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TRAFFIC AUTHORITY N.S.W.

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Annual Report 1980-81

TRAFFIC AUTHORITY
OF NEW SOUTH WALES

Chairman, J.W. Davies I.S.O. O.St.J., B.Ec., F.C.I.T.

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

Dear Mr. Cox,

It is my pleasure to submit to you the Annual Report of the Traffic Authority of New South Wales for the year ended 30th June, 1981.

The report outlines the functions and responsibilities of the Authority as well as activities undertaken during the year under review.

A comparative financial statement for this year and the previous year is also included.

Yours faithfully

Chairman

ANNUAL REPORT 1980-81

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155N–0314–3364.

Constitution

The Traffic Authority of New South Wales is constituted under the Traffic Authority Act, 1976 as a statutory corporation representing the Crown. There are five official members and four members appointed by the Minister for Transport, six of whom form a quorum.

Under the Traffic Authority Act, 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 also direct other public authorities to implement its plans, general principles and decisions.

Other Legislation

Motor Traffic Act, 1909 – confers upon the Traffic Authority responsibility for the administration of the provisions of the Act and its Regulations relating to the regulation and control of traffic, motor vehicles and their drivers upon public streets, the provision of traffic control facilities and the determination of speed limits.

Metropolitan Traffic Act, 1900 – confers upon the Traffic Authority responsibility for the administration of the Act and its Regulations relating to the control of animal-drawn, pedestrian, bicycle and other non-motorised traffic in the Metropolitan, Newcastle and Wollongong Traffic Areas.

Local Government Act, 1919 – requires the Traffic Authority to determine applications by Councils for consent to the closure of a public road to through traffic or the opening of a road which has been closed. Also provides that, subject to certain limited exceptions, a Council may control or regulate the use by traffic of public roads in accordance with the consent of the Traffic Authority or on approval or direction of the Minister.

Traffic Safety (Lights and Hoardings) Act, 1951 – confers on the Traffic Authority responsibility to direct the removal of any light, sign, hoarding, awning or structure which obscures or could be mistaken for any light, sign or device for the controlling of traffic.

Back Row Left to Right:

Mr. J.R. Caldwell (Deputy Member), Manager, Transport Branch, Department of Environment and Planning; Mr. E.W. Lyndon (Member), Managing Director, Urban Transit Authority; Mr. D. Jacob (Deputy Member), Acting Deputy Commissioner for Main Roads; Professor R.L. Huckstep (Advisory Member), Professor of Traumatic and Orthopaedic Surgery, Health Commission of New South Wales; Mr. R.T. Gosling (Member), Local Government and Shires Association; Alderman J. Calpis (Deputy Member), Alderman, Sydney City Council.

Front Row Left to Right:

Mr. H.F. Quinn (Member), Assistant State Secretary, Transport Workers' Union of Australia; Mr. J.W. Davies (Chairman), Commissioner for Motor Transport; Mr. R.M. Holloway (Deputy Member), Assistant Commissioner of Police (Traffic).

Members of the Traffic Authority

Official Members

J.W. DAVIES, I.S.O., O.St.J., B.Ec., F.C.I.T.,
Commissioner for Motor Transport, N.S.W.,
Chairman.

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

B.N. LODER, B.E., M.I.E. Aust., Dip. T.C.P.,
Acting Commissioner for Main Road, N.S.W.

R.B. SMYTH, B.Sc. (Econ.) Hons. (London),
Dip. T.P. (Auckland) M.R.A.P.I., M.I.E. Aust.,
M.I.C.E. (London).
Director.
Department of Environment and Planning.

E.W. LYNDON, F.C.I.T.,
Managing Director,
Urban Transit Authority.

Appointed Members

A. REEVES,
Alderman, Council of the City of Sydney.

R.T. GOSLING, M.B.E.,
Nominee of the Local Government and Shires
Associations of N.S.W.

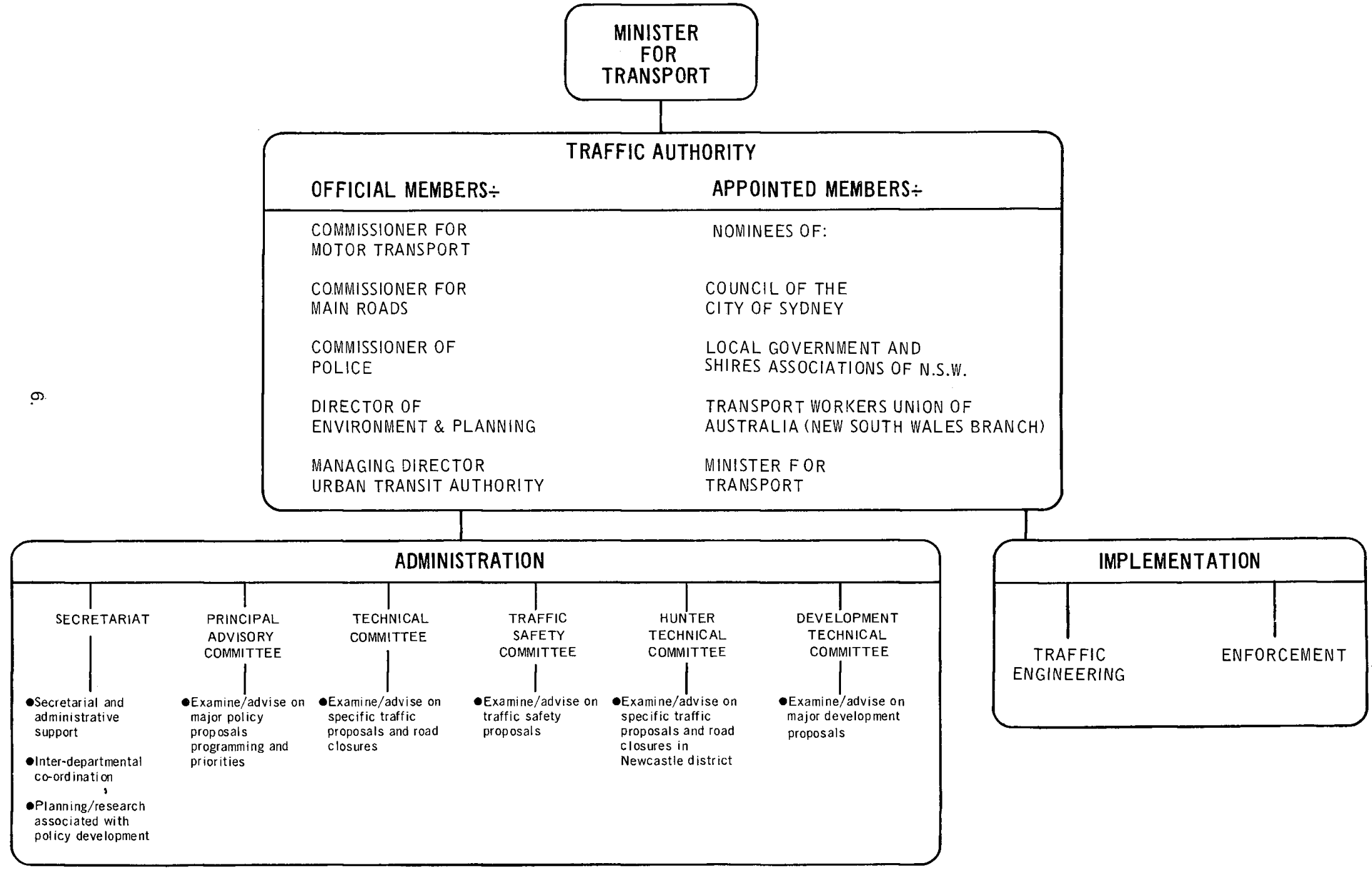
H.F. QUINN, Assistant State Secretary,
Transport Workers' Union of Australia.
(New South Wales).

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

Principal Officers of the Secretariat

DIRECTOR	H.L. CAMKIN, B.E., Dip. T. & C.P., M.I.E. Aust., F.C.I.T.
PRINCIPAL ASSISTANT DIRECTOR	B.J. HAZEL, B.E., M.S.C.E., M.I.E. Aust., M.I.T.E.
ASSISTANT DIRECTOR	J.R. BLISS, B.E., M.Eng.Sc., Dip. Env. Stud. M.I.E. Aust. (on secondment from the Department of Main Roads).
SECRETARY	W.A. LEVITT, A.A.S.A., F.C.I.T.

ORGANISATIONAL CHART



Organisation and Management

The Minister

The Traffic Authority is subject to the control and direction of the Minister for Transport, who has control over the funds expended by or for the Authority.

The Authority

The Traffic Authority's principal function is the determination of policies, priorities and programmes in respect of traffic management and traffic safety measures.

Proposals in this regard are normally submitted by its committees or member organisations and regular meetings are held to discuss these matters. Twelve official meetings were 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 staff to deal with day to day problems.

To expedite the decision-making necessary for day to day operations throughout the State, the Traffic Authority has delegated much of operation level responsibility to local representatives who are far more familiar with local problems than are Authority members. Details of such delegations are referred to in the Sections "Policies and Objectives", "Other Instrumentalities" and "Local Government Authorities".

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.

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, function, 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 Department of Main Roads. It has provided safeguards in the instruments of delegation to ensure maintenance of standards and consistency of application of traffic control facilities. Councils are required to obtain 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.

Committees

Principal Advisory Committee

Senior officers nominated by the member of the Traffic Authority comprise the Principal Advisory Committee, whose function is to advise and assist on major policy matters, corporate planning and matters concerning the provision of funds for carrying into effect the Authority's objectives and works programmes. The Committee meets regularly and submits reports and recommendations to the Authority.

Technical Committee

Senior officers nominated by the organisations represented on the Traffic Authority comprise the Technical Committee which is 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 Committee. One of its major functions is to adjudicate on appeals against decisions made under delegation from the Authority by Councils and the Department of Main Roads. The committee meets regularly and among the major matters considered during the year were –

- Road closures – Chatswood Town Centre
- Ashfield Civic Centre
- Redevelopment of Cooks River Goods Yard
- Extension of the Major/Minor Road System
- Paddington Traffic System Management (PATSYM) Scheme.

Development Technical Committee

The Development Technical Committee comprises officers of the Department of Environment and Planning, Police Department, Department of Main Road 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. It exercises a delegation from the Authority to determine the Authority's requirements for other than major traffic generating developments.

Hunter Technical Committee

The Hunter Technical Committee comprises 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.
- Traffic movement in Newcastle business district.
- Consideration of preferential resident-parking schemes for the City of Newcastle.
- Aluminium Smelters – Hunter Valley Traffic Impact.

Traffic Safety Committee

The Committee comprises senior officers of the Police Department, Department of Education, Health Commission, Department of Attorney General and of Justice, Traffic Accident Research Unit of the Department of Motor Transport, and the Traffic Authority Secretariat.

This Committee plays an important role in the co-ordination of the traffic safety responsibilities and initiatives of the Education, Health and Judicial authorities, with those of the Transport, Roads and Police administrations, traditionally seen as the primary traffic safety organisations. Matters discussed during the year included:

- Newcastle Bikeplan – development of safety education.
- Random breath testing.
- School education programme – drink/driving.
- Wet weather accident "blackspots" – remedial action.
- Motor Traffic Regulations and their simplification.
- Effects of lower alcohol beer.
- Road traffic fatalities in New South Wales and Victoria.
- Alcohol, drugs and driving.

Other Instrumentalities

Department of Main Roads

The Department of Main Roads is the Authority's principal operations and construction agency.

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

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

The Department of Motor Transport provides staff and accommodation for the Authority's Secretariat, acts in a consultative capacity on legislative and regulatory matters, and makes available the services of the Traffic Accident Research Unit which provides 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.

Police Department

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.

Local Government Authorities

The Traffic Authority has delegated to Councils the power to authorise minor traffic facilities on local 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. Action is now in hand to delegate Traffic Authority powers to Councils to deal with routine matters relating to light traffic thoroughfares as well as road closures.

To ensure consistency of standards and treatment throughout the State, the exercise of these powers by Councils is subject to observance of guidelines prepared by the Authority. 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 the 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 Urban Transit Authority and/or Department of Motor Transport as the case may be.

Local Traffic Committees, comprising representatives of Council, Police and Main Roads, and the Local Members of State Parliament, provide a useful forum for open discussions about traffic matters generally and serve as a means of expediting decision making to resolve or avoid local problems.

Transport Workers' Union of Australia (N.S.W. Branch)

Under the Traffic Authority Act the Minister, on the nomination of the Executive Committee of the Transport Workers' Union of Australia (New South Wales Branch), appoints a member of the Authority to represent transport industry interests generally.

Parking Advisory Committees

The Traffic Authority on 1st September, 1980 took over, from the Department of Environment and Planning, responsibility for the administration of all Parking Advisory Committees.

It is proposed, by virtue of amendments to the Local Government Act, that the remaining responsibilities of the Parking Advisory Committees, (i.e. those associated with parking space controlled by parking meters together with parking station developments) be absorbed within the administrative functions of the Traffic Authority. It is expected that the necessary amending legislation will be enacted during 1981-82.

External Committees

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 —

- Transport Strategy Advisory Committee (TRANSAC).
- Standards Association Technical Committees.
- Sydney Entertainment Centre Liaison Committee.
- Interdepartmental Level Crossing Committee.
- State Bicycle Advisory Committee.
- Trolley Bus Task Force.
- Road Tanker Committee.
- Major Airport Needs of Sydney Study (MANS).
- Outdoor Advertising Review Committee.
- Traffic Noise Sub-Committee of the S.P.C.C..
- Various Parking Advisory Committees.
- Land Transport Energy Committee.

The Year Under Review

So often is the efficient running and work output of Government authorities taken for granted that this year a comprehensive list of the important matters considered by the members of the Authority at meetings held during the year is presented. The items are listed without any attempt to place them in order of priority, preference of chronology, and it will be appreciated that it does not cover routine operational and administrative activities.

A brief resume of some of the more topical items is given at the end of the listing.

Preferential Treatment for Omnibuses in Residential Areas.
Metropolitan Parking Policy.
Enforcement Needs.
Priority Bus Lanes and Access to Northern Freeway.
Paddington Traffic System Management.
Driver Observance of Traffic Signals.
Commonwealth Funding Arrangement 1980/81.

Environmental Planning and Assessment Act, 1979.
Sydney Entertainment Centre.
Traffic Management Schemes.
Traffic Generating Developments.
Traffic Facilities Programme.
Trucks Carrying Containers.
Kyeemagh-Chullora Road Enquiry.
Securing of Loads on Motor Lorries.
Left Hand Turns of Long and Articulated Vehicles at Intersections.
Review of National Traffic Code.
Preferential Treatment for Taxis (in residential areas).
Functional Classification of Roads.
Processing of Development Applications.
Local Government Conference 1980.
Warringah Freeway Transit Lanes.
Traffic Safety Committee.
Use of Transit Lanes by Bicycles.
Use of Kerbside Traffic Signs for Commercial Purposes.
Accidents on Sydney Harbour Bridge.
Speeds in the Metropolitan Area.
Heavy Vehicle Parking Problems.
Instruments of Delegation.
Zoning of Arterial Road Frontages in Urban Areas.
Proposed Shopping and Civic Centre Complex — Ashfield.
Proposed Pitt Street Pedestrian Mall.
Traffic Facilities Fund.
Light Traffic Thoroughfares.
Display of Special Signs and Warning Lights on Certain School Buses.
Bondi Junction Pedestrian Mall.
Delegations of Authority.
Membership — Retirements and Appointments.
Reserved Parking Spaces for Disabled Persons.
Implementation of the Priority Road System.
Illawarra Technical Committee Proposal.
Symbol Only Regulatory Signs.
1980 City of Sydney Strategic Plan.
Collisions with Roadside Objects.
Priority for Buses Departing Bus Stops and Bus Bays.
Road Environmental Aspects of the Fairfield In-depth Crash Study.
Operation of Trucks via the Ramp off Day Street to the North-Western Freeway.
Traffic disruption from crashes on major metropolitan bridges.
Sydney Hospital Re-development — Parking facilities.
Resident Parking Schemes.
Removal of Buses from Oxford Street, Bondi Junction.
Angle Parking on Main Roads.
Lower Alcohol Beer.
Transit Lanes — Operation.
Pedestrian Overbridge in George Street, Hornsby.
Container Depot adjacent to Cooks River Goods Yard.
Traffic Authority (Amendment) Bill.
Proposed Pedestrian Signals on Pacific Highway at Swansea.
Roundabouts — amendment of Motor Traffic Regulations and Metropolitan Traffic (General) Regulations.

T-Junction Rule.
Truck Parking Bays.
Checking of Speedometers.
Traffic Authority Committees.
Amendments to Motor Traffic Act re "No Stopping" — "No Standing".
Residential Flat Units — Parking Requirements for Housing Commission Buildings.
Pedestrian Accidents at Marked Footcrossings on Arterial Roads.
Use of High Beam in Street Lighted Areas.
Declaration by Councils of Residential Streets.
Cumberland Oval.
Request by Sydney City Council for Council's Officers to Police Parking in the City Area.
Warrants for Pedestrian Signals.
Appointment of Authorised Vehicle Reserves.
Car Ownership Rates comparable to other States and Countries.
The Convenience Food Store Concept.
Road Trains.
Street Closures.
Road Humps.
Chatswood Town Centre Inquiry.
Baulkham Hills-Castle Hill By-pass Road.
Sydney Harbour Bridge Driver Aid Scheme.
Lang Road — Narrowing of Carriageway.
Parking Signs.
24 Hour Clearways.
Movement of Heavy Vehicles on Princes Highway, Helensburgh.
Consultations with Local Government Associations.
Differences in Traffic Laws Between States.
Rationalisation of Stopping/Standing/Parking Restrictions.

Removal in Emergency Circumstances of Vehicles Obstructing Traffic

Following an accident on the Sydney Harbour Bridge which blocked two lanes and caused serious disruption to peak hour traffic, a small task force was set up to examine the incident and advise what options exist or might be developed to minimise the consequences of similar occurrences in the future, not only on the Sydney Harbour Bridge but on all roads, in particular heavily trafficked arterials.

The provisions of the Tow Truck Act and Regulations apply to accident situations only and do not cover situations where an obstructing vehicle might be "pushed off the road" or "moved around the corner".

The Authority agreed that provisions need to be inserted in the Tow Truck Act and Regulations to cover all contingencies related to the removal of vehicles in emergency circumstances, when instructions are issued by the Police and/or authorised officers of the Department of Main Roads, and that these government agencies be absolved by legislation from any liabilities arising from the removal of vehicles from carriageways in such circumstances. Action is currently in hand to prepare the necessary legislation.

Road Trains

The Commission of Enquiry into the New South Wales Road Freight Industry in its findings concluded that there could be some justification for extending the limits of operation of road trains and recommended that such a proposal be examined in detail by existing Authorities.

Following upon this the Minister for Transport directed that joint examination by the various authorities concerned with the operation of road trains in New South Wales be co-ordinated by the Traffic Authority.

Subsequently a Working Party has been set up, with representation at senior officer level from the State Rail Authority, Department of Main Roads, Police Department, Department of Motor Transport and the Traffic Authority.

Recognising the need for industry input an approach has been made to the Road Freight Industry Council.

The Working Party is presently gathering information with a view to formulating proposals for the future operation of road trains in New South Wales.

Safety Standards for Securing Loads on Motor Vehicles

The Motor Traffic Regulations have been under review with the object of including more specific requirements in relation to the securing of loading on motor vehicles.

The Traffic Authority supported a proposal that the Code of Safe Loading Practices, endorsed by the Australian Transport Advisory Council, should be given legislative status. However, this was found to be not practicable and the lengthy process of selecting relevant parts of the code and drafting appropriate legislative amendments to enable incorporation into the Motor Traffic Regulations was commenced.

Recognizing the industry's need for positive action the Authority decided to amend the regulations to give effect to the industry's immediate needs, and to continue as a longer term project the selection of specific parts of the code for inclusion in the regulations.

Roundabouts

There has been an increasing awareness among the various State and overseas traffic authorities of the advantages of using roundabouts as a traffic control measure, particularly on "local" roads. More than 200 roundabouts have been established in Victoria in recent years and reports have shown an average 50% reduction in reported crashes at a sample of 31 of the intersections which have been signposted as roundabouts.

Roundabouts can have advantages over traffic signals and other conventional intersection controls in appropriate circumstances. Principal advantages are —

- easy installation with negligible maintenance costs
- significant accident reduction and improvement in overall safety at intersections
- increase in intersection capacity by as much as 30%
- fewer delays during off-peak conditions.

Use of High Beam in Street Lighted Areas

In May, 1981 the New South Wales Motor Traffic Regulations were amended to provide that the driver of a motor vehicle may use high beam in street lighted areas and may also flash his headlights as a warning of danger or to signal his intention to overtake; and is required to dip his headlights when following behind or if within 200 metres of another vehicle.

Previously the New South Wales requirement was that the high beam was not to be used when travelling along street lighted areas. The new regulation now brings New South Wales into line with the practice followed in other States and in many overseas countries.

Left Hand Turns by Long and Articulated Vehicles

The geometric characteristics of many intersections on laned roads are such that long vehicles cannot turn from the lane nearest the left hand boundary without crossing the centre line of the street they are entering.

Because the Motor Traffic Regulations and Metropolitan Traffic (General) Regulations required drivers to make the turn from the lane nearest the boundary of the carriageway the drivers of long vehicles were frequently placed in the position of having to make an illegal turn from a lane other than that nearest the kerb.

To overcome this situation amendments were made to the Regulations, which now exempt the driver of a motor vehicle (or combination of a motor vehicle and trailer) which is 7.5 metres or more in length from the requirement to make a turn from the left (or right) lane where the turn could not otherwise be negotiated with safety. Exemption from the requirements is dependent on the driver displaying the appropriate flashing turn signals together with a sign at the rear of the vehicle worded "Do Not Overtake Turning Vehicle".

As a complementary measure the Regulations also make it an offence for a driver to overtake a lengthy vehicle in the kerbside lane when that vehicle is displaying the appropriate sign and the driver has signalled his intention to turn.

Traffic Management Schemes

Priority to High-Occupancy Vehicles

The Traffic Authority is continuing to allocate road priority to public passenger and other high occupancy vehicles by way of bus lanes and transit lanes where there are overall net benefits to road users.

Bus Lanes

Special bus lanes, as distinct from transit lanes, are provided in selected areas of high density bus operations where heavy traffic delays buses and disrupts schedules. They may be provided on either the left kerbside lane or the right kerbside lane (in a one-way street). Only buses, taxi-cabs, private hire cars and motor cycles may travel in bus lanes. Other vehicles may enter a bus lane only when 100 metres before the point at which they will turn to the left (or right in a one-way street). A bus lane, eastbound in Miller and Union Streets, Pyrmont and on Pyrmont Bridge was provided in connection with the opening of the first stage of the North-Western Freeway.

A report entitled "Roundabouts" prepared by the Traffic Authority highlighting the potential uses and importance of roundabouts in the control of traffic has been circulated to all local government authorities for the guidance of engineers and planners. Guidelines for the design of roundabout are being prepared.

Regulations providing for improved signposting of roundabouts and clarification of right of way rules relating to them took effect on 5th June, 1981.

Differences in Traffic Laws Between States

One of the problems confronting motorists travelling between States is the difference in traffic laws, particularly in respect of intersection priority, standing and parking restrictions and the wearing of seat belts.

The Traffic Authority is committed to the maximum degree of uniformity possible in State traffic regulations and to this end major differences between New South Wales and other States' traffic laws and the National Road Traffic Code have been identified and are being examined to determine whether any changes to the New South Wales regulations are warranted.

One set of regulations posing difficulties for N.S.W. drivers travelling interstate has long been the different parking regulations.

Currently, New South Wales regulations provide for signs worded —

"No Parking"	(may not park unless actually setting down or picking up goods or persons),
"No Standing"	(may not park except while actually taking up or setting down persons),
"No Stopping"	(may not stop or wait at the kerb for any purpose).

The National Traffic Code provides only for —

"No Parking"	(may not park unless actually setting down or taking up persons or goods),
"No Standing"	(may not stop or wait at the kerb for any purpose).

Thus N.S.W. drivers, not appreciating the different meaning of "No Standing" signs in Victoria for example, could find themselves subject to heavy penalties for stopping to set down passengers in restricted areas.

Regulatory changes have been sought to the Motor Traffic Regulations and Metropolitan Traffic (General) Regulations to provide that "No Standing" shall mean the same as "No Stopping" in line with the National Road Safety Code Regulations.

"No Stopping" signs will, consequent on the amendment, have the same meaning as "No Standing" signs and will gradually be phased out.

Transit Lanes

Transit lanes have, in every case, been introduced in an effort to overcome major problems being experienced by peak hour commuters on heavily congested arterial roads, by re-allocating the existing roadspace more efficiently for the movement of people rather than vehicles.

They are provided in preference to bus lanes which, especially over long distances on heavily-loaded arterial roads such as the Spit Bridge and Victoria Road routes, would cause extreme over-loading of other lanes.

Regulations relating to transit lanes are similar to those for bus lanes, but access is extended to vehicles with three or more occupants.

Transit lanes are designed:—

- to provide faster and more reliable public transport;
- to assist in encouraging commuters to change their mode of travel to higher occupancy vehicles;
- to achieve a more equitable usage of road space for all commuters;
- to maintain or improve the operating efficiency of the road, and;
- to bring about savings in fuel consumption.

Sydney currently has 19 route kilometres of transit lanes in the morning peak and 7.5 route kilometres in the evening peak. In each case implementation of the transit lane has been 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.

Bus Priority Right of Way

Further means of improving schedule adherence, minimising delays to bus passengers and generally helping to enhance the public image of bus services as a major commuter transport mode, have been under consideration. Priority for buses at traffic signals was mentioned in a previous annual report.

Attention is also being given to delays to buses leaving bus stops and bus bays. Traffic flow on arterial roads can be improved if bus stops are placed in bus bays clear of the traffic stream, but the delays incurred in re-entering the traffic stream are often substantial, and bus operators are loathe to support their construction. To overcome this the Authority has agreed to the principle of priority for buses leaving bus stops as already practiced widely in Europe and recently introduced in Victoria and appropriate amendments to the Motor Traffic Act Regulations are being drafted.

Clearways

Vehicles, other than buses, taxi-cabs and private hire cars actually picking up or setting down a passenger, are not permitted to stop on clearways.

These restrictions are in force on most of the major traffic routes through the Metropolitan area and generally apply from 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 necessary where traffic volumes would otherwise exceed the capacity of the roads concerned.

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 making available the maximum capacity of arterial roads at all times.

Research on the social and economic costs and benefits of "off-peak" clearways has been undertaken to provide a means of quantifying these factors in terms of vehicle-operating, person-time, extra costs to retailers for loading and unloading arrangements, disruption of parking and the effect of transferring parking to adjacent residential areas. The results showed that the total social, economic and rear-access installation costs would be balanced by the reduction in vehicle operating and driven-time cost, if clearways improve average off-peak speed by as little as 5%, e.g. from 20 to 21 km/h but substantially greater improvements than this could be anticipated.

However, whilst it is expected that there would be substantial net benefits to the community from the introduction of off peak clearways, neither the costs nor the benefits would be uniformly distributed across society. Means might need to be developed to adjust this imbalance.

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.

Intersection Controls on Main Traffic Routes

Traffic congestion problems and attendant accidents at individual locations have called for specific controls such as "give-way" signs and traffic signals. Simultaneously, traffic has spread from the crowded main road network and filtered through large areas of the minor street system, disrupting the amenity of otherwise quiet residential areas and generating a multitude of small, difficult and dangerous trouble spots.

There has been a need to bring efficiency back to the main road system and amenity back to residential and recreational areas.

A major technique employed to reduce traffic problems has been the introduction of a "priority" road system under which all side streets are controlled by either "give-way" signs, "stop" signs or traffic signals. Under this system all side street traffic (except where traffic signals are installed) has to give way to traffic already on the priority road whether on its right or on its left.

An indication of the effectiveness of the priority road system can be obtained by an examination of casualty crashes at non-signalised intersections for the four two-year periods 1971-72, 1973-74, 1977-78, 1979-80 detailed hereunder.

	1971-72	1973-74	1977-78	1979-80
Casualty Crashes at Non-Signalised Intersections	15,514	15,395	13,554	12,452

It can be seen that the number of casualty crashes has continued to decline in the latter part of the 1970-80 decade, coincident with the escalation of the intersection control programme.

Introduction of the T-junction rule on 1st March, 1981 was a natural extension of the priority road system. The new rule requires drivers approaching a T-junction from the terminating road (the stem of the T) to give way to all traffic approaching the junction from the continuing road (the cross arm of the T).

It is significant that with the introduction of the T-junction rule 70% of the total road network in New South Wales now operates as a Major/Minor road system thus bringing closer realisation of a full intersection control system.

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

Left Turn on Red Signal

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.

This practice is common in the form of right-turn-on-red (RTOR) in North America.

During the year studies were completed at thirty intersections in the metropolitan area to determine effects on traffic volumes, stops and delays, and fuel consumption. Analysis of the effects on fuel consumption, delay, and safety is not yet completed. Indications to date are that the concept has value in particular applications but could not be applied universally.

Light Traffic Thoroughfares

Amendments to the Local Government Act, Section 269A and Local Government Ordinance 30D Clause 11 were effected on 24th April 1981. These provide as follows:

(a) New Section 269A "Regulation of Traffic on Public Roads" covers both road closures and light traffic thoroughfares. Under this Section, Councils may declare light traffic thoroughfares for reasons other than structural inadequacy of pavements, e.g. to improve the amenity or safety of residential areas. Procedures to be adopted are similar to those for road closures, and the Traffic Authority has issued guidelines for use by Councils seeking its concurrence to particular declarations.

(b) Amended Ordinance 30D permits councils to apply load limits on public roads for structural inadequacy of pavement reasons, subject to certification by a council engineer.

Resident Parking Schemes

All-day parking of vehicles on residential streets surrounding major public institutions, industrial and sporting areas, recreational and shopping centres continues to disadvantage residents whose premises front those streets and who cannot make reasonable provision for off-street parking.

To assist residents in this situation Councils may, with the Traffic Authority's consent, introduce resident parking schemes. Residents in a defined area may obtain from the Council a "parking authority" for a specified term. When displayed in a vehicle parked on a street in an area where 'period' parking (for example, 1 hour, 2 hours) is in force, the vehicle may stand without restriction. These arrangements can only be instituted in residential areas and generally operate from 8.00 a.m. to 6.00 p.m. Mondays to Fridays.

During the year new resident parking schemes were introduced at Newtown, Chippendale, Surry Hills, Pyrmont, Camperdown, Centennial Park (City of Sydney), Kingsford (Municipality of Randwick) and Ashfield.

Research

Sydney Road Hierarchy Plan

One of the Authority's major activities is the preparation of a Road Hierarchy Plan for the Sydney Metropolitan Area. The Sydney Road Hierarchy Plan will encompass all councils in the metropolitan area. The preparation of the plan will be based on the Authority's guidelines "Functional Classification of Roads". The objective of the plan is to produce a rational street system for Sydney based on safety, efficiency, community needs, social attitudes and their interaction with mobility. For each municipal area a street system will be produced that will provide maximum effectiveness in terms of mobility, accessibility and environmental standards for both regional and local traffic.

The study will collate and co-ordinate all the local plans for Arterial, Sub-Arterial, Collector and Local roads in each municipal area. The local plan would also identify truck routes. The study depends on each council or its consultants preparing a road hierachy plan. After its preparation the draft plan would be the subject of discussion with other interested parties such as Police, Department of Main Roads, Department of Environment and Planning and surrounding municipalities. Having collated all the local plans it is intended that an overall final plan would be prepared for Sydney. Such a plan would take into consideration various traffic management techniques and the objectives of State traffic and local government authorities.

The project was started in 1980 at a seminar attended by state traffic authorities and local councils and is being guided by the Technical Committee of the Authority. It is intended that it will be completed by June 1982.

Environmental Capacity of Residential Streets

Environmental capacity (in vehicles/hour or day) relates to road traffic flows and other impacts such as noise, air pollution, visual intrusion and pedestrian safety. There are no clear cut standards for environmental capacity set down by engineers and planners in Australia.

A study was undertaken to determine acceptable environmental capacities of residential streets. The study was based on the perception of the residents

of the study areas and considered a wide range of traffic volumes and heavy vehicle components. Nine Sydney metropolitan suburbs were chosen as representative of the various socio-economic and demographic parameters existing in the metropolitan region. Each study area had to contain different street profiles and habitant conditions. In each study area a questionnaire was completed on a systematic basis encompassing different residential dwelling types.

The questionnaire tried to identify the reasons people had for living in such surroundings and specifically dealt with environmental issues pertaining to road traffic.

The study is due for completion in September 1981 and should assist in evaluating the consequences of traffic management measures in terms of environmental and residential amenity.

Traffic Safety Aids Outside Schools

A survey of all metropolitan schools in Sydney was initiated by the Minister of Transport and completed during 1978/79. The survey involved collecting data on traffic signs, pedestrian and vehicle volumes and site characteristics. The survey resulted in recommended courses of action that would improve child safety outside schools.

Another part of the work in this area was a review of existing standards and warrants applicable to pedestrian crossings and school facilities in particular. As a result of this investigation it is anticipated that new warrants for school crossings will be prepared.

The survey and subsequent study identified needs for child awareness programmes at schools.

Site improvements at school locations have been part of an on-going programme of works.

It is anticipated that the final report will be published by December 1981.

Impact of Land Use on Traffic

Land use development causes a re-distribution in the movement of people and goods, and accurate predictions of the traffic generating potential of proposed developments are necessary in order that suitable provision can be made both within the site boundary and on the adjacent road network.

Research was undertaken by the Traffic Authority in conjunction with the New South Wales Department of Environment and Planning, which was aimed at developing predictive models for estimating the traffic generating potential of a variety of important urban land uses. Models have been developed which are more reliable than existing techniques. The models are intended to replace these techniques, which have evolved largely from local experience, resulting in the application of inconsistent standards based essentially on "rule of thumb".

A summary report incorporating the Traffic generation characteristics of Office Blocks; Shopping Centres; Factories; Licensed Clubs; Homes for the Aged; Home Units; Restaurants; Service Stations; Motels; Hotels; Fast Food Restaurants; Car Sales and Spares; Car Accessories and Tyres; Recreation; Warehouses; and Road Transport Terminals was produced. Each land use was the subject of a separate report available from the Traffic Authority.

Cycleway Planning

Planning for the encouragement of bicycle use by the provision of bikeways continued throughout the State. A number of councils initiated studies to prepare bikeway plans.

The Government has provided $350,000 per year to assist councils (on a dollar for dollar basis) in the conduct of studies and construction of bikeway facilities.

The Authority in December 1980 engaged a Specialist Bicycle Planner to work full time on bicycle projects. An ongoing part of the Authority's activity in cycleway planning has been the Newcastle Bike Plan Study and subsequent report. This report outlines the engineering measures necessary to implement an effective bicycle network in the Newcastle area, as well as detailing programmes in the areas of education, enforcement and encouragement. The study advocates a four pronged approach to bicycle planning, stating that provision of on-road facilities alone will not solve the bicycle safety problems. The Newcastle Bike Plan Study Report is expected to be published in October 1981.

Advice has been given to many local government authorities who are either preparing proposals for construction of bicycle routes or bicycle studies, which are funded by the State Bicycle Advisory Committee.

Two publications that will provide useful information and advice to local government authorities for planning bicycle systems and engineering design and construction will be published by November 1981.

Speed Control Studies

There are a number of measures that are available to reduce vehicle speeds in residential streets. The Traffic Authority has a view that re-organisation of the residential street system in terms of design and scale is likely to be the most effective. In view of the long term nature of such a concept it was considered a short term option might be evaluated. The use of road humps as a short term speed deterrent was considered as one means of reducing speed in the residential environment.

It is anticipated that the Authority will be carrying out experiments by constructing road humps on certain residential streets in the Sydney Metropolitan Area. The study will involve the measurement of speeds before and after installation as well as the degree of acceptance by motorists and residents. The diversion effects of road humps to all vehicles including heavy vehicles will be considered.

The preliminary work for this study has been prepared and it is anticipated that the trial will be under way in early 1982.

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.

Surveys were undertaken on Military Road to determine more efficient procedures for assessing the effects of different traffic management techniques on aggregate fuel consumption of a traffic stream. Data was gathered by means of helicopter surveys, specially instrumented cars, a representative fleet of cars and number plate surveys.

The analysis of the data is presently being carried out and is expected to be completed by December 1981.

Collision with Roadside Objects

Traffic crashes involving fixed roadside objects, including utility poles and trees, contribute significantly to the New South Wales crash statistics each year. For the years 1978 and 1979 respectively, 221 and 225 fatal crashes occurred involving utility poles or trees. This compares with a total of 1,125 and 1,222 total fatal crashes for the same periods.

A research project initiated last year attempted to identify salient factors in the problem of vehicle crashes involving roadside objects. Its aim was to develop guidelines for the investigation and evaluation of methods of crash reduction for accidents involving roadside objects.

The project was completed using a sample study area and resulted in:

(a) formulation of procedures for the identification of hazardous poles
(b) proposals for remedial measures
(c) assessment of costs/benefits of a remedial programme.

As a result of this study the Electricity Development Act, 1980 has been amended to empower the Energy Authority, acting on the advice of the Traffic Authority, to direct the removal or relocation of hazardous roadside electricity poles. Action is in hand to identify and relocate offending hazardous utility poles as part of the on going activities in this area.

Discussions have also been commenced with the electricity undertakings to explore the prospects of locating poles away from the kerb on new roads or when roads are being widened and poles otherwise being replaced.

Pedestrian Grade Separation Warrants

A research project was carried out to review current procedures and practices for the determination of need and priority rating criteria for pedestrian grade separations. From this, guidelines and warrants were developed to:

(a) determine whether or not there is a need for pedestrian grade separation, and
(b) if so determine feasibility of providing these structures and costs thereof, and
(c) set priorities for implementation.

Driver Observance of Traffic Signals

The practice of disobeying traffic signal commands has been increasing and has reached dangerous proportions. The alleviation of this problem was the prime objective of a study designed to assess the effect of changing the signal timing on driver observance of traffic signals. The study was conducted in the relatively compact Newcastle Urban Area, and changes were made to the signal cycle length and the duration of the amber signals at various locations. In order to assess the safety aspects of these changes a before and after accident analysis was carried out. The observational surveys have been completed and the project is expected to be finalised by June 1982, when the accident histories of the intersections treated and the control locations have been evaluated.

Traffic Engineering Works

As mentioned earlier in this report, the Department of Main Roads is the Traffic Authority's principal operations and construction agency.

General Operation and Maintenance

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

Signs and Markings

Over 28,000 new facilities including marked footcrossings, traffic domes, regulatory, warning and guide signs, together with about 18,000 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 by the Department's own staff and in other areas the work is performed by the Department or Council depending upon local arrangements.

The Department re-marked approximately 48,000 km of longitudinal traffic lines on classified roads. Raised pavement markers continued to be used to augment painted lines and to simulate traffic lines on freeways. Approximately 186,000 square metres of transverse lines, zebra crossings and road symbols were marked or re-marked during the year. Paint continues to be used for the bulk of pavement markings. However, hot applied thermoplastic material is now commonly used for transverse markings on heavily trafficked roads and self adhesive marking tape is used for special applications.

Speed Zoning

During the year new speed zones were established over the following lengths, 35.4 km (60 km/h), 96.5 km (80 km/h), 22.1 km (100 km/h) and 35.0 (110 km/h). Extensions to existing speed zones were made over 57.3 km of roadway.

Construction

Traffic Signals

A total of 102 new sets of traffic signals were brought into service during the year using Departmental staff and Contractors. In addition there were 41 sites under construction or let to contract at 30th June, 1981.

At 30th June, 1981 there were 1,751 sets of signals in service throughout the State, distributed as shown in the following table:—

	Vehicle Actuated	Pedestrian Actuated	Inner City	Total
Sydney	1,148	222	116	1,486
Newcastle	81	22	–	103
Wollongong	69	12	–	81
Country Centres	65	16	–	81
TOTAL	1,363	272	116	1,751

In addition 69 sets of traffic signals were reconstructed because of changing traffic factors or road reconstruction and three sets were removed from service. Construction of all permanent new traffic signals and 22 of the reconstructed signals was undertaken by Departmental Contractors, the remaining being undertaken by Departmental employees.

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

Work continued throughout the year on extending the Sydney Co-ordinated Adaptive Traffic (SCAT) System throughout the Sydney Metropolitan, Wollongong and Newcastle urban areas.

A further 184 sites were connected to the SCAT system making a total of 641 sites, including 150 sites in the Sydney C.B.D. under computer control. A further 71 are also co-ordinated, being controlled by earlier versions of non-computer technology. Including the Sydney C.B.D. area, 12 regional computers are now in operation.

Considerable improvement has been achieved during the year in the programming of computer controlled traffic lights. The new programmes enable lower cycle lengths to be operated during periods of light traffic flow significantly reducing delays to side street traffic.

Pedestrian Bridges and Subways

Two pedestrian overbridges were completed during the year, one at Sydney Road, Balgowlah and the other at South Parade, Railway Bridge, Auburn.

Other Pedestrian Improvements

Sixteen mid-block pedestrian signals were installed during the year together with pedestrian facilities at the majority of the new or reconstructed intersection traffic signals. Development of audio-tactile devices was completed and tenders were called for the supply of audio-tactile devices for installation in 1981/82.

Intersection Improvements

A total of 113 intersections were reconstructed during the year with permanent channelisation. Major sites completed included the following:—

S.H.10 — Pacific Highway and Old Bar Road, Purfleet.
S.H.5 — Great Western Highway and Bringelly Road, Kingswood.
M.R.537 — Rooty Hill Road and Francis Road, Rooty Hill.
M.R.181 — Pitt Town Road and Hawkesbury Road, McGraths Hill.
S.H.10 — Pacific Highway and Longueville Road, Lane Cove.
S.H.1 — Princes Highway and Clove Street, Sylvania.
S.H.1 — Princes Highway and Tuross Head Road, south of Batemans Bay.
S.H.10 — Pacific Highway and T.R.65, north of Ballina.
S.H.5 — Great Western Highway and Ross Street, Glenbrook.
S.H.5 — Great Western Highway and Station Street, Medlow Bath.
S.H.1 — Princes Highway and Fowlers Road, Dapto.
M.R.177 & 178 — Campbelltown Road/Camden Road, Campbelltown.
S.H.17 — Newell Highway and M.R. 552 at Jerilderie.
S.H.17 & 20 — Newell Highway and Riverina Highway, Finley.
S.H.23 — S.H.23 and M.R.223, Cardiff and Lookout Roads, New Lambton Heights.
S.H.9 & M.R.102 — New England Highway and Melbourne Street, East Maitland.
M.R.527 — Macquarie and Munibong Roads, Cardiff.
S.H.3 — Federal Highway at Mac's Reef Road, south of Goulburn.
S.H.3 & T.R.52 — Federal Highway and T.R. 52, south of Goulburn.

Cycleways

1980/81 was the first full year under which the cycleway grants scheme operated and the first year in which cycleways were completed. The following cycleways were constructed and placed in service:

University to City Centre, Armidale
Pacific Highway, Raymond Terrace
Mr. Druitt, Stage I, Blacktown
Victoria Street, Goulburn
Junction Hill to Grafton City Boundary, Copmanhurst
In addition, bicycle racks were constructed at Wakool.

Other Traffic Management and Safety Schemes

Approximately 77 miscellaneous traffic management and safety projects were completed during the year. The different types of projects were:—

Guardrail installations	15
Skid resistance improvements	27
Intersection improvements	7
Improvements to alignment	4
Roundabouts	3
Visibility improvement	2
Additional lanes	6
Bus bays	2
Median adjustment	1
Shoulder widening	10

Mechanised movable medians under automatic control were installed on the approaches to Tom Ugly's Bridge to assist in the regulation of tidal traffic flows across the bridge.

Accident Reduction

The road construction works undertaken were selected because of the contribution they will make to improving safety and reducing delay and congestion. In order to give greater emphasis to accident reduction, the Department has recently created a Road Accident Reduction Group within its organisation to ensure that the funds available are used to best advantage.

Accident statistics and "black spot" data available from the Traffic Accident Research Unit are being used as a basis for identifying specific sites and lengths of road requiring particular attention. This information, together with detailed Police accident reports and the results of research from various sources, are used to identify the most appropriate and cost effective solutions available.

In addition, the Unit is investigating appropriate remedial measures for various types of accidents such as those involving skidding, heavy vehicles and pedestrian facilities. Monitoring is also being undertaken to ensure that facilities such as traffic signals produce the expected reduction in accidents.

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.

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.

The principal sources of funds for this purpose are contributions from —

- 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;
- 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.

COMPARATIVE TRAFFIC FACILITIES FUND (SPECIAL DEPOSITS ACCOUNT) STATEMENT OF

1980		1981 Receipts
$		$
1,824,898	Balance brought forward 30.6.80	1,170,810
	Contributions from State Sources:	
19,070,000	Road Transport and Traffic Fund	18,307,000
340,000	Public Vehicles Fund	420,000
	Motor Vehicles Taxation – Tax Levy	
6,852,000	Weight Tax	11,755,135
1,647,805	Road Tolls – Sydney Harbour Bridge	2,367,967
148,388	– Berowra – Calga Tollway	170,000
175,000	– Waterfall – Bulli Tollway	200,000
	Consolidated Revenue Fund – Contribution towards Bicycle	
350,000	Transport Projects	415,000
388,278	Traffic Accident Research Unit Special Deposits Account No. 2660 (Contribution towards cost of Traffic Safety)	151,057
	Contributions by Commonwealth Government:	
	Road Grants Act 1980	
1,717,876	– National Roads – Schedule	2,438,697
3,793,000	MITERS Schedule 8	–
115,452	Transport (Planning & Research) Act, Grant – Traffic Authority Secretariat	137,164
	Department of Motor Transport	
125,738	Traffic Accident Research Unit	107,660
21,738	Chief Engineer	35,972
37,500	Commonwealth Grant for Road Safety Education	37,500
	Miscellaneous	
2,115	Sundry receipts	1,935
344,230	Department of Main Roads income from Services provided for Councils and Other Bodies	1,226,863
36,954,018		38,942,760

RECEIPTS AND PAYMENTS FOR THE YEARS ENDED 30TH JUNE, 1980 AND 1981

1980			Payments	1981
$	**Department of Main Roads, Traffic Facilities Programme**	$	$	$
	Maintenance and Operations: (less costs recovered)			
11,581,268	Pavement Marking and Signposting		13,707,144	
7,552,082	Traffic Signals		9,056,974	
	Driver Aid Schemes			
961,319	Sydney Harbour Bridge	1,270,571		
132,681	Berowra-Calga Tollway	214,786		
226,943	Waterfall-Bulli Tollway	189,769		
24,325	City Tow Service	26,079		
155,919	Tow Services other than City	174,604		
6,123	Western Freeway	6,919		
–	Tom Uglys Bridge	40	1,882,768	
1,441,732	Engineering Administration		1,875,818	26,522,704
	Construction			
	Traffic Signals, Intersection Improvements			
6,124,761	and Railway Level Crossing Modifications		5,139,631	
364,642	Special Pedestrian Facilities		350,774	
1,291,509	Traffic Management and Safety Projects		892,375	
113,866	Cycleways		63,927	
	Driver Aid Schemes			
467,026	Sydney Harbour Bridge	758,750		
171,950	Ryde Bridge Approaches	9,945		
9,842	Tom Uglys Bridge	278,908	1,047,603	
1,235,475	Engineering Administration		1,023,229	8,517,539
1,435,906	Administrative Expenses			1,699,282
	Acquisition of Sites and Construction of			
851,762	premises for Works Operations			337,759
	Contribution towards cost of Construction			
6,885	of Bondi Junction By Pass			
34,156,016	Total, Department of Main Roads			37,077,284
	Department of Motor Transport –			
	Traffic Authority Secretariat			
638,618	Administration	649,176		
	Research Programmes –			
281,557	Transport planning and research projects	214,805		
5,570	Other research projects	21,828		
40,748	TRANSAC	49,008	934,817	
	Traffic Accident Research Unit			
429,137	Traffic Safety Education Section		260,585	
	Commonwealth Grants for Planning and Research			
	Transferred Towards Expenditure Met From –			
	Traffic Accident Research Unit Account			
168,175	(Special Deposits Account No. 2660)		86,305	
53,018	Road Transport and Traffic Fund		–	
	(Chief Engineer's Projects)			
10,369	Miscellaneous		18,250	
1,627,192	Total, Department of Motor Transport			1,299,957
35,783,208	Total Payments			38,377,241
1,170,810	Balance Carried Forward			565,519
36,954,018				38,942,760

PUBLICATIONS

DOCUMENTS, REPORTS AND TECHNICAL PAPERS PUBLISHED BY THE TRAFFIC AUTHORITY.

Information Pamphlet:

"The Traffic Authority of New South Wales" — October 1979

Guidelines:

Provisional Guidelines for the Authorisation and Installation of Traffic Control Facilities — Revised Nov. 197
Guidelines for Road Closures — Revised Jan. 197
Locational Criteria and Siting Requirements for Container Depots — April 1978
Policy and Standards for Traffic Generating Development — June 1978
Guidelines for Residential Parking Schemes — March 1979
Functional Classification of Roads — October 1980

Discussion Papers:

Extending the Hours of Operation of Clearways – Dr. S. Moore — June 1980

Symposium Report:

Control of Traffic on Residential Streets — June 1979

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 — October 1977
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 Marshall and Associates with Planning Workshop Pty. Ltd. — December 1977
Traffic Law Observance Study – by Planning Workshop Pty. Ltd. — March 1978
Traffic Law Observance Study – Summary Report Planning Workshop Pty. Ltd. — May 1978
Left Turn on Red Signal Final Report – by De Leuw Cather of Aust. Pty. Ltd. — April 1978
Impact of Land Use on Traffic – by Sinclair Knight & Partners Pty. Ltd. with R.J. Nairn & Partners Pty. Ltd. — June 1978
Transport System Management in Sydney – by Stapleton, Clark & Associates — June 1978
Bicycle Use Feasibility Study – by GHD-Parsons Brinckerhoff Pty. Ltd. — July 1978
Report on the Survey of Traffic Safety Aids Outside Schools — April 1979
Study of the Effects of Flexitime and Staggered Hours on Transport – Gaven McDonnell & Co. — June 1979
Feasibility Study into Preferential Treatment for Commercial Vehicles – Alan Voorhers & Partners Pty. Ltd. — October 1979
Land Use Traffic Generation Data and Analysis — June 1980
- Office Blocks
- Factories
- Licensed Clubs
- Shopping Centres
- Motels
- Service Stations
- Recreation
- Car Sales and Spares
- Car Accessories and Tyres
- Warehouses
- Road Transport Terminals
- Hotels
- Fast Food Restaurants
- Summary

Collision with Roadside Objects – Study Report
- Volume 1 — October 1980
- Volume 2 — February 1981

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