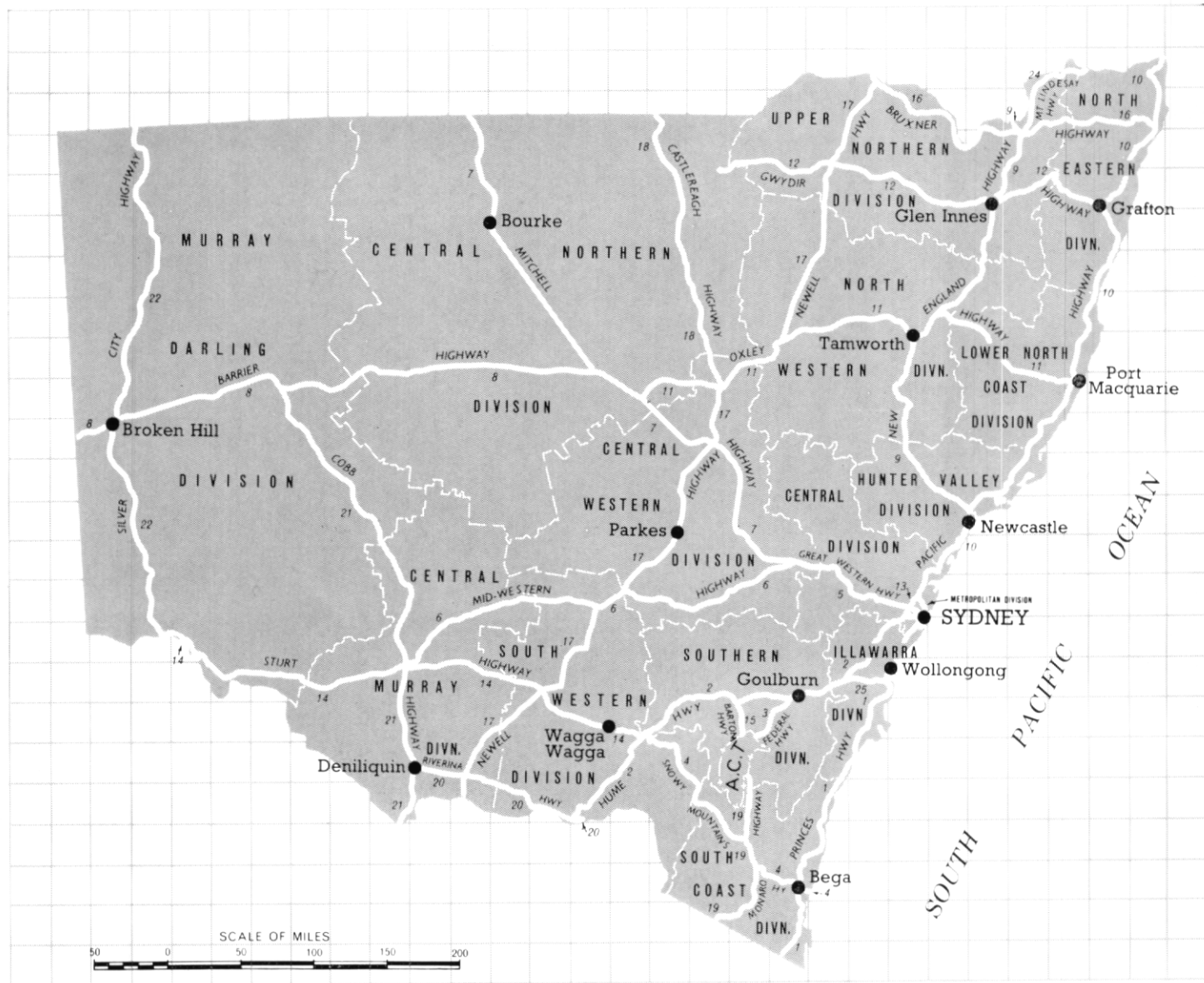




# MAIN ROADS

DECEMBER 1966



## HIGHWAY SYSTEM OF NEW SOUTH WALES

Mileage of Main and Developmental Roads,  
as at 30th June, 1966

State Highways .. .. .	6,530
Trunk Roads .. .. .	4,159
Main Roads .. .. .	11,661
Secondary Roads (County of Cumberland only) ..	144
Tourist Roads .. .. .	206
Developmental Roads .. .. .	2,889

25,589

Unclassified roads, in Western part of State,  
coming within the provisions of the Main Roads  
Act .. .. .

1,137

TOTAL .. .. . 26,726

Area of New South Wales, 309,433 square miles  
Length of public roads within New South Wales,  
131,300 miles

Population of New South Wales at 30th June,  
1966—4,235,030

Number of vehicles registered in New South  
Wales at 30th June, 1966—1,544,201

— STATE HIGHWAYS  
- - - DIVISIONAL BOUNDARIES  
● DIVISIONAL OFFICES



# MAIN ROADS

Journal of the Department of Main Roads, New South Wales

DECEMBER, 1966

VOLUME 32 NUMBER 2

Issued quarterly by the  
Commissioner for Main Roads,  
J. A. L. Shaw, C.B.E., D.S.O., B.E.

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Editors are invited to use any  
information contained in this Journal,  
unless specially indicated  
to the contrary;  
black and white photographs will be made  
available on request

## The Department's Stake In Planning

In this issue is a reprint of an address  
"Planning in New South Wales" given by  
the Hon. P. H. Morton, M.L.A., Minister  
for Local Government and Minister for  
Highways, in August of this year, to the  
Australian Planning Institute Congress.

The Department of Main Roads has a  
special interest in New South Wales  
planning.

The Commissioner is responsible for  
planning the establishment and pro-  
gressive improvements of the State's  
arterial road system which to be fully  
effective must be integrated with overall  
planning for land use and development.

For this task a knowledge of overall  
planning proposals and participation in  
overall planning are essential.

The Commissioner is therefore vitally  
concerned in efficient planning. He  
serves as a member of the State Planning  
Authority, the Traffic Advisory Com-  
mittee and the County of Cumberland  
Passenger Transport Advisory Com-  
mittee. He is represented at local levels  
throughout the State by the staff of his  
Department.

From consultations with these and  
other similar bodies and from the  
Department's own investigation and  
research, stems the information necessary  
to provide, at minimum cost and at  
minimum inconvenience to others, an  
arterial road complex co-ordinated with  
and complementary to other modes of  
transport and planned land use.

Planned development in New South  
Wales is an urgent necessity and it  
behoves all who have a responsibility  
in this regard to co-operate in expediting  
production of the master plans required  
to assure a better future for the whole  
community.

- 
- 33 REVIEW OF YEAR'S WORK
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  - 51 PLANNING IN NEW SOUTH WALES
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  - 64 TENDERS ACCEPTED BY COUNCILS

*Covers: Cutting the girders of the steel arch bridge over Bradfield Highway prior to its  
removal to facilitate the construction of another stage of the Warringah Expressway*

# REVIEW OF YEAR'S WORK

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*An extract from the 41st Annual Report of the  
Commissioner for Main Roads,  
J. A. L. Shaw, C.B.E., D.S.O., B.E.,  
on the work of the Department  
for the year ended 30th June, 1966.*

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## PROGRESS WITH ROAD AND BRIDGE WORKS

A further 547 miles of Main Roads, Secondary Roads and Tourist Roads were provided with a bitumen surface by the Department and Councils during the year.

The total length of dustless surface on these roads is now 12,086 miles, an increase of over 3,000 miles during the last five years.

This does not include 5·8 miles of bitumen surfacing on the Hawkesbury River-Mount White tollway; 20·9 miles of bitumen surfacing on the Calga-Peat's Ridge-Somersby road which provides an alternative route to the Pacific Highway; and 3·4 miles of the North-South Arterial Road between North Wollongong and Ghost's Creek.

The total mileage of main roads, secondary roads and tourist roads in New South Wales is 22,700.

Major works completed in the country included—

□ The first section of the Sydney-Newcastle Expressway between the Hawkesbury River and Mount White, a distance of 5·8 miles which is a tollway. The existing section of the Pacific Highway provides an alternative toll free road.

□ Duplication of the carriageway of the section of the north-south arterial road between North Wollongong and Ghost's Creek to provide a four lane divided carriageway. This road provides an alternative route to the Prince's Highway and by-passes the principal business and shopping centre at Wollongong.

□ *Hume Highway*—General progress was made with the improvement and the principal works have been—

A major deviation and general up-grading and pavement reconstruction to provide a length of 9·5 miles of asphaltic concrete pavement were carried out between 29·0 miles (Uringalla Creek) and 38·5 miles south of Mittagong. This length includes the village of Marulan. From 3 miles north of Goulburn to 3 miles south of Goulburn general pavement widening and the provision of an asphaltic concrete surface were carried out.

□ *Great Western Highway*—Widening of pavement and improvement of alignment between 2 and 9 miles east of Bathurst.

□ *Mitchell Highway*—Reconstruction and pavement widening 0·2 to 6·9 miles east of Nyngan.

□ *Barrier Highway*—Reconstruction and bitumen surfacing between 45·3 and 50·5 miles west of Nyngan.

Reconstruction and bitumen surfacing between 50 and 56 miles west of Cobar.

Reconstruction and bitumen surfacing between 73 and 88 miles east of Broken Hill.

□ *New England Highway*—Construction of approaches to railway overbridge at Muswellbrook.

□ *Pacific Highway*—Improvement of pavement between Wyong and Frazer Park, 66·4 to 81·5 miles north of Sydney.

Construction and bitumen surfacing of deviation through Bulahdelah.

Construction and bitumen surfacing of deviation and approaches, 4·6 miles long, to bridge over Clarence River at Harwood.

□ *Oxley Highway*—Reconstruction and bitumen surfacing of a total of 5·2 miles between 19·6 and 38·6 miles and 11·0 miles between 57·5 and 68·55 miles west of Port Macquarie.

Reconstruction and bitumen surfacing between 15 and 20 miles west of Gilgandra.

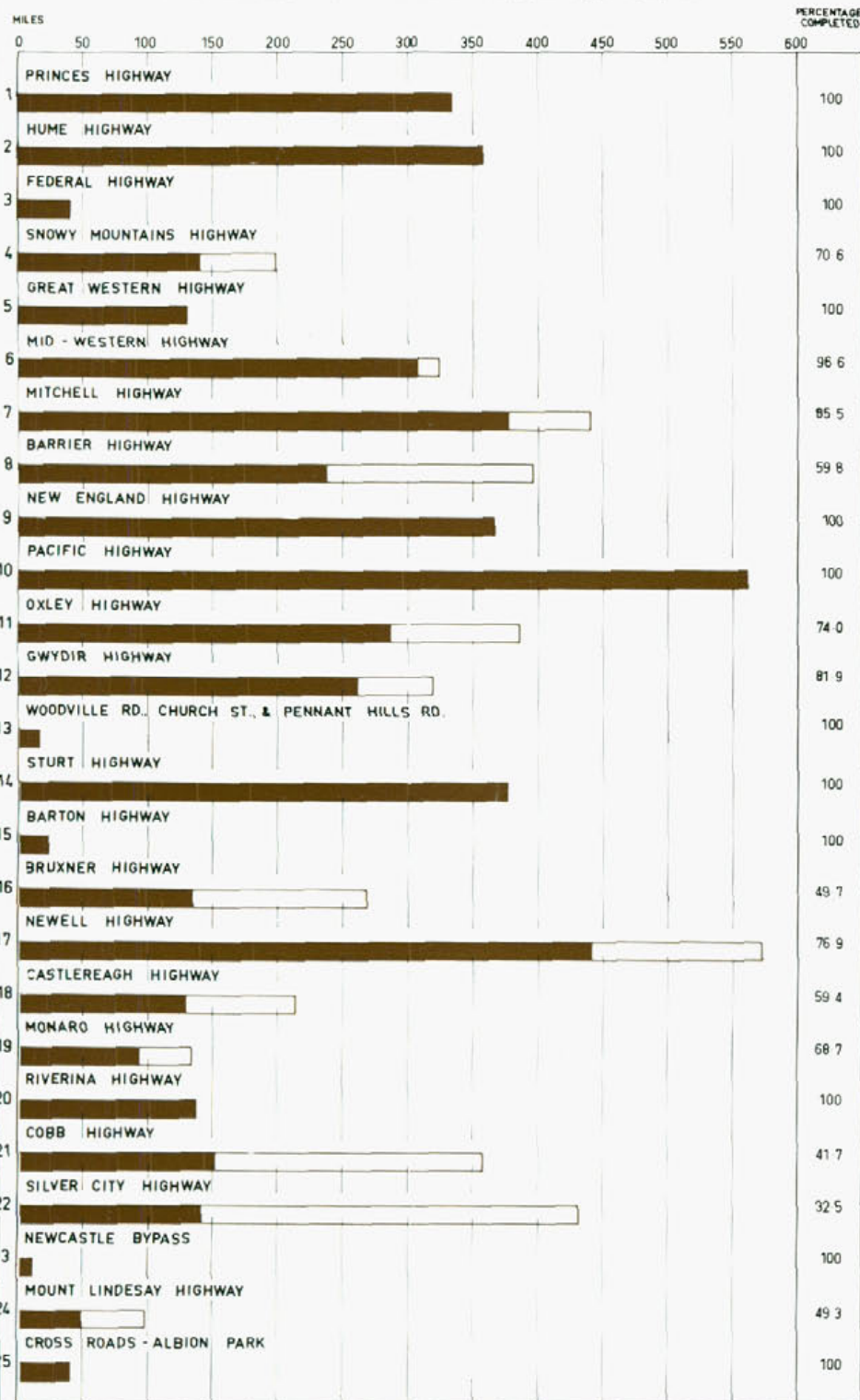
□ *Gwydir Highway*—Between 21·0 and 27·8 miles east of Glen Innes, lengths totalling four miles were bitumen surfaced. A bitumen surface is now provided over the full length of the Gwydir Highway between Grafton and Glen Innes.

Reconstruction and bitumen surfacing between 5·3 and 11·4 miles east of Collarenebri.

□ *Sturt Highway*—Widening of pavement from 18 feet to 22 feet between



# DIAGRAM SHOWING TOTAL LENGTH BITUMEN SURFACED ON EACH STATE HIGHWAY



over the Talbragar River eliminated two railway level-crossings from the route of the highway.

□ *Castlereagh Highway* — Reconstruction and bitumen surfacing between 39.0 and 45.5 miles north of Coonamble.

□ *Monaro Highway* — Reconstruction and bitumen surfacing between 17 and 19 miles south of Nimmitabel.

□ *Cobb Highway* — Reconstruction and bitumen surfacing between 24.1 miles and 27.5 miles north of Deniliquin.

□ *New Jindabyne-Mount Kosciusko Main Road* — Reconstruction and bitumen surfacing of 4.2 miles between 10.5 and 19.6 miles from new Jindabyne.

Major works in hand in the country were:

□ Construction of further section of the Sydney-Newcastle Expressway as a toll-way between Mount White and Calga.

□ *North-south arterial road* — Construction of dual carriageway from the Prince's Highway at Ghost's Creek, West Wollongong, to Gladstone Avenue, Fig Tree.

□ *Prince's Highway* — Construction of deviation from 3.4 to 7.0 miles south of Eden in approach to new bridge over Nullica River and to replace a winding length of highway.

□ *Hume Highway* — Construction and bitumen surfacing (including climbing lanes) of deviation on Cutaway and Bendooley Hills, 4.2 to 5.5 miles south of Mittagong.

Reconstruction and bitumen surfacing from Hovell's Creek to Gunning Gap, 39.8 to 47.2 miles south-west of Goulburn. Reconstruction and bitumen surfacing from 27.4 to 30.2 miles south of Tarcutta and from 7.6 to 15.3 miles south of Holbrook.

□ *Snowy Mountains Highway* — Reconstruction and bitumen surfacing westerly from the Prince's Highway between 7.0 and 18.0 miles and between 26.2 and 33.0 miles.

Reconstruction and bitumen surfacing between 2.0 and 4.3 miles west of Kiandra towards Rules Point.

□ *Great Western Highway* — Widening of pavement and improvement of alignment between 9.8 and 14.0 miles east of Bathurst.

□ *Mitchell Highway* — Reconstruction and bitumen surfacing between 3.0 and 12.0 miles from Orange towards Wellington.

Reconstruction and pavement widening from 6.9 to 15.0 miles east of Nyngan.

Reconstruction and bitumen surfacing between 68.0 and 86.3 miles north of Bourke.

9 and 9.0 miles and between 35.0 and 9.0 miles west of Hay.

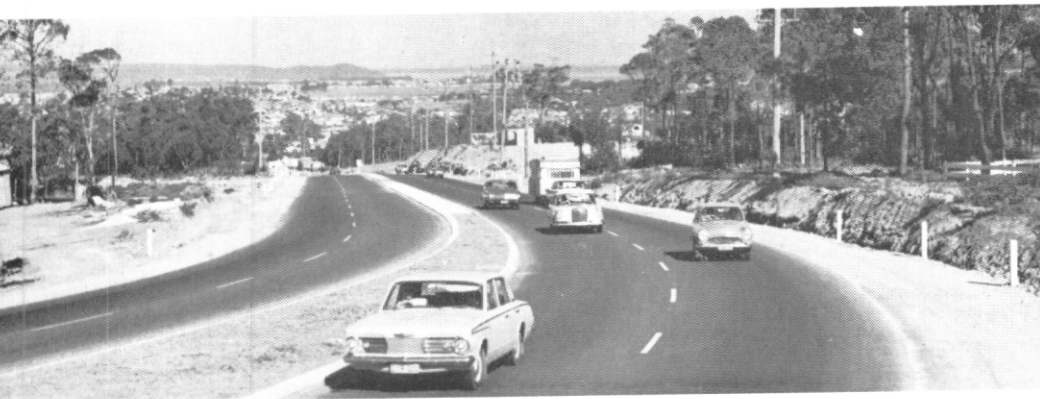
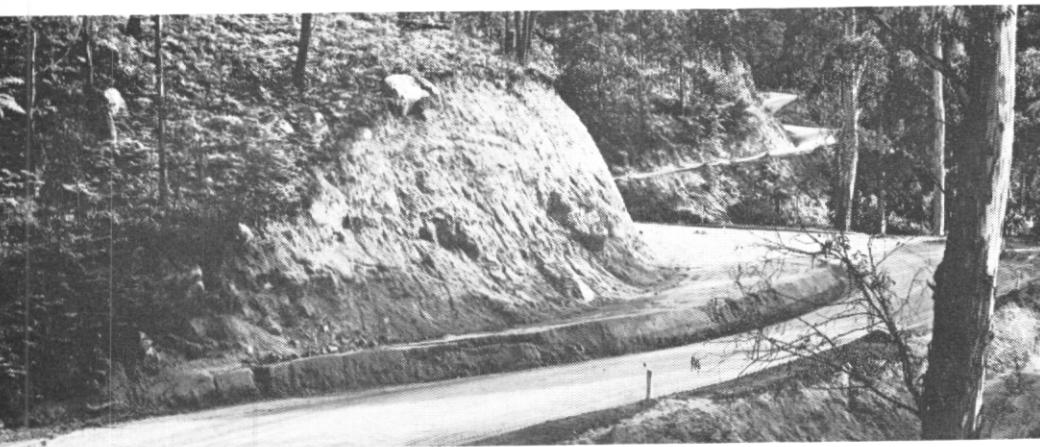
□ *Bruxner Highway* — Reconstruction and bitumen surfacing between 29.0 and 1.6 miles east of Tenterfield.

□ *Newell Highway* — Reconstruction and bitumen surfacing of lengths totalling 2 miles between 20.7 and 55.9 miles and

between 74.9 and 81.8 miles north of Narrandera.

Reconstruction and bitumen surfacing between 16.5 and 27.5 miles south of Narrabri.

Construction and bitumen surfacing of deviation, 3.0 to 6.0 miles, north of Dubbo. This deviation and a new bridge



□ *Barrier Highway*—Reconstruction and bitumen surfacing between 41·2 and 45·3 miles west of Nyngan.

Reconstruction and bitumen surfacing between 56 miles and 70 miles west of Cobar.

Reconstruction and bitumen surfacing between 49·9 and 73 miles and between 108 miles and 121 miles east of Broken Hill.

□ *Pacific Highway*—Construction of six-lane divided carriageway between Vincent Street, Belmont and South Street, Windale.

Construction of climbing lanes on O'Sullivan's Gap Hill, 8 miles north of Bulahdelah.

Construction of divided four-lane carriageway from Boyd's Bay Bridge to the Queensland border, 17·4 to 19·0 miles north of Murwillumbah.

□ *Oxley Highway*—Reconstruction and bitumen surfacing between 24·0 and 25·0 miles and between 50 and 56 miles west of Port Macquarie.

Reconstruction and bitumen surfacing between Collie and Warren (23·5 to 32·0 miles west of Gilgandra).

□ *Sturt Highway* — Widening of pavement from 18 to 22 feet from 33·0 to 35·0 miles west of Hay.

□ *Bruxner Highway* — Reconstruction and bitumen surfacing from 10 to 14 miles west of Tabulam.

Reconstruction and bitumen surfacing between 11·5 and 14·0 miles west of Tenterfield towards Mingoola.

□ *Newell Highway*—Reconstruction and bitumen surfacing between 40·4 and 45·3 miles (Ardlethan Deviation) and between 68·4 and 74·9 miles north of Narrandera.

Reconstruction between 29·5 and 35·7 miles south of Narrabri.

□ *Castlereagh Highway*—Reconstruction and bitumen surfacing between 10 and 26 miles south of Walgett.

□ *Monaro and Snowy Mountains Highways* — Construction of deviation immediately south of Nimmitabel, with a length of 5·5 miles common to both highways.

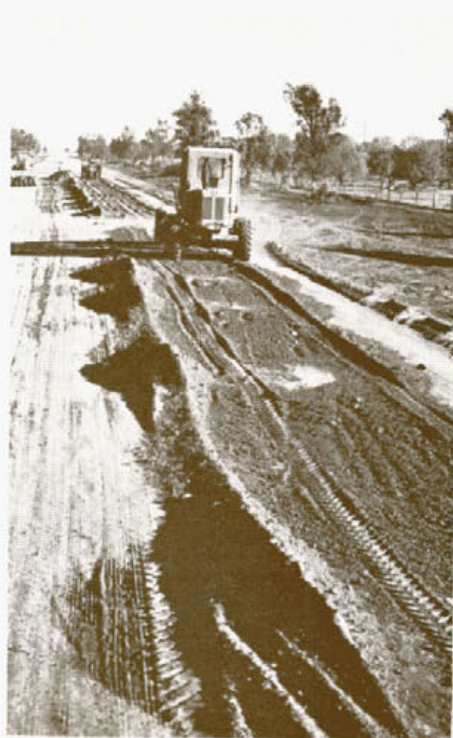
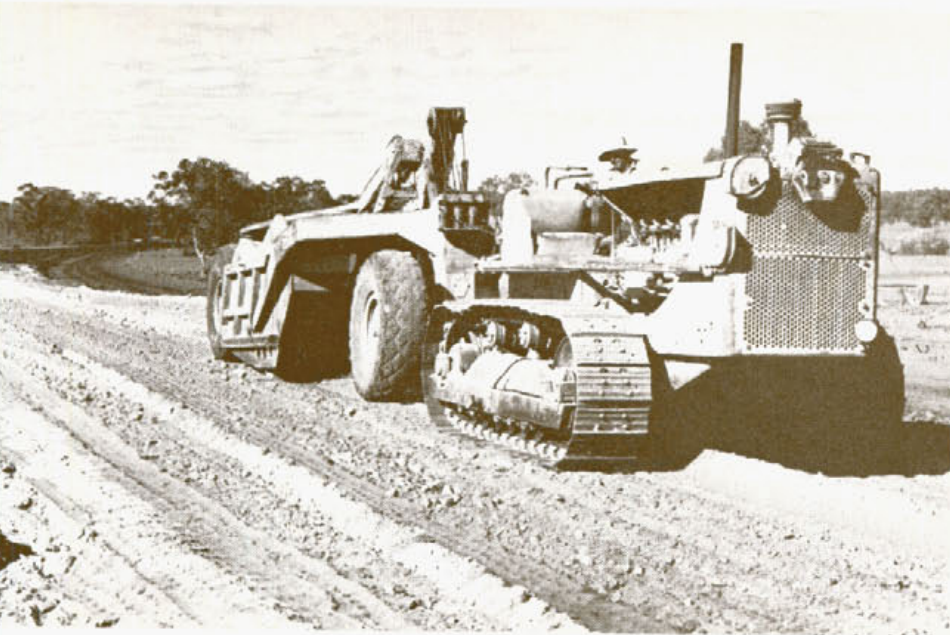
□ *Monaro Highway* — Reconstruction and bitumen surfacing from 14·0 miles to 17·0 miles south of Nimmitabel.

□ *Grafton-Casino Trunk Road*—Reconstruction and bitumen surfacing is nearing completion and will be sealed throughout by December, 1966.

In the County of Cumberland, road works completed were principally reconstruction and pavement widening to







*Highway reconstruction in progress (right) on the Mitchell Highway south of Nyngan and (above) on the Barrier Highway west of Cobar*

*Right: Provision of channelised intersection of Warringah Road and Wakehurst Parkway, French's Forest*

*Below: Widening and provision of dual carriageways on Main Road No. 167 between Liverpool and Milperra*

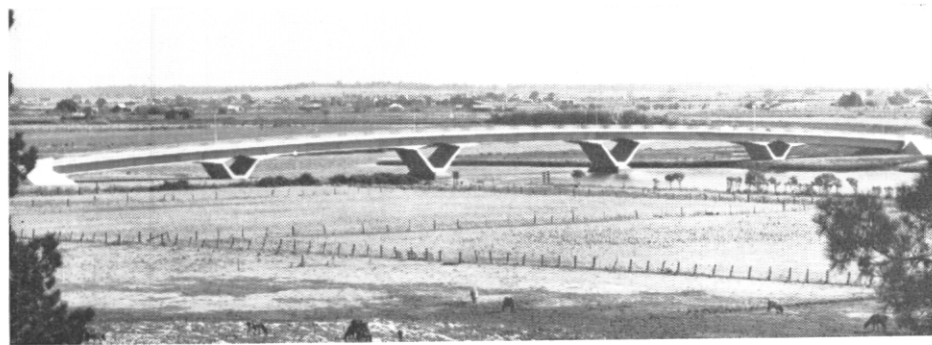
*Opposite page:*

*Above: Reconstruction of the winding section of the Snowy Mountains Highway on Brown Mountain*

*Centre: Provision of dual carriageways on the Pacific Highway near Belmont*

*Below: Part of a completed deviation of the Pacific Highway about 14 miles north of Ballina*





*Above: Bridge being constructed over the Wallagaraugh River at Timbillica south of Eden on the Prince's Highway*

*Below: The Fitzgerald Bridge over the William's River at Nelson's Plains*

provide additional lanes for traffic, installation of median strips in six-lane carriageways, channelisation of inter-sections and construction of approaches to bridges.

Major road works completed in the County of Cumberland include—

□ *North-Western Expressway* — Construction of six-lane divided carriageway from Gladesville Bridge to Fig Tree Bridge.

□ *Spit Road*—Construction of climbing lane from Parriwi Road to Pearl Bay Avenue.

□ *Roseville Bridge over Middle Harbour* —Construction of northern and southern approaches.

□ *Bridge over Parramatta River connecting Camellia and Rydalmere*—Construction of southern approach from Hassall Street to bridge. Construction of northern approach from bridge to Victoria Road.

Major road works in hand in the County of Cumberland were—

□ *Prince's Highway*—Construction of six-lane divided carriageway between Holt Road, Sylvania and Waratah Street, Sutherland.

□ *Warringah Expressway*—Construction of first section from northern end of Sydney Harbour Bridge to Miller Street, Cammeray, a length of 1.5 miles.

□ *Hume Highway*—Construction of kerbside lanes from Lansdowne Bridge to Liverpool. (Kerbside lanes already completed from Lansdowne Bridge to Cabramatta Creek).

□ *Great Western Highway* — Construction of four-lane divided carriageway over Prospect Hill two miles in length to replace a winding two-lane section. Construction of deviation at Springwood to by-pass village of Springwood and eliminate two railway subways from the route of the highway.

□ *Pacific Highway* — Widening of carriageway from two lanes to four lanes from Mt Colah to Mt Ku-ring-gai.

□ *Woodville Road*—Construction of six-lane divided carriageway from Hume Highway to Chiltern Road, Guildford. (Work already completed from the Hume Highway to Villawood railway level crossing and eastern carriageway from Villawood railway level-crossing to Springfield Street, Guildford, in use by traffic.)

Construction of six-lane divided carriageway from Merrylands Road, Granville, to the Great Western Highway including elimination of railway level-crossing at Granville (Dog Trap Gates).

□ Construction of a further section of the Sydney-Newcastle Expressway as a tollway from the Hawkesbury River towards Cowan.

□ *Pennant Hills Road*—Construction of kerbside lanes from Carlingford to Thompson's Corner. (Work already completed from Maher's Road to Thompson's Corner.)

□ *Milperra Road*—Construction of six-lane divided carriageway from the River Road, Revesby, to Henry Lawson Drive at Milperra Bridge over George's River.

□ *Newbridge Road*—Construction of six-lane divided carriageway from Milperra Bridge over George's River over length of 1.8 miles.

□ *Boundary Street*—Construction of six-lane divided carriageway from Ferncourt Avenue to Babbage Road, Roseville.

□ *Silverwater Road*—Provision of six-lane divided carriageway from the Great Western Highway to Blaxland Street,



Silverwater. (Work already completed from the Great Western Highway to Deakin Street, Auburn and construction of western carriageway between Deakin Street and Blaxland Street nearing completion.)

□ *Liverpool By-Pass*—Reconstruction of Sydney Road from the Hume Highway to Copeland Street, Liverpool.

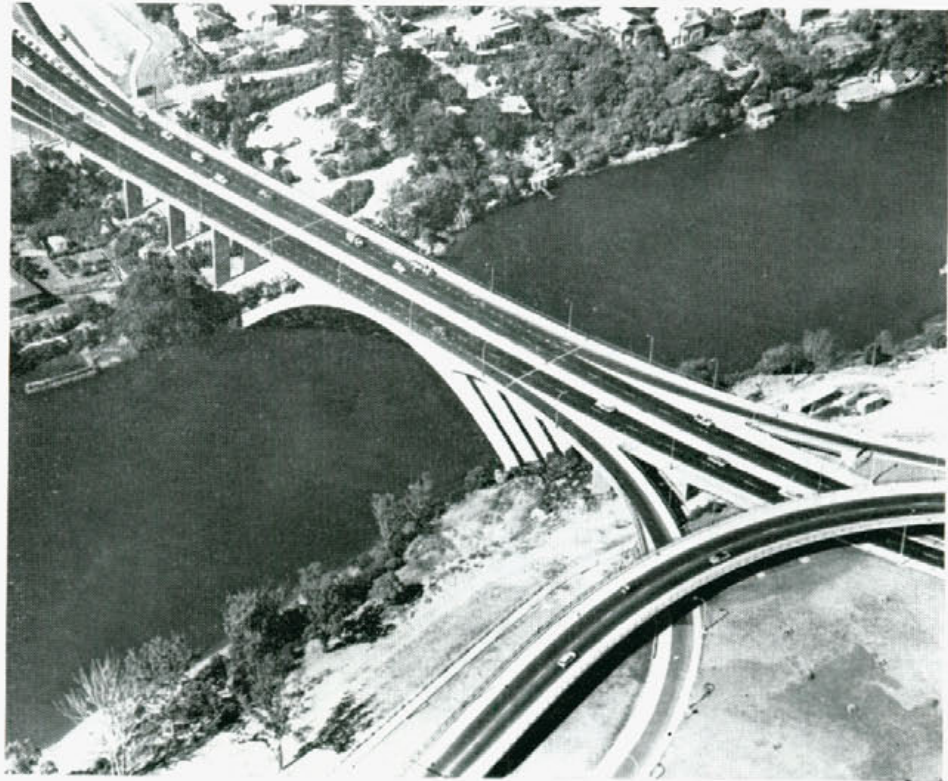
In post-war years the Department has been carrying out an extensive programme of bridge building. The object of this programme is to replace worn-out bridges; to provide wide bridges where conditions are inadequate for present-day traffic, particularly single-lane bridges on State Highways and two-lane bridges in the Sydney Metropolitan area; to replace vehicular ferries with bridges; to eliminate railway level-crossings; and to provide structures where none at present exist.

During the year 138 bridges and box culverts of bridge size were completed on Main and Developmental Roads and at sites where the Department was responsible for the construction of crossings.

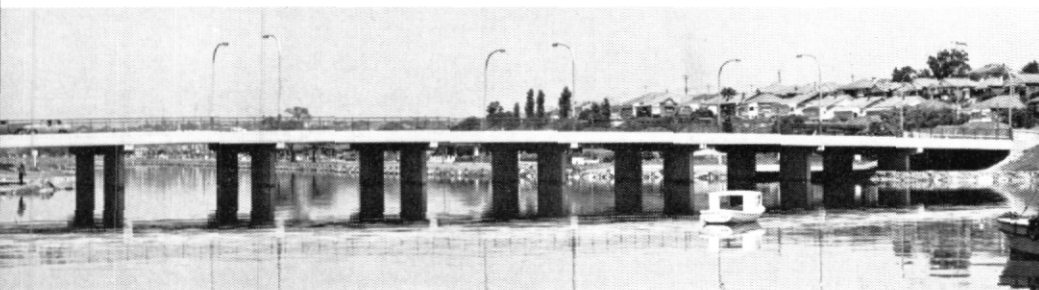
In the last three years, 445 bridges have been constructed by the Department and Councils and this averaged out at about 148 per year or one about every 2½ days.

*Top: Tarban Creek Bridge, the last link in the first section of the North-Western Expressway*

*Bottom: New bridge on the Newell Highway at Caragatel, 18 miles south of Forbes*







Top: New bridge over the George's River at Milperra

Bottom: The new bridge over Hawthorne Canal, Haberfield

At the close of the year 57 bridges and 36 culverts of bridge size were being built on Main and Developmental Roads.

Large bridges completed during the year included—

- *Jugiong Creek on the Hume Highway near Jugiong*—to replace a single-lane bridge.
- *Murrumbidgee River at Jugiong*—a new facility.
- *Peel River at Tamworth on the New England Highway*—to replace an old narrow bridge.
- *Orara River at Ramornie on the Gwydir Highway*—to replace a narrow low-level bridge with approaches on poor alignment.
- *Tarban Creek*—part of the Gladesville-Huntley's Point complex of bridges and flyovers (North-Western Expressway).
- *Hawthorne Canal, Haberfield*—a new facility.

□ *George's River at Milperra*—to replace an old two-lane timber bridge.

□ *Middle Harbour at East Roseville*—to replace a two-lane bridge.

□ *Cudgegong River (Belinfante Bridge)*—to replace an old narrow timber bridge extensively damaged when a large truck collided with the end of a truss.

□ *Parramatta River connecting Camellia and Rydalmere*—a new facility.

□ *Williams River (Fitzgerald Bridge) at Nelson's Plains*—to replace a ferry.

□ *Great Ana-branch of Darling River at Bunninggee*—two new bridges.

□ *Talbragar River at Troy*—to replace an old narrow timber bridge.

□ *Murray River at Barmah*—this bridge to replace a ferry, was a work jointly arranged with the Country Roads Board, Victoria.

Large bridges under construction at the end of the financial year were:

□ *De Burgh's Bridge over the Lane Cove River*—to replace a narrow structure with winding alignment on the northern approach and a sharp turn on the southern approach.

□ *Moruya River at Moruya on the Prince's Highway*—to replace a timber bridge subject to flooding.

□ *Wallagaraugh River at Timbillica on the Prince's Highway*—to replace a timber bridge periodically submerged by floods.

□ *Nullica River near Eden on a deviation of the Prince's Highway*—to replace a length of narrow winding road.

□ *Bargo River at Tahmoor*—to replace the last remaining single-lane bridge on the Hume Highway and at the same time eliminate a narrow railway overbridge on poor alignment from the route of the Highway.

□ *Manilla River on the Boggabri-Manilla Main Road*—to replace a bridge destroyed by flood.

□ *Fennell's Bay near Toronto*—on the Main Road from Newcastle via Cockle Creek to Toronto.

□ *Clarence River to Harwood*—to replace the last ferry on the Pacific Highway and on the Highway System of New South Wales.

□ *Emigrant Creek on the Pacific Highway near Ballina*—to replace an old narrow truss bridge.

□ *Coldstream River near Ulmarra*—to replace a single-lane bridge.

□ *Whalan Creek 60 miles north of Moree on the Newell Highway*—to replace an open crossing.

□ *MacLaughlin River*—4 miles south of Nimmitabel on a deviation of the Monaro and Snowy Mountains Highways with a length of 5.5 miles common to both Highways.

□ *Mooki River at Breeza*—on a deviation of the Willow Tree—Narrabri Trunk Road to replace a low-level bridge and to eliminate two railway level crossings from the route of the road.

□ *Bellinger River at Thora on the Raleigh-Ebor Trunk Road*—to replace a low-level bridge subject to flooding.

□ *Murrumbulla Creek at Murrumburrah*—to replace an old timber bridge.

□ *Hunter River, North Arm, Newcastle*—to connect by-road with the bridge over South Arm and eliminate Newcastle-Stockton ferry service.

□ *Bungawalbyn Creek near Coraki on the South Woodburn-Coraki Main Road*—to replace a narrow timber bridge.

□ *Wollondilly River at Goodman's Ford on the Wombeyan Caves Main Road*—to replace an open crossing.

## COMMONWEALTH AID ROADS ACT, 1964

The Commonwealth Aid Roads Grant of \$22,689,661 available for expenditure on the classified roads of the State represented approximately 31 per cent of the total receipts of the Department's two Road Funds. \$4,649,532 of this



amount was credited to the County of Cumberland Main Roads Fund and was equivalent to 23 per cent of that Fund's total receipts. The balance of \$18,040,129 was credited to the Country Main Roads Fund and was equivalent to 34 per cent of that Fund's total receipts.

The diagrams hereunder show the position in each Fund.

Overall approximately 32 per cent of the Department's total expenditure from these two funds was expended on:

Works of maintenance and minor improvement.

Administration.  
Loan charges.  
Miscellaneous costs.  
The Department finds from State sources the total expenditure under these headings.

The remaining 68 per cent of the total expenditure was expended on the construction and reconstruction of roads and bridges. Since the Commonwealth grant amounted to only 31 per cent of total receipts, it could be said that the Commonwealth Grant amounted to less than half of the Department's expenditure

on works of this nature. The balance of the expenditure on these works was found from State sources.

Having regard to the needs of the classified roads of New South Wales, it would seem that an increase in the Commonwealth Aid Roads grant to the State is both warranted and necessary.

### EXPRESSWAYS

The road planning proposals by the Department of Main Roads for Sydney, Newcastle, Wollongong and between those centres include provision for the widening of existing Main Roads, the construction of new Main Roads and a system of Expressways.

Within the County of Cumberland, the Department's proposals call for 150 miles of Expressways of which 87 miles are within the ring Hornsby-Parramatta-Sutherland.

Beyond the boundaries of the County of Cumberland, it is planned that the Expressways radiating out from Sydney will extend southerly to Wollongong and Kiama, south-westerly to Mittagong, and northerly to Newcastle.

In the case of Expressways included in the Department's planning proposals, there will be complete denial of access from abutting property and there will be grade separation of all intersections, i.e., all cross traffic is carried under or over the expressway. Vehicular access between the expressway and the normal street system is at predetermined points called "interchanges" where traffic joining the expressway merges with the expressway traffic and departing traffic diverges from the expressway traffic without any conflicting traffic movement.

#### The Need for Expressways

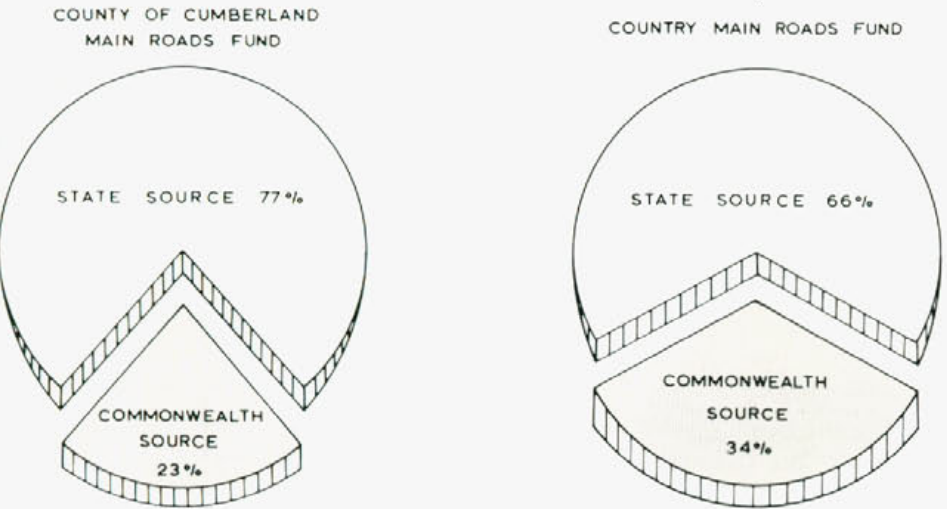
The needs of the New South Wales Main Roads System by 1974 based on the estimated traffic demand by that year have been assessed in conjunction with a survey made for the National Association of Australian State Road Authorities (N.A.A.S.R.A.) covering the period 1964-1974.

As a result of that survey, it was determined that \$1,815m. would be required in New South Wales during these ten years to meet estimated traffic needs.

It was also determined that 163 miles of expressway would be required in New South Wales at an estimated cost of \$780m. of which 96 miles at an estimated cost of \$730m. were in the County of Cumberland.

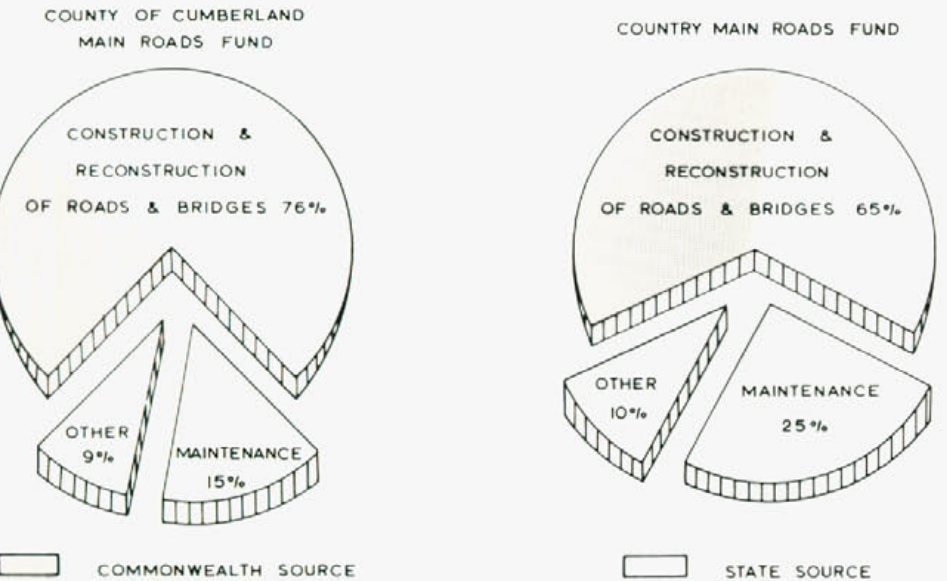
The needs survey conducted for N.A.A.S.R.A. also showed that the funds expected to be available for expenditure

1965-66  
RECEIPTS



The relationship of the Commonwealth Grant to the Department's expenditure in these two Funds is shown in the following diagrams:

PAYMENTS



in New South Wales during the ten year period 1964-1974 were estimated at \$1,060m. compared with a probable outlay to meet these needs of \$1,815m.

In so far as expressways were concerned, over 90 per cent of the outlay required to meet estimated needs was in the County of Cumberland, where the estimate of funds expected to be available during the ten year period 1964-1974 was only \$300m. to meet needs estimated at \$1,116m., or one-third of the amount needed and of the \$1,116m. an amount of \$730m. was required for expressway construction.

*Expressway construction already completed and expressway construction to be commenced before 30th June, 1968*

Because of the wide discrepancy between expressway needs and available funds, the Department has not been in a position to undertake the construction

of long lengths of expressway, except for sections of the Sydney-Newcastle Expressway for which special loan finance was arranged.

Generally the Department has been forced to consider which segments of expressway are of primary importance and in consequence it has commenced with the building of major bridges and approaches which will form part of the final expressway system. The main examples are the Gladesville-Tarban Creek-Fig Tree Bridges complex and the Captain Cook Bridge over the mouth of the George's River.

In addition, the construction of sections of the Cahill Expressway and the Warringah Expressway in approach to the Sydney Harbour Bridge have been undertaken as part of the complex of the bridge and its immediate approaches, the cost of this being met in part from Sydney Harbour Bridge toll charges.

#### *Warringah Expressway*

Construction of the first section of the Warringah Expressway from the northern end of Sydney Harbour Bridge to Miller Street, Cammeray, a distance of 1½ miles, is being carried out for the Department by contract.

The contractors are Reed and Stuart Pty Ltd and the contract price for the work is \$9,972,363.

At the end of June, 1966 the work was well advanced and about half the earthworks and concrete walling had been completed.

The contract time for completion of the first section of the expressway is December, 1967. It is expected, however, that traffic will be able to use a substantial part of the route by August, 1967.

#### *Western Distributor*

Consulting engineers, De Leuw, Cather, and Company, are preparing working drawings and specifications for the construction of the Western Distributor from the southern end of Sydney Harbour Bridge to the City Markets area.

In the first place it is proposed to put in hand the construction of the northern end of the Western Distributor from Sydney Harbour Bridge to Day Street near Erskine Street, City.

The Department is negotiating for the acquisition of the property on the line of this section of the Western Distributor.

Following acquisition and demolition of the properties required, construction will commence late in 1968.

#### *North-Western Expressway*

The first section of the North-Western Expressway was completed on the 16th December, 1965, with the opening to traffic of the bridge over Tarban Creek between the Parramatta and Lane Cove Rivers.

Tarban Creek Bridge provides a direct connection between the new Gladesville and Fig Tree Bridges.

Constructed of reinforced and prestressed concrete, Tarban Creek Bridge is 750 feet long with a main arch span of 300 feet and a width between kerbs of 84 feet.

The bridge has twin carriageways each of three lanes, separated by a median 12 feet wide.

There is a footway on the eastern side.

Designed by Messrs G. Maunsell and Partners of London and Melbourne for the Department of Main Roads, the

*Aerial view showing progress of construction of Warringah Expressway*





bridge was built by Reed and Mallik Ltd of England in partnership with Stuart Bros Pty Ltd. The cost of the bridge was of the order of \$1,630,000.

*Western Expressway*

The planned Western Expressway is designed to provide a fast through route from Sydney to the lower Blue Mountains. It will be built in stages and the first section proposed to be constructed will be a new bridge over the Nepean River and the immediate approaches to the east and west.

The bridge will cross the Nepean River at Regentville, near Penrith, about two miles upstream from the Victoria Bridge on the Great Western Highway.

The Department has engaged the services of G. Maunsell and Partners, consulting engineers of London and Melbourne, to prepare a design for the bridge.

The new bridge will be a six-lane structure. It will have twin carriageways, separated by a median six feet wide, and will be flanked by footways six feet wide.

Architectural advice is being obtained from the architectural firm of Messrs Fowell, Mansfield, Jarvis and MacLurcan.

*Sydney-Newcastle Expressway*

The Sydney-Newcastle Expressway will extend over a length of 73 miles from Wahroonga to Adamstown Heights, Newcastle. It will connect at its southern end with the planned Sydney Expressway System and at its northern end with the planned Newcastle Expressway and arterial road system.

The Hawkesbury River-Mount White section of the expressway, 5.8 miles in length, was opened as a tollway by the Premier and Treasurer, the Hon. R. W. Askin, M.L.A., on the 15th December, 1965.

The cost of this section, including interchanges, bridges and other structures was of the order of \$7,500,000.

The extension of the Expressway from Mount White to Calga is in hand. This further length of 3.4 miles will be made available to traffic on the 28th October, 1966.

The construction of this section will cost approximately \$6,000,000.

As is the case with Hawkesbury River-Mount White section, the length from Mount White to Calga includes—

- Dual carriageways, each of two traffic lanes, separated by median strips 30 feet wide.
- Extra climbing lane, where necessary, for slow-moving traffic.



*Part of the completed first section of the North-Western Expressway*

- First-class road alignment facilitating driving at speeds of 65 m.p.h.
- No narrowing of carriageway at bridges.
- A specially heavy road base to preserve pavement condition and reduce maintenance with its attendant obstruction to traffic.
- Continuous fencing along the route, eliminating hazards due to pedestrians and straying stock.
- A wide paved shoulder or breakdown lane to enable motorists in difficulties to pull out of the traffic stream.

In addition, there is no access from abutting properties or local roads.

There will be no increase in the rates of toll when the additional length of 3.4 miles between Calga and Mount White is brought into use.

This extension of the expressway will link with the new road already in use between Calga and Ourimbah via Peat's Ridge, which provides an alternative route to the Pacific Highway, so that by the end of October, 1966 greatly improved conditions of travel will be available for motorists from the Hawkesbury River to Ourimbah, a distance of about 30 miles.

In April, 1966 the Department commenced relocation of five sections of

the existing Pacific Highway between the Hawkesbury River and Cowan as a first step in clearing the way for expressway construction on the south side of the river.

Construction of the length of the expressway between the Hawkesbury River and Cowan, a distance of approximately four miles, is estimated to cost \$6,400,000. It is expected it will be ready for use by traffic in December, 1968.

Before work is completed on this length, a start will be made with the construction of the expressway between Cowan and Berowra, over a distance of approximately five miles on the eastern side of the railway line at an estimated cost of \$6,600,000. On present indications of the funds position, it is expected that work on this section can begin in June, 1968 and be completed by December, 1970. If more funds become available, the work can be commenced sooner and finished earlier.

In addition to expressway work, widening of the Pacific Highway by the Department to provide a four-lane carriageway from Hornsby to Mount Ku-ring-gai is now approaching completion and will be extended to Berowra. This widened length of the highway will serve through traffic until construction of the expressway from Berowra to Wahroonga has been undertaken.

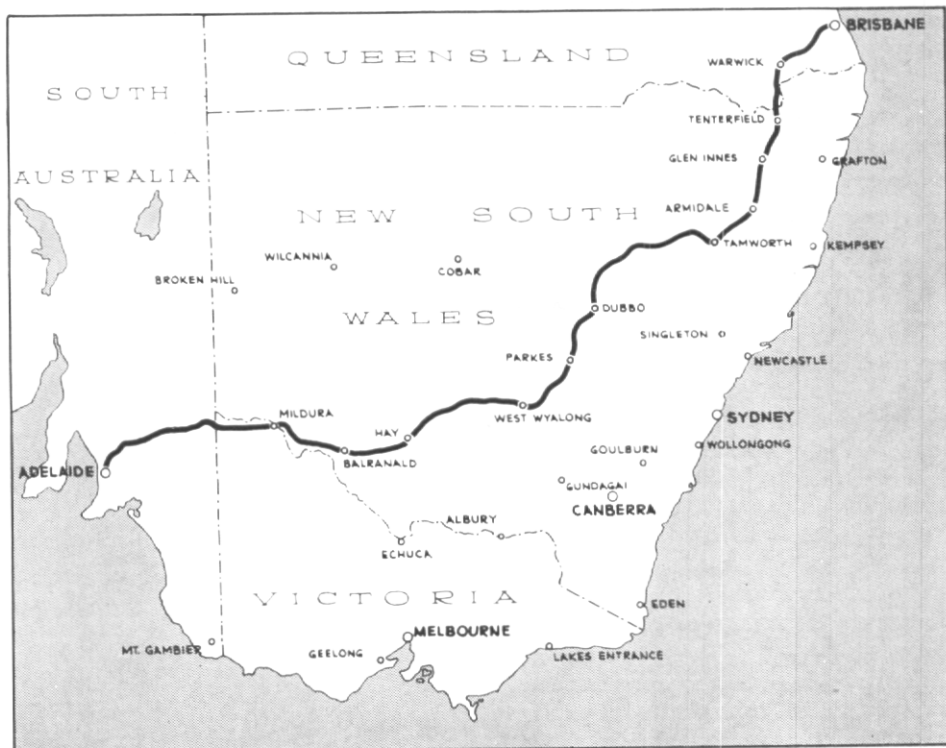


Near Berowra, there will be a modern grade-separated junction or interchange to permit traffic to join or leave the expressway.

The programme outlined means that the expressway should be completed over the full length from Berowra to Calga, no later than 1970 and greatly improved conditions will be available for traffic from Wahroonga to Ourimbah, a distance of 44 miles which is more than half the length of the Sydney-Newcastle Expressway between Wahroonga and Adamstown Heights.

Construction of the expressway between the Hawkesbury River and Berowra involves particularly heavy earthworks and the excavation of approximately 7,000,000 cubic yards of rock and earth, mainly sandstone, will be necessary.

While work south of the Hawkesbury River is in progress, a commencement will be made with the construction of the expressway between Adamstown Heights, Newcastle, and Belmont. The actual date of commencement of this length will depend upon funds available for construction works.



#### ALTERNATIVE SEALED ROUTE FROM ADELAIDE TO BRISBANE NEARING COMPLETION

The provision of a dustless surface on an alternative inland route from Adelaide to Brisbane is nearing completion.

In New South Wales, the route follows the Sturt, Mid-Western, Newell, Oxley and New England Highways and passes through the centres of Wentworth, Balranald, Hay, Wyalong, Forbes, Parkes, Dubbo, Coonabarabran, Tamworth, Armidale and Glen Innes.

To complete the bituminous surfacing of this route, 12 miles remain to be sealed east of Goolgowi on the Mid-Western Highway and about 1.5 miles between Marsden and Forbes on the Newell Highway.

It is expected these lengths will have been provided with a dustless surface by Christmas, 1966.

#### RECONSTRUCTION AND BITUMEN SURFACING OF THE SILVER CITY HIGHWAY

The southern section (14 miles) of a deviation of the Silver City Highway west of Lake Popiltia was opened to traffic on the 20th May 1966. The northern section (16 miles) of the deviation had previously been made available to traffic in September, 1964.

The southern section of the deviation included a bridge over the Great Ana

Branch of the Darling River approximately 42 miles north of Wentworth and another bridge over an adjacent flood channel.

The bridge over the Great Ana Branch is 528 feet long, while that over the flood channel is 240 feet long. The bridges, of steel and concrete, were built for the Department by L. M. Robertson Construction Company of Edwardstown, South Australia, at a cost of approximately \$225,000.

The cost of the southern section of the deviation, which was constructed by the Department with its own forces, was \$350,000.

At the end of the year 110.2 miles of the total length of 166 miles between Broken Hill and Wentworth had been reconstructed and provided with a dustless surface. The reconstructed pavement extended to 46.2 miles south of Broken Hill and from 63.8 miles to 123.8 miles south of Broken Hill. From 162 to 166 miles south of Broken Hill, there is a narrow paved road in existence.

Of the intermediate sections, reconstruction between 46.2 miles and 51.0 miles has since been completed and provided with a dustless surface.

Between 51.0 miles and 63.8 miles south, reconstruction has been commenced with a view to completion by mid-1967.

The Department has also commenced reconstruction and bitumen surfacing between 145 miles and 155 miles south of Broken Hill and this is also expected to be completed by mid-1967.

Provision of a bitumen pavement over the full length of the Silver City Highway between Broken Hill and Wentworth is expected by mid-1970.

Generally, naturally occurring road-making materials suitable for use under a bitumen surface without treatment or modification have not been located on the route of the highway. Suitable rock for the production of aggregate does not occur between Broken Hill and Wentworth and it has been necessary to haul some supplies from Broken Hill.

Owing to the dry climate, soil moisture is low and it has been necessary to provide additional water from dams, wells, creeks or bores in order to achieve satisfactory compaction of the formation and pavement. Consequently, a number of relatively shallow bores, up to 200 feet in depth, have been sunk at suitable locations along the line of the new work.

The country traversed by the Silver City Highway is gently undulating with no habitation other than a homestead or two between Broken Hill and Wentworth. Vehicle speeds are high and the standards of alignment being adopted for new construction are those appropriate for



travel at 60 miles per hour. As far as possible a minimum of 2,000 feet radius curves with sight distances of 1,500 feet are being provided.

#### **EAST-WEST ROUTE—HUNTER VALLEY TO DUBBO AND WELLINGTON**

The Department of Main Roads is assisting the various Councils concerned in the provision of an improved direct route from Dubbo and from Wellington through to the Hunter Valley.

The route from Dubbo follows existing Main, Developmental and Trunk Roads through Dunedoo, Cassilis, Merriwa and Denman to the Hunter Valley, while the branch from Wellington passes through Gulgong and Ulan to junction with the route from Dubbo near Cassilis.

In the last five years, the Department has granted to Councils \$804,000 for work on these routes and this year proposes to grant the sum of \$500,000 to the various Councils.

The Department proposes to continue to assist Councils at this rate annually until the work is completed. The work is programmed for completion in 1970.

#### **ADDITIONAL CROSSING OF THE PARRAMATTA RIVER**

A bridge over the Parramatta River connecting Aston Street, Camellia, with Rydalmere Avenue, Rydalmere, was made available to traffic on the 22nd June, 1966.

There are now seven road bridges over the river. Four of the bridges have been constructed by the Department in the last five years.

The bridge at Camellia provides an important by-pass around the Parramatta business and shopping area and forms part of a future Main Road which will ring the City of Parramatta from Woodville Road, Merrylands to Windsor Road, Northmead, crossing Parramatta Road, Victoria Road, Kissing Point Road and Pennant Hills Road.

Constructed of reinforced and prestressed concrete, the bridge has five spans with a total deck length of 448 feet. It provides for six lanes of traffic with a median in the centre and has two footways.

The bridge was designed for the Department by Messrs Rankine and Hill, consulting engineers of Sydney, and was constructed under contract with the Department by Reed and Stuart Pty Ltd.

The cost of the bridge was of the order of \$530,000.

The approaches, which were constructed by the Department's own forces, cost approximately \$500,000.

#### **LAST FERRY ON STATE HIGHWAY SYSTEM ELIMINATED. BRIDGE OVER THE CLARENCE RIVER AT HARWOOD**

With the opening of the bridge over the Clarence River at Harwood on the Pacific Highway on the 20th August 1966, by His Excellency the Governor of New South Wales, Sir Roden Cutler, V.C., K.C.M.G., C.B.E., the last ferry on the Pacific Highway and on the Highway System of the State was eliminated.

When the Department established a ferry service over the Hawkesbury River at Kangaroo Point in May, 1930 and the route of what is now the Pacific Highway from Hornsby to Gosford came into service, travel along the coastal route involved twelve ferry crossings, including the ferry at Harwood which had been in operation since 1885.

The bridge over the Clarence River at Harwood is of steel and reinforced concrete, is 2,915 feet long, 28 feet between kerbs and has a footway 5 feet wide on the western side.

The superstructure consists of 7 truss spans and 27 girder spans.

A vertical lift span provides an opening for shipping 100 feet wide and 120 feet high.

It is the third-longest road bridge in New South Wales. The two bridges of greater length are Sydney Harbour Bridge (3,770 feet) and the bridge over the Murrumbidgee River at Gundagai (3,025 feet).

Construction of the approaches involved 4.6 miles of highway deviation and the building of bridges over Old Broom's Head Road, New Broom's Head Road and Farlow's Lane.

The road works associated with the bridge and the three overbridges were constructed by the Department of Main Roads with its own work forces.

The contractors for the erection of the bridge were Reed and Stuart Pty Ltd. The steel work was supplied by Arcos Industries Pty Ltd.

The bridge and the three overbridges on the deviation were designed by the Department of Main Roads.

The cost of the bridge and associated road and bridge works was of the order of \$3.8m.

#### **DEVIATION OF THE NEWELL HIGHWAY NORTH OF DUBBO**

A deviation 2.3 miles in length immediately north of Dubbo, opened to traffic on the 2nd February, 1966,

eliminated two railway level crossings from the route of the Newell Highway and provided improved road alignment with flood free conditions.

A new bridge over the Talbragar River at Troy Junction, approximately four miles north of Dubbo, and two smaller bridges in approach, were built on the route of the deviation.

The main bridge, 332 feet in length, replaced an old narrow timber bridge over the Talbragar River with sharp curves on both approaches.

The total cost of the three bridges and associated road works was of the order of \$630,000.

Steel work for the main bridge was supplied by John Lysaght (Australia) Ltd, and the contractor for the erection of the three bridges was Transfield Pty Ltd.

The construction of the deviation was carried out by the Department's own work forces.

#### **ADDITIONAL ROAD CONNECTION BETWEEN NEW SOUTH WALES AND VICTORIA**

Another road connection between New South Wales and Victoria was established on the 19th March, 1966, with the opening of a bridge over the Murray River at Barmah.

The bridge of prestressed concrete construction has seven spans and an overall length of 570 feet. The carriageway is 24 feet wide and there is a footway on the downstream side.

It replaced a ferry.

The cost of building the bridge, \$294,000, was shared equally by the Victorian Country Roads Board and the Department of Main Roads, New South Wales.

Each State Authority paid for the cost of constructing the respective approach roads. The Victorian approach road was constructed by the Nathalia Shire Council and in New South Wales the approach road was constructed by the Murray Shire Council.

The Country Roads Board supervised the construction of the bridge which was built by Central Constructions Pty Ltd of Sydney.

#### **NEW BRIDGE OVER THE GEORGE'S RIVER AT MILPERRA**

The full width of the new six-lane bridge over the George's River at Milperra on Milperra Road was made available to traffic on the 25th February, 1966.

Half of the new bridge was completed and opened to traffic in October, 1965.

The new bridge has not only eased traffic congestion, but will ultimately form part of a six-lane divided carriageway being provided progressively from the Bankstown area to the Liverpool area.

Constructed by contract with the Department by E. C. Clementson Pty Ltd., the new bridge is 280 feet long and replaced a narrow two-lane bridge.

A footway is provided on each side of the bridge.

The contract price for the construction of the bridge was \$500,072.

The bridge was designed for the Department by Messrs Rankine and Hill, consulting engineers.

#### NEW BRIDGE OVER MIDDLE HARBOUR AT EAST ROSEVILLE

Opened to traffic on the 2nd April, 1966, by the Premier and Treasurer the Hon. R. W. Askin, M.L.A., the new bridge over Middle Harbour at Roseville, and its approaches, have greatly facilitated the movement of traffic to and from the rapidly growing Warringah area and Sydney's northern beaches.

The new bridge has six lanes for traffic and is of prestressed concrete with a length along the centre line of 1,229 feet.

There is a footway on the northern side of the bridge.

Constructed by contract, the new bridge was designed by the Department of Main Roads, which sought advice from a firm of consulting architects to ensure that the general appearance of the bridge would be in harmony with the surroundings.

The contractor for the construction of the bridge was John Holland (Constructions) Pty Ltd and the consulting architects were Messrs Fowell, Mansfield, Jarvis and MacLurcan. Advice on landscaping was also obtained from Professor P. Spooner.

The alignment of the new route between East Roseville and Forestville is of a high standard. To secure this, the bridge is curved both horizontally and vertically.

The approaches to the bridge were built by the Department with its own forces. The approach from Forestville presented special difficulties and involved heavy excavation work through a steep rocky hillside.

The quantity of earth and rock removed from the Forestville side amounted to 250,000 cubic yards and from the East Roseville side 100,000 cubic yards.

The cost of the bridge was of the order of \$1,800,000 and of the approaches \$2,600,000. The latter figure includes the cost of a single span prestressed concrete bridge carrying Malga Avenue over the approach from East Roseville.

#### BRIDGE OVER THE ORARA RIVER AT RAMORNIE APPROXIMATELY 10 MILES WEST OF GRAFTON ON THE GWYDIR HIGHWAY

Replacing an old narrow timber bridge on inferior alignment and subject to flooding, a new bridge over the Orara River on the Gwydir Highway, approximately ten miles west of Grafton, was opened to traffic on the 4th May, 1966. As was the case with the old bridge, the new bridge is named the "Tindal" Bridge after one of the pioneers of the district.

The new bridge is built of steel and concrete and is 735 feet long with a carriageway 24 feet wide.

The bridge was designed for the Department by Gordon Bull and Associates, consulting civil engineers.

The contractor for the supply of the steel work was Arcos Industries Pty Ltd and the contractor for the construction of the bridge was John Holland (Constructions) Pty Ltd.

The approaches to the bridge were constructed by the Department's own forces.

The cost of the bridge was of the order of \$417,000 and of the approaches \$128,000.

#### ELIMINATION OF LAST REMAINING SINGLE BRIDGE ON HUME HIGHWAY

In October, 1965, the Department accepted a tender for the construction of a new bridge over the Bargo River and the Main Southern Railway Line on the Hume Highway, three miles north of Bargo.

The bridge is being built on a deviation of the highway.

It will replace the last remaining single lane bridge on the Hume Highway and, at the same time, will eliminate a narrow railway bridge on poor alignment from the route of the highway.

The new structure is of prestressed concrete and will have seven spans with a total length of 627 feet. The carriageway is to be 28 feet wide and there will be a footway on the western side.

The bridge was designed for the Department by Messrs G. Maunsell and Partners, consulting engineers, and is being constructed by Transbridge Pty Ltd.

The contract price for the construction of the bridge, which is due for completion in February 1967, is \$390,783.

The deviation on which the bridge is being built is 1.3 miles in length.

#### REPLACEMENT OF DE BURGH'S BRIDGE OVER THE LANE COVE RIVER

Construction of a new six-lane bridge over the Lane Cove River to replace De Burgh's Bridge on the Main Road (Ryde Road and Lane Cove Road) connecting Pymble and Ryde is in progress.

The existing De Burgh's Bridge is a narrow structure with a carriageway 18 feet wide on a section of Main Road with winding alignment on the northern approach and a sharp turn on the southern approach.

The new De Burgh's Bridge will be of prestressed concrete with six spans and a total length of 607 feet.

Separated by a median strip 15 feet wide, there will be two carriageways, each of three lanes.

There will also be a footway on each side of the bridge.

Plans and specifications for the bridge were prepared by the Department.

The bridge is being built under contract with the Department by M. R. Hornibrook (N.S.W.) Pty Ltd, the contract price being \$850,832.

Special provisions were included in the contract to protect the natural beauty of the Lane Cove National Park.

Trees cannot be cut down without the approval of the Park Superintendent and the area must be restored to the satisfaction of the Park Trust.

#### NEW DIVISION

The Department established a new Division with headquarters at Port Macquarie on the 27th June, 1966.

The new Division is named the Lower North Coast Division and includes the Local Government areas of the Municipalities of Kempsey, Port Macquarie, Taree and Wingham and the Shires of Nambucca, Macleay, Hastings, Manning, Gloucester and Walcha.

As a consequence the Department's Division based at Newcastle and formerly known as the Lower Northern Division has been renamed the Hunter Valley Division.

The Department now has fifteen Divisions covering the whole State with the centres ranging from Sydney to Broken Hill and from Glen Innes to Deniliquin.



# NORTH COAST TOURIST ROADS



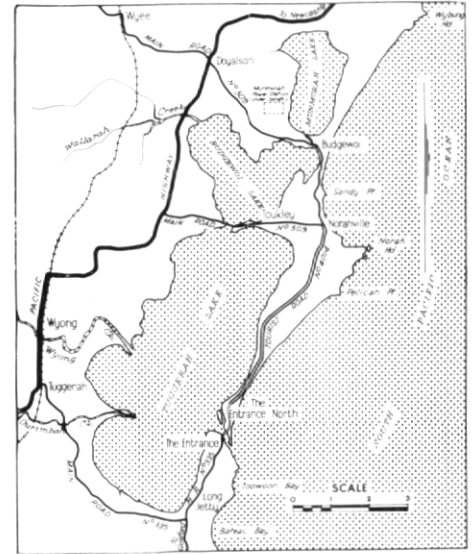
## *The Entrance North to Norahville*

A new road route between the village of The Entrance North and Main Road No. 509 at Norahville near Toukley was proclaimed Tourist Road No. 4014 in May, 1962. It is 5.3 miles long and is situated within the Shire of Wyong.

At the time of proclamation there was no trafficable link connecting the tourist resorts of Toukley and The Entrance. There were, however, several tracks extending northwards from The Entrance North and southwards from Norahville providing access to Tuggerah Lake and the coast.

Construction of the new road was commenced by Wyong Shire Council in 1963 and was completed in February, 1965, at a cost of \$208,000. The Department and Council shared the cost equally.

*Section of completed Tourist Road  
No. 4014*



The road is constructed to a high standard of alignment and is bitumen surfaced throughout. No bridges or other major structures were required.

The road passes through lightly timbered sandy coastal terrain along a narrow strip of land dividing Tuggerah Lake from the South Pacific Ocean. Two branch roads lead to the lighthouse and camping area at Norah Head and in addition, a number of side tracks lead to Tuggerah Lake and the ocean, providing access for fishing, camping and other tourist activities.

The road provides a popular connection for tourists and other travellers directly between the two resorts of The Entrance

*Above: Tourist Road No. 4014 serves the popular tourist area around Tuggerah Lake*



*Left: Norah Head Lighthouse—served by an access road from Tourist Road No. 4014*

*Below: Section of completed Tourist Road No. 4014*







*Left: Section of Tourist Road No. 4030 under construction*

*Below: North Haven at the southern end of Tourist Road No. 4030*

and the Toukley area. It also forms part of an alternative coastal route between Gosford and Doyalson via The Entrance. There has been a rapid build up in traffic usage since it was first brought into service in 1965.

#### *North Haven to Port Macquarie*

Tourist Road No. 4030 extends northerly from North Haven to Lake Cathie entrance within the Shire of Hastings, a distance of 8.3 miles, and from Lake Cathie entrance to a point 5.4 miles north in the Municipality of Port Macquarie.

It serves the popular holiday resorts of North Haven, Bonny Hills and Lake Cathie which are developing rapidly as tourist centres. It also serves to connect the well established holiday and tourist areas of Laurieton and Port Macquarie.

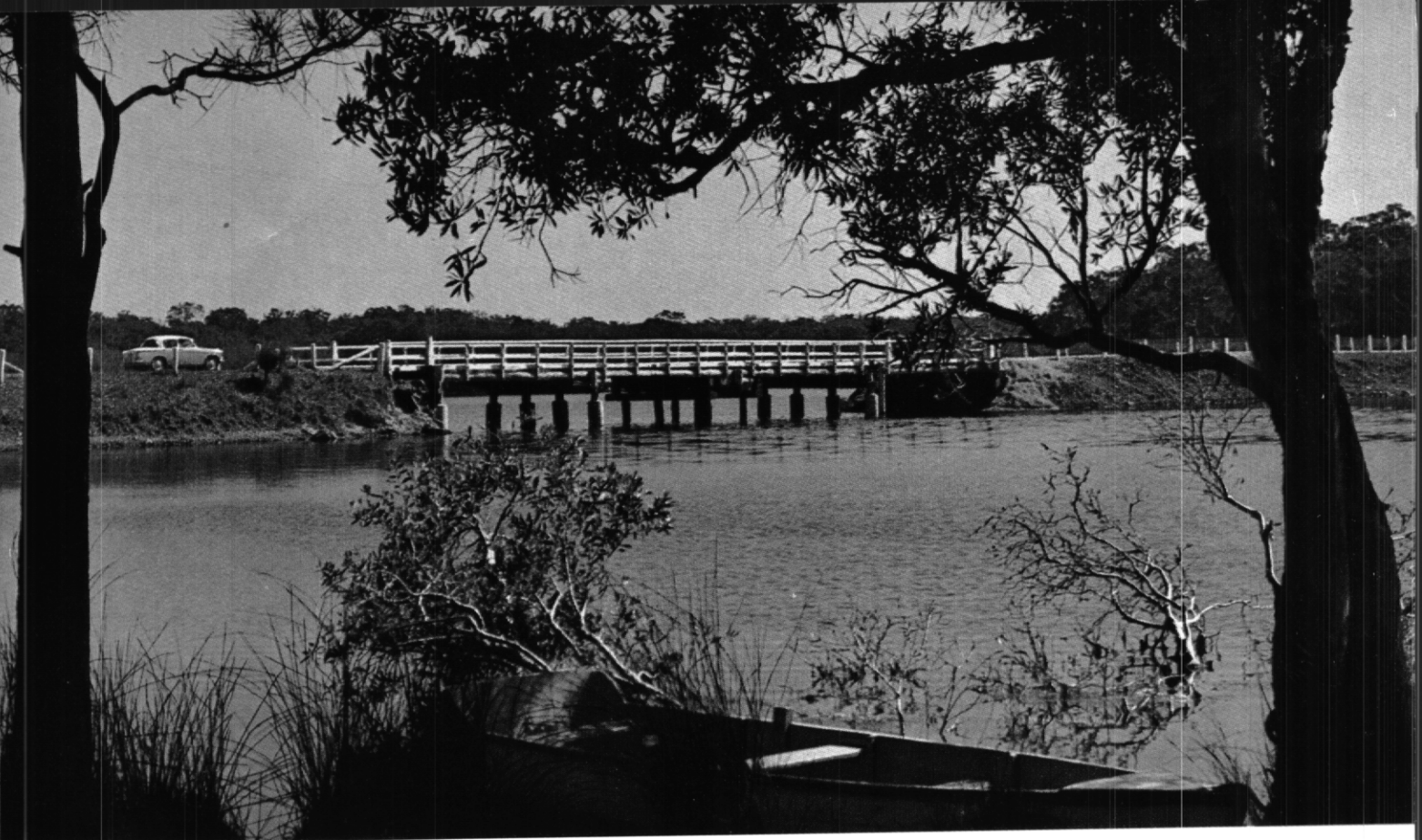
Laurieton and North Haven are river entrance resorts with excellent bathing and fishing facilities. There is a safe surfing beach at Bonny Hills where well developed camping facilities are available. These facilities are also available at Lake Cathie entrance where both surf and lake conditions provide various opportunities for holiday enjoyment.

From this road access is available to a number of more secluded undeveloped beaches. The road provides many attractive sea and lake vistas and the approach towards Port Macquarie is particularly scenic.

A section of the road in the Municipality of Port Macquarie, 4.5 miles in length, was previously Developmental Road No. 3099, and was constructed by

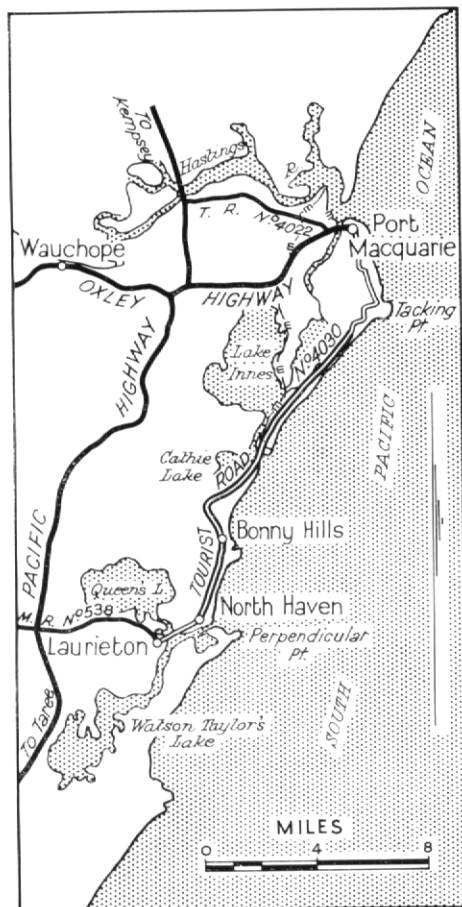






*Above: Bridge over Lake Cathie entrance*

*Below right: A completed section of road*



Council at a cost of approximately \$50,000, half of which was met by the Department. It is provided with a bitumen surface.

During 1964, following the proclamation of the road as a Tourist Road, Hastings Shire Council reconstructed a section immediately south of the Lake Cathie bridge at the shire boundary. This section is 2.7 miles long and built to a speed design of 50 miles per hour and provided with a bitumen surface at a cost of \$58,000. The Department provided half the cost of this work. Council is

now carrying out the reconstruction of the remaining length in the shire, the estimated cost of which is in the order of \$146,000. The Department is providing half the cost of this work which is expected to be completed late in 1966.

On completion of the construction of the full length of the proclaimed tourist road a good-standard bitumen pavement will exist from the Camden Haven River at Laurieton through to Port Macquarie.

The completion of this road will no doubt accelerate the development of this already popular holiday area.





*An Address  
by the Hon. P. H. Morton, M.L.A.,  
Minister for Local Government  
and Minister for Highways  
to the Australian Planning Institute Congress  
Sydney, August 24, 1966*



## *planning in new south wales*

As the Minister responsible for land use planning in this State I would like to take this opportunity of thanking the organisers of the Congress for the invitation extended to me to speak at this very important gathering.

As no doubt many of you are aware I have been at times a critic of planning in New South Wales. However I want you to know that I do not question for one moment the need for a complete understanding about our responsibility for the short and long term utilisation of our land resources. On the whole I believe Australians may have taken this need too lightly and this is regrettable. We are accustomed to talking about the wide open spaces and the problem of finding enough people to fill our vast and empty countryside, and in consequence most of us probably feel that there is little likelihood of Australia being faced with a serious land shortage.

But of course, there is more to it than this. Like almost every other country in the world we must determine how the utilisation of our land area, whether great or small, can be most efficiently organised for the benefit of the whole community. And when we look at the scene in the County of Cumberland and realise that, at the present rate of consumption, there is only seven years' supply of home building blocks remaining

under the present zoning scheme, it is apparent that there is a big task ahead of us which must be tackled without delay.

Planning, of course, is everybody's business, and good planning is to everybody's advantage. Our task is, in my opinion, to prove to everybody that this is true.

### SHORT HISTORY OF PLANNING

During the eighty years between the landing of the First Fleet and the end of the gold rush era, many towns were planned by the Crown. They conformed to very strict rules and established high principles of community planning. A fair proportion of our provincial cities and towns indicate the effectiveness of this initial planning.

However, following this period development took place without any Government interference. A form of town planning control was introduced under the Local Government Act of 1919 when councils were vested with the control of land subdivisions and provision was made for the proclamation of Residential Districts which protected residential areas from the intrusion of commercial and industrial development.

These provisions served a useful purpose up to a point but they did not provide the machinery for full and effective land use control as we know it today.

The tremendous urban development which took place in the years which followed made more comprehensive legislation a necessity, and in an endeavour to provide this Parliament passed the Local Government (Town and Country Planning) Amendment Act, 1945. This Act authorised the preparation of land use control planning schemes by Municipal and Shire Councils acting independently, or acting jointly through the agency of County Councils. These schemes, when prescribed, took on the force of law, and while their schemes were being prepared councils had the power to control interim development.

The Act set up the Cumberland County Council to prepare a master plan for the Sydney metropolitan area and the extra-metropolitan area so as to provide a regional framework for the preparation of local schemes. It also constituted the Town and Country Planning Advisory Committee whose function it was to advise the Minister and councils.

On June 27, 1951 the County of Cumberland scheme prepared by the Cumberland County Council, became law. The responsibility for implementing the scheme was shared by the County Council and its constituent councils. The State Government was to contribute half the cost of acquiring land required under

the scheme for public purposes of a county significance, and the County Council was to meet the balance of the cost from funds obtained by levies on its constituent councils.

Although the legislation which created the Cumberland County Council, and later legislation in 1962, did much to streamline planning procedures, dissatisfaction with the progress of planning persisted and the Government of the day decided to constitute a State-wide planning authority in an endeavour, among other things, to eliminate duplication of effort. This body replaced the Cumberland and Northumberland County Councils, the Town and Country Planning Advisory Committee, and the Town Planning Branch of the Department of Local Government.

It is interesting to note that, from the public's point of view, we have come almost a full circle since 1788. During the colonial days towns were planned through the agency of Crown ownership of land. The "laissez-faire" period followed the alienation of Crown land and during this time there was very little control. Now once again Government is participating in land-use control.

In a country where the public seems to be naturally sceptical of most forms of

Government activity, it was only to be expected that the introduction of statutory planning controls would not be welcomed with open arms. Probably this is a good thing as it makes Governments think twice before introducing legislation affecting personal liberties.

However I believe we have approached the stage where the public is accepting the principle of proper land use planning, and is also recognising the need for it. The development of public sympathy towards the cause of planning and the eventual generation of enthusiasm for your cause is, I believe, one of the most important and difficult problems which you will have to face.

#### ORGANISATION OF PLANNING IN N.S.W. TODAY

Today planning in N.S.W. can be divided into three general areas.

The first is land use planning and zoning initiated by local government, supervised by the State Planning Authority and implemented with Government approval. The second is planning by Government Departments and agencies which is carried out in liaison with the State Planning Authority and again is implemented only with Government approval.

The third is planning by private enterprise which is not always carried out in liaison with the State Planning Authority or other co-ordinating bodies and does not always require Government approval before it can be implemented.

It is immediately apparent that the State Planning Authority occupies a central position in planning in New South Wales. Its primary function is to co-ordinate planning by other bodies, whether they are Government, semi-government, local government or private.

Planning in most cases is originated by local councils. This I believe, is the proper approach as local councils are democratically elected and are well placed to express the wishes of the people of the areas which they administer.

My instructions are that Councils are to be fully consulted on all planning matters affecting their areas. The local Member of Parliament is also fully informed and therefore there are now frequent exchanges of ideas between officers of the State Planning Authority and local representatives.

The public exhibition of planning schemes, and the existing system of public enquiries into objections means that the public is given considerable opportunity to critically examine planning

The Department arranged this exhibit to illustrate its activities at the recent Wollongong Show and Trade Fair





proposals and has ample means of making any protest which it may feel necessary.

The need for co-operation between Government departments and agencies is obvious, and naturally Government departments correspond fairly freely about proposals which affect one another. However the existence of the State Planning Authority provides in effect a central bureau through which departments can co-operate to their mutual benefit.

The magnitude and importance of planning work carried out by departments and statutory authorities such as the Metropolitan Water, Sewerage and Drainage Board, the Department of Main Roads, and the Electricity Commission of N.S.W. is not always fully appreciated.

These authorities fall into two distinct categories. The first are those which deal with organisational and social issues which have an important but not a major influence on physical planning. These include the Police, the Department of Agriculture, the Department of Conservation and the Department of Education.

Other departments' forward planning has a very direct influence on land-use arrangements. Some influence greatly the movement of goods and persons, and therefore influence the distribution of urban settlement and encourage the growth of large industries.

Other departments plan large projects which utilise considerable amounts of land while others encourage the discovery, exploitation or development of new natural resources.

Some examples of this type of work can be found in the activities of the Department of Main Roads, and the Department of Railways. The Department of Public Works plans and constructs water supplies and sewerage systems, carries out important State works, and with the Maritime Services Board, is vitally concerned with the development of ports.

The Housing Commission of N.S.W. is the largest builder of homes in Australia and has large land-use demands which are of considerable importance; the Metropolitan Water, Sewerage and Drainage Board is responsible for water supply and sewerage over the whole of the Metropolitan area and part of the South Coast; and the Electricity Commission of N.S.W. generates nearly all the State's electricity and distributes bulk power to local reticulating authorities.

It is quite evident therefore that no effective land use planning can be carried

out without close co-operation between all these authorities.

The third facet of planning in New South Wales is planning by private enterprise. This is vitally important, although in many cases it does not have the same degree of influence as planning by Government departments. However the activities of our large heavy industries can influence the development of the State substantially and we cannot afford to leave them out of our overall conceptions for the future.

It is only occasionally that large industrial firms are forced to consult with the Government or the State Planning Authority about their future work but frequently they do this of their own accord.

The State Planning Authority has set up various sub-committees through which important industries can discuss proposals which will influence the State's overall development. These sub-committees are of an advisory character, and there is no restriction on their membership. At present a number of sub-committees are functioning, and other similar groups will be set up as the occasion demands.

In addition, the Authority is considering establishing regional planning committees to deal with important proposals relating to State and regional development.

What I have been trying to do in the past few minutes is to show you how N.S.W. is attempting to organise to achieve effective land-use planning. You will have noticed that I have placed considerable emphasis on co-operation, and I sincerely believe that this is a big part of the answer to the question "How do we achieve effective land-use planning." The task we face is certainly very formidable, and our efforts are handicapped by the lack of trained staff.

## ROLE OF THE STATE PLANNING AUTHORITY

As the State Planning Authority plays a central role in our planning efforts, I now intend briefly to outline to you its functions.

The State Planning Authority was constituted for the principal purpose of achieving co-ordination in town and country planning and of securing the more orderly and economic use and development of land throughout the State.

Its duties include:

□ the co-ordination of plans for the development and use of land, including land owned by the Crown and statutory bodies representing the Crown;

□ correlating public and private land uses; and

□ the co-ordination of land uses with the provision of utility services, transport facilities and other requirements for urban and non-urban development.

The Authority also has power to acquire, develop and dispose of land.

One of its important functions, particularly in the short term, relates to statutory planning. This function falls into two broad categories—its jurisdiction in relation to interim development appeals, and its examination of planning schemes for the purpose of advising the Government.

As I said at the beginning of my address, the prime responsibility for the preparation and implementation of planning schemes under Part XIIA of the Local Government Act, and for the administration of interim development control, rests upon the local council. Councils must also review their schemes in the light of changing circumstances.

The Authority's role is to ensure that schemes prepared by councils are, and I quote the Local Government Act: "Adequate and sufficient and that the planning principles contained in the scheme ..... appear ..... to be suitable for implementation."

Since its formation just over two years ago the Authority has devoted a lot of its time to speeding up the prescription of local planning schemes and has made considerable progress in this regard.

The Authority has done a great deal to protect the State's 600 miles of coastline which is a national heritage to be jealously guarded against indiscriminate despoliation by mining or by undesirable and premature urban subdivisions.

Progress has also been made in the introduction of interim development orders to prevent undesirable ribbon development along the State's main roads, and the acquisition of vacant land for public purposes—principally open space, and county roads.

To weld together the four organisations which the Authority superseded has been no easy task. Many problems had to be overcome, and I would like to pay a tribute to the patience and diligence of those involved.

## PROBLEMS OF FUTURE DEVELOPMENT

I now propose to deal briefly with the problems which face us in N.S.W. I do not intend to discuss these matters in detail as they are of a technical nature beyond the scope of my address.



The greatest single problem is planning for the development of the Sydney-Newcastle-Wollongong region. The population of the County of Cumberland is increasing at a rate of about 2.5 per cent, or 60,000 persons, a year and is expected to reach 5,000,000 by the end of the century. Many decisions will have to be made on how to accommodate this growth, provide the necessary public utilities and cater for the industrial and commercial development which it will bring in its wake.

The present County of Cumberland planning scheme is based on a projected population of 2.5 million people. It is quite evident therefore that a complete reassessment will have to be made of the planning of the County.

This will require a great deal of work and thought.

The Authority has already embarked upon this exercise, and is nearing completion of the first stage of its report which will deal with the pressing problem of providing land for urban development after the currently zoned urban areas have been exhausted.

The final plan for the region will follow later. This whole question, you can be assured, is being treated as one of great urgency.

One of the basic problems is how the State's great urban centres will be organised. The question arises "Should we permit continued urban sprawl, or plan for large new centres?" The Authority is also undertaking extensive investigations into this particular problem.

At the moment it foresees an urban region extending from Kiama (south of Wollongong) to Port Stephens (north of Newcastle). This area is expected to have a population of about six million by the year 2,000.

I believe Australians are only just beginning to realise how big this problem of urban planning on a regional scale really is.

From the Government's point of view it is a very real problem. Whether or not we consider it desirable, Sydney could expand to twice its present size within 34 years. From the point of view of traffic alone it is estimated that in the next 10 years our vehicle population could increase by as much as 100 per cent. This gives some idea of the urgency of the task ahead.

Sydney has space to create large urban settlements outside the existing limits of development but the problems

involved in initiating these settlements will require the exercise of considerable foresight and the marshalling of all our resources of intellect and materials. Not only will vision and co-operation between a multitude of people be needed, but vast amounts of money, effort and materials will be required.

## PLANNING PROBLEMS

So far I have outlined to you the history and structure of planning in New South Wales and discussed briefly some of the problems which confront us. I would now like to discuss my personal attitude to planning as the responsible Minister in this State.

In my opening remarks I said I recognised the need for planning, but I also admitted that I had been at times a critic of some aspects. The Government to which I have the honour to belong is a free enterprise Government. It believes that the prosperity of the nation is dependent to a very large extent upon the initiative and enterprise of the individual, and the freer the individual in the exercise of that initiative and enterprise the greater will be the prosperity of the nation.

Restraint designed to benefit the community at large is not necessarily incompatible with democracy and free enterprise, but we must be very careful that these restraints do not become an end in themselves; they must be exercised with a purpose in view and with wisdom, care and understanding.

One form of restraint is the control of land use and if a proper understanding is brought about I believe the individual will accept some degree of planning control in the interests of co-ordinated development, and the building of a better environment in which people may live, work and play.

To ensure that our democratic rights are protected, planning should be a co-operative process between various sections of the community. It should not be a case of the Government or semi-government sector imposing bureaucratic controls, but of all sectors exercising some degree of restraint in order to achieve an objective which is of mutual benefit.

Of course, in practice planning must have a basis in law so as to prevent irresponsible people destroying years of hard work by the rest of the community. But we who impose planning controls should forget that we have the legal power to compel until we have exhausted every possible avenue of co-operation and negotiation.

In my experience most of planning's troubles arise at the personal and practical level.

□ Planning's primary difficulty arises from the fact that it deals with people not objects. Planning affects people's right to do as they wish with their land, and of course most of Australia's land area is in private ownership. This is particularly so in all our cities, except Canberra where planning activity is concentrated.

□ The second difficulty follows on the first. This is the fact that in this State up to the present time we have rarely been successful in explaining the need for particular planning proposals, and what we aim to achieve by imposing them. Naturally this has resulted in large numbers of people becoming antagonistic towards planning proposals in general.

□ A third problem is the attitude of local councils to planning.

□ A fourth problem is that planning the world over is prone to becoming bogged down in a welter of administrative work. The machinery is often cumbersome and the wheels turn slowly. People who are anxious to get on with the job of actually carrying out some developmental project are often delayed for unreasonable lengths of time. It is difficult to excuse this slowness, and every possible means will have to be used to overcome the problem.

I will now deal with these problems individually.

(i) As I have said planning must be implemented with wisdom and understanding because it restricts the rights of the individual. It is well to remember that in planning we are dealing primarily not with inanimate objects, but with people, and this calls for human understanding in the enforcement of planning controls. Blind adherence to planning theory can cause human suffering and injustices which do the cause of planning no good.

It is very easy to justify decisions on the grounds of public interest. But what, in fact, is public interest and who is to be the arbiter of public interest?

In a democratic Government the executive is subject to the scrutiny of Parliament, which is not only the law-making body but is also the people's watchdog. But we all know that in this modern age the ramifications of Government are such that it is most difficult for Parliament to scrutinise every Government action as closely as it would like to.



Ministers also work at high pressure and must delegate some powers to officials.

With regard to planning, the danger in all this of course is that the rights of the individual could be subordinated to some person's conception of public interest, however altruistic that official's idea of his responsibilities may be.

(ii) My second point deals with the breakdown in communications between the planner and the public.

In my opinion Planning's public image is not good. Planners are endeavouring to bring great benefits to the community, but the public rarely hears anything about what is being attempted.

A positive attitude would be to give the Press and the public accurate information illustrating the constructive and beneficial work which is being undertaken.

Governments have a particular responsibility in this regard and I am sure an adequately informed public would make our task considerably easier. The State Planning Authority, at my request, is considering certain proposals which I hope will achieve this objective.

The need to fully explain our aims, if we are going to interfere with the liberty of the individual by the imposition of planning controls, is obvious. If we are not successful in this, the public could rebel, and this of course would be fatal.

We have a heavy responsibility to the future but we also have a heavy responsibility to the here and now. Long term planning is certainly in everybody's interest but in our democratic and free society the rights of the individual are paramount and nobody has a license to decide on anybody else's future without first consulting him.

The planner must have a very close relationship with the public at large. In addition to adequately informing the public, I believe planners should go into the field as frequently as possible, meet the people, and see the situation for themselves. It would be wrong to attempt to work out people's futures with merely textbooks and a drawing board.

(iii) My third point dealt with Councils' attitude towards planning.

Delay in formulating and approving planning schemes has also been the cause of many of the troubles in planning. Although the 1945 legislation empowered councils to prepare planning schemes, Councils were slow in moving to plan their areas.

In fact, of 39 councils within the County of Cumberland, which embraces the Sydney metropolitan and extra-metropolitan area, only four councils have

schemes prescribed. This, after twenty-one years of statutory planning in this State!

How can we be complacent with such a state of affairs? We cannot of course, and it is essential for us all to examine critically the position to see how it may be improved. Steps have been taken over the years to improve the legislative machinery of planning but the machinery is only as good as the people who handle it.

In my view the fault lies in many places. Many councils have been slow to realise their responsibilities for the preparation of planning schemes for their areas. They have relied too heavily upon the County of Cumberland Planning Scheme to justify the control of development within their areas. Many of the decisions made have been based upon parochial considerations without an adequate regard to the fundamental responsibility of councils to act reasonably in the exercise of their statutory responsibilities.

We find some councils changing their minds with changes in local pressures. The result has been the creation of situations which defy satisfactory planning solutions.

In my opinion there has been for years and still is, too great an interference by central authority in what are primarily matters of local concern. There has been a lack of definition of planning objectives and a clear demarcation of the responsibilities of the various levels of planning. The result has been a duplication of effort, lack of co-operation between councils and the central authority and quite often direct conflict between the two levels of planning.

This country is short of planners and will continue to be so for some time. Therefore we must make the best of the resources available. We must be certain that planners in the State Planning Authority are not doing the same work as planners employed by councils. We must define our planning objectives so that we know precisely what we are trying to achieve.

We cannot control every phase of human activity associated with land use so we must be certain that what we seek to do is necessary and important.

(iv) The fourth of the troubles to which I referred is the slowness of the machinery through which planning proposals must pass.

This is a young country which is developing rapidly. Development must be fostered and aided if we are to survive in a competitive world. Planning and planners have an important responsibility to assist development by guiding land

use into proper channels. But in guiding development we must be careful that we do not hinder it. We should not be too meticulous in dotting the "i"s and crossing the "t"s for if we do we will become so submerged in detail that our important planning objectives will be lost.

I offer these thoughts for your careful consideration because planning problems are pressing in upon us from all sides. As I said at the beginning of my address, vacant building land in zoned residential areas within the County of Cumberland is sufficient to meet the requirements of only the next seven years. Yet we are told that Sydney must plan for a future population of five million people by the end of the century. The need to determine where this huge population is to live is a major planning problem which must be tackled with a sense of urgency. This is indeed a tremendous challenge.

In New South Wales many planning schemes have taken years to process and as a result there has been uncertainty as to ultimate land use. When this occurs, it can cause untold injustices to property owners. Persons whose land may ultimately be required for public purposes cannot sell for the obvious reason that their market has been destroyed, and they cannot claim compensation because until the Scheme is prescribed there is no authority against which a claim for compensation can be made.

The State Planning Authority is very much alive to this situation and is making a determined effort to deal with the problem.

I think we now have a better procedure for dealing with planning schemes in N.S.W. However we are all very conscious of the fact that an improvement was long overdue.

I believe we should be continually looking at the efficiency of the administrative side of planning and everybody concerned, including myself, should give a great deal of serious thought to this problem to see if we cannot devise more freely moving planning machinery which still affords a high degree of protection to the individual.

CONCLUSION

We will make mistakes, and future generations will probably criticise our lack of foresight, as we now criticise our forefathers. But this is not a reason for abandoning our attempts to plan for a better future. Our own futures, and the futures of our children depend on what we do now, so despite our problems we must push ahead doing the best we humanly can.





# Repairs To Historic Bridge

Lansdowne Bridge over Prospect Creek is the second-oldest of David Lennox's stone bridges built on the Australian mainland. It is 130 years old and was officially opened by the then Governor, Sir Richard Bourke on 26th January, 1836.

The old bridge is situated on the Hume Highway, near Liverpool, 16 miles south of Sydney. Since the construction of a new concrete bridge at the site, it carries eastbound traffic over Prospect Creek; the new bridge carries west-bound traffic.

The National Trust of Australia has classified this bridge as "one of the structures as being of national importance, the preservation of which is regarded as essential."

The Department of Main Roads, responsible for the maintenance of the bridge, is cognizant of the historic importance of the structure and for many

years has maintained a close inspection of its structural stability and the weathering effect upon the stone. During the passage of years the exterior face of some of the stonework has been affected to varying degrees although there is no doubt of its soundness.

Because the Department has not the skilled knowledge within its own organisation it engaged the services of a consultant to advise on the condition of the stonework and the measures necessary to restore it. Mr Morton Herman, a Sydney architect, well known for his interest in and knowledge of historic structures, was commissioned to report on the bridge.

In his report, Mr Herman says of Lansdowne Bridge, "artistically it is Lennox's most important surviving work and only his now vanished Prince's Bridge in Melbourne surpassed it in size.



*Opposite page: The Lennox Bridge at Lansdowne*

*Right and below: Sections showing eroded face of stonework*

Some parts of the stonework of the bridge are in very good order. Other parts are deeply weathered and eroded, but as yet the defects are not threatening the stability of the structure. The average depth of badly weathered patches is about 1½ inches to 2 inches but there are a few places that are nearer 5 inches.

However, the erosion is a continuing and probably an accelerating process which must eventually become dangerous. In the meantime, the defects have become so conspicuous as to be unsightly.

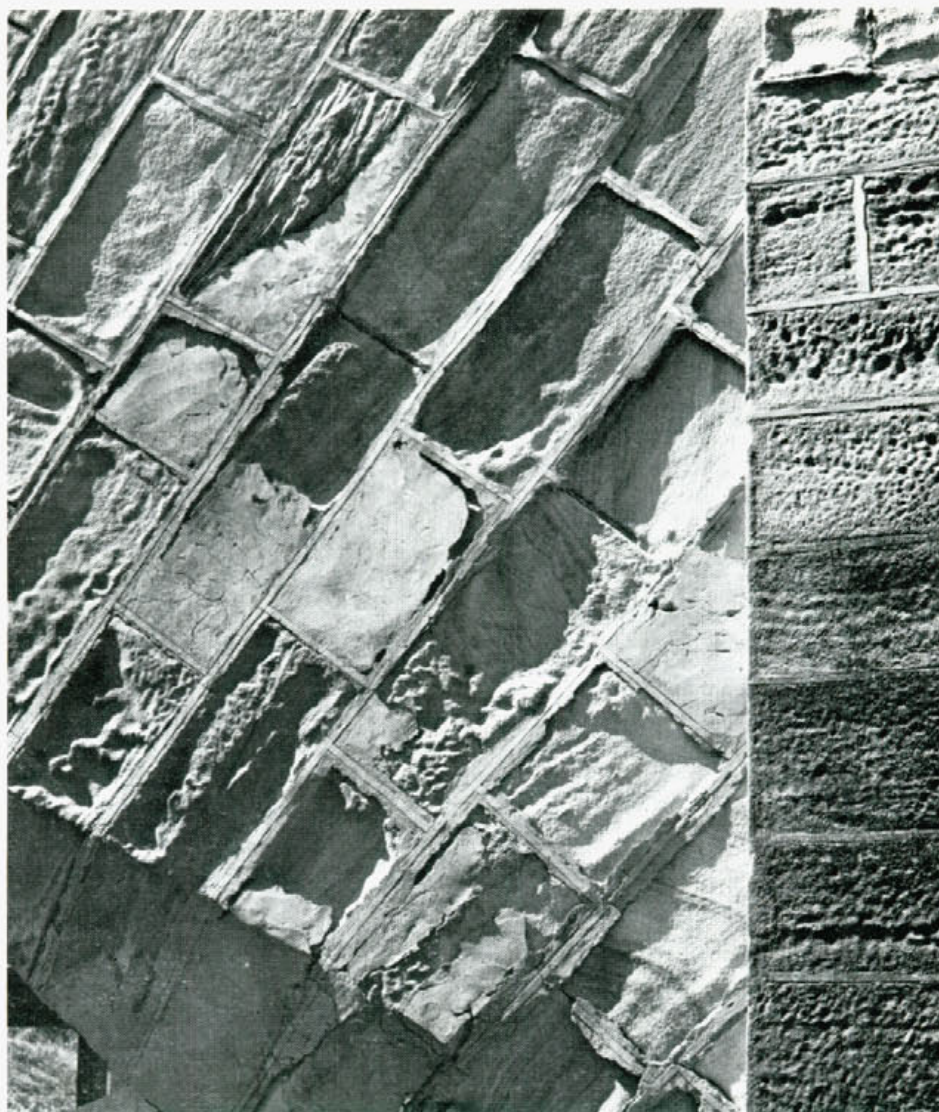
On the whole, deterioration is slow—and erratic. In a survey I took of the bridge in 1928, for instance, the weathering of joints and edges of the stones of the arch was not tremendously different from what it is now."

Mr Herman recommended that the following repairs be effected:

- Cracks to be repaired and made sound and watertight.
- Open joints to be pointed up solid with special plastic material.
- Badly weathered stones to be cut back and new facing stone, at least 3 inches thick, to be inserted and set in a special plastic material.
- The soffitt of the arch to be "combed" by pneumatic hammer to a depth of 2 inches to present a smooth surface to minimise wind action on stones; and deeply pitted stones to be re-faced.
- Other weathered surfaces to be "combed" where necessary.
- The whole of the stonework to be treated with a silicone preservative.

The Department accepted Mr Herman's report and recommendation and subsequently invited tenders for the repairs to be carried out. In May, 1966, a contract for the work was awarded to R. M. Watson Pty Ltd of Strathfield, Sydney, a firm of particularly skilled stonemasons. The contract price for the repairs is \$53,700. Because of the nature of the work and the difficulties associated with its execution, the time allowed for completion is 130 weeks.

Mr Herman has been retained by the Department to give advice on matters which may arise during the restoration work.







# METROPOLITAN DIVISION

The Department's Metropolitan Division is the smallest in area of all its fifteen Divisions, but offsetting this, it is the most densely settled residential, commercial and industrial area throughout the State.

It consists of twenty-eight local government areas, including the City of Sydney and extends from Palm Beach in the north to Waterfall in the south and westwards from the coast to the Ryde-Parramatta boundary. Its area is approximately 470 square miles.

Headquarters of the Division are located in offices constructed under the northern approaches to the Sydney Harbour Bridge at Milson's Point.

The engineer in charge of the Division is Mr R. W. P. Hirt, who became

Metropolitan Engineer in November, 1959, having previously been the Divisional Engineer of the South Coast Division. Mr A. F. Schmidt is the Assistant Metropolitan Engineer.

Day labour works are carried out from construction and maintenance works offices at Granville, which, for convenience, control work gangs from a number of sub-depots throughout the suburbs. An organization under the control of the Metropolitan Engineer maintains the Sydney Harbour Bridge and in addition, because of the number of other large bridges in the Division, there is a separate organization for general bridge maintenance and minor construction.

One of the special features of the road works carried out in the Metropolitan Division is the provision of asphaltic concrete for pavements and this material is supplied from a hot mix plant at Granville. The plant supplies all the needs of the Division and in addition supplies material to other Divisions, and, where necessary, to Councils for works on main and secondary roads. Its total output has exceeded 137,000 tons per annum, with a maximum daily output of over 1,000 tons.

In recent years a number of large construction projects have been undertaken in the Metropolitan Division, including:

- The North - Western Expressway between Drummoyne and Lane Cove including the Gladesville, Tarban Creek and Fig Tree Bridges.
- The Captain Cook Bridge over the George's River, with extensive approaches; the bridge and the southern approach forming part of the Southern Expressway.
- The new Roseville Bridge over Middle Harbour and the extensive approach works.
- The bridge over the Parramatta River at Silverwater.
- The new bridge over the George's River at Milperra.
- New Bridge over Parramatta River at Camellia.

In addition, an extensive programme of reconstruction and widening of main arterial routes has been carried out, including the duplication of carriageways on the Pacific, Hume, Great Western and Prince's Highways, Victoria Road and General Holmes Drive.

The construction of a number of large works is currently in hand, including the reconstruction and duplication of carriageways on the Prince's Highway at Sylvania Heights, Pacific Highway at Pymble, Woodville Road (including elimination of a railway level crossing at Granville), Milperra Road, Epping Road, Lane Cove, and the construction of a new De Burgh's Bridge over the Lane Cove River.

The staff of the Metropolitan Division is 230, comprising Professional, Clerical and General Officers, while the day labour work force numbers 1,328 who are skilled and unskilled workmen.

In the last financial year the expenditure in the Division was \$9,966,314 which includes day labour, contract and Council works. During the past five years, the total Divisional expenditure was \$61,165,342.



# Sydney Harbour Bridge Traffic Organization

The carriageway of the Sydney Harbour Bridge when it was completed in 1932, provided more than adequate capacity for immediate traffic requirements. The average daily traffic at that time was about 11,000 vehicles; only 10 per cent of the present traffic volume. The carriageway was marked in four lanes and no special arrangements were required to cater for traffic during peak periods.

The subsequent substantial growth in traffic using the bridge during the past 34 years has involved progressive rearrangements to cater for the increased usage. Firstly, the deck was re-marked to provide six traffic lanes. Later, to accommodate the morning peak traffic, four of the six lanes were made available to city bound traffic, while similar arrangements were introduced in 1951 for the evening peak northbound traffic.

Disruption to the even flow of traffic caused by disabled vehicles was a problem which became acute as traffic volumes increased. It had reached such proportions that, in 1951, the Department introduced a tow truck service to clear disabled vehicles off the carriageway quickly and so reduce delays and congestion to a minimum. Initially, this service was provided by a single truck which operated only during week-day peak periods. A police motor cyclist patrolled the bridge during these periods and informed the tow truck operator of the need for his services. He also accompanied the tow truck to the site of the disabled vehicles.

The towing service was extended in December, 1957, to include the Cahill Expressway and an additional vehicle was brought into use. Subsequently, further expansions to the traffic organization have been made and at present it consists of four tow trucks, a 30 cwt tabletop truck and a supervisor's utility. In addition, the Department meets the cost of the motor cycles used by the police officers who patrol the road.

At the beginning of 1955, emergency telephones were installed at various locations over the length patrolled by the traffic organization. These telephones are directly connected to the Tollmaster's office, which is manned 24 hours per day. In addition they alert the towing organization when on duty.

The communications system was improved in 1960 by the installation of high frequency radio telephones between the police patrol and the traffic organization.

The objective of the towing service is to keep the carriageway free of obstruction. In consequence no charge is made for the service. Disabled vehicles are towed to a convenient area clear of

*Above: A motorist calling for assistance on the emergency telephone*

*Below: The tow truck staff about to render assistance*





the road and the responsibility for procuring any further assistance rests with the driver of the vehicle. In some cases of minor difficulty, however, such as a flat tyre, it is sometimes more expedient to rectify the trouble on the spot rather than remove the vehicle by the tow truck.

Omnibuses constitute the major type of large vehicles using the Sydney Harbour Bridge. While the number of omnibus breakdowns is small, cases have occurred where they have been disabled through front tyre failure. Because of their size and the fact that they are normally loaded with passengers, the towing of omnibuses is undesirable. By arrangement with the Department of Government Transport, a range of omnibus front wheels are available to the tow truck organization, together with special equipment to change the wheels over.

The tow trucks are so dispersed as to enable them to reach any location from either direction. This is particularly important in multiple collisions when long queues of vehicles build up rapidly and the resultant congestion prevents quick access to the site from one approach. Also the available organization must be

capable of handling several vehicles simultaneously, not necessarily at the same location.

Because the service has been built up to meet the needs of traffic in peak periods, it is greater than required at other times. Consequently, as traffic volumes drop, units become surplus and the crews are diverted to associated work such as maintenance of signs and devices and the repair of markers.

The tow service is available every day except Christmas Day, operating between 6.45 a.m. and 6.15 p.m. on weekdays and 10.00 a.m. and 6.30 p.m. on weekends and public holidays.

The number of calls made on the organization in 1952 when it first commenced, in 1957 and each year since 1962 are shown in Schedule No. 1 and the reasons for the calls are shown in Schedule No. 2.

#### SCHEDULE NO. 1

Year (to May)	Calls	Av. per week
1951-52 .. ..	275	5.3
1956-57 .. ..	422	8.1
1961-62 .. ..	1,426	27.4
1962-63 .. ..	1,561	30.0
1963-64 .. ..	1,900	36.5
1964-65 .. ..	1,818	35.0
1965-66 .. ..	1,969	37.9

#### SCHEDULE NO. 2

Year (to May)	Engine	Transmission	Chassis	Tyres	Lack of Petrol	Accidents	Abandoned	Totals
1951-52 ..	139	26	7	19	75	9	..	275
1956-57 ..	196	33	3	17	148	20	5	422
1961-62 ..	528	134	52	108	525	72	7	1,426
1962-63 ..	491	152	68	162	600	80	8	1,561
1963-64 ..	643	178	93	201	629	147	9	1,900
1964-65 ..	648	157	23	154	655	148	33	1,818
1965-66 ..	731	138	12	221	730	106	31	1,969



It is a matter of very great concern that about one-third of the emergency calls relate to vehicles running out of petrol, which, with reasonable forethought could be avoided.

The traffic organization also changes the markers (known as "flaps" or "mats") which delineate the section of the carriageway available for each direction of travel. A technique has been developed which enables the operators to pick up and put down the markers at a travel speed of about 10 mph. This operation reduces to a minimum the obstruction to traffic.

Designed for use in heavy traffic, the tow trucks are readily visible, and each truck is equipped with a flashing beacon. In addition to this the radio telephone provides good inter-communication. As the crews are experienced in providing for the needs of traffic, the organization is suitable for use on special works requiring more than normal traffic control. The organization was used at night when the pavement of the Sydney Harbour Bridge was stripped by heat treatment in 1965 prior to the provision of a new surface course.

The Sydney Harbour Bridge Traffic Organization provides an essential service in ensuring that, to the extent practicable, the maximum capacity is obtained from the bridge roadway during peak periods. At other times it serves to reduce traffic delays to a minimum.

*Opposite page: Police escort using radio telephone equipment*

*Top: The disabled vehicle being towed away under Police escort*

*Bottom: Tow truck operators changing lane line indicators at the end of a morning peak period*



# SYDNEY HARBOUR BRIDGE ACCOUNT

Receipts and Payments for the period from 1st July, 1966 to 30th September, 1966

## Receipts

	\$
Road Tolls	970,034
Contributions—Railway passengers	71,322
Omnibus passengers	7,815
Rent from Properties	35,452
Miscellaneous	95
Loan Borrowings for the Warringah Expressway Approach	825,000
<b>Total</b>	<b>1,909,718</b>

## Payments

	\$
Cost of collecting road tolls	102,680
Maintenance and minor improvement	150,398
Loan Charges, payment of interest, exchange, management and flotation expenses State Loans	300,020
Administration Expenses	9,999
Provision of traffic facilities	26,526
Interest and provision for repayment—Loan Borrowings under Section 7 of Sydney Harbour Bridge Administration Act	50,108
Transfers to Expressways Fund	1,225,000
Miscellaneous	1,110
<b>Total</b>	<b>1,865,841</b>

# MAIN ROADS FUNDS

Receipts and Payments for the period from 1st July, 1966 to 30th September, 1966

	County of Cumberland Main Roads Fund	Country Main Roads Fund
	\$	\$
<i>Receipts</i>		
Motor Vehicle Taxation (State)	1,610,154	6,440,617
Charges on heavy commercial goods vehicles under Road Maintenance (Contribution) Act, 1958 (State)	584,839	2,339,357
Commonwealth Aid Roads Act, 1964	1,246,341	4,985,364
From Councils under Section 11 of Main Roads Act and/or for cost of works	2,522,249	7,234
Other	181,000	205,843
<b>Total Receipts</b>	<b>6,144,583</b>	<b>13,978,415</b>
<i>Payments</i>		
Maintenance and minor improvements of roads and bridges	1,324,778	4,743,052
Construction and reconstruction of roads and bridges	2,760,446	7,214,096
Land Acquisitions	1,015,569	118,039
Administrative Expenses	313,200	784,108
Loan charges, payment of interest, exchange, management and flotation expenses—State Loans	109,200	216,510
Interest and provision for Repayment of Loan Borrowings under Section 42A of Main Roads Act	33,010	..
Miscellaneous*	715,766	1,048,898
	<b>6,271,969</b>	<b>14,124,703</b>

\* Includes transfers to Special Purposes Accounts in respect of finance for Operating Accounts, Suspense Accounts and Reserve Accounts.



# TENDERS ACCEPTED BY THE DEPARTMENT OF MAIN ROADS

The following tenders (in excess of \$5,000) for Road and Bridge Works were accepted by the Department during the three months ended 30th September, 1966

Work or Service	Name of Accepted Tenderer	Amount
State Highway No. 2—Hume Highway. City of Liverpool. Widening of the prestressed, reinforced concrete bridge over the railway line at Warwick Farm to provide for six lanes of traffic.	Leewil Constructions Pty Ltd	\$ 197,700.00
State Highway No. 2—Hume Highway. Shires of Mulwarree and Wingecarribee. Supply, fabrication and protective treatment of 53 tons of steelwork for the construction of the bridge over Uringalla Creek, 6.75m. east of Marulan.	Arcflow Welders Pty. Ltd.	9,903.00
State Highway No. 4—Snowy Mountains Highway. Shire of Mumbulla. Manufacture and delivery of 70 precast, pretensioned concrete bridge units, each 35 feet long, for the bridge over Colombo Creek at Bemboka.	Gardiner Constructions Pty Ltd	12,090.00
State Highway No. 10—Pacific Highway. Shire of Nambucca. Foundation investigation for new bridge over Lower Warrell Creek near Macksville.	Monier Drilling Co. Pty Ltd	7,115.00
State Highway No. 10—Pacific Highway. Shire of Stroud. Construction of 3 span prestressed, reinforced concrete bridge, 192 feet long, over the Coolongolook River near Coolongolook.	Pearson Bridge Pty Ltd	79,641.00
State Highway No. 14—Sturt Highway. Shire of Balranald. Supply and delivery of aggregate to stockpiles between 14.10m. east of Buronga and 1.80m. east of Euston.	A. G. Leech Pty Ltd	42,840.00
State Highway No. 14—Sturt Highway. Shire of Balranald. Supply and delivery of aggregate to stockpiles at 23.80m. east of Euston.	Lake Boga Quarries Pty Ltd	19,571.76
State Highway No. 17—Newell Highway. Shire of Namoi. Construction of 15 span reinforced concrete bridge 525 feet long, over Bohena Creek, 8.70m. south of Narrabri.	A. & D. Road Constructions Pty Ltd	117,118.50
State Highway No. 22—Silver City Highway. Supply and delivery of precast reinforced concrete box culvert crown sections between 11m. and 21m. north of Wentworth.	Rocla Concrete Pipes Pty Ltd	14,016.80
State Highway No. 22—Silver City Highway. Supply and delivery of delivery of aggregate to stockpiles at 65m. south of Broken Hill.	Readymix Group (S.A.) Pty Ltd	12,781.86
Main Road No. 217—Shire of Lake Macquarie. Construction of 9 span reinforced, prestressed concrete bridge 664 feet long over Fennells Bay near Toronto.	Transbridge Pty Ltd	403,363.80
Main Road No. 225 and Developmental Work No. 3154—Shire of Colo. Foundation investigation for new bridges over the Hawkesbury River and Webbs Creek near Wiseman's Ferry.	Edwards Building Services Pty Ltd	11,137.00
City of Newcastle. Drilling of rock sockets in sandstone in connection with Benoto foundations for bridge over the North Arm of the Hunter River.	Allan Royle Pty Ltd	7,200.00
City of Newcastle. Supply and delivery of steel tube casing for Benoto foundations of Walsh Island approach spans of bridge over the North Arm of the Hunter River.	Humes Ltd	35,766.00

# TENDERS ACCEPTED BY COUNCILS

The following tenders (in excess of \$6,000) for Road and Bridge Works were accepted by the respective Councils for the three months ended 30th September, 1966.

Council	Road No.	Work or Service	Name of Accepted Tenderer	Amount
Abercrombie	T.R. 54	Construction of reinforced concrete box culverts at Bucks Creek and Shepherds Creek approximately 30m. from Bathurst.	R. Orford	\$ 20,082.00
Ashford	S.H. 16, M.R.'s 134, 137 & 187.	Bitumen surfacing at various locations.	Emoleum (Australia) Ltd	34,688.85
Bogan	S.H. 8	Supply and delivery of 1,022 cubic yards of aggregate to stockpiles at various locations.	Cobar Aggregate & Sand Supply.	7,566.19
Boomi	M.R. 232	Loading and delivery of 9,200 cubic yards of pavement gravels between 33.70m. and 36.20m. north of Moree.	E. G. Muggleton	7,852.00
Burrangong	M.R.'s 239, 241 and Shire Road.	Supply and delivery of 43,000 gallons of bitumen at spraying temperature for bitumen surfacing at various locations.	Shell Co. of Australia	13,436.85
Concord	M.R. 589	Reconstruction of Young Street and Sydney Street between Parramatta Road and Concord Road.	Annecci Constructions Pty Ltd.	17,095.00
Coolah	D.W. 3130	Construction of 3 span reinforced concrete bridge 105 feet long over Dennykymine Creek 2.50m. north of Merrygoen.	A. Goor Pty Ltd	28,303.89
Gilgandra	D.R. 1080	Construction of 4 span reinforced concrete bridge, 100 feet long over Tooraweenah Creek at Windurong.	Annecci Constructions Pty Ltd.	31,928.00
Goodradigbee	M.R. 249	Reconstruction to basecourse level between 5.75m. and 6.65m. south of Gundaroo.	A. C. Hill & Sons	24,851.00
Gundarimba	M.R. 544	Manufacture and driving of precast reinforced concrete piles for construction of bridge over Eleven Mile Creek 7.43m. from Lismore.	Dayal Singh Constructions Pty Ltd.	11,276.00
Hastings	M.R. 538	Construction of 5 span reinforced concrete bridge 342 feet long over the Camden Haven River at Kendall.	S. Turner & Son Pty Ltd	139,056.00
Kyogle	T.R. 83, M.R.'s 141 & 361.	Bitumen surfacing and resurfacing at various locations	Boral Road Services Pty Ltd.	15,258.09
Macintyre	M.R. 187	Bitumen surfacing and resurfacing of 144,240 square yards between 2.50m. and 19.10m. north of Inverell.	Emoleum (Australia) Ltd	18,637.60
Merriwa	Various	Supply and spraying of 31,000 gallons of bitumen at various locations.	Shorncliffe Pty Ltd	17,122.14
Patrick Plains	M.R. 128	Winning, loading, hauling and spreading of 22,910 cubic yards of rock at approximately 19m. from Singleton.	Moore's Earthmoving Pty Ltd.	22,451.00
Peel	M.R. 130	Construction of 5 span reinforced concrete bridge 175 feet long over Timbumburi Creek 5.75m. south of Tamworth.	Central Constructions Pty Ltd.	51,081.00
Scone	T.R. 62	Construction of twin 10 feet x 4 feet concrete culvert and pipe headwalls at Bishops Leap.	L. A. Hogan	6,419.56
Scone	D.R. 3183	Construction of 3 span reinforced concrete bridge 105 feet long over Gibbergunyah Creek 15m. west of Scone.	W. H. Marshall & Sons	17,632.00
Stroud	M.R. 111	Supply and delivery of Aggregate to locations at 8m. and 35m. east of the Pacific Highway.	Blue Metal & Gravel (Newcastle) Pty Ltd.	6,476.00
Timbregongie	T.R. 89	Bitumen surfacing between 19m. and 23m. south of Narromine.	Shorncliffe Pty Ltd.	13,256.94
Weddin	M.R. 398	Construction of 3 span reinforced concrete bridge 30 feet long over Emu Creek 8m. south of Grenfell.	Border Bridge Construction Co.	28,250.20
Wollondilly	M.R. 179	Construction of deviation including culvert at Clement's Creek 5.25m. from Appin.	J. A. & J. D. Holdings Pty Ltd.	52,787.00



