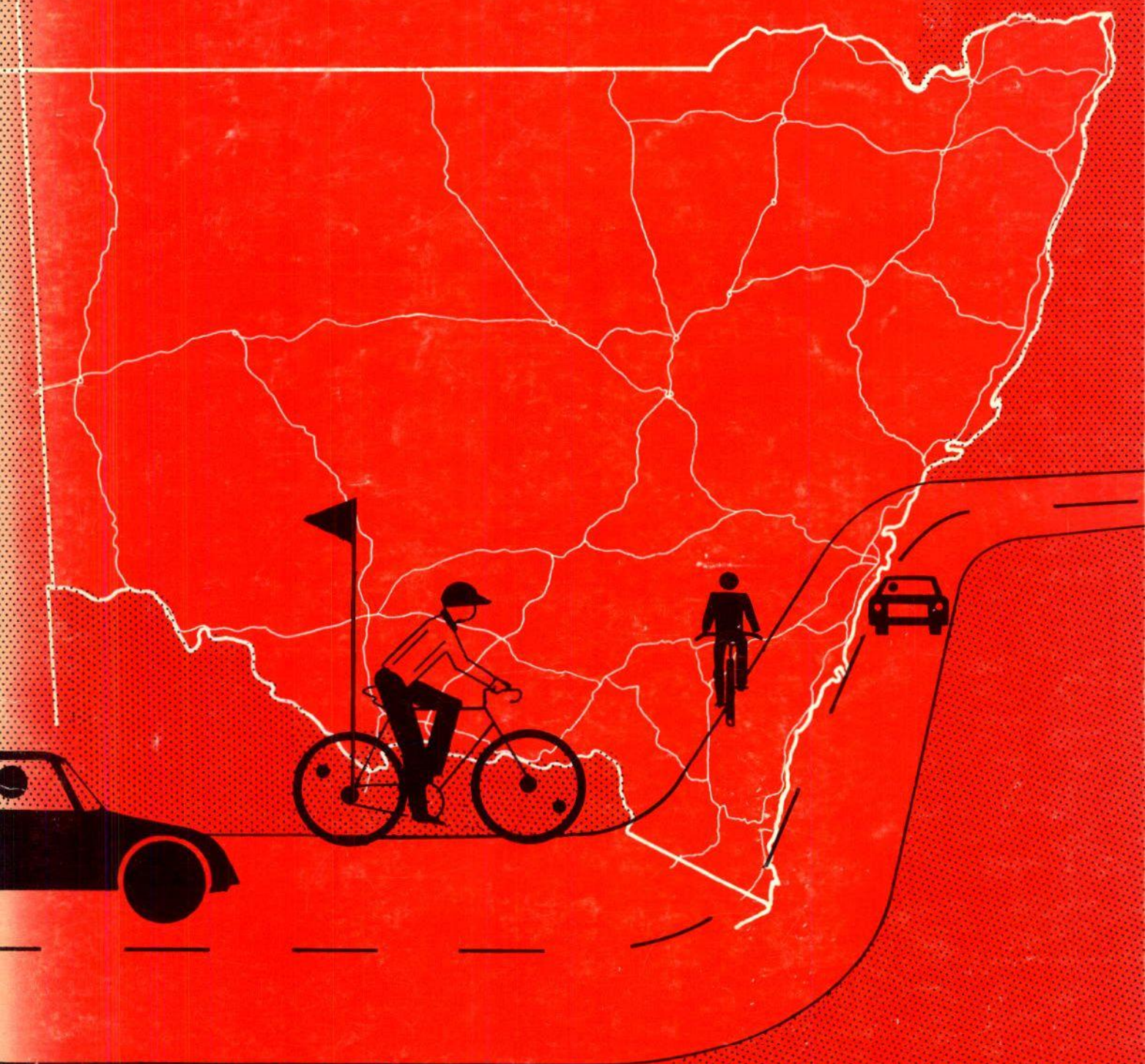


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ANNUAL REPORT 1978-1979



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TRAFFIC AUTHORITY OF NEW SOUTH WALES

Chairman, W. Butler

The Hon. P.F. Cox, M.P.,
Minister for Transport,
SYDNEY 2000.

Dear Mr Cox,

It is with pleasure that I submit to you for the information of Parliament the Annual Report of the Traffic Authority of New South Wales for the year ended 30th June, 1979.

The report gives a broad picture of the Authority's functions and responsibilities as well as outlining activities undertaken during the year in the development of traffic management techniques.

Information about ongoing research being undertaken by the Authority together with statistical data relating to the provision of traffic facilities and comparative yearly financial statements is also included.

Yours faithfully,

Chairman

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ISSN-0314-366X

Members of the Traffic Authority

Official Members

W. R. BUTLER, F.C.I.T.,
Commissioner for Motor Transport, N.S.W.,
Chairman.

J. T. LEES, Q.P.M.,
Acting Commissioner of Police, N.S.W.

B. J. SEXTON, B.E., F.I.E. (Aust.), F.C.I.T.,
Commissioner for Main Roads, N.S.W.

J. J. WICKHAM, F.I.M.A., F.T.C.S.,
Commissioner, N.S.W. Planning and Environment Commission.

Appointed Members

A. BRIGER, A.M.
Alderman, Council of the City of Sydney.

H. G. GOLLAND,
Councillor, Council of the Shire of Tamarang.

Assisting the Authority *

A. S. REIHER, B.C.E., F.I.E. (Aust.), F.A.I.M., F.C.I.T.,
Chief Commissioner, Public Transport Commission, N.S.W.

H. F. QUINN, Secretary, Sydney Sub-Branch, Transport Workers' Union of
Australia.

G. F. MESSITER, B. Sc. (Tech), M.Eng.Sc., M.I.E. (Aust.), Assistant Under
Secretary (Policy & Planning) Ministry of Transport, N.S.W.

The list shows membership at 30 June 1979.

*Following an amendment of the Traffic Authority Act Mr. Reiher became an
"Official Member" and Messrs Quinn and Messiter became "Appointed
Members" in July, 1979.

Mr. M. T. Wood, M.B.E., Q.P.M., ceased to be a member of the Traffic
Authority upon his retirement from the position of Commissioner of Police.
Mr. J. T. Lees, was appointed with effect from 6th June, 1979.

Mr. G. P. Webber, M.S., M.T. & C.P., B. Arch., F.R.A.I.A., A.R.I.B.A. ceased
to be a member of the Traffic Authority upon his retirement from the position
of Commissioner, N.S.W. Planning and Environment Commission. Mr. J. J.
Wickham, was appointed with effect from 6th February, 1979.

Principal Officers of the Secretariat

DIRECTOR
ASSISTANT DIRECTOR
SECRETARY

H. L. CAMKIN, B.E., Dip. T. & C.P., M.I.E. (Aust.), F.C.I.T.
C. TINSLAY, A.S.T.C. (Hons.), M.I.E. (Aust.), M.C.I.T.
A. J. PERCIVAL

Functions and Responsibilities

Traffic Authority Act, 1976

The Traffic Authority of New South Wales is constituted as a statutory corporation representing the Crown.

Under the Traffic Authority Act, 1976, the Authority has subject to the control and direction of the Minister for Transport the responsibility of:

- reviewing traffic arrangements in the State and formulating or adopting plans and proposals for the improvement of those arrangements;
- establishing general standards and principles in connection with the design and provision of traffic control facilities, and priorities for carrying out activities, works or services that are items of approved expenditure;
- promoting traffic safety;
- co-ordinating the activities of public authorities when they are directly involved in matters connected with the Authority's functions.

The Traffic Authority may engage in the promotion of traffic safety measures, publish advice and information and report or recommend to the Minister and others on control of traffic, traffic planning, safety, parking, traffic facilities, and related matters. It may also report and recommend to the Minister proposals for amending the law in relation to matters connected with the Authority's functions.

In this field the Traffic Authority has over-riding power and, in the exercise or performance of its functions, may direct other public authorities to implement its plans, general standards or principles established, or decisions made.

The Authority may delegate the performance of any of its functions to a member, a public authority, an officer of a Government Department or an officer appointed by the Authority and may determine principles and conditions under which a delegate may perform a delegated function.

Other Legislation

The Motor Traffic Act, 1909, and Regulations thereunder confer on the Traffic Authority responsibility for the administration of provisions relating to the regulations and control of traffic, of motor vehicles and their drivers upon public streets, the provision of traffic control facilities and the determination of speed limits on public streets.

The Metropolitan Traffic Act, 1900, and Regulations for General and Pedestrian Traffic require the Authority to administer provisions for the control of animal-drawn, pedestrian, bicycle and other non-motorised traffic in the Metropolitan, Newcastle and District, and Wollongong Transport Districts.

Determination of applications by councils for consent to the closure of a public road to through traffic or the opening of a road previously closed is a responsibility under the Local Government Act, 1919.

Also under the Local Government Act, the Chairman of the Traffic Authority, or a person nominated by him, is appointed as a member of a Parking Advisory Committee.

A further function is the determination of the need for removal of any light, sign, hoarding, awning or structure which obscures or could be mistaken for a light, sign, or device provided for controlling or aiding traffic on a railway, road or waterway as provided for in the Traffic Safety (Lights and Hoardings) Act.

Policies and Objectives

The Traffic Authority's general objectives are —

- to promote safety and efficiency in the use of the State's road system, having regard to traffic, social and environmental interests;
- to provide an administrative system for the management of road traffic responsive to community needs, and to changes in social attitudes and values, as well as innovations in technology;
- to continually review the stated role, functions, membership, financial structure and objectives of the Traffic Authority itself to ensure that it keeps pace with future developments in community needs, social attitudes and technology and, as necessary, to recommend appropriate changes either in the legislation or the Authority's administration.

In pursuing these objectives the Traffic Authority has adopted a policy of delegating decision-making on operational details of purely local significance as far as possible to Local Government Authorities and, on those of regional significance, to the Divisional Offices of the Department of Main Roads. It has provided safeguards in the instruments of delegation to ensure maintenance of high and proper standards and consistency of application of traffic control facilities and requires Councils to seek the concurrence of local representatives of the Police Department so far as safety and enforcement aspects of a proposal are concerned, and of the Department of Main Roads in respect of both safety and traffic operations.

Legislative Constraints Experienced

A degree of constraint on the efficient discharge of the Authority's responsibilities exists in the situations that —

- The Authority has powers to direct a public authority to implement its plans, or standards or principles established, or decisions made in the course of its normal functions, but there is no provision in the Traffic Authority Act to enable the Authority to enforce such a direction.
- The Authority has not experienced difficulty to the extent that urgent action to make legislative changes is necessary at this time. However, the position is being kept under review.
- The Local Government Act and certain Ordinances still recognise various other Departments, but not the Traffic Authority itself, as "traffic authorities" in respect of matters such as planning schemes and development applications. Thus in development matters, for example, Councils are frequently required to seek the views of several Government Departments and are free to implement or approve proposals which impose additional traffic problems on the Traffic Authority without it having been consulted. In this regard, ordinances and instruments such as Planning Schemes and Interim Development Orders are being progressively amended and over-riding legislative amendments are planned.

Organisation and Management

The Minister for Transport

The Traffic Authority is subject to the control and direction of the Minister who appoints the Members of the Authority other than the four official Members, and who may remove any such appointed member. The Minister has control over the funds expended by or for the Authority, as discussed in the Section, "Financial Results".

The Traffic Authority

The Traffic Authority (Amendment) Act, 1979, passed by Parliament towards the close of the 1978-79 period will, when the relevant sections are proclaimed to commence (expected to be a date early in July, 1979), provide for five official members, an increase of one, and four appointed members, an increase of two.

The Chief Commissioner of the Public Transport Commission will be an official member, and the additional appointed members will be a person nominated by the Transport Workers' Union of Australia (New South Wales Branch) and a person appointed by the Minister as his personal representative.

The amending legislation will also provide that any act or thing done by the Traffic Authority will not be invalidated because certain persons, namely those shown in the schedule on page 3 as "Assisting the Authority", have acted as members of the Authority.

To expedite the decision-making necessary for day to day operations throughout the State, the Traffic Authority has delegated much of the responsibility to local representatives who are far more familiar with local problems than are Authority members. Details of such delegations are included in the Section, "Other Instrumentalities". The Authority has, however, retained to itself the role of determining —

- Policies
- Priorities
- Programmes

Proposals in this regard are normally submitted by its committees or member organisations and regular meetings are held to discuss these matters, ten official meetings being held during the year.

The Traffic Authority has available to it the facilities and officers of its member Departments and other public authorities where necessary. In consequence, it has no need to directly employ a large number of technical experts to deal with day to day problems.

Deputy Members

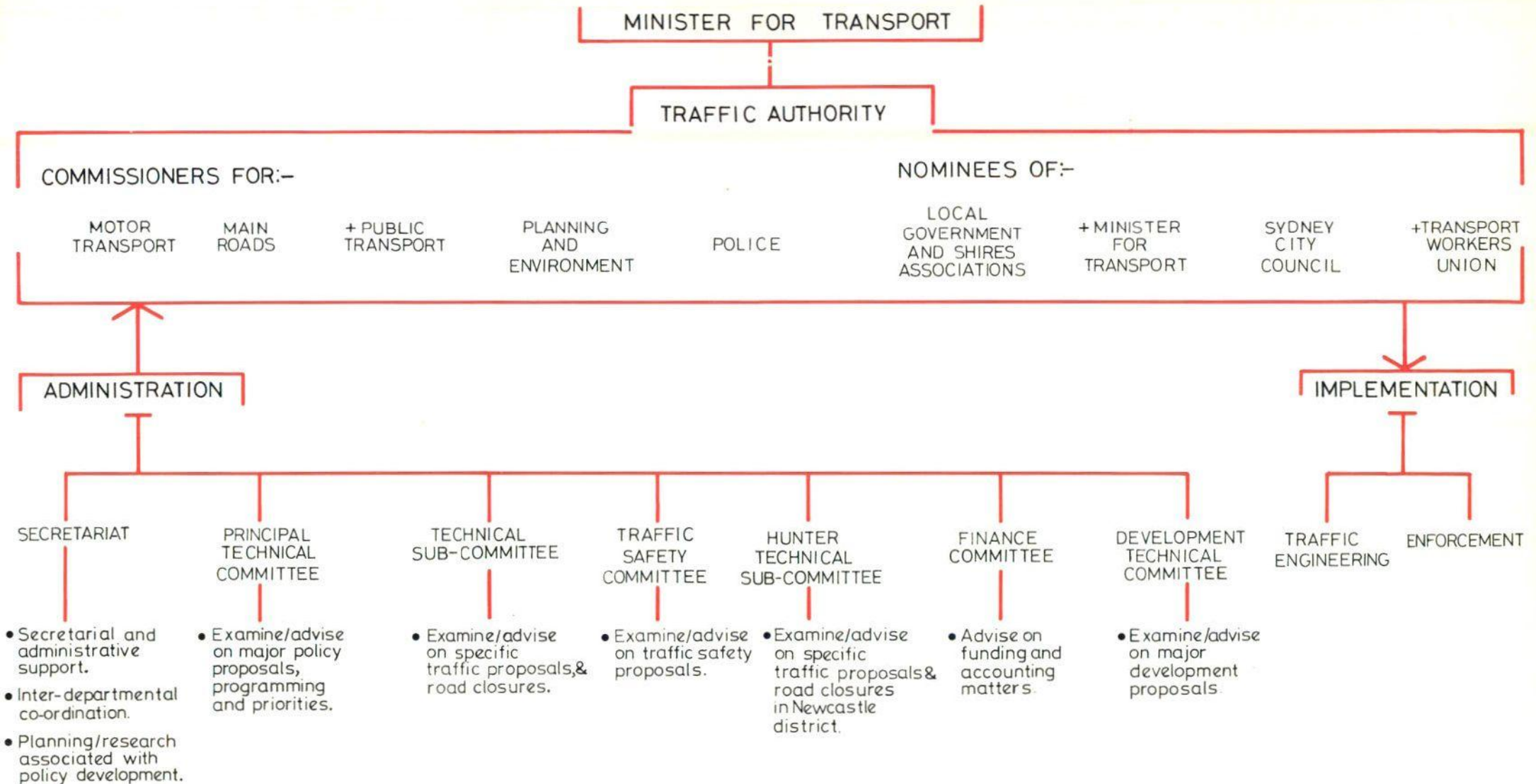
Mr. N.C.M. Skinner, Assistant Commissioner, Department of Motor Transport; Mr. B. N. Loder, Deputy Commissioner, Department of Main Roads; Mr. B. D. Taylor, Assistant Commissioner of Police (Traffic); Mr. P. Standen, Chief Planner, N.S.W. Planning and Environment Commission; Mr. J. Calpis, Alderman of the Council of the City of Sydney; Mr. R. T. Gosling, Nominee of the Local Government and Shires Associations of N.S.W.

Deputy Members of those assisting the Authority are: Mr. E. W. Lyndon, Associate Commissioner and General Manager Bus Services, Public Transport Commission of N.S.W., Mr. E. Edwards, representing the Transport Workers' Union of Australia (N.S.W. Branch) and Mr. R. Daly, Assistant Under Secretary, Ministry of Transport, N.S.W.

The Secretariat

The Secretariat is provided by the Chairman as a Branch of the Department of Motor Transport and comprises administrative and technical officers with wide experience in traffic planning and administration.

ORGANISATIONAL CHART



+ UNOFFICIAL MEMBERS

Committees

Principal Technical Committee

Senior officers nominated by the Departments represented on the Traffic Authority comprise the Principal Technical Committee appointed by the Authority to advise and assist it on major policy matters. The Committee meets regularly and matters discussed during the year included:

- Special lanes for bicycles.
- Preferential parking schemes for residents.
- Preparation of guidelines for road closures.
- Road fatalities in New South Wales.
- Extension of peak hour clearways.
- Annual works programme and priorities for traffic-signals and other traffic facilities.
- Provision of traffic facilities on new link roads.
- Development of a metropolitan parking policy.
- Policy and standards for traffic generating development.
- Review of traffic law observance and enforcement measures.
- Vehicles allowed to turn left on red signals in certain instances.
- Use of transit lanes by heavy commercial vehicles.
- Priority for buses leaving bus-bays and bus stops.

Technical Sub-Committee

Senior officers nominated by the organisations represented on the Traffic Authority comprise the Technical Sub-Committee appointed by the Authority to advise and assist it in the implementation of major traffic management schemes in particular areas, and in relation to other matters referred to the Sub-Committee. This committee meets regularly and among the matters considered during the year were —

- Road closures — applications submitted by various Councils for consent under the Local Government Act.
- Introduction of particular transit lanes and bus lanes.
- Action Plans and redevelopment schemes by Councils.
- Introduction of tidal-flow traffic movements.
- Implementation of preferential resident-parking schemes.
- Provision of grade separation for pedestrians.
- Signposting of light traffic thoroughfares.

Development Technical Committee

The Development Technical Committee comprises senior officers of the New South Wales Planning and Environment Commission, the Police Department, Department of Main Roads and the Traffic Authority Secretariat. Its principal function is to advise the Authority in relation to land and building development proposals of a traffic-generating nature. This Committee is serviced by the Planning and Environment Commission and performs substantially the role of that Commission's former Ribbon Development Sub-Committee now disbanded.

Hunter Technical Sub-Committee

The Hunter Technical Sub-Committee comprises senior representatives based at Hunter Regional offices of the Departments and organisations represented on the Traffic Authority. It advises and assists in the implementation of major traffic management schemes in the Hunter Region. Matters considered by the Committee during the year included:

- Peak-hour clearways.
- Problems caused by "give-way" signs on bus routes.
- Road closures.
- Traffic movement in Newcastle business district.
- Parking of heavy vehicles on streets.
- Effects on traffic of proposed Government office block.

Finance Committee

A committee of officers comprising the Chief Accountants of the Department of Main Roads and the Department of Motor Transport and the Secretary of the Traffic Authority constitute the Finance Committee appointed by the Authority to advise and assist it in matters relating to the provision of funds for carrying into effect the Authority's objectives and works programmes.

The Finance Committee reported on Budget estimates for 1978-79, and for 1979-80, and monthly reviews of expenditure from the Traffic Facilities Fund during the year to 30 June, 1979.

Traffic Safety Committee

A special Traffic Safety Committee was formed in February, 1979 to advise and assist the Traffic Authority in dealing with matters within the traffic safety field. The Committee comprises senior officers of the Police Department, Department of Main Roads, Department of Education, Health Commission, Department of Justice, Traffic Accident Research Unit of the Department of Motor Transport, and the Traffic Authority Secretariat — being organisations in which expertise relevant to traffic safety seem to be most beneficial to the group.

Apart from the expertise available from the members of this Committee, the Traffic Authority sees its establishment as a significant development in the co-ordination of Education, Health and Judicial safety initiatives and programmes with those of the administrations of Transport, Roads and Police traditionally seen as the more active traffic safety organisations.

Other Instrumentalities

The establishment of the Traffic Authority in 1976 brought about substantial changes in the administration of traffic control throughout the State. The responsibility for traffic control previously vested in the Commissioner of Police was transferred to the Authority and traffic engineering activities previously undertaken by the Department of Motor Transport (traffic signals, regulatory signs and roadmarkings) were transferred to the Department of Main Roads.

Apart from the formal links with other instrumentalities derived from its membership, the Traffic Authority and its administrative staff continued association with a number of standing, and 'ad hoc' committees during the course of the year. These included —

- Urban Transport Advisory Committee (URTAC),
- Major Airport Needs of Sydney Study (MANS),
- Various Parking Advisory Committees,
- Australian Road Research Board (ARRB) Technical Committees,
- Bondi Junction Committee,
- Woolloomooloo Re-Development Technical Committee,
- Botany Bay Sub-Region Study,
- Centennial Park — Moore Park Interdepartmental Committee,
- MacArthur Development Board — Technical Committee,
- Standards Association Technical Committees,
- Haymarket Entertainment Centre Liaison Committee.

During the year the Authority was represented by its administrative staff at conferences and seminars on topics directly related to its functions, thus —

- 9th Australian Road Research Board Conference, Brisbane
- LPG and Natural Gas as Transport Fuel in Australia, Melbourne.
- First National Conference, Australian Institute of Energy, Newcastle.
- The 5th Australian Transport Research Forum, Sydney.

Department of Main Roads

Under the Traffic Authority Act the Department of Main Roads is the Authority's principal operations and construction agency and has been vested with authority to install traffic facilities on all public roads within New South Wales.

The Authority has delegated to the Commissioner for Main Roads the power to authorise traffic facility devices on any public road within the State, subject only to the policies, priorities and programmes adopted by the Traffic Authority. These powers are exercised by the Department's Divisional Engineers located throughout the State.

Department of Main Roads staff undertook all routine operation, maintenance and emergency repair work of traffic facilities, including traffic signals, in the Sydney, Newcastle and Wollongong areas. In other areas signal maintenance was carried out under contract by the local electricity supply authority, while maintenance of other traffic facilities was undertaken by the Department of Main Roads or by the local Council, as mutually convenient.

Details of the traffic facilities installed or maintained by the Department of Main Roads for the Traffic Authority are given in the Section of the report, "Traffic Engineering Works".

Department of Motor Transport

In keeping with its statutory responsibility for promoting traffic safety the Traffic Authority's operations, policies and objectives are orientated to safety, as well as efficiency in the regulation and management of traffic on public roads.

The Traffic Accident Research Unit of the Department of Motor Transport has, since 1969, provided an advisory service on all matters relating to traffic safety-based research both in New South Wales and elsewhere. The Unit's own research covers aspects of human factors, environmental factors and vehicle factors involved in motor vehicle operations and crashes.

The Research Unit's staff, resources and equipment, are available to the Traffic Authority as required and details of the Unit's activities and research programmes during the year are included in the Annual Report of the Commissioner for Motor Transport.

Local Government Authorities

Delegation and decentralisation of decision-making to a local level for the provision of traffic control facilities required to solve or avoid a local problem is an essential component of the Traffic Authority's overall strategy. It has therefore arranged for Councils to authorise minor traffic facilities on roads other than main and secondary roads. It has also delegated powers to Councils to consent to the closure of local roads where this is seen to be in the public interest.

To ensure consistency of standards and treatment throughout the State, guidelines as to good and proper practice are issued to Councils to assist them in the exercise of these powers. Additionally, prior to implementing any approval, they are required to obtain the agreement of regional representatives of the Police Department so far as safety and enforcement aspects of a proposal are concerned, and of Department of Main Roads in respect of both safety and traffic operations. Where public transport services are involved, the guidelines require that consultations take place with the Public Transport Commission and/or Department of Motor Transport.

Local Traffic Committees, comprising representatives of Council, Police and Main Roads, and the local Members of State Parliament, serve as a means of expediting decision-making in this area.

Enforcement

All decisions on traffic control must have regard to both the need for, and the practicality of law enforcement. In this regard the Commissioner of Police has responsibility for the enforcement of traffic laws and regulations relating to decisions taken by the Traffic Authority or its delegates. Senior officers of the Police Department are members of the Technical Committees mentioned in the Section, "Committees".

Local Involvement

Traffic Authority delegations have continued to operate through the Department of Main Roads and Councils in the case of traffic facility devices on main roads and local roads respectively, and through Councils in respect of the more recent delegation for road closures. The Council Traffic Committees have enabled these delegations to operate with the minimum of delay in the case of local roads and have provided a useful forum for discussions of other traffic matters.

The Department of Main Roads has continued to convene or to be represented on a number of standing and 'ad hoc' working parties at local level for the Traffic Authority. These working parties have dealt with matters ranging from road closures to light traffic thoroughfares, local traffic management schemes to regional traffic management schemes, commuter transport routes to public transport routes, individual development applications to town centre development proposals and have reported to the Authority recommending appropriate action.

Traffic Management Schemes

Three-year programme

Recommendations were made by the Urban Transport Advisory Committee (URTAC) in February, 1976, for an accelerated programme of traffic engineering works and traffic management schemes to be introduced over a three year period commencing in July, 1976. The Committee nominated specific matters for the Authority to undertake as a complementary part of the recommended traffic management programme.

With the provision of additional funds for this purpose in each of the years 1976/77, 1977/78 and 1978/79, substantial progress was made in the implementation of that works programme. Details of achievements during the past year are given in the section, "Traffic Engineering Works".

Priority to High-Occupancy Vehicles

The Traffic Authority has the task of undertaking a continued examination of possible benefits and costs, both public and private, from the allocation of road priority, including transit lanes, to high-occupancy vehicles such as buses, and to taxis and car pools.

Bus Lanes

In areas where there is a high density of bus traffic associated with generally heavy traffic congestion causing significant delays to buses and disruption to schedules it has been a practice to provide special "buses only" lanes, or alternatively, "transit lanes".

Bus lanes may be provided on either the left kerbside lane or the right kerbside lane (in a one-way flow system) and are validated by the Motor Traffic Regulations which prohibit the driving in a bus lane of any vehicle except a bus, a taxi-cab, a private hire car or a motor cycle, or a vehicle which is about to turn to the left (or right, in a one-way street) at the next intersection. No new bus lanes were introduced during the past year.

Transit Lanes

Transit lanes are basically a development of "Bus Only" lanes. They are designed to provide faster and more reliable public transport for commuters, in an endeavour to increase patronage and to reduce the number of cars on the already overtaxed main road system in peak hours. However, the retention of a kerbside lane for the sole use

of buses, especially over long distances, on heavily-loaded arterial roads such as on the Spit Bridge and Victoria Road routes would result in extreme over-loading of other lanes.

To ease this situation, taxis and vehicles carrying three or more occupants, and motor cycles, are permitted to use the lane thus gaining benefit of lower travel times and providing a more evenly balanced use of the road as a whole. More efficient use of both vehicle and road is thereby encouraged, and a measure of restraint emerges to discourage the use of "low-occupancy" vehicles.

Transit lanes in Sydney have, in every case, been introduced in an effort to overcome major existing problems being experienced by peak hour commuters in all vehicles, not just buses. These problems had been growing rapidly in recent years and general traffic conditions thereby degenerating rapidly. It was obvious that some additional capacity was needed to provide for the growth in commuter movements over the next few years. In each case, implementation of the transit lane was associated with several other traffic management measures, including in appropriate cases, tidal flow, intersection and signal improvements, and local traffic management schemes designed to remove through traffic from parallel streets in adjacent residential areas.

During the year to 30 June 1979 the Victoria Road transit lane was extended across the Gladesville Bridge for citybound traffic in the morning peak period, thus completing a transit lane route of about 10 km between Gladesville and White Bay.

At the close of the period, investigations were under way into proposals for further transit lanes on sections of Epping Road and Pacific Highway at either end of the Longueville Road transit lane, and also on Warringah Freeway on the northern approach to Sydney Harbour Bridge.

Since the inception of the transit lanes, bus passengers travelling via the densely trafficked Spit Bridge and Victoria Road routes have experienced a substantial improvement in regularity and reliability of bus service. There are no longer wide daily variations in journey times and the bus passenger is now confident of reaching his work place at the appointed time. Other transit lane users have also benefited from the priority facility and associated traffic management measures introduced.

Bus Priority — Right of Way

As a means to improve schedule adherence, minimise delays to bus passengers and generally help to enhance the public image of bus services as a major commuter transport mode, measures to afford priority to buses in traffic have been under consideration. Priority for buses at traffic signals was mentioned in a previous annual report.

Under one method, "active" priority, significant costs are involved in fitting electronic equipment to buses to activate traffic signals to change to a green phase on the approach of a bus and it was not demonstrated at that time that the expenditure would result in an appropriate return from an investment point of view. While "passive" priority schemes relying on the use of existing signal controllers and vehicle detectors were seen to have greater benefit-to-cost ratio than "active" priority schemes, experimental work with bus-mounted equipment is in progress in a number of cities elsewhere and developments will be monitored by the Traffic Authority.

Attention is also being given to delays to buses leaving bus stops and bus bays. Traffic flow on arterial roads is clearly improved by the removal of stopping buses from the traffic stream to bus bays, but the disbenefit to the bus operator and the bus passengers from the delays incurred in re-entering the traffic stream are recognised. The granting of priority to buses in those circumstances would overcome the problem but further study needs to be done to establish the feasibility of such a scheme and the best means by which it might be introduced.

Bus Operations — Problem Areas

The introduction of full intersection control on main traffic routes (known as "priority road" conditions) prompted criticism that, where bus routes enter a major road and the minor or intersecting road is controlled by a 'stop' or 'give way' sign, delays to buses because of difficulty in gaining entry to the major roads were severely disrupting timetables and service efficiency. Details of some locations identified as being troublesome were referred to Council Traffic Committees for examination. Remedial action was taken where practicable.

In the Newcastle district, similar problems occurring at a number of intersections brought under notice by the Public Transport Commission and the Australian Tramway and Motor Omnibus Employees' Association, were investigated and resolved by the Hunter Technical Sub-Committee.

Clearways

A "Clearway" restriction is one under which motor vehicles, other than buses, taxi-cabs and private hire cars actually picking up or setting down a passenger, are not permitted to stop during the hours and on the streets so designated by signs.

These restrictions are in force on many of the major traffic routes through the Metropolitan area and may apply between the hours of 6.30 a.m. to 9.30 a.m. and 3.30 p.m. to 6.30 p.m., Mondays to Fridays on one or both sides of such routes as considered necessary for achieving the maximum use of the roads concerned for the movement of traffic.

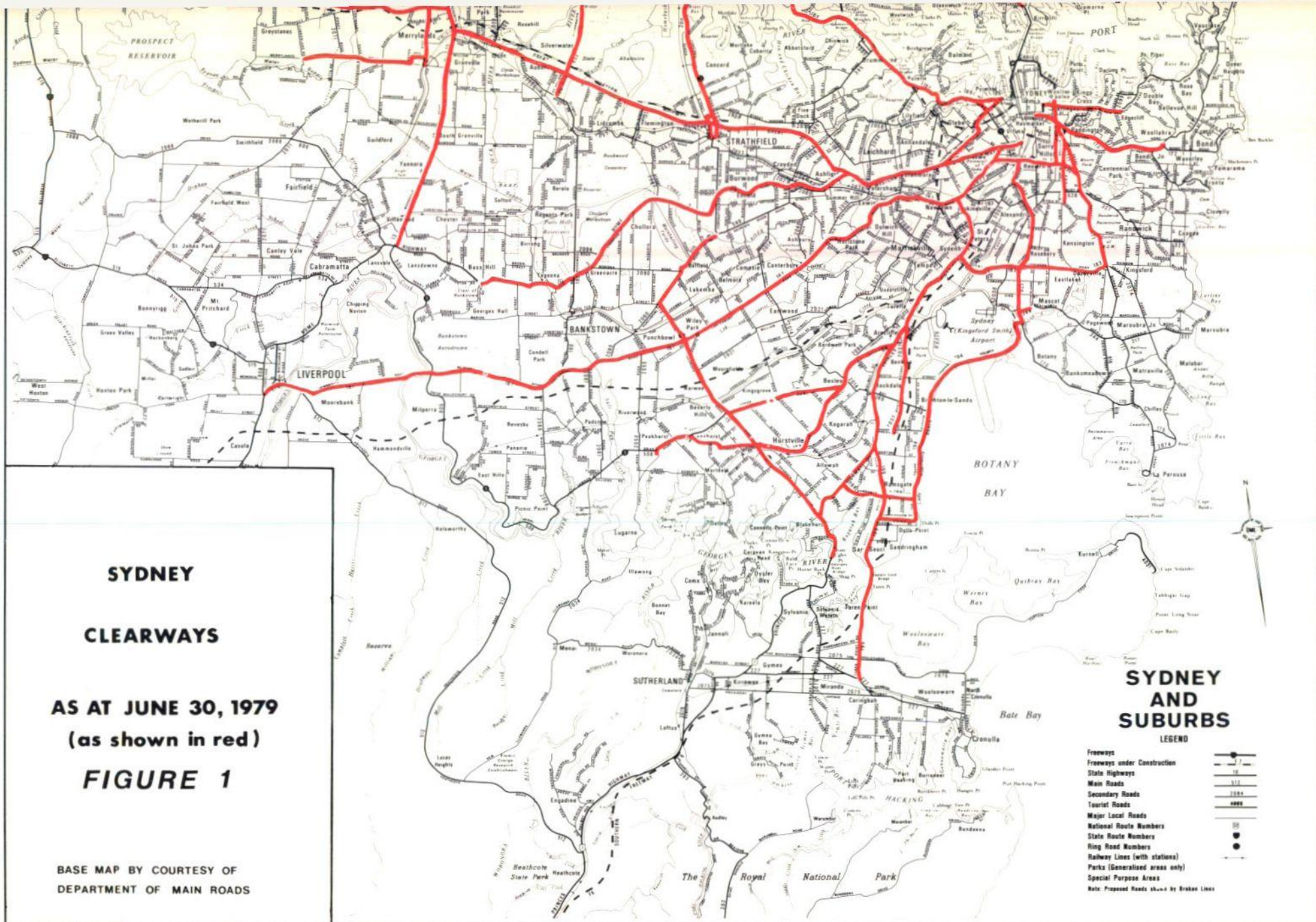
Clearways in operation in New South Wales at present are designed specifically to assist week-day peak hour movement. It is recognised, however, that the demands of industry and commerce and to a degree the needs of recreational traffic, are such as to warrant similarly utilising the maximum capacity of roads at other times.

Research on the social and economic costs and benefits of extended clearway hours, that is "off-peak" clearways, has been completed. This has provided a method of quantifying these factors in relation to vehicle-operating, person-time, extra costs to retailers for disruption to loading and unloading, costs of displacement of shoppers' vehicles, and costs to residential areas due to displacement of on-street parking. A trial application of the method has been made on sections of two arterial roads. This showed that if an off-peak clearway produced average speed increases of approximately 5%, then the total social, economic and rear-access installation costs would be balanced by the reduction in vehicle operating and driven-time cost.

Draft warrants and policies for the future implementation of off-peak clearways are currently being developed. Undertakings have been given to Councils and Chambers of Commerce that off-peak clearways will not be introduced without prior consultation with those bodies.

In the past year peak-hour clearways were introduced in both morning and afternoon periods on arterial routes in the Sydney Metropolitan Area at the following locations, Beecroft Road (Epping — Pennant Hills), George and Jersey Streets (Hornsby — Asquith), Pennant Hills Road (Parramatta — Pearce's Corner, Wahroonga), Pitt Street (Merrylands — Parramatta), Macquarie Street, Parramatta (Pitt Street to O'Connell Street), O'Connell Street, Parramatta (Macquarie Street to Albert Street), Albert Street, Parramatta (O'Connell Street to Church Street), Neil Street, Merrylands (railway overbridge to Treves Street), Treves Street, Merrylands (Neil Street to Merrylands Road), Merrylands Road, Merrylands (Treves Street to Cumberland Road, Newbridge Road (Liverpool-Milperra), Terminus Street (Liverpool), and Old Northern Road (Baulkham Hills — Castle Hill Road). Details are shown at figure 1. As well, peak hour clearways were introduced on 7 km of the Pacific Highway between Charlestown and Merewether in the Newcastle Metropolitan area.





Intersection Controls on Main Traffic Routes

The give-way-to-the-right at intersections rule which has long applied on all types of roads, from multi-lane highways to quiet residential streets is now being replaced generally by specific controls such as "give-way" signs and traffic signals.

These controls are aimed at creating a smooth flow and absence of turbulence, essential ingredients of safe and efficient traffic movement, and assist in obtaining the maximum capacity from the main road system.

Eventually, all of the main road system, including State highways, main roads, and secondary roads will be converted to this pattern. In addition, other roads which already carry significant volumes of traffic which cannot be accommodated on the main road system will be similarly treated.

Routes with full intersection control were established during the year on 14220 km of arterial roads by installation of 'Give Way' and 'Stop' signs. The sealed main and secondary road system is now 90% complete throughout the State. Ultimately, drivers travelling on any road with a marked centre line or median or lane lines may expect control by regulatory signs or signals at every intersection.

The routes under full intersection control in the Sydney Metropolitan Area, Wollongong district, Newcastle district, and throughout the remainder of the State as at 30 June 1979 are shown in Figures 2 to 5.

Left Turn on Red Signal

At certain intersections where traffic signals are installed and where the left turn movement is channelised but not controlled by a signal, signs are displayed "Turn left at any time with care".

Research has been conducted by the Traffic Authority to ascertain the feasibility of permitting traffic to turn left when facing a red signal (LTOR) at particular intersections without the above-mentioned facilities.

This practice is common, in the form of right-turn-on-red (RTOR) in North America where it is used in both "generally permissive" and "sign permissive" (or generally prohibited) modes.

Benefits accruing from this technique are time-savings to drivers, increased vehicle flow through intersections, and reduced fuel consumption because of reductions in waiting time at red signals.

The research study team developed a set of site-selection criteria which could be applied, and upon application of those criteria to signal-controlled intersections in the Sydney Metropolitan area, 30 intersections have been selected for the introduction of the technique during a one year trial period. The "sign permissive" mode is to be adopted and the Motor Traffic Regulations have been amended to prescribe the use of signs worded "LEFT TURN ON RED PERMITTED AFTER STOPPING". Commencement of the scheme will be later in 1979, after necessary 'before' studies are made of traffic volumes, delays and accident rates.

Light Traffic Thoroughfares

The powers under which Councils now proceed to declare roads as light traffic thoroughfares were provided to ensure protection of the road pavement and not designed with matters of environmental amenity in mind. The Traffic Authority sees no objection to the application of traffic management techniques or controls so as to preserve or enhance local amenity, and indeed recognises the need in many instances for positive action to be taken in this direction, but it considers that existing procedures are inadequate to ensure that there is proper regard to all of the consequences.

The Traffic Authority considers that, when contemplating the establishment of light traffic thoroughfares for environmental reasons, Councils should be required to

follow procedures similar to those laid down in the Local Government Act for dealing with road closures. It has therefore recommended that the Local Government Act be amended to repeal Councils' present powers to impose load limits on public roads, except upon certification by a Council engineer that the road is structurally unsuitable for heavy vehicles, and to substitute in lieu thereof powers for Council to proceed in a manner similar to that provided for by Section 269A in respect of closure of roads.

Such an arrangement, if adopted would ensure that Councils fully canvass all aspects of particular proposals and provide an opportunity for public comment by people who may be affected in any way. Councils in neighbouring areas will also be assured of advance notice of proposals which may have repercussions beyond the boundary of the area in which they are planned.

Resident Parking Schemes

The parking of commuters' motor vehicles on streets surrounding major public institutions, industrial centres, sporting and recreational centres and shopping centres continues to inconvenience residents and business people whose premises front those streets.

To assist residents who do not have off-street parking space and who cannot reasonably provide such a facility, preferential parking schemes may be introduced by Councils, with the Traffic Authority's consent in individual cases. Under these schemes residents in a defined area will be able to obtain from the Council a "parking authority" covering a specified term and on display of the authority in a vehicle parked on a street where 'period' parking, for example, 1 hour, 2 hours, etcetera, is in force, the particular vehicle may be parked without restriction. These schemes generally operate during the hours 8.00 a.m. to 6.00 p.m. Mondays to Fridays and are known as "Resident Parking Schemes".

Such schemes have been introduced in sections of the City of Sydney (at South Paddington) and the Municipalities of Woollahra (at Watsons Bay), Leichhardt (at Glebe), South Sydney (at Darlington), and Randwick (at Randwick).

The Traffic Authority has published "Guidelines for Resident Parking Schemes" to assist in their planning and implementation by Councils.

Traffic Flow Monitoring

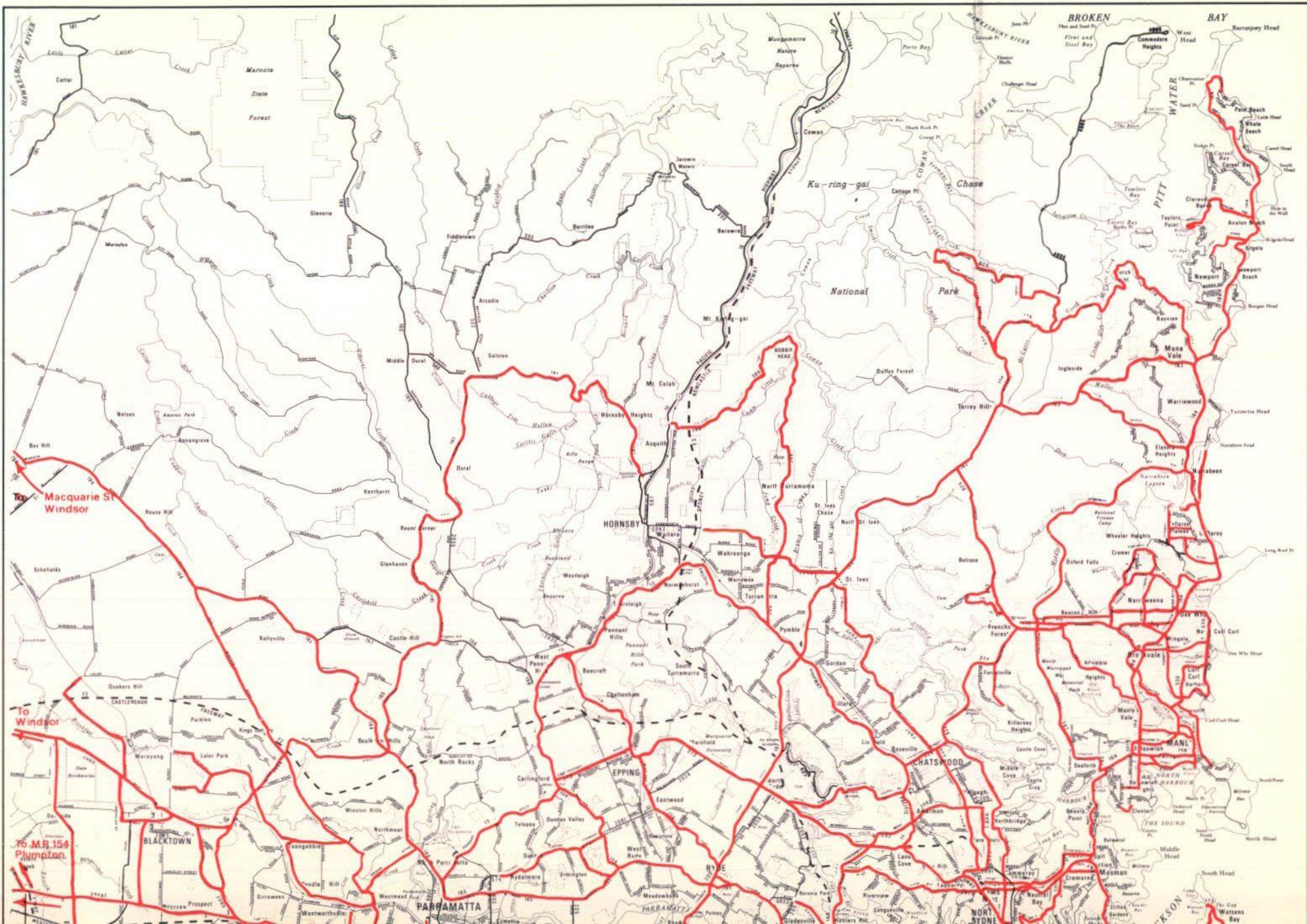
Significant traffic engineering works designed to improve the flow of vehicles on arterial routes are being introduced progressively as funds become available and evaluation of their effectiveness is an essential function of the Traffic Authority. A comprehensive programme has therefore been introduced to survey road travel times on all major trafficked routes including main and secondary roads, and some Council-controlled roads, radiating from the City of Sydney and on circumferential routes.

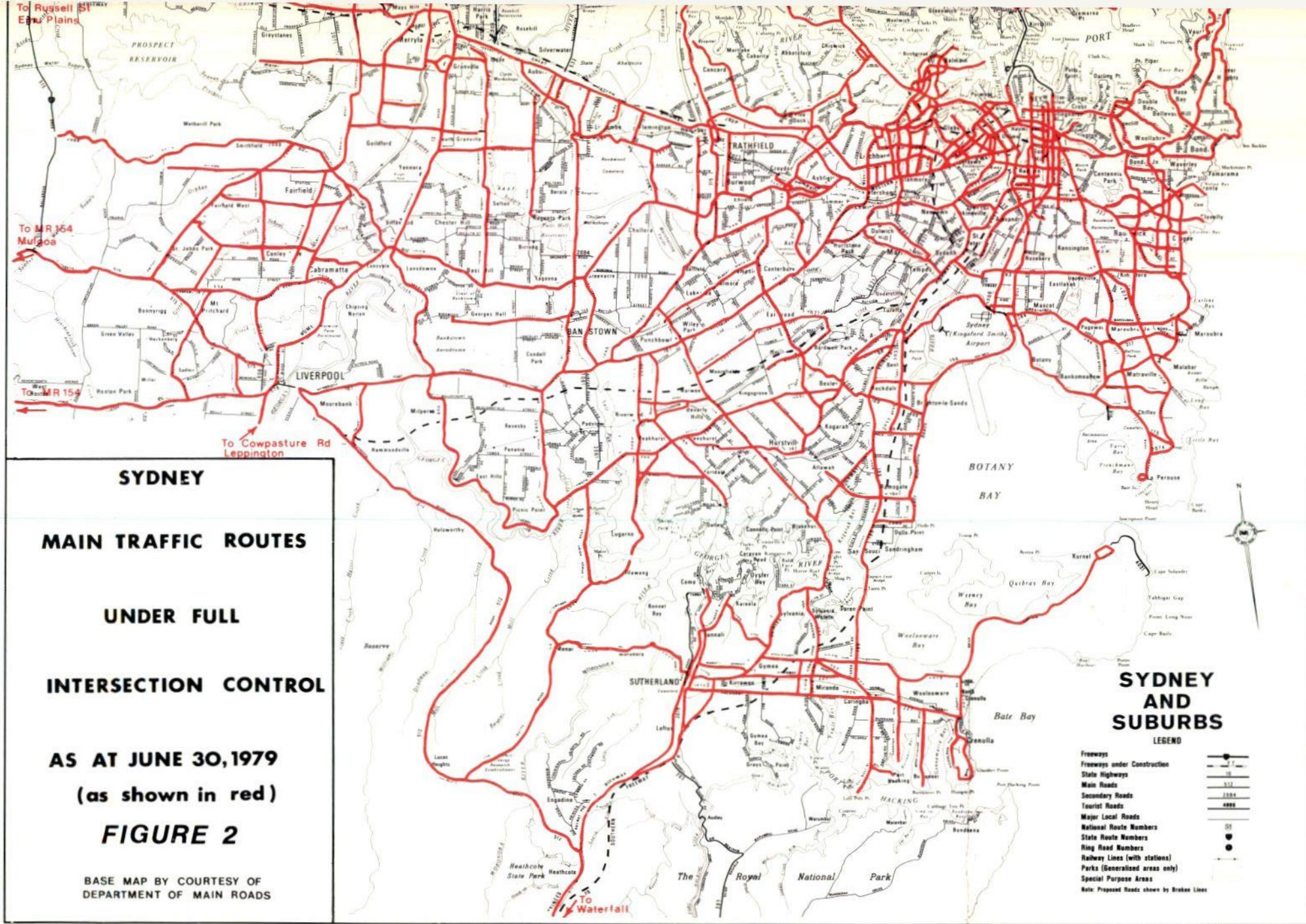
The surveys are planned to record mean travel times and to show variations in mean running speeds for vehicles generally. Bus travel times are studied as a separate exercise with the assistance of the Public Transport Commission.

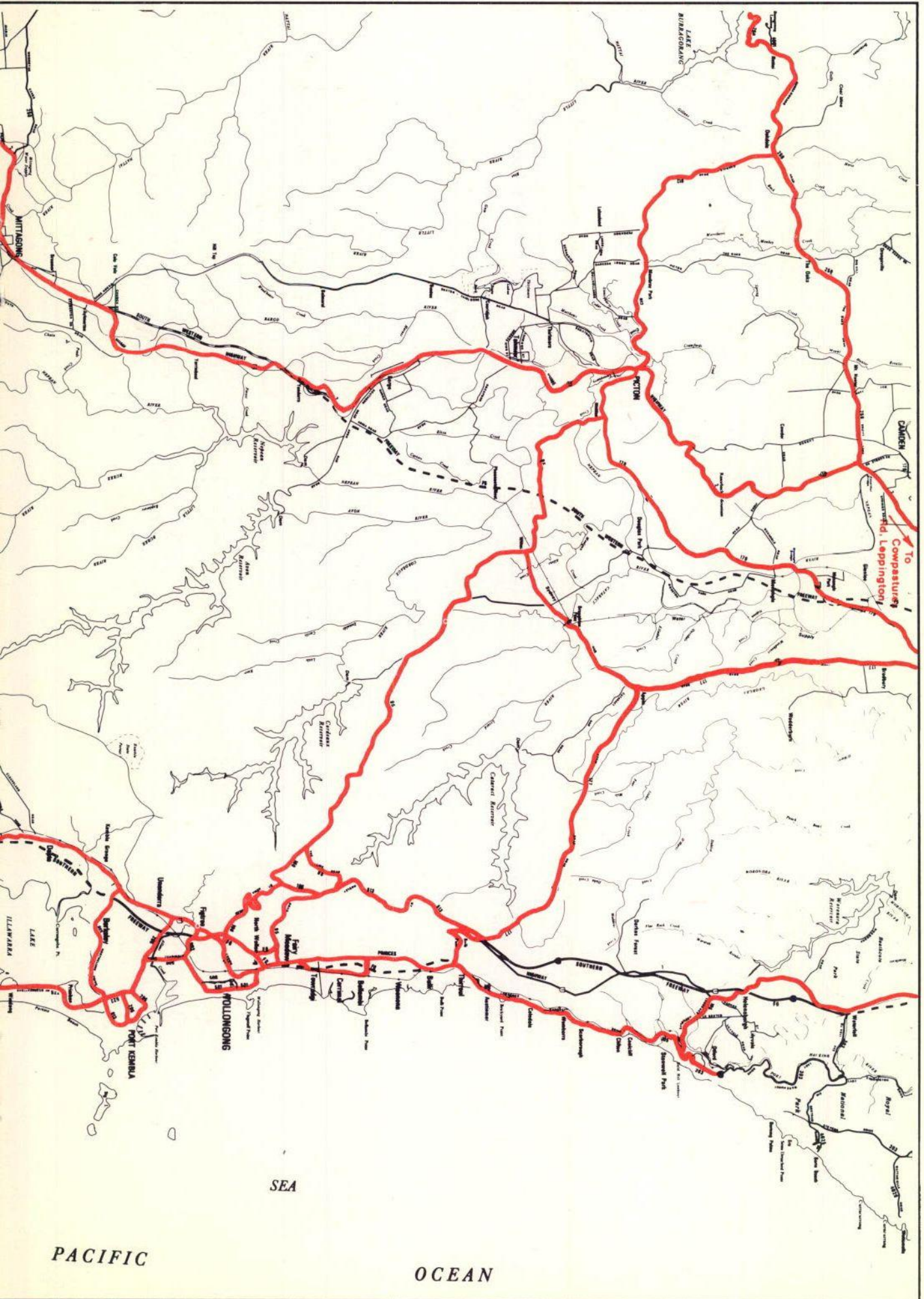
Tidal Flow Traffic

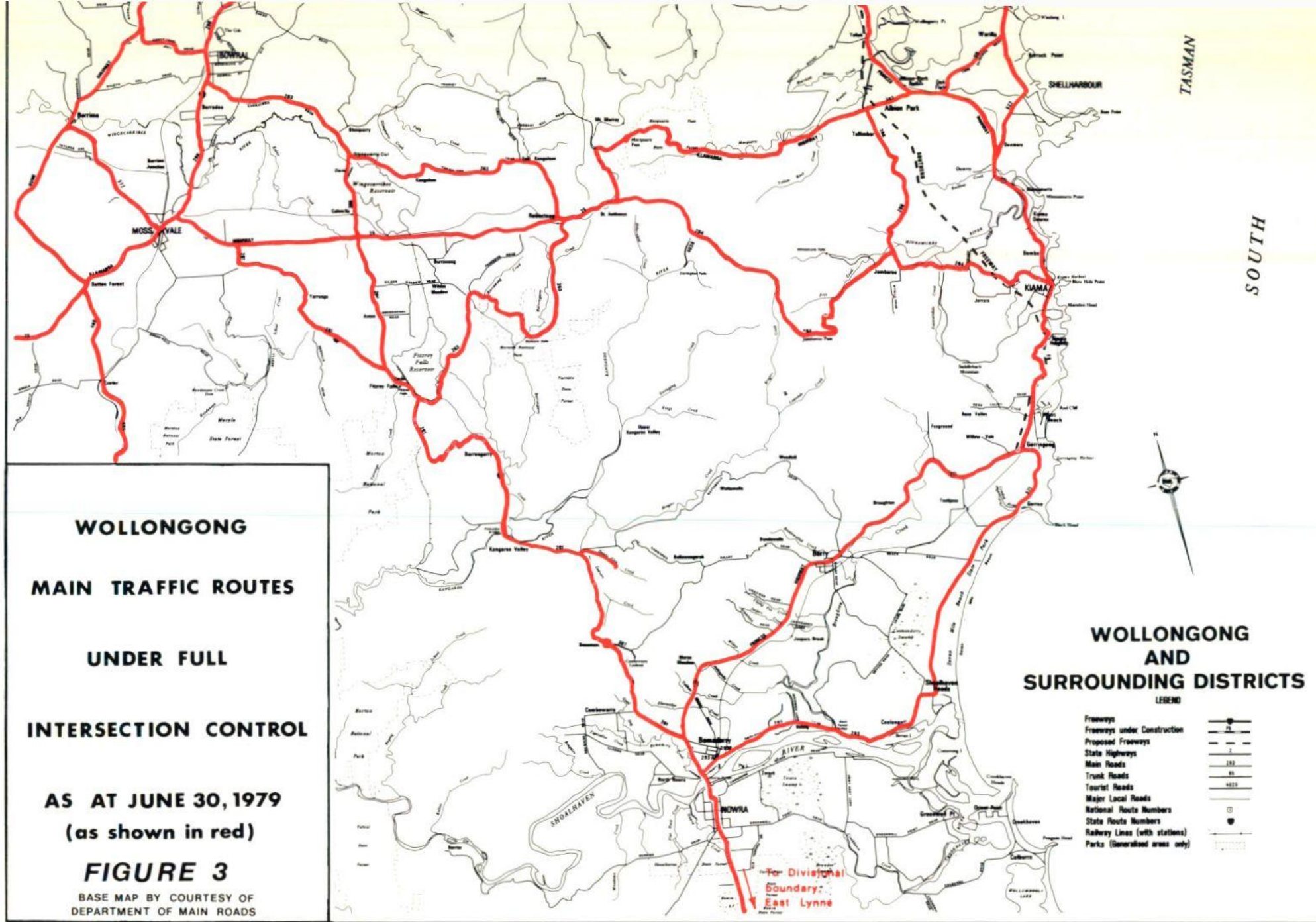
Tidal-flow schemes, whereby certain traffic lanes on a road are used for traffic in one direction in the morning and the opposite direction in the afternoon, continued to be employed on main traffic routes in the Sydney Metropolitan Area where traffic volumes were heavily in excess of the capacity of the particular roads under normal two-way arrangements.

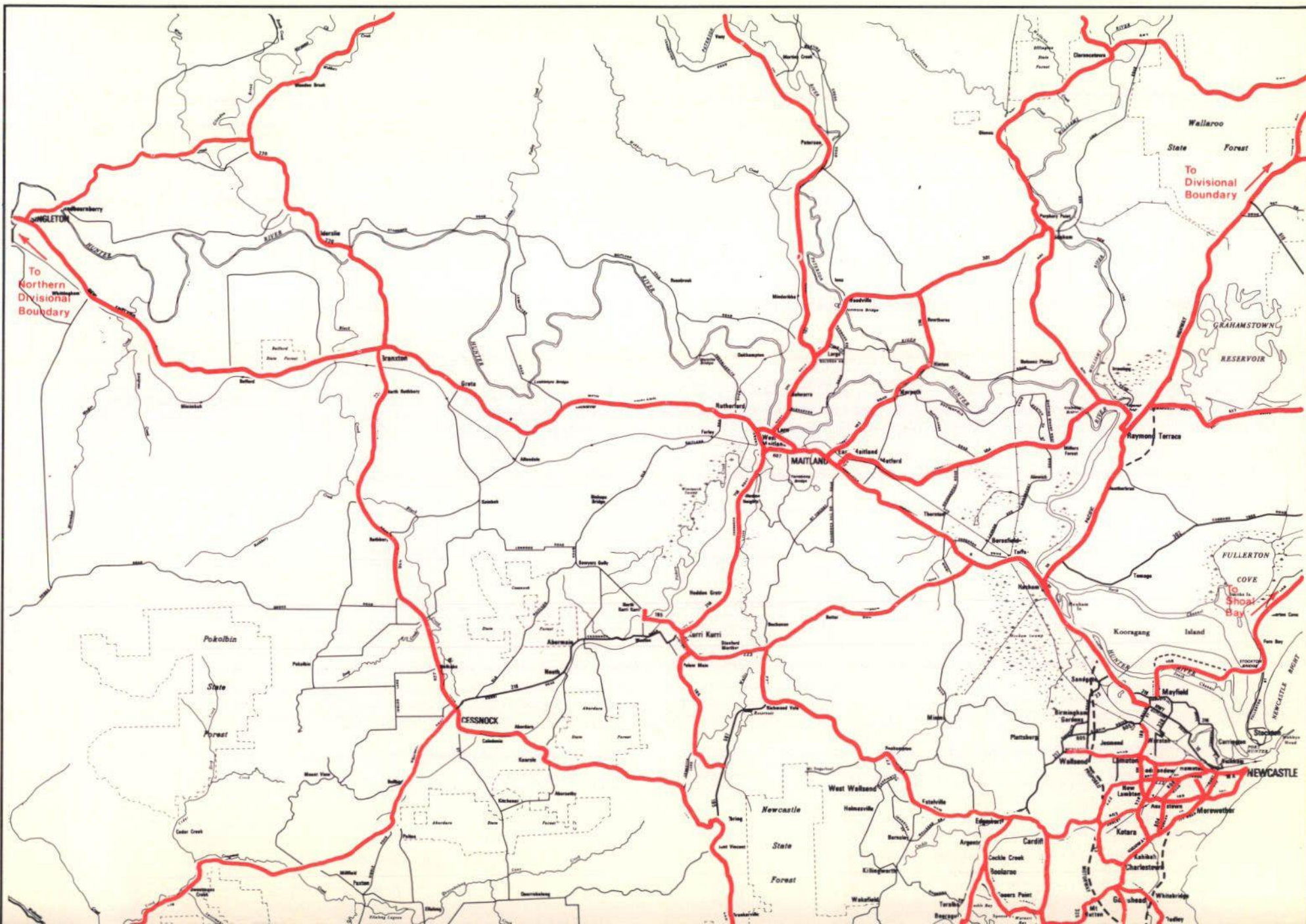
Such a scheme was introduced during the year on Gladesville Bridge to complement the transit lane in the morning peak period. However, to assist in overcoming delays and inconvenience to 'outbound' traffic, modifications are to be made to the bridge to provide seven traffic lanes for use in peak periods.

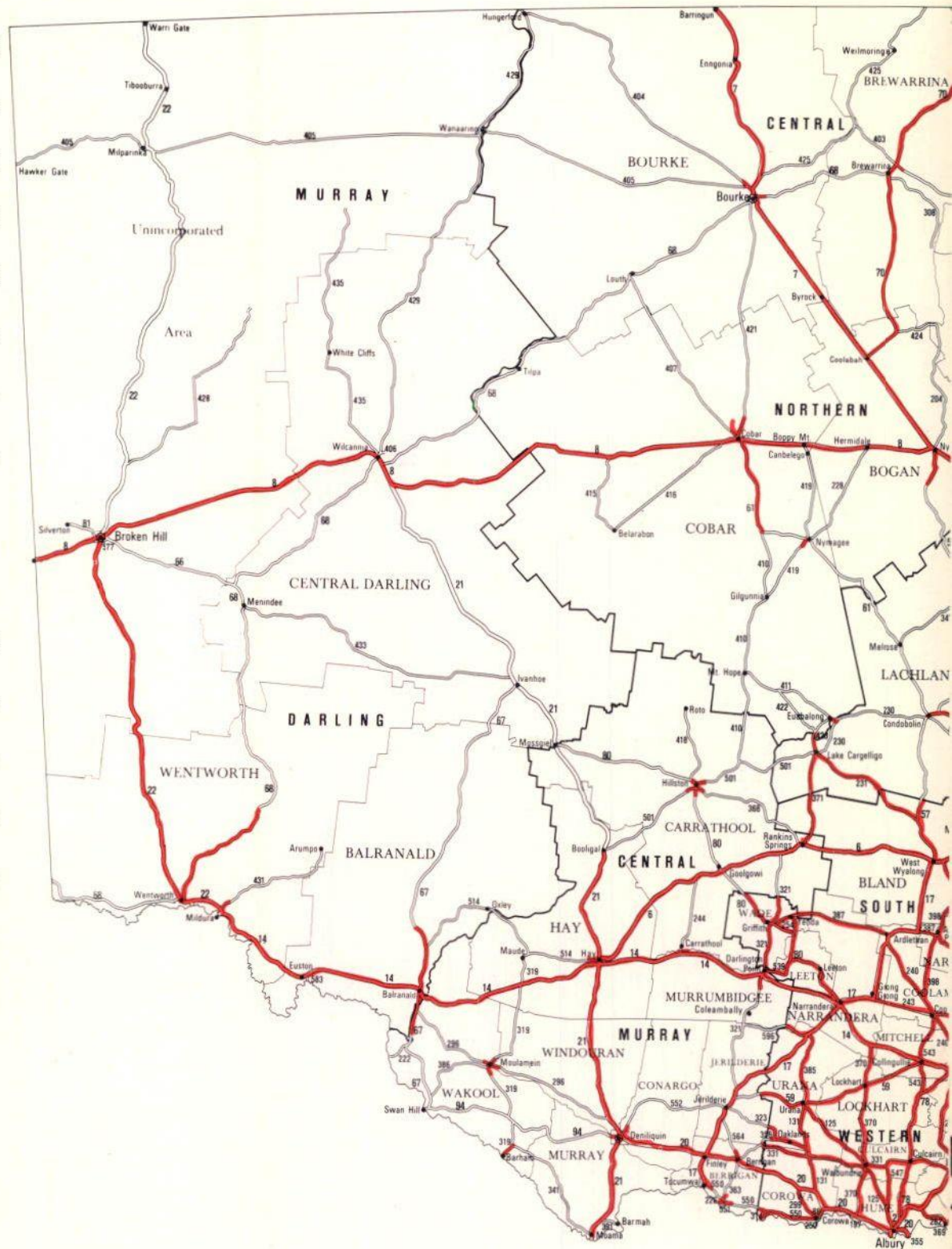


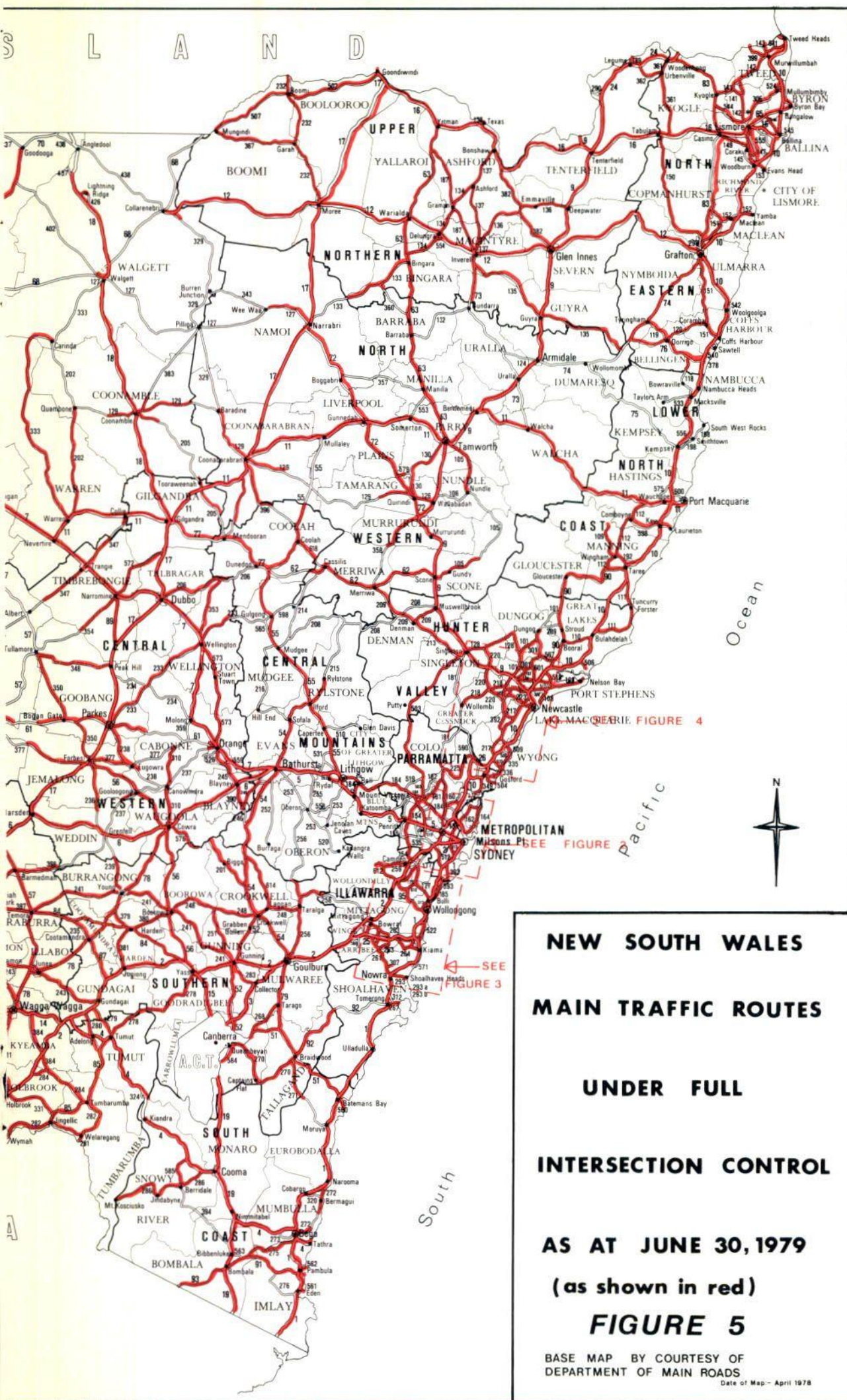












NEW SOUTH WALES

MAIN TRAFFIC ROUTES

UNDER FULL

INTERSECTION CONTROL

AS AT JUNE 30, 1979

(as shown in red)

FIGURE 5

BASE MAP BY COURTESY OF
DEPARTMENT OF MAIN ROADS
Date of Map - April 1978

Traffic Engineering Works

Traffic Signals

A total of 95 new sets of traffic signals were brought into service during the year using Department of Main Roads staff and contractors. In addition there were 23 sites under construction or let to contract at 30 June 1979. At that date there were 1566 sets of signals in service throughout the State distributed as shown in the following table:

	Vehicle Actuated	Pedestrian Actuated	Inner City	TOTAL
Sydney	1028	209	113	1350
Newcastle	68	20	—	88
Wollongong	53	7	—	60
Country Centres	53	15	—	68
TOTAL	1202	251	113	1566

In addition, 41 sets of traffic signals were reconstructed because of changing traffic factors or road reconstruction. Six sets were removed from service.

The Main Roads Department's construction staff installed 10 of the sets of signals commissioned during the year, the remainder being installed by contractors to the Department's designs and specifications. The Department's staff also carried out 26 of the reconstructions of existing signals.

Temporary signals were installed at four locations to assist in controlling traffic movements at works in progress.

This large number of traffic signals has resulted from the needs of traffic on arterial roads, catering for both through traffic and traffic wishing to join, the arterial road. Where signals are close together, either in a central business district, or continuous along an arterial road, there is a need to co-ordinate their operation.

During the year, three additional regional computer systems were installed in cabins at Silverwater, Hornsby and Wollongong, making a total of 9 computer cabins currently commissioned. In addition, three other cabins were constructed at Hamilton, Warwick Farm and Taren Point. The installation of the computer equipment to these cabins is imminent.

There were 95 signal sites co-ordinated during the year. The total number of sites now co-ordinated is 469. Of the above co-ordinated signal sites, 87 were connected to regional computer systems during the year, making a total of 345 signal sites currently controlled by computer.

A map of the locations of co-ordinated systems is shown at Figure 6.

Signs and Markings

Over 23 000 new facilities including marked footcrossings, traffic domes, regulatory, warning and guide signs, together with 36 000 replacement signs were provided during the year. The installation and maintenance work on regulatory signs in the Sydney, Newcastle and Wollongong areas is carried out for the Traffic Authority by Main Roads Department staff and in other areas the work is performed by Councils.

The Department of Main Roads maintained approximately 45 000 km of longitudinal traffic lines on classified roads and unclassified roads. Raised pavement markers continued to be used to augment painted lines and to simulate traffic lines on freeways. Approximately 142 000 square metres of transverse lines, zebra crossings and road symbols were marked and maintained during the year. Increased quantities of hot-applied thermoplastic material, instead of conventional line-marking paint, were used throughout the year.

Speed Zoning

Responsibility for determining the speed zoning on public streets passed from the Minister for Transport to the Traffic Authority in June, 1976. Since that date investigatory work in connection with the review of speed zoning at various locations throughout the State has been carried out for the Authority by traffic engineering officers of the Department of Main Roads.

However, in the interest of decentralising the decision-making in this regard, the Traffic Authority delegated to the Commissioner for Main Roads the power to authorise speed limits, or speed zones, on public roads throughout the State, on the understanding that the powers would be exercised by the Department's Divisional Engineers, wherever located, subject of course, to the observance of guidelines to ensure uniformity in application.

Situations also arise from time to time when it becomes desirable or necessary to impose a temporary speed limit, lower than the prevailing one, over a section of road whilst maintenance or reconstruction work is in progress. This function is also exercised by the Main Roads Department Divisional Engineers.

During the year new speed zones were established over the following lengths: 38 km (60 km/h); 45 km (80 km/h); 147 km (100 km/h) and 32 km (110 km/h); and extensions to existing speed zones were made over 63 km of roadway.

Also, it was recommended to the Minister that the prima facie speed limit of 80 km/h in rural areas be replaced by an absolute speed limit of 100 km/h. The Motor Traffic Act was subsequently amended to take effect from 1.7.79.

Pedestrian Bridges and Subways

At the close of the year a pedestrian subway under the Pacific Highway at Pymble was all but completed with only the construction of approach ramps to be finalised.

Other Pedestrian Improvements

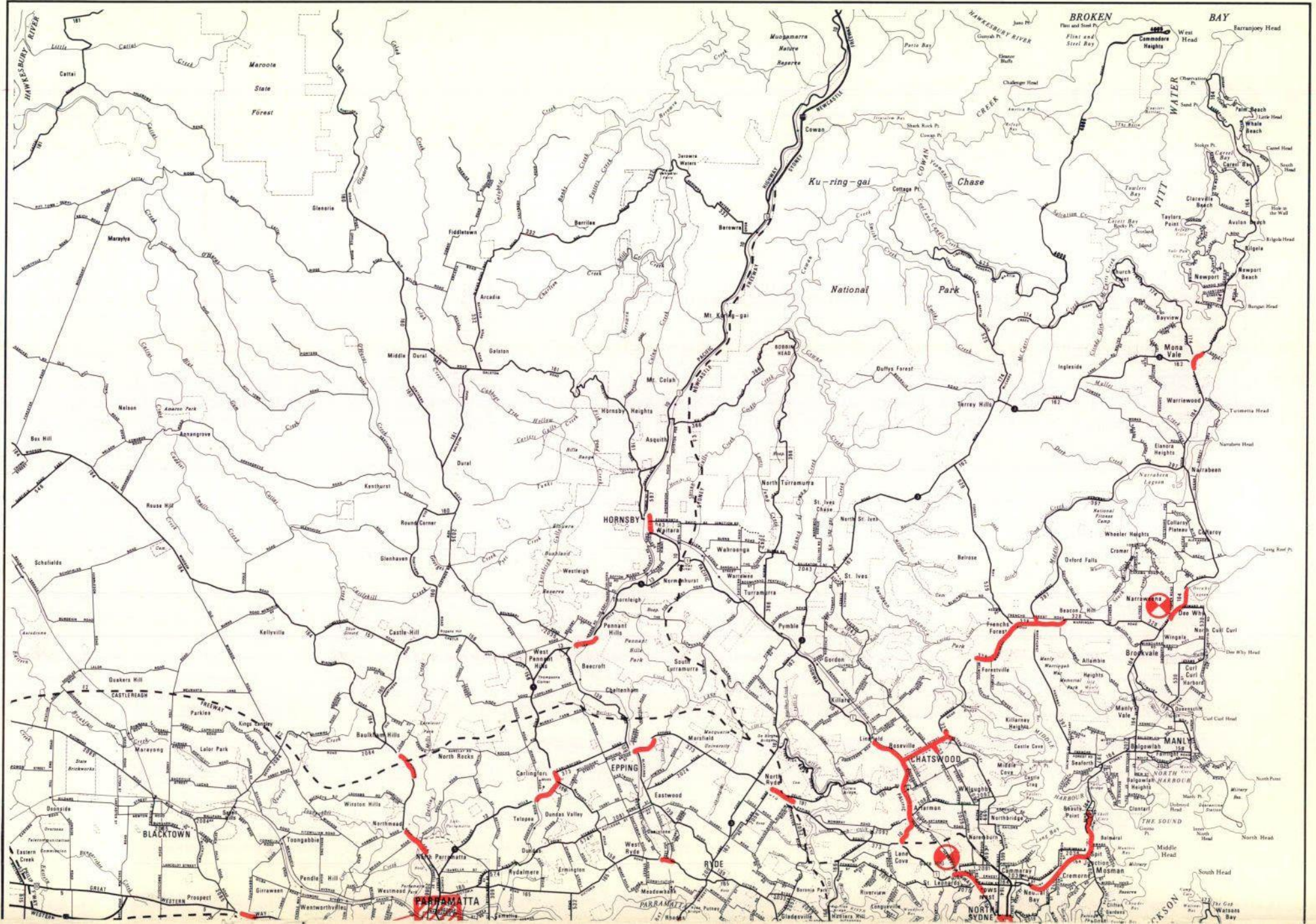
Although only six mid-block pedestrian signals were installed during the year, special pedestrian facilities were provided at most of the 130 sets of traffic signals installed or reconstructed at intersections during the year. These additional facilities should greatly assist pedestrians to safely cross roads particularly the busy arterial routes.

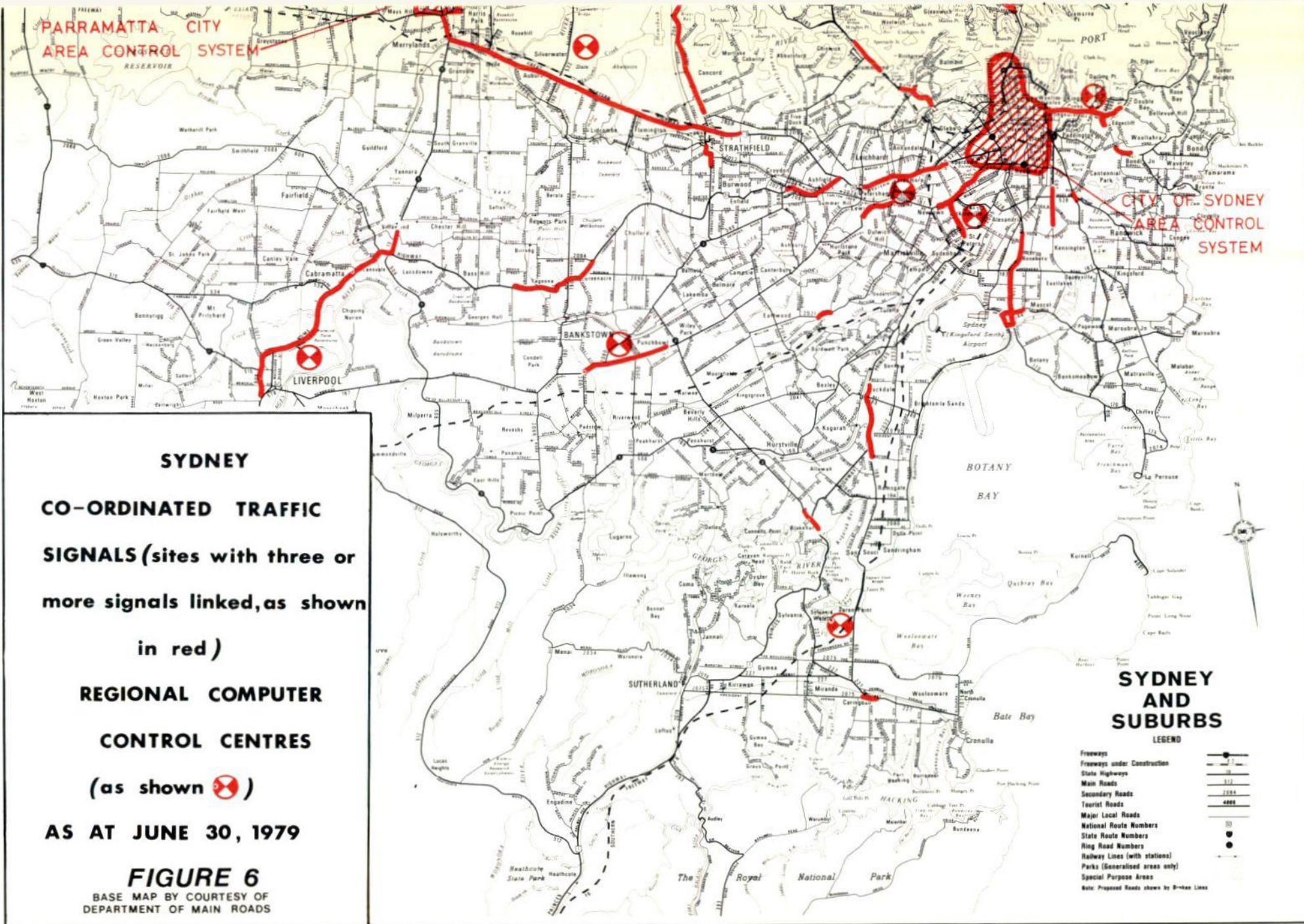
Other Traffic Management and Safety Schemes

Approximately 45 miscellaneous traffic management and safety projects were completed during the year. The different types of projects were —

Guardrail installations	8
Skid resistance improvements	2
Improvement to superelevation	2
Shoulder widening	5
Improvement to alignment	5
Visibility improvement	5
Additional lanes	16
Bus bays	2

An additional lane was completed for southbound traffic along Boundary Street between Clive Street and Archbold Road, Roseville and this work is assisting the movement of traffic towards Chatswood and the city particularly in the morning peak period.





Intersection Improvements

A total number of about 31 intersections were widened and/or channelised during the year. Major sites where work was completed included:

- Anzac Parade and Avoca Street: Kingsford
- The Entrance Road and Terrigal Road: Erina
- Great Western Highway and Main Road No. 255: Meadow Flat
- Pacific Highway at 15.4 km north of Taree
- Pacific Highway at 16.4 km north of Taree
- Rusden Street and Dangar Street: Armidale
- Rusden Street and Faulkner Street: Armidale
- Henry Lawson Drive and Bullecourt Avenue: Milperra
- Bruxner Highway and Kadina Street: Lismore
- New England Highway and Arambah Road: Rutherford
- Epping Road and Delhi Road: North Ryde
- New England Highway and Denman Avenue: Kootingal

Research

Transportation System Management

Transportation System Management (T.S.M.) is a planning concept which views existing streets and highways, rail trackage, parking and pedestrian facilities and transportation vehicles — both private and public — as elements of a single urban transportation system. The objective of T.S.M. is to organise these individual elements with the help of various operating, regulatory, and pricing policies into one efficient, productive and integrated transportation system which respects local community needs and objectives and serves the broader national goals of environmental protection, energy conservation and equity for those dependent on public transportation.

Research was conducted to develop and evaluate a comprehensive programme of T.S.M. methods and strategies in the New South Wales context, in particular, priority treatments for high-occupancy vehicles in specific areas and routes in the Metropolitan Area. The study looked into individual strategic goals and their interaction, techniques for achieving individual goals, and techniques for monitoring resultant system changes.

The report, presented by the consultants in 1978, detailed the T.S.M. planning process developed, together with examples of its application. The report thus gives guidelines for the conduct of future T.S.M. (and traffic management) schemes. This completes the major part of this study. An optional direction for further research is the implementation and subsequent monitoring of the schemes developed in the study areas. Research by other agencies has highlighted the importance of an adequate long term T.S.M. monitoring procedure. There are several areas where such a monitoring exercise could be performed.

Effects of Flextime on Transport

Flexible working hours, or other types of variation on traditional work times have been introduced in the community in recent years and little has been known of the effects of this on the transport system, but as reported in 1977-78, a detailed study of such effects has been undertaken in the North Sydney area.

Analysis of a questionnaire survey is nearing completion. The preliminary results of this analysis indicate that the inter-relationship between mode, route and time of

travel is more complex than initially thought when the survey was commenced. For example, the modal travel to North Sydney developed from the survey indicates that if flextime were extended there would be a shift away from public transport to car travel. It appears as though a number of current public transport users, if given the opportunity, would prefer to travel to work earlier by car. This would suggest that any extension of flextime might need to be accompanied by public transport support and car restraint measures.

These results, though, are only preliminary. The inter-relationships are complex and analysis of the available data may need to be extended to test the significance of a number of variables with the modal developed to date.

Traffic Law Observance

Public observance of laws and regulations governing the parking and movement of vehicular (and pedestrian) traffic is a vital component of traffic management systems, for without such observance, chaos quickly ensues. Factors impinging on the level of this observance include public acceptance, or otherwise, of the need for particular rules and appreciation of the likely cost of ignoring them.

As mentioned in the previous years' report, an extensive study has been made to determine the public attitude towards observance of traffic laws, with the aim of identifying those enforcement techniques or penalty measures likely to attain a higher level of observance of those laws.

The consultant's report makes a number of recommendations for instance in respect of matters such as the level of infringement notice penalties for some traffic offences, the extent of publicity given or to be given, to this question of traffic law observance. A detailed evaluation of the report and recommendations is continuing. However, proposals for a restructuring of the infringement notice penalty scheme and for increasing penalties generally, have been submitted to the Minister for consideration.

Control of Land Use and Access to Arterial Roads

The task of developing policies and procedures relating to the control of land uses and access to and from arterial and sub-arterial roads was continued this year. Guidelines were issued to Councils to assist them, land developers and planning consultants in the submission of development applications made under Local Government Planning Scheme Ordinances or Interim Development Orders.

These guidelines, under the title "Draft Policy and Standards for Traffic Generating Development", cover aspects of safety, environment, traffic and planning principles, siting considerations, vehicular access, parking, and related matters.

There is as yet no statutory obligation for all Councils to seek the Traffic Authority's advice when dealing with land development applications, but this provision is being made progressively in new Planning Scheme Ordinances resulting in an increasing number of such requests being made. Pending the passing of legislative amendments proposed earlier by the Authority, and the setting up of an appropriate administrative procedure for dealing with these applications (almost entirely at a local level), the Development Technical Committee has examined and advised on the requests submitted. Major proposals were considered by the Authority.

Metropolitan Parking Policy

Research and analysis of data collected in connection with the preparation of an overall parking policy for the Sydney Metropolitan Area continued during the year.

Opinions were sought from certain Departments, Local Government and other organisations to assist in the final analysis and determination of the most suitable policies which might be adopted for parking in the Metropolitan Area.

Following analysis of those comments a draft policy statement has been prepared and adopted in principle. Work is continuing on the preparation of guidelines which are to be issued to Councils to assist them in the development of local parking plans as an integral part of the proposed parking policy.

Road Closures

To close a road to traffic, for reasons other than to enable essential works to be carried out, a Council is required by the Local Government Act, 1919, to obtain the consent of the Traffic Authority or the approval of the Minister.

A revised edition of the publication, "Guidelines for Road Closures" was issued during the year by the Authority to Councils to indicate to them and their planning consultants the principles and procedures involved in connection with the four basic categories of road closure, namely, 'full', 'partial', 'part-time' and 'temporary' closures. These derive from the provision in the Act covering the placing of barriers to 'restrict' as well as to 'prevent' the passage of vehicles.

The Traffic Authority's Technical Sub-Committee examined applications by various Councils under the relevant section (269A) of the Local Government Act for road closures until May 1979 when powers were formally delegated to all Councils to allow them to determine road closures on 'local' roads, that is, all but proclaimed main roads and declared secondary roads. Under the conditions of those delegations, Councils may not consent to a road closure without obtaining the prior concurrence of the Police and Department of Main Roads representatives on their Traffic Committees, and they must comply with the Authority's 'Guidelines for Road Closures'.

Traffic Safety Aids Outside Schools

A survey was commenced during the latter part of 1977/78 to determine the extent of the need for additional traffic safety aids in the vicinity of all schools in the Sydney Metropolitan Area. About 1200 schools are involved, both public and private. Following completion and analysis of the results, traffic facilities programmes have been expanded to include the more urgently needed works in this category. More than \$500,000 was allocated for expenditure on such facilities this year and an increased allocation is expected to be made in 1979/80.

The study disclosed a need to review the standard warrants applicable to some facilities, the location of bus stops and "no standing/no stopping" zones, the positioning of school gates, the need for "school only" pedestrian crossings, and consideration of behavioural aspects of school children while crossing roads. Consultants have been retained to assist the Authority in these matters.

Impact of Land Use on Traffic

Changing land use developments cause a redistribution in the movement of people and goods, and accurate predictions of the traffic generating potential of the planned developments is a vital necessity.

As foreshadowed in the 1977/78 Annual Report, research is being undertaken by the Traffic Authority with the help of the New South Wales Planning and Environment Commission to develop adequate quantifying measures, to replace the current 'rule of thumb' techniques.

Technical bulletins are being produced on the traffic generation characteristics of the following land uses: office blocks; shopping centres; factories; licensed clubs; service stations; motels; hotels; drive-in take-away food; motor vehicle sales; motor vehicle tyres and accessories; recreational uses; warehouses; road transport terminals. These bulletins will be published in 1980.

Bicycle Use as a Transport Mode

Planning for the encouragement of bicycle use and for the provision of 'cycleways' continued during the year. Regulations for General Traffic and for Pedestrian Traffic (under the Metropolitan Traffic Act) are being amended to permit the use of bicycles on footpaths where the latter form part of an approved cycleway. New regulatory (symbol) signs have been devised to indicate when a particular footpath, or other portion of a street, can be used either solely by cyclists or, jointly with pedestrians.

A cycleway was opened for use at Moore Park (Sydney) and when completed will form part of a longer cycleway linking the City of Sydney with the University of New South Wales at Kensington. Cost of works was shared equally by the Government and the Sydney City Council.

Speed Control Studies

Studies in relation to the use of speed control devices on roads, and the question of lower speed limits on residential streets were continued during the year.

It is generally accepted that any transport system should provide and maintain the correct balance between safety, mobility and environmental quality. Further, it is apparent that community attitudes govern the acceptable levels of each of these elements. In this regard, there is growing concern with the impact of through traffic in residential areas not the least of which is the speed of this traffic and the potential for accidents.

Based on the assumption that speed which is excessive under the prevailing circumstances is one of the major contributing factors to road accident crashes and the consequences thereof, the Traffic Authority is examining the need for a reduction in speeds in residential areas to improve safety for road users.

In conjunction with the Australian Road Research Board (Victoria), the Authority is studying the use of speed humps as a speed control technique. Experiments with the shape, size and spacing of humps are in progress and the need for amendments to legislation is also being considered.

Fuel Consumption

A study being undertaken by the Authority jointly with the Commonwealth Scientific and Industrial Research Organisation — Division of Mechanical Engineering was continued during the year. The collection of data is proceeding and a model is being developed which is intended to describe fuel consumption of a traffic stream on a road in terms of some of the more readily measurable parameters such as volume and average travel time. Preliminary figures have been prepared which indicate the effect on fuel consumption of stopping a stream of vehicles at traffic signals.

The objective of the Authority is to develop techniques for evaluating alternative traffic management techniques or facilities to conserve fuel and reduce toxic exhaust emissions. The project is expected to be completed during 1980.

Preferential Treatment for Commercial Vehicles

Because traffic delays to commercial vehicles have a high economic penalty for the community the Authority has initiated a research project into the feasibility of reducing this delay by increasing the relative priority for the allocation of road space or time of this type of vehicle. The study will investigate the needs of commercial vehicles in order to determine what measures could be taken to improve their operating conditions.

As the first stage of this investigation, consultants have been retained to conduct a feasibility study into the various treatments available to assist commercial vehicles. This first stage will canvass the issues involved and highlight areas where more detailed study may prove fruitful. At present work on this stage of the project has not reached a point where detailed results can be reported.

Finances

Finance for the provision of traffic control facilities and related works is controlled through the Traffic Facilities Fund established in the Special Deposits Account at the Treasury.

The principal sources of funds for this purpose are —

- Road Transport and Traffic Fund — amounts collected from motor registration fees and drivers' licences fees;
- Main Roads Fund — amounts collected from vehicle weight tax and tax levy;
- special grants by State Treasury;
- contributions by the Commonwealth Government under the Roads Grants Act, 1974 for Minor Improvements for Traffic Engineering and Road Safety (M.I.T.E.R.S.) and under the National Roads Act, 1974;
- Sydney Harbour Bridge Account — amounts collected from the bridge tolls;
- Public Vehicles Fund — amounts collected from motor tax on public vehicles other than omnibuses.

Minor inputs from other sources make up the total sum available for allocation in terms of priorities accorded to immediate objectives and individual programmes.

Other than recommending to the Minister the provision of appropriate funds to cover particular programmes, and allocating priorities for their expenditure, the Authority has no direct control over the availability of its funds.

TRAFFIC FACILITIES FUND
COMPARATIVE STATEMENT OF RECEIPTS AND PAYMENTS

FUNDS (\$,000)	1977/78	1978/79
Road Transport and Traffic Fund	10 300	16 500
Main Roads Fund	3 820	6 500
Treasury grants	2 500	2 500
Harbour Bridge and other Tollway Accounts	1 393	1 632
Public Vehicles Fund	325	330
Commonwealth Government —		
M.I.T.E.R.S. Grants	3 300	3 529
National Roads Act Grants	978	1 320
Planning and Research Grants	195	342
Traffic Safety Purposes —		
State sources	203	280
Commonwealth sources	252	38
Other (miscellaneous) —	413	282
Carry-forward from previous year	3 859	114
	<u>27 538</u>	<u>33 367</u>

EXPENDITURE (\$,000)	1977/78	1978/79
Maintenance and Operations:		
Pavement marking and signposting	8 515	10 253
Traffic signals	5 579	7 000
Driver Aid	1 228	1 386
Engineering Administration	1 055	862
Construction:		
Traffic signals and intersection improvements	4 339	5 179
Pedestrian facilities	56	362
Traffic Management and Safety Projects	2 007	1 085
Driver Aid Schemes	201	244
Engineering Administration	1 120	1 173
Miscellaneous:		
Special commitments	300	636
Transfer (of staff) costs	324	494
Administrative Expenses	1 520	1 630
Secretariat:		
(Administration and Research)	753	691
Traffic Accident Research Unit	405	451
Other	22	96
Balance, carried forward	114	1 825
	<u>27 538</u>	<u>33 367</u>

TRAFFIC FACILITIES FUND (SPECIAL DEPOSITS ACCOUNT) STATEMENT

Sources of Funds	Receipts
Balances brought forward, 30.6.78	
State funds	
Commonwealth Funds:	
Roads Grants Act, 1974 (M.I.T.E.R.S.)	
Schedule 4 amount — Carry-over	114,018
Contributions from State Sources:	
Road Transport and Traffic Fund	16,500,000
Public Vehicles Fund	330,000
Motor Vehicle Taxation	
Tax Levy	
Weight Tax	6,500,000
Sydney Harbour Bridge Account	1,326,310
Berowra-Calgia Tollway	145,461
Waterfall-Bulli Tollway	160,332
Ministry of Transport & Highways	
(Treasury, special grant)	2,500,000
Contributions by Commonwealth Government:	
Road Grants Act, 1974 (M.I.T.E.R.S.)	
Schedule 4 amount —	3,529,000
National Roads Act, 1974 — allocation	1,320,000
Transport (Planning & Research) Act, Grant —	
(Chief Engineer)	54,230
Department of Motor Transport	166,412
Contributions for Traffic Safety Purposes:	
Transport (Planning and Research)	
Act, Grant — T.A.R.U.	121,960
Commonwealth Grant for Road Safety Education	37,500
Special Deposits Account No. 2660	
(Sale of personalised number plates)	280,309
Miscellaneous	
Sundry receipts	2,807
Department of Main Roads Income from Services	
Provided for Councils and Other Bodies	279,017

\$33,367,356

OF RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 30TH JUNE, 1979

Department of Main Roads, Traffic Facilities Programme

			Payments
Maintenance and Operations: (less costs recovered)			
Pavement Marking and Signposting		10,252,974	
Traffic Signals		7,000,169	
Driver Aid Schemes —			
Sydney Harbour Bridge	930,571		
Berowra-Calga Tollway	131,217		
Waterfall-Bulli Tollway	144,632		
City-Tow Service	22,649		
Roseville Bridge Tow Service	150,230		
Western Freeway	6,406	1,385,705	
Engineering Administration		861,620	19,500,468
Construction			
Traffic Signals, Intersection Improvements and Railway Level Crossing Modifications		5,179,441	
Special Pedestrian Facilities		362,342	
Traffic Management and Safety Projects		1,084,726	
Driver Aid Schemes —			
Sydney Harbour Bridge	234,201		
Western Freeway	10,245	244,446	
Engineering Administration		1,172,872	8,043,827
Administrative Expenses			1,630,262
Establishment of Transferred Department of Motor Transport Organisation			493,856
Planning and Research			—
Contribution towards cost of Construction of Bondi Junction By-Pass			636,302
	Total, Department of Main Roads		30,304,715
Department of Motor Transport —			
Traffic Authority Secretariat Administration	439,493		
Research Programmes —			
Transport planning and research projects	205,630		
Other research projects	13,400		
Urban Transport Study Group	32,321	690,844	
Traffic Accident Research Unit			
Transport Planning and research projects	139,835		
Traffic Safety Education Section	311,284	451,119	
Miscellaneous			
Traffic control activities prior to 1/7/76 (less costs recovered)	43,074		
Transport planning and research (Chief Engineer's Projects)	52,706	95,780	
	Total, Department of Motor Transport		1,237,743
Total Payments			31,542,458
Balance Carried Forward			1,824,898
	Total		\$33,367,356

PUBLICATIONS

Documents, Reports and Technical Papers published by the
Traffic Authority.

Information Pamphlet:

"The Traffic Authority of New South Wales" June 1976

Guidelines:

Provisional Guidelines for the Authorisation
and Installation of Traffic Control
Facilities June 1976
Guidelines for Road Closures December 1977
Locational Criteria and Siting Require-
ments for Container Depots April 1978
Policy and Standards for Traffic Generating
Development June 1978

Discussion Papers:

Development of a Metropolitan Parking
Policy — by F. Bezer October 1977
Functional Classification of Roads April 1978

* Reports on Research Projects:

Report on Car Pooling Research Project
Stage 2 — by Development Planning &
Research Pty. Ltd. February 1977
Bus Priority Survey: St. Leonards — by
Stapleton Transportation Planning
Pty. Ltd. May 1977

Car Pooling on a Geographical Basis — June 1977
Evaluation of Transit Lanes — by C. Hallam
Social and Economic Costs and Benefits of
Extended Clearways — by W. D. Scott
& Co. Pty Ltd. October 1977
Bicycle Use as a Transport Mode:
Attitude Surveys (3 Vols.) — by Lyle Mar-
shall and Associates with Planning
Workshop Pty. Ltd. October 1977
Traffic Law Observance Study — by Plan-
ning Workshop Pty. Ltd. December 1977
Left-Turn on Red Signal Final Report — by
De Leuw Cather of Australia Pty. Ltd. March 1978
Traffic Law Observance Study — Summary
Report — Planning Workshop Pty. Ltd. April 1978
Impact of Land Use on Traffic — by Sinclair
Knight & Partners Pty. Ltd. with R. J.
Nairn & Partners Pty. Ltd. May 1978
Transport System Management in Sydney
— by Stapleton, Clark & Associates June 1978
Survey of Traffic Safety at Schools: Stage I
Report — by Casey and Francki June 1978
Bicycle Use Feasibility Study — by GHD —
Parsons Brinckerhoff Pty. Ltd. July 1978
* Reports may be examined at the Author-
ity's offices.