit.

BELOW : Motorists including truck drivers receive their questionnaires as they come off Kings Bridge.

A new prototype line marking machine developed by the Country Roads Board for the METCON traffic system is expected to reduce present costs substantially.

The new line marking machine, undergoing extensive tests at the CRB Central Depot at Syndal and on locations in the metropolitan area, is expected to repaint 150 approaches to priority roads in an average eight-hour day.

This rate would be more than sufficient to repaint the markings on the CRB declared road

NEW LINE MARKER TO CUT COSTS

system in the metropolitan area at the required frequency of twice a year.

At present the repainting of an approach to a priority road costs \$15. The new line marking machine is expected to do the repainting for \$7.

The new line marking machine, incorporates many advanced

features which provide the manoeuvrability required for the METCON system. It is the first of its type to be developed in Australia.

The new painting system is a significant improvement on previous systems in terms of the environmental impact as the amount of paint escaping into the atmosphere is very little.

THE LEVEL CROSSING AND THE CRB

One hundred and forty two people were killed in car accidents at railway level crossings between 1970 and 1975.

A sad position but a situation that the State Government, through the Country Roads Board and the Victorian Railways Board, is rectifying.

Since 1954, 62 road overpasses, or underpasses, have been constructed to eliminate dangerous railway level crossings.

There are 3300 level crossings in Victoria. Most of these are in rural areas and are used infrequently by both motor vehicles and trains.

As the road and rail systems developed in Victoria, level crossings were placed at convenient points to meet the needs of relatively low density road and rail traffic.

Some level crossings have poor road alignments, particularly in

the lighter trafficked areas of the State. In recent years, increasing demands have been placed on the road and rail systems by the travelling public.

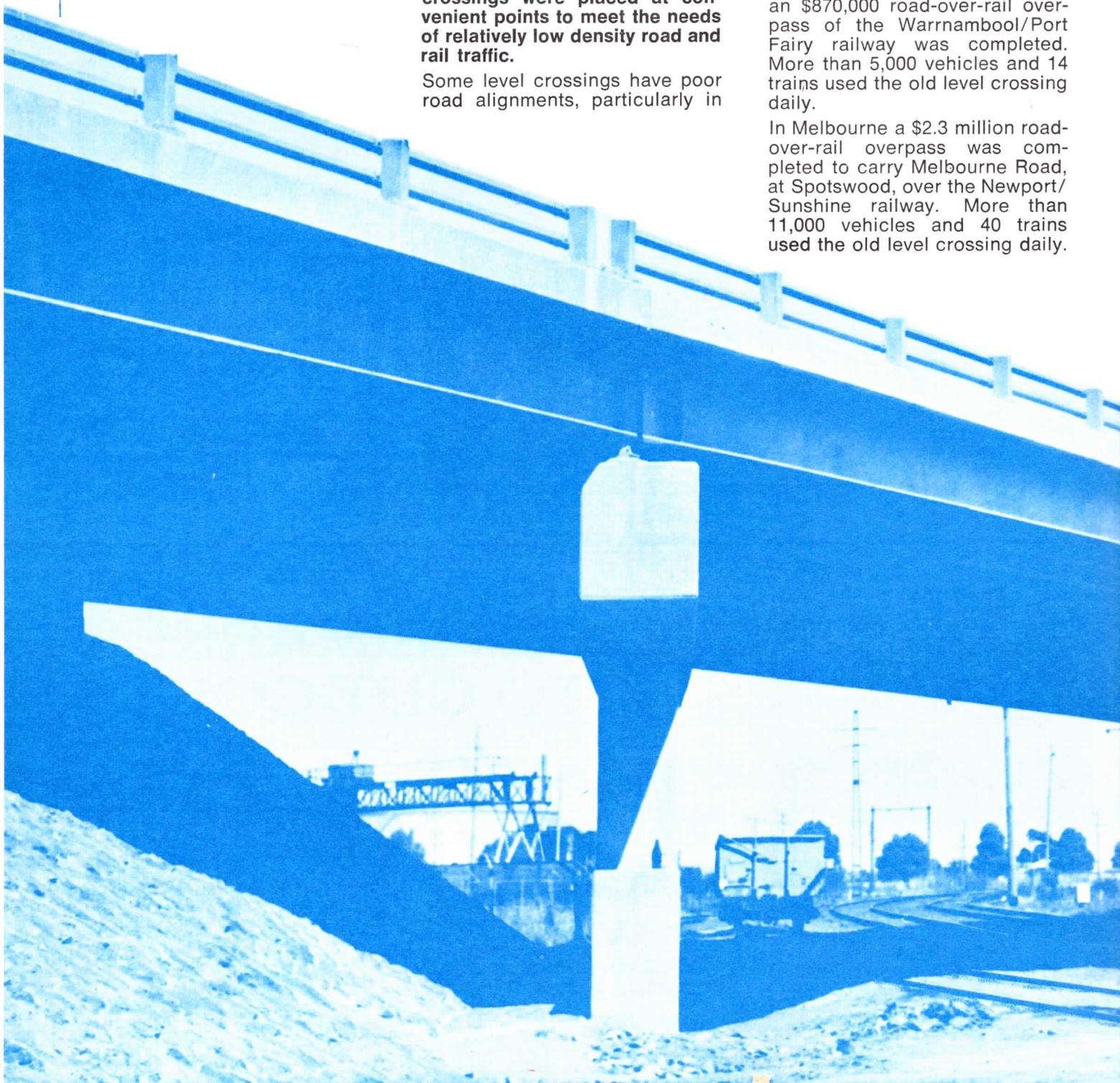
The building of overpasses, or underpasses eliminates the road/rail conflict at level crossings.

Overpasses recently completed

In December 1975, the CRB completed two projects as part of a programme to eliminate level crossings.

On the Princes Highway at Colac an \$870,000 road-over-rail overpass of the Warrnambool/Port Fairy railway was completed. More than 5,000 vehicles and 14 trains used the old level crossing daily.

In Melbourne a \$2.3 million road-over-rail overpass was completed to carry Melbourne Road, at Spotswood, over the Newport/Sunshine railway. More than 11,000 vehicles and 40 trains used the old level crossing daily.



Continuing projects

Preliminary works costing \$500,000 will be carried out in the 1975/76 financial year on the construction of a road-over-rail overpass at the Camp Road level crossing in Broadmeadows. The works include improvements to the Camp Road/Pascoe Vale Road intersection.

The elimination of the level crossing will alleviate considerable congestion resulting in long delays at the level crossing and intersection.

The Camp Road overpass is estimated to cost \$3.7 million and is expected to take three years to construct.

In Geelong, land acquisition is proceeding for the construction of an overpass to carry Latrobe Terrace over the Melbourne/Geelong railway line.

This year the CRB will spend \$300,000 on the project, which will cost a total of \$5.2 million.

New projects

New overpasses costing a total of \$4.5 million will eliminate three level crossings on the Hurstbridge railway line.

At Watsonia Road and Grimshaw Street, Watsonia, the railway line is being lowered and new overpasses will carry traffic over the railway line.

These new overpasses are also designed to meet the needs of the proposed Greensborough Freeway, running north from Watsonia.

As part of the Greensborough project the Nell Street level crossing has been closed to traffic but pedestrian access over the new railway cutting will be provided.

At Weerite, 185 kilometres to the west of Melbourne along the Princes Highway, the CRB is designing an overpass to replace the level crossing of the Warrnambool/Port Fairy railway line. This project is estimated to cost \$410,000.

Elimination of level crossings, in the metropolitan and regional centres, and on State highways, is being carried out by the CRB and Victorian Railways on behalf of the State Government.

Level Crossing Fund

The programme to eliminate railway level crossings was started in 1954 with the establishment of the Level Crossings Fund. From 1970 this fund contributed 45 per cent towards the cost of the elimination of level crossings. The remainder was met by the CRB (50 per cent and Victorian Railways 5 per cent).

On 1st July, 1974 moneys remaining in the Level Crossings Fund were transferred to the Transport Fund, and expenditure on the elimination of level crossings has since been charged wholly to the Transport Fund.

Since the inception of the Level Crossings Fund, and now the Transport Fund, more than \$36 million has been spent on the construction of overpasses or underpasses to eliminate railway level crossings.

In addition, the CRB has eliminated level crossings as part of new roadworks. When a highway is reconstructed or realigned it is in many cases an opportune time to eliminate a level crossing.

In 1975 the CRB constructed an overpass to carry Wells Road, Frankston, over the Melbourne/Frankston railway line, and to connect with the Klauer Street overpass on the Frankston Freeway. This overpass was con-

structed as part of the freeway project. The overpass crossing the railway line and the freeway cost \$1,500,000.

Although the programme to eliminate railway level crossings is designed to meet the needs of the motorist and train traveller, overpasses and underpasses constructed across railway lines provide footpaths so that pedestrians can cross the railway lines in safety.

To build overpasses at the more heavily trafficked level crossings is costly and takes time. The immediate problem is to make the motorist aware that care must be taken when driving across a railway level crossing. Because the human factor becomes so important in level crossing accidents, the Ministry of Transport has formed a committee to investigate level crossing accidents.

Accident Study

With representatives of the CRB, Victorian Railways Board and the Road Safety and Traffic Authority the committee is investigating level crossing warning devices to improve motorist identification and alertness.

Powerful locomotives are capable of transporting passengers and heavy freight at high speed between destinations. However, it is unrealistic to imagine that trains can reduce travelling speed at each level crossing.

The onus therefore falls upon the motorist to take great care when crossing railway lines.

The report from the committee recommending developments to make the motorist aware of level crossings and the potential dangers, is expected before June this year.

Between 1970 and 1974, 419 motor vehicle accidents occurred at level crossings in Victoria and as a consequence 114 persons were killed and 536 persons injured.

These figures compiled by the Australian Bureau of Statistics — Victorian Office, show that of the 419 accidents, 175 occurred at level crossings without a train being involved. The remaining 244 involved trains, and 146 of these occurred at unguarded level crossings.

The Country Roads Board has produced plans for another stage in converting the Western Highway to freeway standard between Ballarat and Deer Park.

The plans, for an 8.4 km section of freeway at Melton, detail the alignment of a new route south of the present highway and away from the Melton shopping centre.

The proposals will allow the rapidly growing preferred development area to develop free of through traffic.

They have been submitted to Melton Shire Council for comment.

The new route will relieve the local road system while still serving the township of Melton and will meet likely future traffic demands, even with the accelerated growth of Melton. The route is already included in the planning scheme.

The estimated construction cost of the project is \$15 million, at current prices but no timetable has yet been set for construction.

A NEW WAY TO THE WEST

CRB figures show a daily traffic flow of 6,040 vehicles west of Melton with 20 per cent commercial vehicle content and an annual growth rate of 4.5 per cent.

The plans forwarded to the Melton Shire Council provide for the construction of six bridges, including dual bridges over the Toolern Creek, an overpass at Station Road, and overpasses associated with interchanges at Ferris Road, Coburns Road and Bulmans Road.

The Council has been involved in the planning of this route since 1966 when the need for a freeway facility was recognized.

Only 18 houses are affected by the proposals, 11 of which are already owned by the CRB. Recent residential development in the area has been planned to allow for the freeway alignment.

Benefits for motorists include:

- Increased safety for both through and local traffic;
- Improved driver interest for through traffic because of the substantial planting of native vegetation and landscaping associated with the project;
- Decreased travel time and therefore reduced travel costs for through traffic;
- Increased freedom for local movements.

Past experience has shown that the removal of through traffic from shopping centres of a town the size of Melton has benefited the local community by providing greater safety for residents and increased usage of community facilities and shopping centres.

WITH THE PUBLIC'S HELP-A NEW ROUTE FOR THE F6 FREEWAY

Public involvement has proven an invaluable aid in assisting the Joint CRB-MMBW Working Group in recommending a new route for the Mornington Peninsula Freeway (F6) from Springvale Road, Keysborough, to South Road, Moorabbin.

Community involvement in locating the new route was essential, so that —

- The community was aware of the project and the steps in the decision making process.
- Community facilities could be located to the best advantage.
- Full assessment of various alternatives could be made.
- The community would not misinterpret the intentions of the study group.
- A final decision could be reached as quickly as possible.

These aims were achieved by close liaison with the general community and press and by releasing progress reports and periodical brochures.

Particular community groups were contacted to obtain information and opinions, and a Citizens Committee was elected at a public meeting to maintain liaison with the study group.

At all times during the study close contact was maintained with municipal councils in and adjacent to the study area.

Once the particular corridor could be established the study group was able to proceed with the study on the type of road required.

The new route recommended follows the existing Dingley Freeway reservation easterly from South Road, and then swings south and to the east of Moorabbin Airport, passing through the Braeside Sewerage Farm. The

route then runs generally parallel to Boundary and Wells Roads to Springvale Road.

The proposed F6 route forms part of the Mornington Peninsula Freeway being developed by the CRB to provide high standard road access to the bayside suburbs and the holiday resorts on the Mornington Peninsula.

The original existing reservation for the F6 running parallel to Warrigal Road was discarded by the study group because of the substantial effect it would have on residential properties.

Warrigal Road and the Nepean Highway are already carrying high volumes of traffic; in March 1975 the combined weekday volume exceeded 46,000 vehicles.

The projected future demands for travel necessitated the planning of a completely new facility.

SNOW DRIVING— IT'S AN ART

The snow skiing boom in Australia takes more and more people to Victoria's alpine resorts each year.

But unless special driving techniques are known and used, the growing number of enthusiasts could be lessening their chances of getting to the resorts and home again safely.

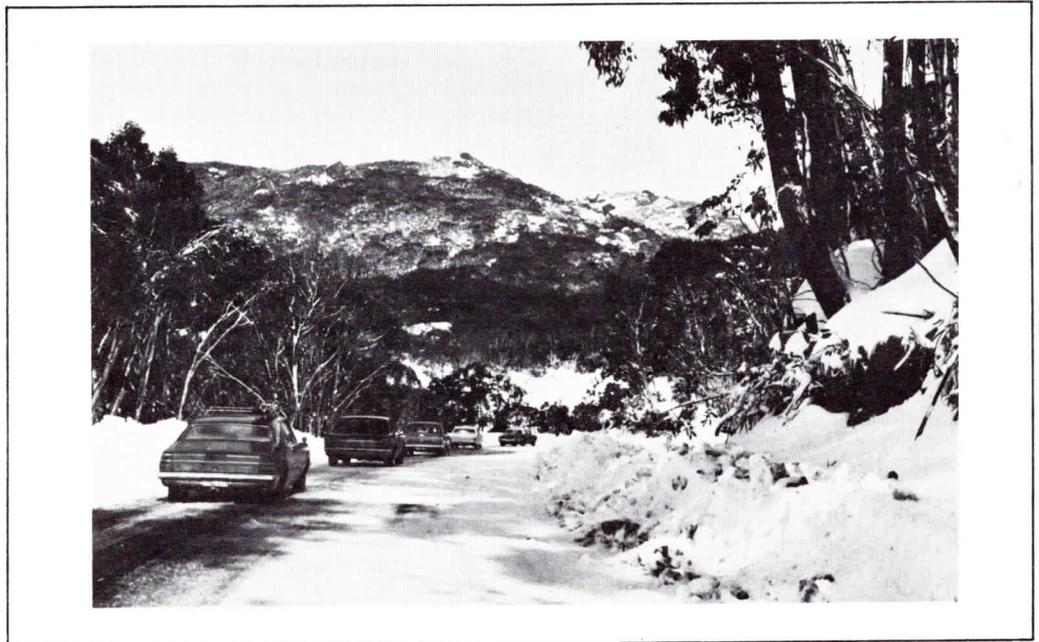
Skiing is a skill acquired, but just as important is acquiring the skill of driving in snow conditions.

The clearing of roads to the resorts of Mt Buller, Mt Buffalo, Falls Creek and Mt Hotham is the responsibility of the CRB's Benalla Divisional office.

After snow has been cleared from a road by the CRB's graders or snow-blowers, a very thin film of snow may remain which is often turned into slush by passing vehicles.

In these conditions the basic rules to be followed are:

- Drive gently with even pressure on the accelerator: it is essential to maintain traction at all times, and avoid spinning wheels.
- Avoid unnecessary gear changes: there is always a momentary loss of traction during a gear change which can lead to a skid.
- Brake with gentle care: front wheels tend to lock easily, with loss of steering and little reduction in speed.
- On reaching a snow covered section of road apply brakes at first gently and then a little harder until the point is reached where the wheels are just beginning to slip or skid: this gives an idea of how hard to apply the brakes on similar surfaces if braking becomes necessary.
- Keep well behind the vehicle in front: braking distances in slush, ice or snow can be many times greater than in the dry.
- Avoid braking when cornering: brakes will not stop the vehicle if a skid develops. In an emergency it is better to hit the bank or get stuck in a windrow of snow rather than go over the edge.



Ski enthusiasts on their way to Mt Buffalo, near Dingo Dell. Knowing how to drive in snow conditions is a skill as important as knowing how to ski.

- Do not drive unless visibility is such that the next snow pole or the edge of the road can be seen: snow falling against the white background makes it very difficult to judge distance, and road direction: if you cannot see, stop.
- **Watch out for icy surfaces: the overnight temperature drop usually freezes the slush hard, and it is almost impossible to maintain traction on ice, going up or down a mountain, particularly if chains are not fitted.**
- Obey road conditions signs: they are erected for your benefit. Do not proceed past "road closed" signs.
- Fit chains in time: "Fit Chains Here" signs are erected for guidance. Proceeding on to the point

where further progress without chains is impossible creates problems — not only is it difficult to fit chains on a slope, but other traffic is likely to be delayed and clearing operations slowed.

- Travel in daylight hours whenever possible: it is difficult to judge distances in snow, particularly when it is snowing, at night.
- Stay with your vehicle if you have to stop, or run into trouble: it is warmer and drier inside a car than out. (CRB patrols are periodically moving along the mountain roads to help.)
- Take plenty of warm clothes and rugs: do not rely on the car heater for extra warmth; it goes off when you have to stop.
- Park only where directed: if

you do not, you run the risk of another vehicle, or a CRB grader, running into what looks to the driver like just another drift of snow.

- When parking the vehicle it is undesirable to apply the handbrake: moisture can freeze the control cables or the brake linings to the drums. Vehicles should be left in gear with the front wheels turned towards the bank. (If wheel chocks are used they should be removed by the motorist, otherwise they can cause damage to snow clearing equipment.)
- **Put an anti-freeze compound in the radiator before reaching the snow line.**
- Keep well away from snow blowers: the spectacular fountain of snow blown out by these units may contain ice chunks and stones.

Snow Service

WEATHER permitting, the CRB maintains road access to the snow fields during the winter. A Snow Roads Report is issued to the media each Thursday during the skiing season and up-to-date information can be obtained by telephoning the CRB, Melbourne (860-2584) on Thursdays between 3.00 pm and 5.00 pm and for late bulletins, on Fridays during the same time period.



Bass Bridge a boon

The CRB opened a 2.2 kilometre by-pass of the township of Bass in the week preceding the Australia Day weekend, to ensure that the heavy holiday traffic flowed smoothly.

The total cost of the project was \$800,000, which included a three-span bridge across the Bass River.

Last year more than 14,000 vehicles travelled along the Bass Highway on Australia Day.

The new section of highway had not been sealed when opened, but the road was in good condition for traffic. Sealing has since been completed after the holiday traffic had declined.

The deviation greatly improves the alignment of this section of highway and replaces the old wooden bridge over the Bass River.

The Bass Highway is the main road access route to the holiday resorts at Phillip Island and the Cape Patterson/Inverloch area.

Geological and foundation testing indicated that the piles supporting the new bridge would need to be driven down 14 metres. In all, 38 piles were driven to the 14 metre design depth.

The CRB has also recently completed a new bridge over the Sherbrook River, on the Great Ocean Road 7 km. east of Port Campbell.

This bridge, including a 1 km. new road alignment, was constructed at a cost of \$184,000 and was opened for the March Labor Day weekend traffic.

MELBOURNE'S WEATHER:

Melbournian's can be thankful for having "variable" weather conditions.

The build-up of smog conditions in Melbourne seldom occurs because the changeable weather conditions clear the atmosphere regularly.

In recent years many parallels have been drawn between the smog problems associated with Los Angeles, California, and the potential threat in Melbourne.

Los Angeles is described as a freeway city where the vehicles using freeways severely pollute the atmosphere. But, although Los Angeles does have a smog problem it is incorrect to say that Melbourne will necessarily suffer to the same extent.

Unlike Los Angeles, Melbourne is not located in a valley or basin with climate conditions that vary little in the area.

Melbourne, on the southern tip of the continent, and built on largely flat terrain, experiences ever changing weather conditions.

This means that the build-up of smog is severely limited and conditions likely to aid a build-up would last for no more than two or three days at a time (This represented 10 days in 1975).

In February 1976, the Clean Air Society of Australia and New Zealand sponsored a Symposium, "Smog '76", at the Macquarie University. Experts from Australia, the United States of

America and Europe met to discuss the problem of photochemical smog in urban areas.

The CRB was the only road authority represented at the symposium.

Photochemical smog is produced when vehicle exhaust fumes (hydrocarbons and nitrogen oxides) and industrial exhaust fumes are exposed to sunlight in still air conditions. The resulting smog hangs over an area until weather conditions change.

Smog is not only a problem for city areas. The highest concentration of the basic requirements may occur in the city areas, but the smog may form or travel well away from this area.

In Los Angeles, smog has been followed up to 190 kilometres in one day. This would be equivalent to Echuca being covered in a brown haze due to Melbourne's pollution. In Europe this problem is magnified since smog travels across international boundaries.

The changing weather conditions of Melbourne move exhaust fumes away from the coastline.

But although Melbourne's weather conditions and location help to minimise smog problems,

A blessing in disguise?

this is not the complete answer. Controlling the amount of fumes emitted into the atmosphere means either reducing the amount of emissions from each source, or the number of sources.

Motor vehicles are recognised as a major contributing source of the photochemical smog. Allowing vehicles to travel constantly at their most efficient speed decreases the pollutant emissions from this source.

Today, vehicle manufacturers and industrialists are being asked to include anti-pollution devices on their vehicles and factories.

Although these devices sometimes mean decreased performance and increased costs, they are penalties the community is coming to accept for the long term benefit they provide.

Free-flowing freeway conditions have been shown to reduce pollution emission per vehicle, by eliminating stop-start motoring.

A freeway system for both heavy and light through traffic and for inter-urban travel, in addition to an effective arterial road system and improved public transport in the congested inner urban area, are some of the ways in which Melbourne can keep its air clean.

CLEARING THE FREEWAYS

CRB 24-hour service on the job

CRB emergency service vehicles are on 24-hour standby to help with vehicle breakdowns, or accidents on metropolitan freeways.

This service answers an average 500 calls per month, and ensures that immobilised vehicles are quickly removed so that traffic flow is unimpeded.

Each metropolitan freeway is serviced by a contract towing service. The CRB's Emergency

Service operator dispatches tow trucks or service vans to answer the motorist's call for assistance.

All emergency telephones on the metropolitan freeways are connected to a switchboard at the CRB's head office in Kew. This switchboard is manned 24 hours a day and also provides overall service on the after hours number for the CRB, 86-5251.

The emergency service staff at CRB head office have a two-way radio link with CRB road patrols on freeways so that repair services can be handled quickly and efficiently.

The object of the emergency service is to keep the freeways clear and to ensure that traffic flow is not impeded.

The emergency vehicles will tow vehicles off the freeway or if practicable make running repairs that will enable the motorist to move on.

This service is free to the motorist.

About 25 per cent of calls for assistance are from motorists who have run out of petrol. Petrol can be purchased from the emergency vehicle attending.

Motorists will find emergency telephones on Tullamarine Freeway (16 telephones), South Eastern Freeway (12), Lower Yarra Freeway (14), Kings Street Bridge (6) and Queens Way under St. Kilda Junction (3).

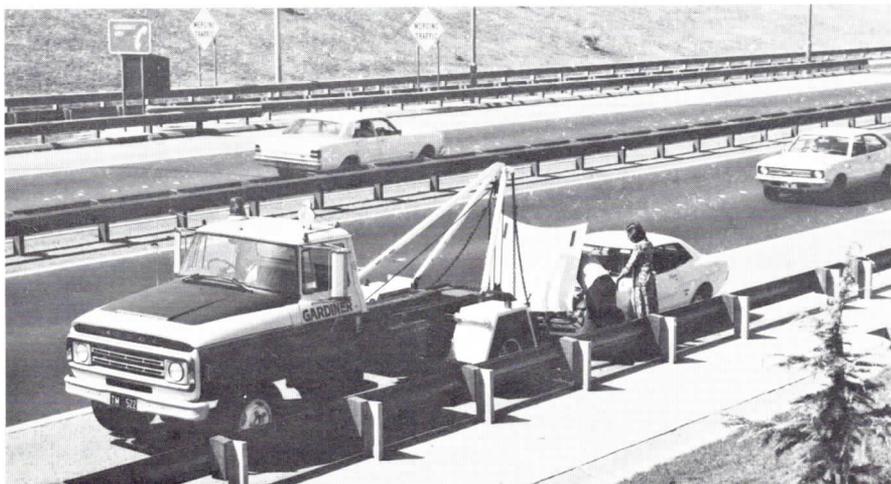
Additional telephones will be installed on new freeways, such as the Mulgrave Freeway and the Eastern Freeway.

Also, the pumping stations on the South Eastern Freeway and Queens Way have automatic alarms that are triggered if the pumps malfunction. This alarm registers at the Emergency Service switchboard and repair personnel are dispatched.

- *RIGHT : One of the CRB emergency service operators answers a motorist's call for assistance.*

- *BELOW : The dispatched emergency service vehicle, under contract to the CRB, helps a stranded motorist on the South Eastern Freeway.*

The CRB has only one authorised contract towing service for each freeway.



***TOWARDS Better Roads details progress on improvements by the CRB to the major road system in the State.**

The CRB is the authority responsible for the planning, design, construction and maintenance of State highways, freeways, main roads, tourists' roads and forest roads throughout Victoria, including the metropolitan area of Melbourne.

The major works currently under construction are summarised below.

Hume Freeway— Wallan to Broadford

Roadworks are nearing completion over the whole length of the Hume Freeway between Wallan and Broadford, a distance of 34 kilometres.

All bridges have been completed and sealing works are well advanced.

The project is scheduled for opening in May 1976.

Eastern Freeway— Collingwood to Bulleen

Bridgeworks are progressing on the Boulevard, Columba Avenue and Bulleen Road bridges, the Chandler Highway interchange and the twin bridges over the Yarra River and Merri Creek.

The placing of fill material for all freeway embankments is complete.

The project is scheduled for completion late in 1977.

Mulgrave Freeway

The CRB expects to open a further section of the Mulgrave Freeway between Springvale Road and Blackburn Road, Glen Waverley, in July, 1976.

This is part of the 3.4 kilometre section under construction between Springvale Road, Mul-

grave and Forster Road, Mount Waverley. Formation of earthworks along an adjoining one kilometre section to Scotchman's Creek are nearing completion. A bridge carrying Stanley Avenue across the freeway at East Oakleigh was opened to traffic in December, 1975.

Construction is proceeding on the bridges at Ferntree Gully Road, Blackburn Road and Forster Road.

The estimated completion date of the section to Forster Road is early 1977.

South Gippsland Freeway

Construction is well advanced on the southerly extension of the South Gippsland Freeway from the completed section of the Mulgrave Freeway at Princes Highway East, to the South Gippsland Highway at Hampton Park.

In December 1975, the South Gippsland Highway was realigned to the west of Hampton Park to enable the construction of a freeway interchange at Pound Road, and the connection to the highway.

Bridges across the Gippsland Railway and the Hallam Main Drain are completed.

The section of freeway is expected to be opened to traffic early in 1977.

Mahoneys Road

The construction of dual carriageways in Mahoneys Road between the Hume Highway, Campbellfield, and High Street, Thomastown, is well underway.

Two sections have been opened to traffic from the Hume Highway to Riviera Court, Fawcner and from High Street to Long Street, Thomastown.

Work is underway on the remaining section between Riviera Court and Long Street.

Snowy River Bridges— Orbost

Work is continuing to schedule on three new bridges to carry the Princes Highway over the

Snowy River and its flood plains at Orbost.

Pile driving work is in progress on the Ashby's Gulch bridge. Beams have been placed in position on the main Snowy River Bridge and 25 per cent of the deck completed.

The new bridge across the Snowy River is expected to be opened to traffic in September, 1976.

The project is expected to be completed late in 1977.

Pascoe Vale Road— Jacana

In December 1975, the second carriageway of the new overpass carrying Pascoe Vale Road across the standard gauge railway line at Jacana was opened to traffic.

A pedestrian underpass has been provided to allow access to the Jacana railway station from the west.

Melbourne Road— Spotswood

In December 1975, the second carriageway of a new overpass carrying Melbourne Road over the Brooklyn-Newport railway line and Blackshaws Road, Spotswood, was opened to traffic.

Freeway F9— South Melbourne

Plans developed by the CRB for the Freeway F9 in South Melbourne have been forwarded to councils and Government authorities for comment.

The Freeway F9 will run between the Lower Yarra Freeway, Port Melbourne, and Grant Street/Kings Way, and then as an arterial road to St. Kilda Road.

Traffic studies carried out in February and March will be used to calculate detailed traffic movement patterns to assist in the development of short term arterial road improvements and the long term freeway.

Greensborough Freeway—

Work has commenced on the construction of overpasses at Watsonia Road and Grimshaw Street, Watsonia, and the closure of the Nell Street level crossing to eliminate three railway level crossings.

The construction of the overpasses is scheduled for completion in early 1978.

The new overpasses will form part of the Greensborough Freeway project north from Watsonia, by-passing the Greensborough shopping centre.

Johnson Street Bridge— South Melbourne

Work on the Johnson Street Bridge to link the proposed Freeway F9 with Footscray Road, is progressing.

Shafts 46 metres deep are under construction for the foundation of the bridge. Beams for the bridge are being manufactured and will be transported to the site when needed.

The project is expected to be completed late in 1978.

Hume Freeway— Seymour to Euroa

Plans prepared by the CRB for the Seymour-Avenel by-pass, and Tubbs Hill to south of Euroa, have been forwarded to respective councils for comment.

Work on the Avenel to Tubbs Hill section is expected to commence mid 1976, with work on the Seymour-Avenel by-pass in late 1976.

Preliminary investigations are underway for the Freeway in the vicinity of Euroa.

Lincoln Causeway Wodonga

Work is well advanced in duplicating the Lincoln Causeway between High Street, Wodonga, and the Murray River at the State border.

The work involves the construction for four bridges and a second carriageway for traffic. A fifth bridge was constructed at the High Street end of the causeway, in 1972.

The project is scheduled for completion late in March, 1976.

McIntyre Road— Sunshine

Work is well underway on the construction of a road-over-rail overpass on McIntyre Road, Sunshine. The work is scheduled for completion in late 1976.

Tullamarine Freeway— Essendon

Roadworks will be completed in August 1976 on widening the highway to three lanes in each direction between Kororoit Creek and McDonalds Road, Brooklyn.

Princes Highway West— Brooklyn

Work has commenced on the construction of a pedestrian over-

pass at Vaughan Street, as the first stage of an interchange at the entrance to Essendon airport, which will eliminate the existing at-grade intersections and the tram crossing.

Camp Road— Broadmeadows

Preliminary works have commenced to construct an overpass across the existing railway level crossing on Camp Road, and the grade separation of Camp Road over Pascoe Vale Road.

A side track for Camp Road is currently under construction for use of vehicles during the construction of the overpass.



● *The Lincoln Causeway, Wodonga*

May opening for new section of Hume Freeway

CRB Engineers discuss the finer points of the \$35 million Wallan to Broadford project, a 34 km freeway section of the Hume Highway, realigning the route away from the towns of Wallan, Kilmore and Broadford. Pictured are (from left) Ian Jacka, Project Engineer Geoff Hunt and Brian Billing.

The project, which reduces the length of the highway by 4 km, will be completed and open to traffic early May.

