

V I C T O R I A

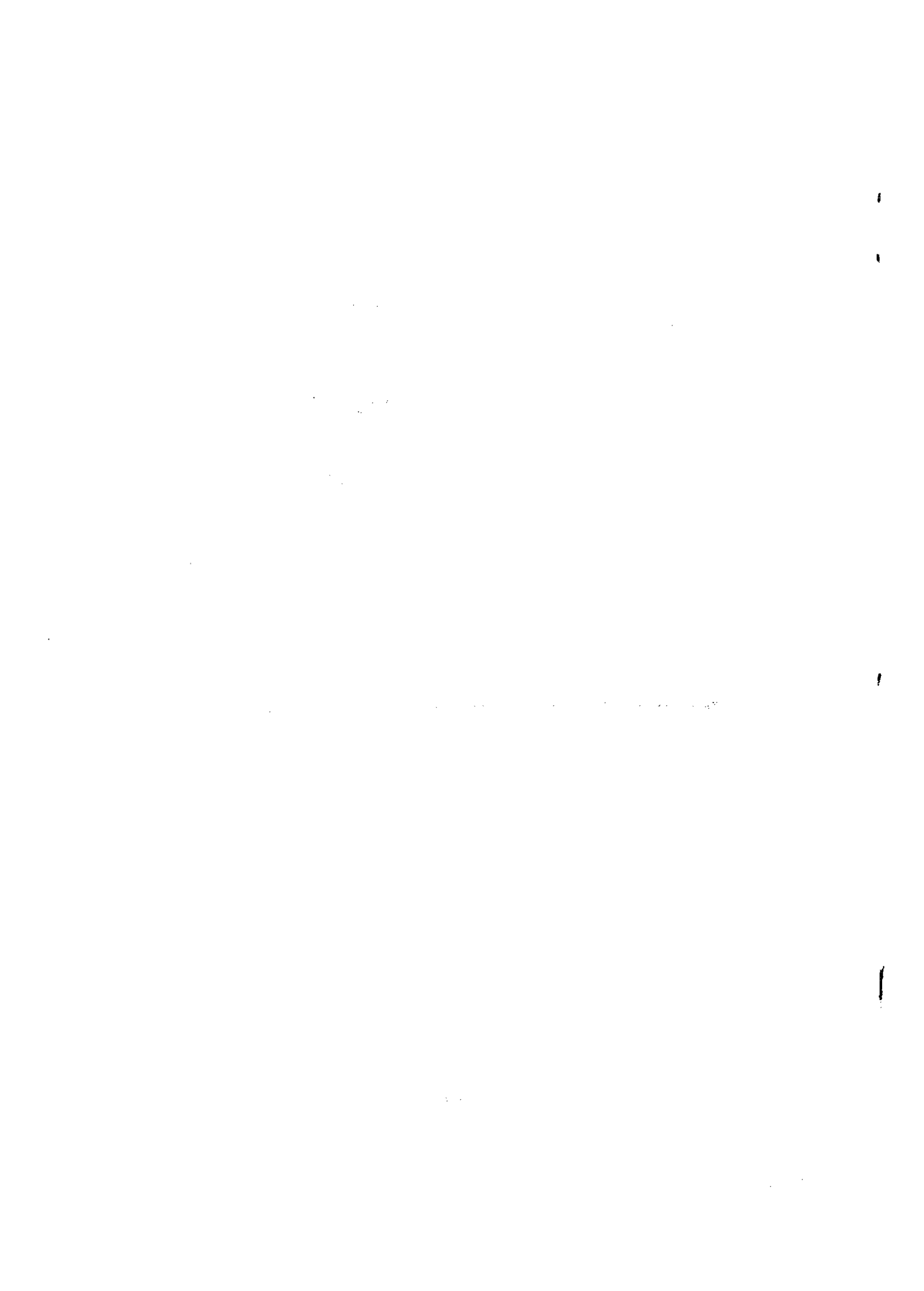
COUNTRY ROADS BOARD

Sixty-sixth Annual Report

For the year ended 30 June 1979

Presented to Both Houses of Parliament Pursuant to Act No. 6229

MELBOURNE
F. D. ATKINSON, GOVERNMENT PRINTER
1979



60 Denmark Street, Kew 3101

28th September, 1979

The Honorable Robert Maclellan, MLA
Minister of Transport
570 Bourke Street, Melbourne 3000

Sir

In accordance with the requirements of Section 128 of the Country Roads Act 1958 No. 6229, the Board submits to you for presentation to Parliament the report of its proceedings for the year ended 30th June, 1979.

The Board wishes to thank the Government for the support and interest in its activities and wishes to place on record its appreciation of the continued co-operation and assistance of State Ministers, Government departments, State instrumentalities and municipal councils.

The Board also pays tribute to the continued loyal co-operation and work done by its staff and employees throughout the year.

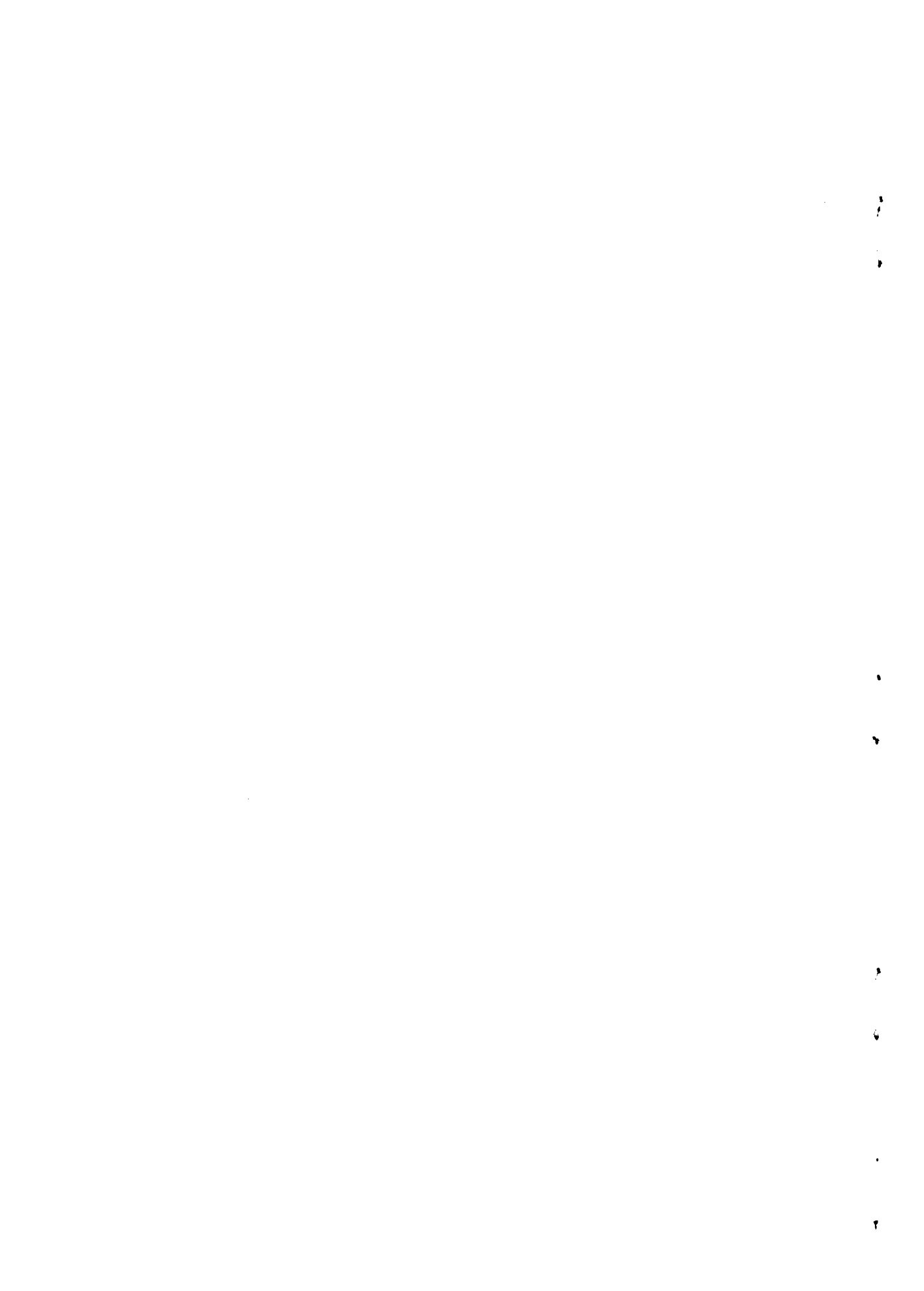
Yours faithfully

T H Russell
MEngSc (Hons.), BCE (Hons.), DipCE, CE, FIE Aust.
Chairman

W S Brake
BCE, CE, MIE Aust.
Deputy Chairman

N L Allanson
AASA (Senior), JP
Member

G K Cox
LL B, JP
Secretary



Country Roads Board

Victoria

Sixty-sixth Annual Report for year ended 30th June, 1979
Presented to both Houses of Parliament pursuant to Act No. 6229

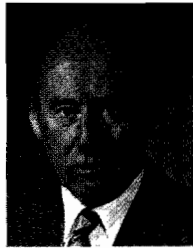
The CRB is the State Road Authority of Victoria. The CRB's aim is to create an efficient road system within the context of the overall transportation needs of the community.

There are about 160,000 km of public roads in Victoria, of which 23,706 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 7,022 km, freeways 288 km, main roads 14,567 km, tourists' roads 798 km, forest roads 1,031 km.



T H Russell
Chairman



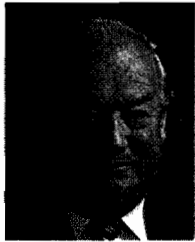
W S Brake
Deputy Chairman



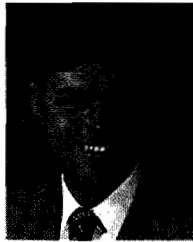
N L Allanson
Member

Principal Officers

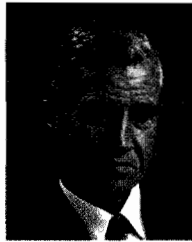
as at 30th June 1979



K G Moody
Engineer in Chief



G K Cox
Secretary



R G Cooper
Chief Accountant

N S Guerin
Deputy Engineer
in Chief

P J McCullough
Deputy Secretary

R J C Bulman
Deputy Chief
Accountant

Divisional Engineers and Regional Divisional Offices

A N Jephcott
Bairnsdale

E T Oppy
Ballarat

B H Chandler
Benalla

T M Glazebrook
Bendigo

S H Hodgson
Dandenong

G W Marshallsea
Geelong

J W Heid
Horsham

R R Patterson
Metropolitan

D T Currie
Traralgon

F G Lodge
Warrnambool

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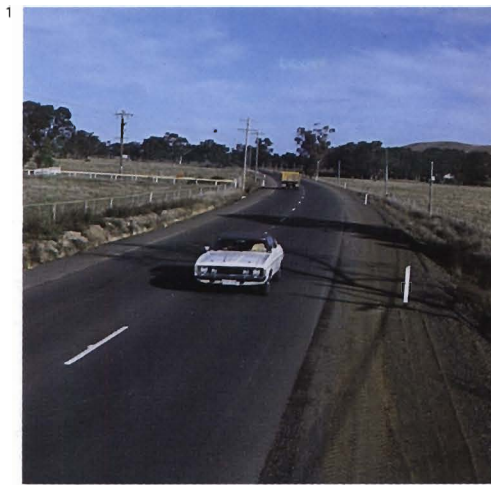
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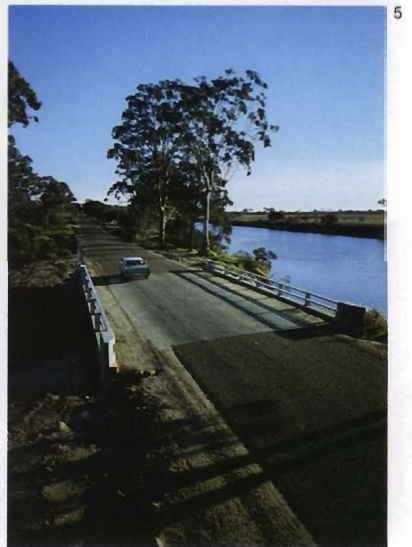
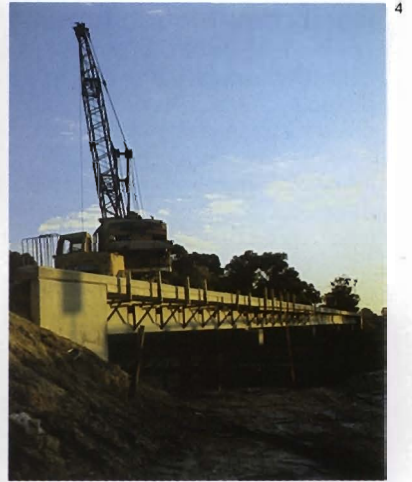
Appendices

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Main roads — construction work completed or substantially completed by municipal councils during the year:

1. Whittlesea Shire — Reconstruction of the Main Whittlesea Road between Cades Road and Donnybrook Road, Shire of Whittlesea.



2. Eltham Shire — Roundabout at the Eltham-Yarra Glen Road/Eltham-Templestowe Road intersection, Shire of Eltham.
3. Widening of 1.6 km of the Dandenong-Frankston Road nearing completion, City of Dandenong.
4. Construction of a 5 span bridge carrying Navarre Road over the Wimmera River, Shire of Stawell.
5. New 3 span bridge carrying Tarra Valley Road over the Tarra River, Shire of Bairnsdale.

Review

Road construction funding

The inadequate level of funds available to the Board continues to be a matter of concern. Many essential projects in both the urban and rural areas of the State could be accelerated or commenced in 1979/80 to the economic benefit of the community if additional funds were made available to the Board. Some examples of significant projects are listed in the following table.

Urban area

Project	Description of work
Arterial Road Extension of the Eastern Freeway Burwood Highway	Thompsons Road to Doncaster Road. Construction of additional lanes between Springvale Road and Wantirna-Sassafras Road.
Calder Highway La Trobe Terrace, Geelong	Bypass of Keilor. Reconstruction between Hope Street and Fyans Street.
Mt Dandenong Tourists' Road	Widen and strengthen sections between Beauty Bend, Ferny Creek and Montrose.
Maroondah Highway Lilydale	Reconstruction between Queens Road and Warburton Highway.
Mornington Peninsula Freeway	Moorooduc Road to Dromana.
Mulgrave Freeway	Warrigal Road to Forster Road.
Nepean Highway	Widening between Elsternwick and Moorabbin.
Nepean Highway	Construction of additional lanes between Station Street, Mordialloc and Progress Avenue, Carrum.
Princes Highway West	Duplication from Princes Freeway to Werribee.
Tullamarine Freeway	Asphalt strengthening, Brunswick Road to Bell Street interchange.
Warburton Highway	Construction of climbing lane between Maroondah Highway and Seville.
Western Highway	Asphalt strengthening in Sturt Street, Ballarat.
West Gate Freeway	Graham Street to east of Kings Way.

Rural projects

Project	Description of work
Calder Highway	Construction of climbing lanes, intersection improvements, and regrading to remove crests between Gisborne and Bendigo.
Cann Valley Highway	Reconstruction north of Fiddlers Green Creek.
Glenelg Highway	Widening narrow sections west of Skipton.
Goulburn Valley Highway	Extension of duplication south of Shepparton.
Goulburn Valley Highway	Reconstruction in Seymour.
Great Ocean Road	Reconstruction on improved alignment between Apollo Bay and Calder River.
Henty Highway	Reconstruction between Hamilton and Cavendish.
Maroondah Highway	Replacement of bridge over Connellys Creek at Acheron.
Midland Highway	Reconstruction from Bagshot to Elmore.
Midland Highway	Construction of deviation through Dookie Hills.
Murray Valley Highway	Construction and sealing at Granya Gap.
Murray Valley Highway	Duplication through Echuca.
Murray Valley Highway	Reconstruction west of Wood Wood.
Murray Valley Highway	Construction and sealing from Lake Powell to Bannerton.
Northern Highway	Reconstruction north and south of Pyalong.
Omeo Highway	Replacement of road over rail bridge in Bruthen.
Omeo Highway	Construction of approaches to new bridge over Bundara River.
Ouyen Highway	General widening including realignment at the Boinka railway level crossing.
Ovens Highway	Replacement of bridge over Ovens River at Porepunkah.

Project	Description of work
Princes Freeway	Construction of bypass of Drouin.
Princes Freeway	Asphalt strengthening of sections between Brooklyn and Lara.
Princes Highway East	Extension of duplication east of Pakenham.
Princes Highway West	Construction of deviation at Cudjee.
Princes Highway West	Construction of deviation at Bolwarra.
Pyrenees Highway	Reconstruction at Mooney's Gap.

It is estimated that an additional \$28 million over and above budgeted expenditure could be expended on the projects listed above in financial year 1979/80 if additional funds were to be made available to the Board.

Progress on a number of projects throughout the State which are under municipal control could also be accelerated if additional funds were available. It is estimated that an additional expenditure of \$17 million could be expended on municipal projects in 1979/80.

New borrowing powers

During the year, the Country Roads (Borrowing Powers) Act 1978 was passed and came into operation on 5th December, 1978. The Act authorises the Board to borrow sums not exceeding \$100 million and permits the Board to obtain a bank overdraft not exceeding \$5 million.

The principal provisions of the Country Roads (Borrowing Powers) Act 1978:

- (a) give the Board power to raise loan money with the consent of the Treasurer by the issue of inscribed stock or debentures; and
- (b) enable the Board, for its temporary accommodation, to obtain advances by overdrafts on credit of the revenues of the Board or by such means as may be approved by the Treasurer.

Following the new powers given to the Board under that Act, the Board sought to have the Semi-Government Borrowing Programme for 1979/80 include an amount of \$18 million to be borrowed by the Board for expenditure on land acquisition for future road projects.

Land acquisition costs would normally be met from revenue funds. If the Board were to receive \$18 million loan funds in 1979/80 for land acquisition, a corresponding amount of revenue funds could be released for use in accelerating progress on road construction work.

Road maintenance charges

A special conference of National Ministers of Transport was held on 7th April, 1979 to deal with the emergency associated with blockades by transport operators. Arising from that conference, decisions were made by States to abolish road maintenance charges as from 1st July, 1979. In Victoria, the obligation to pay road maintenance charges was imposed under the Commercial Goods Vehicles Act. The gross revenue to the Board from road maintenance charges in recent years under that Act has been as follows:

Year	\$ million
1973/74	10.359
1974/75	10.038
1975/76	10.132
1976/77	9.968
1977/78	9.818
1978/79	9.577

With the object of replacing the revenue lost through the abolition of road maintenance charges in Victoria the Business Franchise (Petroleum Products) Act 1979 was passed during the autumn session of Parliament. That Act introduced a fuel franchise licensing system to apply to persons engaged in petroleum wholesaling and retailing. Details of this legislation are described on page 52 of this report.

Australian Roads Report

In April, 1979, the Commonwealth Bureau of Transport Economics released its interim report 'An Assessment of the Australian Road System: 1979 Part I'. The interim report follows three previous roads reports prepared by the Commonwealth Bureau of Roads and released in 1969, 1973 and 1975.

One of the conclusions in the interim report was that over the period 1974/75 to 1978/79, the real level of Commonwealth funding for roads fell by 6%, whilst State funding increased by 39% and Local Government funding increased by 7%, leading to an overall increase in real terms in roads expenditure in Australia of 11% over the four year period 1974/75 to 1978/79. For Victoria, the corresponding situation was that in real terms Commonwealth funding fell by 14%, whilst State funding increased by 13% and Local Government funding increased by 7%, leading to an overall increase of 3%. During the period 1974/75 to 1978/79, the number of registered vehicles in Australia increased by 13%.

Looking ahead, the interim report expresses the conclusion that for the four year period 1979/80-1982/83, a total programme amounting to \$11,288 million at 1978-79 prices is economically warranted on an Australia-wide basis. Victoria's programme is assessed at \$2,383 million. Implicit in this finding is a substantial relative increase in funding for rural and urban arterial roads, a moderate relative increase in funding for national highways and a relative reduction in funding for both rural and urban local roads.

The conclusion in the interim report with respect to local roads, is similar to the conclusions reached in the 1973 and 1975 Bureau of Roads' Reports, particularly with respect to urban local roads. Expenditure on urban local roads construction has been more than twice that calculated as the warranted level by the Bureau of Roads in 1973. As stated in the interim report the level of the economically warranted programme over the 1979/80-1982/83 period, would require an annual increase of 16.1% per annum in expenditure in real terms over the four year period, Australia-wide, but the information in the report indicates that the corresponding increase would require only 8.8% per annum in Victoria. A matter of concern is that if the present level of road expenditure in Victoria continues without being increased, there will be a deterioration in the physical standard of Victoria's road network related to traffic demands on that network.

Board members

Retirement of Mr R E V Donaldson

Mr R E V Donaldson, ISO, AASA (Senior), AIMA, FCIT, JP, retired as Chairman of the Country Roads Board on 8th December, 1978 after having occupied that position for seven years. His retirement ended 33 years' service with the Board. He rose through the administrative ranks to the position of Secretary on 1st July, 1956, before being appointed Board Member in August, 1962, Deputy Chairman in July, 1963 and Chairman in September, 1971. Mr Donaldson also served terms as Chairman of the Australian Road Research Board, and Chairman of the National Association of Australian State Road Authorities.

In 1967 Mr Donaldson completed study tours of parts of North America, the United Kingdom and Europe and attended the Permanent International Association of Road Congresses Conference in Mexico City in 1975 and the International Road Federation Conference in Japan in 1977.

The period for which Mr Donaldson was Chairman of the Board saw the continued development of high

standard roads in Victoria, including the progressive construction of divided highways and the opening of a number of freeways. A significant event during this period was the transfer to the Board in 1974 of the roading functions of the Melbourne and Metropolitan Board of Works.

Mr Donaldson became a Companion of the Imperial Service Order in the 1979 Queen's Birthday honours list.

Appointments

Mr T H Russell, M Eng Sc (Hons), BCE (Hons), Dip CE, CE, FIE Aust, formerly the Board's Deputy Chairman, was appointed Chairman to succeed Mr Donaldson. Mr Russell was appointed Board Member in 1971 and then Deputy Chairman in 1975. Mr Russell's appointment as Chairman was followed by the appointment of the former Board Member, Mr W S Brake as Deputy Chairman and Mr N L Allanson as Board Member. Mr Allanson was formerly Secretary of the Board.

Mr Russell joined the Board in 1943 as a diplomate engineer from the Gordon Institute of Technology. His early service with the Board was mainly in the drafting, surveying and construction supervision field, including approximately one year in the Northern Territory on the construction of the North-South Road.

He worked in the Board's Benalla and Traralgon Divisions and was subsequently appointed Assistant Divisional Engineer, Traralgon Division. From 1959 onwards he occupied various positions including Assistant Engineer for Plans & Surveys, Assistant Bridge Engineer, Chief Bridge Engineer, Deputy Chief Engineer and Chief Engineer.

Mr Russell is a Fellow of the Institution of Engineers, Australia, and was Chairman of the Structural Branch of Victoria Division in 1967. He is currently a member of the Engineering Faculty of the University of Melbourne.

In 1973 Mr Russell was appointed Convenor of the National Association of Australian State Road Authorities Economics of Road Vehicle Limits Study which has resulted in substantial progress towards the rationalisation of mass and dimension limits for heavy vehicles throughout Australia.

Draft Transport Plan for Victoria

In December, 1978, the State Government released a three volume document entitled 'Transport Plan 1978 for Victoria'.

The plan, issued as a draft for community discussion, was compiled by a working party of the State Co-ordination Council comprising representatives from the following departments and authorities:

- Premier's Department.
- State Treasury.
- Ministry for Conservation.
- Town and Country Planning Board.
- Victorian Railways Board.
- Education Department.
- Department of Crown Lands and Survey.
- Ministry of Transport.
- Ministry for Planning.
- Country Roads Board.
- Melbourne and Metropolitan Board of Works.
- Road Safety and Traffic Authority.

The draft plan discusses a number of transport issues, including features and constraints of the existing public transport system, availability of transport services, energy conservation, protection of the environment. It then develops policies in response to these issues, some of these policies being of a general nature and some relating to specific geographic areas.

The draft plan presents a future transport strategy to implement the above policies aimed at optimising the use of the existing public transport system while at the same time reflecting the dominant place of the motor car in today's Australian society.

The plan lists the requirements of the future transport strategy as being to:

- work within realistic funding limits;
- focus on a short to medium term works programme rather than a longer term blueprint;
- place more emphasis on obtaining best use of existing facilities by appropriate modifications;
- be flexible, seeking to preserve as many options as possible for future developments;
- use stage construction as far as possible; and
- include a process for continual monitoring of supply and demand factors, periodic review, and co-ordinated planning and implementation.

Within the overall transport strategy, general transport policies to improve both private and public transport are contained in the document.

These policies are to:

- continue to improve the State's public transport services wherever it is in the overall community interest;
- encourage the use of public transport wherever possible;

- keep public transport fares at the lowest practicable levels;

- improve the availability of transport to those without access to private cars or existing public transport services;

- provide and improve metropolitan and country roads to cater for personal and goods movements that cannot be adequately handled by fixed-track public transport;

- encourage transport developments and uses that contribute to conservation of energy sources that are becoming scarce;

- minimise the adverse effects of transport on the environment;

- remove unnecessary restrictions on freedom of choice of transport modes;

- co-ordinate transport policies with land-use and other policies;

- preserve options for future improvements of the transport system to ensure flexibility of approach;

- improve safety in private and public transport;

- provide equitable compensation for property owners affected by transport improvements;

- develop a process for the modification, co-ordination and implementation of transport policies including inter governmental, inter agency and public participation; and

- continue with trials of alternative types of transport systems.

The draft Five Year Plan for the period 1978/79-1982/83 was prepared on the basis that the total expenditure on transport works undertaken by the principal transport agencies would be 10% higher in real terms over the five years than the expenditure achieved by the continuing 1977/78



Nepean Highway, at the Hampton Street intersection — construction of divided highway.

expenditure level of \$292 million, adjusted only for cost escalation.

In addition to the completion of a number of large projects now in progress, the draft plan lists a number of highly desirable projects of metropolitan or State-wide significance for the period 1978/79-1982/83 including the following:

- the co-ordination of traffic signals with the installation of traffic signal control systems in congested areas;
 - the widening of Bridge Road between Punt Road and Church Street;
 - the upgrading of the Eastern Highway as an approach route to the Eastern Freeway;
 - improvements to the Princes Highway East between Hawthorn Road and Waverley Road;
 - the arterial road extension of the Eastern Freeway to Doncaster Road;
 - the construction of Route E6, from the Eastern Freeway to Harp Road;
 - the construction of the Outer Ring Freeway F5 from Dalton Road to the Heidelberg-Kinglake Road together with the section of Greensborough Freeway south to Watsonia Road;
 - the Western Freeway — bypass of Melton;
 - the Princes Freeway — bypass of Berwick;
 - the Princes Freeway — bypass of Warragul;
 - the Hume Freeway — bypass of Wodonga;
 - the Calder Freeway — bypass of Keilor;
 - the replacement of bridges over the Murray River at Mildura, Echuca, Swan Hill, Tocumwal and Barham;
 - other projects to remove existing bottlenecks and eliminate hazards by pavement reconstruction and widening, and improvement to existing intersections.
- For the period beyond the next five years, the plan indicates a number of desirable proposals to be implemented including the following:
- widening of Punt Road;

- widening of the Western Highway (Ballarat Road) between the Princes Highway West (Geelong Road) and Ashley Street;

- the development of Ashley Street as a connection between the Western Highway and the Princes Highway West;

- the connection of Mulgrave Freeway to the South Eastern Freeway along the Gardiners Creek Valley;

- Route 7 from Dingley Freeway to Highbury Road;

- the extension of the Eastern Freeway from Doncaster Road to Ringwood including an arterial bypass of Ringwood.

The draft plan also lists a number of road improvement proposals which will receive further examination.

Johnson Street Bridge opening

The Johnson Street Bridge over the Yarra River was opened by the Acting Minister of Transport, the Hon A H Scanlan, MP, on Friday, 4th August, 1978.

The project involved the construction of twin 5 span bridges, each with 4 traffic lanes, connecting Footscray Road, north of the Yarra River, to Lorimer, Johnson and Montague Streets in South Melbourne.

The bridge superstructure was constructed of precast, prestressed concrete beams with a 150 mm reinforced concrete deck slab.

The bridges are low level structures with a maximum river clearance of 3.9 m at mean low water level.

Most of the dock and wharf facilities upstream have been replaced elsewhere in the Port of Melbourne.

In addition to the bridge, approach roads were constructed on either side of the river and a number of local roads were improved.

Computer controlled traffic control signals at the main intersections in the vicinity of the new crossing have been linked to obtain optimum traffic flow.

The total cost of the bridge and approach works was approximately \$30 million.



Johnson Street Bridge across the Yarra River.

West Gate Bridge Opening

The West Gate Bridge was opened by the Premier, the Hon R J Hamer, ED. MP, on Thursday, 15th November 1978.

The 5.63 km bridge was constructed by the West Gate Bridge Authority.

The Board spent in excess of \$14 million on the western approaches to the bridge and in excess of \$6 million on road improvements and an Advisory Truck Route on the eastern approaches to the bridge.

The Board is currently engaged in the construction of the West Gate Freeway (South Melbourne Section), which when completed, will provide a continuation from the eastern approaches to the West Gate Bridge at Graham Street, Port Melbourne to east of Kings Way, South Melbourne. The freeway is needed to cater for West Gate Bridge and Johnson Street Bridge traffic and will provide a vastly improved road connection between the western and south-eastern suburbs.

New Autograde

In February, 1979, the Board took delivery of a CMI Autograde TS 500 machine for use in shaping road formations and spreading layers of pavement material to an accurate finished level. The Autograde machine has been proven throughout the world as an efficient and highly productive item of road making equipment and its use will result in cost savings and the earlier completion of major projects. The machine was imported from the USA at a cost of approximately \$411,000.

The Autograde machine can operate over a two lane width of road. It has automatic controls and is self-propelled, utilising electronic sensing devices operating along string lines set by surveyors ahead of the machine. This enables a high degree of accuracy to be offered in the finished work and also enables the machine to work on curves as well as straight sections of road.

Since its commissioning the Autograde machine has been used on the Hume Freeway, Avenel to Tubbs Hill Project and will be used on other major projects on the Hume Freeway and other freeways.

Eastern Freeway traffic study

In April, 1979, the Board released the findings of a study into the traffic distribution effects of the Eastern Freeway. The study showed that although there had been traffic volume increases on some roads, there had been no significant increases in total traffic volumes in the western approaches area to the freeway since it was opened in December, 1977. The study titled "Eastern Freeway Corridor Traffic



West Gate Bridge across the Yarra River.

Studies — Before and After Opening of Freeway", revealed details of a major traffic counting survey, a travel time study and an origin and destination survey, extending from Carlton to Ringwood. The study placed special emphasis on the western approaches area of Carlton, Fitzroy and Collingwood.

The study showed that total traffic crossing Hoddle Street, between Heidelberg Road and Victoria Street, had only increased from 153,000 vehicles per day before the freeway opened to 159,000 vehicles per day, with approximately half of this increase being attributable to natural growth in traffic.



CMI Autograde in operation on the Hume Freeway, north of Avenel.

A significant fact disclosed by the study was the large percentage of freeway users who had origins and destinations in the western approaches area of Carlton, Fitzroy and Collingwood. The study showed that this percentage varied during the day, but that in peak hours it was approximately 28%.

The study also showed that the freeway had resulted in major community benefits in the corridor, including:

- Reduction in the travel times for motor vehicles by up to 18 minutes or 50% of travel time, depending on the origin and destination.
- Improvement in tram and bus service travel times, together with a 24% increase in bus patronage from the Doncaster area.
- Substantial redistribution of traffic away from local



Eastern Freeway — exclusive bus lane and morning peak traffic on exit ramp at Hoddle Street.

residents and commercial streets to the freeway. In addition, the Board expects that the freeway will result in an annual reduction in traffic casualty accidents of more than 60, including 4 fatalities. Measured in monetary terms, it is estimated that this would result in an annual community saving of at least \$1 million.

Whilst in overall terms the study showed that the freeway has resulted in a nett benefit to the community, some localised areas were identified that had been disadvantaged with the opening of the freeway, and remedial action is being taken where possible to improve conditions in these areas.

Traffic management and road safety

In recent years the Board has been involved to an increasing extent in planning and implementing traffic management measures in conjunction with road improvements of all kinds on the Board's declared road system. These measures improve traffic flow and control traffic movements and can result in a substantial reduction in accident rates. The Board's program of freeway and major road widening projects can significantly improve traffic flow and road safety within given corridors. However, these major facilities are expensive to construct and traffic management techniques can provide a relatively low cost means of improving traffic flow on the existing road system.

The Board's main aims when considering the use of traffic management techniques are the improvement of safety and road capacity, the reduction of travelling times and the reduction of the adverse effects of traffic, with improvements to both driver and pedestrian safety as the primary aim.

The Board has at its disposal a wide variety of techniques to provide better traffic management. These techniques include the installation and linking of traffic signals, flaring and channelisation of intersections, the construction of roundabouts and the installation of priority bus lanes.

Traffic signals

Traffic signals are vital to the road network, particularly in the Melbourne urban area, where large numbers of vehicles passing through intersections from different directions make it essential that the flow of traffic be regulated.

The effective control of traffic through intersections by the installation of traffic signals can reduce accidents by up to 50%. In addition to the obvious benefit of reductions in the numbers of fatalities and injuries, this means less damage to vehicles and therefore lower operating costs for motorists.

With the sophisticated equipment now being installed by the Board, traffic signals can be controlled by mini-computers making it possible to link traffic signals on a particular route to assist the flow of traffic.

In August, 1978, the traffic signals on the approach roads to the newly opened Johnson Street Bridge over the Yarra River were linked by a mini-computer that analyses traffic flow and adjusts the signal phases accordingly.

On the Maroondah Highway through Ringwood the Board has linked the traffic signals so that traffic passing through this busy shopping centre flows more freely, which in turn improves access to the shops.

Flaring and channelisation of intersections

In many cases when traffic signals are installed by the Board, the intersection is flared or channelised to remove the obstruction caused by turning traffic. Channelisation or line marking, increases the number of lanes over a length of road resulting in improved traffic flow and increased capacity of the road. This type of improvement is illustrated on the Calder Highway east of Keilor, where in September, 1978, the pavement was marked and signs were erected to allow two lanes for traffic in the direction of the peak traffic flow, and one lane in the other direction.

Roundabouts

In recent years the Board has become more involved in the construction of roundabouts which in some cases have advantages over traffic signals or conventional unsignalised intersections. Roundabouts can be easier and cheaper to install on low volume roads and can allow for better landscape treatment. They are also capable of catering for high traffic flows and can reduce traffic delays.

In South Melbourne the Board constructed a roundabout at the Normanby Road-Clarendon Street-Yarra Bank Road intersection as part of the improvements for the \$600,000 Advisory Truck Route to the West Gate and Johnson Street bridges. In addition to the roundabout, the Bay Street/Graham Street intersection was flared and channelised, Market Street and York Street were converted to one way streets and traffic signals were installed at the Normanby Road/Lorimer Street intersection.

Bus lanes

The Board provided an exclusive bus lane at the Hoddle Street exit of the Eastern Freeway. In March, 1979, this lane was extended easterly along the freeway by approximately 1 km, to improve conditions for buses.

Proposals were considered during the year in conjunction with municipal councils concerned for the installation of a special bus lane in Johnston Street, Collingwood, from east of Nicholson Street, Abbotsford to west of Wellington Street, for a trial period.

Rural roads

A wide range of relatively simple measures is used by the Board to improve safety on rural roads throughout the State.

Some examples include the erection of slip base sign poles that break away at the base if hit by vehicles; the planting of trees and shrubs back from the road pavement so that a driver has time to take corrective action if the vehicle leaves the road; the



Princes Highway — construction of a staggered 'T' intersection at Racecourse and Army Roads, Pakenham.



Nepean Highway — widening work south from Gardenvale.

erection of guard railing to keep vehicles away from solid objects; the use of guide posts, raised reflective pavement markers and linemarking to delineate the road; and the introduction of the STATCON system which by the erection of "Stop" and "Give Way" signs establishes a system of priority roads.

In addition, the construction of climbing lanes to allow faster vehicles to pass slower vehicles, and staggered "T" intersections to eliminate minor cross roads, can improve safety. During the year, the Board constructed climbing lanes on the Princes Highway East at Jefferson Hill, Tynong and a staggered "T" intersection at Racecourse Road and Army Road, Pakenham.

The total number of intersection improvements on arterial roads in the Metropolitan area, including major and minor reconstruction, traffic signals and safety features were as follows:

	1977-78	1978-79
Constructed by Councils (with the Board's financial assistance)	44	62
Constructed by the Board	24	45
Total	68	107

Flood and storm damage restoration works

Extensive flooding in eastern Victoria in June, 1978, and in the southern and northern areas of the State in August, November and December, 1978, caused widespread damage to roads, road closures and hazards to traffic. State highways affected were the South Gippsland Highway, Cann Valley Highway, Princes Highway East, Midland Highway and the Bonang Highway.

Severe windstorms in the north central areas of the State in January, 1979, also caused considerable damage to State highways including the Northern Highway, Calder Highway, Loddon Valley Highway, Midland Highway and the McIvor Highway.

Emergency work was required to re-open these highways to traffic.

During the 1978-79 financial year grants totalling \$3.82 million were made by the State Government, under a Commonwealth/State agreement, for restoration works following natural disasters. Some works were carried out under the direct supervision of the Board's staff and others were carried out under municipal supervision. Under a new Commonwealth/State agreement which came into effect on 1st January, 1979, the State Government meets the first \$7 million of restoration costs and the Commonwealth Government meets any additional amount required. Local Government is responsible for the full cost of the restoration where the total cost does not exceed \$10,000. Where the total cost exceeds \$10,000, but is less than \$110,000, Local Government is responsible for the first \$10,000 plus 25% of the balance of the total cost. Where the total cost exceeds \$110,000, Local Government is responsible for an amount of \$35,000. Allocations for emergency works are made free of Local Government contribution. Assistance is not provided for any expenditure incurred in restoring assets beyond the standards which existed prior to the disaster.

Applications from councils for funds to restore roads and bridges damaged by floods are referred to the Board for investigation and recommendation to the Treasurer.

The road system

State highways

State highways are the principal arteries forming interstate connections and links between the larger centres of population in the State. Some State highways in Victoria form part of the National Route system of highways with uniform route numbering throughout Australia. The Board bears the full cost of both construction and maintenance works required to meet the needs of through traffic. The total length of State highways was 7,022 km, as at 30th June, 1979.

Significant works completed or substantially completed during the financial year are listed in the Road Construction and Maintenance section of the report.

The Hume Highway/Freeway and the Western Highway/Freeway have been declared by the Commonwealth Minister for Transport as national highways under the provisions of the States Grants (Roads) Act 1977. These declarations permitted funds made available by the Commonwealth to be spent on the Hume Highway/Freeway and the Western Highway/Freeway.



Western Highway reconstruction completed east of the Hadden-Windermere Road.



Eastern Freeway.

Freeways

A freeway is a road having dual carriageways with no direct access from adjoining properties and side roads. All crossings of a freeway are by means of overpass or underpass bridges, and traffic enters or leaves the freeway carriageways by means of carefully designed ramps. The Board bears the total cost of all work on freeways.

Significant works completed or substantially completed during the financial year are listed in the Road Construction and Maintenance section of this report.

Tourists' roads

Tourists' roads proclaimed under the provisions of the Country Roads Act provide access to places of special interest to tourists, both in summer and winter.

The Board bears the full cost of works required to cater for the needs of through traffic. In general the works are carried out under the direct supervision of the Board's staff.

Significant works completed or substantially completed during the financial year are listed in the Road Construction and Maintenance section of this report.

Forest roads

Forest roads proclaimed under the provisions of the Country Roads Act are situated within or adjacent to any State forest or in areas which are considered by the Board to be timbered, mountainous or undeveloped. The Board bears the full cost of works required to cater for the needs of through traffic, with approximately half the work carried out on these roads being undertaken by municipal councils on behalf of the Board. Significant works completed or substantially completed during the financial year are listed in the Road Construction and Maintenance section of this report.

Main roads

Main roads are roads linking centres of population with other centres or with areas of industry, commerce, or settlement. Generally main roads are constructed and maintained by municipal councils to the satisfaction of, and with financial assistance from, the Board. In some cases, at the request of the council and with the approval of the Minister, works are carried out under the direct supervision of the Board's staff. A summary of the more important work on main roads completed or substantially completed during the year is given in the Municipal section of this report.

1



Work on tourists' roads for the benefit of recreation travel:

1. Alpine Road — extension of sealed pavement, south of the 'Meg'.
2. Bogong High Plains Road — widened section near Turnback Creek.
3. Alpine Road — extension of sealed pavement between Loch Spur and Hotham Heights.
4. Phillip Island Road — resurfaced.

2



3



4



State Highways — declared as at 30.6.79 (cont.)

Name	Section	Length (kilometres)
Cann Valley	Cann River-NSW border	44.9
Eastern*	Nicholson Street- Gold Street	1.2
Gleneig	Ballarat-SA border near Mt Gambier	282.2
Goulburn Valley	Eildon-Strathmerton	223.8
Hamilton	Geelong-Hamilton	231.0
Henty	Portland-Lascelles	336.1
Hume*	Melbourne-NSW border near Albury	210.5
Kiewa Valley	Bandiana-Mt Beauty	78.7
Loddon Valley	Bendigo-Kerang	123.7
Maroondah	Melbourne-Mansfield	184.6
McIvor	Heathcote-Bendigo	44.2
Midland*	Geelong-Mansfield	414.7
	Morwell-Port Welshpool	78.9
Murray Valley	Corryong-Hattah	737.0
Nepean	Melbourne-Portsea	91.1
Northern	Kilmore-Echuca	161.9
Omeo	Bairnsdale-Tallangatta	282.2
Ouyen	Ouyen-SA border near Pinnaroo	130.7
Ovens	Wangaratta-Bright	76.2
Princes (East)*	Melbourne-NSW border near Genoa	499.4
Princes (West)*	Melbourne-SA border near Mt Gambier	401.9
Pyrenees	Elphinstone-Ararat	147.1
South Gippsland*	Dandenong-Yarram- Sale	254.0
Sturt	Mildura-SA border near Renmark	113.6
Sunraysia	Ballarat-Calder Highways	340.0
Warburton	Lilydale-Warburton	34.6
Western*	Melbourne-Serviceton	371.5
Wimmera	Apsley-St Arnaud	222.2

*Lengths quoted do not include freeway sections.

Freeways — as at 30.6.79

Name	Section	Length (kilometres)
Calder	Keilor	2.8
	Elphinstone	2.8
Eastern	Hoddle Street to Bulleen Road	9.0
Frankston	Eel Race Drain to Beach Street	7.0
Hume	Craigieburn to Kalkallo	8.3
	Beveridge	3.2
	Wallan-Broadford	34.8
	Broadford to Tallarook	15.6
	Chiltern	21.3
West Gate	Bertie Street to Graham Street	0.3
	Williamstown Road to Princes F'way	5.1
Midland	Yinnar	9.6
Mornington Peninsula	Dromana to Rosebud	8.4
Princes	Mulgrave	15.7
	Moe and Haunted Hills	19.7
	Laverton	12.8
	Maltby	10.2
	Lara	24.4
	Dartmoor	3.0
South Eastern	Anderson Street to Toorong Road	6.8
South Gippsland	Whitelaw	3.8
	Princes Freeway to Pound Road	5.6
Tullamarine	Flemington Bridge to Melbourne Airport	20.9
Western	Deer Park to Melton	13.3
	Bacchus Marsh	8.9
	Pentland Hills	9.0
	Pykes Creek	7.3
	Ballan	7.8
	Gordon	8.9

Forest roads — declared as at 30.6.79

Name	Municipalities	Length (kilometres)
Bairnsdale-Dargo	Avon and Bairnsdale Shires	20.8
Bealiba-Moliagul	Bet Bet Shire	9.0
Beech Forest- Mt. Sabine	Otway Shire	12.6
Benambra-Corryong	Omeo, Tallangatta and Upper Murray Shires	76.5
Benambra-Limestone	Omeo Shire	14.3
Bendoc-Orbost	Orbost Shire	20.9
Brookville	Omeo Shire	15.9
Bruthen-Buchan	Tambo Shire	36.5

Forest roads — declared at 30.6.79 (cont.)

Name	Municipalities	Length (kilometres)
Buchan-Ensay	Tambo Shire	19.8
Bullumwaal-		
Tabberabbera	Bairnsdale Shire	30.3
Carrajung-Woodside	Alberton Shire	17.7
Dargo	Avon Shire	74.8
Deans Marsh-Lorne	Winchelsea Shire	22.9
Drummond-Vaughan	Daylesford and Glenlyon and Newstead Shires	20.9
Epsom-Fosterville	Huntly Shire	21.2
Forrest-Apollo Bay	Otway Shire	19.7
Greendale-Trentham	Ballan and Kyneton Shires	23.8
Heyfield-Jamieson	Mansfield and Maffra Shires	145.5
Inglewood-Rheola	Korong Shire	17.3
Kimbolton	Strathfieldsaye Shire	13.5
Lavers Hill-Cobden	Heytesbury and Otway Shires	42.7
Meredith-		
Steiglitz-Maude	Bannockburn Shire	20.7
Murrungower	Orbost Shire	21.3
Portland-Nelson	Portland Shire	38.6
Red Knob	Tambo Shire	7.2
Tatong-Tolmie	Benalla Shire	36.3
Walhalla	Narracan, Mansfield and Upper Yarra Shires	110.7
Warburton-Woods Point	Healesville, Upper Yarra and Mansfield Shires	103.4
Warrowitue	Mclvor Shire	16.5

Tourists' roads — declared as at 30.6.79

Name	Municipalities	Length (kilometres)
Acheron Way	Healesville and Upper Yarra Shires	35.4
Alpine	Bright and Omeo Shires	83.0
Arthur's Seat	Flinders Shire	8.1
Bogong High Plains	Bright and Omeo Shires	66.7
Cameron Drive	Gisborne and Newham and Woodend Shires	4.3
Donna Buang	Healesville and Upper Yarra Shires	34.0
Gipsy Point	Orbost Shire	2.4
Grampians	Ararat, Dundas and Stawell Shires and Stawell Town	69.5
Great Ocean Road	Barrabool, Winchelsea, Otway, Heytesbury and Warrnambool Shires	209.0
Mallacoota	Orbost Shire	22.5
Mount Abrupt	Ararat and Mount Rouse Shires	24.8
Mount Buffalo	Bright Shire	39.0
Mount Buller	Mansfield Shire	27.0
Mount Dandenong	Sherbrooke and Lillydale Shires	21.8
Mount Victory	Arapiles, Stawell and Wimmera Shires	30.7
Marysville-		
Woods Point	Healesville Shire	18.9
Otway Lighthouse	Otway Shire	12.9
Phillip Island	Bass and Phillip Island Shires	23.4
Silverband	Stawell Shire	9.1
Sydenham Inlet	Orbost Shire	21.6
Wartook	Wimmera Shire	3.5
Wilson's Promontory	South Gippsland Shire	31.0

Road construction and maintenance

Major projects

During the year the Board continued work on 16 projects, each having an estimated cost of at least \$4 million. Many of the major projects included the construction of divided roads which as a result of work completed during the year have increased the total length of dual carriageways on freeways, State highways, and main roads throughout the State to 765 km. The more important major projects in progress during the year included:

URBAN

Arterial Road Extension of the Eastern Freeway

Preliminary work for a 2.7 km arterial road from the Eastern Freeway, at Bulleen Road, to Doncaster Road began during the year.

Work at the Doncaster Road terminal which began in early 1979, includes the widening and channelisation of the Doncaster Road-High Street intersection.

The total estimated cost of the arterial road extension and the Doncaster Road intersection work is \$18.7 million at 1979 prices. The Doncaster Road intersection work is expected to be completed in 1980 and the arterial road extension in 1983 subject to the availability of funds.

West Gate Freeway

Work continued on the 3.6 km West Gate Freeway, between Graham Street, Port Melbourne and Grant Street, South Melbourne. The freeway will be elevated for 1.85 km from west of Johnson Street to east of Kings Way and will provide three lanes for traffic in each direction.

Land acquisition and site clearance is well advanced and a contract for the construction of 122 foundation piles has commenced.

Alterations to the existing freeway between Graham Street and Rogers Street were completed and opened to traffic on 15th November, 1978, when the West Gate Bridge was opened. Work is continuing on improvements to local streets adjacent to the freeway alignment.

The project is estimated to cost \$87 million at 1979 prices.

Tullamarine Freeway

Work continued during the year on the upgrading of Lancefield Road, adjacent to the Essendon Airport, to freeway standard. The project includes the construction of an interchange at English Street to provide access to Essendon Airport and Mathews Avenue. The project is estimated to cost \$8 million at 1979 prices and is expected to be completed in mid 1980.

Johnson Street Bridge

The Johnson Street Bridge over the Yarra River, linking Footscray Road, Melbourne, and Lorimer Street, South Melbourne, was opened to traffic by the Acting Minister of Transport, the Hon A H Scanlan, MP, on 4th August, 1978.

The bridge consists of twin structures, each with four lanes for traffic, and cost \$30 million.

A more detailed description of this project is included on page 8 of this report.

Latrobe Terrace, Geelong

Work began on the construction of a high capacity arterial road along Latrobe Terrace in Geelong.

The new arterial road will pass to the west of Geelong's Central Business District and is part of the recommendations of the Geelong Transportation Study.

The first stage of the Latrobe Terrace project currently underway involves the construction of a road over rail overpass from the Princes Highway West, near York Street, to Hope Street, and duplicate carriageways from Keera Street to Fyans Street, a distance of 2.4 km.

An 8 span pedestrian overpass over the railway line is being constructed to restore pedestrian access. Later stages will extend the duplicate carriageways to the south and include a new bridge across the Barwon River and improvements to Settlement Road, Belmont.

The first stage is estimated to cost \$10 million at 1979 prices and is expected to be completed in 1982.



Tullamarine Freeway — asphalt resurfacing south of Brunswick Road.

Nepean Highway

Work continued on the widening of 6 km of the Nepean Highway between Cochrane Street, Elsternwick and South Road, Moorabbin. The demolition of properties on the first section between Cochrane Street and Hampton Street was completed and preliminary earthworks began. Work by the Victorian Railways at the Gardenvale railway bridge progressed satisfactorily. The total project is estimated to cost \$38 million at 1979 prices and is expected to be completed in 1984.

Calder Freeway

Work continued during the year on the 5 km Calder Freeway, Keilor Section, between Erebus Street and the Keilor-Melton Road. Earthworks are underway on the first section of the freeway between Erebus Street and Arundel Road. The total project is estimated to cost \$17.6 million at 1979 prices and is expected to be completed in 1983/84.

Mornington Peninsula Freeway

Construction continued on the 6.7 km section of the Mornington Peninsula Freeway between Springvale Road, Keysborough and Eel Race Drain, Seaford. Earthworks were substantially completed during the year together with the placement of pavement material on various sections. The construction of bridge structures at Thompson Road, Chelsea Road and Patterson River progressed satisfactorily. The project is estimated to cost \$15 million at 1979 prices and is scheduled for completion in mid 1980.

Mulgrave Freeway

Work continued on the construction of the 3.7 km extension of the freeway from Forster Road to Warrigal Road, Oakleigh. The section of the freeway between Forster Road and Huntingdale Road is expected to be opened to traffic in late 1979. Between Huntingdale Road and Warrigal Road earthworks continued and the construction of the Atkinson Street bridge began. The reconstruction of 1.2 km of Warrigal Road at the freeway terminal progressed satisfactorily. The whole project is estimated to cost \$15.5 million at 1979 prices and is expected to be completed in 1981.

RURAL

Western Freeway

Wallace-Bungaree Section

Work continued on the construction of the 11.9 km freeway section bypassing the townships of Wallace

and Bungaree. Work proceeded on earthworks throughout the project and on bridgeworks at Ormond Road and Wallace Street. The project is estimated to cost \$15 million at 1979 prices and is expected to be completed in 1983.

Princes Freeway

Drouin Section

Construction of the 7 km bypass of Drouin continued during the year. Earthworks advanced satisfactorily and the bridge structures were completed at Robin Hood on the Princes Highway East and Main Neerim Road. The project is estimated to cost \$10 million at 1979 prices and is expected to be completed in early 1981.

Hume Freeway

Seymour to Avenel

Minor bridge and culvert construction on the 7 km Seymour Section between Ford Road and the Goulburn River began during the year. Work continued on the 20 km Avenel Section between the Goulburn River and north of Avenel. Earthworks were well advanced and work on the freeway bridges over the north east railway and the existing Hume Highway continued. Bridges across Hughes Creek at Avenel were completed during the year. The whole project is estimated to cost \$41 million at 1979 prices and the Avenel and Seymour Sections are expected to be completed in 1981 and 1983 respectively.

Avenel to Tubbs Hill

Duplication work on the 12 km section of the existing Hume Highway continued during the year. This section is estimated to cost \$7.9 million at 1979 prices and is expected to be completed in late 1979.

Euroa to Violet Town

Duplication of 6 km of the existing Hume Highway commenced during the year. Clearing and drainage work within Violet Town Shire progressed satisfactorily. The project is estimated to cost \$4.2 million at 1979 prices and is expected to be completed in 1981.

Violet Town Bypass

Work continued on the construction of a 6.1 km freeway bypass of Violet Town including the construction of an overpass at Harrys Creek Road. The project is estimated to cost \$7 million at 1979 prices and is expected to be completed in mid 1980.

Violet Town to Baddaginnie

Construction of a 10 km duplicate carriageway and upgrading the existing highway as the southbound carriageway between Violet Town and Baddaginnie was completed in early 1979 at a cost of \$5.1 million.

Major freeway construction:

1. Calder Freeway, Keilor.
2. Princes Freeway, Drouin.
3. Western Freeway between Wallace and Bungaree — rock drilling prior to blasting.
4. Hume Freeway — under construction from north of Euroa to Violet Town.

Contracts

Contracts under the Board's direct supervision

Details of the types and numbers of contracts entered into showing respective values together with a comparison with those of financial year 1977/78 are shown in the following table:

Type of contract	1977-78		1978-79	
	No. of contracts	Value \$	No. of contracts	Value \$
Road construction —				
1. Over \$1M	1	3,074,845	1	1,437,524
2. \$100,000 to \$1M	3	884,798	4	1,084,935
3. Under \$100,000	1	26,884	4	268,005
Supply of roadmaking materials	112	5,173,648	121	6,089,928
Bituminous treatment and supply of materials	54	11,130,377	78	15,675,050
Bridge construction —				
1. Over \$1M	—	—	1	3,212,598
2. \$100,000 to \$1M	9	2,640,745	4	963,780
3. Under \$100,000	8	412,790	5	270,166
Components and fabricated steel	19	1,260,821	17	1,254,088
Building construction	—	—	2	145,302
Construction equipment	19	1,389,507	27	1,645,696
Divisional facilities	1	64,489	1	52,682
Miscellaneous stores	2	520,000	1	37,030
Miscellaneous services	53	2,174,613	44	1,258,899
Total	282	28,753,517	315	33,400,683

Bituminous surfacing

Bituminous surfacing forms an important part of road construction and maintenance work.

A total amount of \$32.8 million was spent in surfacing 4,897 km of road during the financial year.

Approximately 95.5% of the total length of bituminous surfacing done was of the sprayed seal type.

The balance was of asphalt surfacing which is plant mixed and spread in a layer with a mechanical paver.

The sprayed seal process involves the spraying of a thin hot bituminous layer on to the road surface, followed by spreading a layer of aggregate which is rolled into the bitumen by pneumatic tyred rollers and controlled traffic. It is an economical surfacing

process which provides a safe, skid resistant surface and for these reasons is used widely throughout the world. For a successful sprayed seal to be obtained it is necessary for some loose aggregate to be left on the road surface on completion. The Board is conscious of the need to prevent windscreen damage caused by loose aggregate and provides appropriate warning signs, requesting motorists to travel slowly during the first few days after sealing. Traffic controlmen are also on duty while the work is in progress.

The Board's 17 mobile bituminous surfacing units, together with plant owned by municipal councils and contractors, completed 4,697 km of sprayed work at a cost of approximately \$20.3 million.



Contractors operating from fixed asphalt plants completed 200 km of plant mix work on densely trafficked roads at a cost of approximately \$12.5 million using 446,700 tonnes of asphalt. The lengths of the various types of work completed during the year were:

224 km of sealing widened pavements,
 25 km of initial sealing on dual carriageways,
 594 km of restoration of sealed coats on reconstructed sections,
 494 km of final sealing on initial treatments,
 2,620 km of maintenance retreatments,
 369 km sealed on behalf of other State and municipal authorities, and
 571 km of extensions to the bituminous sealed road system of the State including 33 km of roads declared or proclaimed under the Country Roads Act.

The following quantities of materials were used by the Board or by contractors during the year on bituminous surfacing works:

Material	Quantity
Bitumen for sprayed work	36,000 tonnes
Bitumen for asphalt	23,000 tonnes
Aggregate for sprayed work	285,000 cu. metres
Aggregate for asphalt	303,000 cu. metres
Other bituminous materials for sprayed work and maintenance	9,000 tonnes

State highways and Freeways

Significant works completed or substantially completed during the financial year 1978-79.

Bonang Highway

Orbost Shire

Construction of a 3 span bridge and approaches at Goongerrah Creek.

Burwood Highway

Box Hill City

Alterations to the highway to provide for a tramline extension from Warrigal Road to Middleborough Road.

Knox City

Reconstruction and signalisation of the intersection with Wantirna-Sassafras Road, Wantirna.

Calder Highway

Marong Shire

Widening of 1.1 km between Station Street and Alder Street, Kangaroo Flat.

Walpeup Shire

Reconstruction and widening of 5.8 km north of Kiamil.

Glenelg Highway

Glenelg Shire

Widening the existing bridge and approaches at Glenelg River, Casterton.

Goulburn Valley Highway

Euroa Shire

Widening of 5.8 km near Arcadia.

Hamilton Highway

Geelong City

Reconstruction of 0.2 km between Fenwick Street and La Trobe Terrace.

Mortlake Shire

Duplication of 0.8 km at Mortlake.



Hamilton Highway — duplication in Mortlake.



Burwood Highway — completed alterations to highway to allow for extension of tramline from Warrigal Road to Middleborough Road.

Henty Highway

Portland Shire

Reconstruction of 3.4 km through and south of Branxholme.

Portland Town

Duplication of 2.1 km at Portland North.

Warracknabeal Shire

Realignment of 0.9 km at the rail crossing north of Warracknabeal.

Hume Highway

Benalla City

Reconstruction of 0.3 km of the northbound carriageway between Arundel Street and Broken River in Benalla.

Wangaratta City

Reconstruction of 0.4 km between Ford Street and Faithful Street, Wangaratta.

Wodonga City

Reconstruction of 0.2 km at High Street and Elgin Street intersection in Wodonga.

Midland Highway

Buninyong Shire

Reconstruction of 2.1 km at Scotsburn Creek.

Metcalfe Shire

Reconstruction of 1.1 km between Castlemaine and Harcourt.

Murray Valley Highway

Cobram Shire

Reconstruction of 0.6 km on the western approach to Cobram.

Kerang Shire

Reconstruction of 1.3 km between Mystic Park and Tresco.

Tallangatta Shire

Construction of a culvert and approaches at Washaway Creek east of Tallangatta.

Swan Hill Shire

Reconstruction of 1.6 km near Wood Wood.

Nepean Highway

Flinders Shire

Reconstruction at the intersection with the Bittern-Dromana Road, Dromana.

Omeo Highway

Omeo Shire

Realignment of 1.8 km east of Bingo Munjie Creek.

Tambo Shire

Construction of a 3 cell culvert at Dirty Hollow Creek.

Ovens Highway

Bright Shire

Widening of 4 km northwest of Porepunkah.

Princes Freeway East

Moe City

Construction of 3.4 km of duplicate carriageway.

Princes Freeway West

Werribee Shire

Reconstruction and realignment of the on ramp to the freeway at the western interchange with the Maltby Bypass.

Princes Highway East

Buln Buln Shire

Widening of 0.9 km in Longwarry North.

Dandenong City

Reconstruction and signalisation of the intersection with the Dandenong-Frankston Road.

Dandenong City

Reconstruction of the intersection with Gladstone Road and improvement to traffic signals.

Dandenong City

Widening of the bridge over Eumemmerring Creek, Doveton.

Moe City

Construction of 3.4 km of duplicate carriageway between Watson's Road and Gunns Gully.

Morwell Shire

Duplication of 2.9 km in Morwell.

Narracan Shire

Duplication of 1.1 km in Trafalgar.

Orbost Shire

Resurfacing of 1 km east of Bellbird.

Orbost Shire

Resurfacing of 3 km between Tonghi Creek and Reedbed Creek.

Orbost Shire

Resurfacing of 5 km east of Jones Creek.

Pakenham Shire

Duplication of 3.6 km between Toomuc Creek and Army Road, Pakenham.

Pakenham Shire

Construction of a climbing lane at Jefferson Hill, Tynong.

Princes Highway West

Winchelsea Shire

Construction of a footbridge across the Barwon River at Winchelsea.

Pyrenees Highway

Metcalfe Shire

Reconstruction of 1.4 km through Chewton.

Tullaroop Shire

Reconstruction of 1.7 km east of Carisbrook at Shepherd's Hill.

Sunraysia Highway

Avoca and Lexton Shires

Reconstruction and realignment of 4 km between Bet Bet Creek and Lamplough.

South Gippsland Highway

Bass Shire

Reconstruction and widening of 0.8 km on the approaches to the Bass River bridge.

South Gippsland Shire

Reconstruction of 0.8 km east of Stoney Creek.

Western Highway

Ballarat Shire

Reconstruction of 0.4 km east of the Hadden-Windermere Road.

Kaniva Shire

Reconstruction of 4 km west of Merwyn Swamp.

Kaniva Shire

Reconstruction of 0.3 km east of Kaniva.

Wimmera Highway

Dunmunkle Shire

Resurfacing of 2.2 km at Lallat Plains.

Horsham City

Reconstruction of 0.3 km in Horsham.

Kowree Shire

Reconstruction of 3 km west of Miga Lake turnoff.

Tourists' roads

Significant works completed or substantially completed during the financial year 1978-79.

Alpine Road

Bright Shire

Extension of the sealed pavement for 1.3 km south of the "Meg" and for 0.9 km between Loch Spur and Hotham Heights.

Bogong High Plains Road

Bright Shire

Reconstruction and widening of 1.6 km near Turnback Creek.

Great Ocean Road

Otway Shire

Reconstruction of 6.7 km west of Apollo Bay.

Phillip Island Road

Phillip Island Shire

Resurfacing of 4.1 km west of Newhaven.

Forest roads

Significant works completed or substantially completed during financial year 1978-79.

Alberton Shire

Carrajung-Woodside Road

Construction of 1 km.

Avon Shire

Dargo Road

Construction of a 3 span bridge over Castleburn Creek.

Ballan Shire

Greendale-Trentham Road

Reconstruction of 2 km north of Barry's Reef.

Otway Shire

Forrest-Apollo Bay Road

Repairs to damage caused by floods in June, 1978.

Lavers Hill-Cobden Road

Construction of a 4 span bridge over Kennedy's Creek.



Greendale-Trentham Road, Shire of Ballan — reconstruction north of Barry's Reef.

Land purchase

During the year the Board paid compensation and associated costs totalling \$22.95 million for land required for the construction of new roads, the widening of existing roads or deviations from existing roads.

The expenditure incurred included \$4,793,000 for the widening of the Nepean Highway from Elsternwick to Moorabbin and \$3,675,000 for properties affected by the West Gate Freeway project.

The table below shows the road classification on which expenditure occurred.

CRB road classification	Commonwealth road category						Total
	National highways	Urban arterial roads	Urban local roads	Rural arterial roads	Rural local roads	Export roads	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Freeways	1,360	10,535	—	596	—	—	12,491
State highways	2	5,980	—	261	—	—	6,243
Tourists' roads	—	—	—	38	—	—	38
Forest roads	—	—	—	1	20	—	21
Main roads	—	1,692	2	293	118	—	2,105
Unclassified roads	—	1,699	182	1	162	12	2,056
Totals	1,362	19,906	184	1,190	300	12	22,954

The table below shows the number of land purchase transactions completed and the amount of compensation and associated costs paid by the Board over the five years.

	1974/75	1975/76	1976/77	1977/78	1978/79
Number of land purchase cases settled	923	661	671	786	629
Compensation and associated costs paid by the Board	\$19.34m	\$16.02m	\$20.97m	\$22.53m	\$22.95m
Land purchase expenditure on unclassified roads under council supervision	\$0.53m	\$0.73m	\$0.74m	\$1.26m	\$1.70m

Of the \$22.95 million expended during the year, \$10.43 million was spent in purchasing properties from owners who demonstrated that they were incurring hardship due to the Board's future road proposals.

The Board received \$1,766,584 from 788 rented residential or commercial properties and 149 separate areas of vacant land. During the year 51 separate areas of surplus land were sold for \$727,889, 8 residential properties surplus to requirements were sold for \$314,200 and 27 houses were sold for removal for \$44,680.

Bridges

Construction of new bridges

A total of 113 new bridges estimated to cost \$18.3 million were commenced during 1978/79. The following table gives a comparison between the number and estimated cost of bridge projects commenced in 1978/79 and those for the preceding financial year.

Description	1977/78		1978/79	
	No.	Est. cost \$'000	No.	Est. cost \$'000
New bridges commenced under the supervision of the Board's staff	42	9,265	46	14,708
New bridges commenced under municipal supervision with financial assistance from the Board	52	3,120	67	3,476
Miscellaneous — Sign structures, poles, footings, stone beaching and block facing		160		113
Total bridges commenced	94	12,545	113	18,317

Major bridges completed in rural areas

Some of the major bridges completed in rural areas during the year under the direct supervision of the Board's staff included:

Hume Freeway, Avenel

Hughes Creek — two 5 span prestressed concrete beam and reinforced concrete structures, 114 m long and 11 m between kerbs.

Princes Freeway, Drouin

□ Main Neerim Road — two span, prestressed and reinforced concrete structure, 88.75 m long and 9.8 m between kerbs.

□ Princes Highway at Robin Hood — two span, prestressed and reinforced concrete structure, 92.52 m long and 9.8 m between kerbs.



Hume Freeway, Avenel — twin 5 span bridges over Hughes Creek.



Forge Creek Road bridge over East Gippsland railway, Bairnsdale.



Upper Merriang Road bridge over Buffalo River.



Pearce Street bridge under construction over House Creek in Wodonga.

Murray Valley Highway

Keiwa River Flats

□ Three span reinforced concrete structure, 27.4 m long and 9.85 m between kerbs.

□ Five span reinforced concrete structure, 68.75 m long and 9.8 m between kerbs.

□ Two span, reinforced concrete structure, 18.29 m long and 9.8 m between kerbs.

Some of the larger bridges completed during the year under municipal supervision, with financial assistance from the Board were:

Bairnsdale Town

□ Forge Creek Road, bridge over East Gippsland Railway — 3 span, reinforced concrete structure, 27 m long and 7.4 m between kerbs.

Myrtleford Shire

□ Upper Merriang Road, bridge over Buffalo River — 3 span reinforced concrete structure, 45.5 m long and 8.6 m between kerbs. This bridge was opened by the Chairman, Mr T H Russell, on Friday, 9th March, 1979.

Wodonga City

□ Pearce Street, bridge over House Creek — 2 span reinforced concrete structure and 7 cell reinforced concrete culvert.

Metropolitan bridges and overpasses

The larger bridges in the metropolitan area completed during the year under the direct supervision of the Board's staff were:

Johnson Street Bridge, South Melbourne

Twin bridges over Yarra River — five spans, prestressed concrete beams and reinforced concrete structures each 181 m long and 15 m between kerbs, plus 2.7 m footway.

Kew, Camberwell and Heidelberg Cities

Burke Road over Yarra River — duplicate bridge, 11 span, prestressed concrete beams and reinforced concrete structure, 138.17 m long and 10.6 m between kerbs.

Broadmeadows and Keilor Cities

Melrose Drive, road over rail bridge — 3 span steel girder and reinforced concrete deck structure, 34 m long and 10.4 m between kerbs with 1.9 m footway.

Grade separated pedestrian crossings

The Board is involved in the construction of grade separated pedestrian crossings as outlined below:

1. The construction of pedestrian overpasses over

freeways or other important arterial roads to improve pedestrian access to areas on either side of the road.

2. The replacement of at-grade school crossings on heavily trafficked roads with pedestrian overpasses or underpasses, under the scheme introduced by the Victorian Government in 1965.

The scheme provides for:

□ Applications for subsidies to be submitted to the Board by municipal councils;

□ Priorities to be decided by the Board and the Road Safety and Traffic Authority, taking into account traffic volume, average speed, number and age range of children crossing and the type of road;

□ The total costs of approved crossings to be shared equally between the State Government (Treasury), the Transport Fund and the municipal council.

3. Assistance to municipal councils on request in the preparation of plans and specifications and supervision of construction in cases where the council pays the whole cost of construction.

Grade-separated crossings to serve schools

Twenty-two structures have now been constructed under the Victorian Government scheme.

Elimination of railway level crossings

In 1954 the State Government established the Level Crossings Fund with a view to providing finance to assist with the elimination of dangerous railway level crossings. Contributions were made by the Board and the Victorian Railways towards the cost of projects. Since 1st July, 1974, the total cost of this work has been charged to the Transport Fund. Since the inception of the scheme 66 road overpasses, or underpasses have been constructed to eliminate railway level crossings.

The following projects were completed by the Board during the year:

□ Princes Highway West, road over rail overpass at Weerite — three span prestressed concrete and reinforced concrete structure, 41.97 m long and 9.76 m between kerbs.

□ Camp Road, road over rail overpass, Broadmeadows — five span prestressed and reinforced concrete structure, 118.2 m long and 21.7 m between kerbs including two 8.5 m carriageways and three span off-ramp, 6 m wide. Work was commenced by the Board on the following projects in conjunction with major road improvements.

□ Latrobe Terrace, road over rail overpass, twin, 15 span structures, 269 m long and 8.6 m between kerbs.

□ Princes Highway East near Cudgee, road over rail overpass, 3 span structure, 45 m long and 9.8 m between kerbs.

Road planning studies

The road planning function of the Board is an essential and highly sophisticated operation, involving all of the many diverse skills required to reach a compatible balance between the community's desire for mobility and its various other needs. The staff of the Board's Planning Sub-branch bring together engineering, sociological, economic, environmental and town planning expertise in formulating and evaluating future road proposals. Specially trained officers in the Board's service, together with specialised equipment, are also able to provide technical advice on noise and air pollution, landscaping and general environmental matters.

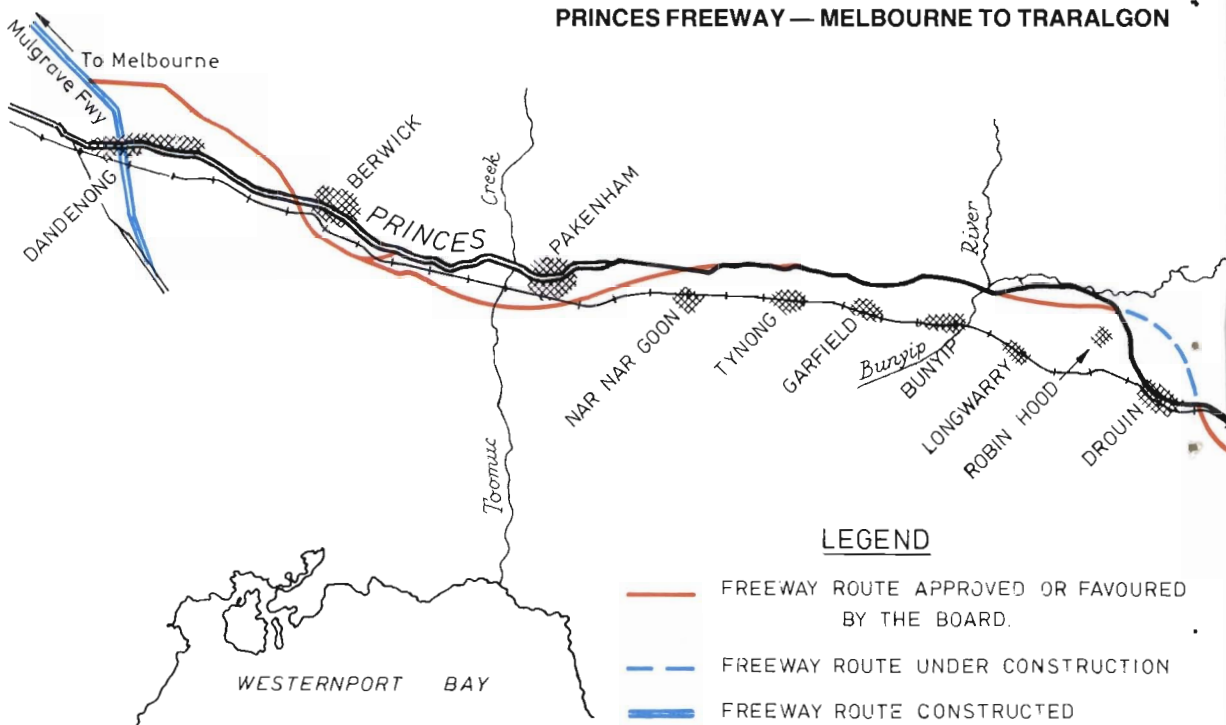
Significant planning studies in which the Board was involved during the year are described below.

South Eastern Freeway — Malvern Section

In August, 1978, the Government approved Route C3 to link the terminal of the South Eastern Freeway at Toorak Road with the section of the Mulgrave Freeway, currently under construction, which will terminate at Warrigal Road. Route C3 generally follows the Main Road Reservation in the Metropolitan Planning Scheme between Toorak and

Burke Roads, then follows an alignment along the north side of the Glen Waverley railway line from High Street to East Malvern, and then a route along Scotchmans Creek to the Mulgrave Freeway. Route C3 was recommended to the Government by the Steering Committee appointed in 1976 to carry out the Gardiners Creek Valley Study. The corridor study was set up by the Government to investigate the need to link the South Eastern and Mulgrave Freeways and to recommend a course of action on the future allocation of space in the Gardiners Creek Valley for transport, drainage, recreation and other community uses. The study involved the Ministry for Planning, Ministry of Transport, Ministry for Conservation, Melbourne & Metropolitan Board of Works, Town and Country Planning Board, Malvern, Camberwell and Hawthorn City Councils and the Country Roads Board. The study also included an extensive process of public consultation.

In making a decision on the recommendations of the Steering Committee, the Government accepted the principle that a four lane freeway should initially be constructed in conjunction with the provision of a right-of-way for a future six lane freeway. The Government decision finalised the basic planning issues allowing the Board and the Melbourne &



Metropolitan Board of Works to work jointly towards the preparation and exhibition of an amendment to the Melbourne Metropolitan Planning Scheme incorporating the necessary Main Road Reservation. Following the Government's approval of the recommended Route C3 the Board commenced the design of this alignment. Design work is proceeding in consultation with the councils and other authorities previously involved in the Gardiners Creek Valley Study. Work is also in progress on the assessment of possible traffic management improvements in the area to provide traffic relief in the short term and to facilitate the staging and implementation of the South Eastern Freeway — Malvern Section.

Princes Freeway East

The Board carried out road planning studies on four sections of the proposed Princes Freeway between Melbourne and Traralgon.

Berwick Bypass

Plans for the 7.3 km Princes Freeway bypass of Berwick were nearing completion at the close of the financial year and were released by the Acting Minister of Transport the Hon James Balfour, MP, in July, 1979. Copies of the plans were sent to the

municipal councils concerned and relevant authorities for comment.

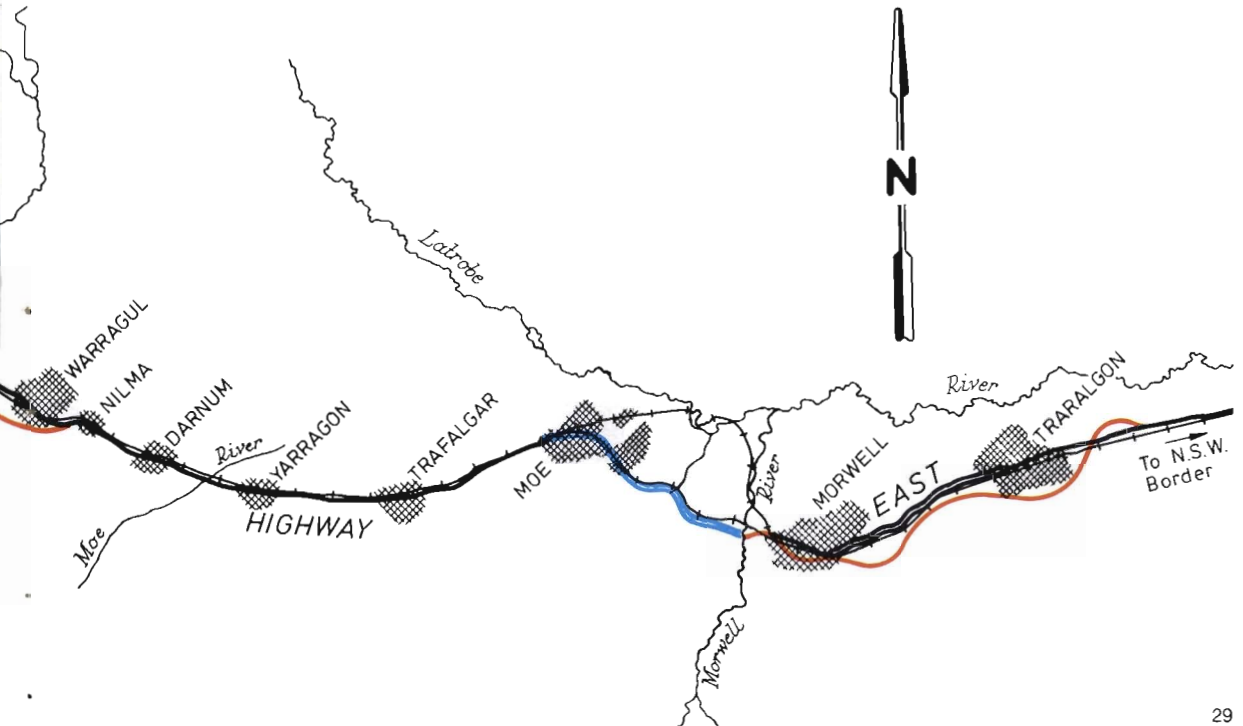
The new freeway will bypass Berwick to the south and follow a route from the Princes Highway east of Narre Warren to the start of the proposed bypass of Pakenham at Cardinia Creek, east of Beaconsfield. As the bypass of Berwick will be constructed before the bypass of Pakenham a connection to the Princes Highway at Pink Hill will be constructed.

More than 14,500 vehicles use the existing Princes Highway at Berwick, between 7 am and 7 pm daily. A main road reservation in the Melbourne Metropolitan Planning Scheme already exists for much of the freeway route.

Landscaping of the new freeway will ensure that the new road blends with the local environment. The Princes Freeway bypass of Berwick is estimated to cost \$12 million at 1979 prices. Preliminary work is expected to begin early in the 1979/80 financial year, with bridge and road works beginning in 1981.

Pakenham and Tynong Sections

In June, 1979, a report detailing the Board's "favoured route" for this 34 km section of the Princes Freeway from west of Pakenham to the Bunyip River, was forwarded to local councils and other interested parties for comment.



The favoured route bypasses Pakenham to the south, joining the existing Princes Highway in the vicinity of Nar Nar Goon. From Nar Nar Goon easterly the route generally follows the existing highway. The proposals are of a long term nature and are being developed now to allow local development to proceed with the Board's favoured route in mind. Pakenham is an expanding community and the freeway, when constructed, will result in a quieter and safer town.

While the long term proposals are being developed, it is the Board's intention to continue the work of duplicating the existing Princes Highway easterly from Pakenham.

The Princes Highway through Pakenham is currently carrying about 11,000 vehicles each day between 7 a.m. and 7 p.m. This traffic is currently increasing by about 7½% each year.

At a later stage, as Pakenham develops and traffic increases, the Board will construct the freeway to bypass Pakenham and upgrade the Princes Highway to the east of Pakenham to freeway standard.

Morwell Section

In February, 1979, revised plans for the 10.5 km Princes Freeway bypass of Morwell were forwarded to Morwell Shire Council and other interested parties for their consideration and agreement.

The revised plans resulted from discussions with Morwell Shire Council, the State Electricity Commission and the public. These discussions followed the issuing of preliminary layout plans in March, 1978.

The major features of the revised plans for a bypass to the south of Morwell include:

- the adoption of a route for the extension of Commercial Road to the Midland Highway to the south of the future freeway thus providing better access to the SEC works area;
- the adoption of a reduced median width for the freeway, resulting in an increased distance between the traffic lanes and residential properties;
- relocation of the freeway alignment by up to 70 m to the south near Willis Street to provide greater separation between the freeway and the adjacent residential properties;
- development of a landscaping concept for the freeway in the vicinity of residential areas, allowing for earth mounds and plantations.

Traralgon Section

In June, 1979, a report detailing the Board's "favoured route" for the 16.7 km Princes Freeway bypass of Traralgon was forwarded to local municipal councils and other interested parties for comment.

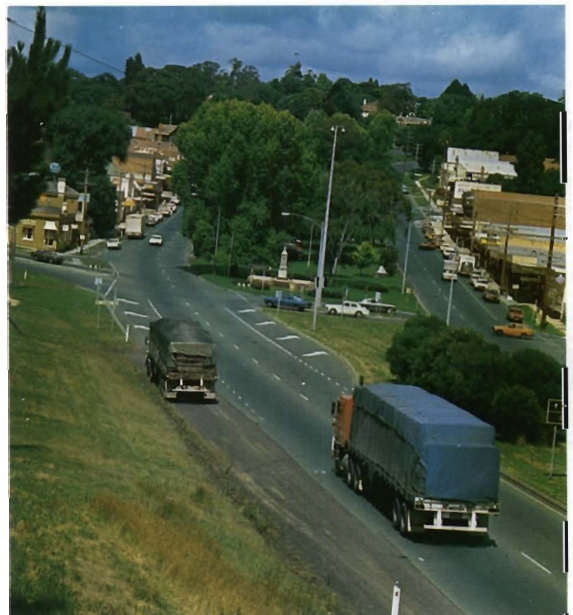
The adoption of a route for the freeway bypass at this time will enable the land required for the future freeway to be protected and also enable compatible development of the land adjacent to the future freeway.

The favoured route will bypass Traralgon to the south, and follow a route from the vicinity of the drive-in theatre west of Traralgon, to North Minnedale Road to the east.

The Board's report contained an evaluation of the effect the various alternatives for the freeway bypass would have on Traralgon, including effects on the environment, properties and public utilities and access to SEC complexes.

Hume Freeway — Euroa Bypass

The Hume Highway/Freeway between Melbourne and Sydney is a declared National Highway under Section 4 of the National Roads Act 1974. The goals of the Commonwealth Government's National Highway Policy are to foster the economic development and social welfare of the nation, provide opportunities for the social welfare of the nation, provide opportunities for social and cultural interaction and safeguard national defence objectives. The planning and the future construction of the Euroa Bypass is required because of the inability of the existing Hume Highway in this area to handle traffic demands.



Princes Highway, Berwick.

The Board's planning investigations for the location of the Euroa Bypass considered in detail all the relevant engineering, economic, social and environmental aspects. A large number of alternatives, both north and south of the town, were examined and assessed. This examination involved extensive consultation with officers of the Euroa Shire Council, relevant Government Departments and Authorities, together with local interest groups and members of the general public. As a result, two alternative routes, termed the Northern Route and the Southern Route, were considered the most viable options.

After careful consideration of the cost and the environmental and social factors involved, the Board concluded that it favoured the adoption of the Southern Route for the bypass of Euroa. A summary report presenting the results of the Board's planning investigations was prepared for discussion purposes and steps were taken to obtain the views of the local community.

As a result of comments received on the Board's favoured route from the Euroa Shire Council, various Government departments and authorities and from the general public, the effects of the Southern Route in the Seven Creeks/Balmattum Hill area were examined in more detail. These further investigations, which incorporated landscape and noise studies, resulted in the formulation of a route termed the Modified Southern Route. The Board concluded that the Modified Southern Route had a number of significant environmental and visual advantages.

This Modified Southern Route, employing careful landscape design including the use of earth mounds as screens, achieved a significant reduction in the effects on houses, the growth potential of the town, the timber mill and Balmattum Hill. The Modified Southern Route is estimated to cost \$20 million and to be \$2.8 million (1977 prices) cheaper than the Northern Route.

The Board subsequently prepared an Environment Effects Statement which was placed on public exhibition in September, 1978, in accordance with the Guidelines of the Ministry for Conservation, and public comment was invited. Following the receipt of comments the Ministry for Conservation made an assessment of the Environment Effects Statement and of the public comment received.

The Ministry for Conservation's assessment concluded that from an environmental point of view, the Northern Route was preferred and would have less direct effects on the town of Euroa. The main disadvantage of the Modified Southern Route was considered by the Ministry to be its effect on the site of the Seven Creeks Run proposed tourist project. However, on the information given, the Ministry for

Conservation found it impossible to judge the viability, strength, or future importance of the proposed tourist project and its compatibility or otherwise with the bypass of Euroa. The advantages of cost and community support for the Modified Southern Route were recognised. The Ministry concluded that the Minister of Transport should arrange detailed discussions with relevant parties to resolve the effects on the proposed tourist project. In addition, the Euroa Shire Council conducted a referendum of its ratepayers on the issue of the bypass location on 21st October, 1978. Six hundred and ninety-one ratepayers favoured the Modified Southern Route whereas 493 ratepayers favoured the Northern Route (45% of ratepayers voted). The Council subsequently advised all concerned that the Shire supported the Modified Southern Route.

Depending on the outcome of the discussions referred to, a decision will be made on the ultimate route to be adopted for the Euroa Bypass.

Bicycle studies

The Board is concerned about the needs of all road users, which includes bicyclists. The Board is represented on the State Bicycle Committee which is responsible to the Victorian Government for advice on matters concerning bicycles and their use. The Board is also represented on the Bendigo Bicycle Committee and is involved with the implementation of the Geelong Bike Plan. As part of the widening of the Nepean Highway between Elsternwick and Moorabbin a bicycle path is being provided between Rose Street, Gardenvale and South Road, Moorabbin. The detailed design of this bicycle path is well advanced.

Energy and road transport

The Board is closely monitoring the energy position, both in Australia and overseas, in an effort to be fully aware of current trends and of their implications as far as future road travel is concerned. The road transport section of Australia's economy is heavily dependent on petroleum as a vehicle fuel. There is little doubt that the world wide demand for crude oil will exceed production capabilities from known sources in the near future, that fuel prices will continue to increase, and that as Australia's dependence on overseas fuel supplies increases, the future availability of fuel will be subject to possible disruption or regulation.

Present indications are that the demand for road travel, and the number of vehicles on the roads, will continue to increase in the future.

There is a limit to the future availability of currently

used liquid fuels, and in the future other sources of fuel will have to be found and/or other types of engines developed. There are several technological possibilities in these areas, and considerable research and development is underway in various countries. This effort can be expected to increase in the future. However, because of the long lead times, and high costs, involved in the development and ultimate implementation of new technologies, there will be no significant alternative in the short to medium term to the continued use of existing fuels. Thus, it is essential that effort be directed to the development and early implementation of fuel conservation policies and practices.

By far the greatest potential for energy conservation is the use of smaller and more energy efficient vehicles. It is not inconceivable that this measure alone could reduce fuel requirements for cars by up to 35% or so.

A further significant saving in fuel is possible by the adoption of improved driving practices, such as driving at a uniform steady speed, attempting to minimize speed changes, and using gradual acceleration and deceleration rates when starting, stopping or changing speed.

The more wide-spread use of known traffic management and operations techniques, particularly in urban areas, offers further scope for fuel conservation. These techniques, which basically are designed to reduce congestion and to permit traffic to flow at or close to optimum speeds with a minimum of stops and speed changes, include the linking of traffic signals to give progressive flow on a route and/or area basis, improved intersections, priority routes, truck routes, reversible lanes to give additional capacity for peak direction travel, parking restrictions and the use of clearways, the control of bus-stops and loading zones, and improved signing and line marking. The Board is actively involved in traffic management and encourages municipal councils to do like-wise. Car-pooling and the staggering of working hours also have potential for reducing the total travel in terms of vehicle kilometres, leading to a reduction in congestion particularly in peak hours, and some saving in fuel. In Australia, in both urban and rural areas, the basic road pattern is now well established and extensive. Even in the longer term, provision of new and improved roads will represent only a very small proportion of the total road system. For this reason, road planning techniques and road design and road construction practices offer less scope for energy conservation, although some worth-while savings are still possible.

In the road planning area, increasing attention is being directed to the relationship between the location and density of various types of land use development and travel, with a view to minimising road travel. At present little is known of these relationships, and in any case the effects of any practicable and feasible changes to current land use development trends in urban areas are likely to be significant only in the longer term.

The Board is closely monitoring the various factors that affect road travel, including population and vehicle ownership trends and the cost and availability of fuel, and takes them into account in its planning activities. For example, in the recent larger planning investigations, the alternatives under consideration have been tested against a range of future travel forecasts, that reflect among other things a range of future fuel costs.

In road design, the standards adopted can affect the amount of fuel required to build new roads or to reconstruct existing roads, and the fuel required to operate vehicles on them. However, in this regard, energy conservation considerations may need to be balanced against other engineering, economic, safety and environmental considerations.

The proportion of liquid fuel used in road construction and maintenance activities is only a small part of the total fuel used by road transport, but there is some potential for energy conservation, and importantly this may be reflected in lower overall costs of construction and maintenance. Aspects that are receiving attention in this regard include the development of substitute binder materials for paving mixtures, the use of waste and marginal materials, recycling existing highway surfacing materials, and improved production and construction and maintenance techniques.

Energy considerations are now an important aspect of all phases of the Board's work, and as appropriate they are considered along with the other relevant engineering, economic and environmental factors.

Linemarking

During the 1978/79 financial year the Board spent \$1,824,457 maintaining Statcon markings and extending and maintaining linemarking and pavement markers throughout the State. The length of linemarking maintained by the Board's linemarking machines was as follows:

- State highways and freeways — 7,789 km or 25,142 km of equivalent standard stripe.
- Other CRB declared or proclaimed roads — 5,924 km or 12,167 km of equivalent standard stripe.
- Unclassified roads — 1,645 km or 4,497 km of equivalent standard stripe.

The term "equivalent standard stripe" means a 3 m stripe and a 10 m gap.

The cost of this work was:

- \$31/km of standard stripe.
- \$55/km of 75 mm wide solid stripe.

The cost of extending and maintaining the system of raised reflective pavement markers on declared roads was \$160,330 and 45,129 reflective markers were laid.

Control of overdimensional and overweight vehicles

In order to maintain safe conditions for road users and also protect both bridges and road surfaces from damage, limits are imposed by law on the width, height, length and weight of vehicles and their loads.

The Board has the responsibility under the provisions of the Motor Car Act, for issuing permits for the movement of overdimensional or heavy vehicles exceeding the legal weight, height, length and width —

- (a) on roads declared or proclaimed under the provisions of the Country Roads Act, and
- (b) for a journey which includes unclassified roads in two or more greater metropolitan municipalities as defined under the Motor Car Act.

The following table illustrates the number and types of permits issued during the year compared with those issued during financial year 1977/78.

	1977/78	1978/79
Single trip permits	21,021	21,293
Annual permits	3,061	3,139
NAASRA permits*	8,260	26,079
Total number of permits issued	32,342	50,511

*This figure represents the number of permits issued in accordance with the NAASRA recommendations from the study into the Economics of Road Vehicle Limits. The permits will be effective until such time as they are made redundant by new legislation.

The number of offences reported during the year by the Board's twenty-two traffic officers and the four police officers seconded to the Board amount to 6,537. These offences resulted in over \$1,043,064 fines and costs which were paid into the Consolidated Fund.

Heavy loads to Jeeralang

A heavy load consisting of a 212 tonne gas turbine (having a gross weight of 336 tonnes) was transported from Melbourne to the State Electricity Commission's project at Jeeralang in the Latrobe Valley on 28th January, 1979. This was the first of a number of loads to Jeeralang with payloads ranging from 161 to 212 tonnes.



Princes Highway — transportation of the SEC's gas turbine to Jeeralang.

Traffic information services and driver education

The Board continued its practice of issuing weekly Motoring Bulletins to the media and the police, fire brigade and ambulance services to provide information on the location of Board and municipal works which could cause delays in traffic flow. In addition, special snow and flood reports were issued as required, describing road conditions.

The Board published the following brochures during the year to assist drivers:

- Driver's Guide to Victoria*
- Snow Driving, It's An Art (revised)*

Snow clearing

Snow clearing of roads to snow resorts was carried out in 1978/79 on the Alpine Road (Mt Hotham), Mt Buffalo Road, Mt Buller Road and Bogong High Plains Road (Falls Creek).

Snow clearing started in May and finished in September with the heaviest falls of snow occurring in July and August.

All night snow clearing was carried out on the Alpine Road on Friday and Saturday nights during the season and was financed by a special State Treasury Grant.

Snow clearing of car parks was carried out at all resorts as a charge against the respective administering authorities or special Country Roads Board/National Parks Service grant in the case of Mt Buffalo.

Five, 4-wheel drive, Aveling Austin grader snow ploughs, three Rolba R1500 snowblowers, two Rolba R400 snowblowers and one Schmidt Unimog multi purpose snow clearing unit were used to carry out snow clearing during the season. Trials of a MAN 4-wheel drive truck fitted with a snow plough blade continued on Mt Buller.

Details of snowfall recorded during the 1978 winter by the Board's snow clearing gangs are shown in the following table.

Road	Resort	Earliest snowfall	No. of snow days	Cost 1978 season
Alpine Tourists' Road	Mt Hotham	11/5/1978	61	\$230,200
Mt Buffalo Tourists' Road	Mt Buffalo	5/6/1978	37	\$46,000
Mt Buller Tourists' Road	Mt Buller	5/6/1978	43	\$52,000
Bogong High Plains Tourists' Road	Falls Creek	2/6/1978	48	\$57,500

- (a) Costs do not include clearing of car parks for committees of management.
- (b) Night clearing of Mt Hotham is funded by a special State Treasury Grant of \$36,200 and is included in the above figures.
- (c) Bogong High Plains Road costs are for the first 1.6 km of the road plus 80% of the costs of clearing the balance of the length of the road. The other 20% of costs has been charged to the State Electricity Commission and is not included in the above figure.



Snow clearing at Mt Hotham.

Emergency services

The Board provides a free emergency telephone service and assistance to drivers of immobilised vehicles on six major metropolitan traffic routes. These routes are:

Eastern Freeway
Kings Bridge – Queens Way
Mulgrave Freeway/South Gippsland Freeway
Tullamarine Freeway
South Eastern Freeway
West Gate Freeway.

The emergency service extends for 24 hours per day and includes providing assistance for minor mechanical problems, the sale of sufficient petrol to enable the vehicle to be restarted and driven clear of the freeway and also a towing service so that the vehicles can be cleared from the freeway.

The number of calls to the Board's Emergency Service Centre at Head Office has increased from 4,800 calls in the first year of operation in 1975 to 17,303 calls during financial year 1978/79. Emergency telephones were installed on the Mulgrave Freeway and South Gippsland Freeway between Forster Road, Mount Waverley, and Somerville Road, Hampton Park, during the year. The Emergency Service Centre permits continuous radio communication with the Board's road maintenance personnel and Traffic Officers outside normal working hours. The Emergency Services Officers are also able to provide up to date information outside normal working hours relating to road conditions especially during floods or bush fires. The following table shows the distribution and types of calls received during financial year 1978/79.

Emergency Services — call analysis (1978/79)

Fault	Total	% of all calls	% of breakdowns
Roadside Emergency Telephone			
Petrol	3,085	17.8	21.1
Tyres	782	4.6	7.8
Radiator	1,202	6.9	17.1
Mechanical	4,227	24.4	42.2
Hoax	678	3.9	5.9
Hazard	300	1.8	2.6
Accident	292	1.7	3.3
Sub Total	10,566	61.1	100.0
Ordinary Telephone			
Other	5,529	31.9	
Hazard	195	1.2	
Traffic Lights	1,013	5.8	
Total	17,303	100.0	

Emergency Services — road analysis (by roads)

Road	No. of calls	%
Tullamarine Freeway	3,175	27.3
Eastern Freeway	3,156	27.2
South Eastern Freeway	1,614	23.9
West Gate Freeway	724	6.2
Kings Bridge/Queens Way	220	1.8
Mulgrave Freeway	2,754	13.6
Total	11,643	100.0

Traffic Signal Co-ordination of regional areas in Melbourne (SCRAM)

In March, 1979, the Board placed an order for two, PDP 11/34 mini computers, and associated equipment, for the new SCRAM system of regionalised traffic signal control. When fully developed each computer will control more than 100 traffic signals to improve traffic flow through a given corridor.

Each of the new computers will co-ordinate traffic signals, via Telecom lines, along a given corridor or region:

□ Maroondah Highway, between Ringwood and Blackburn, with other arterial roads in this eastern corridor being added progressively.

□ St Kilda Junction and the Nepean Highway, together with Kings Way and other routes in the vicinity.

SCRAM is based on a New South Wales traffic control system and the first computer is expected to be installed on the Maroondah Highway in October, 1979.

The two computers were ordered from the Digital Equipment Corporation of Australia at a cost of \$107,000.

The Environmental Studies Section

The role of the Board's Environmental Studies Section is to ensure that the non-engineering aspects of road proposals are properly assessed within the framework of a multi-disciplinary approach, and presented along with engineering and financial considerations so that balanced decisions can be made.

The main functions of the section are:

- To undertake environmental studies for planning investigations ranging through corridor studies, route location investigations and traffic management studies.
- To give specialist advice when required such as in the review or development of guidelines, standards and policies or regulations which may apply to the Board's activities.
- To ensure that the environmental study techniques and procedures used are in line with current practice.
- To initiate applied research into problem areas or on special topics which might advance the field of understanding of environmental issues.

The Environmental Studies Section assisted in the preparation of three environment effects statements during the year — Union Road, Surrey Hills; Banksia Street to Bell Street Connection, Heidelberg; Hume Freeway, Euroa.

Union Road, Surrey Hills

In 1974 the Abolition of Level Crossings Committee comprising the Engineer in Chief, CRB, Chief Civil Engineer, Victorian Railways and Chief Engineer, Public Works Department, recommended that the Board be the co-ordinating and construction authority for a direct road connection from Warrigal Road to Union Road, eliminating the railway level crossing at Union Road, Surrey Hills.

This recommendation was based on the predicted traffic delays and accident potential at the level

crossing. The proposal was approved in principle by the then Minister of Transport and agreed to by Box Hill and Camberwell City Councils in 1976. Such a road connection would require the acquisition of some houses and shops in the area. Plans for an amendment to the Melbourne Metropolitan Planning Scheme to provide for the proposed connection were placed on public display in May, 1977. A considerable number of people in Surrey Hills were concerned by the proposal and a public meeting was convened by local residents in August, 1977.

Following this meeting, and after discussions with the Ministry for Conservation and the Melbourne & Metropolitan Board of Works, the Board decided to prepare an environment effects statement and to re-examine the need for a road overpass of the railway. Other alternatives including traffic management measures, and the use of the existing Melbourne Metropolitan Planning Scheme provision for the future widening of Canterbury Road were also considered.

These investigations showed that the need to eliminate the Union Road level crossing was not as great as envisaged some years ago. However, the investigations indicate a need to alleviate traffic congestion in Canterbury Road between Warrigal Road and Union Road.

The community was involved in the investigations in various ways. For example:

- detailed discussions were held with representatives of Box Hill and Camberwell City Councils, the Surrey Hills Association and the Victorian Railways Board;
 - a study bulletin was produced and widely distributed in the area;
 - interviews and discussion with individuals and groups of 6 to 10 people, including household, shopper and shopkeeper surveys;
 - Board representatives attended a public meeting called by the Surrey Hills Association.
- As well as the community involvement outlined above, a considerable amount of data was collected on matters such as:
- local history of the area;
 - land zoning;
 - the transport network in the area;
 - the social profile of the area;
 - town planning aspects;
 - various traffic aspects.

The investigations concluded that in view of the relatively short delays and good safety record at the existing level crossing in Union Road, the high cost and environmental effects of an overpass, and the fact that other road improvement alternatives (not involving abolition of the railway level crossing) could satisfactorily handle expected future traffic:



Union Road, Surrey Hills.

- (a) there was not sufficient justification to proceed with the grade separation proposals in the foreseeable future;
- (b) there was scope for improved traffic operation in Canterbury Road in the study area by the application of low cost traffic management measures and that steps should be taken to implement these as soon as possible; and
- (c) the existing planning scheme widening along this section of Canterbury Road should be retained to provide for future improvements to Canterbury Road.

On Friday, 6th April, 1979, the Minister of Transport, the Hon Robert Maclellan, MLA, announced that the proposed elimination of the railway level crossing would not proceed in the light of the Board's further investigations:

Banksia Street to Bell Street Connection, Heidelberg

During the year, the Board continued with a study into ways of relieving traffic congestion in the Banksia Street-Bell Street area of Heidelberg. Some years ago an investigation, carried out by the Board concluded that a direct road connection was warranted between Banksia Street, south of the Austin Hospital and Bell Street. In October, 1973, the Board informed the Heidelberg City Council of the findings of the investigation and sought the Council's agreement in principle to the proposal for a direct road connection.

At a meeting in February, 1974, the Council deferred any consideration of this connection.

Following meetings of ratepayers and independent consultant studies being carried out, the Council, in July, 1975, agreed to the Board carrying out further investigations into a direct road connection between Banksia Street and Bell Street. Preliminary design plans were prepared in August, 1976, for a proposed road connection through the parkland and a model showing this preliminary proposal was placed on public display.

Public concern was expressed over the proposed connection, and as a result the Director of Conservation in June, 1977, requested the Board to prepare an environment effects statement for the project.

In November, 1977, the Heidelberg City Council agreed in principle with the proposed connection subject to several modifications including a reduction in the road width.

The environmental effects statement examined the Banksia Street-Bell Street corridor and considered the transport, physical, social and environmental aspects of the area in the context of possible road improvements in the corridor to improve the east-west arterial route serving the north-east

suburbs and to relieve traffic congestion.

Residents' views were obtained from a series of information discussions with small groups in the community, and from the results of a social impact assessment.

Many alternatives were considered, including a "no build" option, one way street systems and several direct connections.

After assessing the effects on traffic and pedestrian movement on the shopping centre and on properties, cost, noise and landscaping and construction aspects the alternatives for the connection were reduced to two;

- (i) a one way street system utilising Banksia Street, Waterdale Road, Bell Street, Burgundy Street and Jika Street; and
- (ii) the Board's modified proposal, a direct divided road connection between Bell Street and Banksia Street.

When compared with the Board's modified proposal, the one way street system proposal would result in a longer and less direct path for through traffic, and would have a greater adverse effect in terms of noise, inconvenience to the local circulating traffic, and the road safety problem in the Burgundy Street Shopping Centre.

The advantage of the one way street system was that it could be readily implemented in the short term to provide some immediate relief to the traffic problems in the area.

The statement concluded that the better alternative would be the Board's modified proposal because of:

- (a) fewer people directly affected;
- (b) less effect on local circulating traffic, including pedestrian movements
- (c) less overall effects in terms of traffic noise in the area; and
- (d) greatly improved amenity and road safety within the Burgundy Street Shopping Centre.

The draft of the environment effects statement was submitted to the Ministry for Conservation to arrange for its public exhibition.

If, after the statement has been exhibited and considered by the Ministry for Conservation, the Board's modified proposal is adopted, an amendment to the Melbourne Metropolitan Planning Scheme would be necessary. This procedure could take from 18 to 24 months. The Government's approval would then be required to commence construction. The timing of construction would depend on the availability of funds.

Hume Freeway — Euroa Bypass

In examining the impacts of possible routes for the bypass of Euroa the Environmental Studies Section

carried out three major studies. These were:

- a social survey of the town's population and business houses;
- a noise survey and predictions of the effect of future traffic noise on homes;
- a landscape survey of the proposed routes leading to the development of proposals which would make the freeway unobtrusive and blend with the countryside.

The results of these studies were incorporated in the planning procedures for this project.

Numbers and costs of trees and shrubs planted during the 1978/79 financial year.

Divisions	Trees and shrubs	Purchase cost \$
Bairnsdale	34	117
Ballarat	800	360
Benalla	1,900	760
Bendigo	6,765	2,230
Dandenong	27,200	9,000
Geelong	2,950	1,571
Horsham	4,000	4,000
Metropolitan	27,606	18,458
Traralgon	3,000	3,000
Warrnambool	5,925	2,825

Projects

Eastern Freeway	16,750	4,550
Hume Freeway	7,960	2,530
Johnson Street Bridge	196	88
Mulgrave Freeway	10,000	3,450
West Gate Freeway	1,850	1,780
Total	116,936	54,719

1977/78	139,062	\$49,016
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St Kilda Junction landscaping

St Kilda Junction was reconstructed almost 10 years ago to overcome the serious traffic problems of the then existing junction.

Previous attempts to improve the aesthetics of the new junction area were not successful because of the harsh environmental conditions. Any trees and shrubs planted in the area are required to withstand

the wind that is funnelled along the approach roads, the pollutants from the heavy traffic flows and the coastal environment as well as being able to find sufficient moisture in the large paved area.

A scheme was implemented during the year which appears to be successful in overcoming the problems. The scheme utilises a combination of bluestone walls and decorative bluestone paving with both plane trees and native spotted gums, together with shrubs and ground cover plants planted in large raised planting beds. Tree holes of one cubic metre each have been excavated and filled with fertile soil, and a drip feed irrigation system has been installed.

The landscape treatment is in harmony with the various road elements of the junction and integrates the junction visually with both the plane tree avenue in St Kilda Road and the newer plantations in Nepean Highway.



Bellarine Highway, Leopold.



St Kilda Junction — blue stone wall and newly planted trees and shrubs.

Municipal

Municipal allocations

Victoria's 212 municipal councils have been allocated \$83,160,000 for road works on main and unclassified roads for 1979-80.

This represents \$3,535,000 more than for 1978/79. However, in real terms the 1979/80 allocations will result in less work being carried out than in 1978/79 due to rising costs.

The total amount of the applications for funds for 1979/80 received from councils was \$186,133,000 but the Board was able to allocate only approximately 45% of this amount.

The table below shows the applications and allocations of funds to municipal councils for 1978/79 and 1979/80.

	1978/79		1979/80	
	Applications	Original allocations	Applications	Allocations
	\$000s	\$000s	\$000s	\$000s
Main roads	67,910	38,015	76,014	39,782
Unclassified roads	106,864	41,610	110,119	43,378
	174,774	79,625	186,133	83,160

Municipalities Forest Roads Improvement Fund

The Municipalities Forest Roads Improvement Fund was established in the State Treasury in 1955 for the purpose of assisting municipal councils in the improvement and protection of roads adjacent to State Forest areas and to facilitate the extraction of forest produce. An amount of \$200,000 was authorised to be paid into the Fund by the State Government during 1978/79, increasing the authorised contributions to \$1,210,000.

The Board's Divisional Engineers combine with the appropriate Forests Commission Officers to determine the priorities of eligible works.

Allocations for particular works are made by the Board with the agreement of the Forests Commission, but the limited funds available from the fund only enable grants to be made for the most urgent works.

Applications on hand have risen to approximately \$520,000.

Visits to municipalities

Each year the Board Members make official visits to a number of municipalities throughout the State. This has been the practice since 1913 when the first Board toured the State to decide which roads should be declared as main roads and financed from

central funds. Most municipalities in Victoria are visited at approximately six yearly intervals.

These visits include a tour of municipal roads with councillors and council officers, and discussions on local road problems. The visits provide the Board Members with important information about road conditions and developments in the municipality. During the year the Board made official visits to 32 municipalities: the Cities of Ballarat, Benalla, Chelsea, Frankston, Melbourne, Moorabbin, Port Melbourne and St. Kilda; the Boroughs of Eaglehawk and Kerang; the Town of Stawell; and the Shires of Avon, Bairnsdale, Ballarat, Bannockburn, Benalla, Cohuna, Corio, Creswick, Dimboola, East Loddon, Gordon, Hastings, Kerang, Korong, Otway, Newham & Woodend, Rosedale, South Gippsland, Stawell, Strathfieldsaye, and Talbot & Clunes.

The Board places on record its appreciation of the assistance given by all councillors and municipal officers during these visits.

Deputations

The Board is always prepared to discuss matters of common interest with representatives of councils or other official bodies. These discussions provide a useful channel of communication between the Board and municipal administration and local interests. During the year the Board received deputations from the following councils:

The Cities of Colac, Footscray, Kew, Knox, Moe, and Traralgon; the Shires of Cranbourne, Kilmore, Metcalfe, Numurkah, Ripon, Walpeup and Werribee. The Board also received deputations from the Local Government Engineers' Association and representatives of two local committees.

The main topics raised by the Councils were the general inadequacy of road grants to meet the State's road needs, the allocation of road funds to municipal councils by the Board, road classifications and matters associated with the development of the declared road system.

35th Conference of Municipal Engineers

The 35th Conference of Municipal Engineers, convened by the Board in conjunction with the Local Government Engineers Association of Victoria, was held at the Board's Head Office on 19th and 20th March, 1979, concluding with a technical tour of freeways and major road projects in the metropolitan and outer metropolitan area on 23rd March.

The conference was officially opened by the Hon Robert Maclellan MLA, Minister of Transport. The general theme of the conference was energy needs for the future, with other papers on contract administration, bridge design, pavement and

drainage construction, and traffic engineering and associated topics. The keynote address — 'Energy Planning' — presented by Professor L A Endersbee, Dean of the Faculty of Engineering, Monash University, set the pattern for a highly informative and successful conference. Approximately 250 Local Government and CRB Engineers attended with representatives from some State instrumentalities and departments.

The Board extends its thanks and appreciation to the Local Government Engineers Association of Victoria for its co-operation in planning the conference, to Professor L A Endersbee, and to all engineers participating, particularly those who presented papers, for contributing to the success of the conference.

Significant works on main and unclassified roads

Main roads

Significant works completed or substantially completed during financial year 1978-79.

Alberton Shire

Tarra Valley Road

Construction of a 3 span bridge over the Tarra River.

Yarram-Traralgon Road

Reconstruction and realignment of 4.3 km.

Bairnsdale Shire

Bulluwaal Road

Construction of a 5 cell culvert and approaches at Waterholes Creek.

Bendigo City

Mandurang Road

Reconstruction of 1.5 km including the Miller Street intersection.

Box Hill City

Canterbury Road

Widening and reconstruction between Elgar Road and Station Street.

Brighton City

North Road

Reconstruction between Beach Road and Asling Street.

Broadford Shire

Broadford-Wallan Road

Reconstruction and realignment of 2.6 km south of Broadford.

Buln Buln Shire

Longwarry-Drouin Road

Reconstruction of 3.8 km.

Camberwell City

Doncaster Road

Reconstruction between Sylvander Street and Greythorn Road.

Cranbourne Shire

Cranbourne-Frankston Road

Reconstruction of 1 km east of Pearcedale Road.

Croydon City

Canterbury Road

Construction of culverts at Croydon main drain and Bungalook Creek.

Mt Dandenong Road

Duplication of 0.6 km.

Dandenong City

Dandenong-Frankston Road

Duplication of 1.6 km between Kirkham Road and Greens Road.

Stud Road

Duplication of 0.5 km between David Street and Leonard Street.

Doncaster and Templestowe City

Heidelberg-Doncaster Road

Duplication of 0.6 km between Lillian Street and Derreck Street.

East Loddon Shire

Bridgewater-Serpentine Road

Reconstruction of 3.6 km south of Serpentine.

Eltham Shire

Eltham-Yarra Glen Road

Construction of a roundabout and duplication of the road at the Eltham-Templestowe Road intersection.

Eltham-Yarra Glen Road

Construction of a single span bridge over Watson's Creek.

Flinders Shire

Rosebud-Flinders Road

Construction of a 2 cell culvert at Main Creek.

Frankston City

Cranbourne-Frankston Road

Duplication of 0.7 km between Beach Street and Lindrum Road.

Hastings Shire

Frankston-Flinders Road

Construction of a 3 cell culvert at Warringine Creek.

Healesville Shire

Eltham-Yarra Glen Road

Reconstruction of 1 km between Yarra Glen-Glenburn Road and Yarraview Road.

Healesville-Yarra Glen Road

Reconstruction of 1.2 km near Yarra Glen racecourse.

Municipal roadworks on unclassified roads:

1. Construction of a 5 span bridge over the Hallam Main Drain, Shire of Cranbourne.
2. Reconstruction of 2.5 km of the Whittlesea-Yea Road, Shire of Yea.
3. Reconstruction of 1.6 km of the Woodend-Wallan Road, Shire of Newham and Woodend.
4. Reconstruction of Drummond Street, City of Ballarat.





Reconstruction and widening of Princess Street, City of Kew.

Main roads (cont)

Kew City

Princess Street

Reconstruction between Wells Street and Earl Street.

Knox City

Main Ferntree Gully Road

Duplication of 0.9 km between Kathryn Road and Scoresby Road.

Wantirna-Sassafras Road

Reconstruction of the Boronia and Wantirna Roads intersection, Wantirna.

Korumburra Shire

Loch-Poowong Road

Reconstruction and realignment of 1 km.

Poowong-Ranceby Road

Reconstruction and realignment of 3 km.

Kyneton Shire

Trentham Road

Reconstruction of 3.5 km north of Tylden.

Lillydale Shire

Lilydale-Monbulk Road

Reconstruction of the Clegg Road intersection.

Mirboo Shire

Leongatha-Mirboo Road

Reconstruction and realignment of 7.1 km.

Mirboo North-Thorpdale Road

Reconstruction and realignment of 1.4 km.

Moorabbin City

South Road

Reconstruction between the Nepean Highway and Jasper Road.

Morwell Shire

Tyers Road

Reconstruction and realignment of 2 km.

Narracan Shire

Willowgrove Road

Reconstruction and realignment of 1.5 km.

Oakleigh City

Ferntree Gully Road

Reconstruction and widening between Stamford Road and Huntingdale Road.

Pakenham Shire

Healesville-Koo-wee-rup Road

Reconstruction of 1.6 km between Ballarto Road and Ellet Road.

Ringwood City

Canterbury Road

Duplication of 0.3 km between Sunset Drive and Dickasons Road.

Sherbrooke Shire

Wellington Road

Reconstruction at the Belgrave-Gembrook Road intersection.

Olinda-Monbulk Road

Reconstruction of 1.3 km between Red Hill Road and Invermay Road.

South Gippsland Shire

Foster North-Mirboo South Road

Reconstruction of 2.6 km.

Stawell Shire

Navarre Road

Construction of a 5 span bridge over the Wimmera River.

Tambo Shire

Metung Road

Construction of a single span bridge and approaches at Bennetts Brook.

Traralgon City

Tyers Road

Reconstruction of 1 km.

Traralgon-Maffra Road

Construction of a 4 span bridge over the Latrobe River.

Warragul Shire

Warragul-Korumburra Road

Reconstruction and realignment of 3 km.

Waverley City

High Street Road

Reconstruction of 1.1 km between Gallaghers Road and the Dandenong Creek.

Springvale Road

Reconstruction of 1.6 km of the northbound carriageway between High Street Road and Waverley Road.

Whittlesea Shire***Epping Road***

Reconstruction of 2 km south of Donnybrook Road.

Main Whittlesea Road

Reconstruction between Cades Road and Donnybrook Road.

Winchelsea Shire***Birregurra-Forrest Road***

Construction of 5 culverts, with a total of 23 cells, across the Barwon River flood plain at Birregurra.

Birregurra-Forrest Road

Construction of a single span bridge across Callaghans Creek.

Woorayl Shire***Inverlock-Leongatha Road***

Reconstruction of 1.1 km in Leongatha.

Mardan Road

Reconstruction of 2.1 km.

Unclassified roads

Significant works completed or substantially completed during financial year 1978-79.

Alexandra Shire***Glendale Road***

Construction of a 3 span reinforced concrete bridge over the Acheron River.

Bacchus Marsh Shire***Fisken Street***

Construction of a 3 span bridge over the Werribee River, Bacchus Marsh.

Ballaarat City***Drummond Street***

Reconstruction of 0.3 km between Duncan and Macarthur Streets.

Berwick City***Hallam North Road***

Reconstruction of 1.5 km between Belgrave-Hallam Road and Heatherton Road.

Robinson Road

Reconstruction of 1.8 km between Narre Warren Road and Halleur Road.

Box Hill City***Station Street***

Widening and reconstruction between Kilsythe Avenue and Bronte Avenue.

Broadmeadows City***Broadmeadows Road***

Construction between Johnstone Street and Mickleham Road.

Buln Buln Shire***Neerim North***

Reconstruction of 1.5 km.

Camberwell City***Stanhope Grove***

Widening and reconstruction between Prospect Hill Road and Canterbury Road.

Caulfield City***Inkerman Street***

Resurfacing between Hawthorn Road and Orrong Road.

Coburg City***O'Hea Street***

Reconstruction between Lansdowne Street and Sussex Street.

Cranbourne Shire***Hallam Road***

Construction of a 5 span bridge over the Hallam Main Drain.

Patullas Road

Construction of a 3 span bridge over Lang Lang River.

Croydon City***Colchester Road***

Reconstruction of 0.7 km between Lena Grove and Canterbury Road.

Dandenong City***Heatherton Road***

Reconstruction of 0.5 km between Cleeland Street and James Street.

Greens Road

Reconstruction of 0.5 km west from Ordish Road.

Diamond Valley Shire***Weidlich Road-Progress Road***

Reconstruction between Karingal Road and Heacham Road.

Doncaster and Templestowe City***Tindals Road***

Construction of 1.5 km between Harris Gully Road and Heidelberg-Warrandyte Road.

Dundas Shire***Narrow Bridge Road***

Construction of a 3 span bridge over Wannon River.

East Loddon Shire***Pyramid-Yarraberb Road***

Reconstruction of 5 km north from Prairie Road.

Unclassified roads (cont)

Eltham Shire

Eltham-Greensborough Road

Reconstruction of 0.4 km between Karingal Drive and Rattray Road.

Hurstbridge-Arthurs Creek Road

Construction of a 3 span bridge over Arthurs Creek.

Essendon City

Brewster Street

Resurfacing between Pascoe Vale Road and Napier Street.

Fitzroy City

Holden Street-Bennett Street

Reconstruction between St Georges Road and Park Street.

Flinders Shire

Browns Road

Construction of 2 km west from Trumans Road.

Footscray City

Whitehall Street

Reconstruction between Somerville Road and Francis Street.

Healesville Shire

Myers Creek Road

Reconstruction of 1.7 km south from Healesville-Kinglake Road.

Heidelberg City

Upper Heidelberg Road

Reconstruction between Clausen Street and Waiora Road.

Keilor City

Kings Road

Reconstruction between Gillespi Road and Taylors Road.

Knox City

Boronia Road

Duplication of 0.6 km between Zeising Court and Scoresby Road.

Korumburra Shire

Timms Road

Reconstruction and realignment of 2.9 km.

Kowree and Wannon Shires

Rocklands Road

Construction of a 4 span bridge over the Glenelg River.

Lillydale Shire

Birmingham Road

Reconstruction of 0.3 km between Greenslopes Drive and Carronvale Road.

Macintyre Lane

Construction of 2.6 km at Lilydale Aerodrome.

Melton Shire

Boundary Road

Reconstruction of 1.6 km west of Hopkins Road.

Centenary Avenue

Reconstruction between Coburns Road and Yuille Street.

Moe City

Haigh Street

Extension of the road and construction of a new bridge over Narracan Creek.

Mordialloc City

Nepean Highway Service Road

Construction of a service road between Warrigal Road and Oak Avenue.

Morwell Shire

Alexanders Road

Reconstruction and widening of 1.3 km.

Nunawading City

Main Street

Reconstruction of 1.2 km between South Parade and Canterbury Road.

Terrara Road

Reconstruction of 0.5 km between Hanover Road and George Road.

Newham and Woodend Shires

Woodend-Wallan Road

Reconstruction of 1.6 km north-east of Woodend.

Oakleigh City

Waverley Road

Reconstruction between Warrigal Road and Huntingdale Road.

Oxley Shire

Carboor-Whorouly Road

Construction of a 3 span reinforced concrete bridge over the Whorouly river.

Portland Town

Port Road (West Boundary Road)

Construction of a 2 span bridge carrying Bridgewater Road over Port Road.

Portland Shire

Winnap-Drik Drik Road

Reconstruction of 1 km at Winnap.

Unclassified roads (cont)



New 2 span bridge on the Violet Town-Dookie Road over the Broken River, Shire of Violet Town.

Preston City

Dunne Street

Reconstruction between Maryborough Avenue and Darebin Creek.

Ringwood City

Eastfield Road

Construction of a single span bridge over the railway.

Wonga Road

Construction of 0.3 km south from Plymouth Road.

Rosedale Shire

Longford-Letts Beach Road

Reconstruction of 3 km.

Shepparton Shire

Ford Road

Reconstruction of 1.8 km.

Sherbrooke Shire

Mahoney Street

Reconstruction of 1 km between Glenfern Road and Main Street.

South Barwon Shire

Marshalltown Road

Reconstruction and widening of 0.5 km west from Barwon Heads Road.

South Melbourne City

Queensbridge Square

Reconstruction and signalisation of the Queensbridge Street/Yarra Bank Road/Riverside Avenue intersection.

Tungamah Shire

Shepparton-Katamatite Road

Reconstruction of 4.9 km.

Violet Town Shire

Violet Town-Dookie Road

Construction of a 2 span reinforced concrete bridge over the Broken River.

Warragul Shire

Old Telegraph East Road

Reconstruction and realignment of 1.6 km.

Waverley City

Jells Road

Reconstruction of 1.6 km between Ferntree Gully Road and Waverley Road.

Waverley Road

Reconstruction of 0.8 km between Lum Road and Jells Road.

Werribee Shire

Derrimut Road

Reconstruction of 1.6 km between Hogans Road and Sayers Road.

Werribee Shire-Sunshine City

Boundary Road

Reconstruction and widening of 1.1 km between Station Road and Fitzgeralds Road.

Whittlesea Shire

Craigieburn Road

Reconstruction of 1 km east of the Hume Highway.

Merriang Road

Reconstruction of 2.8 km north of Beveridge Road.

Woorayl Shire

Andersons Road

Construction of 1.5 km.

Hills Road

Construction of 1.9 km.

Yea Shire

Whittlesea-Yea Road

Reconstruction and widening of 2.5 km.

Other projects and activities

National Park roads

The State Government again provided loan funds repayable by the Board, amounting to \$100,000, for expenditure on roads and associated purposes in or near National Parks.

Allocations were made by the Board after consultation with the National Parks Service for maintenance and for other works in or near the following National Parks:

Brisbane Ranges National Park	Bannockburn and Corio Shires
Bulga National Park	Alberton Shire
Cape Schanck National Park	Flinders Shire
Captain James Cook National Park	Orbost Shire
Ferntree Gully National Park	Sherbrooke Shire
Fraser National Park	Alexandra Shire
Glenaladale National Park	Bairnsdale Shire
Hattah Lakes National Park	Mildura Shire
Holey Plains	Rosedale Shire
Kinglake National Park	Eltham and Whittlesea Shires
Lind National Park	Orbost Shire
Little Desert National Park	Dimboola Shire
Lower Glenelg	Portland Shire
Morwell National Park	Morwell Shire
Mount Buffalo National Park	Bright Shire
Mount Burrowa Pine National Park	Tallangatta Shire
Mount Eccles National Park	Minhamite Shire
Mount Richmond National Park	Portland Shire
Mount Samaria National Park	Mansfield Shire
Organ Pipes National Park	Keilor City and Bulla Shire
Port Campbell National Park	Heytesbury Shire
Tarra Valley National Park	Alberton Shire
The Lakes National Park	Rosedale Shire
Warby Ranges National Park	Wangaratta Shire
Warrandyte National Park	Doncaster and Templestowe City
Wilson's Promontory National Park	South Gippsland Shire
Wingan Inlet National Park	Orbost Shire
Wyperfeld National Park	Karkaroc Shire

The works consisted of the construction and sealing of access roads to National Parks and roads and parking areas within National Parks, together with the

maintenance of roads already constructed. The works were carried out either by the Board, the local municipal council or the National Parks Service. The Government has made loan funds totalling \$1,597,000 available for these purposes since 1st July, 1963.

Roads of tourist interest

The State Government provided loan funds totalling \$225,000 in 1978/79 for expenditure on roads of a tourist nature other than roads proclaimed as tourists' roads under the provisions of the Country Roads Act. The loan funds are repayable by the Board.

Allocations for particular projects were made by the Board after consultation with the Ministry of Tourism. The total amount made available by the Government since 1960 is \$3,894,000.

Application for financial assistance from these funds are well in excess of the amount available for expenditure.

The Board is required to make an annual payment into the Tourist Fund amounting to 2% of the amount credited to the Country Roads Board Fund in the previous year from receipts under the Motor Car Act. An amount of \$1,519,563 was paid during the year. The Tourist Fund is administered by the Ministry of Tourism.

National Association of Australian State Road Authorities

The National Association of Australian State Road Authorities (NAASRA) is an organization of the Road Authorities of the six States and the Commonwealth Department of Housing and Construction, and also the Northern Territory Department of Transport and Works which was admitted on 17th May, 1979.

The members of NAASRA are the heads of the various authorities.

The Association was established in 1934, as the Conference of State Road Authorities, and adopted its present name in 1959.

NAASRA aims to provide a central organization where, by co-operative effort, a uniform approach to the development and improvement of the national road system can be achieved. Over the years, this co-operation has permitted the Association to co-ordinate and rationalize road and bridge design standards, construction and maintenance practices, and road research projects, and also to gather and publish the facts about Australia's principal roads and their financing. From these activities, NAASRA has developed a national approach to Australia's road problems.

The technical work of NAASRA is performed by the

Principal Technical Committee (consisting of the chief engineering officers of the authorities) and a number of standing and ad hoc committees on which the Board is represented. NAASRA's views on such matters as the Commonwealth's controls on road finance, and Commonwealth participation in works programming, road design and construction standards are presented to the Australian Transport Advisory Council Road Advisers' Group, of which the Board's Chairman, Mr T H Russell is a member.

This group advises ATAC, the meeting of Ministers of Transport, which determines policy. The following NAASRA meetings were held during the year:

- 60th (Annual Meeting) Adelaide, 6th and 7th November, 1978, attended by Mr R E V Donaldson, the then Chairman.
- 61st (Intermediate Meeting) Melbourne, 17th May, 1979, attended by Mr T H Russell, Chairman, Mr W S Brake, Deputy Chairman and Mr N L Allanson, Member.

Items considered by NAASRA during the year included:

- 1 Admission of Northern Territory Department of Transport and Works to NAASRA.
- 2 International organizations and conferences.
- 3 Commonwealth road funds legislation.
- 4 State roads legislation.
- 5 Road surveys.
- 6 Road vehicle limits.
- 7 NAASRA study of road maintenance standards, costing and management.
- 8 NAASRA data bank systems.
- 9 Uniform road statistics.
- 10 Co-ordination of road research.
- 11 International training courses.
- 12 NAASRA publications.

Australian Road Research Board

The Australian Road Research Board was established in 1960. The Board of Directors includes the Heads of the State Road Authorities, the Secretary of the Commonwealth Department of Housing and Construction, the Secretary of the Commonwealth Department of Transport, and the Executive Director of ARRB.

Up to 10% of the ARRB's annual expenditure is borne by the Commonwealth Department of Housing and Construction. The remainder is shared by the six State Road Authorities on the percentage basis adopted by the Commonwealth Government in making grants to the States under the States Grants (Roads) Act 1977.

The objective of the Board is to co-ordinate, encourage and arrange continuing research into problems associated with road and traffic in Australia, i.e. research into road planning, location,

design, construction and maintenance, traffic operation and road safety.

The Directors of the Australian Road Research Board meet twice a year to consider management and policy matters and to review the progress of research projects.

Mr R E V Donaldson, the then Chairman, who at the time was also Deputy Chairman of ARRB, attended the 37th Directors' meeting of ARRB at the Highways Department, Adelaide, on 9th November, 1978. The present Chairman, Mr T H Russell, attended the 38th meeting held at the Australian Road Research Centre, Vermont, on 15th and 16th May, 1979.

Technical conferences for the wider dissemination of the results of research and the exchange of knowledge are held biennially. The Ninth Conference was held in Brisbane in August 1978.

Several CRB engineers are members of ARRB Technical or Specialist Committees, and CRB officers are involved in some of the ARRB research projects.

Co-operation with Army Reserve

The Board continued its sponsorship, with other Victorian Government instrumentalities, of Royal Australian Engineers Supplementary Reserve units of the Australian Army Reserve. These sponsoring authorities undertake public works akin to military engineering tasks and the Supplementary Reserve units provide the means of using the civilian knowledge and skills of members to military advantage. With complementary training in purely military subjects a nucleus of army engineers is thereby developed for rapid expansion in time of defence emergency. The units sponsored by the Board are the Headquarters 22 Construction Regiment and the 107 Plant Squadron (Heavy). The 1978 annual camp was held in October at the School of Military Engineering, Casula, New South Wales, where members took advantage of the school's specialist instructors and facilities to develop their individual and collective skills in military engineering. Training included many aspects of modern military bridging equipment and techniques as well as advanced training in specialized topics for officers and senior NCOs. The movement of members interstate was effected in RAAF Hercules transport aircraft.

In May, 1979, Lieutenant Colonel G R Hunt ED, the Board's Specification and Contracts Engineer, completed his term as Commanding Officer of the regiment and was succeeded by Lieutenant Colonel P M Hosking ED, the Board's Property Officer. The plant squadron is commanded by Major E G Renton, an engineer in the Works Sub-branch. At 30th June, 1979, thirteen members of the Board's staff were officers of 22 Construction Regiment.

Public relations

The Board continued to pursue the policy of informing the public of its functions and works. The Public Relations Section prepared news releases, publications, audio-visual productions and displays as mediums for carrying out this activity.

Publications

In May, the awards of the Australian Institute of Management (NSW Division) for annual reporting were announced, and the Board received a Bronze Award for its 65th Annual Report 1977-78. The award was made in the Public Administration Division, Public Administrative Units.

During the year, the Board issued the following publications and pamphlets:

CRB News, Nos. 39, 40, 41.

Drivers' Guide to Victoria (two editions).

Truckies' Guide to the Advisory Truck Route Hume Freeway, Seymour-Euroa.

Colouring Book (reprint).

Snow Driving . . . It's An Art.

Information Bulletin, Surrey Hills.

Information Brochure, Banksia Street to Bell Street Connection, Heidelberg.

Audio Visual Productions

During the year four short video productions were made for public exhibition:

Roadscape — a Moving Environment.

The West Gate Freeway.

Latrobe Terrace, Geelong.

Snow Driving . . . It's An Art.

Vandalism campaign

During the summer months the Board conducted an anti-vandalism campaign, using news releases, CRB News and car tidy bags to bring to the public's attention the problem of roadside vandalism.

The campaign was based on a survey by the Board's Divisional Engineers, which showed that the cost of vandalism to the Board and municipal councils was approaching \$½ million each year.

The campaign was launched jointly by the Minister of Transport, the Hon Robert Maclellan, MLA, and the Chairman of the Board, Mr T H Russell at a news conference in December.

Information bulletins

The Board continued the practice of issuing regular information bulletins on major projects. During the year bulletins were issued on the Nepean Highway widening project between Elsternwick and Moorabbin and the West Gate Freeway project, South Melbourne.

The information bulletins are issued to residents,

councils, Members of Parliament and the media, and outline current progress on the project concerned.



Personnel

The Board's personnel strength as at 30th June, 1979, was as follows:

Technological staff (professional)	618
Technical staff	524
Administrative staff	772
Supervisory staff — Field	177
Depot	76
Clerk of works	82
Construction and maintenance personnel	2170
Workshop and depot personnel	643
Total	5062

During the year the Board continued to examine carefully all requests for staff recruitment and staff replacement in accordance with its policy of as far as possible restricting the total number of staff employed by the Board to the number employed as at 18th May, 1978.

The Board engaged 20 young people during the year as part of the Commonwealth Government initiated Special Youth Employment Training Programme. This programme encourages the development of job skills in young people between the ages of 15-24 years who have been unemployed for at least four months. The young people engaged were given on-the-job training for a maximum period of four months, mostly in field positions.

The Board was also able to provide one hundred school students with work experience under the Work Experience Act 1975, in clerical, technical and field positions. The Act was introduced by the State Government in January, 1975, to enable students over thirteen years of age to be provided with work experience for up to twelve days in any one term. The State Education Department reimbursed to the Board the salaries paid to the students.

Apprenticeships

Twenty-five new apprentices were employed during the year in the trades of motor mechanics (17), structural steel fabrication (1), landscape gardening (2), painting and decorating (1), fitting and turning (1), auto electrics (1) and electrical mechanics (2). The total number of apprentices in training at 30th June 1979, was:

Motor mechanics	72
Structural steel fabrication	5
Carpentry and joinery	7
Painting and decorating	4
Electrical mechanics	3
Cooking	1
Automotive electrics	2
Landscape gardening	4
Lithographic printing	2
Instrument making and repairing	1
Fitting and machining	2
Plumbing and gasfitting	2
Total	105

Training and development

As in previous years, the Board provided a comprehensive inservice training programme for its staff at all levels based on annual assessment of training needs. Courses covered technical subjects such as road design, traffic engineering and quality control, and also management principles and skills. During the year a post graduate scholarship was awarded to a Board officer for a Masters degree in Transportation Engineering at the University of California in pavement design.

During the year officers attended the following external training courses:

- The Traffic Planning and Control Course (University of New South Wales).
- The Construction Management Course (University of New South Wales).
- The Advanced Course (Australian Administrative Staff College).
- The Management Development Course (Australian Administrative Staff College).

A study leave scheme and job rotation programme for professional, technical and administrative staff were conducted to assist staff development.

Industrial relations

The Board's relationships with trade unions during the year continued to be generally satisfactory. The Board was represented in a large number of cases before the Australian Conciliation and Arbitration Commission. The more important cases included claims for increased rates of pay and condition improvements in the two building trades awards — the National Building Trades Construction Award and the Building Construction Employees and Builders Labourers Award. The Board was represented by its Industrial Relations Officer on a national committee of seven employer representatives responsible for negotiations with the unions concerned.

Another important case concerned the Transport Workers' (General) Award where the Transport Workers' Union sought a wage increase of \$8 per week. Several stoppages over this claim directly affected the Board's operations. These matters were unresolved at the end of the financial year.

A dispute with the Australian Workers' Union resulted in a stoppage by Board's employees at the Mulgrave Freeway Project. The issue involved both rates of pay and demarcation between members of the Australian Workers' Union and the Federated Engine Drivers' and Firemen's Association. Both matters were resolved to the satisfaction of all parties.

The Board provided advice on industrial relations matters to the West Gate Bridge Authority over the

eighteen months prior to the opening of the bridge. During the year a new item of highly sophisticated road construction plant, the C.M.I. Autograde, was put into operation by the Board. Prior to purchase of the autograde, discussions were held with the Australian Workers' Union in relation to the effect of the autograde upon employment levels. The A.W.U. was assured that the new plant would not directly reduce the number of jobs available to A.W.U. members, and the Union agreed to co-operate with the Board in the operation of the autograde.

Superannuation for wages employees

On 30th March, 1979, the Premier, the Hon R J Hamer, ED, MP, announced the establishment of a new superannuation scheme which will enable approximately 2,800 wages employees of the Board who were not at that time eligible to contribute to the State Superannuation Scheme, to receive superannuation benefits. The new scheme provides improved benefits over and above the existing retiring gratuity scheme.

Award coverage

Details of Federal Awards to which the Board is a respondent party and the number of its personnel covered by these Awards as at 30 June, 1979, are as follows:

Award	No. of employees
Australian Workers' Union Construction and Maintenance	1772
Building Construction Employees and Builders Labourers	134
Carpenters and Joiners	11
Engine Drivers and Firemen	2
National Building Trades Construction	79
Metal Trades	333
Transport Workers General	310
<i>*Country Roads Board Salaried Staff</i>	1680
Municipal Officers (Country Roads Board) Senior Officers	19
Professional Engineers (Country Roads Board, Victoria)	511
Professional Engineers (Country Roads Board, Victoria) Senior Engineers	21
Total	4872

The remaining employees are covered by Victorian Wages Board Determinations.

*Formerly titled the Municipal Officers (Country Roads Board).

Salaries payment by cheque

During the year, the Board introduced a system of payment of staff salaries by cheque or bank transfer in addition to the previously existing system of cash payment of staff salaries. The new system was introduced in order to reduce security risks associated with cash payment of staff salaries. The new system was introduced with the agreement and co-operation of the staff and staff associations.

Issue of safety footwear

During the year, with the agreement of employee unions, the Board implemented a scheme which will provide free safety footwear and protective clothing to all field, depot and workshop employees.

Occupational health

The Board purchased a portable diagnostic audiometer during the year for the testing of certain employees' hearing ability. The audiometer is of assistance to the Board in meeting its obligations under the Health (Hearing Conservation) Regulations, which came into operation on 1st January, 1979.

From May, 1978, to October, 1978, the Board conducted an immunisation programme against poliomyelitis and influenza. The Board's medical staff carried out the inoculation of personnel at the Head Office complex and at Syndal whilst for personnel elsewhere in the State arrangements were made with local medical practitioners. The response of personnel to this programme resulted in 977 personnel being immunised against influenza and 1361 against poliomyelitis.

Retired Persons' Association

During the year a CRB Retired Persons Association was formed. The association elected its office bearers, drew up a constitution and arranged functions to bring together as many retired Board personnel as possible.

Retirements

During the year the following personnel retired after substantial service with the Board:

Name	Position	Location	Length of service (years)
Donaldson, R E V	Chairman	Board	33
Hughes, E T	Depot Foreman	Bendigo Division	45
Cambridge, C J	Superintendent of Works	Horsham Division	43
Jackson, F W	Pipe Testing Officer	Bridge Sub-Branch	42
Albert, S G	Patrolman	Geelong Division	39
Beston, W B	Mobile Crane Driver	Mechanical Sub-Branch	36
Davey, L G	Carpenter	Secretary's Branch	34
Godkin, H	Superintending Draftsman	Title Survey Division	31
Lingard, N J	Patrolman	Bendigo Division	31
Horan, (Miss) E M	Senior Machine Operator	Geelong Division	30
Proudfoot, D G	Controller of Stores	Central Stores Syndal	30
Wilson, A C	Stock Inspector	Ballarat Division	29
Glisovic, M	Owner Truck Driver	Benalla Division	27
Ward, F E	Overseer	Horsham Division	27
*Jervies, C W	Cleaner/Gardener	Warrnambool Division	26
Mikolajczak, F	Plant Operator	Traralgon Division	26
Cornwall, R W	Rail Car Tanker Attendant	Bairnsdale Division	24
*Harkings, G	Overseer	Traralgon Division	24
*Masters, H E	Experimental Officer	Materials Research Division	24
Gange, P H	Engineer	Plans and Surveys Division	23
*Gunn, G E	Engineer	Warrnambool Division	23
Harris, L G	Carpenter	Ballarat Division	23
Selzer, P F	Overseer	Traralgon Division	23
Duffey, W J	Workshop Supervisor	Bridge Sub-Branch	22
Somerville, K	Storeman	Bairnsdale Division	22
Morris, J C	Patrolman	Bairnsdale Division	21
Debono, S	Fitter	Mechanical Sub-Branch	20
*Hoskin, V	Truck Driver	Dandenong Division	20
McIntyre, A A	Bitumen Worker	Bendigo Division	20
Robe, C	Patrol Assistant	Geelong Division	20

*Deceased

Legislation affecting the Board

Legislation enacted or in the process of being enacted during the year, which affected the Board included the following:

Country Roads (Amendment) Act 1978

This Act which came into operation on 1st December, 1978, made a number of amendments to the Country Roads Act 1958. The principal amendments:

- (a) provided for the Board to administer the Country Roads Act and exercise the rights, powers and authorities and discharge the duties conferred or imposed by that Act or any other Act, subject to both general and specific directions of the Minister of Transport;
- (b) extended the Board's by-law making powers regarding the preservation and protection of land owned by the Board;
- (c) amended and clarified the street lighting provisions already contained in the Act;
- (d) extended to main roads the Board's powers to impound unattended livestock; and
- (e) increased various penalties under the Act.

The Board's by-law making powers were extended to give the Board greater power to control activities on land which it owns. Previously, the Board was unable to make by-laws regulating the use of land purchased or acquired by it for road purposes, until such time as a road had been constructed on that land and the road had been declared. As a result, the Board had been experiencing problems by reason of persons using construction sites or land acquired for future roadworks for various recreational activities and other types of activities which caused inconvenience to nearby residents, mainly through the noise which they produced. In addition, these activities at times resulted in damage to plant and interfered with works.

Section 72 of the Country Roads Act provides that the costs of installation, operation and maintenance of street lighting on State highways and main roads are to be shared equally between the Board, the electric supply authority and the municipal council concerned. Some queries had arisen as to whether or not certain costs, in particular, the costs of improving existing lighting installations, should be included in the cost sharing scheme. The amendments to Section 72 made by the Country Roads (Amendment) Act 1978 made it clear that all costs relating to the installation, operation and maintenance of street lighting on State highways and main roads are to be shared, provided that the costs have first been approved by the Street Lighting Committee.

The Board previously had power to impound unattended stock on State highways, freeways, and tourists' roads, but not on main roads. This had given rise to some problems where the Board's Stock Inspectors were unable to deal with unattended stock on main roads in circumstances where it was apparent that such stock could stray on to State highways. The amendment overcame this problem by extending to main roads the Board's power to impound unattended stock.

Most of the penalties provided for in the Country Roads Act were fixed many years ago and with the inflation which has occurred over recent years, it was appropriate that these penalties be increased. Most of the penalties were increased by 100%.

Country Roads (Borrowing Powers) Act 1978

This Act came into operation on 5th December, 1978.

The Act amended the Country Roads Act 1958 by authorising the Board to borrow sums not exceeding \$100 million by the issue of inscribed stock or debentures, and to permit the Board to obtain a bank overdraft not exceeding \$5 million. The amendment enables the Board to have access to wider forms of finance to provide a greater flexibility in road funding.

Business Franchise (Petroleum Products) Act 1979

This Act was passed during the Autumn Session of Parliament and came into operation on 1st September, 1979.

The Act was passed with the object of replacing the revenue lost through the abolition of road maintenance charges, the decision to abolish these charges having been made by all mainland States following the emergency associated with blockades by transport operators.

On 27th April, 1979, the Australian Transport Advisory Council (ATAC) comprising Commonwealth and State Transport Ministers, considered the question of alternative funding for roads following the abandonment of the road maintenance charges. At that meeting it was decided to form a working party of officers representing each State to consider means of replacing road maintenance charges. The Board's Chairman, Mr T H Russell, was appointed by ATAC to convene the Working Party.

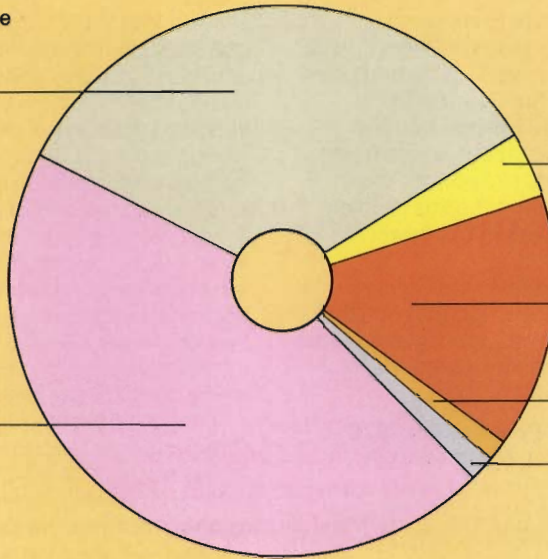
The Working Party reported generally that the alternative to road maintenance charges should be a levy on road fuels imposed by the Commonwealth on behalf of the States or alternatively, that a franchise licensing of persons selling fuel should be introduced in the States and Territories.

As the Commonwealth did not agree to imposing a levy on road fuels on behalf of the States, the State Government adopted a franchise licensing system and the Act provided for the raising of revenue by a licence fee payable by persons who carry on petroleum wholesaling or retailing in Victoria. As from 1st September, 1979, the Act requires petroleum wholesalers to hold a licence, the monthly licence fee being \$50, together with the payment of an amount of 4.5% of the value of motor spirit and 7.1% of the value of diesel fuel sold by the licence holder in the course of intra State trade during the month, two months prior to the month to which the licence relates. Petroleum retailers are also required to hold a licence for which an annual fee of \$50 is paid on a similar basis to the fee applicable to the petroleum wholesaler's licence, except that the ad valorem fee does not apply to fuel purchased by a petroleum retailer from a licensed petroleum wholesaler. The Act also established a "Roads and Special Projects Fund" into which is to be paid an amount equal to the licence fees collected under the Act after deduction of costs of administration. The Act provides for moneys in the Roads and Special Projects Fund to be paid to the Country Roads Board Fund and to the Transport Fund as determined by the Minister of Transport with the proviso that the amount paid to the Country Roads Board Fund in each financial year shall not be less than one quarter of the amount credited in licence fees under the Act during the financial year or \$10 million whichever is the greater and that the minimum amount so paid shall be available for road maintenance.

Receipts 1978-79

Registration fees, drivers' licence fees etc.
33.14% \$78,571,000

Commonwealth Grants
44.57% \$105,652,000



Tonne kilometre tax
4.04% \$9,577,000

Allocation from Roads (Special Projects) Fund
15.32% \$36,320,000

Municipal repayments
1.25% \$2,956,000

Other
1.68% \$3,982,000

Payments 1978-79

State highways
18.05% \$42,251,000

Other
2.22% \$5,201,000

Planning and research
1.59% \$3,723,000

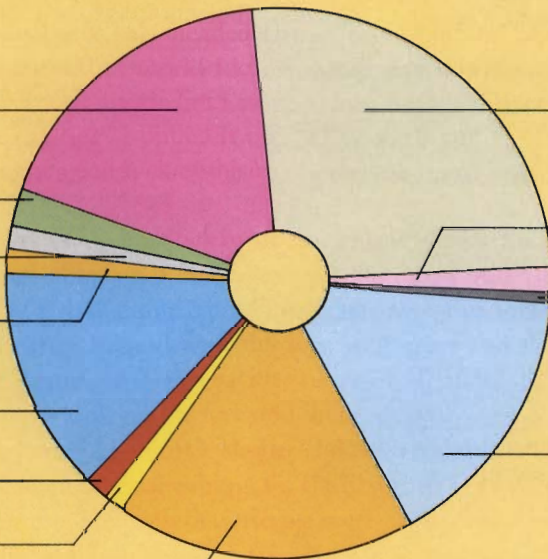
Capital
1.61% \$3,756,000

Management and operating expenditure
12.78% \$29,903,000

Statutory payments
1.23% \$2,871,000

Interest and sinking fund
1.31% \$3,056,000

Unclassified roads
17.76% \$41,560,000



Freeways
25.33% \$59,285,000

Tourists' roads
1.54% \$3,610,000

Forest roads
.77% \$1,798,000

Main roads
15.81% \$37,005,000

Receipts

The Board's receipts were obtained from the following main sources:

After deducting the cost of collecting revenue received under the Motor Car Act, the total funds available to the Board during the year, including the allocation from the Roads (Special Projects) Fund, was \$238,861,286. The funds were derived from:

State sources	131,406,010
Commonwealth sources	105,652,109
Balance brought forward from year 1977/78	1,803,167
	<hr/>
	\$238,861,286

State sources:

Motor registration fees:

Fees payable on the registration and re-registration of motor vehicles and trailers less the costs of collecting the fees (excluding metropolitan omnibus registration fees and the specified proportion of registration fees paid to the Roads (Special Projects) Fund).

Registration number plate fees:

Fees payable for the provision and/or replacement of number plates less the costs of providing the plates and collecting the fees.

Examiners' licence fees:

Fees payable by persons licensed to conduct motor car road-worthiness examinations, less cost of collection of the fees.

Authorized log book fees:

Fees payable for the purchase of log books less the cost of providing the books and collecting the fees.

Learner driver permit fees:

Seven-eighths of the permit fee and the permit extension fee payable by applicants for and/or holders of learner driver permits less seven-eighths of the cost of collection of the fees (one-eighth less one-eighth cost of collection is paid to the Drivers' Licence Suspense Account).

Drivers' licence testing fees:

Seven-eighths of \$4 of the fee payable for the test of proficiency of candidates for motor car drivers' licences less seven-eighths of the cost of conducting the test and collecting the fee (one-eighth of \$4 less one-eighth cost of collection is paid to the Drivers' Licence Suspense Account) and the amount of each fee above \$4 is paid to the Consolidated Fund.

Motor car drivers' licence fees and tractor drivers' licence fees:

One-eighth of the fees payable for the issue of drivers' licences less one-eighth of the cost of collecting the fees (one-half, less one-half cost of collection, is paid to the Consolidated Fund; one-quarter, less one-quarter cost of collection, is paid to the Municipalities Assistance Fund; one-eighth, less one-eighth cost of collection, is paid to the Drivers' Licence Suspense Account).

Motor driving instructors' appointment and testing fees: Fees payable by candidates for motor driving instructors' licences, less cost of collection of the fees.

Motor driving instructors' licence fees:

One-quarter of the fees payable for the issue of motor driving instructors' licences less one-quarter of the costs of collection of the fees (one-half, less one-half cost of collection, is paid to the Consolidated Fund; one-quarter, less one-quarter cost of collection, is paid to the Municipalities Assistance Fund).

Unregistered vehicle permit fee:

A fee for the issue of a permit to use an unregistered motor car or trailer on a highway for a period of not more than 7 days, less the costs of collection of the fee.

Proprietorship notification fee:

A fee payable with notification by a proprietor of a motor car or trailer of repossession of the item under a hire purchase agreement, bill of sale or like instrument, less the costs of collection of the fee.

Fines imposed under the provisions of the Country Roads Act.

All moneys received under Part II of the Commercial Goods Vehicles Act (tonne kilometre tax).

Municipal payments on account of main road works.

Special moneys appropriated by Parliament.

Loan money.

Allocation from Roads (Special Projects) Fund.

Commonwealth sources:

Receipts under the States Grants (Roads) Act 1977, Transport Planning and Research (Financial Assistance) Act 1977.

Grant towards Traffic Engineering and Road Safety Improvements.

The following table shows the funds available to the Board for the construction and maintenance of roads in 1978/79 compared with 1977/78.

Item	1977/78	1978/79
Receipts from State sources	\$	\$
Fees under the Motor Car Act less cost of collection	75,978,153	78,570,895
Commercial Goods Vehicle Act	9,817,988	9,577,183
Municipalities contributions	2,890,536	2,955,935
Loan funds — See 31 CR Act 6229 State loans	325,000	325,000
Loan funds — See 31A CR Act 6229	—	1,000,000
Special grant from State treasury	581,000	463,000
General receipts	1,923,860	2,194,451
Allocation from Roads (Special Projects) Fund	33,456,293	36,319,546
	124,972,830	131,406,010
Balance brought forward at 1st July	792,920	1,587,490
	125,765,750	132,993,500
Receipts under Commonwealth grants for roads		
National highways	29,000,000	31,015,000
National commerce roads	3,800,000	3,341,000
Urban arterial roads	28,900,000	30,852,000
Urban local roads	3,600,000	4,628,000
Rural arterial roads	11,100,000	11,871,000
Rural local roads	19,000,000	20,321,000
Minor traffic engineering and road safety improvements	2,270,000	2,457,000
Balance brought forward at 1st July	—	215,677
	97,670,000	104,700,677
Traffic engineering and road safety	8,855	48,609
Receipts under Transport (Planning & Research) Act 1974	14,573	—
Receipts under Transport Planning & Research (Financial Assistance) Act 1977	1,286,666	1,118,500
	1,301,239	1,118,500
Total funds available for expenditure by the Country Roads Board	224,745,844	238,861,286

Matching Commonwealth Grants for roads

The Commonwealth States Grants (Roads) Act 1977 fixes for each year a 'quota' of expenditure to be made on roads by each State from its own resources. The achievement of the quota over the three year period ending 30th June 1980 is necessary for each State to qualify in full for the total amounts of the Commonwealth grants to be made

under the States Grants (Roads) Act 1977. Failure to expend an amount at least equal to the overall quota would require a State to pay to the Commonwealth the amount of any shortfall against the quota or such lesser sum as the Commonwealth Treasurer determines.

Victoria's quota for the year 1978/79 was \$132,187,000.

Expenditure

Expenditure in the form of cash payments during the financial year amounted to \$234,018,975, leaving a balance of \$4,842,311 to be carried forward into financial year 1979/80.

The following table shows expenditure incurred by the Board including that from the Roads (Special Projects) Fund, in the years 1977/78 and 1978/79.

Item	1977/78	1978/79
	\$	\$
Construction and maintenance of roads and bridges	182,486,681	189,709,980
Capital expenditure (plant, workshops, offices, etc.)	3,121,769	3,756,467
Planning and research	2,817,237	3,722,626
Salaries operating accounts and other administrative expenditure	29,101,827	30,902,815
Statutory payments to Traffic Authority Fund, Transport Regulation Fund and Tourist Fund etc.	2,422,112	2,868,424
Interest and Sinking Fund payments	2,993,051	3,058,663
Total	222,942,677	234,018,975

Sharing the costs of roadworks

The Country Roads Act provides that no more than one-half of the amount expended from loan funds and one-third of the amount expended from the Country Roads Board Fund on main roads during the preceding financial year shall be apportioned between the various municipalities benefited thereby. The Act also provides that the amount apportioned to a council in respect of expenditure charged to the Country Roads Board Fund may be reduced where the cost of maintenance is excessive due either to motor traffic not of local origin or to timber traffic. The revenue, valuation, and rating of the municipality and its financial obligations for loan expenditure on permanent works are taken into account in deciding the level of contribution by a council.

In September 1978 expenditure on the normal program of main roads works in financial year

1977/78 was apportioned in accordance with the Country Roads Act, resulting in the following distribution of expenditure other than Loan Fund expenditure:

Expenditure from Country Roads Board Fund	\$18,708,174
Expenditure from Commonwealth funds	9,186,316
Expenditure from proceeds of tonne/kilometre tax (Commercial Goods Vehicles Act)	6,445,884
	34,340,374

Amount of Country Roads Board Fund expenditure apportioned to councils	2,879,299
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Within the limit of funds available, the Board made allocations to municipal councils for works on unclassified roads.

The expenditure incurred from the allocations made by the Board in financial year 1978/79 compared with 1977/78 was as follows:

	1977/78		1978/79	
	CRB	Council Contribution	CRB	Council Contribution
	\$	\$	\$	\$
Patrol maintenance	2,567,219	1,159,647	2,618,805	1,170,682
Construction, reconstruction and other maintenance	35,728,625	8,511,193	36,999,851	8,594,563
Total	38,295,844	9,670,840	39,618,656	9,765,245

Municipal councils were not required to contribute towards the cost of works involving an expenditure during the year of \$106,943,000 on State highways,

freeways, tourists roads and forest roads (including expenditure from the Roads (Special Projects) Fund).

Appendix 1

Special projects

Projects financed in whole or part from the Roads (Special Projects) Fund, during the financial year.

Project No.	Name and Descriptions	Project No.	Name and Descriptions
24	Eastern Freeway — Construction of a multi-lane freeway from Alexandra Parade, Collingwood to Thompsons Road, Bulleen.	56	Latrobe Terrace — Construction of multi-lane highway, between Hope Street and Settlement Road, Geelong.
33	Princes Freeway — Construction of a new bridge over the Snowy River at Orbost and realignment of approaches.	57	Mornington Peninsula Freeway — Construction of multi-lane freeway between Eel Race Drain, Seaford and Springvale Road, Keysborough.
38	Outer Ring Route (F5 Freeway) — Land Acquisition from Dalton Road, Thomastown to Heidelberg Road, Greensborough.	58	Nepean Highway — Construction of multi-lane highway between Cochrane Street, Elsternwick and South Road, Moorabbin.
40	Princes Freeway — Construction of a second carriageway between Moe and Hernes Oak.	59	Calder Freeway — Bypass of Keilor between Erebus Street and west of Keilor-Melton Road.
41	Princes Freeway/Princes Highway — Construction of dual carriageways between Morwell and Traralgon.	60	Princes Highway East — Construction of multi-lane highway between Hawthorn Road and Waverley Road, Malvern.
42	Bass Highway — Improvements between Lang Lang and Dalyston.	61	Western Highway — Construction of four-lane highway between Princes Highway and Ashley Street, Sunshine.
43	Princes Freeway — Bypass of Drouin and Warragul.	62	Princes Freeway — Construction of bypass of Berwick.
44	Tullamarine Freeway — Construction of interchange at Essendon Airport and conversion of Lancefield Road to Freeway.	63	Princes Highway East — Improvements between Tonghi Creek and Bluenose Creek, Shire of Orbost.
46	Omeo Highway — Improvements between Omeo and Mitta Mitta.	64	Princes Highway East — Improvements between Rankins and east of Jones Creek Road, Shire of Orbost.
47	Calder Highway — Improvements between Harcourt and Bendigo.	65	Omeo Highway — Improvements between Sarsfield and Bruthen.
48	Princes Highway East — Duplication through Pakenham and improvement of Army Road intersection.	66	Cann Valley Highway — Improvements between Weeragua and NSW border.
49	Goulburn Valley Highway — Construction of a bridge over the Goulburn River At Trawool.	67	Mallacoota Tourists' Road — Improvements between Halls Creek and Mangans Lane.
50	STATCON — The installation of stop signs, give way signs and traffic signals throughout the State.	68	Sunraysia Highway — Improvements between Bet Bet Creek and Lamplough.
51	Bellarine Highway — Construction of duplicate carriageways and new bridge at Fenwick Gully, Wallington.	69	Murray Valley Highway — Improvements at Killara and construction of bridges over Kiewa River.
52	Great Ocean Road — Reconstruction from Marengo to Calder River.	70	Midland Highway — Improvements between Reef Hills and Barjarg south of Benalla
54	South Gippsland Freeway — Construction of road and bridge at Hampton Park.	71	Murray Valley Highway — Improvements between Wood Wood and Piangil.
55	Arterial Road Extension of the Eastern Freeway between Thompsons Road, Bulleen and Doncaster Road, Balwyn North.		

Appendix 1 cont.

Project No.	Name and Descriptions	Project No.	Name and Descriptions
72	Phillip Island Tourists' Road — Improvements between Anderson and the Nobbies.	79	Route E6 — Construction of duplicate carriageways from Eastern Freeway to Harp Road.
73	Hamilton Highway — Improvements between Bruce Creek and west of Inverleigh.	80	Westgate Freeway — Land Acquisition from Graham Street to St Kilda Road.
74	Wimmera Highway — Improvements between Rupanyup and west of Marnoo.	81	Princes Highway West — Reconstruction from east of Bellbird to east of McKenzie River.
75	Henty Highway — Princes Highway West — Improvements between Portland North and Bolwarra deviation.	82	Henty Highway — Construction of duplicate carriageways between Mt Bainbridge Road and Rowes Corner.
76	Henty Highway — Improvements between Heywood and Branxholme.	83	South Eastern Freeway (Malvern Section) — Land Acquisition.
78	Jeeralang North Road — Reconstruction at access to new quarry at Jeeralang North.		

Appendix 2

Motor Registrations

Registrations under the Motor Car Act during 1978/79 totalled 2,308,701 an increase of 1.5% over the total for the previous year.

Vehicle	Financial year 1977/78		Financial year 1978/79		Increase	Decrease
<i>Private</i>						
New	121,125		126,585			
Secondhand:						
Re-registered	58,915		57,702			
Renewed	1,489,284		1,515,604			
	1,669,324		1,699,891		30,567	
<i>Commercial and hire</i>						
New	16,579		15,794			
Secondhand:						
Re-registered	5,823		5,907			
Renewed	135,221	157,623	134,698	156,399		1,224
<i>Primary producers' trucks and tractors</i>						
New	4,168		5,153			
Secondhand:						
Re-registered	2,864		3,167			
Renewed	80,773	87,805†	78,912	87,232*		573
Trailers	311,997		316,113		4,116	
Motorcycles	46,845		48,205		1,360	
<i>Licences under the Motor Omnibus Act</i>	871		861			10
Totals	2,274,465		2,308,701		36,043	1,807

† Includes 43,512 no-fee tractors

* Includes 43,303 no-fee tractors

Road Expenditure	12,787,788						
Main Roads	6,934,149	7,014,986	623,193	9,607,178	38,041	23,056,200	13,949,135
— Construction and Reconstruction							
Maintenance	1,338,203	325,000	12,565,945	11,416,690	2,686	25,648,524	16,602,431
State Highways	12,127,062	2,562,197		1,913,172		56,054,601	42,250,955
— Construction and Reconstruction	8,802,824	8,802,824	13,517,903	33,733,874		3,230,646	59,285,247
Maintenance	2,087,685		656,214	243,386		1,683,410	1,926,160
Tourists' Roads	783,810					744,869	1,052,719
— Construction and Reconstruction	1,926,160						
Maintenance	447,867		297,002				
Forest Roads	1,052,719						
— Construction and Reconstruction	8,471,215	1,060,816	24,057,342	7,882	33,597,255		
Maintenance	1,332,768		6,105,696		7,428,464		
Unclassified Roads							
— Construction and Reconstruction	534,739					534,739	41,560,458
Maintenance	563,318					563,318	501,844
Contribution to Melbourne & Metropolitan Tramways Board Tram Tracks Reconstruction							
Rail/Road Bridges Protection							
Metropolitan Bridges							
State Intersection Control (STATCON) Programme			745,308			745,308	565,899
Murray River Bridges & Puntis	565,899					1,824,458	189,709,980
Traffic Line Marking	1,824,458						
Statutory Payments							
Interest and Sinking Fund — State Loans	3,056,163						
Sinking Fund Contribution — Act 6229 Sec 31C	2,500						
Traffic Authority Fund	759,782						
Tourist Fund	1,519,563						
Transport Regulation Fund	589,079						
Planning & Research	2,604,126					1,118,500	5,927,087
Investments — Temporary — Act 6229 Sec 39A	1,000,000						3,722,626
Capital Expenditure							1,000,000
Plant Replacement and Additions	2,857,298						
Buildings, Workshops, etc.	899,169						
Management & Operating Expenditure	7,816,075		7,150,167	14,936,573		3,756,467	29,902,815
Balance available to the Board as at 30th June 1979	\$82,674,419	9,577,183	325,000	36,319,546	103,955,718	1,118,500	234,018,975
	\$4,097,352			744,959			4,842,311

Auditor General's Certificate

The accounts of the Country Roads Board for the year ended 30th June 1979 have been audited. In my opinion, the above Statement of Receipts and Payments fairly presents in summary form the transactions during that period.

B. J. Waldron, Auditor-General, 25th September 1979.

R. G. Cooper, Chief Accountant, 19th September 1979

Appendix 4

Loan Liability to the Government of Victoria

as at 30th June 1979

	Main Roads etc.	Developmental Roads	Total
	\$	\$	\$
Permanent Works			
Main roads	16,730,322.16		16,730,322.16
State highways	19,604,304.20		19,604,304.20
Freeways	3,000,000.00		3,000,000.00
Tourists' roads	227,316.44		227,316.44
Forest roads	2,167.89		2,167.89
Developmental roads		12,851,515.09	12,851,515.09
Discount and expenses	755,205.92	585,619.54	1,340,825.46
Total amount borrowed	40,319,316.61	13,437,134.63	53,756,451.24
Less redemption of loans			
Redemption funds	170,438.11	1,292,772.73	1,463,210.84
Main roads sinking fund	571,376.76		571,376.76
Developmental roads sinking fund		110,166.02	110,166.02
State loans repayment fund	3,690,247.61		3,690,247.61
National debt sinking fund	9,990,613.69	9,123,485.06	19,114,098.75
Consolidated fund	65,313.51		65,313.51
	14,487,989.68	10,526,423.81	25,014,413.49
Loan liability at 30th June 1979	25,831,326.93	2,910,710.82	28,742,037.75

Appendix 5

Works executed on behalf of Commonwealth and State Government Authorities

for the year ended 30th June 1979 (Adjusted to nearest dollar)

Departments	Description of works	Expenditure	
Commonwealth			
Department of Housing and Construction	Access roads to various Commonwealth establishments		1,774
Victoria			
Melbourne and Metropolitan Tramways Board	Roadworks associated with the East Burwood Tramway Extension	300,000	
Ministry of Tourism	Additional snow clearing on the Alpine Road to Mt Hotham	35,000	
Ministry of Transport	Grade separated level crossing projects, etc., charged to the Transport Fund	5,076,730	
Ministry of Transport	Grade separated pedestrian crossings charged to State Treasury, Municipalities and Transport Fund	54,000	
Port of Melbourne Authority	Repairs to upgrade the structure of Centenary Bridge, Port Melbourne	345,915	
Premier's Department	Roadworks in connection with Wonderland and Sundial Road, Stawell Shire	300	
State Electricity Commission	Roadworks to enable the movement of heavy loads to Loy Yang power station	189,460	6,001,405
State Treasury	Improvements to various roads adjacent to State Forests to facilitate the extraction of timber and charged to Municipalities Forest Roads Improvement Fund	107,181	
State Treasury	Restoration works on roads and bridges damaged by floods	3,300,595	
State Treasury	Restoration works on roads and bridges damaged by bushfires in Bairnsdale Shire	144,670	3,552,446
			\$9,555,625

Appendix 6

Loans raised by the Country Roads Board

Under Authority of Country Roads Act

No. 6229 Sec 31A (Borrowing Powers)

Loan No.	Lender	Type of Loan	Interest Rate	Due Date	Amount \$
1.	State Insurance Office	Inscribed Stock	9.5%	30th March 1989	500,000
2.	The National Bank of Australasia Ltd.	Inscribed Stock	9.3%	15th June 1994	500,000

Temporary Investments — Country Roads Act No. 6229 Sec 39A

Invested with	Type of Investment	Interest Rate	Due Date	Amount \$
The National Bank of Australasia Ltd.	Term Deposit	9.0%	29th August 1979	500,000
State Savings Bank of Victoria	Term Deposit	9.1%	15th September 1979	500,000

Sinking Fund Contribution — Country Roads Act No. 6229 Sec 31C

Invested with	Type of Investment	Interest Rate	Due Date	Amount \$
The National Bank of Australasia Ltd.	Term Deposit	7.5%	26th September 1979	2,500

erection of guard railing to keep vehicles away from solid objects; the use of guide posts, raised reflective pavement markers and linemarking to delineate the road; and the introduction of the STATCON system which by the erection of "Stop" and "Give Way" signs establishes a system of priority roads.

In addition, the construction of climbing lanes to allow faster vehicles to pass slower vehicles, and staggered "T" intersections to eliminate minor cross roads, can improve safety. During the year, the Board constructed climbing lanes on the Princes Highway East at Jefferson Hill, Tynong and a staggered "T" intersection at Racecourse Road and Army Road, Pakenham.

The total number of intersection improvements on arterial roads in the Metropolitan area, including major and minor reconstruction, traffic signals and safety features were as follows:

	1977-78	1978-79
Constructed by Councils (with the Board's financial assistance)	44	62
Constructed by the Board	24	45
Total	68	107

Flood and storm damage restoration works

Extensive flooding in eastern Victoria in June, 1978, and in the southern and northern areas of the State in August, November and December, 1978, caused widespread damage to roads, road closures and hazards to traffic. State highways affected were the South Gippsland Highway, Cann Valley Highway, Princes Highway East, Midland Highway and the Bonang Highway.

Severe windstorms in the north central areas of the State in January, 1979, also caused considerable damage to State highways including the Northern Highway, Calder Highway, Loddon Valley Highway, Midland Highway and the McIvor Highway.

Emergency work was required to re-open these highways to traffic.

During the 1978-79 financial year grants totalling \$3.82 million were made by the State Government, under a Commonwealth/State agreement, for restoration works following natural disasters. Some works were carried out under the direct supervision of the Board's staff and others were carried out under municipal supervision. Under a new Commonwealth/State agreement which came into effect on 1st January, 1979, the State Government meets the first \$7 million of restoration costs and the Commonwealth Government meets any additional amount required. Local Government is responsible for the full cost of the restoration where the total cost does not exceed \$10,000. Where the total cost exceeds \$10,000, but is less than \$110,000, Local Government is responsible for the first \$10,000 plus 25% of the balance of the total cost. Where the total cost exceeds \$110,000, Local Government is responsible for an amount of \$35,000. Allocations for emergency works are made free of Local Government contribution. Assistance is not provided for any expenditure incurred in restoring assets beyond the standards which existed prior to the disaster.

Applications from councils for funds to restore roads and bridges damaged by floods are referred to the Board for investigation and recommendation to the Treasurer.

State Highways — declared as at 30.6.79 (cont.)

Name	Section	Length (kilometres)
Cann Valley	Cann River-NSW border	44.9
Eastern*	Nicholson Street- Gold Street	1.2
Glenelg	Ballarat-SA border near Mt Gambier	282.2
Goulburn Valley	Eildon-Strathmerton	223.8
Hamilton	Geelong-Hamilton	231.0
Henty	Portland-Lascelles	336.1
Hume*	Melbourne-NSW border near Albury	210.5
Kiewa Valley	Bandiana-Mt Beauty	78.7
Loddon Valley	Bendigo-Kerang	123.7
Maroonah	Melbourne-Mansfield	184.6
Mclvor	Heathcote-Bendigo	44.2
Midland*	Geelong-Mansfield	414.7
	Morwell-Port Welshpool	78.9
Murray Valley	Corryong-Hattah	737.0
Nepean	Melbourne-Portsea	91.1
Northern	Kilmore-Echuca	161.9
Omeo	Bairnsdale-Tallangatta	282.2
Ouyen	Ouyen-SA border near Pinnaroo	130.7
Ovens	Wangaratta-Bright	76.2
Princes (East)*	Melbourne-NSW border near Genoa	499.4
Princes (West)*	Melbourne-SA border near Mt Gambier	401.9
Pyrenees	Elphinstone-Ararat	147.1
South Gippsland*	Dandenong-Yarram- Sale	254.0
Sturt	Mildura-SA border near Renmark	113.6
Sunraysia	Ballarat-Calder Highways	340.0
Warburton	Lilydale-Warburton	34.6
Western*	Melbourne-Serviceton	371.5
Wimmera	Apsley-St Arnaud	222.2

*Lengths quoted do not include freeway sections.

Freeways — as at 30.6.79

Name	Section	Length (kilometres)
Calder	Keilor Elphinstone	2.8 2.8
Eastern	Hoddle Street to Bulleen Road	9.0
Frankston	Eel Race Drain to Beach Street	7.0
Hume	Craigieburn to Kalkallo Beveridge	8.3 3.2
	Wallan-Broadford	34.8
	Broadford to Tallarook	15.6
	Chiltern	21.3
West Gate	Bertie Street to Graham Street	0.3
	Williamstown Road to Princes F'way	5.1
Midland	Yinnar	9.6
Mornington Peninsula	Dromana to Rosebud	8.4
Princes	Mulgrave Moe and Haunted Hills	15.7 19.7
	Laverton	12.8
	Maltby	10.2
	Lara	24.4
	Dartmoor	3.0
South Eastern	Anderson Street to Toorong Road	6.8
South Gippsland	Whitelaw	3.8
	Princes Freeway to Pound Road	5.6
Tullamarine	Flemington Bridge to Melbourne Airport	20.9
Western	Deer Park to Melton	13.3
	Bacchus Marsh	8.9
	Pentland Hills	9.0
	Pykes Creek	7.3
	Ballan	7.8
	Gordon	8.9

Forest roads — declared as at 30.6.79

Name	Municipalities	Length (kilometres)
Bairnsdale-Dargo	Avon and Bairnsdale Shires	20.8
Bealiba-Moliagul	Bet Bet Shire	9.0
Beech Forest- Mt. Sabine	Otway Shire	12.6
Benambra-Corryong	Omeo, Tallangatta and Upper Murray Shires	76.5
Benambra-Limestone	Omeo Shire	14.3
Bendoc-Orbost	Orbost Shire	20.9
Brookville	Omeo Shire	15.9
Bruthen-Buchan	Tambo Shire	36.5