1976-77

VICTORIA

COUNTRY ROADS BOARD

SIXTY-FOURTH ANNUAL REPORT

FOR YEAR ENDED 30th JUNE, 1977

PRESENTED TO BOTH HOUSES OF PARLIAMENT
PURSUANT TO ACT No. 6229

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Country Roads Board
Victoria

Sixty-fourth Annual Report
for year ended 30th June, 1977

Presented to both Houses of Parliament
pursuant to Act No. 6229

R. E. V. Donaldson
Chairman

T. H. Russell
Deputy Chairman

W. S. Brake
Member

Principal Officers
as at 30th June, 1977

Dr. K. G. E. Moody
Engineer in Chief

N. L. Allanson
Secretary

R. G. Cooper
Chief Accountant

N. S. Guerin
Deputy Engineer in Chief

C. C. Liddell
Deputy Secretary

R. J. C. Bulman
Deputy Chief Accountant

Divisional Engineers and Regional Divisional Offices

A. N. Jephcott
Bairnsdale

E. T. Oppy
Ballarat

R. R. Patterson
Benalla

T. M. Glazebrook
Bendigo

S. H. Hodgson
Dandenong

G. W. Marshallsea
Geelong

J. W. Heid
Horsham

L. M. Jones
Metropolitan

Dr. D. T. Currie
Traralgon

F. G. Lodge
Warrnambool

Cover:
A range of locations showing the various uses the Board makes of plant growth on the roadside. The Board planted 129,246 trees and shrubs throughout the State during 1976-77, at a cost of $46,813. Of the total figure, 90,471 trees and shrubs were planted within the Board's two divisions which cover Metropolitan Melbourne and its surrounds.
Pictured are (from top to bottom):
1. Trees now established on the Ovens Highway, near Tarrawingee. 2. Creek treatment and rest area, Princes Highway East near Rosedale. 3. Planting on Mulgrave Freeway. 4. Planting on the road reserve of the Princes Highway East near Pakenham. 5. Planting on the Eastern Freeway sound barrier.

60 Denmark Street
Kew 3101

30th September 1977

The Honorable J. A. Rafferty MP
Minister of Transport
570 Bourke Street
Melbourne 3000

Sir
In accordance with the requirements of Section 128 of the Country Roads Board Act 1958 No. 6229, the Board has the honour to submit to you for presentation to Parliament the report of its proceedings for the year ended 30th June, 1977.

The Board thanks you, Sir, for your support and interest in its activities and wishes to place on record its appreciation of the continued co-operation and assistance of other 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.

We have the honour to be,
Sir,
Your obedient servants

R. E. V. Donaldson
AASA (Senior), AIMA, FCIT, JP
Chairman

T. H. Russell
M.Eng.Sc., BCE, Dip.CE, CE, FIE Aust.
Deputy Chairman

W. S. Brake
BCE, CE, MIE Aust.
Member

N. L. Allanson
AASA (Senior), JP
Secretary

Some of the bridges completed by the CRB during the year: 1. Eastern Freeway — Chandler Highway Overpass. 2. Princes Highway East — Simpson's Creek Bridge. 3. Princes Freeway — Snowy River Bridge, Orbost. 4. Goulburn Valley Highway — Goulburn River bridge at Trawool, under construction. 5. Princes Freeway — Ashbys Gulch Bridge, Orbost.

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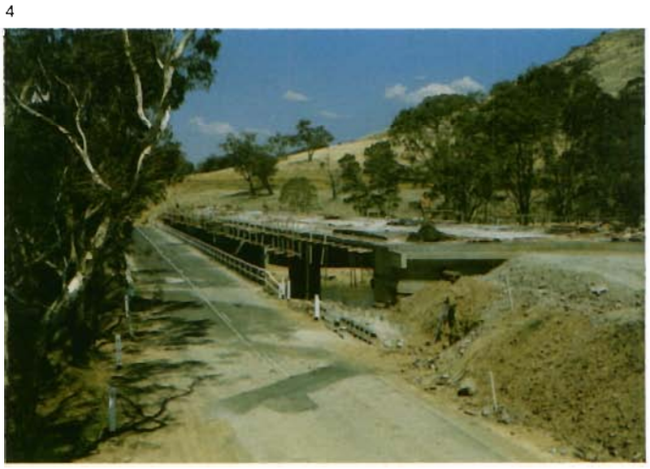

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Motor registration fees

An increase in the rates of motor registration fees by approximately 36% as from 1st January, 1977, resulted in additional revenue of approximately $14.5 million being paid into the Country Roads Board Fund and the Roads (Special Projects) Fund during the year. The additional revenue assisted in easing the financial crisis facing the Board.

As a result of the increased revenue, supplementary allocations of funds were made by the Board in January, 1977, to municipal councils for expenditure on main roads and unclassified roads. Additional funds were also provided for the Board's direct works programme.

The total gross revenue received from motor registration fees, including trailer registration fees, during the year amounted to $100.754 million, $69.162 million of which was paid into the Country Roads Board Fund and $31.592 million into the Roads (Special Projects) Fund.

Gross revenue received from motor registration fees represented approximately 49% of the Board's total funds available for expenditure on roads in the financial year. The level of registration fees is therefore a significant factor in the amount of funds available to satisfy the community's road needs.

Motor registration fee rates were previously increased in February, 1975, by approximately 35% and in March, 1968, by proportions ranging from 9% for private vehicles up to about 20% for commercial vehicles.

The amounts paid for registration of a Holden Kingswood sedan-type vehicle with 32 power units and 25 weight units as at 31st March, 1977, in the various States were approximately as follows:

Victoria	$65	South Australia	$61
New South Wales	$63	Western Australia	$56
Queensland	$54	Tasmania	$53

Commonwealth funds for roads

Funds made available by the Commonwealth for the three-year period from 1st July, 1974, were provided under the National Roads Act 1974, the Roads Grants Act 1974, and the Transport (Planning and Research) Act 1974, all of which expired on 30th June, 1977.

Although the Honorable P J Nixon MP, Commonwealth Minister for Transport, advised the States on 10th May 1977 of the principles which he would be proposing for the new Roads Assistance legislation, the only legislation passed by the Commonwealth prior to 30th June 1977 was interim legislation covering the three-month period from July 1977 to September 1977. The interim legislation entitled 'The States Grants (Roads Interim Assistance) Act 1977' is expected to be subsumed by later legislation covering a three-year period from 1st July 1977 to 30th June 1980.

The interim legislation provided for grants to be made to the States equal to one-quarter of each State's proposed total 1977/78 grants announced by the Honorable P J Nixon MP on 25th February 1977. The interim legislation did not provide funds for planning and research expenditure.

Although the principles outlined by the Honorable P J Nixon MP on 10th May 1977 regarding the proposed Roads Assistance legislation indicate that the new legislation will combine into one act the 1974 National Roads Act and Roads Grants Act, there is no indication that the serious shortcomings of the 1974 legislation will be avoided. The proposed legislation is expected to cover only a three-year period and to provide for eight separate categories with specific grants being made to each category. The three-year period is far too short for planning purposes and the retention of so many categories receiving specific grants continues the Commonwealth's intrusion into the development of Victoria's road system in respect of which the priorities and standards should be determined by Victoria. The administrative arrangements required to cope with so many categories is time-wasting and unnecessary.

Another disturbing feature of the proposed legislation is the indication that the level of grants for 1978/79 and 1979/80 are to be held, in real terms, at the level of 1977/78 grants. Although this is a form of indexation, the indexation is based on the amount of the proposed 1977/78 grant which is well below needs. The proposed 1977/78 grant of $98.9 million is inadequate, taking into account the following factors:

- —$98.9 million is only 8.5% or $7.8 million greater than that made available by the Commonwealth in financial year 1976/77.
- —To maintain in 1977/78 the 1976/77 level of road and bridge works financed from Commonwealth funds assuming an inflation rate of 16%, the Commonwealth allocation should be approximately $106 million.
- —Assuming an inflation rate of 16% in 1977/78, the real work effort will fall in 1977/78 by approximately 7% compared with 1976/77. This could lead to reductions in workforces employed by the Board, Councils and Contractors.
- —The Commonwealth Bureau of Roads "Report on Roads in Australia 1975" recommended an allocation to Victoria in 1977/78 of $135.5 million.

Another deficiency in the proposed new legislation is the serious departure from previous trends in the amounts made available for particular categories. The proposed 1977/78 distribution of funds announced by the Honorable P J Nixon MP drastically reduces the amounts made available for urban arterial roads, approximately 30% of the Commonwealth funds for urban arterial road construction is under municipal control, and increases the amounts proposed for urban local and rural arterial and rural local roads. The results of road needs surveys conducted by the Commonwealth Bureau of Roads and the States' Road Authorities and the recommendations of the Commonwealth Bureau of Roads have been disregarded by the Commonwealth Government. The situation is illustrated by the following table:

Note: In financial year 1976/77 approximately $200 million was paid to the Commonwealth by Victorian motorists in fuel taxes. In return grants made available to Victoria were only $91.1M.

In order to correct the deficiencies, the Honorable P J Nixon MP was requested by the Honorable J A Rafferty MP, Minister of Transport, Victoria, to increase the urban arterial roads grant by $21.2 million, or if this could not be arranged, to transfer $5.3 million from the proposed urban local roads grant to the urban arterial roads grant, and $1.4 million from the national commerce roads grant to the urban arterial roads grant.

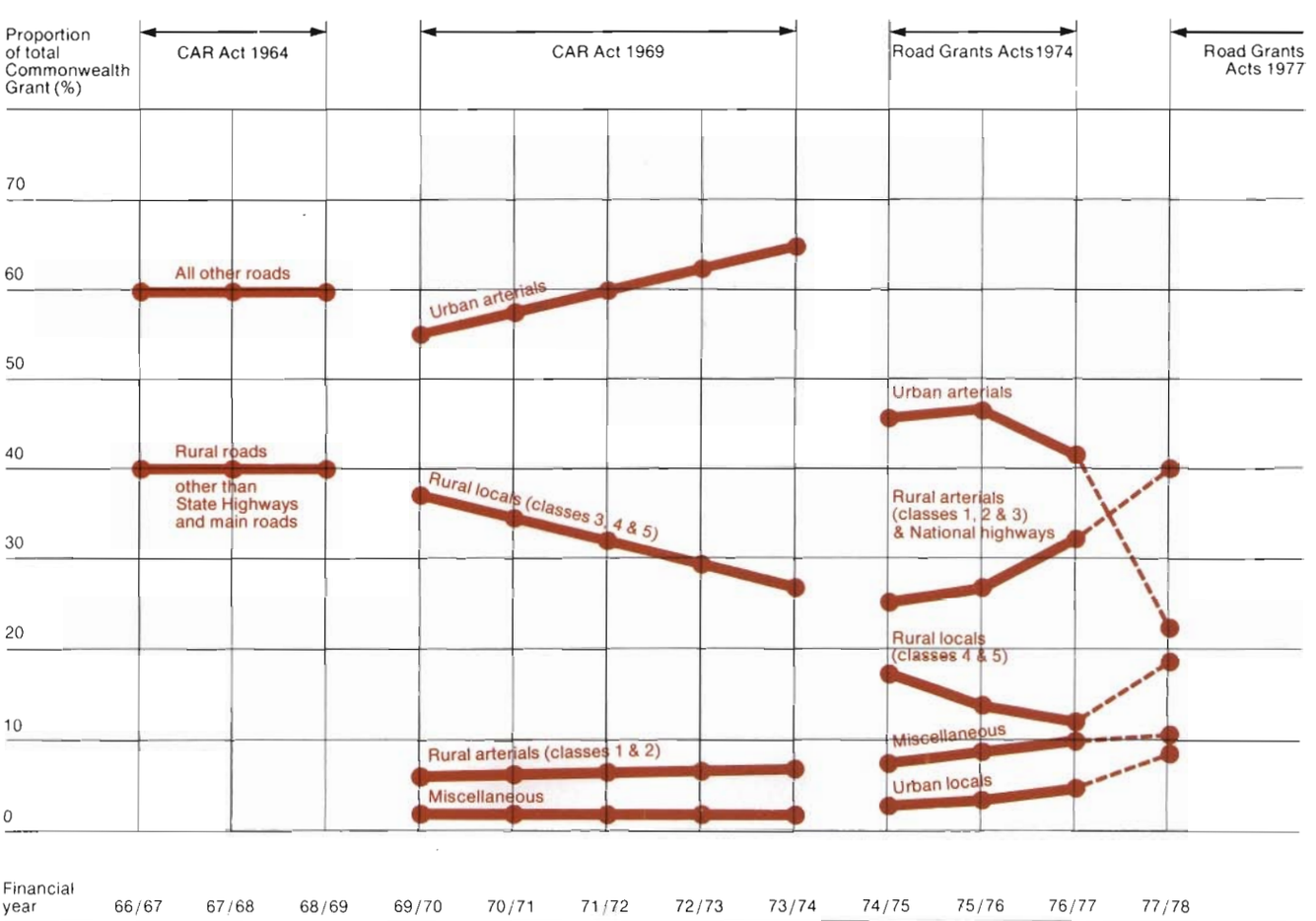
In summary, the Commonwealth's proposed distribution of funds over the eight categories ignores demonstrated road needs and indicates that the Commonwealth is adopting a role in relation to local government which properly belongs to the State. The lack of a coherent Commonwealth policy for roads seriously impairs the States' ability to predict likely financial resources and to plan and implement the necessary road programmes.

The following graph illustrates the confusing changes in the pattern of Commonwealth grants to Victoria since 1966/67.

Table Showing Comparison of:
1. Proposed Commonwealth road grants for 1977/78
2. Commonwealth grants 1976/77
3. Recommendations of Bureau of Roads for 1977/78

Category	Proposed C'wealth grants 1977/78	C'wealth grants 1976/77	Increase/Decrease proposed grants on 1976/77 grants		Bureau of roads rec. 1977/78 (current prices)	Increase/Decrease proposed grants on Bureau's rec. 1977/78	
	$'000	$'000	$'000	%	$'000	$'000	%
National Highway construction	26,000	23,450	+ 2,550	+ 11	36,400	− 10,400	− 29
National Highway maintenance	3,000	2,150	+ 1,850	+ 39	3,200	− 200	− 6
Major commerce roads	5,200	5,200	—	—	6,400	− 1,200	− 19
National roads	34,200	30,800	+ 3,400	+ 11	46,000	− 11,800	− 26
Rural arterial	11,100	4,300	+ 6,800	+ 158	5,700	+ 5,400	+ 95
Rural local	19,000	10,700	+ 8,300	+ 78	14,600	+ 4,400	+ 30
Urban arterial	22,200	39,600*	− 17,400	− 44	57,800	− 35,600	− 62
Urban local	8,900	3,100*	+ 5,800	+ 187	5,700	+ 3,200	+ 56
M.I.T.E.R.S.	3,500	2,600	+ 900	+ 35	5,700	− 2,200	− 39
Roads grants	64,700	60,300	+ 4,400	+ 7	89,500	− 24,800	− 28
Total:	98,900	91.1	7,800	8.5	135,500	− 36,600	− 27

*Includes approved transfer of $350,000 from National Highway construction to National Highway maintenance, and $1.5 million from urban local to urban arterial



1. South Gippsland Freeway, south from Princes Highway East. 2. Minister of Transport, Mr J A Rafferty, plants a tree to mark the opening of the Mulgrave Freeway, Blackburn Road to Forster Road Section. 3. Guests at the official opening of the Snowy River Bridge, Orbost.

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Allocations to municipal councils simplified procedures

In October 1976, the Board announced new simplified procedures relating to the allocation of funds to municipal councils for expenditure on unclassified, main and forest roads. The new procedures allow the councils greater flexibility in the expenditure of the allocations and substantially reduce the administrative work involved by municipal staff and the Board's staff.

The Board's 1977/78 allocations to municipal councils were made in April 1977 in accordance with the new procedures. The principal features of the new procedures are:

Unclassified roads

—Apart from large road and bridge projects MITERS projects and jointworks between two councils, one overall allocation will in future be made to each municipal council for an approved list of projects.

—The present system of seeking the Board's approval to transfers of funds will be eliminated. Councils will in future be able to spend the total allocation on any of the works in the approved programme provided that the total allocation is not exceeded.

—The revote and commitment system will be eliminated. Councils will in future be able to claim against the current year's allocation, expenditure incurred on uncompleted works approved in the previous year, but any unexpended funds at 30th June each year will lapse and will need to be included in the councils' ensuing year's applications for funds.

—The 'Application for funds' form requiring councils to submit an application for one job only on each form has been amended to allow for applications for several jobs to be made on each form.

—The submission of tenders for the Board's approval in future will only be necessary where plans and specifications are required to be submitted and approved by the Board, or the lowest tender is not proposed for acceptance, or the total amount of the tender exceeds $100,000 or the tender proposed for acceptance is not in accordance with the plans and specification.

—The amount of information required in claims submitted by councils for reimbursement of expenditure will be substantially reduced.

—Plans and specifications will only be required in future for particular projects where it is considered necessary to ensure that uniform standards are maintained. Such projects would include bridgeworks, urban construction works, large and complex rural works and works requiring the acquisition of land from permanent reserves.

—The Board's approval to the hire of private plant by municipal councils will not be required in the future.

Main roads

—Apart from the retention of the present system of requiring applications for individual jobs on main roads and the allocation of funds for individual jobs, procedures generally have been simplified on the lines outlined above for unclassified roads. Provided that the overall allocation to the council is not exceeded, councils will be permitted to incur expenditure in excess of individual allocations by up to 25% or $1,000 whichever is the greater. Expenditure in excess of these limits will require the approval of the Board's Divisional Engineer.

Prior to their introduction the simplified proposals were discussed with representatives of the Municipal Association of Victoria and at meetings arranged with municipal officers in each of the Board's regional divisions.

Three major projects opened to traffic

Many significant roadworks and bridgeworks were completed and opened to traffic during the year. Three projects of major significance were: the Snowy River Bridge on the Princes Freeway at Orbost, the South Gippsland Freeway at Hampton Park and the Mulgrave Freeway between Springvale Road and Forster Road at Mount Waverley.

Snowy River Bridge, Princes Freeway, Orbost

A new bridge over the Snowy River on the Princes Freeway at Orbost was officially opened to traffic by the Honourable J A Rafferty, Minister of Transport on 25th November 1976. The bridge was built at a cost of $2.4 million and is the first of four bridges to be built as part of the 8.4 kilometre freeway bypass of Orbost.

The old timber bridge over the Snowy River had always been susceptible to flooding but the new bridge now provides motorists with a road level 3 metres above the record flood level of 1971.

The new bridge is 366.4 metres in length and is among the ten longest bridges in Victoria.

Construction of the freeway project started in 1974 and is scheduled for completion in November 1977. The total estimated cost of the whole project is $9 million. The work is the biggest single project undertaken by the Board in the far east of the State.

South Gippsland Freeway, Hampton Park

This South Gippsland Freeway project, when completed, will provide a freeway connection between the Mulgrave Freeway north of the Princes Highway at Dandenong and the junction of the South Gippsland Highway and Dandenong-Hastings Road at Hampton Park.

The dual carriageways of the freeway between the Princes Highway East and Pound Road including the Pound Road interchange were opened to traffic on 6th December 1976. At the same time the southbound carriageway of the ultimate dual carriageways between Pound Road and the Dandenong-Hastings Road was opened to traffic. The northbound carriageway on this section is expected to be complete late in 1977. The project is estimated to cost $12 million.

Mulgrave Freeway, Springvale Road to Forster Road, Mount Waverley

The Mulgrave Freeway between Springvale Road and Forster Road was opened to traffic in two sections during the financial year. The first section of 2 km from Springvale Road to Blackburn Road was opened on 15th December 1976. The second section of 1.6 km was opened on 5th April 1977 following an inspection and tree planting ceremony conducted by the Honourable J A Rafferty, Minister of Transport.

The two sections were completed at a total cost of $13 million.

As part of the project Forster Road was widened and traffic lights installed at its intersections with Waverley Road and Ferntree Gully Road.

Miss Kareen Wealands from the CRB's Estates Section explains compensation procedures to Nepean Highway residents.

Four new urban projects

The Board announced the commencement during the year of preliminary work on four new urgently required major urban projects.

The projects are:

—the construction of the F9 Freeway from Graham Street, Port Melbourne to Grant Street, South Melbourne

—the widening of the Nepean Highway between Cochrane Street, Elsternwick and South Road, Moorabbin

—the extension of the Eastern Freeway from Bulleen Road to Doncaster Road, North Balwyn

—the widening of Bell Street, Preston between James Street and O'Keefe Street.

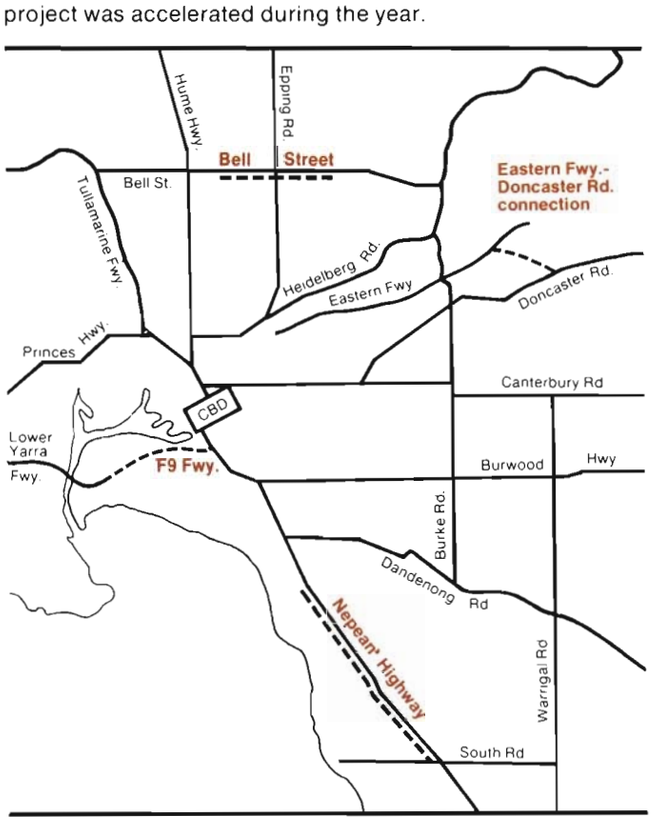
F9 Freeway

The F9 Freeway will extend from Graham Street, Port Melbourne to Grant Street, South Melbourne. The freeway is needed to cater for West Gate Bridge and Johnson Street Bridge traffic and will provide a southerly bypass of the City centre resulting in a vastly improved road connection between the western and south-eastern suburbs.

Eight traffic lanes at ground level will be provided from Graham Street to Johnson Street. From Johnson Street, the freeway will be elevated to east of Kingsway with a basic six-lane configuration. Beyond Kingsway an arterial road connection will be provided along Grant Street to St. Kilda Road. Interchanges will be provided at Graham Street Port Melbourne and at Johnson Street and Kingsway in South Melbourne. Connections to Sturt Street and Power Street will provide access to Alexandra Avenue.

In March 1977, the Honourable J A Rafferty, Minister of Transport announced the acceleration of the works programme to enable the completion of the freeway late in 1981. The completion of a link between the existing freeway at Graham Street and the Johnson Street Bridge should be achieved by late 1979.

The purchase of the necessary properties required for the project was accelerated during the year.



Nepean Highway widening

In February 1977, the Board served notices of acquisition on the owners of property required for the widening of the Nepean Highway between Cochrane Street, Elsternwick and Hampton Street in Brighton, a distance of 2.4 km. The whole project between Cochrane Street, Elsternwick and South Road, Moorabbin, a distance of 6.4 km, will be carried out in three sections over a six-year period at an estimated cost of $32 million in 1976 prices.

The first section on which construction will commence is between Cochrane Street and Hampton Street, followed by the sections between Hampton Street and Cummins Road and between Cummins Road and South Road. The widened highway will provide four lanes for traffic in each direction and a service road along the eastern side. The widening will take place along the western or bay side of the existing highway.

The widening is an urgently needed improvement to the road system servicing the eastern bayside suburbs and will improve traffic flow for the 28,000 vehicles which use this section of the highway each day.

Eastern Freeway extension

In March 1977 the Honourable J A Rafferty, Minister of Transport and the Honourable G P Hayes, Minister for Planning approved the extension of the Eastern Freeway from Bulleen Road to Doncaster, a distance of 2.7 km.

The extension will provide two lanes for traffic in each direction and allow for any future expansion on the southern side.

The freeway will be constructed substantially within the existing Melbourne Metropolitan Planning Scheme main road reservation. Some relocation of the Koonung Creek will be involved.

The work is estimated to cost $12 million in 1977 prices.

Bell Street, Preston widening

The purchase of land and demolition of buildings already owned by the Board was commenced by the Board during the year for the widening of Bell Street, Preston between James Street and O'Keefe Street.

This 2.5 km widening project is expected to be completed by 1981 and will provide three lanes for traffic in each direction with flared intersections at major crossroads. The estimated cost is $10 million in 1977 prices.

The plans for the project were developed by the Board in conjunction with the Preston City Council, to improve traffic flow for more than 20,000 vehicles using the road each day.

The construction work will be undertaken by the Preston City Council with funds provided by the Board.

The Council is expected to commence work on the first section of the project between Hotham Street near the Preston and Northcote Community Hospital and the railway line early in 1978.

Increased commercial vehicle weight and dimension limits

In November, 1976, the CRB began issuing special permits for commercial vehicles to exceed certain existing State limits in length, weight and height.

The new levels followed a comprehensive three year study into the economics of road vehicle limits by a Study Team set up by the National Association of Australian State Road Authorities. (NAASRA).

NAASRA felt that a study into the economics of road vehicle limits was warranted because of the differences and

inconsistencies that existed between State regulations. These differences and inconsistencies were of concern to the transport industry, particularly interstate operators.

In developing the organisation for the Study, a Steering Committee was formed to guide and administer the Study program. Mr T H Russell, the Board's Deputy Chairman, was Convenor of the Steering Committee. The Committee was made up of representatives of NAASRA, the Commonwealth Bureau of Roads, the Commonwealth Bureau of Transport Economics, the Australian Road Research Board, together with a representative from the Australian Road Transport Federation.

An independent Study Team was appointed, which, for the majority of the Study, consisted of six professional staff and four supporting administrative staff. Additional assistance and specialist advice from consultants was obtained where necessary.

Following the publication of the Study's findings and recommendations late in 1975, the recommendations were subjected to close scrutiny and review by State and Commonwealth government departments, the transport industry and other interested parties.

NAASRA approved the recommendations in principle in November, 1975 and in February, 1977, the Australian Transport Advisory Council endorsed new draft regulations incorporating the Study's recommendations.

The Victorian State Government agreed that the Board should issue special permits until the appropriate State legislation can be amended.

The new permits allow the overall length of articulated vehicles to be increased from 15.3 metres to 16 metres, and the height of long distance vehicles travelling on specified routes to be increased from 4 metres to 4.3 metres. Mass limits were increased to the levels recommended by the NAASRA Study as outlined below:

	New	(Old)
	tonnes	tonnes
Tyre loading		
Single tyre	2.7	(2.3)
Axle loading		
Single axle		
—single tyres	5.4	(4.6)
—dual tyres	8.5	(8.2)
Axle group loading		
Twin steer (comprising two axles 10 m-2.0 m apart)		
—with load equalization	10.0	—
—no effective load equalization	9.0	(9.2)
Tandem axle (comprising two axles 10 m-2.0 m apart)		
—all dual tyres		
NSW, Vic, Qld, Tas, ACT	15.0	(13.2)
SA, WA, NT	16.5	—
—all single tyres	10.0	(9.2)
—single and dual tyres	12.0	(11.2)
Triaxles (comprising a group of three axles 2.0 m-3.2 m apart)		
—all dual tyres		
all States and ACT	19.0	(16.32)
NT	20.0	—
—all single tyres or a combination of single and dual tyres	15.0	

Gross loading (except NT)

The maximum permitted gross mass of a vehicle or vehicle combination, used in general transport operations, should be the minimum of

—the manufacturer's rating.

—the sum of the permitted tyre or axle loadings.

—the gross mass M (in tonnes), as given by the axle spacing/mass schedule in which applies to the axle spacing L (in metres) only, based on the formula $M = 2L + 12$.

—35 tonnes for immediate application (this level to be reviewed within three years with a view to adopting a maximum of 38 tonnes subject to the introduction and enforcement of greater control on the safety and operational characteristics of heavy commercial vehicles).

Specific requirements

1. Tyres used for a given load should be in accordance with the rating standards of the Tyre and Rim Association. The maximum tyre pressures are — bias ply tyre — 700 kPa. radial tyre — 825 kPa.
2. The maximum permitted axle and axle group loading limits are dependent on the provision of an approved suspension system, capable of adequate equalization in the case of tandem and triaxle groups provided wholly by hydraulic or pneumatic or mechanical or other approved means.
3. Vehicles with a spread tandem configuration will not be registered after (date to be specified). Spread tandem axle configurations already in use will be permitted to operate to a maximum limit of 15 tonnes (the limit for the normal tandem).

The new permits only apply to commercial vehicles that meet particular safety and design criteria.

In addition to the many recommendations concerning length, weight and height the Study Team found that there were many inadequacies in the existing regulation and enforcement of controls on heavy vehicle operations in Australia.

Having regard to the safety of all road users and the need to overcome the present inadequacies, the following additional recommendations were made by the NAASRA Study:

—Inspection of the mechanical condition of commercial vehicles, on both a regular and random basis, should be given greater emphasis as vehicle defects are of significant concern in regard to the safety of all road users.

—Policing of gross mass should be improved to increase the safety and efficiency of traffic flow. The registered gross vehicle mass and gross combination mass should be clearly displayed on all vehicles.

—Modifications which affect basic operational characteristics of vehicles should be more strictly controlled.

—Action should be taken to ensure that the braking systems of trucks are of the highest standards attainable.

—Effective standards on the type, strength and location of semi-trailer and trailer couplings should be enforced.

—Controls in relation to noise levels, exhaust smoke and gaseous emission levels of heavy commercial vehicles should be adopted and enforced.

Roadworks speed limit signs

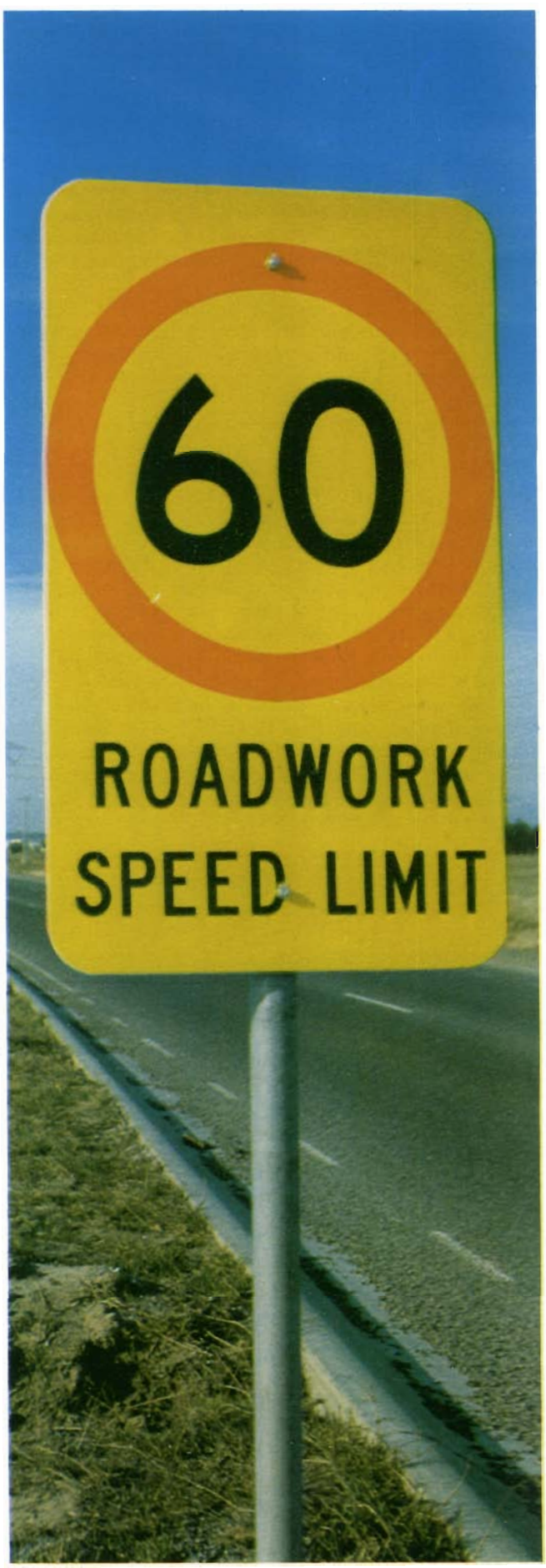
On 1st February 1977 the Board made a by-law to provide for the erection of speed limit signs to indicate the legal maximum speed at which a vehicle may be driven through the Board's construction sites. Motorists who exceed the speed limit may be prosecuted and subject to a maximum fine of $100.

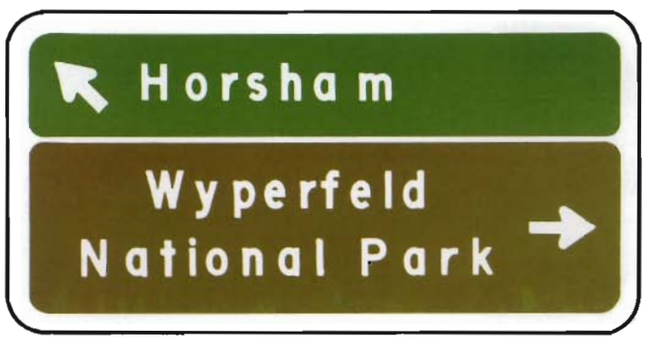
The need for a speed limit has been evident in recent years as an attempt to prevent motorists travelling too fast through construction areas thereby creating a danger to other motorists and the Board's construction personnel.

Local police will be advised when the signs are proposed to be erected at particular locations.

The signs are rectangular in shape and feature a red circle on a yellow background with the words 'Roadworks Speed Limit' underneath the circle. Enclosed in the red circle is the speed in kilometres per hour at which the motorist may travel.

The signs will be placed on both sides of the road in advance of construction sites together with other warning signs. Where necessary in an extended works area repeater speed limit signs will be erected.





Tourist and services signs

During the year the Board formulated and promulgated a series of detailed specifications for the erection of signs denoting:

1. tourist drives and features of tourist interest on declared or proclaimed State highways, main roads, tourists' roads and forest roads,
2. roadside services on declared or proclaimed State highways, main roads, tourists' roads and forest roads, and
3. services in the vicinity of rural freeways.

The specifications describe warrants and methods of signing.

The colour schemes adopted for the signs are
—white legend on brown background for tourist signs and
—white legend on blue background for services signs.

Signs erected denoting tourist facilities which are non-commercial and roadside facilities such as rest areas provided by the Board are generally provided at the Board's expense. Signs denoting certain types of commercial tourist or service establishments may be erected by the Board at the operator's expense.

On rural freeways emphasis will be given to providing signs indicating off-freeway services which offer a suitable standard of service within a reasonable distance of freeway interchanges.

Hume Freeway, Wallan-Broadford section

Following heavy rains in the Spring of 1976 some sections of the Hume Freeway between Wallan and Broadford required repair.

Some sections of pavement had rutted and cracked under the wheel paths of heavy trucks and had caused the bituminous surfacing to break up under wet weather conditions.

The distortions had resulted from the instability of the upper pavement layer of fine crushed rock. Some of the methods used to overcome harshness of the fine crushed rock during production and placement of the road pavement proved to be unsatisfactory and resulted in the instability of the pavement.

Remedial work was carried out after considerable investigation and testing.

Assistance at Creswick and Streatham bushfires

The Board provided assistance in the form of personnel and equipment during and after the bushfires which devastated the Creswick and Streatham areas on 12th February 1977.

Three 680 litre (1500 gallon) water tankers, with drivers, were used in a supporting role in the suppression of the Creswick fire. The tankers transported water to the Country Fire Authority fire fighting units at the fire fronts.

At Streatham the Board provided three bulldozers, a heavy grader and a front end loader, plus drivers, to assist graziers to bury the thousands of dead stock which perished in the fire. A low loader float was used to transport the equipment.

In the week after the fire a water tanker was used to transport water to households for domestic use.

Two of the Board's typists from Head Office volunteered in assisting with general stenographic duties at Streatham after the fire.

The declared road system

Freeways — Tullamarine Freeway — Bell Street interchange.

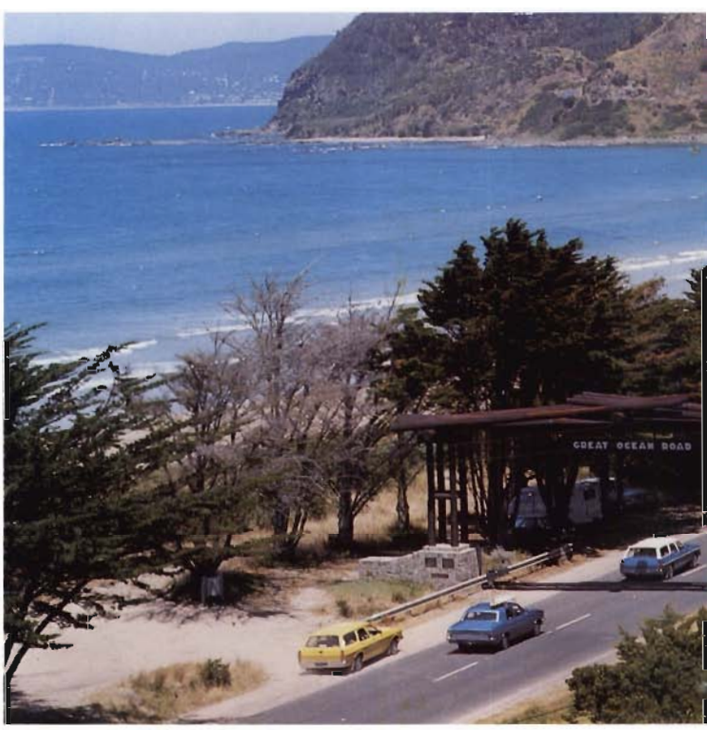
State Highways

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 7049 km.

The total expenditure of $36,408,900 on Victoria's 32 State highways during the year included an amount of $3,720,000 made available from the Roads (Special Projects) Fund.

Appendix 1 includes a list of State highways declared by the Board, and details of the more significant works completed during the year on State highways are given in Appendix 2.

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 Commonwealth National Roads Act. These declarations permitted funds made available under the Commonwealth National Roads Act to be spent on the Hume Highway/Freeway and the Western Highway/Freeway. During the year $21,018,000 from Commonwealth sources and $861,000 from State sources was spent on these two State highways/freeways.



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 carriageway by means of carefully designed ramps. The Board bears the total cost of all work on freeways. The total expenditure of $55,747,000 on freeways during the year included an amount of $19,235,000 made available from the Roads (Special Projects) Fund.

The table in Appendix 1 lists the freeways constructed by the Board and opened to traffic. The significant works completed during the year are shown in Appendix 2.

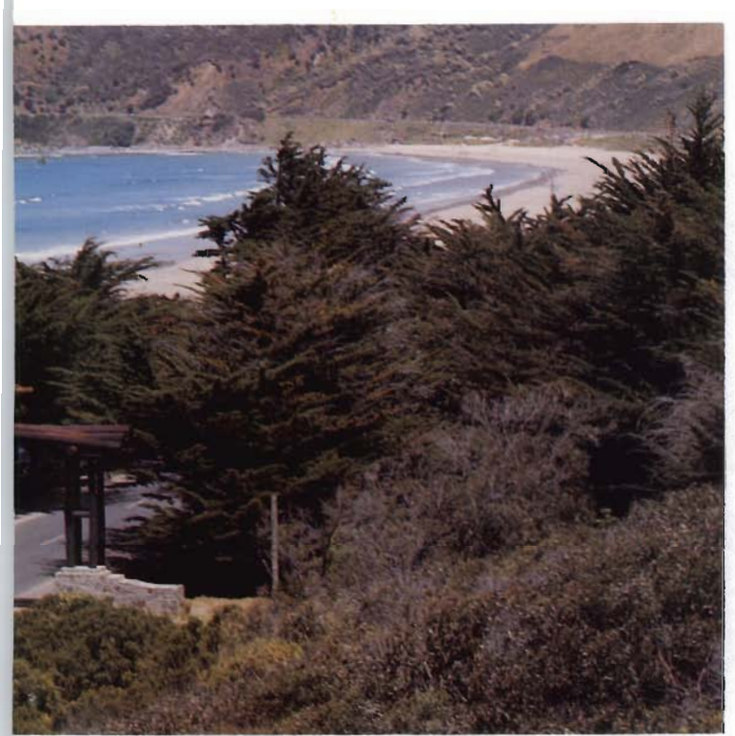
Tourists' roads

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.

Details of the more significant works carried out on tourists' roads during the year are listed in Appendix 3. The table in Appendix 1 lists the tourists' roads proclaimed under the provisions of the Country Roads Act. The total length of roads declared or proclaimed in Victoria under the Country Roads Act was 23,657 km as at 30th June, 1977.

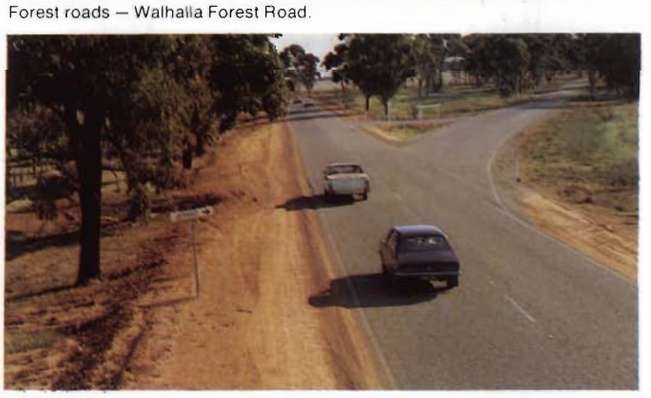
'000s kms	0 2 4 6 8 10 12 14 16 18 20 22 24
State Highways	7049
Freeways	231
Tourists' Roads	797
Forest Roads	1032
Main Roads	14548
Total length of declared road system	23657

Main roads — Doncaster Road, East Doncaster.



Tourists' roads — Great Ocean Road.

Forest roads — Walhalla Forest Road.



Highways — Western Highway, near Dimboola

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.

The table in Appendix 1 lists the forest roads proclaimed under the provisions of the Country Roads Act.

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.

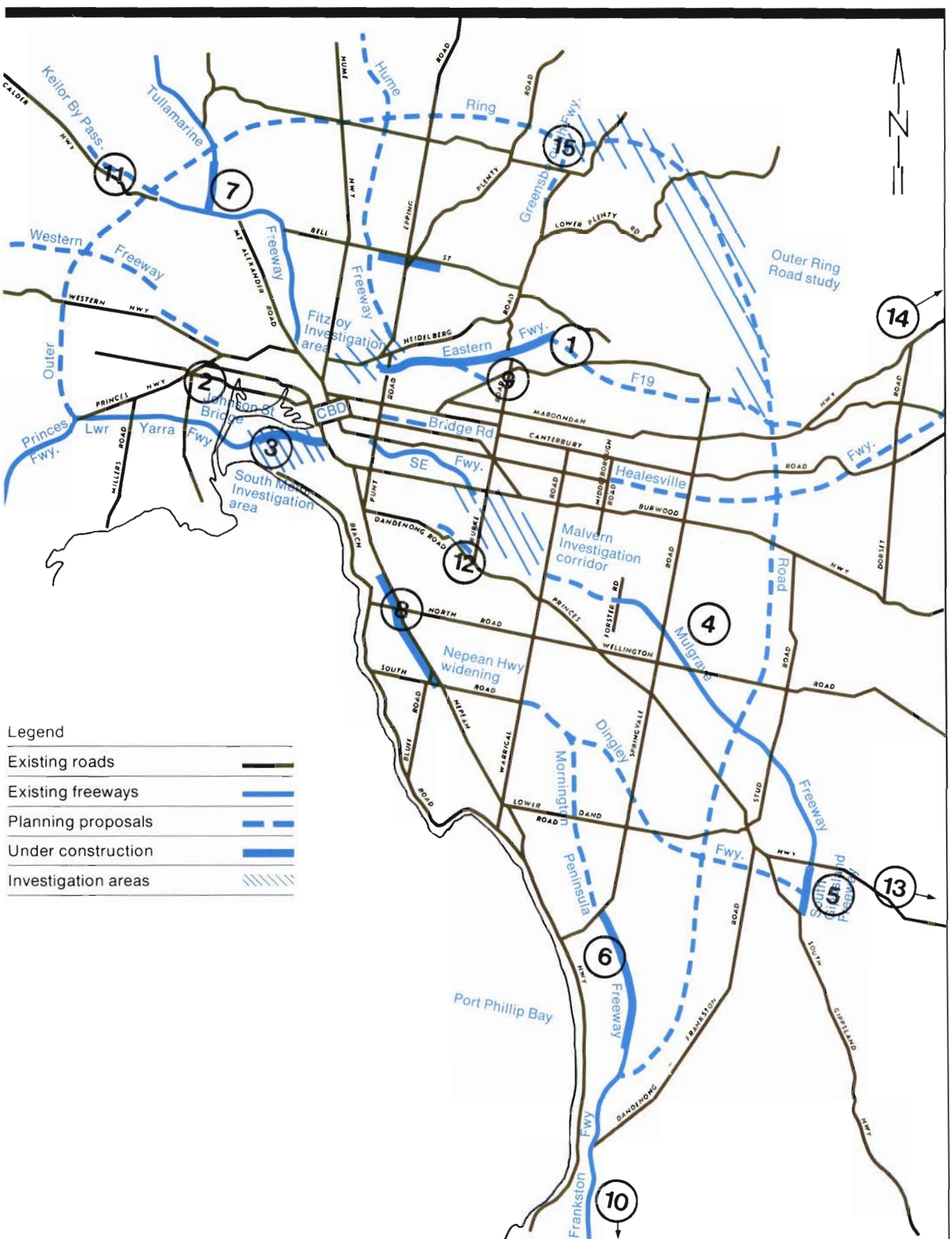
A summary of the more important works on main roads completed during the year is given in Appendix 4.

Unclassified roads

Roads which are not included in the Board's declared and proclaimed road system are referred to as unclassified roads. These roads are the responsibility of municipal councils, but each year the Board provides financial assistance towards the cost of construction and maintenance works, generally in accordance with priorities allotted by municipal councils.

Municipal contributions are determined at the time the allocation is made, and are based on many factors including the nature, extent, and location of the particular work and the financial position of the municipality concerned. A list of the more significant works on unclassified roads carried out during the year with financial assistance from the Board appears in Appendix 5.

Road construction programme



Road planning

Metropolitan road improvements

For the metropolitan area to function efficiently and for the existing quality of life of the community to be maintained and improved, it is essential for people and goods to be able to move, or to be moved, through, around and across the urban area of Melbourne with reasonable freedom and safety.

The Board fully realises the importance of public transport in providing for the movement of people but in a City of relatively low density development such as Melbourne there are many trips, especially those involving the movement of goods, which cannot take place on public transport. The progressive improvement of Melbourne's road system in such a way that significant economic, safety, environmental and social benefits result is an essential component of the overall transportation system.

Urban road development criteria

The Board has adopted the following criteria in the development of the urban road system of Melbourne:

- —all works must, of course, comply strictly with Government policies;
- —selected arterial roads be developed to provide reasonable continuity of high capacity movement on an integrated road system. This would include an outer ring road;
- —other arterial roads be developed or provided to the maximum extent possible, generally within existing road reservations to provide adequate distribution and circulation of traffic through and around suburban centres and bypassing the Central Business District of Melbourne;
- —more emphasis be placed on the application of traffic management techniques both along selected arterial roads and on an area-wide basis to optimise traffic flow on the arterial roads and to protect the environmental quality of local areas;
- —consideration be given to the construction of freeways where other forms of road improvements are not capable of catering for high volume traffic flows to meet the demands of business and social needs in the transportation of goods and people. Community disruption and adverse environmental impacts to be avoided or minimized as far as possible.

Road construction programme

During the year the Board adopted a tentative construction programme for major works in the metropolitan area over the next decade from 1977/78 to 1986/87.

The programme was prepared within the criteria outlined above to assist the Board in planning the necessary preconstruction stages of various projects and to ensure as far as possible that the required construction and financial resources are available.

The preconstruction requirements, eg. right of way determination, detailed design, planning scheme amendments, alterations to services and land purchase are resource consuming tasks which apply to major metropolitan road projects.

The need for flexibility in the programme is a primary requirement. Revisions will be necessary from time to time especially in the second five-year period to cater for departures from the estimated availability of funds, inflation, changes in priorities and other demands on the Board's funds.

Projects already commenced and expected to be completed in the first five-year period to 1981/82 are:

Project	Estimated expenditure 1977/78 to completion at 1977/78 costs	Year of completion
	($ million)	
1 Eastern Freeway, Hoddle Street to Doncaster Road	22.96	1979/80
2 Johnson Street Bridge and approaches	3.44	1977/78
3 Freeway F9	72.00	1981/82
4 Mulgrave Freeway, Warrigal Road to Forster Road	13.4	1980/81
5 South Gippsland Freeway	2.19	1977/78
6 Mornington Peninsula Freeway, Springvale Road to Eel Race Drain	8.43	1978/79
7 Tullamarine Freeway, Lancefield Road conversion	4.45	1979/80
8 Nepean Highway, widening between Elsternwick and Moorabbin	32.44	1981/82

Projects expected to be initiated during the first five-year period to 1981/82 are:

Project	Estimated cost to complete at 1977/78 costs	Year of Completion
	($ million)	
9 Chandler Highway extension (Route E6), Eastern Freeway to Harp Road	12.0	1981/82
10 Mornington Peninsula Freeway, Moorooduc Road to Dromana (single carriageway)	9.92	1981/82
11 Calder Freeway, Keilor Section	19.21	1982/83
12 Princes Highway East, Hawthorn Road to Waverley Road	6.5	1982/83
13 Princes Freeway, Berwick bypass	10.6	1982/83
14 Maroondah Highway, Hull Road to Warburton Highway	3.54	1981/82
15 Greensborough Freeway — F5	24.7	1983/84

Each of the above projects either has been or will be the subject of extensive investigation and discussions with the municipal councils concerned and local communities.

The Hume challenge

The Board is facing one of the major challenges of its 63 years with the planning and construction of the 300 km Hume Highway/Freeway duplication and realignment between Melbourne and Wodonga.

Modern design techniques are being used to ensure that wherever possible the freeway will blend into the natural environment, making best use of the surrounding vistas and topography.

Background

The Hume is the most important inter-capital link on the Australian continent and one of Australia's most colourful highways.

Explorers, miners, settlers, bushrangers, convicts and troopers have all contributed to establishing the Hume as a major intercapital road.

Bullock wagons and coaches carried pioneers over approximately the route taken by the explorers, Hume and Hovell, to the loneliness of central Victoria and southern New South Wales, and to the Beechworth goldfields. These travellers fell easy prey to bushrangers such as Ned Kelly, whose memory still haunts the area just north of the newly constructed Wallan to Broadford freeway.

Sydney Road, as it had become known, was declared a Main Road by the Board in 1914, making councils eligible for some financial assistance from the limited funds then available to the Board. In 1925 the full financial responsibility for Sydney Road was passed to the Board. Sydney Road was then renamed the North-Eastern Highway and in 1928 changed to the Hume Highway — in both Victoria and New South Wales, in honour of Hamilton Hume who was the first explorer to enter what is now Victoria.

Since World War Two, practically the entire Victorian section of the Hume Highway has been reconstructed. In recent years the work has included the construction of dual carriageways, in many cases to freeway standard.

The Hume Freeway is being developed with the assistance of finance provided under the Commonwealth Government National Roads Act 1974.

The conversion of the Hume Highway to freeway standard, including the construction of bypasses of some centres of population, is being planned and constructed, and for convenience, the length has been divided into a number of Sections:

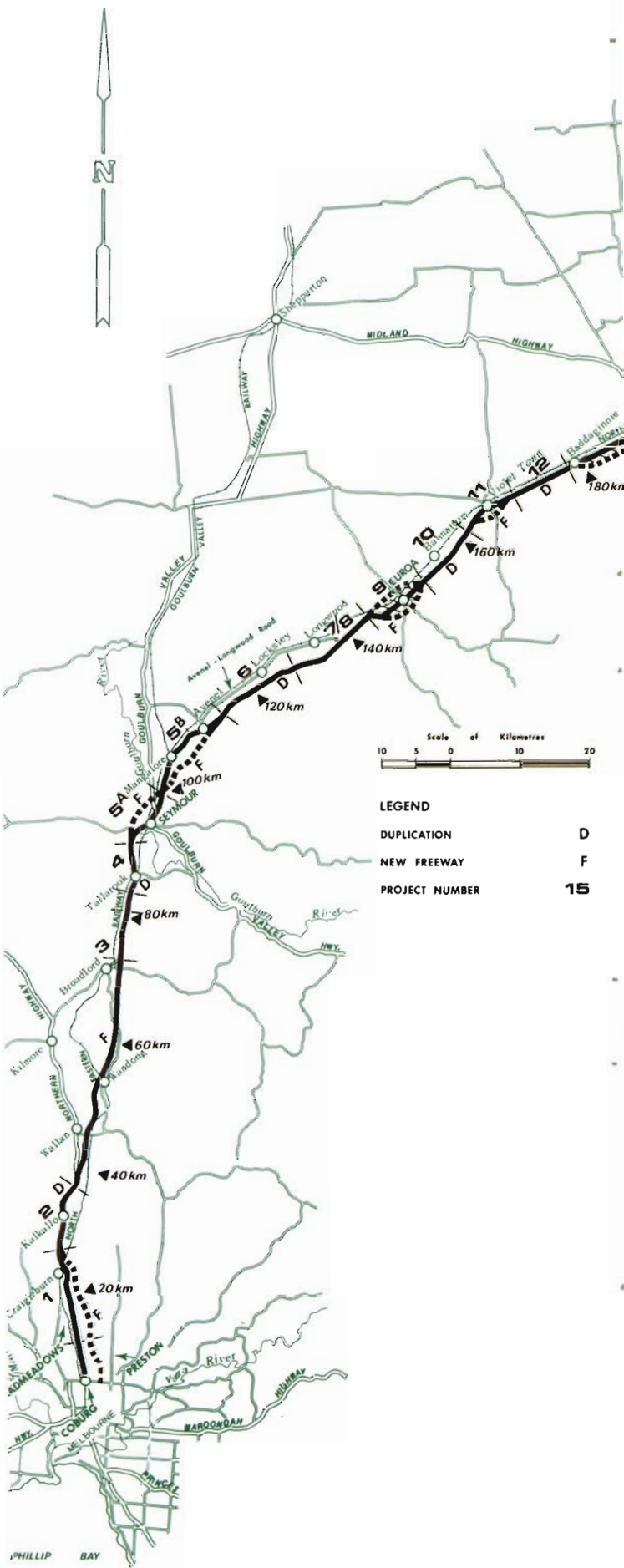
Section 1 Mahoney's Road to Craigieburn

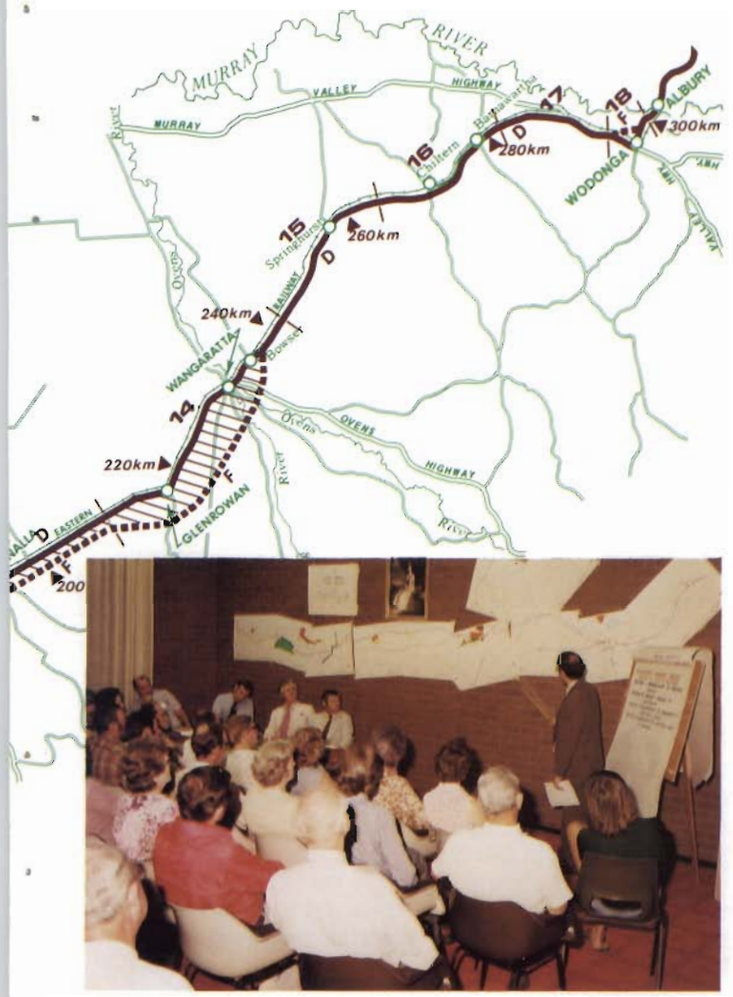
The existing Hume Highway passes through the northern suburbs of Melbourne along a narrow, highly developed corridor.

Traffic is unable to move freely, especially in peak hours. To alleviate this problem, an ultimate 8 lane urban freeway is planned and a reservation has been provided in the Melbourne Metropolitan Planning Scheme.

The 14 km Mahoneys Road to Craigieburn section of the Hume Freeway will provide a transition between the rural area north of Craigieburn and the proposed fully developed urban area south of Mahoneys Road. It will be the entrance of the major interstate route into the Melbourne Metropolitan Area.

This section passes through land zoned for general industrial use but almost rural in character at present. Through traffic using the existing Hume Highway south of Craigieburn will be substantially reduced when this section of freeway is completed, improving access to industrial areas which have developed on both sides of the old highway route.





Public meetings were held in Benalla (pictured), Glenrowan and Wangaratta to discuss the Hume Freeway, Baddaginnie-Bowser Section.

Heavy interstate transports pass through Benalla and other towns day and night.

Section 2 Craigieburn to Beveridge

The terrain in this section transitions from the flat and gently undulating coastal plains to the foothills of the Great Dividing Range.

The existing divided highway was constructed in the late 1960s and carries more than 11,000 vehicles daily. In order to upgrade this section of highway to freeway standards, it will be necessary to close existing road and property connections, replacing them with access roads leading to freeway interchanges.

The settlement of Kal Kallo, which abuts the existing highway, includes accommodation and vehicle servicing facilities. Special consideration will be required at the freeway stage to provide access to these amenities.

Section 2a Wallan to Broadford

This project, the largest undertaken by the CRB to date, was opened on the 3rd May, 1976, by the Hon R J Hamer, ED, MP, Premier of Victoria. The opening heralded the beginning of a new era of rural freeways in Victoria where the planning and design include environmental, aesthetic, and engineering factors.

The alignment of this section of freeway had been fixed with both environmental and conservational aspects in mind. Existing stands of timber have been retained as much as possible, and in addition, over 40,000 native trees and shrubs have been planted along the roadside. In future years these will provide an ever changing vista to the motorist as they mature.

Safety is also of paramount importance. Generous clearance to roadside objects, large radius curves, and good visibility are noticeable features of the design.

The four-lane freeway is 34 km long, and includes 18 bridges. The total cost was $36.5 million.

Section 3 Broadford to Tallarook

The Broadford to Tallarook Section was largely a duplication of the existing Hume Highway. The bypass of Tallarook was completed in 1970, leading the way for the much longer Wallan to Broadford Section to complete full duplication from Melbourne to just south of Seymour.

Section 4 Tallarook to Seymour

A duplicated section using the former Hume Highway as one carriageway, this Tallarook to Seymour section also has a wide median preserving well established tree and shrub growth.

Section 5a Seymour Bypass

The bypass of the township of Seymour is a high priority project in the overall Hume Freeway programme, and construction is due to begin late in 1977.

A major interchange will be constructed at the Goulburn Valley Highway and this will provide free flowing connections for all major traffic movements. The importance of this interchange is highlighted by the fact that approximately 40% of the Hume Freeway traffic south of Seymour uses the Goulburn Valley Highway.

Section 5b Avenel Bypass

The Avenel Bypass will follow the 'Old Sydney Road' route from the North Eastern Railway overpass to Lambing Gully Road. Northward from Lambing Gully Road, the freeway passes to the east of Avenel after crossing Hughes Creek. The terrain is generally flat and swampy with the freeway placed on a low embankment. Access to Avenel will be provided by an interchange at Tarcombe Road.

Section 6 Avenel to Tubbs Hill
This 12 km section is under construction and consists of duplicating the existing Hume Highway on the northern side from the end of the Avenel Bypass to Pranjip Creek. The existing highway is flanked by established tree plantations, and wherever possible, these will be retained.
At the ultimate freeway stage, an interchange will be constructed at Alexanderson's Road, while an overpass will connect Oxenbury's Road to a deviation of Oak Valley Road.

Section 7 Tubbs Hill
A new carriageway will be constructed on the northern side of the existing Hume Highway, retaining the large stands of trees within a wide median. In the vicinity of Tubbs Hill, the proposed freeway bypasses the settlement of Old Longwood which has several old stone cottages. An interchange will be provided on a new alignment for the Longwood-Ruffy Road, a major local access across the Highway.

Section 8 Tubbs Hill to Euroa
The new carriageway for this section is to be constructed on the north side of the existing Hume Highway between the Old Longwood Bypass and Creighton's Creek. It then changes to the southern side for the rest of the section. This changeover avoids existing development, as well as the Telecom Melbourne to Sydney co-axial cable at a point where expensive relocation would be necessary. Again, wide medians are provided to retain the trees.

Section 9 Euroa Bypass
This section is currently under investigation. A 'Band of Interest' has been established, and covers alternatives both north and south of the Euroa Township.
The northern routes cross flood plains and low lying area. Problems associated with a northern route are in the areas of earthworks, landscaping and two crossings of the Melbourne-Sydney railway. Furthermore, access to Euroa from the northern routes is not as satisfactory as from the southern routes.
With the southern routes there are topographical and environmental problems, as well as difficult crossings of Seven Creek and Castle Creek. Considerable thought and effort has been and will be involved in the planning of this section to ensure that the route finally adopted gives the best overall solution

Section 10 Euroa to Violet Town
This section of the freeway is over flat ground, and special consideration will be given to landscaping in the form of tree planting to augment the existing growth alongside the present highway.
Several creeks which rise in the foothills of the Strathbogie Ranges to the south-east and spread across the plains to the north-west will need to be crossed. The flat terrain has led to extensive flooding of the existing highway, which will be regraded to provide a flood free route.

Section 11 Violet Town Bypass
This 6.5 km section is planned to bypass Violet Town to the south. Access to the township will be provided by an interchange at Harry's Creek Road. The bypass was favoured to duplication of the highway through Violet Town itself because of the development adjacent to the highway, and the restriction to the town development caused by the Melbourne-Sydney Railway.
Of particular interest will be the wide cross section adopted. Not only will the median be wide (about 25 m) but the clearance from the edge of the batters to the road boundaries will also be in the order of 20 m. This will allow extensive tree planting in all areas, especially desirable as there is little natural vegetation along the new route.

Section 12 Violet Town to Baddaginnie
Duplication is currently under way on the northern side of the existing highway carriageway. The new freeway reserve will extend to the railway reservation to enable generous landscaping during and after construction.

Section 13 & 14 Baddaginnie to Bowser
Proposals for this 67 km freeway section which includes bypasses of Benalla and Wangaratta to the east are being undertaken with a significant involvement in open planning and public participation.
The new freeway from Baddaginnie to Bowser will remove through traffic from Benalla and Wangaratta and extensive investigations are being carried out to ensure that the route selected will be compatible with local environmental considerations. As an essential part of these investigations, officers of the Board explained the various freeway alignment proposals at public meetings held during February, 1977, in Glenrowan, Benalla and Wangaratta.
The public meetings were arranged by Benalla and Wangaratta City Councils and Benalla, Oxley, Violet Town and Wangaratta Shire Councils. About 500 people attended the meetings. The input from the public meetings and individual discussions with people and councils will assist planners in providing interchanges at suitable points to meet the needs of the local communities and the travelling public.
The construction of this section of freeway, estimated to cost $110 million, will have a significant effect on the future development of Benalla, Winton, Glenrowan and Wangaratta. The community's and the motorists' needs are being carefully balanced. Investigations carried out by the Board have shown that of the 6000 vehicles that travel the highway daily, more than 95% can be classified as through traffic. Signs on the freeway will indicate to the motorist services available in each of the towns. Glenrowan township, because of its historical significance, will remain easily accessible to tourists.
Between Benalla and Wangaratta, the freeway crosses the Warby Ranges and alternative routes under investigation make use of various 'Gaps' or saddles in the ranges.
The new freeway will need to cross a number of water courses, including the Ovens and King Rivers, Fifteen Mile Creek, and the Laceby Flood Plain. In general the freeway will be above 'the 100 year flood' level or the highest recorded level, whichever is the greater.

Section 15 Bowser to Chiltern
The topography consists of two distinct types over this section. For the 11 km between Bowser and Bentons Hill the existing highway crosses low lying plains. Then, from Bentons Hill to Chiltern, a distance of 14 km, there is generally lightly rolling terrain.
The first low part of the section will be upgraded by duplicating the existing carriageway on the east side. The existing carriageway, which is subject to flooding, will need to be raised extensively.
At Springhurst, a local deviation is proposed, and an interchange is to be provided. North-east of Springhurst, the duplicate carriageway is to be located on the southern side because of the location of both the Telecom Co-axial Cable and the Melbourne-Sydney Railway on the northern side.

Construction is underway on four projects on the Hume:

Section 16 Chiltern to Barnawartha
Planned as a divided highway some years ago, this section has recently been re-examined to ensure that sufficient land has been reserved for full freeway development. The freeway will pass through the Chiltern State Forest, which consists mainly of ironbark, along with grey, yellow and red box. Forests of these species are rare in the north-east of Victoria.

Section 17 Barnawartha to Wodonga
A new carriageway on this 12 km section will be constructed to the south of the existing carriageway, because of the proximity of the railway reserve to the north. A service road, to provide local access, is to be located on the south side over the entire length.

Section 18 Wodonga to Lincoln Causeway
The Wodonga Section of the Hume Freeway will bypass Wodonga on the northern side. The new route will leave the existing Hume Highway west of Wodonga at an interchange and cross the Melbourne-Sydney Railway line.
To the north of Wodonga, the route will pass through the outskirts of the town, running between the Donga Meat Works and the Sewerage Authority settling ponds. The route will rejoin the Hume Highway at an interchange located on the southern end of the Lincoln Causeway.

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 brings 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.
Three significant planning studies in which the Board was involved were carried out during the year and are described below.

South Melbourne traffic and environmental study
A traffic and land use and environmental study of the South Melbourne and Port Melbourne area was completed and copies of the following reports were distributed to Councils and other interested organisations in June, 1977:
Volume 1: Land use and environmental survey
Volume 2: Traffic survey
Volume 3: Short term traffic management
Summary of short term improvements

The study was undertaken by the Country Roads Board with the co-operation of the South Melbourne and Port Melbourne Councils. The purposes of the study were:

—to gather and document information on traffic patterns in the area;
—establish predicted volumes of traffic in the area after the opening of West Gate and Johnson Street Bridges and before the F9 Freeway is completed;
—to identify any improvements to the road system which should be implemented prior to the completion of the F9 Freeway; and
—to allow an objective evaluation to be made of proposals to restrict truck movement on certain routes.
—to investigate the long term traffic management requirements and the development of the F9 corridor.

The following reports were substantially completed at the end of the financial year:
Volume 4: Long term traffic management
Volume 5: F9 Corridor development
Volume 6: F9 impacts

A series of short term improvements was suggested to cater for traffic in the period between the opening of the bridges and the opening of the F9 Freeway.
The study also analysed truck movements in the area and suggested that discussions should be held between the Board, the councils, truck operators and other parties to consider those recommendations which were aimed at minimising or restricting truck travel through residential areas.
The existing volumes of trucks crossing the Yarra River in the period 7 a.m. to 7 p.m. together with the predicted volumes after the opening of the new bridges, are shown below.

Bridge	Existing 12 hour truck volume	Predicted 12 hour truck volume on opening of bridge
West Gate Bridge	0	4,000
Johnson Street Bridge	0	5,800
Spencer Street Bridge	10,600	3,250
Kings Bridge (high level)	4,800	4,100
Kings Bridge (low level)	1,550	1,300
Queens Bridge	3,400	2,900
Princes Bridge	1,250	1,150

The land use and environmental survey carried out as part of the study involved the collection of land use data, presentation of existing traffic noise levels, review of previous environmental area studies, and an appraisal of other environmental and residential precincts generally in South Melbourne and Port Melbourne.

Gardiner's Creek valley study
In January, 1977, the Government set up this corridor study involving the Ministry of Planning, Ministry of Transport, Ministry for Conservation, Melbourne & Metropolitan Board of Works, Town & Country Planning Board, Malvern, Camberwell and Hawthorn Councils and the Country Roads Board to investigate and 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 is progressing under the direction of a Steering Committee comprising representatives of the above bodies.
The investigation work is being carried out by six study teams from the participating authorities. The six study teams have been formed to study particular problems relating to Roads, Transport User, Drainage, Recreation, Waterway Environs and Community Effects. Overall co-ordination is being undertaken by a full time Study Manager who is also responsible for the public involvement programme. This programme includes the wide distribution of information in the form of bulletins, displays and a mobile information centre, and feedback of information and ideas from the community to the Study Manager.

Outer Ring Corridor study
The study into the Outer Ring Corridor continued during the year.
The purpose of the study is to examine the strategic significance of a new transport route around the main built up area of Melbourne. The terms of the study cover the possible effects on:

—the land use zoning system
—the transport (road and public transport) network and investments
—the social and economic situation.

The study is under the control of the Road Planning Liaison Committee, consisting of representatives of the Ministry of Transport, the Melbourne and Metropolitan Board of Works and the CRB. Consultants P G Pak Poy and Associates Pty Ltd, and a number of sub-consultants, have been retained for the study.
One question to be resolved is whether or not the option to build an Outer Ring road should be retained. In this context, preliminary cost estimates show that the cost of a freeway between Frankston and Laverton would be about $560 million at present day values. This is a large investment, but such a facility would be stage constructed over many years.
Although the Melbourne Metropolitan Planning Scheme contains a Main Road Reservation around the outer suburbs except between Ringwood and Diamond Creek, further detailed investigations may be required over some sections if the Government decides to retain the option to build part or all the ring.
It is expected that the findings of this study will be reported to the Government early in the 1977/78 financial year.

Road construction and maintenance

Major project construction

During the year the Board continued construction on major projects throughout the State. Work completed on the construction of divided roads on freeways, State highways and main roads during the year increased the total length of divided roads to 706 km.

In addition to National Highways and the other major projects completed and referred to in the Review section of this annual Report, the more important projects in progress during the year were:

Urban

Eastern Freeway

The construction of the Eastern Freeway between Hoddle Street, Collingwood, and Bulleen Road, Bulleen, a distance of nine kilometres, continued during the year. This section of the freeway will be generally of eight lane capacity, with a ten lane capacity between the Merri Creek and the Chandler Highway interchange. The central median is designed to cater for a fixed rail public transport system to serve the East Doncaster area. The Boulevard, Chandler Highway, Columba Street and Bulleen Road overpasses were opened to traffic during the year and work on the remaining bridge structures and the freeway carriageways progressed satisfactorily. The freeway is expected to be opened to traffic late in 1977. The total cost for this first section of the Eastern Freeway is estimated to exceed $87 million.

In March, 1977, the CRB obtained the approval of the Minister of Transport to the construction of an easterly extension of the freeway, generally along the existing Melbourne Metropolitan Planning Scheme main road reservation to Doncaster Road, Balwyn North, and investigations and design for this extension are progressing.

South Gippsland Freeway

Work continued on the freeway interchange with the South Gippsland Highway and on the northbound freeway carriageway between the South Gippsland Highway and Pound Road. The project is scheduled for completion late in 1977 at an estimated cost of $10 million.

Mulgrave Freeway

Preliminary work commenced on the relocation of services east of Huntingdale Road on the proposed 3.7 kilometre extension of the Mulgrave Freeway from Forster Road to Warrigal Road. This extension to Warrigal Road is expected to be opened in two sections: to Huntingdale Road in late 1979, and to Warrigal Road in 1981. The extension is estimated to cost $12 million.

Tullamarine Freeway

Work continued during the year on the upgrading of Lancefield Road, adjacent to the Essendon Airport, to freeway standard. Construction of an interchange at English Street to provide access to the Essendon Airport began during the year. The upgrading of Lancefield Road is expected to be completed in late 1979 at an estimated cost of $6 million.

Greensborough Freeway

Lowering and duplication of the Melbourne-Hurstbridge railway line and the construction of road over rail overpasses at Watsonia Road and Grimshaw Street continued during the year. The project is scheduled for completion in early 1978 at an estimated cost of $5.7 million.

Mahoneys Road

The construction of a six lane, divided road in Mahoneys Road between the Hume Highway, Campbellfield and High Street, Thomastown, continued during the year. The construction of a new second carriageway was completed and upgrading of the existing carriageway was undertaken during the year. The total cost of the project is estimated to be $3.5 million.

Johnson Street Bridge

Work progressed on the Johnson Street Bridge over the Yarra River to link the proposed F9 Freeway with Footscray Road. Foundation work and work on the superstructure for the river span, and associated roadworks continued during the year. The project is expected to be completed in mid 1978 at an estimated cost of $32 million.

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. The work involved earthworks in the vicinity of Thompson Road and the Patterson River. The section of freeway between Springvale Road and Eel Race Drain is estimated to cost $11 million and is scheduled for completion late in 1979.

In November, 1976, a two kilometre section of the freeway south from Eel Race Drain to the Frankston Freeway was opened to traffic. The cost of this freeway section was $1.1 million.

Rural

Western Highway, Horsham

During the year work on the duplication of the Western Highway southern approach to Horsham including the construction of a second bridge across the Wimmera River continued. The 1.7 km road and bridge project is scheduled for completion in December, 1977, at an estimated cost of $1 million.

Bellarine Highway

During the year work continued on the duplication of 2.7 km of the Bellarine Highway between Bawtree Road and Swan Bay Road. The work, including the construction of a large culvert at Fenwick Gully, is estimated to cost $708,000 and is scheduled for completion in August, 1977.

Princes Highway East

—Beaconsfield-Pakenham

Work continued on the construction of 14.2 km of divided highway between Beaconsfield and Pakenham. Work was completed between Beaconsfield and Pink Hill, and is scheduled for completion to Pakenham in late 1978. The estimated cost of the project is $5.2 million.

—Morwell-Traralgon

Construction of the 10 km of divided highway between Morwell and Traralgon continued during the year. Work on the last 2.5 km section is scheduled for completion in mid 1978 and the whole project is estimated to cost $2.5 million.

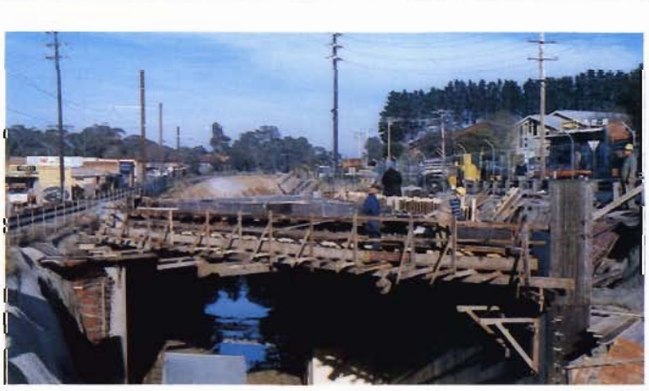
—Simpsons Creek

The reconstruction and realignment of 3.8 km of highway including construction of a three span concrete bridge was completed in June, 1977, at a cost of $650,000.

Mornington Peninsula Freeway, adjacent to Wells Road.

Johnson Street Bridge, South Melbourne

Eastern Freeway-Yarra River Bridge.



Level crossing elimination, Watsonia, part of the Greensborough Freeway Project.

National highways

The Commonwealth National Roads Act 1974 provided funds for national roads, which include national highways, export roads and major commercial roads. A national highway is a road or proposed road that in the opinion of the Commonwealth Minister of Transport is or will be the

principal road linking:
—two or more State capitals;
—a State capital city and Canberra;
—a State capital city and Darwin;
—Brisbane and Cairns; or
—Hobart and Burnie,

or a road or proposed road that should in the opinion of the Commonwealth Minister of Transport be treated by reason of its national importance as a national highway.

In Victoria the Hume Highway from Campbellfield to the River Murray, and the Western Highway from Deer Park to the South Australian border, excluding the section through Ballaarat City, are declared as national highways.

The length of Victoria's national highways and the length of dual carriageways on the national highways as at 30th June 1977 were as follows:

Highway	Length (km)		Percentage of
	Dual carriageways	Total	dual carriageways
Hume	94	285	33
Western	64	405	16
	158	690	23

Princes Freeway, Drouin to Warragul Section

Work continued on the construction of this section of the Princes Freeway, having a length of 15 km and which will bypass the townships of Drouin and Warragul. The construction of two kilometres of divided highway on the existing Princes Highway to form part of a freeway interchange two kilometres east of Drouin was commenced. The project is scheduled for completion in 1982.

Princes Freeway, Orbost

Work continued during the year to provide an 8.4 km flood free crossing of the Snowy River flood plain and a bypass of Orbost. In November, 1976, the bridge across the Snowy River was opened to traffic. Construction of roadworks to the east of the Snowy River have been completed and opened to traffic. The bridges at Ashbys Gulch and Watts Gulch were completed. The whole project is scheduled for completion in November, 1977, at an estimated cost of $9 million.

The amount allocated to Victoria for national highways for the three year period was, as indicated below.

Year commencing	1 July 1974*		1 July 1975	1 July 1976*	Total
	Original	Supplementary			
	$	$	$	$	$
National Highways					
Construction	15,900,000	1,390,000	16,800,000	23,450,000	57,540,000
Maintenance	1,500,000	130,000	1,600,000	2,150,000	5,380,000
	$17,400,000	$1,520,000	$18,400,000	$25,600,000	62,920,000

*Including approved transfers.

The total expenditure by the Board on the Hume Highway and the Western Highway during the year was $21,879,000, $21,018,000 of which was charged to Commonwealth funds.

Expenditure during the year on the Hume Highway was $13,733,000. Work estimated to cost $52 million at 1976 prices and extending over 55 km was under construction during the year north of Seymour on four freeway projects. These projects are:

—**Seymour Bypass and Avenel Bypass**
This project extends for 27 km bypassing the townships of Seymour and Avenel. The estimated cost of the project is $35 million and is expected to be completed in 1982.

—**Avenel to Tubbs Hill**
This project extends for a distance of 12 km and is estimated to cost $6.6 million with completion due in late 1978.

—**Violet Town Bypass**
This project is 6.2 km in length bypassing the township of Violet Town. The project is estimated to cost $5.5 million and is expected to be completed in mid-1979.

—**Violet Town to Baddaginnie**
This project is estimated to cost $4.5 million and is expected to be completed in late 1977.

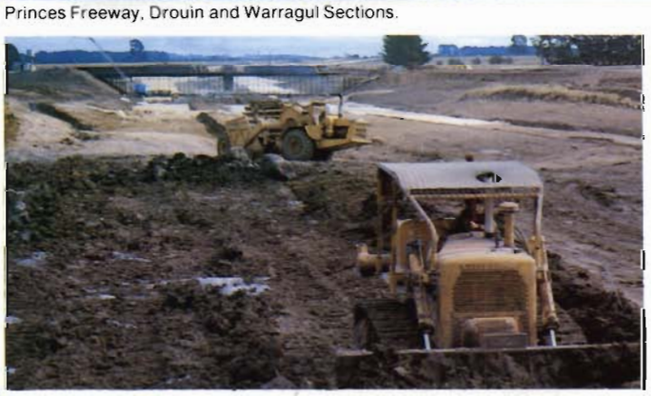
Details of other work proposed on the Hume Highway are contained in the article headed 'The Hume Challenge' on page 17.

Expenditure during the year on the Western Highway was $8,146,000. The major construction project involved was the 8.4 km freeway bypass of the township of Ballan. The project is estimated to cost $8.2 million and is expected to be completed in mid 1978.

Rural projects:

Duplication of the Western Highway, Horsham.

Princes Freeway, Drouin and Warragul Sections.



Western Freeway, Ballan.

Duplication east of Beaconsfield on the Princes Highway East.

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 1975/76 are shown in the following table:

	1976/77		1975/76	
Type of contract	No. of contracts	Value $	No. of contracts	Value $
Road construction —				
1. Over $1M	3	3,985,130	—	—
2. $100,000 to $1M	2	422,411	3	590,390
3. Under $100,000	4	178,540	—	—
Supply of roadmaking materials	134	7,927,294	134	4,825,667
Bituminous treatment & supply of materials	85	10,944,708	62	10,024,524
Bridge construction —				
1. Over $1M	—	—	—	—
2. $100,000 to $1M	3	595,336	7	2,715,629
3. Under $100,000	12	614,817	5	325,689
Components & fabricated steel	28	1,742,112	22	1,169,859
Construction equipment	18	678,811	16	665,055
Divisional facilities	3	193,383	2	65,724
Stores	5	2,660,375	13	1,600,676
Miscellaneous services	46	1,398,313	28	1,131,060
Total	343	31,341,230	292	23,114,273

Contracts under the councils' supervision

During the year the Board approved the acceptance by municipal councils of 150 tenders for a total amount of $6,872,314 for road and bridge works for which the Board allocated funds in whole or in part. In financial year 1975/76 156 tenders were approved for a total amount of $7,525,247. The Board also approved the use of 50 municipal contracts for the supply of materials for works partly financed from funds provided by the Board compared with 63 last year.

Bituminous surfacing

The total length of bituminous surfacing, including both sprayed work and plant mix work, completed during the year amounted to 4,826 km at an approximate cost of $26,000,000.

The Board's 17 mobile bituminous surfacing units, together with plant owned by municipal councils and contractors, completed 4,285 km of sprayed work at a cost of approximately $15,200,000

Contractors operating from fixed asphalt plants completed 219 km of plant mix work on densely trafficked roads at a cost of approximately $10,700,000 using 436,850 tonnes of asphalt.

The lengths of the various types of work completed during the year were:

240 km of sealing widened pavements,

33 km of initial sealing on dual carriageways,

622 km of restoration of sealed coats on reconstruction sections,

475 km of final sealing on initial treatments,

2,551 km of maintenance retreatments,

322 km sealed on behalf of other State and municipal authorities, and

583 km of extensions to the bituminous sealed road system of the State including 32 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	31,000 tonnes
Bitumen for asphalt	23,000 tonnes
Aggregate for sprayed work	261,000 cubic metres
Aggregate for asphalt	294,000 cubic metres
Other bituminous materials for sprayed work and maintenance	11,000 tonnes

The total length of sealed roads in the Board's declared or proclaimed road network is 21,811 km or 92% of the total length of declared or proclaimed roads.

Rolba R1500 Snowblower at Mt Hotham.

Use of reclaimed rubber

Over the years various blends of small amounts of natural and synthetic rubbers have been used in bitumen to give better initial adhesion of the bitumen and aggregate with varying degrees of success. A recent development has been the use of granulated reclaimed rubber. This enables much larger proportions of rubber to be economically added. The granules do not fully dissolve in the bitumen but act as a soft elastic aggregate, or cushion, between the larger stone particles. This gives a surfacing suitable for resurfacing cracked pavements and better able to withstand the effects of heavy traffic.

Granulated rubber is obtained from used motor vehicle tyres by shredding or by crushing after being made brittle by freezing in liquid nitrogen. The practical and economical use of discarded tyres is also attractive from the point of view of preservation of the environment.

Approximately 10 km of sprayed work was carried out during the year and two short sections of plant mix work were placed.

The use of reclaimed rubber is being developed in close co-operation with the Australian Road Research Board.

See full page photo montage on previous page.

Snow clearing

Snow clearing of roads to snow resorts was again carried out during the year on the Alpine Road (Mt Hotham), Mt Buffalo Road (Mt Buffalo), Mt Buller Road (Mt Buller) and Bogong High Plains Road (Falls Creek). Snowfalls were generally light during the 1976 winter with most of the snow falling in early August. Snow clearing operations started in early June and finished in Mid September.

At Mt Hotham the cost of the work performed by the Board on Friday and Saturday nights during the season was financed by a special Treasury Grant. The cost of clearing snow from car parks at all resorts was charged against the respective administering authorities or, in the case of Mt Buffalo, to a special CRB/National Parks Service grant.

Mechanical improvements to snow clearing plant, in particular the Rolba R1500 snow blowers, used on the Alpine Road at Mt Hotham, and the purchase of a Mercedes Benz U94 Unimog prime mover and Schmidt snow clearing attachments for use on the Bogong High Plains Road improved the efficiency of the snow clearing operations during the year.

The snow clearing operations were performed by four supervisors and nine plant operators, using twelve main items of plant:

—6 four wheel drive Aveling Austin Grader Snowploughs.
—3 Rolba R1500 snowblowers.
—2 Rolba R400 snowblowers.
—one U94 Unimog and Schmidt snow clearing attachments.

Linemarking

Implementation of METCON/STATCON

During the year the Board allocated a further $350,000 for expenditure on the continuing implementation of the METCON and STATCON signals, signs and markings for which it has responsibility. The allocation included $100,000 for the installation of METCON signals, enabling a further four sets of traffic signals to be installed on declared roads in the metropolitan area.

The remaining $250,000 was allocated for expenditure on signs and markings in rural areas of Victoria under STATCON. The necessary METCON signs and markings on the Board's declared roads in the Metropolitan area were completed during the year. STATCON signs and markings were also completed on the Board's declared roads in the Mornington Peninsula, some outer suburban areas to the east of Melbourne, and the urban areas of Geelong, Ballarat and Bendigo.

At the end of the financial year STATCON had been extended to all declared roads on the Bellarine Peninsula and in the urban areas of a total of 51 towns on State highways. Approximately 3800 Stop and Give Way signs, and 3500 pavement markings had been installed to the end of the year.

The whole of the Board's signs and markings programme should be substantially complete by the end of 1978, and the major part of the signals installation programme by 1981.

Raised pavement markers on rural highways

During the year the Board completed a programme of laying raised reflective pavement markers on a total of 1100 km of rural State highway. The lengths of highways treated in this manner were selected on the basis of accident frequency. A substantial length of most of the major State highways radiating from Melbourne were included in the programme.

The markers were laid at 24 m centres, ie. one marker in every second gap in the broken painted line. At double lines two markers were laid with one either side of the line at each location. A feature of this programme was the partial mechanization of the operation which enabled machine mixing of the epoxy adhesive used to lay the markers. Machine mixing in turn made possible the use of special fast setting adhesives enabling the laying process to proceed both in cold weather and under reasonably heavy traffic with minimal disturbance to the markers during setting. The initial loss rate of about 1 to 2% of the markers due to imperfect laying techniques is regarded as a significant improvement over earlier methods.

The markers provide substantial improvement in night driving conditions.

Use of reclaimed rubber in bituminous surfacing.
Background: Test section of bitumen reclaimed rubber seal on the Maroondah Highway at the intersection with Mount Dandenong Road, Ringwood.
Insert top: Discarded tyres — a disposal headache.
Insert below: Close up of rubberised asphalt.

Land purchase

The payment of compensation for property acquisition to those owners whose property is in the path of planned road widening projects or new road construction projects is a major aspect of road building in Victoria and accounts for millions of dollars each year.

With most major road projects property owners have been made aware of the proposals for many years. For example, in the case of the Board's largest current road widening project — the Nepean Highway widening from Elsternwick to Moorabbin — owners have been aware of the general proposals since 1954 when a main road reservation was included in the Melbourne Metropolitan Planning Scheme.

Under the provisions of the Country Roads Act the Board is required to make full compensation at current market values for the property acquired and all damages sustained.

The Board's objective is to place the owner in the same financial position after the property is sold to the Board as he or she was prior to the sale.

During the year the Board paid compensation and costs amounting to $20.97 million to 671 owners of land. The following table shows the road classifications on which the expenditure was incurred:

During the year the Lands Compensation (Amendment) Act 1976 was passed. Prior to the passing of this Act the Lands Compensation Act 1958 provided for the Board to grant an interest free loan to an owner where certain conditions apply. Two of these conditions were that the market value of the land being acquired did not exceed $35,000 and that the amount of the loan did not exceed the difference between the market value of the property being acquired by the Board, and $35,000. The Lands Compensation (Amendment) Act 1976 amended the figure of $35,000 to $75,000.

	Commonwealth road category						
CRB road classification	National highways	Urban arterial roads	Urban local roads	Rural arterial roads	Rural local roads	Export roads	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Freeways	2,455	11,864	—	236	—	—	14,555
State highways	28	3,326	—	406	—	—	3,760
Tourists' roads	—	1	—	3	1	—	5
Forest roads	—	—	—	—	1	—	1
Main roads	—	1,583	—	177	71	—	1,831
Unclassified roads	—	202	309	—	225	79	815
Totals	2,483	16,976	309	822	298	79	20,967

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 last five years.

	1972/73	1973/74	1974/75	1975/76	1976/77
Number of land purchase cases settled	865	864	923	661	671
Compensation and associated costs paid by the Board	$10.07m	$11.71m	$19.34m	$16.02m	$20.97m
Reimbursement to councils for the purchase of land for unclassified roads	$0.46m	$0.88m	$0.53m	$0.73m	$0.74m

Of the $20.97 million expended during the year $10.84 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 $1,478,214 from 707 rented residential or commercial properties and 176 separate areas of vacant land.

During the year 41 separate areas of surplus land were sold for $1,705,341, 11 residential properties surplus to requirements were sold for $376,680 and 18 houses were sold for removal for $42,130.

Bridges

Construction of new bridges

A total of 111 new bridges estimated to cost $16,457,000 were commenced during 1976/77.

The following table gives a comparison between the number and estimated cost of bridge projects begun in 1976/77 and those for the preceding financial year:

Description	1975/76		1976/77	
	No.	Est. cost	No.	Est. Cost
New bridges commenced under the supervision of the Board's staff	37	$9,970,000	56	$12,670,000
New bridges commenced under municipal supervision with financial assistance from the Board	41	$1,695,000	55	$3,787,000
Total bridges commenced	78	$11,665,000	111	$16,457,000

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:

—South Gippsland Freeway, Pound Road Overpass — a two span post-tensioned concrete box girder bridge 76.4 m long and 12.2 m between kerbs.

—Western Freeway, Ballan-Greendale Road Overpass — a two span post-tensioned concrete box girder bridge 89 m long and 9.8 m between kerbs.

—Princes Freeway, Orbost Section: Snowy River Bridge — a fifteen span prestressed and reinforced concrete bridge 370.9 m long and 10.0 m between kerbs. Watts Gulch Bridge — a ten span prestressed and reinforced concrete bridge 210.4 m long and 10.0 m between kerbs. Ashbys Gulch Bridge — a twenty eight span prestressed and reinforced concrete bridge 490.9 m long and 10.0 m between kerbs.

—Princes Highway East, Simpsons Creek Bridge — a three span prestressed and reinforced concrete bridge 37 m long and 9.8 m between kerbs.

—Princes Highway West, Darlots Creek Bridge — a four span reinforced concrete bridge 44.4 m long and 9.8 m between kerbs.

—Western Highway, Wimmera River Bridge at Horsham — a seven span reinforced concrete bridge 74 m long and 9.2 m between kerbs.

—Goulburn Valley Highway, Goulburn River Bridge at Trawool — a five span steel girder and reinforced concrete bridge 147.5 m long and 9.8 m between kerbs.

—Swanpool Main Road, Broken River Bridge — a three span prestressed and reinforced concrete bridge 55.6 m long and 8.6 m between kerbs.

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

—Oxley Shire: Bright Main Road, over Pelican Creek, five span reinforced concrete bridge 31.1 m long and 6.7 m between kerbs.

—Bacchus Marsh: Geelong-Bacchus Marsh Main Road, over Parwan Creek, three span reinforced concrete bridge 27.4 m long and 8.6 m between kerbs.

—Otway Shire: Birregurra-Forrest Road, over the Barwon River, three span reinforced concrete bridge 28.8 m long and 9.8 m between kerbs.

Metropolitan bridges and overpasses

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

—Eastern Freeway: Columba Street Overpass — City of Camberwell — a two span post-tensioned concrete box girder 116.7 m long and 5.4 m between kerbs. Boulevard Overpass — City of Kew — a single span post-tensioned portal frame concrete bridge 132 m long and 12.1 m between kerbs. Chandler Highway Overpass — City of Kew — a five span post-tensioned concrete box girder bridge 175.5 m long and 20.4 m wide. Chandler Highway Ramp Bridge — City of Kew — a three span post-tensioned concrete box girder bridge 61.5 m long and 20.4 m between kerbs. Bulleen Road Overpass — City of Camberwell — a two span post-tensioned multi-cell concrete bridge 93 m long and 20.4 m between kerbs.

—Mulgrave Freeway: Ferntree Gully Road On Ramp Bridge — City of Waverley — a four span post-tensioned concrete box girder bridge 143.7 m long and 10.1 m between kerbs. Ferntree Gully Road East-bound Bridge — City of Waverley — a four span prestressed and reinforced concrete bridge 83.2 m long and 15.9 m between kerbs. Ferntree Gully Road West-bound Bridge — City of Waverley — a four span prestressed and reinforced concrete bridge 88.7 m long and 21.2 m between kerbs. Forster Road Bridges — City of Waverley — twin three span post-tensioned concrete slab bridges each 50.6 m long and 10.7 m between kerbs.

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 in conjunction, 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.

Other projects and activities

Pedestrian overpass across the Mulgrave Freeway.

The following crossings were constructed by the Board during the year:

Restoration of pedestrian access

—Kernot Avenue over the Mulgrave Freeway: A five span prestressed and reinforced concrete beam overpass 175 m long and 1.8 m wide.

Grade-separated crossings to serve schools

Nineteen structures have now been constructed under a Victorian Government scheme.

Overpasses completed during the year under the scheme were:

—Warrigal Road at Euston Street, City of Oakleigh: A single span prestressed and reinforced concrete structure 32.8 m long and 1.8 m wide.

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 then 62 road overpasses, or underpasses, at a cost of more than $36 million have been constructed to eliminate dangerous railway level crossings.

Since 1st July, 1974 the total cost of this work has been charged to the Transport Fund.

Between 1970 and 1976, 740 motor vehicle accidents occurred at railway level crossings in Victoria and as a consequence 164 persons were killed.

The following project was substantially completed by the CRB during the year:

—road-over-rail overpass to carry Grimshaw Street over the Melbourne/Hurstbridge railway line at Watsonia. More than 17,000 vehicles travel along Grimshaw Street daily.

A road-over-rail overpass at Watsonia Road is scheduled for completion early in the 1977/78 financial year. The realignment of the railway line under both the Grimshaw Street and Watsonia Road overpasses will be completed by mid 1978 to finish the project.

Work was commenced on the following project during the year:

—A road-over-rail overpass at Weerite, 185 kilometres to the west of Melbourne to carry the Princes Highway over the Melbourne/Port Fairy railway line. The project is estimated to cost $700,000 and is scheduled for completion in early 1978.

Construction is well advanced on a major level crossing elimination project at Camp Road, Broadmeadows.

National Parks roads

The State Government again provided loan funds amounting to $100,000 repayable by the Board 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:

—Brisbane Ranges National Park in Bannockburn Shire
—Bulga National Park in Alberton Shire
—Cape Schanck National Park in Flinders Shire
—Captain James Cook National Park in Orbost Shire
—Ferntree Gully National Park in Sherbrooke Shire
—Fraser National Park in Alexandra Shire
—Glenaladale National Park in Bairnsdale Shire
—Hattah Lakes National Park in Mildura Shire
—Kinglake National Park in Eltham and Whittlesea Shires
—Lind National Park in Orbost Shire
—Little Desert National Park in Dimboola Shire
—Melba Gully National Park in Otway Shire
—Morwell National Park in Morwell Shire
—Mt Buffalo National Park in Bright Shire
—Mt Burrowa-Pine National Park in Minhamite Shire
—Organ Pipes National Park in Keilor City and Bulla Shire
—Port Campbell National Park in Heytesbury Shire
—Tarra Valley National Park in Alberton Shire
—The Lakes National Park in Rosedale Shire
—Warby Ranges National Park in Wangaratta Shire
—Warrandyte National Park in Doncaster & Templestowe City
—Westerfolds National Park in Doncaster & Templestowe City
—Wingan Inlet National Park in Orbost Shire
—Wilson's Promontory National Park in South Gippsland Shire
—Wyperfeld National Park in Karkarooc 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 and parking areas already constructed. The works were carried out either by the Board, the local municipal council concerned, or the National Parks Service. The Government has made loan funds totalling $1,397,000 available for these purposes since 1st July, 1963.

Roads of tourist interest

The State Government again provided loan funds totalling $225,000 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 again made by the Board after consultation with the Ministry of Tourism. The total amount made available by the Government since 1960 is $3,444,000. Applications for financial assistance from these funds far exceed the amount available for expenditure.

The Board is required to make an annual payment into the Tourist Fund amounting to two per cent of the amount credited to the Country Roads Board Fund in the previous year from receipts under the Motor Car Act. An amount of $1,016, 537 was paid during the year. The Tourist Fund is administered by the Ministry of Tourism.

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 to facilitate the extraction of forest produce. An amount of $125,000 was authorized to be paid into the Fund by the State Government during the year increasing the authorized contributions to $860,000 since the inception of the Fund. Once again the Board's Divisional Engineers combined with the appropriate Forests Commission officers to determine the priorities of eligible works. Allocations for particular works were made by the Board with the agreement of the Forests Commission.

The limited funds available from the Fund only enable grants to be made for the most urgent works. Unsatisfied applications for funds totalled approximately $335,000.

Control of over-dimensional and overweight vehicles

To provide safer conditions for road users and to protect road surfaces, it is necessary for the Government to impose statutory limits on the weight, width, height and length of vehicles and their loads. The Board is the authority responsible for issuing permits for the movement of vehicles and loads exceeding the legal weight, height, length and width on:

—roads declared or proclaimed under the provisions of the Country Roads Act; and

—a journey which includes unclassified roads in two or more greater metropolitan municipalities as defined in the Motor Car Act.

The number and types of permits issued during the year compared with those issued during financial year 1975/76 are shown below:

	1975/76	1976/77
Single trip permits	22,959	20,075
Annual permits	4,040	3,526
NAASRA permits	—	11,150*
Total number of permits issued	26,999	34,751

*This figure represents the number of permits issued in accordance with the NAASRA recommendations, referred to in the Review Section of this Report. The permits will be effective until such time as they are made redundant by new legislation.

The number of offence reports submitted was 7,929, of which 6,793 or 85.6% were successfully prosecuted. Total fines and costs resulting from the above cases amounted to $882,565 which was paid into Consolidated Revenue.

Thirty-third conference of municipal engineers

The thirty-third conference of municipal engineers, convened by the Board in conjunction with the Local Government Engineers of Australia, was held at the Board's Head Office on 21st and 22nd March 1977, with a technical tour on 25th March.

The Conference was officially opened by the Chairman, Mr R E V Donaldson, on behalf of the Minister of Transport.

The theme of the Conference was the various aspects of management related to engineering. For the first time the opening paper was a Keynote Address by a distinguished speaker, Sir John Holland, Kt, BCE, FIE Aust, FAIB, whose topic was 'Management from a Civil Engineering Viewpoint'. Sir John's address was well received by conference participants and set the pattern for a highly informative and successful conference.

Approximately 270 engineers, including representatives of many Victorian municipalities, some State Government Instrumentalities and Departments and interstate bodies, and the Board attended the Conference to hear and discuss a number of papers on the general themes of Planning, Organisation and Resources, and Direction and Control. Another innovation was the introduction of a split programme whereby papers on different subjects were given concurrently in the Head Office theatrette and in the Materials Research Division laboratory building. This change offered a selection of interest to participants and allowed a large number of papers to be presented over the two Conference days.

On the theme of Planning, Mr P S Parkinson, Shire Engineer, Flinders, spoke on Tourism — The role of Local Government. Mr N H Cottman, Shire Engineer, Stawell, convened a panel discussion on rural residential subdivisions, development and controls. The Board's Chief Planning Engineer, Mr R T Underwood, spoke on Urban Transportation Corridor Studies and discussion on this was followed by papers given by Mr S J Pike, City Engineer, Melbourne, and Mr B J Negus of the Board's Traffic Engineering Division on Inner Urban Traffic Management. Mr W P Dunk of the Ministry of Conservation, Mr R E Saunders, Leader of the Board's Environmental Studies Section and Mr E C Madsen, Shire Engineer, Mornington, spoke on Environmental Issues, Legislation and Practice.

On the theme of Organisation and Resources, Mr P M Jeffreys, the Board's Chief Mechanical Engineer jointly with Mr N J Schofield, Shire Engineer, Hampden, presented a paper on New Plant and Equipment. Mr M J Pawsey, City Engineer, Berwick, spoke on Street Works Co-ordination. There were a number of papers on bridge topics — by Mr D G Thompson of the Dandenong Valley Authority jointly with Mr R J Ladd, Deputy City Engineer, Knox, by Mr J W Sterkenberg, Shire Engineer, Avon, and by Mr D C Gillett, BHP Co. Ltd. The Board's Personnel Manager, Mr G C Rogers spoke on Flexible Working Hours, the Industrial Relations Officer,

NAASRA members attended the annual conference in Melbourne in November, 1976. Seated around the table are (from left): Mr W S Brake, Board Member CRB, Mr T H Russell, Deputy Chairman CRB, Mr D H Aitken ISO, Commissioner Main Roads Department WA, Mr G E C McKercher, Director Main Roads Department Tasmania, Mr J R M MacBride, Engineer Secretary (Elect) NAASRA, Mr R E V Donaldson, Chairman CRB and NAASRA, Mr D J Black, Engineer Secretary NAASRA.

Mr R C S Howard, spoke on Industrial Relations and the Board's Divisional Engineer, Ballarat, Mr E T Oppy, spoke on Delegation and Participation.
The third segment on the theme Direction and Control, included papers by Mr J C Sherring, City Engineer, Sandringham, who presented a paper on Maintenance and Servicing Functions, by Mr A M Noble, the Board's Assistant Chief Road Design Engineer, on Traffic Management Schemes, and by Mr H E Kilminster, City Engineer, Wangaratta, on External Controls. Mr D G Dean, Shire Engineer, Grenville, spoke on Retreatment of Bituminous Sealed Surfaces; and Mr D S MacLeod, Shire Engineer, Chiltern, on Quarrying Methods and Product Control. The Conference concluded on the subject of Financial Programme Management and Legislation with a paper by Mr A Thomson, City Engineer, Mildura, and a joint paper by Mr R G Cooper, the Board's Chief Accountant and Mr N S Guerin, the Board's Deputy Engineer in Chief.
On 25th March, interested engineers were taken on a tour of inspection of the preliminary rail lowering and grade separation works for the Greensborough Freeway.
The Board extends its thanks and appreciation to the Local Government Engineers Association of Victoria for assistance in planning the Conference and to Sir John Holland and all engineers, particularly those who presented papers, for contributing to the success of the Conference.

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 main roads. Most municipalities in Victoria are visited at approximately six yearly intervals. These visits include a tour of the municipality's roads, in company with Councillors and council officers, and discussions on local road problems. These visits provide the Board Members with important information about road conditions and developments.
During the year the Board made official visits to thirty-six municipalities: the Shires of Alberton, Avoca, Ballan, Beechworth, Birchip, Chiltern, Colac, Donald, Gisborne, Karkarooc, Leigh, Metcalfe, Mornington, Morwell, Mount Rouse, Phillip Island, Pyalong, Traralgon, Upper Murray, Waranga, Warracknabeal, Wimmera, The Cities of Broadmeadows, Colac, Croydon, Dandenong, Essendon, Knox, Nunawading, Ringwood, Sale, Springvale, Sunshine, Traralgon, the Rural City of Wodonga and the Borough of Wonthaggi.
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 local administration. During the year the Board received deputations from the Footscray, Kew, Essendon, Moe and Ballaarat City Councils and the Whittlesea and Diamond Valley Shire Councils. The main topics raised 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, freeway planning and road construction.

National Association of Australian State Road Authorities

The National Association of Australian State Road Authorities (NAASRA) is an organisation consisting of the Heads of the road authorities of the six States and the Commonwealth Department of Construction which is the road constructing authority for the territories administered by the Commonwealth Government. The aims of NAASRA may be briefly stated as providing uniformity of practice in road and bridge design construction and operation, improved road construction methods and the production and updating of technical manuals to establish standard practices throughout Australia.
The Association also collects and disseminates statistical information relating to traffic, the types and standards of roads and road finance. The information collected is used in the formulation of national road policies.

NAASRA's views on Commonwealth 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 R E V Donaldson, is a member. This Group advises ATAC, a meeting of Ministers of Transport which determines policy.
The following NAASRA meetings were held during the year
—55th (Special Meeting) Perth, 26/8/76 attended by Mr R E V Donaldson, Chairman.
—56th (Annual Meeting) Melbourne, 1-3/11/76 attended by Mr R E V Donaldson, Chairman, Mr T H Russell, Deputy Chairman and Mr W S Brake, Member.
—56th (Intermediate Meeting) Melbourne, 17/5/77 attended by Mr R E V Donaldson, Chairman, Mr T H Russell, Deputy Chairman and Mr W S Brake, Member.
At the 56th Annual Meeting of NAASRA, Mr R E V Donaldson, Chairman, was appointed Chairman of the Association for 1976/77. Matters which were considered at this meeting included National Highway Identification Signs, Uniform Longitudinal Linemarking on Road Pavements in Australia, the Implementation of Recommendations

Mr A F Schmidt, Commissioner Department of Main Roads NSW, Mr W Hansen, Commissioner Main Roads Department Queensland, Mr A K Johinke, Commissioner Highways Department SA, Mr G H Warwick Smith CBE, Secretary Department of Construction (Commonwealth), Mr N A Waslin, 1st Assistant Secretary (Roads) Department of Transport (Commonwealth), Mr H T Loxton, Chairman Commonwealth Bureau of Roads.

of the Economics of Road Vehicle Limits Study, NAASRA Data Bank System Study, a Road Maintenance Study, a Guide Policy for Road Noise Control and Guidelines for Environmental Study Groups.
Before the Annual Meeting, NAASRA members toured the north-east of Victoria, visiting Tallangatta, Bright, Mt. Buffalo, Beechworth and Benalla. The tour concluded with an inspection of the Hume Highway.
The Principal Technical Committee of NAASRA plans and organises the technical work of the Association with the assistance of eight specialist committees. The Board is represented on the PTC by the Engineer in Chief, Dr K G Moody.
The financial and administrative functions of the State Road Authorities are covered by the Secretarial and Accounts committee of NAASRA and the Board is represented on this Committee by Mr N L Allanson, Secretary and Mr R G Cooper, Chief Accountant.

The Board is also represented on the Specialist engineering Committees of NAASRA by the officers named below.
Mr K N Opie, Chief Bridge Engineer (Bridge Engineering Committee); Mr R A Northrope, Acting Officer-in-Charge, Computer Section (Computer Committee); Mr A M Noble, Assistant Chief Road Design Engineer (Geometric Road Design Committee); Mr P W Lowe, Materials Research Engineer (Materials Engineering Committee); Mr P M Jeffreys, Chief Mechanical Engineer (Plant and Equipment Committee); Mr A M MacPherson, Traffic Engineer (Traffic Engineering Committee); Mr A J Pryor, Works (Administration) Engineer (Construction and Maintenance Practice Committee); Mr J H Pittard, Advance Planning Engineer (Advance Planning Committee).
The joint work of the State Road Authorities through these Committees ensures co-ordination of effort, uniformity of approach and a pooling of experience in road and bridge planning, design, construction and maintenance.

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 Construction, the Secretary of the Commonwealth Department of Transport and the Executive Director of ARRB. The Chairmanship of ARRB rotates annually amongst the Directors.
Up to 10% of the ARRB's annual expenditure is borne by the Commonwealth Department of Construction and 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 Commonwealth Roads Grants Act 1974.
The major objective of the Board is to co-ordinate, encourage and arrange continuing research into problems associated with roads and traffic in Australia.
The members 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, who is Deputy Chairman of ARRB attended the intermediate meeting at the Road Research Centre, Vermont on 4th November, '76 and also the Annual Meeting held there on 18-19th May 1977.
Technical conferences for the wider dissemination of the results of research and the exchange of knowledge are held biennially. The 8th Biennial Conference was held in Perth 23-27th August 1976 and was attended by Mr R E V Donaldson, Deputy Chairman, ARRB, Mr T H Russell (Deputy Chairman, CRB), who was co-author of a paper on the NAASRA Economics of Road Vehicle Limits Study, and several CRB engineers.
ARRB Directors have decided to present an annual prize for the paper which best translates research into practice. The first award was presented at the August Conference in Perth to CRB engineer, Mr B L Phillips for his paper on 'Synthetic Aggregates for road surfacings'.
Several CRB engineers are members of ARRB technical or specialist committees.
There was co-operation between the Country Roads Board and ARRB during the year in several areas of practical road research, for example:

—Field evaluation of a durability test for bitumen at four field sites at Elmore, Violet Town, Epping and Vermont.
—Development of an asphalt mix for residential streets.
—Evaluation of asphalts which incorporate granular scrap rubber.
—Evaluation of granular rubber-bitumen binders for sprayed seal work.
—Field evaluation of the CRB Pavement Design Method.
—Preliminary investigations to determine the effectiveness of 'rumble-strips' as a warning device.
—Delineation of roads by means of reflective lines and other devices.
—Investigations into freeway lighting.

Co-operation with Army Reserve

The CRB continued its sponsorship of Australian Army Reserve (SR) units of the Royal Australian Engineers. The units are the Headquarters 22 Construction Regiment and the 107 Plant Squadron (Heavy).
The 1976 annual training camp was held at Benalla and about 120 CRB personnel attended. Training at the camp was concerned principally with Bailey bridging, improvised bridging and watermanship, as well as recruit training for new members.

As at 30th June, 1977, fifteen members of the Board's staff were officers of the regiment, including the Commanding Officer, Lt Col G R Hunt ED, the Board's Project Engineer for the Eastern Freeway, and the Commanding Officer of the plant squadron, Major P M Hosking ED, the Board's Property Officer.

Public relations

In recent years the Board has accepted the need to employ specialist staff in order to inform the public of its functions and works.

This public information function is carried out through the preparation of news releases, media conferences, displays, films and the production of journals and brochures.

Publications

During the year, the Board issued the following publications:

CRB News, Nos 33, 34, 35
Urban Freeways
The Hume Challenge — a freeway from Melbourne to Wodonga
The Princes Freeway, Orbost Section
The Calder Freeway, Keilor Section
Converting Lancefield Road to Freeway
'Your Property . . . Your Roads'
Widening of Nepean Highway (revised)
Snow Driving . . . It's An Art
Financial Facts, February, 1977
The Hume Freeway, Baddaginnie to Bowser Section
The Replacement of the Murray River Bridge — Mildura
South Gippsland Freeway Extension, Hampton Park

Displays

The Board purchased a Mobile Information Centre to assist in the dissemination of information on its various projects and planning proposals. The Centre has provision for the display of literature, plans and photographs and includes video equipment. As well as its use at the Royal Melbourne Show and at country shows, the Centre was utilised prior to the opening of the Snowy River Bridge at Orbost, and at public meetings held at Benalla, Glenrowan and Wangaratta to discuss the proposed Hume Freeway in these areas.

In all the Board participated in 17 displays and exhibitions during the year, including Environment '76, the State Government Garden State exhibit at Garden Week, and Civinex '77.

Films

During the year five films were produced for public exhibition.

—Landscaping the Eastern Freeway
—The Great Ocean Road
—Bridging the Snowy — a freeway bypass for Orbost
—The Gardiners Creek Study
—The Hume Challenge.

Motorists' services and driver education

The Motoring Bulletin service to the media and emergency services was continued, after its introduction in early 1976. In all, 69 bulletins were issued covering roadwork locations that could cause delays to traffic. In addition, snow and flood reports were issued as required.

The Board's driver education brochure, 'Snow Driving . . . It's an Art' was reprinted after requests for 20,000 copies were received from interested authorities and individuals.

Personnel

The Board's personnel numbers as at the 30th June 1977, were as follows:

Technological staff (professional)	609
Technical staff	509
Administrative staff	738
Supervisory staff — Field	172
— Depot	71
Clerks of works	86
Construction and maintenance personnel	2224
Workshop and depot personnel	619
Total	5028

As in the last financial year replacements of personnel who left the Board's service were not made unless the need could be clearly justified. There was no recruitment of additional technological staff during the year and again no cadetships were granted. Salaried staff numbers reduced by 77 during the year.

Although recruitment activities were generally at a low level, officers of the Board continued to attend Careers functions throughout the State in an endeavour to assist students in determining their career objectives.

In the latter part of 1976 a scheme of Flexible Working Hours, somewhat similar to that in operation in many areas of the State Public Service, was introduced for staff located at Head Office. The results to date indicate that the scheme is operating successfully to the advantage of both the Board and the staff. Consideration is being given to the extension of the scheme to other areas of the organisation.

Apprenticeships

In order to assist with apprentice training generally the Board engaged as many apprentices as funds and training facilities would allow. Twenty-four apprentices were engaged during the year in the trades of motor mechanics (18), fitting and machining (1), structural steel fabrication (1), painting and decorating (1), lithographic printing (1), instrument making and repairing (1) and gardening (1).

One new apprenticeship offered by the Board this year was in the trade of instrument making and repairing. This apprentice has been employed in the Materials Research Division where he will be trained in the production of electronic and mechanical components for testing equipment.

The Mobile Information Centre was used successfully at the Snowy River Bridge opening ceremony at Orbost, and at rural shows in the eastern regions.

The total number of apprentices in training at the 30th June 1977 was:

Motor mechanics	58
Structural steel fabrication	3
Carpentry and joinery	3
Painting and decorating	3
Electrical mechanics	3
Cooking	2
Automotive electrics	2
Gardening	1
Lithographic printing	1
Instrument making and repairing	1
Fitting and machining	1
	78

Industrial relations

The rate of inflation reflected in wage and price increases during the year continued to be of concern in reducing the Board's capacity to carry out its programmes.

Industrial disputes such as the concrete batching plant dispute in March/April 1977 impeded the Board's work on some projects. The strike of petrol tanker drivers in April 1977 ended before it seriously hindered the work of the Board. Apart from the national stoppage on the Medibank issue the year was free of strikes.

The Board accepts the importance of consultation and participation with staff associations and trade unions as an important factor in good industrial relations. After extensive consultation with the staff associations the Board agreed to establish a Classifications Committee instead of acceding to a claim for a Board of Reference. The Classifications committee includes staff association representation. The role of the Committee is to consider:

1. requests for the reclassification of positions occupied by salaried staff provided that no request shall be considered which would result in a reclassification exceeding the level of Class 5 in the Administrative Division or Class 5 in the Technical Division or Class 4 in the Professional Division;
2. appeals from members of the salaried staff against the level of, or non-payment of higher duties allowances.

The Committee has no power of final decision and is required to make recommendations to the Board.

During the year the Board participated in several important cases before the Conciliation and Arbitration Commission. These included building industry and construction industry awards covering the employment of builders labourers, carpenters and construction workers. The Board also participated in an extensive case concerning the salaries of Class 1 professional engineers required to supervise the work of personnel receiving higher rates of pay. This case arose from a claim made by the Association of Professional Engineers, Australia, on the Metropolitan Water Sewerage and Drainage Board, NSW which could have had repercussions on the Board.

Details of awards by the Conciliation and Arbitration Commission to which the Board is a respondent party and the number of its personnel covered by these awards are as follows:

Award	No. personnel
Australian Workers Union Construction and Maintenance	1780
Building Construction Employees and Builders Labourers	80
Carpenters and Joiners	20
Engine Drivers and Firemen	5
National Building Trades Construction	77
Metal Trades Award	294
Transport Workers (General)	310
Municipal Officers (Country Roads Board)	1760
Municipal Officers (Country Roads Board) Senior Officers	19
Professional Engineers (Country Roads Board, Victoria)	522
Professional Engineers (Country Roads Board, Victoria) Senior Engineers	20

The remaining employees are covered by Victorian Wages Board Determinations.

Training and development

Once again the Board's comprehensive training and development programme provided training courses based on the needs of each work area. Engineering training courses covered a wide range of technical subjects such as road and bridge design, project management, materials testing, traffic engineering and computer methods.

Management skills were developed by conducting internal residential management courses for selected officers at middle and senior management level.

Appropriate external training courses, lectures and conferences were attended by selected staff, so that the latest trends in particular disciplines are available to the Board.

Over two hundred members of the staff used the Board's study leave scheme to undertake a wide variety of courses at tertiary institutions, thereby improving their promotional opportunities and gaining special skills and knowledge important to the Board's work.

Medical officer

During the year the Board engaged the services of a Medical Officer on a part-time basis with a view to providing certain occupational Health services.

As a result of this appointment important changes have been made in occupational health generally and in accident reporting and investigation and workers' compensation administration.

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

			Years of service
*Mintern-Lane, T	Superintendent of Works	Bridge	43
Jacka, A	Divisional Engineer	Traralgon	42
Ryan, J C	Engineering Assistant Class 4	Dandenong	42
Williams, C E	Roadmaster Grade A	Bendigo	41
Cambridge, A J	Roadmaster 'A'	Geelong	40
Pike, R S	Patrolman Grade 2	Dandenong	37
Sullivan, J P	Roadmaster A	Ballarat	37
Neville, W F	Assistant Chief Works Engineer	Engineer in Chief's Branch	36
*Aldridge, C S	Storeman Grade 3	Bendigo	35
Combridge, H R	Patrolman Grade 1	Dandenong	34
Stevens, N M	Compensation Investigating Officer	Estates Section	32
Easton, F R	Patrolman Grade 2	Traralgon	30
Leitch, E D	Plant Operator	Bairnsdale	30
Roberts, R	Divisional Engineer's Clerk	Warrnambool	30
Smooker, S J	Patrolman Grade 2	Bairnsdale	30
Bruhn, L G	Clerk of Works Grade A	Metropolitan	29
Darcy, E J	Senior Gardener	Geelong	29
Duffy, W C	Depot Foreman	Warrnambool	29
Knox, G W	Engineer Class 2	Materials Research Division	29
Farish, J J	Divisional Accountant	Benalla	28
Gavin, S K	Cost Accountant	Chief Accountant's Branch	28
Molnar, J	Assistant Chief Mechanical Engineer	Mechanical Sub-Branch	28
Moncrieff, E J	Principal Traffic Officer	Secretary's Branch	28
Dale, S W E	Float Driver	Syndal	26
*Jason, C E	Painter	Bendigo	26
Keddie, W	Carpenter	Ballarat	26
Medwell, W C	Owner Truck Driver	Ballarat	26
Beecher, L F	Administrative Officer Class 3	Bridge	25
Nolan, D F	Owner Driver	Ballarat	25
Radic, M	Bitumen Worker	Benalla	25
Stomm, M L	Scientific Officer Class 2	Materials Research Division	25
Thorne, F W	Fitter	Benalla	25
Keily, G	Patrolman Grade 1	Ballarat	24
McEvoy, J F	Patrol Assistant	Benalla	24
Alksnis, (Mrs) E J	Senior Machine Operator Grade 1	Chief Accountant's Branch	22
*Dunstan, C B	Patrolman Grade 1	Benalla	22
Goudie, H S	Patrolman Grade 1	Bairnsdale	22
*Krisans, B	Truck Driver	Mechanical Sub-Branch	22
Whitefield, L D	Truck Driver 7-8 tonne	Ballarat	22
Busk, L N	Patrolman Grade 1	Traralgon	21
Ollis, B D	Plant Serviceman Grade 1	Geelong	21
Pattie, J	Overseer Grade C	Traralgon	21
Speechley, R J	Overseer Grade B	Bendigo	21
Taylor, E T	Overseer Grade C	Bairnsdale	21
Walter, B	C.M.W.2	Dandenong	21
White, R W	C.M.W.3	Bendigo	21
Adams, R	Administration Engineer	Engineer in Chief's Branch	20
Douglas, T	Grader Driver	Warrnambool	20
Manly, E W	Patrolman Grade 3	Dandenong	20

*Deceased

Finance

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 $204 312 788. The funds were derived from:

State sources	104 958 848
Commonwealth sources	91 191 634
Balance brought forward from year 1975/76	8 162 306
	204 312 788

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 or 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 National Roads Act 1974, Roads Grants Act 1974, and Transport (Planning and Research) Act 1974.
—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 1976/77 compared with 1975/76

Item	1975/76		1976/77	
	$	$	$	$
Receipts from State sources				
Fees under the Motor Car Act less cost of collection		50,826,830		60,801,371
Commercial Goods Vehicle Act		10,132,146		9,967,856
Municipalities contributions		2,232,860		2,517,696
Loan funds		325,000		325,000
Special grant from State treasury		427,000		638,000
General receipts		1,524,877		1,745,537
Allocation from Roads (Special Projects) Fund		30,192,191		28,963,388
		95,660,904		104,958,848
Balance brought forward at 1st July		616,605		3,175,871
		96,277,509		108,134,719
Receipts under Commonwealth grants				
Regional employment development scheme		701,864		—
Traffic engineering and road safety		129,616		146,572
General employment purposes		1,500,000		—
		2,331,480		146,572
Receipts under National Roads Act 1974				
National Highways		18,400,000		25,600,000
Export and major commercial roads		4,800,000		5,200,000
		23,200,000		30,800,000
Receipts under Roads Grants Act 1974				
Urban arterial roads		42,590,000		39,600,000
Urban local roads		3,200,000		3,100,000
Rural arterial roads		5,660,000		4,300,000
Rural local roads		11,750,000		10,700,000
Minor traffic engineering and road safety improvements		1,610,000		1,045,000
		64,810,000		58,745,000
Balance brought forward at 1st July		15,000		4,986,435
		64,825,000		63,731,435
Receipts under Transport (Planning & Research) Act 1974		1,790,910		1,500,062
Balance brought forward at 1st July		25,623		—
		1,816,533		1,500,062
Total funds available for expenditure by the Country Roads Board		188,450,522		204,312,788

Matching Commonwealth Grants for roads

The Commonwealth Roads Grants Act 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 1977 is necessary for each State to qualify in full for the total amounts of the Commonwealth grants to be made under the National Roads Act, the Roads Grants Act and the Transport (Planning and Research) Act. 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.

The three year quota for Victoria was $307.3m

Expenditure

Expenditure in the form of cash payments during the financial year amounted to $203,519,868 leaving a balance of $792,920 to be carried forward into financial year 1977/78.

The following table shows expenditure incurred by the Board, including that from the Roads (Special Projects) Fund, in the years 1975/76 and 1976/77.

Item	1975/76	1976/77
	$	$
Construction and maintenance of roads and bridges	147,120,207	169,475,841
Capital expenditure (plant, workshops, offices, etc.)	1,547,473	2,092,381
Planning and research	3,662,713	2,843,525
Salaries, operating accounts and other administrative expenditure	22,931,701	24,041,489
Statutory payments to Traffic Authority Fund, Transport Regulation Fund and Tourist Fund etc.	2,233,242	2,132,733
Interest and Sinking Fund payments	2,792,880	2,933,899
Total	180,288,216	203,519,868

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 1976 expenditure on the normal program of main roads works in financial year 1975/76 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	$14,296,069
Expenditure from Commonwealth funds	6,257,117
Expenditure from proceeds of ton/mile tax (Commercial Goods Vehicles Act)	5,147,059
	$25,700,245

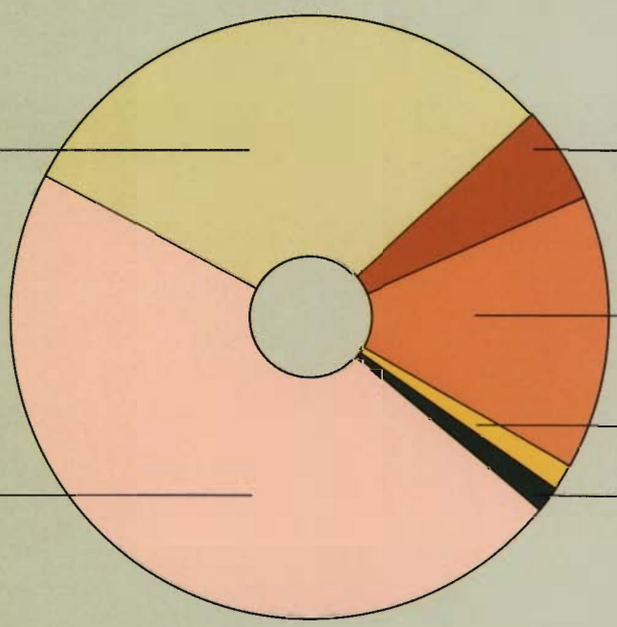
Amount of Country Roads Board Fund expenditure apportioned to councils $2,310,404

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 1976/77 compared with 1975/76 was as follows:

	1975/76		1976/77	
	CRB	Council Contribution	CRB	Council Contribution
	$	$	$	$
Patrol maintenance	2,195,180	974,530	2,391,553	1,046,240
Construction, reconstruction and other maintenance	22,035,733	5,475,677	31,909,877	7,952,078
Total	24,230,913	6,450,207	34,301,430	8,998,318

Municipal councils were not required to contribute towards the cost of works involving an expenditure during the year of $96,702,000 on State highways, freeways, tourists' roads and forest roads (including expenditure from the Roads (Special Projects) Fund).

Receipts 1976-77



Registration fees, drivers' licence fees etc.
31% $60,801,000

Tonne kilometre tax
5.08% $9,968,000

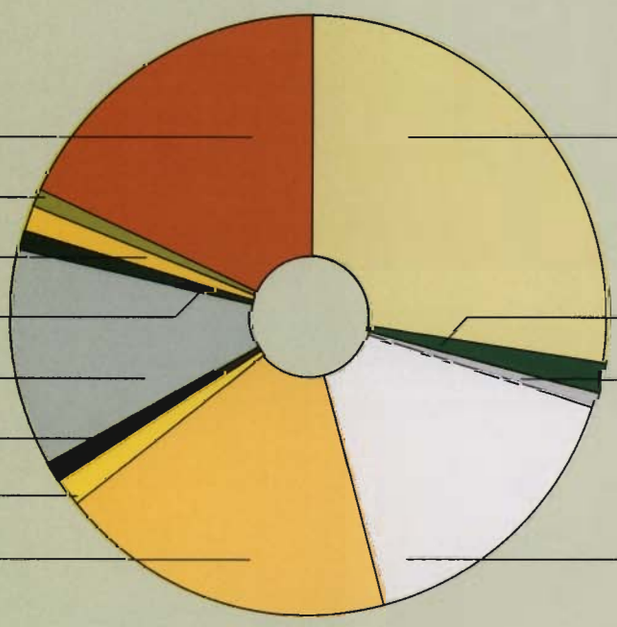
Allocation from Roads (Special Projects) Fund
14.77% $28,963,000

Municipal repayments
1.28% $2,518,000

Other
1.38% $2,709,000

Commonwealth Grants
46.49% $91,192,000

Payments 1976-77



State highways
17.89% $36,409,000

Other
.82% $1,675,000

Planning and research
1.40% $2,844,000

Capital
1.03% $2,092,000

Management and operating
11.81% $24,041,000

Statutory payments
1.05% $2,133,000

Interest and sinking fund
1.44% $2,934,000

Unclassified roads
18.83% $38,328,000

Freeways
27.39% $55,747,000

Tourist roads
1.51% $3,066,000

Forest roads
.73% $1,480,000

Main roads
16.10% $32,771,000

Appendix 1

Lengths of State Highways, Freeways, Forest roads and Tourists' roads

As at 30th June, 1977

State Highways

Name	Route	Length (kilometres)
Bass	Lang Lang-Inverloch	60.6
Bellarine	Geelong-Queenscliff	31.6
Bonang	Orbost-NSW border near Delegate	113.1
Borung	Dimboola-Charlton	123.3
Burwood	Burwood-Ferntree Gully	20.4
Calder	Melbourne-Mildura	560.1
Cann Valley	Cann River-NSW border	44.9
Glenelg	Ballarat-SA border near Mt Gambier	282.2
Goulburn Valley	Eildon-Strathmerton	225.4
Hamilton	Geelong-Hamilton	231.0
Henty	Portland-Lascelles	346.1
Hume	Melbourne-NSW border near Albury	246.6
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-Ballarat	
	Bendigo-Shepparton	
	Benalla-Mansfield	416.0
	Morwell-Port Welshpool	78.9
Murray Valley	Corryong-Hattah	738.5
Nepean	Melbourne-Portsea	91.1
Northern	Kilmore-Echuca	142.5
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	485.7
Princes (West)	Melbourne-SA border near Mt Gambier	401.9
Pyrenees	Elphinstone-Ararat	147.5
South Gippsland	Dandenong-Yarram-Sale	254.4
Sturt	Mildura-SA border near Renmark	113.6
Sunraysia	Ballarat-Calder Highway	340.0
Warburton	Lilydale-Warburton	34.6
Western	Melbourne-Serviceton	376.4
Wimmera	Apsley-St Arnaud	222.2

Freeways

Name	Section	Length (Kilometres)
Calder	Keilor	2.8
	Elphinstone	2.7
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	15.5
	Chiltern	21.3
Lower Yarra	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 to Haunted Hills	16.2
	Laverton	12.8
	Lara	24.4
	Maltby	10.2
	Dartmoor	3.0
South Eastern	Anderson Street to Tooronga Road	6.8
South Gippsland	Whitelaw	3.8
	Princes Freeway to Princes Highway	1.4
	Princes Highway to Pound Road	2.5
Tullamarine	Flemington Bridge to Melbourne Airport	20.9
Western	Deer Park to Melton	13.3
	Bacchus Marsh	8.7
	Pentland Hills	11.0
	Pykes Creek	5.7
	Gordon	10.8

Forest roads

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
Buchan-Ensay	Tambo Shire	19.8
Bullumwaal-Tabberabbera	Bairnsdale Shire	30.2
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	43.5
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	McIvor Shire	16.5

Appendix 2

State Highways and Freeways

Significant works completed during financial year 1976/77

Tourists' roads

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	207.2
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

Bass Highway
—Cranbourne Shire
Widening 2.5 km between South Gippsland Highway and Lang Lang Jetty Road.

—Wonthaggi Borough
Regrading and widening railway crossing in Wonthaggi.

Burwood Highway
—Knox City
Reconstruction of the intersection with Stud Road.

Calder Highway
—Metcalfe Shire
Reconstruction at the Midland Highway junction.

Goulburn Valley Highway
—Numurkah Shire
Reconstruction and widening of 5.2 km between Wunghnu and Numurkah.

—Seymour Shire
Construction of a 5 span bridge on a new alignment over the Goulburn River at Trawool and construction of 1.7 km of highway.

Hume Highway
—Wodonga City
Duplication of 0.5 km of highway between South and Wodonga Streets.

Maroondah Highway
—Alexandra Shire
Reconstruction of 3.1 km of highway south of Taggerty.

—Box Hill City
Reconstruction of intersections with Elgar Road and Nelson Street.

—Nunawading City
Reconstruction of westbound carriageway at Frankcom Street.

Midland Highway
—Benalla Shire
Reconstruction and widening of 3 km of highway south of Swanpool.

—Bendigo City
Replacement of the old roundabout at the 'Fountain'.
Reconstruction of intersections with Weeroona Avenue.

—Huntly Shire
Reconstruction and widening of 1.5 km south of Goornong.

—Waranga Shire
Placement of asphalt on 3 floodways, east of Corop.

Mornington Peninsula Freeway
—Frankston City and Springvale City
Construction of 2 km between Armstrongs Road and Eel Race Drain.

Mulgrave Freeway
—Waverley City
Construction of 3.6 km between Springvale Road and Forster Road.

Murray Valley Highway
—Cobram Shire
Reconstruction of intersection with Benalla-Tocumwal Road.

—Upper Murray Shire
Reconstruction and widening of 4 km between Jerimal Creek and Towong.

Nepean Highway
—Frankston City and Chelsea City
Reconstruction of intersection at Eel Race Road level crossing.

—Frankston City
Reconstruction and installation of traffic signals at Davey Street.

Northern Highway
—McIvor Shire
Replacement of timber bridge north of Tooborac over Hayes Creek with a 3 cell 2.4 m x 2.4 m box culvert.

Ovens Highway
—Wangaratta Shire
Reconstruction and widening of 2 km between Tarrawingee and Everton.

Princes Highway East
—Bairnsdale Shire
Realignment of highway at Broadlands railway level crossing.

—Cranbourne Shire and Dandenong City
Reconstruction and signalisation of intersection with South Gippsland Highway.

—Orbost Shire
Reconstruction of 2.5 km at Manorina.
Construction of new bridge over Simpsons Creek, and reconstruction and realignment of 3.8 km.

—Pakenham Shire
Duplication of 3.6 km between Pink Hill and Starling Road, Officer.

Princes Highway West
—Belfast Shire
Reconstruction and realignment of 5.8 km east of Codrington.

—Corio Shire
Channelisation of intersection with Cox Road.

—Port Fairy Borough
Construction of new bridge and 2.4 km of highway at Rosebrook.

—Portland Shire
Reconstruction of 4.3 km at Lyons.

—Warrnambool
Duplication of 1.9 km in Warrnambool.

Princes Freeway (Laverton)
—Werribee Shire
Channelisation of Leakes Road-Fitzgeralds Road intersection.

South Gippsland Freeway
—Cranbourne Shire and Berwick City
Construction of 4 km between Princes Highway and Pound Road.

Sunraysia Highway
—Donald Shire
Resheeting and widening of 8 km between Donald and Litchfield.

—Lexton Shire
Reconstruction and minor realignment of 1.8 km north of Lexton.

Western Highway
—Ararat and Ripon Shires
Reconstruction and resheeting of 5.5 km between Eurambeen and Middle Creek.

—Ballaarat City
Reconstruction to provide for full channelisation of Sturt and Pleasant Streets.

—Ballaarat City
Construction of 0.5 km of divided highway.

—Horsham City
Duplication of southern approach to Horsham including construction of duplicate bridge over the Wimmera River.

—Stawell Shire
Reconstruction of intersection with Ararat-Stawell Road.

Western Freeway
—Bacchus Marsh Shire
Widening of Coimadai Creek bridge and approaches to freeway standard.

Wimmera Highway
—Arapiles Shire
Reconstruction and realignment of 5 km at Tooan and through Salt Lakes.

Appendix 3

Tourists' roads

Significant works completed during financial year 1976/77:

Tourists' roads
Alpine Road
—Bright Shire
Reconstruction of 1.6 km between Hotham Heights and Davenport.

Bogong High Plains Road
—Bright Shire
Reconstruction and widening of 3.1 km between Clover Dam and Dynamite Creek.

Appendix 4

Main roads

Significant works completed during financial year 1976/77:

—Alexandra Shire
Buxton-Marysville Road — Reconstruction and realignment of 1.7 km.

—Ballaarat City
Colac-Ballarat Road — Retreatment with asphalt between Darling and Rubicon Street.

—Beechworth Shire
Beechworth-Wodonga Road — Reconstruction and realignment of 1.6 km, north of Beechworth.

—Benalla Shire
Swanpool Road — Construction of a 3 span bridge over the Broken River.

—Cranbourne Shire
Cranbourne-Frankston Road — Duplication and reconstruction of 0.2 km between South Gippsland Highway and Scott Street.

—Croydon City
Canterbury Road — Reconstruction of intersection with Dorset Road.

—Dandenong City
Stud Road — Reconstruction of 0.8 km from Clow Street to David Street.

—Doncaster and Templestowe City
Doncaster Road — Duplication and reconstruction of 1.8 km Elizabeth Street to Pine Way.

—Dunmunkle Shire
Murtoa-Minyip Road — Reconstruction and sealing of 4.4 km west of Minyip.

—Eltham Shire
Heidelberg-Kinglake Road — Reconstruction between Kangaroo Ground-Wattle Glen Road and Hurstbridge, 2.9 km.

—Glenelg Shire
Casterton-Edenhope Road — Reconstruction of 2.2 km.

—Kilmore Shire
Kilmore-Kilmore East Road — Construction of multi-cell culvert at Kilmore Creek.

—Knox City
Wellington Road — Reconstruction of 3.1 km between Stud Road and Summit Road.

—Korumburra Shire
Nyorya-Poowong Road — Reconstruction and realignment of 3.2 km.

—Mirboo Shire
Mirboo North-Thorpdale Road — Reconstruction and realignment of 2.7 km.

—Newham and Woodend Shire
Lancefield-Woodend Road — Reconstruction of 2.8 km at Woodend.

—Oxley Shire
Bright Road — Construction of a 3 span bridge, known as 'Pelican Bridge'.

—Romsey Shire
Melbourne-Lancefield Road — Reconstruction of 3.5 km south of Bolinda.

—Springvale City
Cheltenham Road — Widening of 2 km between Springvale Road and Howard Road.: Widening of 1.7 km between Chandler Road and Corrigan Road.

—Stawell Shire
Stawell-Warracknabeal Road — Construction of a 10 span bridge over the Wimmera River at Glenorchy.

—Swan Hill Shire
Nyah-Ouyen Road — Reconstruction of 6.8 km.

—Tallangatta Shire
Yabba Road — Reconstruction and realignment of 0.9 km.

—Traralgon City
Tyers Road — Reconstruction of 1.2 km.

—Upper Murray Shire
Tallangatta-Corryong Road — Reconstruction and realignment of 2 km, near Beetoomba.

—Warrigal Shire
Brandy Creek Road — Reconstruction and widening of 1.2 km.

—Waverley City
Springvale Road — Widening of 1.6 km of the western carriageway between Ferntree Gully Road and Waverley Road.

—Williamstown City
Douglas Parade — Intersection and channelisation treatment between Hyde Street and Simcock Avenue.

—Wodonga City
Beechworth-Wodonga Road (Main and Unclassified Rd) — Duplication of 1.6 km between Murray Valley Highway and Pearce Street.

—Worrayl Shire
Leongatha-Yarragon Road — Reconstruction and widening of 1 km.

—Yea Shire
King Parrot Creek Road — Reconstruction and realignment of 4 km.
Yarra Glen-Yea Road — Reconstruction and realignment of 2 km at Glenburn.

Appendix 5

Unclassified roads

Significant works completed during financial year 1976/77:

—Ballaarat City
Drummond Street — Reconstruction of 0.4 km between Sturt and Webster Streets.

—Benalla City
Ackerby Street — Construction of a 3 span bridge over the Broken River, and approaches.

—Bendigo City
Nolan Street — Reconstruction between Midland Highway and Bridge Street.
Kennedy Street — Reconstruction between McIvor Highway and Phillips Street.
Patrick Street — Reconstruction between McIvor Highway and Lansell Street.

—Doncaster & Templestowe City
Thompsons Road — Reconstruction of existing pavement, from Manningham Road to Koonung Creek.

—East Loddon Shire
Pyramid-Yarraberb Road — Reconstruction between Dingee Road and Tandara-Serpentine Road.
Rothacker's Road — Reconstruction over 14.5 km.

—Eltham Shire
Bolton Street — Construction between Brougham Street and Eltham-Greensborough Road.

—Flinders Shire
Charles Street — Reconstruction of existing pavement between Solander Street and William Street, Dromana.
Latrobe Parade — Reconstruction of existing pavement between Foote Street and Park Grove, Dromana.
Mary Street — Reconstruction of existing pavement between Elizabeth Avenue and Boundary Road, Dromana.
Weerona Street — Construction between Field Road and Willow Road, Rye.

—Hastings Shire
Myers Road — Reconstruction of existing pavement between Coolart Road and Stumpy Gully Road.
Stanleys Road — Reconstruction of existing pavement at Tar Barrel Corner.

—Heidelberg City
Cape Street — Reconstruction between Darebin Street and St James Road.

—Knox City
Francis Crescent — Reconstruction between Station Street and Dorset Road.
Olivebank Road — Construction between Forest Road and Mont Albert Road.

—Korumburra Shire
Korumburra South Road — Reconstruction and widening of 4 km.

—Kowree Shire
Mitre Road — Construction and sealing of 4 km.

—Lillydale Shire
Birmingham Road — Construction between Edinburgh Road and Carronvale Road.
Killara Road — Construction between Boundary Road and Gruyer Road.

—Lowan Shire
Nhill-Murrayville Road — Construction and sealing of 9.8 km on the southern end of the Big Desert.

—Moe City
Old Sale Road — Reconstruction of bridge over Narracan Creek.

—Mornington Shire
Oakbank Road — Reconstruction west of Baldock Road.

—Morwell Shire
Mountain Hut Road — Reconstruction and realignment of 3.9 km.
Yinnar-Driffield Road — Reconstruction and realignment of 0.8 km.

—Oxley Shire
Benalla-Whitfield Road — Reconstruction and culvert work of 5 km.

—Pakenham Shire
Bessie Creek Road — Reconstruction of existing pavement.

—Phillip Island Shire
Back Beach Road — Reconstruction of 1.2 km of existing pavement.

—Portland Town
Cape Nelson Road — Construction of bridge at Salt Creek.

—Richmond City
Bridge Road — Reconstruction between Church Street and the Yarra River.

—Ringwood City
Loughnan Road — Reconstruction of existing pavement between Hearthside Court and Ringwood Street.

—Rosedale Shire
Longford-Letts Beach Road — Reconstruction and realignment of 1 km.
Glengarry-Tyers Road — Reconstruction and widening of 1.8 km.

—Sherbrooke Shire
Kallista-Emerald Road — Reconstruction between Helena Avenue and O'Connors Road.

—Springvale City
Douglas Road — Reconstruction of existing pavement between Stuart Street and Mile Creek.

—Stawell Shire
Glenorchy-Roses Gap Road —Complete the construction and sealing to provide a sealed road between Glenorchy and the Western Highway.

—Traralgon City
Jeeralang North Road — Reconstruction and realignment of 1.6 km.

—Warrigal Shire
Bourke Street — Reconstruction of 1 km.

—Waverley City
Forster Road — Reconstruction including the installation of signals at Waverley Road.
Lawrence Road — Construction of bridge at rail crossing including approaches.

—Wimmera Shire
Longerenong Road — Preparation and sealing of 4 km to the Historic Longerenong Homestead.

—Woorayl Shire
Cape Patterson-Inverloch Road — Reconstruction and realignment of 2.9 km.

—Yackandandah Shire
Lockharts Gap Road — Reconstruction and realignment of 3 km.

Appendix 6

Special projects

Project No.	Description of project	Progress of Work to 30th June, 1977
24	Eastern Freeway — Construction of a multi-lane freeway from Alexandra Parade, Collingwood to Thompsons Road, Camberwell.	Work continued over the entire length of 9 km during the year.
25	Johnson Street Bridge over the Yarra west of Spencer Street Bridge.	Work continued on the bridge and the associated roadworks.
33	Princes Highway East — Construction of a new bridge over the Snowy River at Orbost and realignment of approaches.	Bridgeworks were completed and roadworks well advanced.
40	Princes Freeway — Construction of a second carriageway between Moe and Hernes Oak.	Duplication of the carriageways commenced during the year.
41	Princes Freeway/Princes Highway — Construction of dual carriageways between Morwell and Traralgon.	Work was well advanced to complete the duplication of the highway between Morwell and Traralgon.
42	Bass Highway — Improvements from Lang Lang to Dalyston. Including interchange with South Gippsland Highway.	The project was completed during the year.
43	Princes Freeway, Bypass of Drouin and Warragul.	Work continued on the construction of the Princes Highway interchange with the freeway, between Drouin and Warragul.
44	Tullamarine Freeway — Construction of diamond interchange with Essendon Airport and conversion of Lancefield Road to Freeway.	Work continued on upgrading Lancefield Road to freeway standard and the construction of the English Street interchange.
46	Omeo Highway — Omeo to Mitta Mitta	Work continued on sections of the highway between Omeo and Mitta Mitta.
47	Calder Highway — Harcourt to Bendigo.	Work continued on the reconstruction of sections of the highway between Harcourt and Bendigo.
48	Princes Highway East — Duplication through Pakenham and improvement of Army Road intersection.	Duplication work progressed during the year.
49	Goulburn Valley Highway-Trawool. Construction of a new bridge and realignment of approaches.	The construction of a new bridge and approach roads was completed during the year.
50	Metcon-Statcon	The installation of stop signs, give way signs and traffic signals continued throughout the State during the year.
51	Bellarine Highway — Construct duplicate carriageways and new bridge at Fenwick Gully, Wallington.	Work was substantially completed during the year.
52	Great Ocean Road — Reconstruction from Marengo to Calder River.	Realignment and reconstruction of the Great Ocean Road between Marengo and Calder River progressed.
53	Princes Highway East — Construct new bridge at Simpson's Creek and improve Sydenham Inlet Road intersection at Bellbird.	Construction of a new bridge and roadworks was completed during the year.
54	South Gippsland Freeway — Construction of road and bridge works at Hampton Park.	Work continued on the construction of the South Gippsland Freeway overpass of the South Gippsland Highway at Hampton Park and the south-bound carriageway, south from Pound Road.

Appendix 7

Motor Registrations

Registrations under the Motor Car Act during the year 1976/77 totalled 2,149,703, an increase of 1.6% over the total for the previous year.

Vehicle	Financial Year 1975/76		Financial year 1976/77		Increase	Decrease
Private						
New	130,205		125,504			
Secondhand:						
Re-registered	52,535		52,355			
Renewed	1,365,540	1,548,280	1,393,199	1,571,058	22,778	
Commercial and hire						
New	17,461		18,092			
Secondhand:						
Re-registered	5,432		5,407			
Renewed	130,578	153,471	129,323	152,822		649
Primary producers' trucks and tractors						
New	3,223		3,521			
Secondhand:						
Re-registered	2,735		2,716			
Renewed	82,190	88,148†	77,934	84,171*		3,977
Licences under the Motor Omnibus Act		848		820		28
Trailers		279,897		295,230	15,333	
Motor cycles		46,230		45,602		628
Totals		2,116,874		2,149,703	38,111	5,282

† Includes 45,258 no-fee tractors
* Includes 42,577 no-fee tractors

Appendix 8

Statement of receipts and payments

for year ended 30th June 1977 (Adjusted to nearest dollar)

Country Roads Board

		Country Roads Board Fund Act 6229	Act 6222 road maint. A/c
Receipts			
Balances as at 1st July 1976		3,175,871	
Motor Car Act 1958 (No. 6325)			
Motor car registration fees	67,229,429		
Drivers licence fees	1,468,333		
Drivers licence testing fees	476,525		
Trailer registration fees	1,933,085		
Learner drivers permit fees	207,842		
Examiners licence fees	8,304		
Sale of log books	14,656		
Motor driving instructors licence —			
Appointment and testing fees	2,115		
Motor driving instructors licence fees	5,560		
	71,345,849		
Less: Cost of collection	10,544,478	60,801,371	
Municipalities contributions			
Permanent works — main roads	157,175		
Maintenance works — main roads	2,360,521	2,517,696	
Fees — Commercial Goods Vehicles Act No. 6222 —			
Road maintenance A/c			9,967,856
Public Works and Services Act No. 8928		638,000	
Fines — Country Roads Act. No. 6229		4,825	
General receipts		1,740,712	
State loan funds — Act No. 6229			
Allocation — Roads (Special Projects) Fund			
Commonwealth grants			
National Roads Act 1974			
Roads Grants Act 1974			
Transport (Planning & Research) Act 1974			
Adjustment of grants for year ended 30th June 1975			
Adjustment of grants for year ended 30th June 1976			
Traffic & road safety improvement			
		$68,878,475	9,967,856
Payments			
Road expenditure			
Main roads — Construction and reconstruction		11,793,669	
Maintenance		5,736,446	5,884,680
State highways — Construction and reconstruction		7,672,173	
Maintenance		8,892,668	3,531,016
Freeways — Construction and reconstruction		581,663	
Maintenance		852,929	552,160
Tourists' roads — Construction and reconstruction		848,594	
Maintenance		1,168,446	
Forest roads — Construction and reconstruction		557,481	
Maintenance		847,982	
Unclassified roads — Construction and reconstruction		11,727,110	
Maintenance		2,256,109	
Contribution to Melbourne & Metropolitan Tramways Board			
Tram tracks reconstruction		195,000	
Metropolitan bridges		13,300	
State Intersection Control (STATCON) Programme			
Murray River bridges and punts		144,486	
Traffic line marking		1,212,183	
Statutory payments			
Interest and sinking fund	2,933,899		
Traffic authority fund	508,268		
Tourist fund	1,016,536		
Transport regulation fund	607,929	5,066,632	
Planning & research		1,343,463	
Capital expenditure			
Plant replacement and additions	1,366,116		
Buildings, workshops, etc.	726,265	2,092,381	
Management & operating expenditure		5,082,840	
		$68,085,555	9,967,856
Balance available to the Board as at 30th June 1977		$ 792,920	

Auditor General's Certificate

The accounts of the Country Roads Board for the year ended 30th June 1977 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, 6th September 1977

Loan funds	Roads (Special Projects) Fund	National Roads Act 1974	Roads Grants Act 1974	Transport (Plan & Res) Act 1974 Sections 7 & 8	C'wealth Traffic & Road Safety Improvement Trust Account		Total
			4,986,435				8,162,306
						60,801,371	
						2,517,696	
						9,967,856	
						638,000	
						4,825	
						1,740,712	
325,000						325,000	
	28,963,388					28,963,388	104,958,848
		30,800,000				30,800,000	
			58,745,000			58,745,000	
				1,225,667			
				172,771			
				101,624		1,500,062	
					146,572	146,572	91,191,634
325,000	28,963,388	30,800,000	63,731,435	1,500,062	146,572		204,312,788
	431,749		8,896,420		28,083	21,149,921	
						11,621,126	32,771,047
325,000	3,720,123	1,720,196	9,172,515		102,042	22,712,049	
		1,273,141				13,696,825	36,408,874
	19,235,274	17,300,000	16,500,000			53,616,937	
		725,000				2,130,089	55,747,026
	536,009		87,923			1,472,526	
			424,948			1,593,394	3,065,920
						557,481	
			74,817			922,799	1,480,280
	735,527Cr.	4,217,698	16,651,434		16,447	31,877,162	
			4,000,000			6,256,109	
						195,000	38,328,271
							13,300
	304,454						304,454
							144,486
							1,212,183
							169,475,841
							5,066,632
				1,500,062			2,843,525
							2,092,381
	5,471,306	5,563,965	7,923,378				24,041,489
325,000	28,963,388	30,800,000	63,731,435	1,500,062	146,572		203,519,868
							$ 792,920

R. G. Cooper, Chief Accountant, 31st August 1977

Appendix 9

Loan liability

as at 30th June 1977

Country Roads Board

	Main roads etc.	Developmental roads	Total
	$	$	$
Permanent works			
Main roads	16,730,322.16		16,730,322.16
State highways	18,954,304.20		18,954,304.20
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	748,467.44	584,597.81	1,333,065.25
Total amount borrowed	39,662,578.13	13,436,112.90	53,098,691.03
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	3,550,848.82		3,550,848.82
National debt sinking fund	8,863,237.11	8,270,969.95	17,134,207.06
Consolidated fund	40,561.03		40,561.03
	13,196,461.83	9,673,908.70	22,870,370.53
Loan liability at 30th June 1977	26,466,116.30	3,762,204.20	30,228,320.50

Appendix 10

Works executed on behalf of Commonwealth and State Government authorities

for the year ended 30th June 1977
(Adjusted to nearest dollar)

Departments	Description of works	Expenditure	
Commonwealth			
Department of Construction	Access roads to various Commonwealth establishments		167
Victoria			
Housing Commission	Overpass at Riggall Street, Broadmeadows City	49,426	
Melbourne and Metropolitan Board of Works	Roadworks in connection with Cardina Reservoir, maintenance of Marysville-Woods Point Road	5,792	
Ministry of Tourism	Additional snow clearing on the Alpine Road to Mt Hotham	30,358	
Ministry of Transport	Grade separated level crossing projects etc. charged to the Transport Fund	4,204,288	
	Grade separated pedestrian crossings charged to State Treasury, Municipalities and Transport Fund	207,691	
Premier's Department	Roadworks in connection with Wonderland and Sundial Roads, Stawell Shire	300	
Rural Finance & Settlement Commission	Roadworks in Commission land settlement areas throughout the State	4,065	4,501,920
State Treasury	Kings Bridge — sundry expenditure less proceeds of rental of properties acquired in connection with construction of Kings Bridge	22,850 Cr.	
State Treasury	Improvements to various roads adjacent to State Forests to facilitate the extraction of timber and charged to Municipalities Forest Roads Improvement Fund	85,062	
State Treasury	Burial of dead stock following bushfires at Cressy and Creswick	9,415	
State Treasury	Restoration work on roads and bridges damaged by floods and bushfires	235,390	307,017
			$4,809,104