CRB news

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Changes in Commonwealth financial assistance for roads

Since 1923 the Commonwealth Government has made grants available to the various States to assist their road programmes.
For the five year period which ended on June 30, 1974 these grants were made under the provisions of the Commonwealth Aid Roads Act 1969 for expenditure on specified categories of roads and on road planning and research.

In continuation of this financial assistance the Commonwealth Government has enacted legislation to provide for grants to the States for the three financial years 1974/75, 1975/76 and 1976/77. The legislation is contained in three Acts titled the National Roads Act 1974, the Roads Grants Act 1974, and the Transport (Planning and Research) Act 1974.

Under these Statutes provision has been made for Victoria to receive the following amounts each year—

	1974/75	1975/76	1976/77
National Roads Act 1974	$17,400,000	$23,200,000	$30,800,000
Roads Grants Act 1974	$52,300,000	$51,500,000	$52,800,000
Transport (Planning and Research) Act 1974	$ 1,300,000	$ 1,300,000	$ 1,400,000
Totals:	$71,000,000	$76,000,000	$85,000,000

These amounts are much less than the amounts recommended by the Commonwealth Bureau of Roads following a comprehensive road needs survey. The Bureau had recommended a further $61 million during the three year period — a difference which is all the more marked by the fact that the Bureau's recommended level of grants allowed for an inflationary factor of only 6% per annum which is considerably less than the present inflation rate of over 20% being experienced in the Board's work.

After allowing for inflation the Commonwealth funds to be made available to Victoria from July 1, 1974 to June 30, 1977 will be 18.6% less than those received over the preceding three years in terms of real financial capacity to perform works. Other undesirable features of the legislation are:

Members of 22 Construction Regiment, Army Reserve (C.M.F.), training on an air-portable bridge during the Annual Camp held in November, 1974, at the School of Military Engineering, Liverpool, N.S.W. Many members of 22 Construction Regiment are staff or employees of the C.R.B. (Army photograph).

National Roads Act

1. the Commonwealth Minister for Transport may request a State to submit for his approval a programme of proposed projects to be carried out on National Roads, i.e. National Highways, Export roads, and major Commercial roads;
2. the Commonwealth Minister for Transport may modify the State's programme of proposed projects;
3. the Commonwealth Minister for Transport may—
   (a) notify a State of the standards to be observed in connection with the construction and maintenance of National roads,
   (b) notify a State of the order in which work in connection with National roads should be carried out,
   (c) after consultation with a State, notify the State of the works on National roads that the Commonwealth Government considers necessary to be carried out.

Roads Grants Act

1. the Commonwealth Minister for Transport may require a State to submit programmes of work of a specific kind for his approval;
2. the Commonwealth Minister for Transport may require a State to submit programmes of work on the construction of roads designated as "urban arterial roads" to include all projects whether they are to be financed from Commonwealth, State or Local Authority funds;
3. if the Commonwealth Minister for Transport notifies a State that he is satisfied that the State or a Local Authority has expended any money on the carrying out of projects on roads designated as "urban arterial roads" that were not in the programme of projects approved by the Minister, the State will be required to repay the amount received under the Act or such lesser amount as the Commonwealth Minister for Transport determines.

1974 PER CAPITA EXPENDITURE ON ROADS IN "WESTERN" COUNTRIES

Great Britain	$64.2
Australia	69.2
Sweden	84.5
Canada	85.8
Germany (W)	94.2
France	96.7
Japan	111.0
U.S.A.	118.0

Source: World Highways — March, 1974.

Hume Freeway (Wallan-Broadford) project

As part of the programme to progressively improve the Hume Highway in Victoria, the C.R.B. early in 1970 initiated a preliminary proposal for the construction of a four-lane divided roadway from south of Wallan to north of Broadford to join the sections of freeway already developed north and south of these points. Lengthy consideration was given to further developing the existing highway, but the C.R.B's investigations clearly showed that a 34.1 kilometre freeway deviation would provide a more satisfatcory solution for traffic using this section of the Hume Highway. During 1972, work commenced on this project and is expected to be completed in 1976.

The new freeway will reduce the route length between Wallan and Broadford by about 4 kilometres and save motorists considerable time by by-passing the townships of Wallan, Kilmore and Broadford. The new route crosses the Great Dividing Range at an elevation approximately 400 feet (120 metres) lower than the present highway route at Pretty Sally.

The southern 6 kilometres of the new route traverse flat volcanic plains as far as the vicinity of Wallan East. The remainder of the route passes through undulating to steep sedimentary rock terrain.

The appearance of the roadside has been a major consideration during design. Batter slopes and surroundings have been designed to blend with the natural shape of the countryside, existing stands of timber have been retained where practicable, and the planting of the roadside with native shrubs and trees and the grassing of slopes are planned. Other proposals include the landscaping of earthworks in the vicinity of bridge structures and median planting of shrubs to minimize headlight glare. Two rest areas, one on each side of the freeway, will be provided just north of Wallan East with picnic areas, toilet facilities and separate car and truck parking areas.

At the southern end of the project, work has advanced to the stage of pavement laying, while further north, earthworks are in progress. During the financial year 1973/74 seven contracts were let for bridgeworks. Interchanges at Wallan East, Wandong and between Wandong and Broadford have been completed and are in use by local traffic crossing the line of the freeway.

Construction of the freeway is being undertaken mainly by contractors engaged by the C.R.B., with some associated works being carried out by the C.R.B's direct works personnel. The project is being controlled from the C.R.B. project office at Wandong and its total estimated cost is $25 million.

The Hume Highway in Victoria

There has been much interest in the Hume Highway in the press and politically in recent months.

Motorists and hauliers in Victoria will know that such descriptions as "horror road", "bush track" and "national disgrace" misrepresent the general condition of the highway which prevails south of the Murray.

Between Melbourne and Seymour major work carried out in recent years has resulted in 56.3 km (35 miles) of dual carriageways being constructed, and work currently in progress on the Wallan-Broadford deviation will provide a continuous length of 88.5 km (55 miles) of dual carriageways mostly to freeway standard.

From Seymour to Wodonga the highway is generally of good alignment, has a minimum sealed width of 7.3 m (24 feet), gentle gradients, and smooth surface.

Planning is already in progress for further improvements to the highway between Seymour and Wodonga. These improvements will be commenced as soon as possible, having regard to the need to reach agreement with all interested parties on the nature of the improvements to be made.

Duplication of Banksia Street Bridge

The peak hour crawl along Banksia Street, Heidelberg, will be reduced by the duplication and consequent doubling of capacity of the Banksia Street Bridge.

The importance of this major link between the north-eastern and northern suburbs is indicated by the March, 1974 Traffic Census which showed that a total of 33,845 vehicles used the present bridge over a 12-hour week day period from 7 a.m. to 7 p.m.

Work is at present in progress on the construction of the second bridge abutting the existing bridge. The total road width on the bridges is being widened from 8.5 m (28 ft.) to 22 m (72 ft.) between outer kerbs and each carriageway will be 10.1 m (33 ft.) wide. There will be a 1.8 m (6 ft.) wide central median and a 2.2 m (7 ft. 2 in.) wide footway on either side.

Steel girders have been erected on the three spans of the new bridge, and cross frames and bracing have been welded and bolted into position.

Approach roads are being constructed in conjunction with the bridge works and have already been commenced on the Doncaster/Templestowe side of the Yarra River.

The whole project, which is estimated to cost $667,000, is advancing according to schedule and is expected to be completed in April, 1975.

The National Association of Australian State Road Authorities

The National Association of Australian State Road Authorities (NAASRA) is an organization of the six State road authorities and the Commonwealth Department of Housing and Construction.

Meetings of the Association are held at six-monthly intervals and are attended by the Heads of the seven member authorities. Victoria is represented by C.R.B. Chairman, Mr. R. E. V. Donaldson.

Representatives of the Commonweatlh Department of Transport and the Commonwealth Bureau of Roads also attend the meetings while matters of common interest are discussed.

NAASRA aims at uniformity of practice in road design and operation and improved road construction methods, publishing the results of its findings in technical manuals. It is a body which collects and disseminates information relating to traffic, the types and standards of roads, and road finance. The information is used for the formulation of national road policies.

The secretarial work of the Association is the responsibility of the Engineer-Secretary. He is assisted by a small technical and clerical staff in the Secretariat which is located at the Head Office of the Department of Main Roads, New South Wales. Each of the member authorities contributes to the cost of operating the Secretariat.

NAASRA is represented on the Australian Committee on Road Devices, Australian Transport Advisory Council, Metric Conversion Board, Concrete Institute of Australia, and the Standards Association of Australia.

The technical work of the Association is planned and organized by a Principal Technical Committee on which the Board's representative is Mr. W. S. Brake, Chief Engineer.

This Committee is assisted by a number of specialist committees considering engineering, scientific and other technical matters. Financial and accounting matters are dealt with by a Secretarial and Accounts Committee.

Some additional Committees have been formed to perform specific tasks such as the preparation of publications on the role of roads in the movement of people and goods, and to consider community and environmental problems associated with urban highway proposals, land acquisition procedures, training, legal matters, transportation planning, programme budgeting, roadside development, national and inter-regional routes, and pavement testing.

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.

Further Metropolitan Responsibilities to C.R.B.

In December, 1973, the Premier of Victoria, the Hon. R. J. Hamer, E.D., M.P., announced that as from July 1, 1974, the responsibilities of the Melbourne and Metropolitan Board of Works for the design and construction of arterial roads and bridges in the Melbourne Metropolitan area would be transferred to the C.R.B.

The necessary amending legislation — the Metropolitan Bridges, Highways and Foreshores Act 1974 — was passed by the legislature during the first week in May. Amongst other matters, this Act made provision for staff of the M.M.B.W. engaged principally in work involving metropolitan roads and bridges to transfer to the C.R.B. Some 210 staff and supervisory personnel accepted the offer and commenced work with the C.R.B. on July 1.

WELCOME BY CHAIRMAN OF C.R.B.

In his address of welcome, C.R.B. Chairman, Mr. R. E. V. Donaldson, spoke of the experience and skills which the new members of staff were bringing to the C.R.B. Of the decision to bring all major road and bridge activities under one authority, Mr. Donaldson said that the implementation of this policy will bring about greater efficiencies and simpler procedures which will be to the benefit of all sections of the community.

Initially field staff working on construction projects formerly under the control of the M.M.B.W. continued to work on the particular project, whilst office staff were accommodated within various sections in the C.R.B. Head Office. The success of the transfer has been evidenced by the integration of former M.M.B.W. staff into much wider areas of C.R.B. activity in the months following July.

METROPOLITAN ARTERIAL ROADS

The additional metropolitan arterial roads which became the responsibility of the C.R.B. on July 1 are—

- The Tullamarine Freeway from Flemington Bridge to Bell Street;
- Kings Way, Queens Road, St. Kilda Junction and Queens Way;
- The St. Kilda Road underpass (Alexandra Avenue);
- High Street, St. Kilda, now under construction;
- The Eastern Freeway, now under construction.

Mr. R. E. V. Donaldson, Chairman of the C.R.B., welcomes the new members of staff who were previously with the M.M.B.W.

Implementation of roadside metric conversion

The conversion of speed limit signs has been completed as planned, and the cost of signs and fittings, including their installation, was about $200,000 of which the C.R.B's and the Road Safety and Traffic Authority's contributions were $150,000 and $50,000 respectively.

The conversion of direction signs by changing distance numerals to kilometres and attaching small metal plates overlayed on existing signs was completed by August 30, 1974. The cost of converting direction signs was about $20,000.

Kilometre distance markers at 5 km intervals have been installed on all State highways. In addition the erection of small kilometre distance markers at 1 km intervals is now substantially complete.

The estimated cost of the conversion of mile posts to kilometre distance markers is $100,000. Existing mile posts are being retained for as long as they are required for reference purposes.

The conversion of advisory speed signs on curves to metric speeds is complete and the total cost of this was about $12,000. Other signs like clearance signs on bridges and distance indications on warning signs have also been converted. The cost of converting warning and clearance signs was about $10,000.

C.R.B. workmen placing a new metric speed limit sign.

The total cost to the C.R.B. of converting all road signs to metric measurements has been in the order of $290,000. No Commonweatlh Government subsidy was available.

Freeway lighting improvements

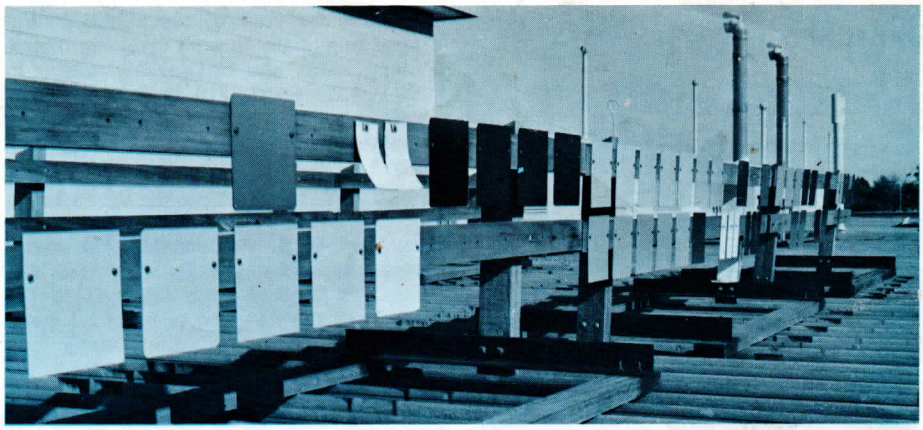
Lighting on the South Eastern Freeway between the Anderson Street Bridge and the Burnley off-ramp is being improved to conform with the standard of lighting on the remainder of the freeway.

The existing mercury vapour lamps are being replaced by sodium vapour lamps, and the height of the poles, at present 8.2 m (27 ft.) is being increased by 2.4 m (8 ft.).

More light will be given by the new installation and therefore create safer driving conditions. Sodium vapour lamps are more efficient and more economical to operate than mercury vapour lamps.

The work of improving lighting on the freeway is being undertaken by the State Electricity Commission and the Melbourne City Council during off-peak periods. It is estimated that the work will be completed within a month at a cost of approximately $18,000.

Sign materials tested for weathering



Racks of sign materials being tested for weathering at Kew on the roof of the C.R.B. laboratory building.

Roadsigns are made from a variety of materials of differing colours, textures and reflective properties. Apart from direct abuse from errant vehicles and capricious vandals, roadsigns can suffer from long-term weathering effects.

The suitability of many materials is being tested by the C.R.B. at a number of places throughout Victoria. Matters such as colour stability, reflective quality, crazing, shrinkage, chalking, peeling, fading and general material life are being watched over a period of time and in a variety of climatic situations.

Exposure racks where sign materials are subjected to the full forces of the elements have been set up at Warrnambool, Warracknabeal, Mount St. Bernard and Kew. These sites were chosen so as to cover as far as possible all climatic conditions likely to be experienced in Victoria. The site at Warrnambool is subjected to windy coastal conditions; that at Warracknabeal gives hot, dry spells; Mount St. Bernard experiences wind, rain, and snow; and Kew has an urban environment.

These tests, which began in 1972, were augmented by similar tests carried out in 1973 at the Australian National Antarctic Research Expedition base at Davis. A C.R.B. staff member who was in the expedition party took samples of sign materials expecting the extremes of climate to produce an accelerated weathering effect which would produce results well in advance of the Victorian tests.

Three groups of signing materials are presently being tested — reflective sheeting, laminated films including fluorescent materials, and painted surfaces. Aluminium sheeting is used as a backing material and each sample is fixed to the timber test rack by brass bolts. The racks are inspected periodically and any samples considered to have failed are removed.

Evaluation of the performance of samples is made by comparing those on the test racks with protected master samples held in the C.R.B. laboratories at Kew. There are several ways in which materials can be considered to be failing. Failure may be due to such factors as chalking, edge shrinkage and peeling. Each sample is rated from one to four points in accordance with its performance in a particular category.

An inspection of racks earlier this year revealed that after 18 months of exposure, some noticeable differences in the performances of samples are emerging as a result of the variations in climate between the rack locations.

Most of the samples that have been brought back from Antarctica after one year's exposure generally seem to have weathered in a similar manner to the Victorian samples. Despite temperatures as low as —32°C and windgusts of up to 100 knots, there is no evidence of the expected acceleration of failure. It would therefore appear that extreme cold is not a significantly destructive factor with the majority of materials used on signs in Victoria.

The tests, largely experimental so far, have proved to be worthwhile and are to become a permanent part of the C.R.B. materials testing programme.

As new sign materials are developed in Australia and overseas their suitability in Victorian climatic conditions can be evaluated to ensure that the road users of the State have the benefit of the best available road signs.

Synthetic sealing aggregate

Laying pyrophyllite on North Road, Ormond. (C.S.I.R.O. photo).

In April, 1974 the C.R.B. applied a seal to a short section of North Road, Ormond, using a synthetic stone as the sealing aggregate. This material, known as "Calcined Pyrophyllite" has been jointly developed by the C.S.I.R.O. and Vickers Ruwolt Research Pty. Ltd.

Pyrophyllite is a naturally occurring clay mineral (hydrous aluminium silicate) which has been partly changed in situ by heat or pressure to a soft stone state. Calcining (driving off moisture and carbon dioxide under the action of high temperature) is carried out by firing in a kiln and the resulting product is crushed and graded to give a "Calcined Pyrophyllite" sealing aggregate. For the test sections of North Road, Vickers Ruwolt supplied the aggregate at no cost to the C.R.B.

Calcined pyrophyllite is a white-coloured aggregate which has a high luminance factor (i.e. the ability of the material to reflect light, making it conspicuous in headlamp beams at night). This makes it a suitable material for road surfacing particularly where pedestrians are prevalent, as silhouetting against the light road surface improves safety. In fact because of this, light coloured aggregate has an effect at night similar to increasing the intensity of street lighting. The material has a resistance to polishing by traffic, which should be satisfactory except in highly trafficked situations.

The test section in North Road will be inspected regularly and checked to assess the performance in regard to factors such as aggregate breakdown (the crushing of the stones used to a small size), skid resistance, and luminance.

As it is likely to be a relatively expensive material, the use of calcined pyrophyllite would be limited to areas where its high luminance factor is required, or where pavement delineation is required for traffic management purposes.

Overseas aid

The C.R.B. Materials Research Engineer, Dr. D. T. Currie visited Pakistan in November to assist in a road project which will join the coastal city of Karachi and the northern city of Peshawar by a dual carriageway highway 1,290 kilometres long.

The Indus Super Highway is being constructed by the Pakistan Government to open up the western areas of the country and technical assistance has been sought from Australia under the Colombo Plan.

Through the Commonwealth Government's Australian Development Assistance Agency, Dr. Currie was chosen to advise on the materials to be used in the highway pavement construction.