



RTA Thematic History

A component of the RTA Heritage and Conservation Register

2nd Edition, 2006



ROADS AND TRAFFIC AUTHORITY HERITAGE AND CONSERVATION REGISTER

Thematic History
Second Edition, 2006

ROADS AND TRAFFIC AUTHORITY HERITAGE AND CONSERVATION REGISTER

Thematic History
Second Edition, 2006

Compiled for the Roads and Traffic Authority as the basis for its Heritage and
Conservation (Section 170) Register

Terry Kass
Historian and Heritage Consultant
32 Jellicoe Street
Lidcombe
NSW, 2141
(02) 9749 4128

February 2006

Cover illustration:

Peak hour at Newcastle in 1945. Workers cycling to work join the main Maitland Road at the corner of Ferndale Street.
Source: GPO I, ML, 36269

Abbreviations

| | |
|-------|---|
| DMR | Department of Main Roads, 1932-89 |
| DMT | Department of Motor Transport, 1952-89 |
| GPO I | Government Printer Photo Collection I, Mitchell Library |
| MRB | Main Roads Board, 1925-32 |
| SRNSW | State Records of New South Wales |

Table of Contents

| | |
|---|-----|
| A. THEMATIC OUTLINE..... | 11 |
| 1.0 Connecting settlements in the new colony..... | 11 |
| 2.0 Providing roads and bridges through the Department of Public Works..... | 18 |
| 3.0 Experimenting with new ways of providing roads and bridges for the colony/state | 24 |
| 4.0 Evolving administrative arrangements for the DMR/RTA..... | 27 |
| 4.1 Assessing previous routes and bridges inherited by the Main Roads Board/DMR..... | 33 |
| 5.0 Planning road hierarchies | 33 |
| 5.1 Road classes..... | 38 |
| 6.0 Constructing roads and works (DMR)..... | 43 |
| 6.1 Evolving construction techniques..... | 43 |
| 6.2 Continuing construction and maintenance works on roads | 44 |
| 6.3 Constructing new roads | 47 |
| 6.4 Providing river crossings and bridges..... | 51 |
| 6.5 Undertaking wartime defence works..... | 54 |
| 7.0 Responding to the impact of road construction or works | 55 |
| 8.0 Ameliorating Environmental Impacts..... | 58 |
| 9.0 Handling property acquired for works and other functions..... | 63 |
| 10.0 Co-ordinate or Compete - The mix of transport systems?..... | 65 |
| 11.0 Managing traffic..... | 67 |
| 12.0 Licensing and regulating vehicles..... | 71 |
| 12.1 Motor registries | 73 |
| 12.2 Vehicle weighing stations..... | 74 |
| 13.0 Licensing and regulating drivers | 76 |
| 14.0 Enhancing road safety..... | 76 |
| B. CHRONOLOGY..... | 80 |
| 1.0 Connecting settlements in the new colony..... | 80 |
| 2.0 Providing roads and bridges through the Department of Public Works..... | 82 |
| 3.0 Experimenting with new ways of providing roads and bridges for the colony/state | 82 |
| 4.0 Evolving administrative arrangements for the DMR/RTA..... | 83 |
| 5.0 Planning road hierarchies | 85 |
| 5.1 Road classes..... | 86 |
| 6.0 Constructing roads and works (DMR)..... | 86 |
| 6.1 Evolving construction techniques..... | 86 |
| 6.2 Continuing construction and maintenance works on roads | 87 |
| 6.3 Constructing new roads | 87 |
| 6.4 Providing river crossings and bridges..... | 89 |
| 6.5 Undertaking wartime defence works..... | 91 |
| 7.0 Responding to the impact of road construction or works | 91 |
| 8.0 Ameliorating Environmental Impacts..... | 92 |
| 9.0 Handling property acquired for works and other functions..... | 93 |
| 10.0 Co-ordinate or Compete - The mix of transport systems?..... | 94 |
| 11.0 Managing traffic..... | 95 |
| 12.0 Licensing and regulating vehicles..... | 96 |
| 12.1 Motor registries | 97 |
| 12.2 Vehicle weighing stations..... | 101 |
| 13.0 Licensing and regulating drivers | 101 |
| 14.0 Enhancing road safety..... | 102 |
| C. NOTABLE PERSONS ASSOCIATED WITH ROADS IN NEW SOUTH WALES OR WITH THE RTA..... | 103 |
| D. RTA HISTORICAL THEMES COMPARED WITH NATIONAL AND STATE THEMES..... | 107 |

E. BIBLIOGRAPHY..... 115

F. INFORMATION SOURCES FOR THE HISTORY OF THE RTA AND HOW TO USE THEM..... 120

FOREWORD

The RTA Thematic History was originally written as the first stage of the process of developing a Section 170 Heritage Register that would encompass the whole state of NSW. It provided a history of the RTA and its predecessors as well as providing a list of themes as the basis for investigating the types of heritage items that the RTA held in its custody and to help establish the significance of those items. The History provided the basis for interpretation of those items to the community.

The Thematic History is only part of the RTA's long-term heritage policy, which has three main aims:

- to identify and manage the heritage items the Authority owns, occupies or controls,
- to ensure that the heritage significance of the Authority's assets is established and maintained, and
- to identify and care for heritage items on which the Authority has an impact.

There have been, and will continue to be, many challenges in achieving these aims. Some of them are:

- identifying the heritage items for which the RTA has responsibility (apart from those listed by other bodies),
- holding information on heritage items in such a way that:
 - staff working on a particular item were alerted to the fact that an item is a heritage item,
 - as full as possible a record of each item was available,
 - the information was compatible with the State Heritage Inventory.
- compiling and recording information on each item, and
- raising the awareness of RTA staff to the significance of heritage issues in planning work and in day-to-day activities.

The process of locating and/or identifying the heritage items held by the RTA across NSW is now complete. However, the identification and management of heritage is a dynamic process, so that items will be added to the register as well being removed from it in accordance with Section 170A of the Heritage Act, 1977. Creation of the RTA's Heritage and Conservation (Section 170) Register ensures that the Register will be a tool in planning and environmental assessment of activities and in total asset management.

INTRODUCTION

This thematic history has been prepared for the Roads and Traffic Authority (RTA) as required under Section 170 of the Heritage Act. This history seeks to identify the main themes in the history of the RTA and its predecessor departments, including their administrative history, the history of roads and bridges, the evolution of vehicle regulation and licensing and the licensing of drivers as well as changes in traffic management and safety. Additionally, the roles of these departments affect society and the landscape around them. Hence, matters such as the implications of the provision of roads and the control of drivers and vehicles has to be addressed, as does the impact of road building on the districts they pass through.

Of course, the vast size of the state of New South Wales, and the multiplicity of roads means that a detailed outline of the history of each road and its impact on its district cannot be dealt with here. This study identifies the broad themes or historical processes which explain the evolution of road transport in this state. The Brief provided by the NSW Heritage Office for such studies requires that the Historic Context Report be based upon existing printed secondary sources rather than upon extensive research into original primary sources. Detailed research into primary sources is very time consuming and it is not warranted by the nature of the task. It would be unnecessary and contrary to the terms of the Brief to undertake widespread primary research in the time available.

This Thematic Outline serves as the basis for understanding the forces that have shaped the RTA and roads in NSW. It is followed by a Chronology that outlines the salient events that fall within the ambit of each Theme. A brief directory of Notable Persons associated with the RTA and its predecessors follows. After the Bibliography, a Section that details the array of different sources available to obtain information about the history of the RTA and roads in NSW is included.

In this revised version of the Thematic History, additional material incorporating the results of the process of identifying heritage items held by the RTA across the state has been incorporated. In order to draw attention to specific items on the Section 170 Register that relate to historical processes or periods of development of roads and the RTA across NSW, margin boxes have been added to this report with relevant examples.

N. B. The Department of Main Roads was responsible for the construction and maintenance of the state's system of Main Roads. From the early 1930s, registration of drivers and vehicles, plus road safety was handled by the Commissioner for Road Transport and Tramways, followed in the early 1950s by the Department of Motor Transport, which took over the functions of that department associated with roads. The following report splits the different functions into themes. Hence, the different functions are effectively handled in different sections. Licensing and road safety and thus the Commissioner for Road Transport and Tramways and the Department of Motor Transport are dealt with in the latter part of the report.

Responsibility for report

Thematic History Terry Kass, Historian and Heritage Consultant

Acknowledgements

One of the pleasures of this project has been the opportunity to draw out the wide and deep knowledge that many staff members or former members of the DMR and RTA. I have benefited from the comments and advice provided by Margaret Veitch, John McKerral, John Brunt, H L Camkin and Rod Watson. It is always invidious to single out anyone for special mention. I would, however, like to specially thank Bruce Loder for the range and depth of his comments on the original version of this report. His insights have added considerably to it. I also wish to thank Anne Picot for clarifying the records management system of the RTA.

Although they have contributed to this work by their knowledge and insights, responsibility for its accuracy and interpretations is mine alone.

"What is the best road? ... The class or classes of road that will efficiently serve the community at the lowest possible cost and in the shortest possible period of time."

William Calder, Chairman of the Victorian Country Roads Board. ¹

"Life is a matter of mind over motor."

Dept of Main Roads, December 1965.²

¹ Quoted in Dept of Main Roads, *Annual Report*, 1935, p 2

² *Main Roads*, Dec 1965, inside cover in this issue and those following

A. THEMATIC OUTLINE

I.0 Connecting settlements in the new colony

No made roads existed in Australia before white European settlement, although some Aboriginal pathways were heavily used. Some even appear to show signs of being formed rather than simply being cleared.³ Between 1789 and 1791, after white settlement commenced in NSW, a track was formed between Sydney and Parramatta, although most communication was by river. Though frowned upon by government since the track enabled convicts to evade scrutiny of their movements, it became the basis for the Parramatta Road. Close to Parramatta, the track ran about a mile south of the current Parramatta Road, running roughly where Mona Street crosses Duck River in Auburn.⁴ Parramatta Road was laid out about 1797 under the direction of the Surveyor-General, Augustus Alt.⁵ It was remade in 1806 and in 1810.⁶ In October 1797, a bridge was also built across Duck River.⁷

After settlement was established in the vicinity of Windsor and Richmond on the Hawkesbury River, another track developed between Parramatta and Windsor. The River in Parramatta was bridged by 1796, although it would be some years before a sturdy bridge, which did not succumb to flooding was built there.⁸ Upkeep of new roads in a rough new colony could not keep up with wear and tear inflicted upon them by travellers. In 1805, a voluntary committee of officers and other notables was formed to collect contributions to keep the two main roads of the colony, that from Sydney to Parramatta, and then on to Windsor, in repair.⁹

Governor Macquarie instituted a wide ranging construction programme after his arrival. Works, which he initiated during his governorship, included roads. Tolls were established on most roads. The payment of tolls on government maintained roads became a significant element in the split between Judge-Advocate Ellis Bent and Governor Macquarie from the middle years of Macquarie's reign, a split that ultimately added to the momentum, which caused Macquarie's removal from the colony.

An early road completed under his administration was the road from Sydney to South Head finished in May 1811 by men of the 73rd Regiment.¹⁰ Apart from convict labourers and the work of the military, Macquarie made extensive use of private contractors. His use of them to build roads was later criticised, but by drawing upon the talent of newly emancipated convicts, lean and hungry to make their mark on society, Macquarie unleashed creative energies, which had the desired results. In May 1810, James Harrex was contracted to build a toll road from Sydney through Parramatta to the Hawkesbury

³ I McBryde, *Records of Times Past - Ethno historical essays on the culture and ecology of the New England tribes*, Canberra, 1978, pp 163-6

⁴ J Jervis, 'The Road to Parramatta - Some Notes on its History', *JRAHS*, 13, 1927, p 67

⁵ J Jervis, 'The Road to Parramatta', 1927, p 68-9

⁶ Auburn Jubilee, *Auburn 50 years*, p 13

⁷ D Collins, *An Account of the English Colony in New South Wales*, Vol II, London, 1802, p 41

⁸ *Roadmakers*, p 5

⁹ *Roadmakers*, pp 7-8

¹⁰ *Roadmakers*, p 13

River. William Roberts was contracted to complete a road from Sydney to Liverpool in 1813. Harrex did not complete his contract due to his conviction for stealing livestock.¹¹ Nevertheless, such men became some of the notable entrepreneurs in the colony.¹²

Old Windsor Road, and Windsor Road Heritage Precincts (Item 4301011)

The routes constructed to the Hawkesbury, which include Windsor Road and the Old Windsor Road, have been substantially improved recently to cater for modern traffic. However, significant elements of the old road remain, some as bypassed sections, with boundary stones and alignment markers, which appear to date back to construction work in the reign of Governor Macquarie. These are highly significant heritage items, which are arguably of national significance.¹³

By April 1814, a road from Liverpool to the Western Road near Parramatta (later to called Dog Trap Road and then the Woodville Road) was in progress.¹⁴ The most notable achievement, however, was the building of a road across the Blue Mountains after the mountains had been crossed by Gregory Blaxland, William Charles Wentworth and William Lawson in 1813. William Cox, a magistrate and former army officer from the Hawkesbury, was given a gang of men plus equipment to complete a road to Bathurst. His task was completed on 18 July 1815. Work on the new Blue Mountains Road included the construction of the pass at Mount York using a route that did duty for some years until the alignment was altered to a more suitable location at Mount Victoria.¹⁵ By 1816, many of these routes had been given milestones, a few of which survive today. In 1818, Edward Cureton erected an obelisk in Macquarie Place, which was the starting point for measurement for all roads leading out of Sydney.¹⁶ Macquarie also introduced a number of significant initiatives to control traffic including restraints on the weights of vehicles and wheel widths, the registration of carts, as well as the “keep to the left road” rule.¹⁷ After Macquarie's departure in 1821, work continued on opening new roads.

Construction methods were crude. When engineer George Druitt formed a road in 1818 from the Pennant Hills to the wharf (today's Marsden Road-Wharf Road), he built a road with a table on each side, and a barrel form in the middle which was formed by throwing any ironstone or gravel he could locate onto the centre on top of a clay foundation.¹⁸ He also altered the basic roadmaking material from sandstone to ironstone. When crushed ironstone was mixed with clay it provided a more robust longer lasting surface.¹⁹

Roads had a significant impact opening up new country to settlement. Although many roads were built to connect one settlement to another, the country they traversed was made accessible in an era when travel was slow and based upon animal muscle power. The road to Liverpool, for example, passed through country uninhabited by white man in 1814. Within the next 15 years, most of the land along the road had been settled as

¹¹ T Kass, *Parramatta Hospital: An Historical Analysis for an Archaeological Assessment of the Site*, For Consultant Archaeological Services, For Public Works Department of NSW, September 1990, pp 11-3

¹² D R Hainsworth, *The Sydney Traders - Simeon Lord and His Contemporaries*, Melbourne, 1981, pp 212-5

¹³ *RTA Regional Heritage Study: Hawkesbury Sub-region*, Professor Ian Jack, 2004, Sections 1.0, 5.2, 5.3

¹⁴ *Roadmakers*, p 13

¹⁵ *Roadmakers*, pp 15-6

¹⁶ *Roadmakers*, p 19

¹⁷ *Roadmakers*, p 20

¹⁸ R Hawkins, *The Convict Timbergetters of Pennant Hills: A History and Biographical Register*, Hornsby Shire Historical Society, Hornsby, 1994, pp 72-3

¹⁹ *RTA Sydney City Sub-region Heritage Study*, Godden Mackay Logan, March 2004, p 11-2

grants were given out and inns were built. The road became the front boundary for these grants, as indeed roads often were in many areas as settlement passed through. The road also became the boundary between the Parishes of Liberty Plains and Bankstown when parishes were laid out in 1831.

From the original nucleus of settlement in the County of Cumberland, a growing network of roads snaked across new country. Construction of a road southwards from Picton to near the Goulburn Plains commenced in October 1819. It was completed in February 1821. A shorter route superseded it in later years. The Illawarra was penetrated by settlers along a series of rough tracks, none of them formed as roads.

Victoria
Pass,
Great
Western
Highway,
Mt
Victoria,
Item
4301023

The search for a less extreme descent down the western side of the Blue Mountains led to work commencing on an alternative route in 1829 by Major Lockyer. Surveyor-General T L Mitchell found a more suitable descent late in 1829 and transferred work to this line at a place he named Mount Victoria. Major Lockyer resigned from his position and the Road Branch of the Surveyor-General's Department was re-organised. A new engineer, John Nicholson, was appointed to take charge of road works. A road was cut through the pass and built up with massive buttresses. The work was completed and opened as Victoria Pass on 23 October 1832.²⁰ Along with the work at Devines Hill on the Great North Road, Victoria Pass stands as a monument of national significance to the work and vision of T L Mitchell as road builder. Unlike the Devines Hill works though, Victoria Pass has been in continual heavy use for over 170 years and continues to cope with pounding by heavily loaded freight trucks.²¹



Figure 1 Victoria Pass - before works. Source: J Macle hose, *Picture of Sydney and Strangers' Guide in New South Wales for 1839*, between pages 172 & 173

²⁰ J Macle hose, *Picture of Sydney and Strangers' Guide in New South Wales for 1839*, Sydney, 1839, pp. 172-5; *Roadmakers*, pp 27-8

²¹ RTA Regional Heritage Study: Western Region, Final Report, Ian Jack Consulting Pty Ltd, for RTA, April 2004, p 8

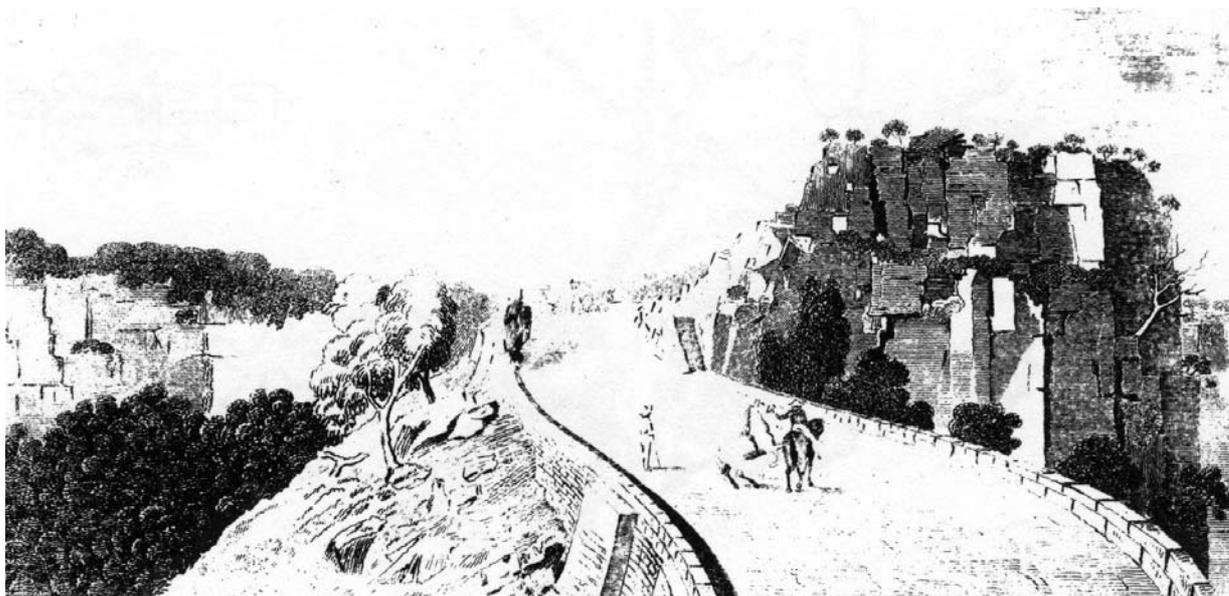


Figure 2 Victoria Pass - after works were complete. Source: J Maclehose, *Picture of Sydney and Strangers' Guide in New South Wales for 1839*, between pages 172 & 173

Lennox
Bridge
(Item
4300301)

Arrangements to finance road works by levying tolls were made in 1832 when the Act (2 Wm IV, No. 12) was passed. An Act was passed on 28 August 1833 (4 Wm IV, No 11), which separated main roads, which would form a charge upon the whole colony, from minor roads, which should be maintained at the expense of local inhabitants.²²

Lans-
downe
Bridge,
(Item
4301042)

After some delay, the Surveyor-General, Thomas Livingston Mitchell was instructed by Governor Darling to survey routes for major roads north to the Hunter, west to Bathurst and south to Goulburn, a task which he had completed in 1833. In 1837 road construction was taken out of the hands of the Surveyor-General's Department where it had remained since 1827, and handed to Royal Engineers stationed in the colony.²³ Mitchell's Map of 1834 depicts the evolving road network of the colony. In 1832, Mitchell engaged David Lennox as the Sub-inspector of Roads, with responsibility for bridges. He was appointed Superintendent of Bridges in June 1833.²⁴ Lennox's skill as mason and bridge-builder was shown in his stone bridges at Lansdowne and Lapstone, and spanning the Parramatta River in Church Street, Parramatta.

²² *Main Roads*, April 1932, p 117

²³ *Roadmakers*, p 22

²⁴ *Roadmakers*, p 29

A road from Menangle southwards to Stonequarry Creek was commenced in 1832.²⁸ It followed a line surveyed by Mitchell in 1830 and joined an existing track at Towrang near Goulburn. The road was completed in stages over the next few years. Although a completion date cannot be ascertained, the road continued through Goulburn and Yass by 1847.²⁹ Construction work completed by convicts on this stretch of road and the remains of the convict stockade and cemetery survive at the intersection of the Hume Highway with the road to Towrang.

Settlement in the Illawarra from the 1820s onwards, ensured that there was pressure for roads to serve the area. Governor Bourke gave Mitchell instructions to survey a route through Appin to Illawarra in 1834. Work on the new route from Broughton's Pass to Mt Keira commenced the following year. It connected with an existing road privately built by Cornelius O'Brien, and then carried on to connect with Bulli and southwards to Saddleback Mountain and a road marked to Bong Bong. A new route down Bulli Pass discovered in 1836 became the preferred route down the escarpment into the Illawarra in later years. Mitchell also surveyed another road to the Illawarra along a more direct route than the Appin Road, from Cooks River across the Georges River at Lugarno through Menai to Mount Keira. It was cleared in 1843, but was not used by travellers to any great extent.³⁰

To allow the free movement of cattle in the County of Cumberland, a number of "driftways" were left in places such as Pennant Hills and near Prospect. Many do not appear to have been used very much. Later development has almost completely obliterated them. Their function was taken over in later years when settlement expanded across the Blue Mountains by the creation of travelling stock routes (TSRs), wide rights-of-way, known to pastoralists as the "long paddock" for their value in times of drought. Many rural roads later followed these stock routes.



Figure 4 Travelling stock reserve near Tamworth August 1947. A narrow carriageway for wheeled vehicles often followed a wide reserve set aside for stock movement. Source: GPO1, 45316

²⁸ *Roadmakers*, p 33

²⁹ *Main Roads*, XIII, 4, June 1948, pp 124-5

³⁰ *Roadmakers*, pp 35-6

Beyond the County of Cumberland, the provision of tracks and roads filled in the road hierarchy on a number of levels. They connected country settlements with Sydney. It provided a network of roads, which linked regions and localities across the colony of NSW to other colonies such as Victoria and South Australia. Finally, it filled in a finer grid of roads leading from farms, settlements, villages and towns.³¹ This road hierarchy would, in time, come into the control of various levels of government or of government agencies responsible for their upkeep and construction.

With the passing of the Parish Roads Trust Act (4 Vic No 11) in 1840, the colonial government sought to pass responsibility for the upkeep of local roads to local landholders. They would constitute road trusts to maintain roads, and levy a rate on local landowners and fix tolls. This was the first attempt at local government in NSW. The first three road trusts to be formed were for the road from South Head Road to Cooks River, from Kiama to Jamberoo and for the Cooks River Road.³² Inadequacies in the Act and with financial arrangements ensured that the Act was little used. In 1848, special Acts were passed to establish Trusts for the Old and New South Head Roads. It was followed in June 1848 by the Sydney Suburban Roads Act (11 Vic No 49), which made provision for roads near Sydney by creating Trusts for them. In 1849, the Cumberland Roads Act (13 Vic No 41) extended the trust system across the County and created seven road districts. Other road trusts for areas such as Maitland followed.³³ Construction of toll houses was a feature associated with the collection of tolls to use the road. Most toll houses have now disappeared, but a few remain such as those at Windsor and Mount Victoria.

Roads wore out all over the colony, including those managed by trusts. Widespread decay of roads coupled with the failure of district councils that were supposed to manage local roads in their area ultimately caused the appointment of a Royal Commission into the administration of roads by Surveyor-General T L Mitchell. When the findings of the Commission were published in November 1855, they were critical of Mitchell, but he had no time to respond in detail since he had died on 5 October, ironically from pneumonia caught whilst surveying the Braidwood-Nelligen Road.³⁴

The death of Mitchell coincided with the introduction of railways into NSW. A line to Parramatta Junction (now Granville) terminating at a point a few hundred yards beyond Woodville Road opened in September 1855. In 1856, the Public Works Department of the newly self-governing colony took over responsibility for road construction in NSW. However, the extension of railways and their success in moving goods and providing rapid and efficient transport soon diverted traffic away from roads and ultimately reduced their funding as well. The quality of roads, already reasonably poor, declined further. Captain B H Martindale of the Royal Engineers was appointed as Chief Commissioner for Railways in July 1857. The emerging role of roads in the transport hierarchy was highlighted by the fact that his other, less important responsibility would be main roads. Martindale recommended a cheap mode of construction for roads keeping in view the

³¹ RTA – Upgrade of Heritage & Conservation Register for the South West Region, NSW, Freeman Randall, Canberra for RTA, August 2003, p 3

³² F A Larcombe, *The Origin of Local Government in New South Wales 1831-58*, Sydney, 1973, pp 53-9

³³ F A Larcombe, *Origin of Local Government in New South Wales 1831-58*, pp 63-5

³⁴ *Roadmakers*, p 26

vast distances, which had not yet been adequately serviced, by roads.³⁵ Trains provided fast and reliable services unaffected by weather. Journeys were less likely to be interrupted by delays, bushrangers, livestock movements and other impediments which road-users had become accustomed to.

2.0 Providing roads and bridges through the Department of Public Works

The Main Roads Management Act (21 Vic No 8) of June 1858, made Martindale responsible for the three main roads leading out of Sydney to the north, south and west. The 1858 Municipalities Act (22 Vic No 13) made the creation of local government authorities possible. They would also care for local roads in their areas. Yet, a hastily drafted Act ensured that many municipalities were too small to collect adequate rate revenues to undertake the wide range of municipal functions and services expected by electors. Local roads suffered.³⁶

The surveying and alignment of roads remained in the hands of the Surveyor-General and later, the Department of Lands. The Roads Branch of the Lands Department was formed in 1867. It was responsible for the alignment of roads, and for dealing with road trusts and was the avenue through which many roads were funded. It also dealt with private individuals concerned with the opening of local roads. Works on these roads were often arranged between the Department of Lands and the Public Works Department, such as Rookwood Road in 1887.³⁷

The Public Works Department continued its responsibility for construction and maintenance of roads and bridges across most of the state. In 1859, Martindale created a district based organisation to maintain roads, principally focused upon the northern, southern, and western roads. In 1863, three positions as Bridge Superintendent were added. Martindale's arrangement of roads was strongly but hastily criticised. Although an inquiry vindicated his management of roads, he resigned and returned to England in November 1860. Martindale was succeeded by a number of short-term appointments until W C Bennett was appointed as Commissioner and Engineer-in-Chief for Roads in 1862.³⁸

Bennett was to supervise the roads of the colony for many years. He sought to implement a sound strategy to improve roads across the colony. In 1865, Bennett's report to Parliament outlined his priorities for road works:

The bridging of waterways;

Engineering works to improve roads across mountainous and swampy areas;

The laying out of permanent lines of main roads;

³⁵ *Roadmakers*, p 40

³⁶ F A Larcombe, *The Origin of Local Government in New South Wales 1831-58*, Sydney, 1973, pp 296-300

³⁷ File 87/475, in Department of Lands - Roads Branch, Correspondence Files, SRNSW 10/15192

³⁸ *Roadmakers*, p 44

The forming and surfacing of main roads, of roads where soil conditions demanded it (e. g. black soil plains), and the forming and surfacing of heavily trafficked areas near settlements;

The linking of metalled portions of roads to make a continuous road network maintained more easily.³⁹

Bennett also continued the joint use of contractors and day labour works under the control of the Public Works Department, commenced by Martindale, rather than simply relying upon day labour.⁴⁰

After the arrival of responsible government, it would be some time before elected members joined themselves into formal parties rather than simple loose factional alliances. In the first forty years of responsible government, local members were elected less for their policy than for their ability to act as lobbyists for their district and for their ability to attract public works and employment to their electorate. Such politicians were quite properly described in popular parlance as "roads and bridges" politicians. Apart from the railway, public works such as bridges and roads were eagerly sought. The impact of this upon the overall scheme of road and bridge building in NSW has never been adequately assessed. It appears that the effect of small scale and often isolated works to appease a local member and his electorate undercut attempts of the Roads Branch of the Public Works Department to provide an adequate transport network, which was based on an overall plan based upon a suitable road hierarchy.

Rail attracted the bulk of finance and construction attention. As the new and most reliable form of transport, with its aura of elite travel, railways naturally attracted the bulk of effort. Speed coupled with reliability quickly made railways the most advanced means of travel for people, goods and livestock. Thus, they attracted large sums of finance, often funded by loans from overseas sources. Railways were also crucial elements in the battle of Sydney based businessmen and politicians (often the same) to strengthen their control over the colonial market. Since the main river system in NSW ran west to east and towards the southwest, the absence of adequate roads enabled river transport to evolve into a serious rival. Since the main rivers also drained to the south-west, they also took a large amount of trade to South Australia and Victoria. Main roads largely followed these rivers, a legacy of when the roads were created and travellers needed to keep good feed and adequate water for their stock within easy reach. The spectacle of teams bogged on the roads in sight of steam driven riverboats sailing unhindered up and down these rivers only enhanced the impotence of road transport at that time of change.

In order to recapture this trade slipping away to the borders, the colonial government sought to use railways to draw that trade back to Sydney. A vigorous campaign of railway building coupled with aggressive freight discounting was used to counter the drift of trade to the other colonies. Needless to say, roads emerged at the bottom of the transport hierarchy, acting as feeders to the river ports along the Murrumbidgee, Murray and Darling or to the railway stations which emerged at key locations, such as Wagga Wagga, Junee and Bourke.

³⁹ 'Roads (Report from the Commissioner)', *V & P L A N S W*, 1865-6, I, pp 941-2

⁴⁰ 'Roads (Report from the Commissioner)', *V & P L A N S W*, 1865-6, I, p 942

Railways rather than roads acted as the driver of town growth. Major towns at railway termini or on strategic points between river and rail became large bustling towns, such as Bourke, Hay, Griffith and Narrandera.⁴¹ Only later, once these towns had consolidated their position, were roads able to empower these towns even further. They allowed the towns to draw in the trade of their districts ever more tightly, once sufficient people owned cars to allow them a reasonably comfortable trip into town. Thus, the expanding hinterland of these towns grew ever larger as the district, which could be comfortably travelled in a day by car, increased.

By 1865, there were 34 toll bars and 5 toll ferries on main roads and the Public Works Department's responsibilities had increased markedly. In January 1864, 3,286 miles of minor roads were transferred from the Department of Lands to the control of the Public Works Department. Large parts of this road network were then transferred to road trusts - South Head, Maitland, Penrith, Parramatta, Campbelltown, Liverpool, Windsor, Richmond, Narellan, Randwick-Coogee and Sydney.⁴²

Major road works projects of the 1860s included the construction of a road from Grafton to Glen Innes across the Great Dividing Range. Roads connecting Armidale to Bellingen, Kempsey and Grafton on the coast were also constructed.⁴³

Pastoral development in the far west of the state relied upon a series of poorly maintained tracks. Mining centres that emerged had to accept the same scant provision of roads. Railways continued to serve the main centres but could do little for the smaller scattered centres. Even travellers to booming Broken Hill had to put up with a mix of modes of transport including rail and road or river. It was not until the 1930s that the Barrier Highway was cobbled together from a range of existing roads and turned into a traffickable route for motor vehicles.⁴⁴

In 1871, an amendment to the Main Roads Management Act (35 Vic No 2) specified that the schedule of main roads, which then only comprised the main north, south and west road out of Sydney, could be altered, though no changes were made. Minor roads were assigned to one of six classifications and their funding from consolidated revenue was apportioned on that basis. Roads controlled by road trusts were also funded on a similar basis but the money was distributed by the Department of Lands through its Roads Branch.⁴⁵ R Hickson was appointed Commissioner and Engineer-in-Chief for Roads and Bridges in 1889 after Bennett's retirement.⁴⁶

By 1891, there were 51 Road Superintendents as well as H H Dare who worked exclusively on bridges as Bridge Modeller and Bridge Computer. E M de Burgh was appointed as Supervising Bridge Engineer. J J C Bradfield joined the Drawing Office on 12 January 1891. Despite apparent reductions in the Public Works Department for economic reasons during the Depression of the 1890s, the PWD commenced an

⁴¹ RTA – Upgrade of Heritage & Conservation Register for the South West Region, NSW, Freeman Randall, Canberra for RTA, August 2003, p 3

⁴² 'Roads (Report from the Commissioner)', *V & P L A N S W*, 1865-6, I, p 941

⁴³ *Roadmakers*, p 49

⁴⁴ RTA Regional Heritage Study: Western Region, Final Report, Ian Jack Consulting Pty Ltd, for RTA, April 2004, p 15

⁴⁵ *Main Roads*, April 1932, p 119

⁴⁶ *Roadmakers*, p 50

extensive road and bridge building programme, as works were used to provide unemployment relief. In 1891, Hickson created road divisions headed by suitably qualified officials. Divisions included the Metropolitan, the Central, the Southern, Western, Northern and North Eastern. In 1895, Hickson was appointed to a position as Engineer-in-Chief for Public Works, adding the Harbours and Rivers Branch to his responsibilities. He held that post until 1901 when a further promotion took roads out of his hands.⁴⁷

Bridges built by the Public Works Department from the 1850s onwards were mostly erected using local hardwood due to their strength and the high cost of using imported iron or steel. Since the best hardwoods often grew on the coast where the problems of crossing rivers were greatest, the use of locally grown timbers on the coast allowed considerable economies in bridge construction. Timber beam and corbel bridges plus laminated timber arch bridges were built originally. With the introduction of timber truss construction, higher bridges could be built above the level of floods. Research into the strength of different timbers allowed better planning and design of bridges, as well as more appropriate monitoring of them during their lifespan. The evolution of timber bridge design was assisted by the development of the McDonald truss and the Allan truss. In 1886, Public Works Department engineer, John A McDonald improved the existing truss design used on bridges since the 1860s. Percy Allan adapted existing British and American bridge design methods to Australian conditions and by 1893 had developed a new truss design which was 20 per cent cheaper but able to carry 50 per cent higher loads.⁴⁸

Former
Square &
Compass
Inn,
Lidsdale
(Item
4305613)

Old
Marulan
Town
(Item
4300302)

Survey
tree,
MR7,
Riverina
Highway,
(Item
4309692)

The Public Works Department rarely laid out roads ahead of settlement. It was always coming behind settlement and improving tracks which had developed along Aboriginal routes or which had emerged from travellers seeking the most traffickable route across country to their destination. When their destinations were a series of small gold mining settlements such as in the Tumut area, roads swung about to service settlements, which might never have arisen, were it not for the discovery of gold. Teamsters and travellers rode these roads. Roadside inns sprang up. Camping places emerged. Travellers congregated where they had to cross creeks, especially when they were swollen at times of flood. Thus, a host of places have emerged along roads, which have left evidence in their wake. Defunct inn sites, camping sites, and other places traversed by travellers have retained evidence both above and below ground of those who passed that way. Road markers erected in later years, distance markers, and direction signs, boundary stones, and survey marks that survive, demonstrate the past of roads and travelling across the state. Cut-off sections of road, bypassed culverts and cuttings as well as extant road construction techniques, some surviving on bypassed lengths of road or sometimes encapsulated beneath current road surfaces all have the ability to demonstrate former road construction techniques.⁴⁹

On the Northern Rivers, roads long remained as minor transport routes. Until the advent of railway connection across the district, most of the freight and passengers travelled to and from the different river valleys by water. Heavy goods were impossible to ship by rail until the completion of the Hawkesbury Rail Bridge in 1889. Even travel between adjacent

⁴⁷ *Roadmakers*, pp 50-1

⁴⁸ L Coltheart & D Fraser, *Landmarks in Public Works: Engineers and their works in New South Wales 1884-1914*, Sydney, 1987, pp 50-1

⁴⁹ RTA – Upgrade of Heritage & Conservation Register for the South West Region, NSW, Freeman Randall, Canberra for RTA, August 2003, p 8, 14

river valleys was often cheaper, faster and infinitely more salubrious than travel by road. Roads long focused on serving river ports and jetties, rather than on long distance travel.⁵⁰

As pastoral settlement extended across the state, a network of travelling stock routes (TSRs) emerged. They permitted pastoralists to walk their livestock to distant markets, between properties, and, in times of drought served as useful reserves of fodder. Main roads and TSRs often follow the same route, the main road nestling comfortably within the wide right-of-way represented by the TSR. The PWD also provided watering facilities on TSRs, including watering places, water troughs or tanks and windmills. Though often traversed by stock, the TSRs did not attract the same level of intensive management that pastoral properties did. Thus, in many TSRs, native vegetation species have survived far better than in adjacent paddocks. Along with the extant evidence of their past use as livestock routes, TSRs are often now significant repositories of native plant species.

In 1906, responsibility for roads was devolved to local government under the new Local Government Act, which came into operation on 1 January 1907. The Act also increased the number of local government authorities by compulsorily incorporating many rural areas as shires. However, the Public Works Department remained the main construction authority. On 30 June 1906, the Public Works Department cared for 48,311 miles (77,749 km) of roads. Roads Trusts cared for 195 miles (313.8 km). A total of 1,338 miles (2,153.3 km) was controlled by local government with government subsidies. An additional 8,300 miles (13,357.6 km) of municipal roads received no subsidy.⁵¹ With the devolution of maintenance work to local government, a wholesale re-arrangement of the Public Works Department's Roads and Bridges section occurred with sixty Road Offices reduced to twelve District Offices. The number of District Offices had risen to 14 by 1911.⁵² With the exception of those declared National Works, all roads and bridges were placed under the control of local government.⁵³ Two hundred and fifty six bridges were declared National Works, plus a small number built after 1907, as were ferries or punts.⁵⁴ By 1915, the Public Works Department had divided the state into eighteen Works Districts responsible for National and Local Government Works including roads and bridges.⁵⁵

The Public Works Department remained responsible for road works in areas being developed for closer settlement by the Department of Lands such as those in the Manning Valley in the 1910s, as well as the re-construction of some urban roads, such as York Street in the "Rocks" area.⁵⁶ In 1918, for example, it formed the road to the new Field of Mars cemetery, the road from the Orara River Bridge to Glenreagh platform, paved Oxford Street in the City, tar-paved the section of Parramatta Road at Taverners Hill, levelled the Cranbrook estate at Rosebery for sale by the government and

⁵⁰ RTA Regional Heritage Study: Northern Region, Final Report, Ian Jack Consulting Pty Ltd, for RTA, April 2004, pp 5-6

⁵¹ *Roadmakers*, p 60

⁵² L Coltheart, *A Guide to the History of the Public Works Department, New South Wales*, Sydney, 1991, p 51

⁵³ *Roadmakers*, p 60

⁵⁴ *Roadmakers*, p 71

⁵⁵ Public Works Dept, *Annual Report*, 1915, p 79

⁵⁶ Public Works Dept, *Annual Report*, 1914, p 66

constructed Gallipoli Avenue through it, as well as works on government subdivisions at Maroubra and Yarra Bay.⁵⁷

The emergence of closer settlement schemes across the state hastened by both the development of irrigation and soldier settlement after the First World War caused an enlarged demand for roads to be built to serve these new settlements. Not only would they allow settlers to get to town but they enabled them to transport their produce to market. Thus, a network of developmental rail lines snaked across the state servicing such areas. From the farms to the rail sidings, a special class of roads termed Developmental Roads was built. The Railway Department, the Lands Department, and road builders worked in tandem to provide farms and access to these new settlements.

To assist in funding, some 154 roads were declared Main Roads, which made them eligible for government subsidies.⁵⁸ Main roads received a state government subsidy from 1913 onwards.⁵⁹ The list of roads eligible for subsidies was extended in January 1924. However, under this system the quality of roads deteriorated, especially since motor lorries and buses running on solid rubber tyres on narrow wheels began to have a devastating impact upon road surfaces.⁶⁰ Motorists, at that stage a relatively well-off section of the community, were irritated by the continuing decline of roads. The condition of roads across the state excited a great deal of concern. Lobbying for better roads came from the Automobile Club of Australia formed in 1903, which later became the Royal Automobile Club of Australia.⁶¹ They publicised the poor state of the roads as often as they could. Others also were critical of the state of the roads. George A Taylor was a journalist and manufacturer, who married the noted architect, Florence Taylor. He also was an early enthusiastic motorist with a deep fascination with modern technology including the wireless, and flying.⁶² His publications were aimed at the building and property professions. His periodical, *The Property Owner* (later *The Commonwealth Home*) pushed for better roads by publishing graphic photographs, such ones where horses had fallen into a deep pothole in order to illustrate the state of rural roads.

As roads broke up under the impact of the motor car, the State Government provided funding assistance to improve some Main Roads in the metropolitan area, often using unemployed labour. Roads handled under the scheme included General Holmes Drive, Rockdale, Parramatta Road from Ashfield to Parramatta, the Southern Road from Liverpool to Campbelltown and Woodville Road.⁶³ However, the surfaces being applied to these roads were specially geared for motor traffic. Asphalt and concrete gripped the rubber tyre, but they proved a glassy and deceptive surface particularly in the wet for horses clad with iron shoes. When a section of Parramatta Road at Granville was resurfaced in 1925, it was immediately apparent how treacherous and slippery it was for horses.⁶⁴

⁵⁷ Public Works Dept, *Annual Report*, 1918, p 1

⁵⁸ *Roadmakers*, p 60

⁵⁹ Main Roads Board, *Annual Report*, 1926, p 2

⁶⁰ *Roadmakers*, p 61

⁶¹ *Roadmakers*, p 61

⁶² M Roe, 'G A Taylor', *ADB*, 12, pp 178-9

⁶³ *Roadmakers*, p 66

⁶⁴ *Cumberland Argus*, 1 May 1925, p 2

Parramatta Road was resurfaced as a macadam road utilising four gauges of road metal, a work that changed a very boggy and untraffickable surface into one able to cope (temporarily) with the demands of modern motor traffic.⁶⁵ Lane Cove Road, later renamed Pacific Highway, and Botany Road were also repaired. Reconstruction of Botany Road was completed by the Botany Road Trust, formed by a special Act, which also enabled it to borrow money for the improvements. It was one of the first extensive uses of reinforced concrete road surface in Australia.⁶⁶ Reconstruction of Lane Cove Road (Pacific Highway) between Boundary Street, Roseville and Pearce's Corner, Wahroonga in the early 1920s was undertaken in asphaltic concrete. It was the longest length of asphaltic concrete road then constructed by a local government authority.⁶⁷

Spit
Bridge
(Item
4300307)

Major bridges built by local government authorities before the formation of the Main Roads Board included a steel and timber bridge erected by Manly Council over Middle Harbour at the Spit, which opened on 23 December 1924. Another bridge was built across Middle Harbour at Roseville jointly by Willoughby, Ku-ring-gai and Warringah Councils. It was built of reinforced concrete by unemployed returned servicemen. It was claimed to be the longest bridge of that type in NSW although the bridge across the Hawkesbury River at North Richmond was longer. It opened on 20 September 1924. It was claimed to be the first bridge supported on reinforced concrete piles.⁶⁸ A bridge built across Georges River at Tom Ugly's Point by Sutherland Shire Council of steel and reinforced concrete opened on 11 May 1929.⁶⁹

Sydney
Harbour
Bridge,
App-
roaches
& Viaduct
(Item
4301067)

Construction of the Sydney Harbour Bridge was finally put out to tender in 1923 and tenders were accepted in March 1924. Construction commenced by the Public Works Department before the Main Roads Board was formed.

3.0 Experimenting with new ways of providing roads and bridges for the colony/state

Most roads were originally left as a cleared route with only the natural soil as a surface in the early nineteenth century. Macadam surfaces were laid on more important roads and some suburban streets. Macadamised roads were built by laying a finer top course of broken stone over a coarser base course on a convex earth base providing good drainage.⁷⁰ In 1822, when a contract to remake the road from Prospect to Richmond (later known as the Blacktown Road) was let, it specified that the techniques of John McAdam must be used, thus making it the first road to be built in the colony using that method.⁷¹

Maca-
damised
Road,
Bruxner
Highway
(Item
4302674)

Country roads, which had to carry heavier traffic, were given a Telford base with one to two coats of waterbound macadam. In the Sydney area, local sandstone was often used for the stone base.⁷² Although macadamised roads needed more maintenance they were favoured by the Department of Public Works for most roads. On the other hand,

⁶⁵ *Roadmakers*, p 66-9

⁶⁶ *Roadmakers*, p 70

⁶⁷ *Roadmakers*, p 70-1

⁶⁸ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 7

⁶⁹ *Roadmakers*, p 72

⁷⁰ *Roadmakers*, p 36

⁷¹ *Sydney Gazette*, 11 January 1822

⁷² H H Newell, 'Road Engineering and its Development in Australia 1788-1938', *Transactions of the Institution of Engineers*, Australia, Feb 1938, XIX, p 58

suburban councils favoured a mixture of the Telford and macadam techniques, which gave a higher initial cost but reduced long-term maintenance costs.⁷³ As late as 1920, the Public Works Department was using a Telford base when it repaved Parramatta Road between Ashfield and Parramatta.⁷⁴ In some heavily used roads in urban areas, thoroughfares were surfaced with cobble stones using stone setts.⁷⁵

To provide a cheap method of surfacing roads, from the 1860s onwards, roadways were formed by cutting down the table drain along the edges of the road and adding extra metal on the centre. Most roads were surfaced with four to five inch stones as a base course over which a finer ballast course was laid (called blinding). The fine ballast layer was then packed down by traffic after which a running surface of gravel was laid. In places where clay occurred a formation of clay mixed with blue metal was used. Drains were cut along the high side of the road to catch surface drainage and carry it away before it damaged the road surface.⁷⁶

In the 1880s, experiments with wood block paving in Sydney's streets attracted widespread attention. A part of King Street between George and Pitt Streets was paved with a variety of eucalypt timbers laid on a concrete base. After the success of the experiment, the methods were used, with modification, in many other Sydney streets, whilst hardwood timber was exported as paving to other countries.⁷⁷

Bridge design evolved. Timber and composite timber and metal bridge types consisted of the following:

Monkerai Bridge, Karuah River (Item 4300133)

Old PWD Truss design

This had flat diagonal beams and solid end members. Bridges that were built to this design included the the Monkerai Bridge over the Karuah River (1877), which is still extant and the original Clarencetown Bridge over the Williams River built in 1878 but later altered.

McKanes Falls Bridge, Lithgow (Item 4300003)

McDonald Truss design

J A McDonald, a Public Works Department engineer modified the original design by adding a constant timber upper chord plus doubled diagonals splayed out to the bases. There was no corbel. Examples of this type are McKane's Falls Bridge, Lithgow and the bridge over Tunks Creek at Galston Gorge, Hornsby.

Swan Hill-Murray River Road Bridge (Item 4301080)

Allan Truss design

In 1893, Percy Allan re-designed the standard bridge on the basis of the Howe truss from the USA. It used two half trusses which were bolted together. Bolts were fitted on the outside of the trusses rather than internally. By using smaller sizes of timber, it made the bridge easier to maintain, as the right timber was easier to locate in sufficient sizes to do the job. When he designed a bridge to cross the Murrumbidgee at Wagga Wagga, he extended the span and allowed for

⁷³ RTA Sydney City Sub-region Heritage Study, Godden Mackay Logan, March 2004, p 12

⁷⁴ Roadmakers, pp 51-2

⁷⁵ H H Newell, 'Road Engineering and its Development in Australia 1788-1938', *Transactions of the Institution of Engineers*, Australia, Feb 1938, XIX, p 58

⁷⁶ 'Roads (Report from the Commissioner)', *V & P L A N S W*, 1865-6, I, p 945

⁷⁷ Roadmakers, p 51

a larger floor space per truss, thus providing of the first large span overhead truss bridge in NSW.⁷⁸

Middle Falbrook Bridge (Item 4300131)

De Burgh timber truss design

Ernest de Burgh altered the US Pratt truss design including both timber and steel or iron in the design. Extant examples include the Middle Falbrook Bridge over Glennies Creek built in 1904 and Gillies Bridge over Black Creek at Rothbury.

Cooreei Bridge (Item 4300177)

Dare Truss design

Henry Dare responded to the large-scale export of suitable timber from Australia by using steel beams for the lower chord and the double timber diagonals thus economizing on a resource, which was becoming scarcer. Examples of the Dare truss design include the Cooreei Bridge over the Williams River at Dungog erected in 1906.

Percy Allan's timber bridge designs attracted attention, as did H H Dare's.⁷⁹ Allan's timber trusses were used in numerous bridges he designed, enabling longer spans to be erected and wider river crossings. Iron and, later, steel was used in situations which required considerable strength in the superstructure, although the original use of iron in NSW bridges was to provide shoes for piles and later to construct piers. To cater for shipping on coastal and inland rivers, lift spans using a variety of lifting mechanisms were incorporated in bridges.⁸⁰ Metal bridges largely utilized expensive imported ironwork so they were rarely used. Extant metal bridges include the Gundagai Bridge and the Kayuga Bridge across the Hunter River at Muswellbrook, built of iron lattice trusses.

By the 1910s, the increasing scarcity of timber of sufficient strength in suitable lengths ensured that the Public Works Department adopted reinforced concrete where it cost less than an additional 60% than timber and steel for bridge building.⁸¹

Hawkesbury River Bridge, North Richmond (Item 4309511)

As well as utilising the timber resources of NSW, freely available locally to erect bridges, the Public Works Department also experimented with the erection of concrete bridges. The first to be built was a bridge of mass concrete, with a low strength sandstone aggregate forming its material carrying the Hume Highway across Black Bobs Creek near Berrima completed in September 1896.⁸² The first reinforced concrete arch bridge was built soon afterwards near Tamworth at Reads Gully on the Main Northern Road in 1900.⁸³ Harvey Dare designed a low level reinforced concrete arch bridge crossing the Hawkesbury River at North Richmond, which was completed in 1905.⁸⁴ Reinforced concrete slab and girder bridges were also constructed at American Creek near Figtree in 1914, (now demolished) and over Mullet Creek at Dapto in 1916. However, the first true

⁷⁸ RTA – Upgrade of Heritage & Conservation Register for the South West Region, NSW, Freeman Randall, Canberra for RTA, August 2003, p 14

⁷⁹ See articles by Allan and Dare on their works in Lenore Coltheart & Don Fraser, *Landmarks in Public Works: Engineers and their works in New South Wales 1884-1914*, Sydney, 1987, pp 53-92

⁸⁰ *Roadmakers*, pp 57-8

⁸¹ Public Works Dept, *Annual Report*, 1914, p 66

⁸² L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 3

⁸³ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 4

⁸⁴ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, pp 4-5

continuous girder reinforced concrete bridge was Fullers Bridge across the Lane Cove River completed in 1918.⁸⁵

The Public Works Department was responsible for constructing a number of early concrete road pavements in the metropolitan area before the inauguration of the Main Roads Board, the earliest built in 1917 in New South Head Road in Woollahra. A full list of its concrete roads is provided in *Main Roads*, June 1953.⁸⁶

4.0 Evolving administrative arrangements for the DMR/RTA

The need for better roads was obvious by the early twentieth century. Both the Public Works Department and local government were unable to keep up with the impact of the motor car. Some advocated a tax on vehicles to maintain roads, which were falling into disrepair. Following the Victorian example, A H Griffiths introduced a Main Roads Bill in the House on 8 November 1912. When it did not succeed, he was able to broaden the ambit of grants for roads to local councils by asking local councils to contribute to road making.⁸⁷

The National Roads Association was formed in February 1920. It became the National Roads and Motorists' Association (NRMA) in June 1923. One of its main goals was the formation of a "Main Roads Board", with power to build and maintain roads and resume land for their construction. It pressed for this at its meeting with the Local Government Association in 1923.⁸⁸

The Federal government commenced a grants scheme for roads under the Main Road Development Act of 1923. NSW was given £500,000 in the first year. Grant money could be used for works on:

Main roads - those that opened up new country for primary industry;

Trunk roads - those between important towns with no rail connection;

Arterial roads - those that were beyond the means of local finance.

Grants continued to be made in later years, through the NSW Department of Local Government and later through the Main Roads Board.⁸⁹

On 7 August 1924, J C L Fitzpatrick, Minister for Local Government introduced a Main Roads Bill, aimed at establishing a Main Roads Board. When introducing the Bill, he cited the inability of local government to generate enough finance to provide arteries for motor traffic. The Bill sought to incorporate all revenue from motor licensing and direct it to maintaining roads, with one fund for city roads and another for the country. The country fund would have access to all revenue collected from rural areas and half of the funds from the city. Finance was also available from other sources, principally from government grants. Michael Bruxner successfully moved an amendment that the Blue Mountains shires

⁸⁵ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 7

⁸⁶ *Main Roads*, June 1953, p 98-103

⁸⁷ *Roadmakers*, p 77

⁸⁸ *Roadmakers*, p 78

⁸⁹ *Roadmakers*, p 80

be regarded as part of the County of Cumberland since they were the holiday area of Sydney. Another fund for Developmental Roads was also established. Local councils were to undertake the work with the Board only providing advice and finance, although the Board was given power to obtain equipment to carry out works if needed.

The Bill was passed on 10 November 1924 to come into operation on 1 January 1925. The Main Roads Board would have three members serving seven-year terms, and it was stipulated that two board members be road engineers.⁹⁰ When the MRB was established it had to work closely with local government. The relationship varied from close co-operation to outright hostility and opposition.⁹¹

Until the passing of the Main Roads Act, roads had been one of the forms of communication used to travel from place to place, operating as part of a network with rail and water transport. Road transport was the last to be mechanised. Railways initially relied on steam power as did water transport. Attempts to apply steam to road travel were of limited success since the weight and bulk of the machines were too large to operate effectively on roads. They provided power but little speed, and so there was no real competition with rail or water transport. The motor vehicle powered by the internal combustion petrol engine changed this. The intention of the Main Roads Act was to create an authority, which would provide a road system suitable for the motor age, a radical departure philosophically from previous transport works. The Act signalled the acceptance of the motor age in NSW. The Main Roads Board was given the power to make it come to pass.⁹²

The Board initially had problems in 1925 obtaining sufficient staff from the government. The Public Works Department argued that it should remain the construction authority for road works whilst the MRB should only handle administrative arrangements with local councils who could not undertake the work themselves.⁹³

Agitation from various quarters, including local government authorities, and the Public Works Department to reduce the role of the Main Roads Board in 1926 hampered its first year. The situation was relieved in 1927, by the new Bavin government, which set up new arrangements to operate from October 1927. The Public Works Department would complete all road and bridge works in the Western Division. The MRB would take responsibility for all road and bridge works including National Works in the Central and Eastern Divisions, on roads later proclaimed as Main or Developmental Roads. The Public Works Department would complete works for local government and the MRB would continue as the authority controlling specifications and plans and control government works on roads. Roads other than Main and Developmental roads in the Eastern and Central Divisions would come under the control of Public Works Department.⁹⁴

⁹⁰ *Roadmakers*, pp 80-2

⁹¹ *Roadmakers*, p 85

⁹² The analysis here is based upon information received from B N Loder, January 1996

⁹³ *Roadmakers*, p 94

⁹⁴ *Roadmakers*, pp 96-8

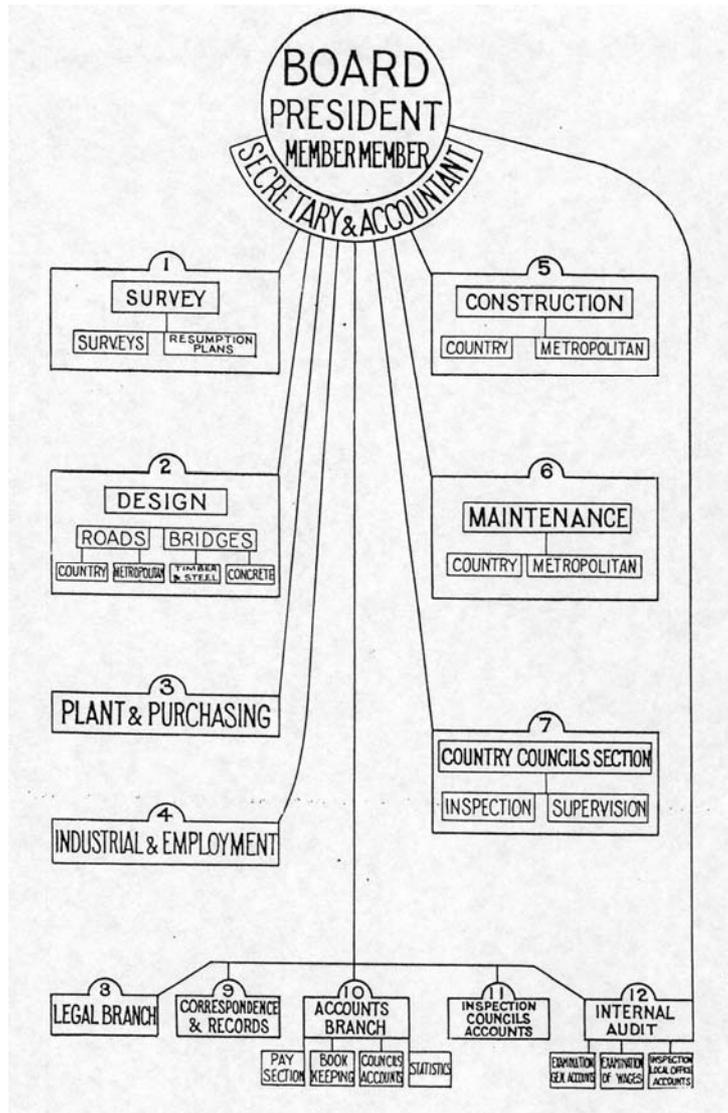


Figure 5 Organisational chart of the Main Roads Board in 1927. Source: Main Roads Board, *Annual Report*, 1927, p 50

In March 1928, the MRB moved to an office at 309 Castlereagh Street, Sydney.⁹⁵ Its staffing problems were solved by the Act of 1929, which allowed it to appoint its own staff.⁹⁶ City and country works were kept distinct, with a resident engineer reporting on each day labour job in the country. An areal division, the Metropolitan Division, with an Engineer-in-Charge at its head started on 1 January 1928. On 1 July 1928, a major rearrangement of the MRB took place. Administration was decentralised from the Head Office. Apart from Head Office, six new divisions with their own office and staff were created - Upper Northern (office at Glen Innes); Lower Northern Division (Tamworth); Outer Metropolitan (Sydney); Central Western (Parkes); Southern (Queanbeyan); Riverina (Wagga Wagga). Bridge design and Property matters were concentrated at Head Office due to their specialised nature.⁹⁷

⁹⁵ Main Roads Board, *Annual Report*, 1929, p 75

⁹⁶ *Roadmakers*, p 98

⁹⁷ *Roadmakers*, p 101

The Main Roads Board was abolished on 22 March 1932 and replaced by a Board of Transport Commissioners in a series of changes initiated by the Lang Labor government. The MRB's divisions were joined with the railways in six transport districts with offices at Sydney, Newcastle, Goulburn, Wagga Wagga, Bathurst and Tamworth.⁹⁸ This arrangement was quickly changed by the incoming Stevens-Bruxner government, which divided transport again by the Transport (Division of Functions) Act of 19 November 1932 and created the Department of Main Roads. It placed H H Newell in charge of Main Roads.⁹⁹ Newell quickly re-assembled former MRB staff who had been dispersed by the March 1932 Act and by retrenchments due to the Great Depression. Motor vehicle registrations grew markedly until 1939, increasing at a considerably faster rate than the population.¹⁰⁰ The new DMR took over seven administrative divisions on 1 May 1932 from the Department of Transport - Metropolitan (Head Office), North Eastern (Glen Innes), North Western (Tamworth), Northern (Newcastle) Central Western (Parkes), Southern (Goulburn) and South Western (Wagga Wagga) but soon reverted to its earlier divisions except the Metropolitan Division. The boundary of the Metropolitan Divisions was expanded to include much of the Outer Metropolitan Division. Meanwhile, the Upper and Lower Northern and central Western Division boundaries were altered to reflect a new divisional headquarters established at Newcastle.¹⁰¹

Divisions multiplied during the 1930s. A new North East coastal division centred on Grafton commenced operations on 1 September 1935.¹⁰² A new South Coast Division centred on Bega was established on 19 April 1937, mainly due to the need to devote attention to the recently improved section of the Princes Highway, which made Bega more accessible.¹⁰³ The Outer Metropolitan Divisions Numbers 1 and 2 were created in August 1939, with their headquarters at Petersham and Chatswood from 1942 onwards.¹⁰⁴

The responsibilities of the DMR were further altered with the Main Roads (Amendment) Act of 27 July 1936, which made the following changes:

Roads through public reserves linked to Main Roads could be taken over.

The DMR could charge councils for works associated with road making.

All income from motor vehicles taxes would be devoted to the DMR.

The regulatory role of the DMR was extended to cover aspects such as road sides and guttering.

The DMR gained control of all roads in the Western Division previously held by the Public Works Department from 2 September 1935 onwards.¹⁰⁵ The DMR established a new Division - the Western Division with four districts at

⁹⁸ *Roadmakers*, pp 130-1

⁹⁹ *Roadmakers*, p 131

¹⁰⁰ *Roadmakers*, p 136

¹⁰¹ Main Roads Board, *Annual Report*, 1932, p 2

¹⁰² *Roadmakers*, p 158

¹⁰³ Dept of Main Roads, *Annual Report*, 1937, pp 16-7

¹⁰⁴ *Roadmakers*, p 158

¹⁰⁵ Dept of Main Roads, *Annual Report*, 1935, p 1

Broken Hill, Bourke, Cobar and Hay. In practice, Public Works Department district engineers continued to supervise work for the DMR until the early 1950s.

The DMR could recommend the proclamation of "Developmental Works" (as well as Developmental Roads) covering bridge and culvert works, or short sections of road construction needed to aid road development.¹⁰⁶

During the Second World War, the DMR focussed on wartime activities and road works associated with defence needs. Other roads were less carefully tended since there were shortages of bitumen of the best quality. Some Divisions closed down for the duration. After the end of the war, a new Division was established in the Central Murray area on 1 March 1946 with its office at Deniliquin. The South Coast Division with an office at Bega, which had closed during the war, reopened on 26 November 1945.¹⁰⁷ By 1947, the Metropolitan Divisions of the DMR, which had moved out of the central office during the war, were at new locations. The Metropolitan Division office was located at 8 Ennis Road, Milsons Point. The Outer Metropolitan No 1 office was at the Town Hall, Crystal Street Petersham. The office for Outer Metropolitan No 2 was at 405 Victoria Ave, Chatswood.¹⁰⁸

Roads in the Western Division, which were still under the supervision of Public Works Department engineers acting for the DMR, were gradually taken into the control of the DMR. A new division, the Murray Darling Division, was created in 1955 with headquarters at Broken Hill.¹⁰⁹

All branches of the DMR expanded from the 1950s onwards with some alterations of their function. A first level Property Committee of the Secretary, Chief Accountant and Chief Engineer (Urban), was formed in 1969 to deal with property purchases involving significant sums of money. Other matters that caused the committee to meet were matters involving the sale of property that was not required or cases of hardship.¹¹⁰ The Investigations Section, which assessed road proposals throughout the state, was divided into the Design and Urban Planning Section covering Sydney, Newcastle and Wollongong in the late 1940s. It was further formalised in 1964 when their names were changed to the Urban Investigations and Rural Investigation Sections.¹¹¹ An Advance Planning Section was formed in 1959 to ascertain road needs in the future and to determine priorities.¹¹²

New Divisions were created as the DMR expanded. A Central Northern Division with an office at Bourke was formed on 1 March 1962.¹¹³ The Lower North Coast Division with an office at Port Macquarie was formed on 27 June 1967.¹¹⁴ The Central Mountains

¹⁰⁶ Dept of Main Roads, *Annual Report*, 1936, pp 1-4

¹⁰⁷ Dept of Main Roads, *Annual Report*, 1946, p 31

¹⁰⁸ Dept of Main Roads, *Annual Report*, 1947, p 32

¹⁰⁹ *Roadmakers*, p 219

¹¹⁰ *Roadmakers*, p 224; Information from Rod Watson, January 1996

¹¹¹ *Roadmakers*, p 224

¹¹² *Roadmakers*, p 225

¹¹³ *Main Roads*, March 1962, p 79

¹¹⁴ *Main Roads*, Sept 1966, p 9

Division centred on Lithgow was formed in July 1967.¹¹⁵ On 14 February 1983, the DMR's eighteenth Division - the Blacktown Division - commenced operations.¹¹⁶

The Traffic Authority of NSW was established on 1 June 1976. Changes that its creation encompassed included taking over traffic management including traffic signals, signage and road marking previously controlled by the Department of Motor Transport to the DMR.¹¹⁷ The Transport Administration Act (No. 109, 1988) amalgamated the Department of Main Roads, Department of Motor Transport and the Traffic Authority on 1 January 1989 to form the Roads and Traffic Authority.

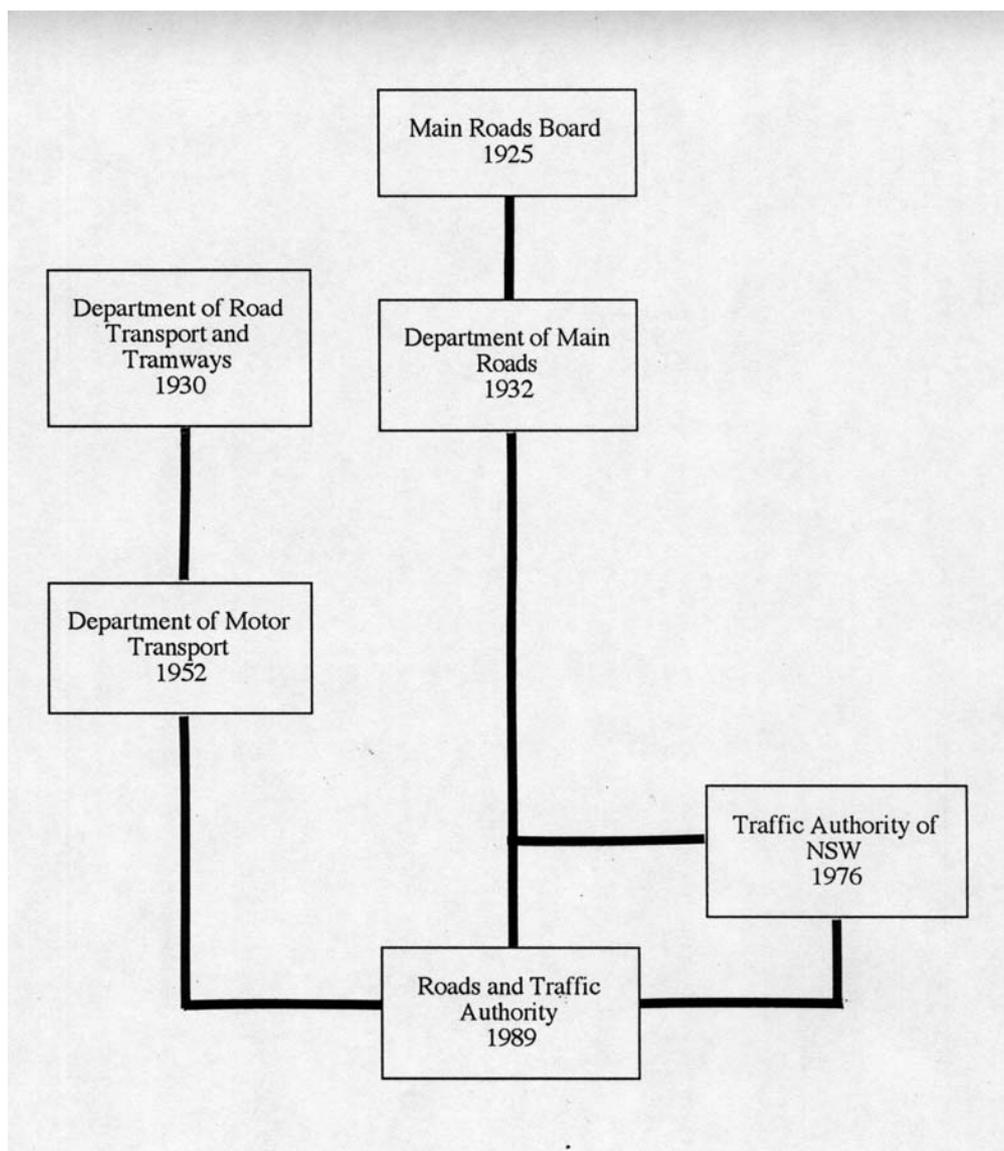


Figure 6 Evolution of the Roads and Traffic Authority

¹¹⁵ *Roadmakers*, p 229

¹¹⁶ Dept of Main Roads, *Annual Report*, 1983, p 66

¹¹⁷ Dept of Main Roads, *Annual Report*, 1977, p 23

4.1 Assessing previous routes and bridges inherited by the Main Roads Board/DMR

Roads inherited by the Main Roads Board ranged from relatively well maintained major roads down to minor routes connecting different localities, which were merely lengths of road, which together enabled the traveller to traverse the county between two points, even if these were not planned or maintained as a single thoroughfare. Many roads had evolved along travelling stock routes and so followed the movement of livestock.

At its formation in 1925, the MRB had 579 miles (932 km) of road to maintain in the County of Cumberland and 12,261 miles (19,732 km) across the rest of NSW, a much greater burden than that held by road authorities in any other state.¹¹⁸ It also inherited financial responsibility for road works undertaken up to three years before its formation.¹¹⁹

Roads inherited by the MRB in 1925 included Main Roads radiating outwards from Sydney, constructed in an assortment of pavements depending upon the local government authority responsible for it. There were gaps where the pavement surface was sub-standard. Parramatta Road between Ashfield and Parramatta was 24 feet (7.3 m) wide, too narrow for the volume of traffic travelling along it. In other instances, the surface of outer parts of major roads such as the Great Western Road or the Great Southern Road deteriorated rapidly as the metropolis was left behind.¹²⁰

5.0 Planning road hierarchies

When the MRB was established in 1925, it determined that its policy should be:

To ascertain its responsibilities to local government under the Main Roads Act;

To determine responsibilities shared with local government by starting a survey of Main Roads;

To determine finance needed for annual maintenance;

To explore what new construction was possible with the remainder of its funding;

To consider applications from local government to proclaim new Main Roads;

To make personal visits to country areas as a matter of priority to determine local needs and local resources.¹²¹

In its first year of operation, the MRB added only two Main Roads in the County of Cumberland - an extension of the Main Road from North Sydney to Berowra; and the road from Bunnerong Main Road to the Coast Hospital. A single Secondary Road was

¹¹⁸ *Roadmakers*, p 84

¹¹⁹ *Roadmakers*, p 86

¹²⁰ *Roadmakers*, p 103

¹²¹ *Roadmakers*, p 84

added - Port Hacking Road from Princes Highway to Kingsway Main Road to give access to Cronulla.¹²² The MRB quickly decided that a major priority should be the elimination of gaps or "missing links" in the existing road network. It devoted considerable attention to the problem in its first *Annual Report* of 1926.¹²³ It also sought to reconstruct Main Roads radiating out from Sydney to the margins of the County of Cumberland.¹²⁴

Widening of roads out of Sydney was a matter of major concern. Councils had used re-alignment of roads for decades to improve road layouts, but the MRB instituted a strategic plan to improve roads out of Sydney, mainly by re-alignment. Princes Highway or Cooks River Road was re-aligned. Any new buildings would be built further back at the new alignment where the road passed through Newtown and St Peters.¹²⁵ In 1927, the MRB published a set of proposed layouts for highways 132 feet (40.2 m) wide including plantings and pavements.¹²⁶ Due to the absence of sufficient finance to undertake wholesale widening schemes with their associated demolition and compensation payments, the MRB adopted an approach in which a new building line was laid down and as land became vacant and buildings were demolished, new construction had to be completed behind the new building line. Compensation would then be paid for land lost at the front of the building allotment.¹²⁷ Since this scheme could not be implemented immediately, it proceeded in a piecemeal fashion, which gave roads out of Sydney an appearance of untidiness and inefficiency for many years. However, as time proceeded, the benefits of the scheme became apparent. Roads were wider and better able to handle higher traffic volumes. To allow owners, especially shopkeepers, who felt disadvantaged by the need to build new premises further back on the new building line making their properties less prominent, the DMR allowed owners to lease back their land at the front of their lot and build single storey buildings, on the proviso that they be removed when the road was widened. Part of the Princes Highway through Rockdale was one place where this was extensively used.¹²⁸ A method of jacking up cottages off their foundations even if they were of brick so they could be moved back on the lot out of the road alignment was devised and tried out in 1950.¹²⁹ In 1953, for example, a total of eleven timber framed cottages were moved for road widening.¹³⁰ By 1956, in a period of housing shortage, the Housing Commission re-housed some families ejected by road widening.¹³¹

¹²² Main Roads Board, *Annual Report*, 1926, p 46.

¹²³ Main Roads Board, *Annual Report*, 1926, pp 7-8

¹²⁴ *Roadmakers*, p 84

¹²⁵ Main Roads Board, *Annual Report*, 1926, pp 24-5. See photo p 25

¹²⁶ Main Roads Board, *Annual Report*, 1927, pp 16-7

¹²⁷ Main Roads Board, *Annual Report*, 1928, p 29

¹²⁸ Dept of Main Roads, *Annual Report*, 1938, p 12

¹²⁹ Dept of Main Roads, *Annual Report*, 1950, illus opp p 12, p 13

¹³⁰ Dept of Main Roads, *Annual Report*, 1953, p 17

¹³¹ Dept of Main Roads, *Annual Report*, 1956, p 19



Figure 7 A single dray amongst the cars, with pavements wet with rain. Gardeners Road (MR 183) ready for widening. September 1938. Source: GPO I, 32486

In 1926, after considering the needs of motor traffic and trams, an optimum metropolitan road width of 84 feet (25.6 m) had been established. It did not make allowance for an island in the centre of the road for beautification. Schemes to widen the roadway were then adopted for Parramatta Road, Lane Cove Road, Gordon Road, New South Head Road, Henderson Street and Garden Street.¹³² With greater financial security and as earlier debts were repaid, the DMR was able to embark on a scheme to acquire land to widen major city roads, such as the Pacific Highway at Crows Nest and Oxford Street in 1937.¹³³ In rural areas, the road reserve could vary from 66 feet (20.1 m) up to half a mile (0.8 km) on stock routes. In February 1926, the MRB adopted national standards for rural road metalling ranging from 12 to 20 feet (3.7 m to 6.1 m) depending on the status of the road.¹³⁴

¹³² Main Roads Board, *Annual Report*, 1926, p 14

¹³³ *Roadmakers*, p 145

¹³⁴ *Roadmakers*, p 108



Figure 8 Moving House! A brick cottage affected by road widening was moved as an experiment by the DMR in 1950. This shows the cottage before moving. DMR, *Annual Report*, 1950, opp p 12

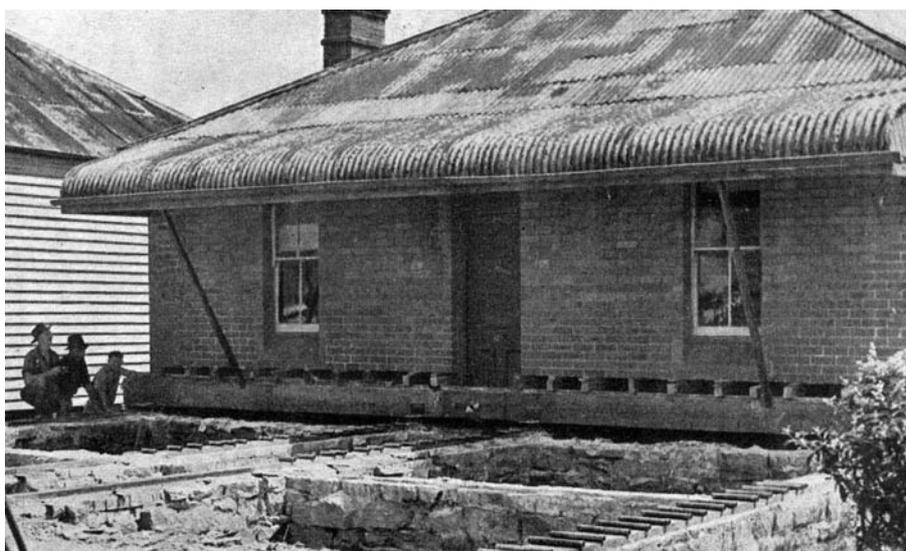


Figure 9 Moving House! The cottage after moving. DMR, *Annual Report*, 1950, opp p 12

A radial system of roads fanned out from Sydney, and many of them were gazetted as Main Roads. Yet the need to provide linkages between these major routes out of Sydney was recognised by the MRB. In its first *Annual Report* of 1926, it identified the need to promote a system of "circumferential roads" which would serve both as linkages between these roads and subsidiary centres.¹³⁵ To deal with the flood of applications from local councils for proclamations of new Main Roads in its first year of operation, the MRB decided to give priority to roads connecting the main regions of the state with each other, roads connecting localities with rail and port facilities and those crossing the Tablelands.¹³⁶

¹³⁵ Main Roads Board, *Annual Report*, 1926, p 46.

¹³⁶ Main Roads Board, *Annual Report*, 1926, p 76.

A reduction in finance by the Labor government's 1926 Finance Bill meant work in the County of Cumberland slowed down.¹³⁷ The Federal Government's Federal Aid Roads Act passed in August 1926 provided aid for the construction of specified classes of Roads, which would then be maintained by the states.¹³⁸

To expend the remaining funds which it inherited as money for Developmental Roads from previous schemes, the MRB decided to divide the state into three Divisions - Coastal, Tableland, and Inland (or Western Slopes), which were then further divided into northern, central and southern.¹³⁹ Using a formula, which took into account land quality, population and the size of local government areas and the cost of building roads in particular topographic conditions, it was able to allocate cash for road construction. The first Developmental Roads were gazetted in 1925. By 1932, they totalled 2,449 miles (3,941 km) on 142 roads. Most of them were feeder roads to railways. As a general principle, the MRB decided that it would, all other things being equal, give preference to those roads that, "most clearly encourage new settlement on the soil".¹⁴⁰

By 1928, the MRB was warning local government to be careful about roads it selected as Developmental Roads. Once constructed by the Board, maintenance of these roads fell into the hands of local government. If the road did not induce sufficient settlement to cover maintenance costs from rates and other charges, it could become a burden on the council. Many councils were overly optimistic about these roads. The Board suggested Developmental Roads should serve areas at a maximum of thirteen miles (21 km) from the railway in wheat growing areas in the Riverina. Since Developmental Roads were aimed at assisting the small settler, the council should determine whether large landholders were ready to subdivide their land for closer settlement or whether Crown land was ready for opening for closer settlement in the target area before they undertook to build Developmental Roads.¹⁴¹

By 1930, financial problems had reduced cash available for Developmental Roads. Competition was emerging between roads and railways in some areas, deliberately fostered by poorly considered proposals from local interests. The difficulties created by such proposals inspired the MRB to suggest the formation of a State Development Council which would examine the feasibility and appropriateness of proposals as well as the most suitable manner to provide transport.¹⁴²

Since roads classified as Main Roads in the 1920s had been determined on an ad hoc basis due to the availability of finance, they did not reflect any considered system of major and minor roads. A new start was needed. The MRB re-classified roads as State Highways, Trunk Roads and Ordinary Main Roads for the country and State Highways and ordinary Main Roads in the city. A full revised list of roads under these headings was published in the 1928 *Annual Report* of the MRB.¹⁴³ A consistent new classification using these hierarchies was proclaimed with the Main Roads (Amendment) Act, April 1929. These principles are used to the present day. In addition to the above categories, roads

¹³⁷ *Roadmakers*, p 87

¹³⁸ *Roadmakers*, p 89

¹³⁹ *Roadmakers*, pp 91-2

¹⁴⁰ Main Roads Board, *Annual Report*, 1926, p 78

¹⁴¹ Main Roads Board, *Annual Report*, 1928, p 52

¹⁴² Main Roads Board, *Annual Report*, 1930, p 41

¹⁴³ Main Roads Board, *Annual Report*, 1928, pp 2-12

could be proclaimed as Secondary Roads, if they relieved a Main Road of some of its traffic burden. The MRB could then provide financial aid for maintenance. The first Secondary Road proclaimed was Port Hacking Road from Princes Highway to Cronulla.¹⁴⁴ The definitions of Road Classes are provided in the following table.

| |
|---|
| <p>5.1 Road classes</p> <p><u>State Highway</u></p> <p>A principal avenue of road communication between the coast and the interior or throughout the State and connecting with such avenues in other States and proclaimed a State Highway.¹⁴⁵</p> <p><u>Trunk Road</u></p> <p>A secondary avenue of road communication forming with the State Highways and other trunk roads a framework of a general system of intercommunication throughout the State and proclaimed a Trunk Road.¹⁴⁶</p> <p><u>Main Road</u></p> <p>A road which is or will be the main trunk route connecting producing districts with markets, or point of shipment, or connecting two or more producing districts or centres of population and proclaimed a Main Road.¹⁴⁷</p> <p><u>Developmental Road</u></p> <p>A road which serves to develop or further develop any district or part of a district or serves to develop any area of Crown or private land by providing access to a railway station or shipping wharf.¹⁴⁸</p> <p><u>Developmental Work</u></p> <p>This was a new category added in 1936. This dealt with obstacles that impeded the smooth flow of traffic along a section of road. They could include boggy ground, steep hills or a section of road, which flooded. The gazettal of this category allowed the DMR to undertake works to improve roads by dealing with these obstacles.¹⁴⁹</p> <p><u>Secondary Road</u></p> <p>A road that carries a substantial amount of through traffic thereby relieving a neighbouring main road of traffic that it would otherwise have to bear. Secondary Roads were "declared" by the Commissioner for Main Roads whilst</p> |
|---|

¹⁴⁴ *Roadmakers*, p 107

¹⁴⁵ Dept of Main Roads, *Annual Report*, 1935, p 3

¹⁴⁶ Dept of Main Roads, *Annual Report*, 1935, p 3

¹⁴⁷ Dept of Main Roads, *Annual Report*, 1935, p 3

¹⁴⁸ *Main Roads*, Dec 1929, p 69

¹⁴⁹ Dept of Main Roads, *Annual Report*, 1936, p 3

Main Roads were proclaimed by the Governor on the Commissioner's recommendation.¹⁵⁰

Motorway

A road specifically designed to facilitate the movement of motor traffic and proclaimed a Motorway. Access of motor traffic was carefully controlled and animals were excluded.

These were created in 1945 but none were gazetted before 1960. The term "Freeway" was more generally used and meant a road with no frontage access and with other roads carried over or under it by bridges. An "Expressway" was defined as a road similar to a freeway but which had some access.¹⁵¹

Tourist Road

A public road or road within a public reserve which is expected to assist in making accessible areas or districts used or likely to be used by tourists.

A new provision in the Act of December 1960 allowed the DMR to create Tourist Roads.¹⁵² The DMR provided assistance to local councils for works on Tourist Roads. By 30 June 1962, twelve roads had been proclaimed Tourist Roads.¹⁵³

For some years, State Highways and Main Roads were proclaimed in a piecemeal fashion due to budgetary constraints. In the later 1930s, however, increasing traffic brought on by improved economic growth and conditions, created demands for better roads. Hence, the DMR instituted a review of the Main Roads System in 1937-8, followed by an extension of the network. New State Highways, Trunk Roads and Main Roads reflecting the changing population distribution and traffic trends were proclaimed on the basis of the review. Hence, 1,359 roads were reclassified as State Highways. A total of 847 miles (1,363 km) were selected for proclamation as Trunk Roads and 910 miles (1,464.5 km) as Main Roads, although not all were proclaimed within the 1937-8 financial year.¹⁵⁴

The DMR also reviewed past progress in widening metropolitan Main Roads, and commenced an analysis of the possibility of planning "express" roads to handle heavy traffic flows. Whilst it was difficult to make major roads of the ideal width in many city areas, it increased the width of the Great Western Highway westward from Hawkesbury Road, May's Hill to Lapstone Hill from 84 feet (25.6 m) to 150 feet (45.7 m) to allow for future traffic volumes.¹⁵⁵ To alleviate traffic on major roads, which could not economically be widened in the city centre, Secondary Roads that took the traffic to the same destination were developed, such as Mitchell Road between Botany Road, Alexandria and Princes Highway at St Peters, which relieved traffic on Princes Highway.¹⁵⁶

¹⁵⁰ *Main Roads*, June 1930, p 206; Information from B N Loder, January 1996

¹⁵¹ Dept of Main Roads, *Annual Report*, 1957, pp 10-1

¹⁵² Dept of Main Roads, *Annual Report*, 1961, p 16

¹⁵³ Dept of Main Roads, *Annual Report*, 1962, pp 20, 146

¹⁵⁴ Dept of Main Roads, *Annual Report*, 1938, pp 4-5

¹⁵⁵ Dept of Main Roads, *Annual Report*, 1938, p 9-11

¹⁵⁶ Dept of Main Roads, *Annual Report*, 1938, pp 11-2

After its review of roads in the late 1930s, the DMR was ready to re-assess the road needs of the metropolitan area. It was prepared to develop schemes in accordance with town planning principles. The DMR commenced surveys of land use, population densities and traffic flows in 1943. It collected aerial photographs and mapped out routes. It sought to determine existing trends and future land uses within the metropolitan area. It expected to separate slow moving traffic from fast moving traffic and to provide a complete system of radial and circumferential roads for the three main coastal cities.¹⁵⁷ Hence, in 1945, it issued a report titled the "County of Cumberland Main Road Development Map". When the Cumberland County Council was formed in 1946, it used some of the data collected by the DMR. It eventually issued its own plan that did not differ greatly from that produced by DMR. The DMR's plan could be easily fitted to suit.¹⁵⁸ To permit the Department to meet the needs of traffic in the immediate post-war period, the programme of road widening commenced immediately before the war was revived despite the shortage of building materials, labour and housing. Roads, which attracted the attention of the DMR, included Victoria Road near Sydney, Princes Highway in Rockdale, Military Road and Oxford Street in Paddington Municipality.¹⁵⁹

The DMR's plan for Sydney was based on the existing system of Main Roads, but also had provision for "Expressways" which would become major routes for long distance travel. The Development Plan for the County incorporated 87 miles (140 km) of Expressways. When the Cumberland Scheme became a statutory document in 1951, areas required for roads were only shown in general fashion to allow flexibility for engineering and other reasons. Vacant land affected by the Scheme was acquired by the Cumberland County Council and its successors if requested by an owner. Improved property was acquired by the DMR if an owner could not sell on the open market and was experiencing hardship.¹⁶⁰ Similar schemes were developed for Wollongong and Newcastle. The Illawarra Scheme was approved in 1952. A plan for arterial roads in Newcastle was adopted in 1946. A plan encompassing much of the Hunter Valley was approved in 1952.¹⁶¹ The Northumberland County Council was formed in 1948 to undertake an identical role to that of the Cumberland County Council in the Newcastle area. A road plan devised by the Department of Main Roads establishing a road hierarchy linked to the level of government that would be responsible for them was included.¹⁶²

In the 1950s, the DMR undertook the widening of road reservations of State Highways and Main Roads in rural areas, as well as some Main Roads in the County of Cumberland. A width of two chains (40.2 m) was aimed at, although three chains (60.4 m) were taken where the need for a divided carriageway was anticipated in the future, where the road passed through forest, and in order to preserve the roadside vegetation belt. Wider road reservations were needed to cater for works such as drainage and embankments, for roadside vegetation, for travellers to pull off the road and also for travelling stock, as well

¹⁵⁷ Dept of Main Roads, *Annual Report*, 1945, pp 9-10

¹⁵⁸ *Roadmakers*, p 204

¹⁵⁹ Dept of Main Roads, *Annual Report*, 1947, p 31

¹⁶⁰ Information from Rod Watson, January 1996

¹⁶¹ *Roadmakers*, pp 206-7

¹⁶² *Roadmakers*, p 207

as to prevent ribbon development.¹⁶³ An Advance Planning Section was formed in 1959 to ascertain road needs in the future and to determine priorities.¹⁶⁴

An amendment to the Act on 3 April 1945 provided for the construction of limited access roads to be called "Motorways".¹⁶⁵ The first, proclaimed on 20 May 1960, was the Pacific Highway near Mount White, between Peats Ferry and Gosford, which had already been widened from two to four lanes. Motorways were distinguished from Freeways by having more access points than Freeways.¹⁶⁶ Freeways and Expressways were the more commonly used terms for what was legally a Motorway. The DMR was intent on building them since they permitted larger and quicker traffic flow as well as reducing the accident rate.¹⁶⁷ Yet, the DMR could not undertake their construction immediately despite widespread public yearning for them. It sought to improve traffic conditions by cheaper means until there was no alternative but to embark upon costly Motorway construction. Until then, widening of roads and the improvement of outdated or decayed road surfaces and bridges was its way of improving urban traffic flow.¹⁶⁸

Construction of Expressways commenced with the Cahill Expressway. However, it was the Warringah Expressway, which brought the issues into sharp relief. It was planned, like all Expressways, to improve traffic flow, safety and to reduce congestion. By building inner city Expressways first, it was hoped that the most urgent problems of traffic congestion would be ameliorated. Yet, the Warringah Expressway also brought the problems into focus. It crossed a difficult topographical site and cut across dense building development.¹⁶⁹

On a more relaxed note, Tourist Roads could be proclaimed after an alteration to the Act in 1961. They were aimed to provide access to natural features of tourist interest which otherwise might not be accessible.¹⁷⁰ The first to be proclaimed was a road to the look-out over the Burratorang Valley in Wollondilly Shire.¹⁷¹

The County of Cumberland Main Roads Development Plan of 1945 and then later in 1960 considered all forms of transport in its assessments. The 1945 study laid the foundations for later studies in urban transportation. Improvements in the future were associated with better equipment and with more detailed assessment of different elements. Computers sped up the process markedly.¹⁷² A Traffic Census was taken in 1947 as part of the process of gathering data. In 1973, the Environmental Study Group was formed within the DMR. Its role was to assess "Environmental Factors" in road proposals from different sections of the DMR and determine whether an impact statement was required and how comprehensive it should be. Factors assessed in road

¹⁶³ Dept of Main Roads, *Annual Report*, 1959, p 11

¹⁶⁴ *Roadmakers*, p 225

¹⁶⁵ Dept of Main Roads, *Annual Report*, 1945, p 4

¹⁶⁶ Dept of Main Roads, *Annual Report*, 1960, p 15

¹⁶⁷ Dept of Main Roads, *Annual Report*, 1957, p.11

¹⁶⁸ Dept of Main Roads, *Annual Report*, 1957, p 18

¹⁶⁹ Dept of Main Roads, *Annual Report*, 1961, p 16

¹⁷⁰ *Roadmakers*, p 229

¹⁷¹ Dept of Main Roads, *Annual Report*, 1962, pp 20, 146

¹⁷² Information from B N Loder, January 1996

proposals included vegetation, fauna, aboriginal relics and the social impact of aspects such as noise.¹⁷³



Figure 10 To help the DMR ascertain future trends in traffic, motorists were asked to complete cards about their journey during the 1947 Traffic census. Source: GPOI, 36803

Aerial
Camera
Equip-
ment
(Item
4309002)

A helicopter was acquired by the DMR in 1964, being replaced by newer models over the years. It has been used for wide variety of tasks, including aerial photography, surveying, traffic control and safety.¹⁷⁴

The Sydney Area Transportation Study of 1974 produced projections for Sydney's transport needs to the year 2000.¹⁷⁵ Unlike earlier studies of road systems, the SATS study sought to view Sydney's transport as a broad range of systems including railways, private vehicles on roads and public transport on the roads. In October 1977, the State Government announced the abandonment of the projected North Western Freeway from Pymont to Gladesville Bridge for an alternative project of progressive upgrading of Victoria Road from Bank Street to Gladesville Bridge.¹⁷⁶ A programme of reviewing existing road reservations and the linking of all non-abandoned lengths of freeway to the existing arterial road system was under way by 1977.¹⁷⁷

¹⁷³ Dept of Main Roads, *Annual Report*, 1979, p 35

¹⁷⁴ *Roadmakers*, p 238

¹⁷⁵ Dept of Main Roads, *Annual Report*, 1977, p.22

¹⁷⁶ Dept of Main Roads, *Annual Report*, 1979, p 34

¹⁷⁷ Dept of Main Roads, *Annual Report*, 1977, p 22

6.0 Constructing roads and works (DMR)

6.1 Evolving construction techniques.

In the nineteenth century, most roads lacked a dust free surface. When used by motor cars in the early twentieth century, they were prone to create huge quantities of dust. Pounding by heavy vehicles created potholes in the road surface.¹⁷⁸ A partial solution to the problem was found by regulating wheel widths.¹⁷⁹ Tarring surfaces eliminated the dust problem and also served to bind the surface despite pounding by motor cars, as some local Councils discovered.¹⁸⁰

Various means of surfacing roads were tried over the years to devise a cheap but durable surface. An experimental stretch of Telford foundation consisting of sandstone laid eight inches (20.3 cm) thick with a covering course of three inches (7.6 cm) of pre-mixed bitumen macadam was laid in 1927 on the Great Southern Highway at Cross Roads and Carnes Hill in Nepean Shire.¹⁸¹ A quarry was opened locally to secure sandstone for the work.¹⁸²

An experimental stretch of reinforced concrete road was laid by the Public Works Department at Homebush. The Botany Road re-construction was the first extensive use of concrete in NSW and one of the first in Australia.¹⁸³ Concrete roads were built by the Main Roads Board in a number of areas, even outside Sydney where required.¹⁸⁴

To assist in the cheap and rapid construction of roads, the MRB bought power driven road making machinery from its inception ensuring better quality roads and more efficient construction.¹⁸⁵ When the MRB began to fill in the missing links and the ends of Main Roads in the County of Cumberland, it used cement concrete or cement concrete topped with asphalt concrete. Macadam was used in areas of lighter traffic. Cut stone laid in setts was rapidly falling into disuse due to its high cost, since it had to be obtained from outside the area.¹⁸⁶ The high cost of imported materials led to the DMR paving roads with materials such as cement concrete for reasons of economy. Whilst cement concrete was not the cheapest material, it had the added advantage that it was durable thus saving money in the long term due to reduced maintenance costs. In early 1934, the DMR laid an experimental course of harsh-mix roller-consolidated cement concrete on Blaxland Road in Ryde Municipality. Once the system was perfected, it was used on a number of other roads.¹⁸⁷ In the Western Division, the main problems were large lengths

¹⁷⁸ *Roadmakers*, p 63

¹⁷⁹ *Roadmakers*, p 65

¹⁸⁰ Lidcombe Municipal Council, *Annual Report*, 1920-2, p 4

¹⁸¹ Main Roads Board, *Annual Report*, 1927, p 8

¹⁸² Main Roads Board, *Annual Report*, 1928, p 45

¹⁸³ *Roadmakers*, p 70

¹⁸⁴ A list of concrete main roads built outside Sydney from 1920 to 1940 is given in *Main Roads*, June 1953, pp 102-3

¹⁸⁵ *Roadmakers*, p 112

¹⁸⁶ *Roadmakers*, p 103

¹⁸⁷ Dept of Main Roads, *Annual Report*, 1935, p 6

of road, which needed to be provided cheaply. Suitable road making material was scarce whilst there were many difficulties due to sand drift and soil erosion.¹⁸⁸

By the mid 1930s, the almost universal use of pneumatic rubber tyres meant that wear and tear on road surfaces was reduced thereby permitting greater use of bitumen or tar sealed pavements, which were also progressively used on major roads in rural areas.¹⁸⁹ By the late 1930s, changes in motor cars meant that road surfaces needed to keep pace with car design. Lighter cars, running on balloon tyres and travelling at higher speeds meant that surfaces needed to be designed to provide a better grip for the tyre whilst roads needed to incorporate smoother curves to allow for faster but safer driving at higher speeds.¹⁹⁰ Bitumen surfaces were widely used from the 1930s to the 1950s notably the flush seal or seal coat. In the 1950s, the DMR began to produce increasing quantities of its own hot-mix.¹⁹¹ By the mid 1950s, the sprayed bitumen and stone aggregate surfaces previously used for most rural roads were no longer of sufficient strength to withstand the impact of heavier vehicles so a more durable surface had to be provided.¹⁹²

6.2 Continuing construction and maintenance works on roads

Due to the huge quantity of works undertaken by the MRB and its successor, the DMR, it is impossible to catalogue all the works here. The following is a selective outline of some of its works, including some notable achievements, to provide an overview of the Department's works. In March 1925, one of first tasks undertaken by the new MRB was the authorisation of urgent works on Main Roads by local government, notably in Oxford Street and Parramatta Road.¹⁹³

The MRB soon took over maintenance of major roads out of Sydney. A depot was established at Granville, the most central location for works in the County of Cumberland. Roads were maintained by a patrol, which was responsible for a section of road, supplemented by mobile gangs.¹⁹⁴ In 1925, the MRB became a member of the Sydney Streets Opening Conference, which arbitrated the excavation of roads for utility services. The MRB commenced a policy of relocating as many utility services to footpaths as possible to minimise the breaking up of expensive surface pavements.¹⁹⁵ The most significant outcome was that utility services came to realise that it was better that their services were located in the footpath for reasons of economy and safety. Even the Postmaster General's Department, more recalcitrant than other authorities, was forced to move under pressure from the union representing its employees, which was concerned about safety.¹⁹⁶ To foster roads more suited to the motor car, the MRB opposed the traditional vee shaped transverse gutter and actively sought to eliminate it from 1925 onwards.¹⁹⁷

¹⁸⁸ *Roadmakers*, pp 168-9

¹⁸⁹ *Roadmakers*, p 144

¹⁹⁰ RTA – Upgrade of Heritage & Conservation Register for the South West Region, NSW, Freeman Randall, Canberra for RTA, August 2003, p 26

¹⁹¹ *Roadmakers*, p 217

¹⁹² Dept of Main Roads, *Annual Report*, 1956, p 9

¹⁹³ *Roadmakers*, p 84

¹⁹⁴ *Roadmakers*, p 104

¹⁹⁵ *Roadmakers*, p 105

¹⁹⁶ Information from B N Loder, January 1996

¹⁹⁷ *Roadmakers*, pp 108-9



Figure 11 Maintenance, October 1938. Upgrading roads was a constant chore as seen on Parramatta Road near the Homebush underpass. Source: GPO I, 32541

An active programme of road reconstruction works was started by the MRB in its first few years. Money was available and councils were not submitting applications for works. Many Main Roads in the country were attracting the attention of the relevant local government authorities in the first two years of the operation of the Main Roads Act, so the MRB stepped in with ample funding to remedy deficiencies in these roads. It was able to utilise abundant unemployed labour for the work and forestall the need for costly remedial work in the future. Works included the Lidsdale and Coxs River deviation on the Lithgow-Mudgee and Great Western Road, construction of the Sydney to Newcastle Road, the Warland's Range deviation on the Great Northern Road, construction of the Razorback deviation and Breadalbane-Cullerin-Gunning deviation on the Great Southern Road and works between Bulli and Kiama on the Princes Highway.¹⁹⁸

In the 1930s, the drag re-sheeting method of repairing roads was taking over as a surfacing technique. It was first used by the DMR in 1931. A wide grader-spreader at the back of a vehicle spread material evenly without the need for manual spreading or handling.¹⁹⁹ Another process gaining acceptance was the road-mix reseal process first used experimentally in 1935.²⁰⁰ In rural areas with a shortage of suitable stone, processes, which mixed the soil with a bituminous material and/or sand, were used on lightly

¹⁹⁸ Main Roads Board, *Annual Report*, 1929, pp 3-4

¹⁹⁹ *Roadmakers*, p 147

²⁰⁰ *Roadmakers*, p 149

trafficked roads.²⁰¹ In 1935, the DMR experimented near Narrandera with the Irvine heat treatment process for hardening earth roads in country areas. However, it did not continue with the process.²⁰²

Greatly increased works were undertaken on rural roads in the 1930s, often to improve existing roads or to open up new country in association with railway development. Coastal roads were much more expensive to build than interior roads, due to the lack of suitable stone, rugged country, the large number of bridges required, flood damage and erosion as well as the added expense of raising roads above water logged areas.²⁰³

During the 1930s, the DMR commenced linking roads into a connected highway system, which could serve regional areas. One example is the Pacific Highway. Although its line had been marked out by the early twentieth century, it was not until the 1930s that serious work to link roads between the different river valleys of the North Coast was underway. The process would be prolonged and slow, and continues to the present day, as funds are continually provided to upgrade parts of the highway and make it adequate.²⁰⁴ The road running northwards from Hexham through Muswellbrook and Tamworth to Queensland was proclaimed as the New England Highway in 1933. It was given a bituminous surface more suited for the main road from Maitland to Brisbane.²⁰⁵

Substantial increases in the use of heavy lorries and semi-trailers occurred after World War Two. This was coupled with a series of wet seasons and floods in the late 1940s. As a result, there was considerable deterioration of surfaces on major roads. Greater use of more robust pavements was undertaken whilst the monitoring of loads on heavy vehicles was stepped up.²⁰⁶

In the 1950s, reconstruction and re-routing of sections of the Princes Highway from Narooma to Bega was undertaken, as was shortening of the Pacific Highway between Raymond Terrace and Taree. Other major works were the continuation of work in the Snowy Mountains, and the realignment of parts of the Great Western Highway between Linden and Woodford, Katoomba, Mount Victoria and Lithgow.²⁰⁷

Sealing of major roads in the outer rural areas was gradually completed. The Sturt Highway was completely sealed in 1962 providing a route through to Adelaide.²⁰⁸ The DMR laid a deep asphalt pavement on Southern Cross Drive in 1968-9, one of the earliest uses of this surface in Australia.²⁰⁹

²⁰¹ *Roadmakers*, p 151

²⁰² *Roadmakers*, pp 153-4

²⁰³ *Roadmakers*, pp 159-60

²⁰⁴ RTA Regional Heritage Study: Northern Region, Final Report, Ian Jack Consulting Pty Ltd, for RTA, April 2004, p 11

²⁰⁵ RTA Regional Heritage Study: Northern Region, Final Report, Ian Jack Consulting Pty Ltd, for RTA, April 2004, p 14

²⁰⁶ *Roadmakers*, p 194

²⁰⁷ *Roadmakers*, p 218

²⁰⁸ *Roadmakers*, p 230

²⁰⁹ *Roadmakers*, p 231

In the early 1970s, in a bid to prevent ribbon development, the Pacific Highway north of Coffs Harbour was proclaimed a Motorway, thus controlling the number and location of access points and indiscriminate frontage development.²¹⁰

6.3 Constructing new roads

The dividing line between construction of completely new roads and improvement works on existing roads is often unclear. Some of the major construction works undertaken by the MRB and DMR are highlighted here. Construction of a new road from Sydney to Newcastle between Hornsby and Gosford commenced in August 1925. It was the major road building project undertaken by the MRB in its early years.²¹¹ The section between Hookhams Corner, Hornsby and the Hawkesbury River opened on 2 June 1930. Ferries carried cars across the river at this point, which was not bridged until May 1945.²¹²

Work commenced on a major project to provide a suitable new road to Canberra from the Hume Highway south of Goulburn in 1929. The Federal Government provided considerable funding for this road, which became the Federal Highway.²¹³ Two quarries were opened locally where rock was crushed, heated and mixed with bitumen and then carried to the road works.²¹⁴ Another scheme of improvement of the Federal Highway (later Barton Highway) leading from the Hume Highway at Yass to Canberra was undertaken between January 1935 and March 1937.²¹⁵

A lengthy re-routing of the Gwydir Highway between Glen Innes and Grafton totalling 73 miles (117.5 km) was commenced in 1939 until works were stopped by the war in October 1942.²¹⁶ It was the first road planned using extensive aerial photography to assess suitable routes across the terrain and economise on costly surveys by foot.²¹⁷ Work continued in stages after the war. The new route was officially opened on 9 December 1960.²¹⁸

Extensive works were also undertaken on the Oxley Highway. It was first completed in 1928-30. Another phase commenced in July 1932 using unemployed labour. Most of the alignment was complete by 1937 although it still needed a bitumen surface.²¹⁹

Roads were taking over the role of railways in rural areas by the 1930s and were often constructed in preference to them. Trunk Roads 64 and 361 were constructed between Casino and Bonalbo instead of a proposed railway in 1936-40. A similar road (MR 135) instead of a railway was commenced between Guyra and the Dorrigo Road in 1936-7 and completed in 1948.²²⁰

²¹⁰ *Roadmakers*, p 252

²¹¹ *Roadmakers*, p 119

²¹² *Roadmakers*, p 121

²¹³ Main Roads Board, *Annual Report*, 1929, pp 46-7

²¹⁴ Dept of Main Roads, *Annual Report*, 1936, p 15

²¹⁵ *Roadmakers*, p 163

²¹⁶ *Roadmakers*, pp 164-5

²¹⁷ Dept of Main Roads, *Annual Report*, 1937, pp 14-5

²¹⁸ *Main Roads*, March 1961, p 74

²¹⁹ *Roadmakers*, pp 165-6

²²⁰ *Roadmakers*, p 166

Developmental Roads were built from the earliest days of the MRB in continuation of a tradition of developmental road building by the Roads Branch of the Public Works Department. The most significant scheme of Developmental Road building in the 1930s Depression was in the Upper Clarence and Richmond River valleys. Developmental roads were built from 1932 onwards with extensive use of unemployed labour. A special local headquarters was set up at Grevillia to manage the works.²²¹ The construction of Developmental Roads was not confined to rural areas distant from Sydney. Even the County of Cumberland was the subject of Developmental Road works. In the 1930s, Cabramatta and Fairfield were given Developmental Roads.



Figure 12 Road haulage near Glen Innes August 1947. Increasingly heavier vehicles were using the state's roads after the Second World War. Source: GPO I, 45286

²²¹ *Roadmakers*, p 167

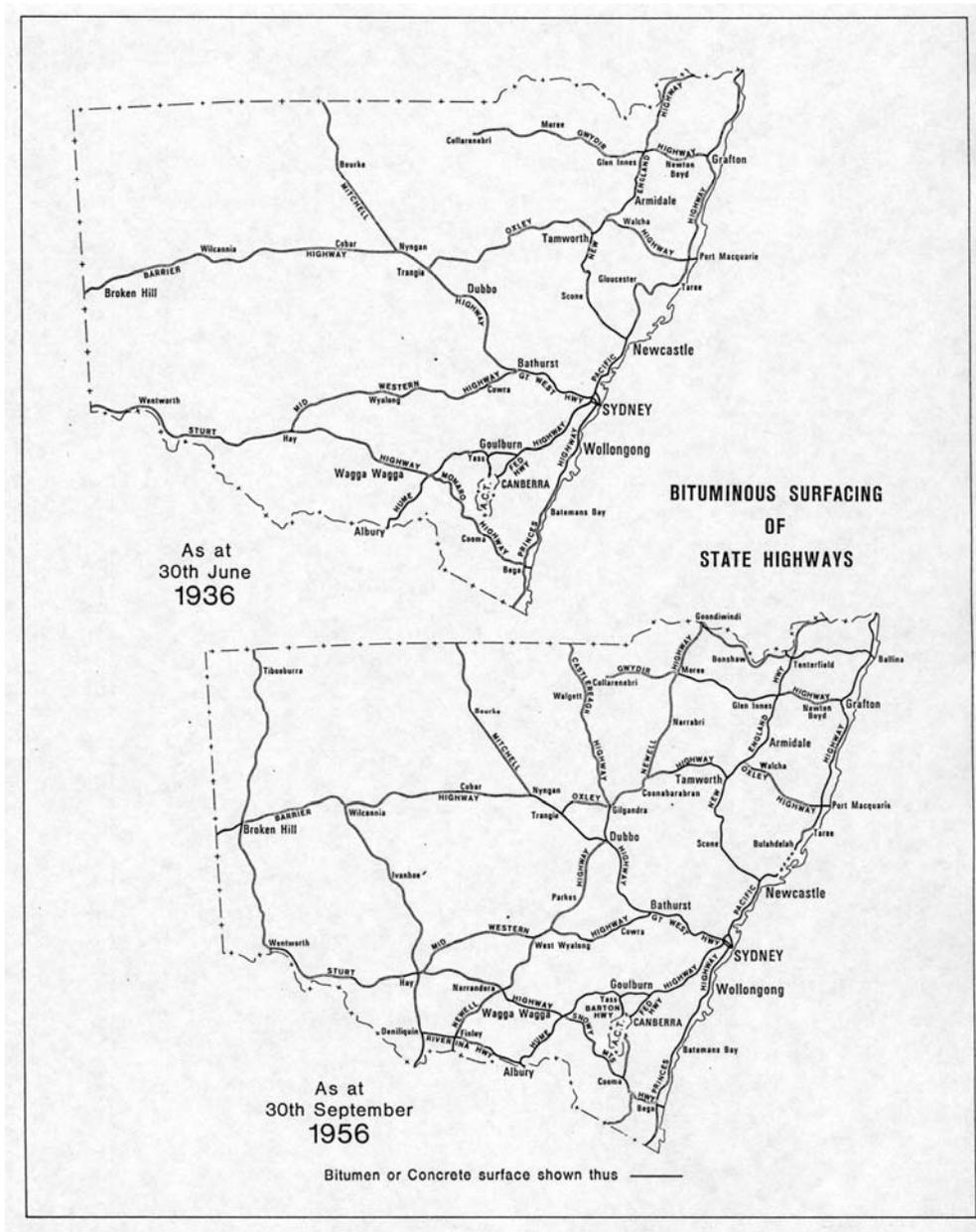


Figure 13 Pavement improvement. Extension of road surfaces from the 1930s onwards improved travelling times. Source: *Roadmakers*, 1976

A major road-building scheme between Narrandera and Griffith passing through Leeton was commenced using day labour on April 1936.²²² The work was completed in early 1938 providing an all weather road.²²³ Plantings along the road were also completed in concert with the work. The Newell Highway from Tocumwal to Goondiwindi was proclaimed in 1938. Work started on improving some sections in June 1946 and was completed in 1949.²²⁴

In the County of Cumberland, the Wakehurst Parkway in Warringah Shire was commenced in December 1939 as unemployment relief work. It was mostly complete

²²² Dept of Main Roads, *Annual Report*, 1936, p 15

²²³ *Roadmakers*, p 168

²²⁴ *Roadmakers*, p 200

when war stopped work. After its restart after the war it was officially opened on 22 March 1946. It was named after Governor Lord Wakehurst who was keen about the natural beauties of the state. The road passed through many areas of natural bushland.²²⁵

Widespread wet weather and flooding on the late 1940s and early 1950s extensively damaged roads in rural areas. Major works were undertaken on the Pacific Highway in the late 1940s, including bridge work and surfacing in areas much affected by flooding. Works were also undertaken on the Princes Highway and the New England Highway.²²⁶

Continuous upgrading work on roads gradually converted earth based surfaces into hard and durable all weather surfaces. Commencing with areas near Sydney and the coast, roads were gradually paved or tarred to serve in all weathers.

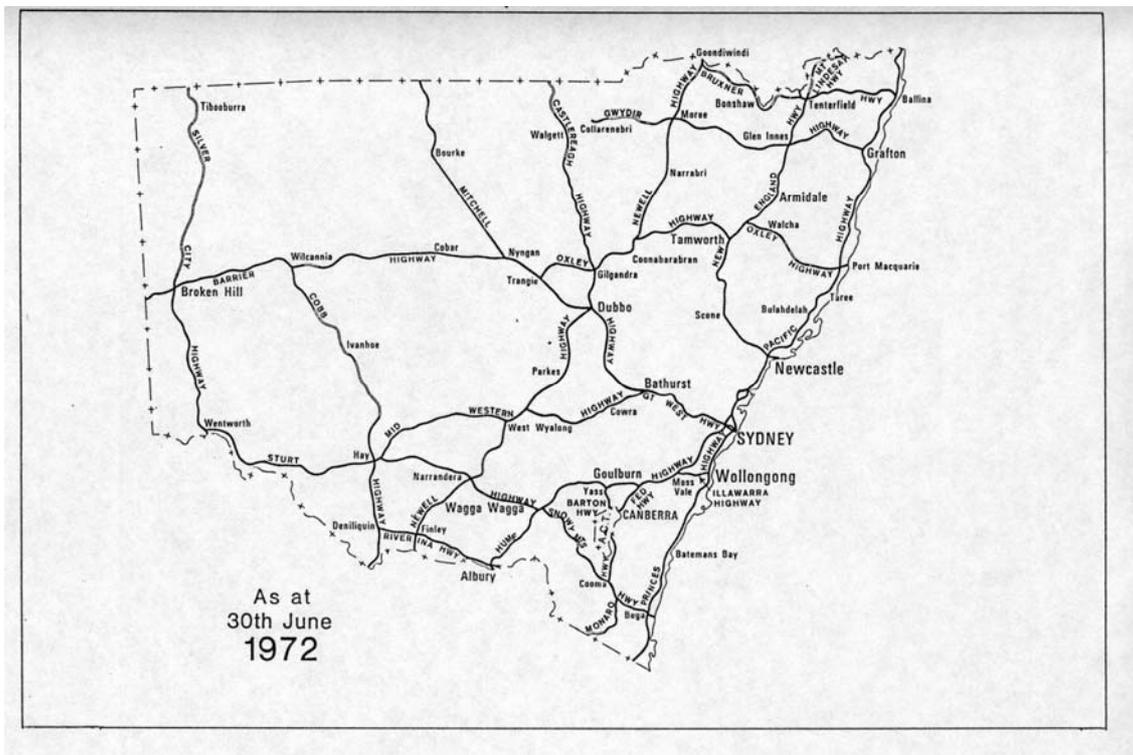


Figure 14 Improved road surfaces at 30 June 1972. Source: *Roadmakers*, 1976

Freeways were first built when the Cahill Expressway was started as a distributor for traffic from the Sydney Harbour Bridge to Eastern Sydney. It opened in March 1958. The second section extended from the overhead road at Circular Quay to Sir John Young Crescent at Woolloomooloo, and opened on 1 March 1962.²²⁷ Other Freeways followed. Part of the Lane Cove Valley Freeway was built when the Gladesville, Tarban Creek and Figtree Bridges were built in 1964. The first section of the Newcastle Freeway, to Mount White, was opened in December 1965. The first section of the Western Freeway, a small three mile section near the Nepean River at Regentville, opened on 11 October 1971. A further nine-mile section opened on 20 December 1972. It was also

²²⁵ Dept of Main Roads, *Annual Report*, 1946, pp 6, 15

²²⁶ *Roadmakers*, pp 200-1

²²⁷ Dept of Main Roads, *Annual Report*, 1962, p 16

the first state road to have the new maximum speed limit of 110 km per hour.²²⁸ A six mile section of the South Western Freeway from Cross Roads to Raby Road opened on 26 October 1973.²²⁹ The first section of the Western Distributor taking traffic out of Sydney opened in September 1972.²³⁰

From the early 1990s onwards, the RTA has organised the provision of roads through private construction companies, which then obtained a long-term lease on those roads and the right to collect a toll to recoup their original investment. Roads built and financed by this technique include the Western and South Western Motorways, (M4 and M5), the Sydney Harbour Tunnel and the Cross City Tunnel.

6.4 Providing river crossings and bridges

As well as being responsible for many bridges, the MRB and then the DMR became responsible for numerous ferries, which crossed rivers across the state when it was formed in 1925. Both bridge building and maintenance fell into its area of responsibility. It inherited the bridge construction function from the Public Works Department. The DMR created its own specialist bridge design section at Head Office. Between 1925 and 1940, the DMR built over 1,000 bridges.²³¹ Bridges were constructed as reinforced concrete slab bridges, reinforced concrete beam bridges and steel beam or truss bridges set on concrete piers and timber beam and truss bridges.²³² To allow shipping movement on some rivers, bascule lift or vertical lift span bridges were provided. Bridge maintenance was the responsibility of the DMR and ranged from small timber truss bridges on rural roads to the Sydney Harbour Bridge taken over in 1932 from the Public Works Department.

During the late 1920s and the early 1930s, the Bridge section developed a series of designs for reinforced concrete bridges which became the departmental standard for twenty years, comprising slab bridges; girder bridges; continuous girder bridges; framed bridges and arch bridges.²³³

The 1930s was an active decade for bridge building and a rate of construction was achieved which was not surpassed until the 1950s. Notable works in the 1930s included the rebuilding of the bridge at Northbridge as a concrete arch span replacing an earlier suspension bridge whilst retaining the sandstone towers at the ends undertaken in 1936 to 1939, plus a bow-string arch bridge on the Pacific Highway at Shark Creek near Maclean completed in 1935, the first in Australia (now bypassed by the main road but still retained), followed by another at Hillas Creek between Tumblong and Tarcutta on the Hume Highway in 1937.²³⁴ In 1935, a steel lift span bridge of a new type was completed on the North Arm of the Clarence River at Mororo, the second bridge of this type after an earlier one was completed at Terranora Creek in the Tweed Valley.²³⁵ Another notable bridge, opened on 1 July 1933, was the Suspension Bridge at Kindee over the

Long
Gully
Bridge,
North-
bridge
(Item
4309506)

²²⁸ *Roadmakers*, pp 259-60

²²⁹ *Roadmakers*, p 260

²³⁰ *Roadmakers*, p 261

²³¹ *Roadmakers*, p 169

²³² *Main Roads*, Jan 1931, pp 69-78

²³³ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 8

²³⁴ Dept of Main Roads, *Annual Report*, 1936, p 16; *Roadmakers*, p 170

²³⁵ Dept of Main Roads, *Annual Report*, 1935, p 43

Hastings River on Developmental Road 1094, a light and cheap structure built to serve dairy farmers in the district.²³⁶

Peats
Ferry
Road
Bridge,
Brooklyn
(Item
4309666)

One of the last steel bridges built by on-site assembly of pre-riveted sections was the steel bascule bridge at Narooma over Wagonga River on Princes Highway built in 1932. From 1934 onwards, all bridge sections were welded off the site for assembly on the site. Sections continued to be riveted on the site due to technical problems with welding in the field. The bridge on Trunk Road 63 over the Manilla River in the Municipality of Barraba was the first major bridge welding project to be undertaken by the DMR.²³⁷ The Hawkesbury River Bridge at Peats Ferry completed in 1945 had the longest welded truss spans.²³⁸

In the immediate post-war period, bridge building did not attain the levels of the 1930s for some time.²³⁹ A prolonged period of catch-up maintenance had to be completed in the 1950s. By 1950, the DMR had developed a range of different types of bridge railing directed at economy in construction at handling different situations such as the needs of stock crossing the bridge, safety for vehicular traffic and beauty.²⁴⁰

The immediate post-war years saw the last of the reinforced concrete bridges built, as pre-stressed concrete construction was emerging as the new technology. The first pre-tensioned concrete bridge superstructure of the bridge built across Mittagong Creek near Bowral for the Bowral Municipal Council in June 1953.²⁴¹ A bridge across Pipers Creek near Guthega Power Station completed in September 1953 was the first post-tensioned concrete bridge in NSW. It was erected for the Snowy Mountains Authority with sections pre-cast by Concrete Industries Ltd at Villawood. The first pre-stressed concrete bridge built by the DMR was completed across Cockle Creek, Bobbin Head that was opened on 1 September 1956.²⁴² The first post-tensioned concrete bridges built by the DMR were completed in 1957 on the Princes Highway over Corunna Lake and Nangudga Lake near Narooma.²⁴³

Cable
ferry,
Wise-
man's
Ferry,
(Item
43003
11)

During the 1950s, replacement of ferries by bridges accelerated. In 1948, the Department or the state government operated thirty ferries across major rivers.²⁴⁴ By 1958, there were 18 ferries controlled by the DMR. To handle increased road traffic, especially semi-trailers and caravans, ferry services were enhanced on some coastal rivers with duplicate ferries or larger vessels. The conversion of steam powered ferries was under way by 1958, and it was anticipated that the only steam powered ferries would soon be larger vessels crossing Newcastle Harbour.²⁴⁵ Opening of the Harwood Bridge over the Clarence River on 20 August 1966 eliminated the last remaining ferry operating on the Pacific Highway. It was also the last ferry on State Highways. It replaced a ferry service

²³⁶ Dept of Main Roads, *Annual Report*, 1936, p 17; *Main Roads*, Nov 1933, p 10

²³⁷ Dept of Main Roads, *Annual Report*, 1935, p 44; 1936, p 16

²³⁸ *Roadmakers*, p 171

²³⁹ *Roadmakers*, p 201

²⁴⁰ *Main Roads*, Sept 1950, pp 27-31

²⁴¹ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 16

²⁴² L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, pp 17-9

²⁴³ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 21

²⁴⁴ *Main Roads*, Dec 1948, p 43

²⁴⁵ Dept of Main Roads, *Annual Report*, 1958, p 52

that had been operating since 1885. The Harwood Bridge was then the third longest road bridge in NSW.²⁴⁶

Timber still had to be used for construction of many bridges in the 1950s due to shortages of steel. Modern traffic was found to be loosening timber planking on older timber bridges, which had been laid transversely. By laying the decking longitudinally, it was found that it lasted longer and did not come loose so easily. All new timber bridges were constructed in this fashion, whilst older bridges were gradually renovated by placing longitudinal planking over the older decking.²⁴⁷ The DMR maintained a timber mill at the Bega office in the 1950s to assist in the repair and construction of timber bridges.²⁴⁸ However, in the late 1950s, the cost advantage of timber was overtaken by advances in pre-stressed concrete construction techniques, which made them cheaper to build than timber bridges.²⁴⁹

Advances with pre-stressing of concrete allowed pre-casting of structural members as well as longer spans and more elegant profiles and shapes. The first bridge with a pre-stressed concrete superstructure was the bridge at Bobbin Head in Ku-ring-gai Chase. Two other significant bridges were the 2,074 feet long (632 m) concrete and steel bridge over the Wollamba River between Forster and Tuncurry and the Irving Bridge over the Richmond River at Casino, both opened in 1959.²⁵⁰

Gladesville Bridge (Item 4300309)

Extensive bridge construction was undertaken both in the County of Cumberland and in rural areas during the 1960s. Bridge and culvert construction in rural areas proceeded rapidly in the 1960s. On average, one was completed every 2.8 days during the decade.²⁵¹ One of the most notable bridges built was the Gladesville Bridge opened on 2 October 1964, the longest concrete arch span in the world constructed at that time. The Silverwater Bridge was a five span pre-stressed bridge opened on 10 November 1962 and was the first concrete box girder bridge built in NSW.²⁵²

In the early 1970s, a burst of bridge building resulted in the construction of four of the longest road bridges built in NSW - Stockton Bridge opened on 1 November 1971, Macarthur Bridge, Camden, opened on 26 March 1973, Bega Bridge completed in 1975 and the new Gundagai Bridge ready for completion in 1976.²⁵³

The new bridge at Maldon across the Nepean River opened to traffic in April 1980 was the first DMR bridge erected using the slip form method of construction on its piers.²⁵⁴ When the new pre-stressed concrete bridge across the Shoalhaven River was opened in September 1980, it shared its burden of traffic with the steel truss bridge built in 1881, which had been refurbished and retained in use.²⁵⁵ The highest bridge ever built in NSW

²⁴⁶ Dept of Main Roads, *Annual Report*, 1966, p 25

²⁴⁷ Dept of Main Roads, *Annual Report*, 1958, p 51; *Main Roads*, June 1958, pp 109-10

²⁴⁸ Information from Margaret Veitch, Telopea, 17 January 1996

²⁴⁹ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 23

²⁵⁰ *Roadmakers*, p 220

²⁵¹ *Roadmakers*, p 235

²⁵² L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 26

²⁵³ *Roadmakers*, p 254

²⁵⁴ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 36

²⁵⁵ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 36-7

was the Pheasants Nest Bridge across the Nepean River on the South Western Freeway opened in December 1980, which is 76 metres above water level.²⁵⁶

When the section of F4 Freeway from Concord to Melton Street Auburn was opened in December 1982, it included a cable-stayed pedestrian bridge across the road at Pomeroy Street, Homebush, the first such bridge built by the DMR.²⁵⁷

Another notable bridge was the Mooney Mooney Bridge on the Sydney to Newcastle Freeway opened in December 1986, which was carefully designed to minimise damage to the National Park, which the bridge traversed.²⁵⁸

6.5 Undertaking wartime defence works

Works completed by the DMR during the Second World War included roads built for defence purposes as well as other works within NSW for defence needs. Additionally, the DMR undertook works outside the state as required for national needs. Development of the Army camp at Liverpool and the emergence of motorised transport meant that there was heavy pressure applied to the existing roads of that area. Moorebank Avenue (Main Road 657) was metalled during the war, to better serve the needs of the Army.²⁵⁹

In NSW, it built the Mt Keira-Wilton Road (MR 502) to allow access from Picton and Menangle, where there were military camps, to Wollongong and the Illawarra. The Mt Ousley Road was built as an alternative route to Bulli Pass and the Princes Highway. A road from Liverpool to Heathcote (MR 512) was built to improve cross country access again associated with a military training area. A road (MR 515) from Liverpool to Wallgrove (military training area) was built. Work commenced on making Bells Line of Road across the Blue Mountains into an alternative traffickable road in 1942, but was not completed until after the war since military operations moved away from Sydney. The road from Windsor to Singleton via Putty was rebuilt and re-aligned (MR 503).

Bell's Line of Road was constructed in four stages. The first stage undertaken from 1939 to 1941 involved the section from Mt Victoria to about 11 miles (18 km) from Mt Victoria using unemployed relief workers. The second, the wartime phase from about February to September 1942, mainly involved improvements of the bottleneck from Kurrajong to Cut Rock and at Mt Tomah. The early postwar phase from 1946 to 1948 involved work on the section from Bilpin to Mt Tomah. The final phase from 1947 to 1949 involved a short deviation at Kurrajong and a bridge over Little Wheeny Creek as well as further works at Cut Rock.²⁶⁰

In the Port Stephens area, major road works were undertaken to a military camp at Nelson Bay (MR 108, MR 517) and near Williamstown (MR 518). On the North Coast, a road deviation at the Hastings River was built. Roads between Grafton, Lawrence and Casino were built or improved. In preparation for invasion, many bridges, river crossings and roads were mined, or prepared for destruction to delay the advance of the Japanese. On the other hand, many bridges had to be strengthened to carry heavier military traffic.

²⁵⁶ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 37-8

²⁵⁷ Dept of Main Roads, *Annual Report*, 1983, p 17

²⁵⁸ L H Evans, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney, p 38

²⁵⁹ *Liverpool Sub-Region Phase I Heritage Study*, Sue Rosen and Associates for RTA, March 2004, p 19

²⁶⁰ *Main Roads*, Sept 1950 pp 22-5

Access and internal roads in military camps at Bathurst, Greta, Ingleburn and Singleton were built by the Department. It also completed works at aerodromes at Tocumwal (the largest work) as well as work on others at Parkes, Camden, Pokolbin, Clairville near Glen Innes, Fleurs, Wallgrove, Cordeaux, Nowra, Mount Druitt, Jervis Bay, Napiac, Bankstown and Schofields. Construction of an all-weather road in the Northern Territory, later the Stuart Highway in conjunction with other road authorities, and the Queensland Defence Highway between Duaringa to Charters Towers were major projects outside NSW. It also completed aerodromes at Norfolk Island and New Caledonia.²⁶¹

7.0 Responding to the impact of road construction or works

Roads provide the essential arteries that enable modern society to function effectively and are the channels by which a new area is settled. Development and works on coastal roads enabled much more rapid development of coastal areas as holiday and resort destinations, whilst agriculture, fishing and forestry developed considerably with better road communication.

Apart from their value in improving transport, roads and bridges have also been objects of interest and wonder. In the nineteenth century when “improvement” was one of the pillars that underlay the Victorian era system of values, any new work was the focus of interest, amazement and delight. Roads were more mundane, but to those long accustomed to the dusty bumpy ride on older roads, the first passage down a newly paved road surface must have been sheer delight. More is known about the attraction of notable engineering and building works. The opening of a new school or even an engine shed at the railway station was often an occasion for celebration. Notable features such as bridges were also absorbed in the social networks of people. The long bridge at Gundagai was the focus of walks and Sunday promenades.²⁶² As landmarks, bridges were set to attract a certain amount of interest in towns where they were a major source of local pride.

Developmental Roads provided the routes that enabled more intensive or more profitable utilisation of the resources of a locality. Construction of the Mt Darragh deviation in 1929 provided better communication from the head of the railway at Bombala to the coastline between Eden and Bega.²⁶³ Considerable work on the improvement of the Princes Highway in the 1930s, often using unemployed labour, allowed coastal areas to become more accessible.²⁶⁴ Major works were also completed on the Pacific Highway, including construction of bridges over the Nambucca, Bellinger, Tweed and Clarence Rivers. By 1939, two thirds of the Pacific Highway was bitumen.²⁶⁵

The use of road works to relieve unemployment is an established tradition in Australia. One of the earliest works undertaken by the Main Roads Board, the formation and gravelling of the road between Cattai Creek and Maroota in 1926, a length of 11.5 miles

²⁶¹ *Main Roads*, Dec 1946, pp 58-62; *Roadmakers*, pp 172-7

²⁶² RTA – Upgrade of Heritage & Conservation Register for the South West Region, NSW, Freeman Randall, Canberra for RTA, August 2003, p 31

²⁶³ Main Roads Board, *Annual Report*, 1929, pp 50-1

²⁶⁴ *Roadmakers*, p 160

²⁶⁵ *Roadmakers*, p 161

(18.5 km) was undertaken to provide unemployment relief.²⁶⁶ In the late 1920s, large scale works were undertaken by the MRB to utilise available funds and make up the deficiency in Main Roads, which were not being addressed by local government. These works ensured that many men, formerly unemployed, became trained and efficient road workers able to engage in road construction and maintenance as their full-time occupation. Additionally, this core of experienced road workers was distributed across the state providing a network of experienced personnel where they were required.²⁶⁷ In the mid 1930s, when the issue of widespread unemployment became more pressing, the DMR reviewed its activities over ten years. It found that it had provided work for many men who became skilled road workers. "It is an outdoor occupation also which is healthy and active and one which is calculated to build up the morale of employees who have searched fruitlessly for other jobs. This is perhaps the reason for the particular freedom which has been enjoyed during the ten years from industrial disputes."²⁶⁸

Bitumen
kettle
(Item
4300728)
Tool
Chest,
Rockdale
(Item
4309012)

Roadwork had a central role in unemployment relief from 1933 to 1939 during the 1930s Depression. The DMR concentrated unemployment relief workers on projects needing muscle power rather than machinery. Roads, which were the subject of major unemployment relief work, were the Princes, Hume, New England, and Pacific Highways, and Main Road 110 near Bulahdelah.²⁶⁹ In addition, the DMR provided input into schemes whereby roadworks were undertaken in conjunction with local government authorities to alleviate unemployment. In Sutherland Shire brick guttering was completed. Guttering work was also undertaken at Cronulla, and Kogarah as well as road improvements in order to provide better access to suburban areas.²⁷⁰

In general, however, the MRB felt that it was best to use a blend of contractors and local government authorities to complete some work whilst day labour work under the control of the Board completed the rest. Contractors knew they had to arrive at a quotation close to the cost of the Board completing the work itself if they wanted the contract. The "friendly rivalry" that this mixture of construction bodies created was seen positively by the Board.²⁷¹

The most significant unemployment work scheme involving Developmental Road building was in the Upper Clarence and Richmond River Valleys in the 1930s. A survey by the MRB in 1929 identified the area as suitable for dairying. It proposed to develop 65 miles (105 km) of new roads in the area and submitted its proposal to the Unemployment Relief Council. By mid 1933, about 600 men had been employed continuously on the work.²⁷² Works commenced on 12 October 1932 and continued during the wettest season seen in the area for 43 years.²⁷³ The roads provided access to 670,000 acres (271,000 hectares) of land and benefited 320 land holdings, used for dairying and cattle grazing. It allowed closer settlement of another 300 to 400 dairy farms. Transport costs

²⁶⁶ Main Roads Board, *Annual Report*, 1926, p 36

²⁶⁷ Main Roads Board, *Annual Report*, 1929, p 4

²⁶⁸ Dept of Main Roads, *Annual Report*, 1935, p 4

²⁶⁹ *Main Roads*, May 1937, pp 116-7

²⁷⁰ Phase I Heritage Study – Botany Sub-region for Section 170 Heritage and Conservation Register, Final Report, Volume I, Austral Archaeology for RTA, 2004, pp 38-9

²⁷¹ Main Roads Board, *Annual Report*, 1929, pp 13-4

²⁷² Dept of Main Roads, *Annual Report*, 1933, pp 41-2

²⁷³ Dept of Main Roads, *Annual Report*, 1934, pp 6-7

for settlers were significantly reduced.²⁷⁴ As the work was drawing to completion, local freight prices for transporting goods dropped from £4 to 30/- and the cost of transporting pigs dropped to 1/- from 4/-.²⁷⁵ The towns of Woodenbong and Bonalbo grew rapidly and Crown land was sold profitably.²⁷⁶

From March 1934, a scheme for the Upper Manning River commenced to provide an access road and enable the development of 800 square miles (2,072 sq km), as well as providing part of a long range scheme to link the coast with Walcha, Scone and Tamworth.²⁷⁷ Another instance of the co-ordination of developmental works was the Kindee Valley in the Upper Hastings River area. A bridge of an unusual design was opened across the river in 1933. It was integrated with works on Developmental Road No 1094 which opened up the area for better transport of pigs, dairy produce and calves as well as providing better access for supplies for settlers. Children were able to attend the Central school in Wauchope on a daily basis, previously inaccessible to them since the bus could not cross the river.²⁷⁸

In the Wakool-Berrigan-Deniliquin district, in conjunction with government schemes to provide a more assured supply of water for stock, a low-key scheme of providing Developmental Roads commenced in the late 1930s.²⁷⁹ A smaller scheme was also instituted at Gloucester, which allowed development of dairy farms.²⁸⁰ In 1930, Developmental Roads were built to open up wheat land near Condobolin, Hillston, and Wyalong.²⁸¹ After the war, there were changes in emphasis in building Developmental Roads, mainly being directed at roads serving grazing land with good water supplies, which were the subject of pasture improvement and irrigation areas and roads serving the north-west wheat belt at Yallaro, Boolooloo and Namoi Shires. Some construction was also directed at aiding forestry, mining and tourism.²⁸²

Wartime roads built for defence became primary vectors enabling better penetration after the war. Roads built and improved during the war at Port Stephens later became major access routes for tourist penetration of the district. Bells Line of Road, which attracted considerable wartime attention, became an alternative road across the Blue Mountains and opened up the area.

The DMR also completed roads for other authorities. In 1948, for example, it built 14 miles (22.5 km) of road from Bellangry in the Wauchope district for the Forestry Commission to allow it to open up State Forests for timber, which was urgently needed for housing and construction.²⁸³ Large scale work in the Snowy Mountains area by the Department was associated with the Snowy Mountains scheme.²⁸⁴

²⁷⁴ Dept of Main Roads, *Annual Report*, 1935, pp 6-7

²⁷⁵ Dept of Main Roads, *Annual Report*, 1934, p 7

²⁷⁶ Dept of Main Roads, *Annual Report*, 1935, p 7

²⁷⁷ *Main Roads*, August 1936, p. 133-8; Dept of Main Roads, *Annual Report*, 1939, p 37

²⁷⁸ *Main Roads*, March 1949, pp 74-5

²⁷⁹ Dept of Main Roads, *Annual Report*, 1939, p 38

²⁸⁰ *Roadmakers*, p 168

²⁸¹ *Roadmakers*, p 202

²⁸² *Roadmakers*, p 202

²⁸³ Dept of Main Roads, *Annual Report*, 1948, p 15

²⁸⁴ *Roadmakers*, p 201

Roads were major elements in regional developmental strategies. A new route for the Gwydir Highway was selected in the late 1930s but construction was slow. It aimed to provide the main link between the North Coast and the Tablelands. It was anticipated that it would enable Tablelands produce to be shipped to a proposed deepwater port at Iluka.²⁸⁵ Development of an international port at Iluka was a major initiative of the Maritime Services Board and it featured in long term planning for the district.

Recreational development along the coast, in the Blue Mountains and on the Southern Tablelands benefited from better road access as motor car ownership increased in the 1950s and as the car-towed caravan became a new goal of consumer desire. The building of Developmental Road 1196 from Princes Highway aided the holiday fishing village of Sussex Inlet immediately after the war.²⁸⁶ A new category of roads deserving DMR funding and works were developed to cater for the emergent tourist traffic. Tourist Roads were first provided for by legislation in December 1960 as roads to places of natural beauty, which would not qualify for expenditure under other categories. Some Tourist Roads have facilitated development in these areas. Tourist Road No 4030 from Laurieton across the Christmas Bell Plain to Port Macquarie has encouraged the development of Lake Cathie, North Haven and Bonny Hills as tourist destinations and retirement villages.

The social impact of road works has been great although often less visible than spectacular engineering works associated with road building. During the nineteenth century, building of railways into the heart of London displaced numerous tenants, as did so-called slum clearance in early twentieth century Sydney in Surry Hills, Millers Point and the Rocks. The displacement of occupiers by road works is less apparent in the latter part of the twentieth century, since so many people are owner-occupiers, and simply take the compensation payment and buy and move elsewhere. For tenants, however, the choices are less simple. By 1956, in a period of housing shortage, the Housing Commission was being used to re-house some families ejected by road widening.²⁸⁷

Better roads also made major centres more accessible. After reaching a peak in the mid-1930s, the population of rural areas began to decline. More efficient farms meant less demand for labour. Closer settlement had meant too many small and uneconomic farms. Efficient better roads meant that people no longer needed to live far out of town to be near work. Others could still live out of town and do their shopping in a major centre with a wider choice of goods rather than a nearby village. The small village bled, losing people and services to the major centres now far more accessible by road. However, the ease of using modern cars on modern roads has also inspired a countervailing tendency. Just as it became possible for people to live "in town", due to better road connections, it also became possible for people who did not want to be in an urban environment to live out of town. Thus, around some of the major towns, such as Armidale and Orange, smaller hamlets and villages which had long been bleeding population have begun to rise in population as a different mix of people have come to live "out of town".

8.0 Ameliorating Environmental Impacts

²⁸⁵ *Main Roads*, March 1954, p 77

²⁸⁶ *Roadmakers*, p 202

²⁸⁷ Dept of Main Roads, *Annual Report*, 1956, p 19

From its inception, the MRB/DMR has recognised that road works are both engineering marvels as well as blights upon the landscape. Initially, the departmental response was limited to landscape treatments of road works to soothe their impact upon the scenery. The importance of beautification and the appearance of roadsides were matters of concern from the beginning, although little attention was devoted to them, initially due to problems of funding and responsibility. In 1926, the MRB anticipated that there would be scope for roadside beautification around Main Roads in the future. It stated that

None of the main trunk roads approaching Sydney, with the exception of the New South Head road, a portion of the Princes Highway between Sutherland and Loftus, and the new road to Newcastle via Peats Ferry, now under construction, have any pretence to beauty, such as the main approaches to the metropolis warrant, and the Board, therefore, has under consideration proposals for obtaining greater reserves of road on the main trunk roads... wherever the land can be economically obtained, so that these approaches may be made... worthy of the great city to which they give access.²⁸⁸

Following that statement of principle, the MRB published a set of proposed layouts for highways 132 feet wide (40.2 m) and 99 feet wide (30.2 m) including plantings and pavements in 1927.²⁸⁹

One of the earliest components of the roadside that the DMR inherited were monuments. Often these monuments were erected to commemorate explorers who forged the routes, which were later followed by main roads. This ancestry was overtly acknowledged in articles on historic roads in its journal, *Main Roads*. Written to a basic formula, these articles with an outline of explorations, which opened up the particular area, now traversed by the State Highway or Main Road in question and invariably include illustrations of monuments commemorating these explorers.²⁹⁰ Today, local government authorities normally manage monuments, since the RTA only manages the road reserve itself.

Due to uncertainty about routes and the likelihood of continuation of works already started on many Main Roads, it was not until the mid-1930s that the DMR focussed much attention upon tree planting. During road works, it sometimes deliberately preserved trees, such as an avenue of trees left along the Oxley Highway in Coonabarabran, when the road way was cleared for work.²⁹¹ Prior to July 1934, the Department provided tree guards and trees, but they were not cared for by councils. From 1 July 1934, the DMR agreed to bear the full cost of trees on State Highways, two-thirds of the cost of them on Trunk Roads and one-half on Main Roads, and the whole cost for trees on roads it managed in the County of Cumberland. It opposed isolated tree planting and stated it would support avenues of trees or the planting of copses.²⁹² In August 1934, it advised Councils that in future it would undertake some responsibility for the cost of tree planting favouring extensive schemes for long lengths of road. Large-scale plantings commenced at that time, especially on the Great Western and Federal Highways, using native trees as

²⁸⁸ Main Roads Board, *Annual Report*, 1926, p 15

²⁸⁹ Main Roads Board, *Annual Report*, 1927, pp 16-8

²⁹⁰ See article on monuments in *Main Roads*, June 1953, pp 104-11

²⁹¹ *Main Roads*, May 1934, p 75

²⁹² Dept of Main Roads, *Annual Report*, 1934, p 66

well as robust deciduous trees with bright autumn colouring.²⁹³ In early 1936, it published a detailed article about trees along Main Roads, which included a comprehensive list of suitable species arranged by its own divisions, which corresponded to some extent with climatic conditions.²⁹⁴

The Department took its responsibility to preserve native flora seriously. From June 1928, it prohibited anyone, even its own employees, from cutting or removing any native flora without Departmental approval in the County of Cumberland. The same provision was extended to cover country State Highways on September 1928 and later all country Main Roads. The DMR noted, however, that constructors of electrical power lines were not as careful in their preservation of native flora as the DMR would have wished.²⁹⁵ Yet, it was the Postmaster-General's Department, responsible for telephone lines, which was most averse to any possible limitations on its ability to trim and cut as it pleased.²⁹⁶

When planning tree planting schemes in country areas in 1936, the DMR sought to select "native trees...of a species as closely similar as possible to those existing". Trees with colourful autumn foliage were selected whenever possible whilst flowering trees were chosen for warmer coastal areas.²⁹⁷ Council road tree planting schemes were approved for Blayney, Lismore and Lockhart. A memorial planting of trees with golden foliage such as golden privet, wattle, ash maple and poplars, commenced on 22 July 1936 along the Great Western Highway between Leura and Katoomba to commemorate servicemen who had lost their lives in the Great War. It was proposed to extend plantings at Leura with copses of dark-leaved lillipilli. At selected road culverts, Lombardy poplars were planted to create a visual break in roadside vegetation. Most trees were obtained from the State Nursery at Gosford. The Forestry Commission agreed to refer any proposal to ringbark trees along travelling stock reserves to the DMR. The Department maintained that a two chain wide (40.2 m) strip of trees from the centre of the road was desirable in such circumstances. A DMR arborculturalist was appointed in 1936-7. Trees were preserved as much as possible and only removed from necessity, whilst anyone caught cutting them down was prosecuted. Trees were despoiled by people stealing newly planted trees, by people taking gum tips from new trees or by destruction of fully grown trees.²⁹⁸

By 1938, the Postmaster-General's Department was more co-operative in retaining trees and sought DMR advice and assistance. The DMR noted, in passing, that in Wayne County, Michigan, USA, transmission lines were able to pass through trees due to judicious trimming.²⁹⁹

²⁹³ *Roadmakers*, pp 155-6

²⁹⁴ *Main Roads*, Feb 1936, pp 48-50

²⁹⁵ Dept of Main Roads, *Annual Report*, 1935, p 68

²⁹⁶ Dept of Main Roads, *Annual Report*, 1936, p 29

²⁹⁷ Dept of Main Roads, *Annual Report*, 1936, pp 28-9

²⁹⁸ Dept of Main Roads, *Annual Report*, 1937, p 10

²⁹⁹ Dept of Main Roads, *Annual Report*, 1938, p 22



Figure 15 A variety of plantings of native and exotics was seen along Trunk Road 80 through Yanco in November 1938. Source: GPO I, 33264

War caused the loss of many trees due to lack of maintenance and general destruction. A replacement programme commenced after the war. The DMR established small nurseries in the regions to provide replacements for the more common tree types.³⁰⁰ In the immediate post-war years, roadsides had deteriorated. Transmission lines meant widespread destruction of trees, and the relevant authorities preferred to place their line along the road for ease of inspection, whilst many trees were lost during war years due to lack on maintenance notably lack of watering. The 1948 report of the DMR lamented,

Many of the most important roads in the State are gradually becoming lined with poles along each side of the roadway.The Department has generally not encouraged in recent years the extensive planting of roadsides. The most desirable lengths were planted before the war, and it is felt best to concentrate on making a success of these in the first place and defer the acceptance of further liabilities.³⁰¹

In 1952, a group of citizens met and formed a committee under Lt-General Sir Frank Berryman to create a national memorial to servicemen by using trees and shrubs as living memorials. The NSW Premier, J J Cahill, officially launched the scheme on 9 December 1953. The Remembrance Driveway project as it was called started on 5 February 1954, when trees were planted at either end of the Driveway at the War Memorial, Canberra, and in Macquarie Place, Sydney, by the Queen and the Duke of Edinburgh. By June 1959,

³⁰⁰ Dept of Main Roads, *Annual Report*, 1946, p 17

³⁰¹ Dept of Main Roads, *Annual Report*, 1948, p 18

10,000 trees had been planted.³⁰² Since then, planting of trees in avenues or groves has continued. When the M5 Motorway replaced the Hume Highway south of Liverpool, it became the focus for planting trees and shrubs in remembrance.

In the 1960s, the DMR started providing rest areas at the side of roads for travellers but lacked any systematic programme of provision. Moves to co-ordinate the construction of rest areas commenced. The first rest areas were eight on the Hume and Federal Highways in 1965.³⁰³ By 1970, there were 39 rest areas.³⁰⁴ A further enhancement of the programme of providing rest areas has been the creation of stops along the Remembrance Driveway from Sydney to Canberra named in honour of Australian winners of the Victoria Cross. This project has been under way since the mid-1990s, as part of the Remembrance Driveway project.³⁰⁵

Due to the impact of large scale Freeway projects, landscaping became more important to the DMR. In 1960, it obtained the services of a landscape designer, Peter Spooner, of the University of New South Wales to prepare schemes and improve particular locations.³⁰⁶ Landscaping of Freeways was thus applied on major works. Attempts to alleviate the rawness of the Sydney Newcastle Expressway by artificially colouring newly excavated rock faces to appear weathered were tried by the Department, whilst concrete surface drains were coloured to minimise their visual impact. This work won the Royal Australian Institute of Architects Civic Design Award for 1969.³⁰⁷ Concern for littering was evident by 1970 when the DMR noted its continuing campaign by placing rubbish bins at suitable locations and the prosecution of people depositing rubbish on road reserves.³⁰⁸

In 1972, the *Annual Report* noted that the DMR had recently established a plant holding nursery at Yennora as part of an extension of the works office.³⁰⁹ The plant nursery closed in late October 1982.³¹⁰ Extensive plantings along main roads have continued. In 1975, a total of 18,000 trees and shrubs were planted, largely on freeways and state highways.³¹¹ By 1983, the DMR planted 15,000, of which 10,000 were planted along the Western Freeway.³¹²

Simply focusing upon landscaping roads after works were complete was no longer an appropriate response by the 1970s. Widespread changes in public perception of the environment and more sophisticated environmental planning raised the need for a more integrated response to the environment. Government legislation also began to reflect changing perceptions and needs. In 1973, the DMR formed the Environmental Study Group to respond to these issues.

³⁰² *Main Roads*, June 1959, pp 117-9

³⁰³ *Main Roads*, March 1967, p 68

³⁰⁴ *Roadmakers*, p 231-2

³⁰⁵ http://www.rta.gov.nsw.au/environment/heritage/heritage_driveway.html. Accessed 22 November 2005

³⁰⁶ Dept of Main Roads, *Annual Report*, 1960, p 15

³⁰⁷ *Roadmakers*, pp 250-1

³⁰⁸ Dept of Main Roads, *Annual Report*, 1970, p 4

³⁰⁹ Dept of Main Roads, *Annual Report*, 1972, p 29, 32

³¹⁰ Dept of Main Roads, *Annual Report*, 1983, p 60

³¹¹ Dept of Main Roads, *Annual Report*, 1975, n p

³¹² Dept of Main Roads, *Annual Report*, 1983, p 60

Popular opposition to urban freeway projects for Sydney generated a groundswell of opposition to the DMR and its road building schemes. Some of the concern was entangled with the wholesale destruction of much-loved urban environments, the reduction of property values and amenity as well as an ideological commitment to forms of public transport that did not focus upon the private motorcar. Construction of the freeway through Hunters Hill and the demolition of St Malo were forerunners of what could be expected if the inner freeway scheme was implemented. The Sydney Region Outline Plan of 1968 had recommended radial freeways, including two running across the historic Glebe Estate. They simply reinforced schemes already existing in outline for major roads out of the city. Widespread public opposition, the formation of Resident Action Groups and strong protests eventually caused a halt to the project. In Glebe, the Commonwealth Government acquired the land originally proposed for the freeway.³¹³ Additionally, rather than proceed with compulsory acquisition of land for roads, the RTA increasingly emphasised leasing of land and acquisition by negotiation.

From the 1920s to the 1950s, numerous measures were instituted to increase traffic flow in country towns and urban areas. One of the more notable measures was legislation that enabled Local Government Authorities to require the replacement of all post supported verandahs and balconies with cantilevered awnings. Insufficient strength in cantilevered awnings meant that no balconies were feasible on many buildings, which had formerly featured them. Thus, verandah posts on main roads and the major commercial streets of places as diverse as Parramatta and Granville in the early 1920s and Lismore in the late 1930s were removed. A wholly different appearance was created on these centres. However, more recently traffic calming measures have come into favour, for reasons of safety especially for pedestrians in retail centres. Roundabouts have also been installed in many locations.

Under the onslaught of popular feeling, the RTA commenced to apply more enlightened concepts of management and sought to defer a little more to the community. One way was the construction of bypasses, which took traffic around towns and country centres, so that their main streets would no longer be simply a thoroughfare for heavy vehicles and through traffic. The process gave main streets back to their communities and allowed them to be safer and more attuned to the needs of pedestrians and local traffic. Small centres such as Carcoar were bypassed in the 1970s. An ongoing programme ensured that places such as Berrima and Goulburn were also included.

Objections to the routing of the Newcastle to Sydney Freeway through the National Park between Calga and Kariong resulted in changes to the route leaving a cutting as evidence of the change, demonstrating the power of public opinion on environmental issues. Similar changes were made to avoid wetlands near Tuggerah, the grounds of Wyong High School and an area of rare boronia.³¹⁴

9.0 Handling property acquired for works and other functions

To successfully undertake its role as developer of the state's main roads, the DMR acquired properties mostly by negotiated purchase and occasionally by resumption to complete road works and to use as depots, offices, quarries, and road workers' camps.

³¹³ Australia - Dept of Housing and Construction, *Glebe Project*, AGPS, Canberra, 1980, pp 28-30

³¹⁴ RTA s 170 Heritage & Conservation Register Upgrade, Hunter Region, Stage 1, by Heritas Architecture for RTA, Aug 2003, p 23

During and after World War Two, the DMR depot at Rosehill needed to expand since it was heavily involved in the refurbishing of wartime equipment. The original eight acre site (3.2 ha) was expanded by a further 17.5 acres (7.1 ha). Reconstruction of a store and workshop started in 1943 and was completed by 1948. In 1947 a bituminous hot-mix plant was added.³¹⁵ Further expansion altered the arrangement of work areas within the plant.³¹⁶ New maintenance depots were acquired at Windsor and Bowenfels in 1946.³¹⁷

Other properties acquired included a quarry at Bonville near Coffs Harbour in 1953 used to provide roadmaking material. Meanwhile, a new stone crusher was installed at another quarry at Moruya.³¹⁸ In September 1953, a new DMR testing laboratory commenced operation under the northern approaches to the Harbour Bridge.³¹⁹

In the immediate post-war period, DMR personnel working in country areas were having difficulty obtaining accommodation. Hence, the DMR commenced buying or building cottages as staff accommodation. In 1949, it was building two cottages at Bega, four at Deniliquin and purchasing a building site at Tamworth.³²⁰ By 1950, it had three cottages at Port Macquarie, two at Bega, two at Wentworth, one each in the towns of Deniliquin, Grafton and Yass. Further cottages were to be acquired or built at Parkes (4), Deniliquin (3), Goulburn (2), Tamworth (1), Yass (1), Grafton (1) and Bega (1).³²¹ The provision of staff housing continued for many years.

With the expansion in Divisions in the post-war period, new depots and offices were built. A new Divisional office building was completed at Deniliquin in 1955.³²² A new office was under construction for Newcastle, which would be occupied late in 1956.³²³

A first level Property Committee was formed in 1969 to consider offers to purchase and sell property when there was a significant consideration. The Committee was often activated when a person affected by a road reservation was unable to arrange a sale on the open market because of the road affectation and was experiencing hardship because of their inability to sell. A second level Property Committee also dealt with purchase and sales for a lesser consideration, which was still significant.³²⁴ An officer had been appointed in 1940 to deal with architectural matters associated with properties involved in acquisitions. An architect was appointed in 1965 to handle similar matters. In 1966, a separate Tenanted Properties Section was created.³²⁵

By 1960, the use of external expertise was no longer limited to engineering advice. Noted architect, Morton Herman, was engaged to provide advice on the stonework of Lansdowne Bridge and St Malo and a church in Hunters Hill affected by the Expressway

³¹⁵ *Main Roads*, March 1947, pp 88-90; *Roadmakers*, p 191

³¹⁶ *Main Roads*, June 1948, p 115-6

³¹⁷ Dept of Main Roads, *Annual Report*, 1946, p 17

³¹⁸ Dept of Main Roads, *Annual Report*, 1953, p 17

³¹⁹ Dept of Main Roads, *Annual Report*, 1953, pp 51-2

³²⁰ Dept of Main Roads, *Annual Report*, 1949, p 32

³²¹ Dept of Main Roads, *Annual Report*, 1950, p 42

³²² Dept of Main Roads, *Annual Report*, 1955, p 68

³²³ Dept of Main Roads, *Annual Report*, 1956, p 67

³²⁴ Information from Rod Watson, January 1996

³²⁵ *Roadmakers*, p 224

leading from the Gladesville Bridge.³²⁶ Despite the acknowledged significance of St Malo, it was demolished in 1961, a key event leading to greater public support for conservation and increased membership of the National Trust.³²⁷ On the other hand, the DMR paid for the painstaking removal and re-erection of All Saints Anglican Church, Hunters Hill, also affected by the road works under the supervision of Morton Herman.³²⁸

Early in 1973, the DMR was given the power to lease the air rights over Main Roads. It was envisaged that the air space over the Kings Cross tunnel would be the first such space to be leased.³²⁹ The air space was later sold by public auction.

Buildings and sites acquired for road works were often let to provide income until they were needed. At 30 June 1983, the DMR held 2,280 income producing properties across the state. Income from rents in 1982-3 totalled \$3,150,000. Residential properties were offered as emergency accommodation to the Housing Commission. A total of 223 were in the hands of the Commission in June 1983.³³⁰

10.0 Co-ordinate or Compete - The mix of transport systems?

When the colonies achieved Federation in 1901, responsibility for roads was left with the states, which were largely left to fund them from their own sources. From 1923 onwards, the Commonwealth began to allocate funds for roads. By the late 1930s, Commonwealth funding was being used to improve the Hume and New England Highways, both roads that formed national links.

In NSW, the Transport Act of 1930 established a Commissioner for Road Transport who was to encourage the formation of transport trusts, which would regulate and control transport in certain areas. It controlled cabs and tramways, plus the registration and licensing of all vehicles and drivers. It was given control of all fees paid under the 1900 Metropolitan Traffic Act and 1909 Motor Traffic Act. These fees paid police for traffic supervision and for traffic facilities under the Act, whilst the surplus was transferred to the Country Main Roads Fund.³³¹ Vehicles used to convey the public such as buses and taxis were placed into a separate category. Revenue from them was paid into the Public Vehicles Fund, part of which was handed over to the Main Roads Board to maintain roads used by buses.³³² The Lang Labor government passed the State Transport (Co-ordination) Act on 31 August 1931, which placed all transport under a single minister. The Ministry of Transport Act of 22 March 1932 sought to place restrictions upon all motor bus and public transport, which was in competition with government transport.³³³

Road construction started to replace railways. The state government had been promising a railway from St Leonards to the Eastwood-Epping area since the 1920s. It had been put into abeyance by the Depression. Popular pressure was kept up for the railway. In the

³²⁶ Dept of Main Roads, *Annual Report*, 1960, p 120

³²⁷ M Walker, 'On Public View', in Historic Houses Trust, *Demolished for the Public Good - Crimes, Follies and Misfortunes - Demolished Houses of New South Wales*, Sydney, 1988, p 50

³²⁸ *Main Roads*, March 1963, pp 76-7

³²⁹ *Roadmakers*, p 261

³³⁰ Dept of Main Roads, *Annual Report*, 1983, p 60

³³¹ *Roadmakers*, p 124

³³² Main Roads Board, *Annual Report*, 1930, p 4

³³³ *Roadmakers*, pp 129-30

late 1930s, the decision to build a new Main Road - No 373 from St Leonards to Epping instead of the railway was made. Work commenced on the road, later named Epping Road in February 1938.³³⁴

Competition between state governments also affected road transport. In the border area, agreement between the NSW and Victorian state governments curtailed the competition of cross-border road transport with railways from 1931 until 1954. This allowed the governments to bolster their railways at the expense of the private road transport industry.³³⁵

State railways had been unable to cope with the demand for transport after the war. During the war, restrictions upon road haulage, which had been applied since the days of Lang's State Transport (Co-ordination) Act of 1931 were relaxed to make up for the railway deficiency. Coastal shipping services were markedly reduced after the war. Hence, the commercial road haulage industry increased substantially after the war. There was a corresponding huge increase in traffic, including a fourfold increase in traffic across the Blue Mountains section of the Great Western Highway since 1939. Between Goulburn and Tarcutta, the Hume Highway was so extensively damaged by increased traffic that a special repair project costing £50,000 was completed.³³⁶

From the inception of town and regional planning in NSW, with the creation of the Cumberland County Council, the DMR has been closely involved in planning for the future. Co-operation between the County Council and the DMR commenced early, with senior officers of the DMR serving on advisory committees dealing with planning.³³⁷ Co-operation continued after the Cumberland County Council was transformed into the State Planning Authority.

The Commonwealth Transport Advisory Council was formed in 1946 to co-ordinate transport policy. By adding representatives from the States, this became the Australian Transport Advisory Council in January 1947. A Roads Standards sub-committee was formed in July 1947. It fostered and disseminated research into transport.³³⁸ The Commonwealth Bureau of Roads was formed in 1965 and advised the Federal government on the allocation of road grants to the States.³³⁹

The Minister for Transport announced that all tram services would be terminated by 1961. Buses would replace them, a decision which had been influenced by the cost of renovating and upgrading tram tracks and services.³⁴⁰

Gradually, Commonwealth government involvement in road funding has increased. Revenue from petrol taxation has been diverted to the states to finance roads. National Highways are now almost completely funded in their construction and maintenance by

³³⁴ Dept of Main Roads, *Annual Report*, 1938, pp 29-30

³³⁵ RTA – Upgrade of Heritage & Conservation Register for the South West Region, NSW, Freeman Randall, Canberra for RTA, August 2003, p 16

³³⁶ Dept of Main Roads, *Annual Report*, 1947, p 18-9

³³⁷ *Roadmakers*, p 204

³³⁸ *Roadmakers*, p 208

³³⁹ *Roadmakers*, p 246

³⁴⁰ *Roadmakers*, p 223

the Federal government. By 2000, NSW had received a total of \$550,000,000 from the Federal government to spend on roads.³⁴¹

11.0 Managing traffic

From its formation, the MRB undertook the task of adequately signposting roads with advisory signs about location and safety. It also commenced marking road edges in places such as the Blue Mountains.³⁴² After the formation of the Department of Motor Transport and Tramways in 1930, the Commissioner was also responsible for traffic management matters such as signs, traffic lights and safety, in the metropolitan area. It took over many of these functions in the metropolitan area from the police.

In 1928, restrictions had been placed upon kerbside petrol pumps to encourage their replacement by drive-in service stations located off the road. Kerbside petrol pumps were an impediment to traffic and created safety problems. The Municipalities of North Sydney, Lane Cove, Willoughby and Ku-ring-gai issued notices to owners to remove kerbside pumps from the Great Northern Road and Canterbury Council did the same for Canterbury Road.³⁴³ In 1945, the DMR sought the agreement of local government authorities in the County of Cumberland and the Newcastle area to eliminate all kerbside pumps by 31 December 1947.³⁴⁴

Signage and Traffic Management Equipment, Parkes (Item 4305432)

Similarly, restrictions were placed upon advertising hoardings near Main Roads to avoid distraction of drivers from warning signs.³⁴⁵ The DMR took a strong stand against roadside advertising for safety reasons and for roadside beautification, preferring tree planting instead.³⁴⁶ Provision of signage was a major pre-occupation of the DMR. In 1929, the MRB had purchased a machine for its Granville depot for cutting letters into wooden signboards used to produce directional signs for the state.³⁴⁷

In the late 1920s, the Police Department had placed some traffic domes at intersections as an experiment, but ran out of funds to continue their installation. Hence in 1929, the MRB took over the placement of traffic domes. They were used to control traffic, to assist in the "rotary circulation of traffic" and to keep vehicles to the outside of the curve.³⁴⁸

Traffic light lenses (Item 4300729)

The first set of automatic vehicle activated traffic lights was installed at the corner of Market and Kent Streets, Sydney by the Department of Road Transport and Tramways on 13 October 1933.³⁴⁹ Due to their high cost, they were not joined by others until 1937, when other sets were installed at York and Margaret Streets; Erskine and Clarence Streets; Pymont Bridge Road and Booth Street; and Pymont Bridge Road, Wattle

³⁴¹ RTA – Upgrade of Heritage & Conservation Register for the South West Region, NSW, Freeman Randall, Canberra for RTA, August 2003, p 19

³⁴² *Roadmakers*, pp 111-2

³⁴³ Main Roads Board, *Annual Report*, 1929, p 73

³⁴⁴ Dept of Main Roads, *Annual Report*, 1946, p 17

³⁴⁵ *Roadmakers*, p 106

³⁴⁶ Dept of Main Roads, *Annual Report*, 1937, pp 10-1

³⁴⁷ Main Roads Board, *Annual Report*, 1929, p 74

³⁴⁸ Main Roads Board, *Annual Report*, 1929, pp 74-5

³⁴⁹ Commissioner of Road Transport, *Annual Report*, 1933, p 23

Crescent and Jones Streets.³⁵⁰ In 1935, the Commissioner for Road Transport took over the maintenance of over 2,000 road signs previously under the care of the Police Department.³⁵¹

A wholesale review and consolidation of road regulations was undertaken in 1935. In its wake, new regulations were issued in June 1935. These altered regulations included specified parking restrictions in certain areas in the Central Business District of Sydney and certain heavily used suburban streets after the opinions of police, motor dealers and business people were obtained.³⁵²

After Commissioner Newell visited California in 1937, the DMR obtained line-marking machinery from the US and started its own programme of line-marking for reasons of safety and traffic management.³⁵³ On 7 July 1939, it became obligatory for drivers not to cross double centre lines marked on the road. Improved safety on roads developed in consequence. The number of collisions by vehicles travelling in opposite directions on the Great Western Highway between Penrith and Parramatta was halved almost immediately.³⁵⁴

By the late 1930s, the need to improve traffic flow along major city roads was being addressed by providing special crossings for pedestrians and refuges for them in the middle of the road. Restrictions on parking in particular locations was another means to help keep roads clear.³⁵⁵ In 1940, the Burwood Traffic Signals Depot replaced the former one in Jamieson Street, Sydney.³⁵⁶ In 1949, the Commissioner for Road Transport installed a set of pedestrian actuated traffic lights on the Pacific Highway at Lindfield Railway Station.³⁵⁷ In a list of notable dates later compiled by the DMT, it gave 1953 as the date of the installation of the first pedestrian actuated crossing lights but gave no location.³⁵⁸

Control of vehicle weights was a way of keeping wear and tear on roads to a minimum. On 27 July 1934, Ordinance 30C under the Local Government Act specified the maximum loaded weights for vehicles using Main Roads and reintroduced stronger sanctions upon heavy vehicles. Weighing machines were installed at Divisional offices to monitor vehicle weights.³⁵⁹

The DMR had collected records of traffic at eleven points on roads near Sydney and Newcastle for some years. In February 1956, it extended the scheme to country roads, so that there were twenty-two recording stations permanently sited on country State Highways.³⁶⁰

³⁵⁰ Commissioner of Road Transport, *Annual Report*, 1937, p 26

³⁵¹ Commissioner of Road Transport, *Annual Report*, 1935, p 27

³⁵² Commissioner of Road Transport, *Annual Report*, 1935, p 23

³⁵³ Dept of Main Roads, *Annual Report*, 1937, p 14

³⁵⁴ Dept of Main Roads, *Annual Report*, 1939, pp 8-9

³⁵⁵ *Roadmakers*, p 146

³⁵⁶ Commissioner of Motor Transport, *Annual Report*, 1974, cover

³⁵⁷ Commissioner of Road Transport, *Annual Report*, 1949, p 22

³⁵⁸ Commissioner of Motor Transport, *Annual Report*, 1974, cover

³⁵⁹ *Roadmakers*, p 155

³⁶⁰ *Roadmakers*, p 216

By the 1950s, the DMR was using various measures to improve traffic flow and safety in metropolitan and rural areas. These included widening road pavements at bus stops to allow buses to stop off the main roadway, the provision of parking bays for heavy long haulage vehicles on country roads, the construction of climbing lanes to allow faster traffic to bypass slower vehicles, the introduction of channellised intersections, the investigation of accident sites followed by suitable action if required and better signposting.³⁶¹

On 9 October 1959, the Department of Motor Transport, linked a set of vehicle actuated traffic lights at the intersection of Parramatta Road and Crystal Street, Petersham, with another set at Parramatta and Norton Street, thus creating the first vehicle actuated co-ordinated traffic light system in Australia. Two sets of pedestrian operated co-ordinated signals in Swanson Street, Erskineville, were completed soon afterwards.³⁶² They were followed on 18 May 1961, by the first set of co-ordinated traffic lights, which were installed in Church Street, Parramatta. They allowed traffic to pass through the busiest shopping streets in successive cohorts or waves with minimal disruption.³⁶³ In 1960-1, a new building for the Department of Motor Transport's traffic signals section was completed at Burwood.³⁶⁴

Transfer of traffic signals and regulatory signage and marking from the DMT to the DMR was a significant advance, since it allowed the DMR to concentrate on catering for the movement of motor traffic rather than simply provide roads. Since it had previously lacked sufficient in-house expertise, the DMR could not exploit the latest traffic control technology when designing road improvements in the urban area. The shift in philosophy that resulted from the transfer meant that there would be substantial economies when planning and managing traffic flows.³⁶⁵

During the 1960s, the DMR provided numerous climbing lanes on rural roads for slow moving vehicles, as a way of reducing congestion. Divided carriageways were also installed in some instances though they were more commonly used in metropolitan areas.³⁶⁶ Work in providing median strips on metropolitan six-lane roads was well under way by 1961, and channelling of intersections continued, eased in a number of instances by the removal of tram services.³⁶⁷

A major project on traffic management was the completion of a set of overhead traffic signs and signals at Villawood where Woodville Road, Henry Lawson Drive and the Hume Highway met. Due to large traffic volumes at this intersection, it was selected as a suitable location to install the system. The site has become known, within the DMR/RTA, over the years, as the "Meccano set". It was in operation by December 1962.³⁶⁸

³⁶¹ Dept of Main Roads, *Annual Report*, 1957, p 27

³⁶² Commissioner of Motor Transport, *Annual Report*, 1960, p 26

³⁶³ Commissioner of Motor Transport, *Annual Report*, 1961, pp 4, 24-5; F R Hulscher, *A signal career: desultory reminiscences of the development of traffic light signals in NSW from 1933 to 1993*, Sydney, 1993, pp 19-21

³⁶⁴ Commissioner of Motor Transport, *Annual Report*, 1961, p 34

³⁶⁵ Information from B N Loder, January 1996

³⁶⁶ *Roadmakers*, p 231

³⁶⁷ Dept of Main Roads, *Annual Report*, 1961, p 12

³⁶⁸ *Main Roads*, Dec 1962, p 61

A significant decision was the raising of the speed limit. In 1937, the speed limit in built-up areas was set at 30 mph (48 kph). Research suggested that raising the limit would not bring about any overall increase in vehicle speeds. This plus the need to bring NSW into line with other states meant that a new limit of 35 mph (56 kph) became legal on 1 May 1964.³⁶⁹

Pedestrian overbridges had been provided since the 1930s, particularly where schools were located on busy roads. They were being provided in other locations from the 1960s onwards, particularly where they assisted the flow of traffic along Freeways.³⁷⁰

Measures to achieve better traffic flow were attempted in the 1960s. In June 1967, a large part of Parramatta Road was declared as the first Clearway, with no parking allowed at certain times. That measure was applied to other roads within the following year.³⁷¹

After the transfer of traffic signals and road marking to the DMR, two developments enabled maximum use to be made of existing roads resulting in improved safety conditions. The first was the introduction in Sydney of the Sydney Co-ordinated Area Traffic Signals System (SCATS), a computer controlled interlinked network of traffic signals, incorporating a complete hardware and software system based upon its own control philosophy and running in real time. The system was developed by DMT and DMR engineers and has been constantly upgraded and refined by RTA engineers to the present day.³⁷² A further advance was the introduction of "S" lanes, which allowed two continuous through lanes in each direction on six lane arterial roads in the city.³⁷³ During the 1980s, "S" lanes were provided on Victoria Road and on the Pacific Highway between Hornsby and St Leonards.³⁷⁴

A computer regulated traffic light system was introduced in the Sydney Central Business District in 1964 as part of the Inner City Signals Project as a way of better handling traffic flows.³⁷⁵ The computer was originally located in the basement of the DMR building in 309 Castlereagh Street. The control equipment was transferred to 4 Brisbane Street, Sydney when it was extended to cover more city streets.³⁷⁶ It was followed by the switching on of televisions used to aid in traffic flow on 29 January 1964.³⁷⁷ The first set of signals installed outside the Sydney-Wollongong-Newcastle area was a set of pedestrian lights at Lochinvar and a set of intersection signals at Tamworth installed in 1966.³⁷⁸

The Traffic Authority of NSW was established on 1 June 1976. It re-arranged the responsibilities of the Departments of Main Roads and Motor Transport. Traffic management previously controlled by the Department of Motor Transport such as traffic

³⁶⁹ Commissioner of Motor Transport, *Annual Report*, 1964, p 12

³⁷⁰ *Roadmakers*, p 233

³⁷¹ *Roadmakers*, p 238

³⁷² P R Lowrie, *SCATS - Sydney Co-ordinated Adaptive Traffic System: A Traffic Responsive Method of Controlling Traffic*, RTA, Sept 1992, p 4; *A History of SCATS*, RTA, July 1992

³⁷³ Information from B N Loder, January 1996

³⁷⁴ Information from Margaret Veitch, Telopea, 17 January 1996

³⁷⁵ *Roadmakers*, p 234

³⁷⁶ Commissioner of Motor Transport, *Annual Report*, 1974, cover; Information from John McKerral, January 1996

³⁷⁷ Commissioner of Motor Transport, *Annual Report*, 1964, p 40

³⁷⁸ Commissioner of Motor Transport, *Annual Report*, 1974, cover

signals, signage and road marking was transferred to the DMR. Vehicle and driver licensing remained in the hands of the DMT.³⁷⁹

12.0 Licensing and regulating vehicles

Governor Macquarie had first introduced registration of carts and wagons in 1813.³⁸⁰ Regulation of vehicles was initially aimed at reducing the damage they made to roads. Minimum wheel widths were prescribed and a graduated road toll was introduced on the basis of those widths. To reduce the damage made to roads by narrow wheels, an Act of 1857 (20 Vic No 38), stipulated that all wheels less than a certain width would be charged a double toll. The Act proved ineffective. Attempts to use taxing powers to control the width of vehicle wheels were ineffective, although various Acts stipulating the width of wheels remained in force until 1906 even though the tax on vehicles had been abolished in 1877.³⁸¹

When motor cars began to make a large impact on road surfaces, proposals arose to tax them.³⁸² Motor vehicles were licensed by the Motor Traffic Act, 1909, which commenced operation in March 1910. Vehicles were taxed from 1914 onwards.³⁸³ It was followed in 1916 by the Motor Vehicles (Taxation) Act.³⁸⁴ Licensing of vehicles was in the hands of the police. To prevent vehicles breaking up road surfaces constructed of stone based macadam, the Local Government Act of 1919 enabled councils to regulate wheel widths.³⁸⁵

When the MRB was formed, all revenue from motor vehicle licensing was used to amass funds, with all revenue from the country directed to the Country Main Roads Fund along with half of the city's revenue. The rest of the city's revenue was devoted to the County of Cumberland Main Roads Fund. In the County of Cumberland, an additional levy of 1/2d in the pound (14/240ths) on the unimproved capital value of land and 1/4d (16/240ths) for the City of Sydney and for rural land in the area was applied to obtain further funds.³⁸⁶

In December 1926, the incoming Lang Labor government passed the Finance (Taxation Management) Bill which reduced funding from vehicle licensing for the Road Fund to £106,155 per annum from vehicle licensing for the County of Cumberland Fund and £6,300 from Metropolitan Traffic Act fees whilst the Country Roads Fund would receive £452,382 from motor vehicle taxation. The rest of the money collected would be devoted to Consolidated Revenue.³⁸⁷ The re-election of the Bavin Nationalist government caused the repeal of the Act and the restoration of the original funding arrangements.³⁸⁸

³⁷⁹ Dept of Main Roads, *Annual Report*, 1977, p 23; Commissioner of Motor Transport, *Annual Report*, 1976, p 36

³⁸⁰ *Roadmakers*, p 20

³⁸¹ *Roadmakers*, pp 52-3

³⁸² *Roadmakers*, p 61

³⁸³ *Official Year Book of New South Wales*, 1917, p 339

³⁸⁴ *Roadmakers*, p 76

³⁸⁵ *Roadmakers*, p 65

³⁸⁶ *Roadmakers*, p 86

³⁸⁷ *Roadmakers*, p 87

³⁸⁸ *Roadmakers*, p 88

The Department of Road Transport and Tramways created by the Transport Act, 1930, took over the licensing of both drivers and vehicles in the Sydney Metropolitan area. Newcastle and its District were placed under the control of the Commissioner for Road Transport in 1937.³⁸⁹ New style vehicle number plates came into operation in May 1937 when a sequence of letters and numbers replaced the earlier numerical sequence.³⁹⁰ In 1951, vehicle licensing plates had exhausted all the two letter combinations and the three letter series commenced.³⁹¹

So that only roadworthy vehicles would be registered, the Commissioner for Road Transport started a scheme on 1 October 1939 whereby all vehicles had to be inspected mechanically by authorised inspection stations situated at service stations and other motor businesses when registration was renewed annually. By 30 June 1940, 1,749 service stations had been appointed to inspect vehicles and 3,575 mechanics had likewise been authorised. In the first year, 15% of the 205,000 vehicles inspected failed to be approved.³⁹² During the war years, the requirements for roadworthiness were relaxed due to shortages of parts, but they were reinstated in their full rigour at the end of the conflict.³⁹³

After the passing of the Transport (Division of Functions) Amendment Act of 1952 and another amending act of the same year, the Department of Motor Transport was created on 1 June 1952, from the Department of Road Transport and Tramways. The licensing of private and public vehicles and drivers, traffic management and safety in the metropolitan area and Newcastle, the administration of the third party insurance scheme, collection of road taxes, licensing of driving instructors and second hand motor dealers were taken over by the Commissioner for Motor Transport.

Details of drivers' and riders' licences and licences of motor vehicles were kept by the DMT until 1957 on manually controlled cards. For drivers, these cards included a series filed by surname, a series with cards filed by licence number and a third series, which contained chronological data about the licence. A similar system operated for motor vehicles. In 1957, there were 5,500,000 cards. The Department commenced a scheme to enter them onto IBM punched cards to allow mechanisation of the issue and recording of them as well as the collection of revenue.³⁹⁴

Due to the more complex nature of data entered on motor vehicle cards, conversion of these records to a punched card system did not commence immediately. By 1958, however, conversion had commenced, starting with all motor cycles, government owned vehicles, vehicles registered under the Transport Act 1930-58, and all cars registered after 1 May 1958.³⁹⁵

At the same time, to standardise number plates and to assist police to identify vehicles, all older style number plates consisting of a numerical sequence only rather than the alpha-

³⁸⁹ Commissioner of Road Transport, *Annual Report*, 1937, p 24

³⁹⁰ Commissioner of Road Transport, *Annual Report*, 1937, p 24

³⁹¹ Commissioner of Motor Transport, *Annual Report*, 1981, cover

³⁹² Commissioner of Road Transport, *Annual Report*, 1940, p 13

³⁹³ Commissioner of Road Transport, *Annual Report*, 1946, p 6

³⁹⁴ Commissioner of Motor Transport, *Annual Report*, 1957, pp 14-5

³⁹⁵ Commissioner of Motor Transport, *Annual Report*, 1958, p 14

numerical system then current, were gradually withdrawn as vehicles changed hands. Only in cases of changes within families, or where owners had a long association with the particular plate, was retention of plates permitted.³⁹⁶

The Department of Motor Transport decentralised its administration with the establishment of the Western, Southern and Northern Regional Transport Districts on 1 July 1966, with offices at Armidale, Dubbo and Wagga Wagga.³⁹⁷ Further divisions were soon added. On 1 November 1966, the Hunter and Central Coast Region was established followed by the South Coast on 6 June 1967.³⁹⁸ To house officers stationed there, the Department purchased suitable residences.

12.1 Motor registries

District motor registries had originally been established in police stations or adjacent. By 1933, the Department of Road Transport's officers had taken control of some of them. The registry at Newcastle was transferred to the DMT on 9 November 1931 and the Department staffed those at Parramatta, Burwood, North Sydney, Hornsby and Manly by 1933, whilst arrangements were under way to replace police at Kogarah, the last remaining metropolitan registry and at Wollongong.³⁹⁹ The Commissioner for Road Transport took over motor registries at Albury and Broken Hill in June 1939.⁴⁰⁰ Most registries continued to be conducted by the police, particularly in rural areas.

In 1946, the Department of Road Transport conducted motor registries at Newcastle, Parramatta, Kogarah, Broken Hill, Burwood, Albury, Wollongong, Hornsby, Manly, North Sydney and Penrith. The Commissioner for Police had requested that his men be relieved of duty in a number of registries in major country towns, so the Department was engaged in taking over registries at Armidale, Bathurst, Dubbo, Goulburn, Griffith, Katoomba, Lismore, Liverpool, Orange, Parkes, Tamworth, Taree, Wagga Wagga and West Maitland.⁴⁰¹

When the Department of Motor Transport commenced operating in 1952 as the licensing authority for drivers and vehicles, it formulated a policy that all registries conducted directly by itself would be conducted from modern, specially designed and suitably located buildings under its own control. In 1953, a prefabricated building was built in Gray Street, Kogarah for motor registry purposes whilst a new building was under construction in George Street, Parramatta for the registry there.⁴⁰²

DMT
Rosebery
opening
plaque
(Item
4309018)

In October 1954, the Department of Motor Transport purchased office premises at Rosebery from Parke Davis Pty Ltd as the central base for all its administration and other activities. After extensions and alterations, it was officially opened on 3 September 1956, and open for business on 10 September 1956.⁴⁰³ Extensions were added progressively as required. In 1958, a curtain wall office block was added to provide an additional 10,000

³⁹⁶ Commissioner of Motor Transport, *Annual Report*, 1958, p 15

³⁹⁷ Commissioner of Motor Transport, *Annual Report*, 1966, p 43

³⁹⁸ Commissioner of Motor Transport, *Annual Report*, 1967, p 12

³⁹⁹ Commissioner of Road Transport, *Annual Report*, 1933, p 19; 1934, p 23

⁴⁰⁰ Commissioner of Road Transport, *Annual Report*, 1939, p 25

⁴⁰¹ Commissioner of Road Transport, *Annual Report*, 1946, p 6

⁴⁰² Superintendent of Motor Transport *Annual Report*, 1953, p 38

⁴⁰³ Commissioner of Motor Transport, *Annual Report*, 1957, p 49

square feet (929 sq m) of office space.⁴⁰⁴ By 1967, it had acquired the whole block on which the office stood and had added to its stock of buildings on that site.⁴⁰⁵

The vehicle weighing station established at Chullora in 1953 was upgraded to a motor registry on 8 August 1955.⁴⁰⁶ In 1956-7, the motor registries at Wollongong, Homsby (Waitara) and North Sydney transferred into new purpose built motor registries.⁴⁰⁷ Motor registries at Newcastle, Five Dock, Manly and Liverpool were completed in 1957-8.⁴⁰⁸ From then onwards, new motor registries were completed almost annually. (A list appears in the chronology below).

By 1962, ten years after it took over vehicle and driver licensing, the Department of Motor Transport operated registries at Albury, Armidale, Bathurst, Bega, Broken Hill, Casino, Cessnock, Chullora, Cooma, Cowra, Dubbo, Five Dock, Forbes, Glen Innes, Gosford, Goulburn, Grafton, Griffith, Inverell, Katoomba, Kempsey, Kogarah, Leeton, Lismore, Lithgow, Liverpool, Maitland, Manly, Miranda, Mittagong, Moree, Murwillumbah, Newcastle, North Sydney, Nowra, Orange, Parkes, Parramatta, Penrith, Queanbeyan, Richmond, Ryde, Rosebery, Tamworth, Taree, Wagga Wagga, Waitara, Wollongong and Young.⁴⁰⁹

On 1 March 1986, a significant reduction in police run registries occurred when the government closed all such registries within a distance of 80 km of a DMT registry. Hence, 121 of these registries closed.⁴¹⁰ When the Roads and Traffic Authority was created in 1989, all registries were transferred to its control. (A full list appears in the last *Annual Report* of the DMT.)

12.2 Vehicle weighing stations

Macquarie attempted to institute controls over the width of wheels on carts and wagons to reduce their impact upon the roads, a measure that eventually lapsed due to a shortage of suitable iron.⁴¹¹ Various Acts passed in the nineteenth century to regulate the width of wheels on vehicles so that they did not cut up the road surface were ineffective. Many owners still used narrow wheeled vehicles. Differential tolls had been applied as a way of discouraging the use of narrow wheels. When tolls on roads were abolished in 1871, this avenue of regulation fell into disuse. It was not until 1934 when effective regulation of vehicle load weights re-commenced.⁴¹²

The MRB realised the impact of vehicle weight on roads. The 1919 Local Government Act had given councils the power to regulate vehicle weights. With this in mind, the MRB proposed a draft ordinance to control vehicle weights more effectively under the Local Government Act in 1933.⁴¹³ This amendment was passed as Ordinance 30C to the Local

⁴⁰⁴ Commissioner of Motor Transport, *Annual Report*, 1958, p 49

⁴⁰⁵ Commissioner of Motor Transport, *Annual Report*, 1967, p 46; 1968, cover

⁴⁰⁶ Commissioner of Motor Transport, *Annual Report*, 1956, p 20

⁴⁰⁷ Commissioner of Motor Transport, *Annual Report*, 1957, p 49

⁴⁰⁸ Commissioner of Motor Transport, *Annual Report*, 1958, p 49

⁴⁰⁹ Commissioner of Motor Transport, *Annual Report*, 1962, p 47

⁴¹⁰ Commissioner of Motor Transport, *Annual Report*, 1986, p 48

⁴¹¹ *Roadmakers*, p 20

⁴¹² *Main Roads*, Sept 1956, pp 20-2

⁴¹³ Dept of Main Roads, *Annual Report*, 1933, p 2

Government Act which prescribed load limits on main roads. A simultaneous Ordinance, No 30D specified loads for roads other than main roads. It was gazetted on 27 July 1934, and would come into full operation three years later in the area covered by the Metropolitan Traffic Act and one year later in other areas to permit vehicle owners time to modify or renew their vehicles.⁴¹⁴

Weighing machines were installed at Divisional offices to monitor vehicle weights.⁴¹⁵ To better control increased vehicle weights after World War Two, more intensive monitoring of vehicle weights was undertaken. Ordinance 30C was amended on 28 July 1950 with new maximum weights. The DMR appointed Ordinance inspectors to check vehicle weights. Local councils continued to appoint their own inspectors.⁴¹⁶ Permanent vehicle weighing stations were established by the DMR at Gosford on the Pacific Highway and at Hexham Highway by 1956 where the Pacific Highway met the New England.⁴¹⁷

In tandem with the DMR, the Department of Motor Transport also monitored vehicle weights. In 1953, an office and a very large weighbridge were under construction at Chullora for the DMT to deal with large lorries.⁴¹⁸ By 1956, the Department of Motor Transport operated a permanent weighbridge at Chullora, which also issued permits for oversize loads. The Department had access to a railway weighbridge at Goulburn and a public one at Gosford for weighing vehicles.⁴¹⁹ By 1958, railway weighbridges at Marulan, Lithgow, Honeysuckle and Newcastle were being used, whilst a weighbridge was under construction for the Department at Marulan.⁴²⁰ The Marulan weighbridge was opened in December 1958 and plans to erect another one at Berowra were well advanced.⁴²¹ To ensure that lorries used the checking stations that the Department of Motor Transport was then constructing, a new regulation under the Motor Traffic Act was passed in May 1959.⁴²² The Berowra checking station opened on 9 October 1960.⁴²³ As part of the works associated with the Newcastle to Sydney Expressway, a new lorry checking station was built at Berowra in 1969, whilst plans to build a new station at Marulan were well advanced.⁴²⁴ Another checking bay was planned for Singleton whilst another was already under construction at Darroobalgie near Forbes.⁴²⁵

In 1973, the DMR had recently established a weighbridge at Kankool on the New England Highway and was about to establish more near Derringullen Creek on the Hume Highway south of Yass and at Mount Boyce at Blackheath on the Great Western Highway.⁴²⁶ The Derringullen Creek weighbridge was deferred since existing weighbridges at Tarcutta and the weighbridge conducted by the Department of Motor Transport at Marulan were seen to be handling the work load sufficiently.⁴²⁷ By 1985, five

⁴¹⁴ Dept of Main Roads, *Annual Report*, 1934, p 5

⁴¹⁵ *Roadmakers*, p 155

⁴¹⁶ Dept of Main Roads, *Annual Report*, 1950, p 39

⁴¹⁷ Dept of Main Roads, *Annual Report*, 1956, p 62

⁴¹⁸ Superintendent of Motor Transport *Annual Report*, 1953, p 38

⁴¹⁹ Commissioner of Motor Transport, *Annual Report*, 1956, p 20

⁴²⁰ Commissioner of Motor Transport, *Annual Report*, 1958, p 21

⁴²¹ Commissioner of Motor Transport, *Annual Report*, 1959, p 36

⁴²² Commissioner of Motor Transport, *Annual Report*, 1959, p 33; *NSWGG*, 15 May 1959, p 1458

⁴²³ Commissioner of Motor Transport, *Annual Report*, 1961, p 34

⁴²⁴ Commissioner of Motor Transport, *Annual Report*, 1969, p 47

⁴²⁵ Commissioner of Motor Transport, *Annual Report*, 1970, p 39

⁴²⁶ Dept of Main Roads, *Annual Report*, 1973, p 31

⁴²⁷ Dept of Main Roads, *Annual Report*, 1976, p 35

weighing stations operated at Berowra, Marulan, Mt Boyce, Kankool and Bell.⁴²⁸ Vehicle weighing stations all came into the hands of the RTA when it was formed.

13.0 Licensing and regulating drivers

The Commissioner for Road Transport took over driver and vehicle licensing after the passing of the 1930 Transport Act. Private motor buses had previously been licensed in Sydney by the police and in Newcastle by local government whilst the police had licensed private vehicles. The police carried out licensing from motor registries conducted by the Commissioner in the metropolitan area and in the country. (See section "Motor registries" above for an outline of motor registries). To reduce stealing of vehicles, it hoped to establish a system of issuing "certificates of title" for vehicles and the licensing of second hand car dealers.⁴²⁹ Legislation drafted to provide for the recording of vehicle ownership languished after the government did not bring it before parliament.

To counter the use of expired or bogus vehicle licence plates to avoid the payment of motor tax, the new Commissioner instituted an annual registration label scheme whose colour changed annually after the vehicle was submitted to an inspection. The annual label scheme commenced operation on 1 December 1932.⁴³⁰

The institution of compulsory third party insurance for drivers was under investigation in 1934.⁴³¹ It was in abeyance for a number of years, with the government not bringing the draft bill to parliament. It was finally passed on 29 June 1942, making it obligatory for owners and drivers of vehicles to insure themselves against injury to third parties involved in accidents. It commenced operation on 1 February 1943.⁴³²

A new system of licensing drivers was instituted in 1953, which created four classes of licence. A Class A licence was valid for private cars, light lorries and tractors. The B class licence covered private hire cars, small tourist vehicles and country taxi cabs. The C class licence covered lorries and a D licence was needed to drive buses, tourist vehicles and taxi cabs in Sydney and Newcastle metropolitan areas.⁴³³ A scheme to issue young and relatively inexperienced drivers a "provisional" licence for the first twelve months of their licence period, with certain limitations on them, commenced operation on 4 January 1966.⁴³⁴

14.0 Enhancing road safety

The advent of motor cars in NSW meant an increase in traffic accidents. Most early casualties were pedestrians.⁴³⁵ Police were initially responsible for road safety, but in 1930, the Commissioner for Road Transport took over many safety responsibilities. It added to them as police gradually gave up their role in maintaining traffic and safety

⁴²⁸ Dept of Main Roads, *Annual Report*, 1985, p 59

⁴²⁹ Commissioner of Road Transport, *Annual Report*, 1931, p 16, 18-9

⁴³⁰ Commissioner of Road Transport, *Annual Report*, 1933, p 19; 1934, p 23

⁴³¹ Commissioner of Road Transport, *Annual Report*, 1934, p 25

⁴³² Commissioner of Road Transport, *Annual Report*, 1942, p 8; 1943, p 6

⁴³³ Superintendent of Motor Transport *Annual Report*, 1953, p 12

⁴³⁴ Commissioner of Motor Transport, *Annual Report*, 1966, p 13

⁴³⁵ J W Knott, 'Road traffic accidents in New South Wales 1881-1991', *Australian Economic History Review*, XXXIV, 2, Sept 1994, p 85

Pedestrian Bridge at Arncliffe School (Item 4305029)

facilities to focus on policing. The Commissioner for Road Transport authorised expenditure to build a pedestrian bridge across the Princes Highway opposite Arncliffe Public School in 1932-3.⁴³⁶ A newer bridge has replaced it, though the footings of the old bridge are still extant. By 1933, the Department of Road Transport's Traffic Facilities committee was examining the need for works in the metropolitan area. It also commenced collating data about road accidents.⁴³⁷

In 1934, the Commissioner for Road Transport provided 65 traffic domes, largely in the Central Business District, painted 122 school pedestrian crossings, spread across the metropolitan area plus a few in the country, as well another eighteen other crossings elsewhere and installed various signs at numerous locations, particularly near schools. Experimental flood lighting had been installed at the corner of College and Park Streets, Sydney.⁴³⁸ By 1936, almost all metropolitan schools situated on busy roads were provided with traffic safety barriers, which kept children on the footpath until it was swung out onto the roadway to stop oncoming traffic.⁴³⁹

Increasing speed and the larger number of vehicles on roads in the 1930s meant that road accidents came increasingly to be a focus for road authorities. The first Road Safety Conference with strong involvement of the DMR was held in June 1936, which set up five committees to deal with relevant matters.⁴⁴⁰ The road toll decreased for the first time in 1938-39 when a speed limit of 30 mph (48 kph) in built-up areas and 50 mph (80 kph) elsewhere was introduced late in 1937.⁴⁴¹

The Commissioner for Road Transport issued the first Motor Traffic Handbook on 1 December 1940, with the message *SAFETY is your greatest responsibility when Driving* on the cover.⁴⁴² A copy was issued to every holder of a driver's or motor cycle rider's licence as well as to applicants for licences.⁴⁴³

The Department of Road Transport and Tramways began to analyse accidents to discover factors, which affected them, and locations, which were "danger spots".⁴⁴⁴ The DMR, in conjunction with the analysis of traffic accidents, reviewed its standards for road construction so that roads could be safely built for faster vehicles. It continued its review of standards for several years.⁴⁴⁵

As the basis for consistency in road signage across Australia, the Standards Association of Australia issued the "Standard Road Sign Code" in 1935.⁴⁴⁶ The DMR marked a section of the Great Western Highway between Parramatta and Mt Victoria with new warning signs, traffic lines and guideposts to test the value of these various safety devices in 1937.

⁴³⁶ Commissioner of Road Transport, *Annual Report*, 1932, p 12; 1933, p 23; *Main Roads*, Jul 1933, p 150

⁴³⁷ Commissioner of Road Transport, *Annual Report*, 1933, p 23; 1934, p 24

⁴³⁸ Commissioner of Road Transport, *Annual Report*, 1934, pp 27-8, 74-8

⁴³⁹ Commissioner of Road Transport, *Annual Report*, 1936, p 25

⁴⁴⁰ *Roadmakers*, p 136

⁴⁴¹ Commissioner of Road Transport, *Annual Report*, 1939, p 27

⁴⁴² Commissioner of Road Transport, *Motor Traffic Handbook*, Dec 1940

⁴⁴³ Commissioner of Road Transport, *Annual Report*, 1941, p 9

⁴⁴⁴ *Roadmakers*, p 137-8

⁴⁴⁵ *Main Roads*, May 1939, pp 73-82

⁴⁴⁶ Dept of Main Roads, *Annual Report*, 1938, p 15

A programme of improved methods for marking all State Highways commenced thereafter.⁴⁴⁷

In 1937, agreement was reached with railway authorities about road-rail level crossing standards and signage. Regular meetings between the Railway Department and the DMR commenced to deal with railway crossings.⁴⁴⁸ Since all crossings could not be eliminated immediately, the DMR commenced a programme of removing the most dangerous crossings on roads it controlled and the signposting of others with signs of the new Australian standard. In 1939, a metal warning sign with reflectors was being manufactured.⁴⁴⁹

Signage,
Cooma
(Item
4301438)

Increasing pressures on roads and research caused the DMR to publish its "Road Design Standards" in 1937, after thorough investigation. These were followed with additional standards in 1939.⁴⁵⁰ By the late 1940s, the Commissioner for Road Transport was conducting road safety exhibits at Sydney's annual Easter Show.⁴⁵¹ In an effort to gauge the effectiveness of road safety campaigns, the Commissioner took an opinion poll of people attending a road safety display at the Sydney Town Hall in January 1951. Responses from the poll showed that the "Horror" category of safety message rated far more effectively than "Courtesy" and "Shock".⁴⁵² The DMR was involved in the National Association of Australian State Road Authorities from its inception, and officers of the DMR participated in research fostered by the organisation and in the development of standards.

Pedestrian
Bridge at
Bexley
Public
School
(Item
4305025)

A significant aspect of road safety for children was the provision of crossings. On very busy roads, pedestrian overbridges were installed, as early as one at Arncliffe in 1932. A pedestrian overbridge had been opened over Parramatta Road, Auburn in front of Auburn North Public School in the late 1930s and was pictured in a DMR publication in March 1948.⁴⁵³ Another pedestrian overbridge was opened over Forest Road at Bexley Central Public School on 27 March 1953. Experimental painting of pedestrian crossings in the new "zebra" pattern was attempted in 1953, in three locations - Macquarie Street at King Street, Sydney, at the top of William Street, Kings Cross and in Alison Road near Doncaster Avenue, Kensington.⁴⁵⁴

A new position of Traffic Service Engineer with attached staff was created within the DMR in 1956 to deal with safety matters.⁴⁵⁵ In 1959, an experiment using advisory speed signs on curves on the Hume Highway between Camden and Berrima was successful and was extended to other roads. A new system of marking the centre line was instituted in 1950. The first climbing lane for slow traffic was added on a section of the Pacific Highway south of Gosford by the DMR.⁴⁵⁶

⁴⁴⁷ Dept of Main Roads, *Annual Report*, 1938, pp 17-8

⁴⁴⁸ Dept of Main Roads, *Annual Report*, 1937, p 14

⁴⁴⁹ Dept of Main Roads, *Annual Report*, 1939, pp 12-4

⁴⁵⁰ Dept of Main Roads, *Annual Report*, 1939, pp 3-5, 89ff; *Main Roads*, May 1939, pp 73-82

⁴⁵¹ Commissioner of Road Transport, *Annual Report*, 1947, p 7

⁴⁵² Commissioner of Road Transport, *Annual Report*, 1951, pp 28-9

⁴⁵³ Information from Margaret Veitch, Telopea, 17 January 1996; *Main Roads*, March 1948, p 71

⁴⁵⁴ Superintendent of Motor Transport *Annual Report*, 1953, pp 29-30

⁴⁵⁵ *Roadmakers*, p 221

⁴⁵⁶ *Roadmakers*, p 222



Figure 16 Accidents on the roads such as this at Canterbury in 1950 have been an issue ever since the motor car arrived in NSW. Source: GPO I, 46 I 17

In order to create driving trainers with the correct attitude and aptitude for their public role of instilling respect for the safety of others, and good driving practice, the Department of Motor Transport started a course to train driving instructors at Sydney Technical College on 18 September 1958.⁴⁵⁷ Since then, issues of road safety have continued to attract the attention of the DMR, DMT and their successor, the RTA.

Research into various aspects of road safety continued. In 1960, the National Association of Australian State Road Authorities (NAASRA) formed the Australian Road Research Board (ARRB) to encourage, and co-ordinate research into various aspects of road engineering, including traffic flow and pavements as well as safety. It acted as a national clearing house for research and made grants to research bodies. The Commissioner for Main Roads was a member of ARRB and often served as chairman.⁴⁵⁸

⁴⁵⁷ Commissioner of Motor Transport, *Annual Report*, 1958, pp 33-4

⁴⁵⁸ *Roadmakers*, p 227

B. CHRONOLOGY

I.0 Connecting settlements in the new colony

1789-1791

A track had been formed between Sydney and Parramatta

October 1797

A bridge was built across Duck River

1805

A voluntary committee of officers and other notables was formed to collect contributions to keep the two main roads of the colony in repair

May 1810

James Harrex was contracted to build a toll road from Sydney through Parramatta to the Hawkesbury River

May 1811

Road to South Head completed by men of the 73rd Regiment

1813

William Roberts was contracted to complete a road from Sydney to Liverpool

April 1814

A road from Liverpool to Parramatta Road (later to called Dog Trap Road and then the Woodville Road) was in progress

18 July 1815

Road to Bathurst completed by William Cox

1816

Many roads had been given milestones

1818

Edward Cureton erected an obelisk in Macquarie Place that was the starting point for the measurement for all roads leading out of Sydney

October 1819

Construction of a road to the south commenced from Picton to near the Goulburn Plains

1829

Completion of new route from Castle Hill to Wollombi Creek with a crossing of the Hawkesbury near Wiseman's Ferry called the Great Northern Road

1832

Road from Menangle to Stonequarry Creek commenced

23 October 1832

Victoria Pass opened

1832

David Lennox was engaged by Mitchell as Sub-inspector of Roads, with responsibility for bridges

1832

Act (2 Wm IV No 12) made arrangements to finance road works by levying tolls

1833

Act (4 Wm IV No 11) stipulated that minor roads be maintained at the expense of local inhabitants

1836

A new route to Illawarra down Bulli Pass discovered

1837

Road construction transferred to the Royal Engineers

1840

Passing of the Parish Roads Trust Act, which permitted creation of Roads Trusts

June 1848

Sydney Suburban Roads Act passed which made provision for roads near Sydney

1849

Cumberland Roads Act, which covered County of Cumberland, was passed

November 1855

Commission of Inquiry into Mitchell administration of roads critical of him

September 1855

First railway line opened to Parramatta Junction (now Granville)

1856

Responsible government. The Department Lands and Public Works took over responsibility for road construction in NSW

July 1857

Captain B H Martindale of the Royal Engineers appointed as Chief Commissioner for Railways and Roads

June 1858

Main Roads Management Act (21 Vic No 8) made Martindale responsible for the three main roads to the north, south and west

1858

Municipalities Act made possible the creation of local government authorities, which were also responsible for local roads

2.0 Providing roads and bridges through the Department of Public Works

1859

B H Martindale created a district based organisation to maintain roads

1862.

W C Bennett appointed as Commissioner and Engineer-in-Chief for Roads

January 1864

Department of Lands transferred 3,286 miles (5.288 km) of minor roads to the Public Works Department

1889

R Hickson appointed Commissioner and Engineer-in-Chief for Roads and Bridges

1906

Responsibility for roads devolved to local government

January 1924

List of roads eligible for subsidies extended

23 December 1924

Spit Bridge opened

24 September 1924

Bridge across Middle Harbour at Roseville opened

11 May 1929

Bridge across the Georges River at Tom Uglys Point opened

March 1924

Tenders to build Sydney Harbour Bridge accepted

3.0 Experimenting with new ways of providing roads and bridges for the colony/state

1880s

Experiments with wood blocking on part of King Street between George and Pitt Streets

September 1896

Bridge of mass concrete, with a low strength sandstone aggregate completed on the Hume Highway across Black Bobs Creek near Berrima

1900

The first reinforced concrete arch bridge built near Tamworth at Reads Gully on the Main Northern Road

1905

A low-level reinforced concrete arch bridge crossing the Hawkesbury River at North Richmond to the design of Harvey Dare completed

1914

Reinforced concrete slab and girder bridge constructed at American Creek near Figtree

1916.

Reinforced concrete slab and girder bridge constructed over Mullet Creek at Dapto

1917

Early concrete road pavement built in New South Head Road between Bentley's Bridge and Mona Road in Woollahra⁴⁵⁹

1918

First true continuous girder reinforced concrete bridge completed as Fullers Bridge across the Lane Cove River

4.0 Evolving administrative arrangements for the DMR/RTA

8 November 1912

A H Griffiths introduced a Main Roads Bill

February 1920

National Roads Association formed.

1923

Federal government commenced grants scheme for roads under Main Roads Development Act

7 August 1924

J C L Fitzpatrick, Minister for Local Government introduced Main Roads Bill, to establish Main Roads Board

10 November 1924

Main Roads Bill passed and to come into operation on 1 January 1925

October 1927

Duties and responsibilities of MRB and Public Works Department regarding roads and bridges re-arranged

March 1928

MRB moved to new office at 309 Castlereagh Street, Sydney

1 January 1928

Commencement of Metropolitan Division operations, with an Engineer-in-Charge at its head

1 July 1928

Decentralization of administration of MRB and six new divisions created

⁴⁵⁹ *Main Roads*, June 1953, p 102

22 March 1932

Main Roads Board abolished

19 November 1932

H. H. Newell appointed in charge of new Department of Main Roads⁴⁶⁰

1 September 1935.

New North East coastal division commenced operation

19 April 1937

New South Coast Division established

August 1939

Outer Metropolitan Divisions 1 and 2 created

27 July 1936

Main Roads (Amendment) Act altered duties of DMR

26 November 1945

South Coast Division reopened

1 March 1946

New division in Central Murray area established

1955

Murray Darling Division created with headquarters at Broken Hill

1 March 1962.

Central Northern division with office at Bourke formed

27 June 1967

The Lower North Coast Division with office at Port Macquarie formed

July 1967

Central Mountains Division centred on Lithgow formed

1 June 1976

Traffic Authority of NSW established. Traffic management such as traffic signals, signage and road marking previously controlled by the Department of Motor Transport was transferred to the DMR

14 February 1983

Blacktown Division commenced operations

1 January 1989

Department of Main Roads, Department of Motor Transport and the Traffic Authority amalgamated to form the Roads and Traffic Authority by the Transport Administration Act (No 109, 1988)

⁴⁶⁰ *Roadmakers*, p 131

5.0 Planning road hierarchies

1926

Elimination of gaps or missing links in the existing road network a major priority

1926

MRB identified the need to promote a system of "circumferential roads"

1926

An optimum metropolitan road width of 84 feet (25.6 m) was established

February 1926

MRB adopted national standards for rural roads for the provision of 12 to 20 feet (3.7 to 6.1 m) width of metalled surface depending on grade of road

April 1929

A classification of roads using new hierarchies was proclaimed

1937-8

Review of Main Roads System leading to a total of 847 miles (1,363 km) selected for proclamation as Trunk Roads and 910 miles (1,465 km) as Main Roads

1943

DMR commenced series of surveys of land use, population densities and traffic flows and collected aerial photographs for post war plan

1945

DMR issued a report titled the "County of Cumberland Main Road Development Map"

3 April 1945

An amendment to the Act provided for the construction of limited access roads to be called motorways

1946

A plan for arterial roads in Newcastle was adopted

1952

A plan encompassing much of the Hunter Valley approved

1952

Road scheme for the Illawarra Scheme approved

1959

An Advance Planning Section was formed to ascertain future road needs and determine priorities

20 May 1960

First Motorway, the Pacific Highway near Mount White, between Peats Ferry and Gosford proclaimed

1961

Tourist Roads able to be proclaimed

1962

Sturt Highway completely sealed providing route through to Adelaide

1964

Helicopter acquired by the DMR

1968-9

DMR laid deep asphalt pavement on Southern Cross Drive, one of the earliest uses of this surface in Australia

1973

Environmental Study Group was formed within the DMR to assess "Environmental Factors" in road proposals

1974

Sydney Area Transportation Study produced projections for Sydney's Transport needs to the year 2000

October 1977

State Government announced the abandonment of the projected North Western Freeway from Pymont to Gladesville Bridge and other inner city freeways

5.1 Road classes

December 1960

A provision in the Act allowed the DMR to create Tourist Roads providing access to places of natural beauty

13 October 1961

First Tourist Road gazetted - road to the look-out over the Burragorang valley in Wollondilly Shire⁴⁶¹

6.0 Constructing roads and works (DMR)

6.1 Evolving construction techniques.

January 1926

First contract to lay concrete road pavement let by MRB for Erskineville Road (MR 193) between King Street and Erskineville Railway Station⁴⁶²

1927

Experimental stretch of Telford foundation of sandstone with covering course of three inches (7.6 cm) of pre-mixed bitumen macadam laid on Great Southern Highway at Cross Roads and Carnes Hill in Nepean Shire⁴⁶³

⁴⁶¹ Dept of Main Roads, *Annual Report*, 1962, p 146

⁴⁶² *Main Roads*, June 1953, p 98

⁴⁶³ Main Roads Board, *Annual Report*, 1927, p 8

1934

DMR laid an experimental course of harsh-mix roller-consolidated cement concrete on Blaxland Road in Ryde Municipality

6.2 Continuing construction and maintenance works on roads

March 1925

Urgent works on Oxford Street and Parramatta Road

1926

Depot established at Granville for maintenance work in County of Cumberland

1925

MRB became member of Sydney Streets Opening Conference

1929

Work commenced on major road to Canberra from Hume Highway south of Goulburn

1930s

Drag re-sheeting method of repairing roads taking over

1935

DMR experimented with the Irvine heat treatment process for hardening earth roads near Narrandera

January 1935 to March 1937

Major scheme of improvement of Federal Highway

1950

State Highway No 24, the Mount Lindesay Highway, between Tenterfield and Wallagarra on Queensland border proclaimed

6.3 Constructing new roads

August 1925

Construction of new Sydney to Newcastle Road between Hornsby and Gosford commenced

2 June 1930

Section of Sydney to Newcastle Road between Hookhams Corner, Hornsby and Hawkesbury River opened

1932

Upper Clarence and Richmond River Valleys Developmental Road Scheme commenced

April 1936

Major road building scheme between Narrandera and Griffith passing through Leeton commenced using day labour

1936-40

Roads (TR 64 and MR 361) constructed between Casino and Bonalbo instead of a proposed railway

1936-7

Road instead of railway built (MR 135) between Guyra and Dorrigo Road and completed 1948⁴⁶⁴

1937

Completion of series of extensive improvement works on Oxley Highway

1938.

Newell Highway from Tocumwal to Goondiwindi proclaimed

1939

Lengthy re-routing of Gwydir Highway between Glen Innes and Grafton commenced

December 1939

Wakehurst Parkway in Warringah Shire commenced

22 March 1946

Wakehurst Parkway officially opened

1949

Work on improving Newell Highway completed

March 1958

First Freeway - Cahill Expressway opened

9 December 1960

New route of Gwydir Highway officially opened

1 March 1962

The second section of Cahill Expressway opened

December 1965

First section of Newcastle Freeway to Mount White opened

11 October 1971

First section of Western Freeway opened

September 1972

First section of Western Distributor out of Sydney opened

20 December 1972

An additional section of the Western Freeway opened. Also the first state road to have the new maximum speed limit of 110 km per hour

⁴⁶⁴ *Roadmakers*, p 166

26 October 1973

A six mile (9.7 km) section of the South Western Freeway from Cross Roads to Raby Road opened

6.4 Providing river crossings and bridges

1925 to 1940

MRB/DMR built over 1000 bridges

1932

Maintenance of Sydney Harbour Bridge taken over by DMR

1 July 1933

Suspension Bridge at Kindee over the Hastings River opened

1935

A steel lift span bridge of a new type was completed on the North Arm of the Clarence River at Mororo, the second bridge of this type after an earlier one completed at Terranora Creek in the Tweed Valley

1935

A bow-string arch bridge at Shark Creek near Maclean completed, the first in Australia

1936-9

Rebuilding of bridge at Northbridge whilst retaining sandstone towers

1937

Bowstring bridge completed at Hillas Creek between Tumblong and Tarcutta on Hume Highway

1932

One of last steel bridges built by assembly on site of pre-riveted sections was the steel bascule bridge at Narooma over Wagonga River on Princes Highway

1936

Bridge on Trunk Road 63 over the Manilla River in the Municipality of Barraba was the first major bridge welding project to be undertaken by the DMR⁴⁶⁵

1945

The Hawkesbury River Bridge at Peats Ferry had the longest welded truss spans

1950s

Acceleration of replacement of ferries by bridges

June 1953

First pre-tensioned concrete bridge superstructure built on the bridge built across Mittagong Creek near Bowral for the Bowral Municipal Council Area

⁴⁶⁵ Dept of Main Roads, *Annual Report*, 1935, p 44; 1936, p 16

September 1953

Bridge across Pipers Creek near Guthega Power Station was the first post-tensioned concrete bridge in NSW

1 September 1956

First pre-stressed concrete bridge built by the DMR was completed across Cockle Creek, Bobbin Head

1957

First post-tensioned concrete bridges built by the DMR were completed on the Princes Highway over Corunna Lake and Nangudga Lake near Narooma

20 August 1966

Opening of the Harwood Bridge over the Clarence River eliminated the last remaining ferry operating on the Pacific Highway

1959

A 2074 feet (632 m) long concrete and steel bridge between Forster and Tuncurry opened

1959

The Irving Bridge over Richmond River at Casino opened

2 October 1964

Gladesville Bridge over Parramatta River opened

29 May 1945

Captain Cook Bridge at Taren Point opened across the Georges River

16 December 1965

Tarban Creek Bridge near Hunters Hill opened

2 April 1966

Roseville Bridge over Middle Harbour opened

15 December 1967

De Burghs Bridge over Lane Cove River opened

11 October 1971

Regentville Bridge across Nepean River, opened, part of the first section of the Western Freeway to be completed

1 November 1971

Stockton Bridge, one of the longest in NSW, opened

26 March 1973

Macarthur Bridge, Camden opened

7 September 1973

Alfords Point Bridge opened across Georges River

1975

Bega Bridge completed

April 1980

New bridge at Maldon across the Nepean River opened. It was the first DMR bridge erected using the slip form method of construction for its piers

December 1980

Highest bridge ever built in NSW, the Pheasants Nest Bridge across the Nepean River on the South Western Freeway, was opened

December 1982

A cable-stayed pedestrian bridge across the road at Pomeroy Street, Homebush, the first such bridge built by the DMR was built over a section of the F4 Freeway

December 1986

Mooney Mooney Bridge on the Sydney to Newcastle Freeway opened

6.5 Undertaking wartime defence works

1942

Work commenced on making the Bell's Line of Road across the Blue Mountains

7.0 Responding to the impact of road construction or works

1926

One of the earliest works undertaken by the Main Roads Board, the formation and gravelling of the road between Cattai Creek and Maroota undertaken to provide unemployment relief

1929

Construction of Mt Darragh deviation to provide better communication from the head of the railway at Bombala to the coast between Eden and Bega

1930

Developmental Roads built to open up wheat land near Condobolin, Hillston, and Wyalong

1930s

Considerable works using unemployed labour, especially Princes, Hume, New England, and Pacific Highways, and Main Road 110 near Bulahdelah

March 1934

A scheme of Developmental Roads for the Upper Manning River commenced

1939

Two thirds of Pacific Highway was bitumen

Late 1930s

A low-key scheme of providing developmental roads commenced in the Wakool-Berrigan-Deniliquin district

1948

DMR built 14 miles (22.5 km) of road from Bellangry in the Wauchope district for the Forestry Commission

By 1956

Housing Commission was being used to re-house families displaced by road widening

8.0 Ameliorating Environmental Impacts

1926

MRB outlined some aims for road side beautification

1927

MRB published a set of proposed layouts for highways 132 feet (40.2 m) wide and 99 feet (30.2 m) wide including plantings and pavements

June 1928

MRB prohibited anyone from cutting or removing any native flora with Departmental approval in the County of Cumberland

September 1928

Prohibition against anyone cutting or removing any native flora extended to cover country State Highways

1 July 1934

DMR agrees to bear the full cost of trees on State Highways, two-thirds of the cost on trunk roads and one-half on main roads, and the whole cost for trees on roads it managed in the County of Cumberland

August 1934

DMR advised Councils that it would undertake some responsibility for the cost of tree planting

February 1936

DMR published a detailed list of suitable species arranged by climate

22 July 1936

A memorial planting of trees along Great Western Highway between Leura and Katoomba commenced

1936-7

DMR arborculturalist appointed

1939-45

War caused loss of trees due to lack of maintenance and general destruction

1952

Group of citizens formed a committee to create a national memorial to servicemen using trees and shrubs

5 February 1954

First trees of Remembrance Driveway project planted by Queen Elizabeth II and the Duke of Edinburgh

1965

First roadside rest areas provided under co-ordinated scheme on Hume and Federal Highways

1960,

DMR engaged landscape designer, Peter Spooner of the University of New South Wales, to prepare schemes and improve particular locations

1969

DMR won the Royal Australian Institute of Architects Civic Design Award for landscape on Sydney to Newcastle Freeway

1972

Plant holding nursery established at Yennora

1973

Environmental Study Group formed to assess environmental impacts of road works

October 1982

Plant nursery at Yennora closed

9.0 Handling property acquired for works and other functions

1940

Officer appointed to deal with architectural matters associated with acquired properties

1943

Reconstruction of store and workshop at depot at Rosehill

1947

Bituminous hot-mix plant added at depot at Rosehill

1946

New maintenance depots acquired at Windsor and Bowenfels

By 1949

DMR was building cottages for country staff

1953

Quarry in operation at Bonville near Coffs Harbour

September 1953

New DMR testing laboratory commenced operation under northern approaches to Harbour Bridge

1955

A new Divisional office building completed at Deniliquin

1956

New office at Newcastle occupied

1960

Morton Herman engaged to provide advice on the stonework of Lansdowne Bridge and St Malo and church in Hunters Hill

1961

St Malo demolished, a key event leading to greater public support for conservation and increased membership of the National Trust

1965

Architect was appointed to handle DMR properties

1966

Tenanted Properties Section created

1969

A first level Property Committee of the Secretary, Chief Accountant and Chief Engineer (Urban) was formed

1973

DMR given power to lease the air rights over Main Roads

10.0 Co-ordinate or Compete - The mix of transport systems?

1930

Transport Act established a Commissioner for Road Transport

31 August 1931

Lang Labor government passed State Transport (Co-ordination) Act, which placed all transport under a single minister

22 March 1932

Ministry of Transport Act placed restrictions upon all motor bus and public transport in competition with government transport

February 1938

Work commenced on new main road - No. 373 from St Leonards to Epping instead of a railway

1946

Commonwealth Transport Advisory Council formed to coordinate transport policy.

January 1947

The Commonwealth Transport Advisory Council became the Australian Transport Advisory Council

July 1947

Roads Standards sub-committee of Australian Transport Advisory Council formed

1965

Commonwealth Bureau of Roads formed

11.0 Managing traffic

1928

Restrictions were placed upon kerbside petrol pumps

1929

MRB took over responsibility for placement of traffic domes from Police Department

13 October 1933

First set of automatic vehicle activated traffic lights installed at the corner of Market and Kent Streets by Dept of Road Transport and Tramways

June 1935

New traffic regulations issued

1935

Commissioner for Road Transport took over maintenance of over 2,000 road signs from Police Department

1937

Next traffic lights were installed at York and Margaret Sts; Erskine and Clarence Streets; Pymont Bridge Road and Booth Street; and Pymont Bridge Road, Wattle Crescent and Jones Streets

1937

DMR started its own programme of line-marking for reasons of safety and traffic management

7 July 1939

Road rules altered so that crossing double centre lines on the road was prohibited

1940

Burwood Traffic Signals Depot replaced former depot in Jamieson Street, Sydney

1949

Commissioner for Road Transport installed a set of pedestrian actuated traffic lights on the Pacific Highway at Lindfield Railway Station

1950s

DMR improving traffic flow and safety in metropolitan and rural areas by widening road pavements at bus stops to allow buses to stop off the main roadway, provision of parking bays for heavy long haulage vehicles on country roads, construction of climbing lanes to allow faster traffic to bypass slower vehicles, introduction of more channellised intersections, the investigation of accident sites and better signposting

9 October 1959

Department of Motor Transport, linked a set of vehicle actuated traffic lights at the intersection of Parramatta Road and Crystal Street Petersham with another set at Parramatta and Norton Street, thus creating the first vehicle actuated co-ordinated traffic light system in Australia

18 May 1961

The first set of co-ordinated traffic lights installed in Church Street, Parramatta, allowed traffic to pass through the busiest shopping streets in successive waves with minimal disruption

1960-1

New building for the Department of Motor Transport's traffic signals section completed at Burwood

December 1962

Major set of overhead traffic signs and signals in operation at Villawood

1964

Computer regulated traffic lights system introduced in the Sydney Central Business District as part of the Inner City Signals Project

29 January 1964

Switching on of televisions used to aid in traffic flow

1 May 1964

New limit of 35 mph (56.3 kph) became legal⁴⁶⁶

1966

The first sets of signals installed outside the Sydney-Wollongong-Newcastle area at Lochinvar and Tamworth

June 1967

Large part of Parramatta Road declared the first Clearway

1 June 1976

Traffic Authority of NSW established

12.0 Licensing and regulating vehicles

1813

Governor Macquarie introduced registration of carts and wagons

⁴⁶⁶ Commissioner of Motor Transport, *Annual Report*, 1964, p 12

1857

Act stipulating that all wheels above a certain width would be charged a double toll was passed

1877

Tax on vehicles abolished

1909

Motor vehicles licensed by the Motor Traffic Act

May 1937

New style number plates came into operation with sequence of letters and numbers

1937

Newcastle and its District placed under control of the Commissioner for Road Transport

1 October 1939

Commissioner for Motor Transport started a scheme whereby all vehicles had to be inspected mechanically before registration

1951

Vehicle licence plates begin three letter series

1 June 1952

Department of Motor Transport created (with a different title later altered to Department of Motor Transport)

1957

DMT commenced scheme to enter driver's licence details onto IBM punched cards

1958

DMT commenced IBM card system for vehicle licensing

1 July 1966

DMT decentralised its administration with the establishment of the Western, Southern and Northern Regional Transport Districts with offices at Armidale, Dubbo and Wagga Wagga

1 November 1966

Hunter and Central Coast Regions established

6 June 1967

South Coast Region established

12.1 Motor registries

1932-3

Commissioner for Road Transport took over registries in Newcastle, Wollongong and Sydney

June 1939

Commissioner for Road Transport took over motor registries at Albury and Broken Hill

1946

Department begins to take over registries in country towns - Armidale, Bathurst, Dubbo, Goulburn, Griffith, Katoomba, Lismore, Liverpool, Orange, Parkes, Tamworth, Taree, Wagga Wagga and West Maitland

1953

Prefabricated building built in Gray Street, Kogarah for motor registry

1953

Building was under construction in George Street, Parramatta for registry

October 1954

Department of Motor Transport purchased office premises at Rosebery from Parke Davis Pty Ltd

3 September 1956

DMT's Rosebery offices officially opened

8 August 1955

Vehicle weighing station at Chullora upgraded to motor registry

1956-7

Motor registries at Wollongong, Hornsby (Waitara) and North Sydney transferred into new purpose built motor registries⁴⁶⁷

1957-8.

Motor registries at Newcastle, Five Dock, Manly and Liverpool completed ⁴⁶⁸

1958-9

Motor registries completed and opened at Gosford, Penrith, Wagga Wagga (June 1959) and Leeton⁴⁶⁹

1959-60

Motor registries at Bathurst, Dubbo and Orange were completed and occupied⁴⁷⁰

1960-1

Motor registries completed and occupied at Lithgow, Tamworth and Miranda (officially opened 14 November 1960)⁴⁷¹

1961-2

Motor registries opened at Ryde, Bega, Nowra, Goulburn, Forbes and Parkes⁴⁷²

⁴⁶⁷ Commissioner of Motor Transport, *Annual Report*, 1957, p 49

⁴⁶⁸ Commissioner of Motor Transport, *Annual Report*, 1958, p 49

⁴⁶⁹ Commissioner of Motor Transport, *Annual Report*, 1959, p 36-7

⁴⁷⁰ Commissioner of Motor Transport, *Annual Report*, 1960, p 35

⁴⁷¹ Commissioner of Motor Transport, *Annual Report*, 1961, p 34-5

⁴⁷² Commissioner of Motor Transport, *Annual Report*, 1962, p 34

15 July 1963

New motor registry opened at Beverly Hills⁴⁷³

18 November 1963

New motor registry opened at Blacktown⁴⁷⁴

21 September 1964

Motor registry opened at Gwabegar

6 October 1964

New motor registry opened at Toronto⁴⁷⁵

16 July 1965

New motor registry opened at Campbelltown

22 December 1965

New motor registry opened at Lidcombe

31 August 1965

Police registry at Wyong transferred to Departmental control⁴⁷⁶

1966-7

A new District Office and registry was completed at Maitland

1966-7

New registries were completed at Taree, Broken Hill, Katoomba, and Glen Innes⁴⁷⁷

1967-8

The Dubbo Western Regional office was completed

1967-8

Motor registries opened with new buildings at Charlestown and Cessnock⁴⁷⁸

1968-9

New motor registries opened at Richmond and Raymond Terrace⁴⁷⁹

30 July 1969

New motor registry opened at Fairfield

1969-70

Motor registries completed at Mittagong, Singleton, and Tweed Heads⁴⁸⁰

⁴⁷³ Commissioner of Motor Transport, *Annual Report*, 1964, p 20

⁴⁷⁴ Commissioner of Motor Transport, *Annual Report*, 1964, p 20

⁴⁷⁵ Commissioner of Motor Transport, *Annual Report*, 1964, p 17

⁴⁷⁶ Commissioner of Motor Transport, *Annual Report*, 1966, pp 21-2

⁴⁷⁷ Commissioner of Motor Transport, *Annual Report*, 1967, p 46

⁴⁷⁸ Commissioner of Motor Transport, *Annual Report*, 1968, p 46

⁴⁷⁹ Commissioner of Motor Transport, *Annual Report*, 1969, p 47

⁴⁸⁰ Commissioner of Motor Transport, *Annual Report*, 1970, p 39

1973.

A regional office was completed at Chullora on the site of old registry

1973.

New District Offices were completed at Five Dock and Moree, as were motor registries at Inverell and Narrabri⁴⁸¹

3 August 1973

District Office and registry at Deniliquin opened

17 July 1973

Motor registry at Tumut opened

26 July 1973

Motor registry at Wellington opened⁴⁸²

19 January 1976

Cammeray Motor registry opened ⁴⁸³

1976-7

A District office and Registry opened at Kogarah, as did the registry at Wauchope⁴⁸⁴

26 June 1978,

Toronto registry opened

1977-8

District office and registry at Liverpool, the motor registries at Mt Druitt and Kiama opened ⁴⁸⁵

1980-1

New motor registries opened in Albury and Coffs Harbour⁴⁸⁶

12 November 1982

Wagga Wagga Branch Office and registry opened⁴⁸⁷

26 September 1983

Motor registry opened at Hornsby

20 February 1984

Motor registry opened at Tweed Heads⁴⁸⁸

⁴⁸¹ Commissioner of Motor Transport, *Annual Report*, 1973, p 42

⁴⁸² Commissioner of Motor Transport, *Annual Report*, 1974, pp 3, 16, 42

⁴⁸³ Commissioner of Motor Transport, *Annual Report*, 1976, cover

⁴⁸⁴ Commissioner of Motor Transport, *Annual Report*, 1977, p 38

⁴⁸⁵ Commissioner of Motor Transport, *Annual Report*, 1978, p 34

⁴⁸⁶ Commissioner of Motor Transport, *Annual Report*, 1981 p 18

⁴⁸⁷ Commissioner of Motor Transport, *Annual Report*, 1983, p 33

⁴⁸⁸ Commissioner of Motor Transport, *Annual Report*, 1984, p 36

30 December 1985

Motor registry opened at Kempsey

28 January 1986.

Motor registry opened at Nowra ⁴⁸⁹

1986-7

New registries opened at Tenterfield, South Penrith, Leichhardt, Canley Heights and Bondi Junction⁴⁹⁰

1 March 1986

All police run registries closed within a distance of 80 km of a DMT registry⁴⁹¹

12.2 Vehicle weighing stations

1919

Local Government Act gave councils the power to regulate vehicle weights

27 July 1934

Amendment was passed as Ordinance 30C to Local Government Act which prescribed load limits on main roads. A simultaneous Ordinance, No 30D specified loads for roads other than main roads

1953

Chullora office and a very large weighbridge under construction for dealing with large lorries⁴⁹²

December 1958

Marulan weighbridge operated by DMT opened⁴⁹³

9 October 1960

Berowra checking station opened⁴⁹⁴

1969

New lorry checking station built at Berowra as part of expressway⁴⁹⁵

13.0 Licensing and regulating drivers

1930

Commissioner for Motor Transport took over driver and vehicle licensing

1 December 1932

Annual registration label scheme commenced⁴⁹⁶

⁴⁸⁹ Commissioner of Motor Transport, *Annual Report*, 1986, p 49

⁴⁹⁰ Commissioner of Motor Transport, *Annual Report*, 1987, p 48

⁴⁹¹ Commissioner of Motor Transport, *Annual Report*, 1986, p 48

⁴⁹² Superintendent of Motor Transport *Annual Report*, 1953, p 38

⁴⁹³ Commissioner of Motor Transport, *Annual Report*, 1958, p 21

⁴⁹⁴ Commissioner of Motor Transport, *Annual Report*, 1961, p 34

⁴⁹⁵ Commissioner of Motor Transport, *Annual Report*, 1969, p 47

29 June 1942

Compulsory third party insurance legislation finally passed

1953

A new system of licensing drivers instituted with four classes of licence

4 January 1966

"Provisional" licence for new drivers commenced operation

14.0 Enhancing road safety

1932-3

Pedestrian bridge across Princes Highway opposite Arncliffe Public School built

June 1936

First Road Safety Conference held

Late 1930s

Pedestrian overbridge across Parramatta Road, opposite Auburn North Public School

1 December 1940

Commissioner for Road Transport issued the first Motor Traffic Handbook

1935

Standards Association of Australia issued the "Standard Road Sign Code"

1937

DMR published its "Road Design Standards"

27 March 1953

Pedestrian overbridge opened School for school children over Forest Road at Bexley Central Public

1953

Experimental painting of pedestrian crossing in the "zebra" pattern was attempted

1956

DMR creates position of Traffic Service Engineer

18 September 1958

First course to train driving instructors commenced at Sydney Technical College

1960

NAASRA formed the Australian Road Research Board to encourage, and co-ordinate research into various aspects of road engineering

⁴⁹⁶ Commissioner of Road Transport, *Annual Report*, 1933, p 19; 1934, p 23

C. NOTABLE PERSONS ASSOCIATED WITH ROADS IN NEW SOUTH WALES OR WITH THE RTA

Allan, Percy

Born 1861 in Sydney. Educated in Sydney. Joined Roads Branch of Public Works Department in September 1878. Appointed Assistant Engineer of Bridges, January 1895 and Engineer-in-Charge of Bridge Design in 1896. Also responsible for Water Supply, Sewerage and Drainage from 1900 to 1908. Appointed Chief Engineer of Public Works at Newcastle in 1911. Became Acting Chief Engineer, National and Local Government Works January 1917 which became a permanent appointment in July 1918. Noted bridge designer who was responsible for designing the Allan Truss bridge, which was named after him. By the time, he retired, he had designed a total of 583 bridges for the Public Works Department by his retirement in 1927. Died May 1930.⁴⁹⁷

Bennett, William Christopher

Born 1824 in Dublin. Trained as surveyor in Ireland and as engineer on railways and drainage works. Worked in South America and New Zealand. Entered Survey Branch of Surveyor-Generals' Department. Appointed as Engineer for Roads. Appointed as Commissioner and Engineer-in-Chief for Roads in Public Works Department in 1862. Managed roads in NSW for period of 27 years. Great ability as engineer and administrator. Retired June 1889 and died 1889.⁴⁹⁸

Craig, David

Born at Paisley in Scotland on 29 September 1883. Came to Australia in 1910. Worked for Victorian Railways. In Britain from 1916 to 1919 working on projects with Ministry of Munitions. Chief Engineer and Director of Armstrong Whitworth's Pty Ltd, a public works contractor, in Britain in 1923. Joined Main Roads Board on 15 February 1928 as Engineer in charge of Country Construction. Chief Engineer for country main roads. Deputy Commissioner. Appointed Assistant Commissioner on 15 November 1937.⁴⁹⁹ Strongly associated with defence works that DMR was involved with during World War Two. Commissioner for Main Roads from March 1941 until his death on 1 August 1946.⁵⁰⁰

Fisk, Bernard

Born in England. Qualified in metallurgy. Appointed Commissioner for Main Roads in 1988 and served until position abolished in 1989 with creation of Roads and Traffic Authority.⁵⁰¹

⁴⁹⁷ A Corbett, 'P Allan', *ADB*, 7, pp 36-7

⁴⁹⁸ R Johnson, 'W C Bennett', *ADB*, 3, pp 142-4

⁴⁹⁹ Dept of Main Roads, *Annual Report*, 1938, p 1

⁵⁰⁰ Dept of Main Roads, *Annual Report*, 1946, pp 4-5; *Main Roads*, Dec 1946, p 2

⁵⁰¹ Information from B N Loder, January 1996

Garlick, John

First President of MRB, 1925-8. Officer-in-Charge of Local Government in Public Works Department from December 1905, then Under-Secretary for Local Government July 1916. Left temporary post as President to take up appointment as Commissioner for City of Sydney in January 1928.⁵⁰²

Loder, Bruce Norman

Born at Sydney in 1926. Educated at Fort Street Boys High School and University of Sydney and graduated in Civil Engineering. Joined DMR as Engineering Assistant. Various positions in Department including Divisional Engineer, Bourke and Wollongong. Appointed Deputy Commissioner in 1978. Served as Commissioner from 1981 to 1988.⁵⁰³

Martindale, Ben Hay

Born 1824 in London. Educated at Rugby and Royal Military Academy, Woolwich. Commissioned in Royal Engineers June 1843. Saw service on Gibraltar, Corfu and Dover, as well as an appointment in charge of fortifications in England. Appointed to build and direct the running of the NSW railways in July 1857, as well as electric telegraphs and roads. Hamstrung by inadequate funding, he was unable to meet all expectations regarding the adequacy of roads. Although vindicated by a public inquiry, he resigned in November 1860 and returned to England, where he had a long and successful career in military and civil engineering. Died 1904.⁵⁰⁴

Newell, Hugh Hamilton

Born 29 April 1878. Entered employment with Public Works Department in March 1894 with Roads and Bridge Branch. Public Works Department engineer at Wollongong in 1924. Appointed to first board of MRB in March 1925. Had been involved for over thirty years with road construction across NSW. Appointed Commissioner for Main Roads in November 1932. Possessed a wide knowledge of the whole state due to his many years of experience. Died 15 March 1941.⁵⁰⁵ Newell Highway from Tocumwal and Boggabilla was named after him.⁵⁰⁶

Schmidt, A F

Began career with DMR in Bridge Design section on 4 September 1939. Enlisted in Second AIF January 1942 and served with Electrical and Mechanical Engineers rising to rank of Captain. Rejoined Bridge section and worked there for two years before transfer to Bega in 1948. Appointed Officer-in-Charge of Windsor Office in 1953. Appointed to Goulburn as Supervising Engineer in 1955. Became Divisional Manager at Wagga Wagga in 1960. Became Assistant Metropolitan Engineer in 1962, where he was involved with major bridge building projects at Gladesville, Captain Cook and Roseville. On 26 August

⁵⁰² *Roadmakers*, p 83

⁵⁰³ Information from B N Loder, January 1996

⁵⁰⁴ G J Abbott, 'B H Martindale', *ADB*, 5, pp 220-1

⁵⁰⁵ Dept of Main Roads, *Annual Report*, 1941, pp 5-6

⁵⁰⁶ Dept of Main Roads, *Annual Report*, 1942, p 3

1967, he was appointed Assistant Commissioner. Appointed Commissioner for Main Roads on 26 August 1974. Served until 5 October 1977.⁵⁰⁷

Sexton, Brian J

Born at Sydney in 1921. Educated at Christian Brothers, Waverley, and University of Sydney gaining degree in Civil Engineering. Joined DMR as an Engineering Assistant. Various departmental positions, including Divisional Engineer, Broken Hill and Metropolitan Engineer. Appointed Assistant Commissioner in 1974. Served as Commissioner from 1977 to 1981.⁵⁰⁸

Shaw, J A L, (C B E, D S O)

Born at Marrickville in 1902. Educated at Sydney Technical High School and University of Sydney. Joined MRB in February 1926 as Assistant Engineer. Appointed Divisional Engineer of Lower Northern Division based at Tamworth when it was formed. Formed new Divisional office at Newcastle in May 1932. Service overseas with Second AIF 1940 to 1946 rising to rank of Major, seeing service in Malaya as engineer. Became Chief Engineer in August 1946. Appointed Commissioner for Main Roads on 20 April 1962. Retired on 25 August 1967.⁵⁰⁹

Sherrard, H M, (C B E)

Educated at University of Melbourne, and saw service overseas with first AIF. Worked on irrigation and water supply in Victoria and Queensland. Joined MRB in 1926 as Designing Engineer. Undertook extensive wartime works for DMR as Chief Engineer. Appointed Assistant Commissioner in 1946. Appointed Commissioner for Main Roads in 19 August 1953.⁵¹⁰ Joint author of text book on Town and Country Planning published in 1951. Author of a textbook on highway engineering published in 1958. Retired on 20 April 1962.⁵¹¹

Thomas, Russell John Scarr

Born 1909 in Sydney, and educated at Canterbury Boys High School. Joined DMR as junior clerk and gained Diploma of Civil Engineering from Sydney Technical College. Served in Second World War, rising to the rank of Major. Various positions in DMR including Divisional Engineer, Grafton and Broken Hill. Appointed Assistant Commissioner in 1962. Served as Commissioner from 1967 to 1974.⁵¹²

Toyer, Alfred Edward

Born in Sydney on 24 January 1896 and educated at Cleveland Street School and University of Sydney. Saw service overseas in First World War. Entered public service in 1912. Employed as engineer with Public Works Department from 1920 to 1925.

⁵⁰⁷ Dept of Main Roads, *Annual Report*, 1978, p 14

⁵⁰⁸ Information from B N Loder, January 1996

⁵⁰⁹ Dept of Main Roads, *Annual Report*, 1967, p 18; *Main Roads*, Dec 1953, p 55; Sept 1967, p 7

⁵¹⁰ *Main Roads*, Dec 1953, p 46

⁵¹¹ *Main Roads*, June 1962, p 108

⁵¹² Information from B N Loder, January 1996

Appointed to staff of MRB as Engineer in June 1925. Became Engineer in charge of Metropolitan Division in 1928. Chief Engineer (Metropolitan) in 1932 followed by post as Chief Engineer of DMR in 1937. Assistant Commissioner in June 1941. Commissioner in August 1946. Served as Colonel from 1941 to 1945 with Engineers in Northern Territory, New Guinea, Morotai and Borneo. Died on 18 August 1953 whilst inspecting bridge at Blandford on New England Highway.⁵¹³

Upton, T H

Senior Lecturer in Civil Engineering, University of Melbourne appointed to first Board of MRB in 1925. Had worked in England in 1914 and had visited USA in World War I. Employed by Victorian MRB 1919-22.⁵¹⁴ Finally left on 29 April 1935 for a post with the Water Board.⁵¹⁵

⁵¹³ Dept of Main Roads, *Annual Report*, 1953, pp 5-6; *Main Roads*, Sept 1953, p 1

⁵¹⁴ *Roadmakers*, p 83

⁵¹⁵ *Roadmakers*, p 158

D. RTA HISTORICAL THEMES COMPARED WITH NATIONAL AND STATE THEMES

NB. This is an edited version of a comparative table that is supplied by the Heritage Office of NSW. To see a version of this table, check the NSW Heritage Office website <http://www.heritage.nsw.gov.au>, and look for “Historical Themes” in the Historical Research section.

| Australian Theme | NSW Theme | Themes for RTA | Notes | Examples |
|--|--|---|--|--|
| 1 Tracing the natural evolution of Australia | Environment - naturally evolved | - | There are two aspects to this theme: (1) Features occurring naturally in the physical environment which have significance independent of human intervention (2) Features occurring naturally in the physical environment, which have shaped or influenced human life and cultures. | A geological formation, fossil site, ecological community, island, soil site, river flats, estuary, mountain range, reef, lake, woodland, seagrass bed, wetland, desert, alps, plain, valley, headland, evidence of flooding, earthquake, bushfire and other natural occurrences. |
| 2 Peopling Australia | Aboriginal cultures and interactions with other cultures | 1.0 Connecting Settlements in the new colony | Activities associated with maintaining, developing, experiencing and remembering Aboriginal cultural identities and practices, past and present; with demonstrating distinctive ways of life; and with interactions demonstrating race relations. | Place name, camp site, midden, fish trap, trade route, massacre site, missions and institutions, whaling station, pastoral workers camp, timber mill settlement, removed children's home, town reserve, protest site, places relating to self-determination, keeping place, resistance & protest sites, places of segregation, places of indentured labour, places of reconciliation |
| 2 Peopling Australia | Convict | 1.0 Connecting Settlements in the new colony | Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW (1788-1850) – does not include activities associated with the conviction of persons in NSW that are unrelated to the imperial 'convict system': use the theme of Law & Order for such activities | Prison, ticket-of-leave and probationary living quarters, landscapes-of-control, lumber yard, quarry, gallows site, convict-built structure, convict barracks, convict hospital, estate based on convict labour, place of secondary punishment. Great North Road (Item 4309678): Culverts on Great North Road (Item 4306010) |
| 2 Peopling Australia | Ethnic influences | 6.5 Undertaking wartime defence works 7.0 Responding to the impact of road construction or works | Activities associated with common cultural traditions and peoples of shared descent, and with exchanges between such traditions and peoples. | Ethnic community hall, Chinese store, place or object that exhibits an identifiable ethnic background, olive grove, date palm plantation, POW camp, ethnic quarter in a town. |

| Australian Theme | NSW Theme | Themes for RTA | Notes | Examples |
|---|--------------------------------|--|---|--|
| 2 Peopling Australia | Migration | 6.5 Undertaking wartime defence works 7.0 Responding to the impact of road construction or works | Activities and processes associated with the resettling of people from one place to another (international, interstate, intrastate) and the impacts of such movements | Migrant hostel, customs hall, border crossing, bus depot, quarantine station, works based on migrant labour, detention centre. |
| 3 Developing local, regional and national economies | Agriculture | 1.0 Connecting Settlements in the new colony 2.0 Providing roads and bridges through the Department of Public Works 6.0 Constructing roads and works (DMR) | Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture | Hay barn, wheat harvester, silo, dairy, rural landscape, plantation, vineyard, farmstead, shelterbelt, silage pit, fencing, plough markings, shed, fish farm, orchard, market garden, piggery, common, irrigation ditch, Aboriginal seasonal picking camp. |
| 3 Developing local, regional and national economies | Commerce | 1.0 Connecting Settlements in the new colony 2.0 Providing roads and bridges through the Department of Public Works 6.0 Constructing roads and works (DMR) | Activities relating to buying, selling and exchanging goods and services | Bank, shop, inn, stock exchange, market place, mall, bond store, customs house, trade routes, mint, Aboriginal trading places, Aboriginal ration/blanket distribution points, Aboriginal tourism ventures Former Square & Compass Inn, Lidsdale (Item 4305613); Hillview Garages (Item 4309663) |
| 3 Developing local, regional and national economies | Communication | 11.0 Managing traffic 14.0 Enhancing road safety | Activities relating to the creation and conveyance of information | Post office, telephone exchange, printery, radio studio, newspaper office, telegraph equipment, network of telegraph poles, track, airstrip. Traffic light lenses (Item 4300729) |
| 3 Developing local, regional and national economies | Environment cultural landscape | 7.0 Responding to the impact of road construction or works 8.0 Ameliorating environmental impacts | Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings | A landscape type, bushfire fighting equipment, soil conservation structures, national park, nature reserve, market garden, land clearing tools, evidence of Aboriginal land management, avenue of trees, plantation, place important in arguments for nature or cultural heritage conservation. Gwawley Bay Landscape Conservation Area (Item 4309050) |

| Australian Theme | NSW Theme | Themes for RTA | Notes | Examples |
|---|-------------|--|--|--|
| 3 Developing local, regional and national economies | Events | 8.0 Ameliorating environmental impacts | Activities and processes that mark the consequences of natural and cultural occurrences | Monument, flood marks, memorial, honour board, blazed tree, obelisk, camp site, boundary, legislation, place of pilgrimage, places of protest, demonstration, congregation, celebration. Honour board, 422 West Botany Street (Item 4309028); DMT Rosebery Opening Plaque (Item 4309018) |
| 3 Developing local, regional and national economies | Exploration | 1.0 Connecting Settlements in the new colony | Activities associated with making places previously unknown to a cultural group known to them. | Explorers route, marked tree, camp site, surveyor's notebook, mountain pass, water source, Aboriginal trade route, landing site, map. |
| 3 Developing local, regional and national economies | Fishing | 6.0 Constructing roads and works (DMR) | Activities associated with gathering, producing, distributing, and consuming resources from aquatic environments useful to humans. | Whaling station, fisher camp, seafood factory, fish shop, fish trap. |
| 3 Developing local, regional and national economies | Forestry | 6.0 Constructing roads and works (DMR) 8.0 Ameliorating environmental impacts | Activities associated with identifying and managing land covered in trees for commercial timber purposes. | Forested area, forest reserve, timber plantation, sawmill, mill settlement, arboretum, charcoal kiln, coppiced trees, timber tracks, whim. |
| 3 Developing local, regional and national economies | Health | 11.0 Managing traffic 14.0 Enhancing road safety | Activities associated with preparing and providing medical assistance and/or promoting or maintaining the well being of humans | Hospital, sanatorium, asylum, ambulance, medical school, baby clinic, landscaped grounds, pharmacy, medical consulting rooms. First Aid Box and Canvas Cover, North Sydney (Item 4310567) |
| 3 Developing local, regional and national economies | Industry | 1.0 Connecting Settlements in the new colony 2.0 Providing roads and bridges through the Department of Public Works 6.0 Constructing roads and works (DMR) | Activities associated with the manufacture, production and distribution of goods | Factory, workshop, depot, industrial machinery, timber mill, quarry, private railway or wharf, shipbuilding yard, slipway, blacksmithy, cannery, foundry, kiln, smelter, tannery, brewery, factory office. Ashby Dry Dock, Ashby (Item 4300303); Handwritten Notebooks (Item 4300706) |

| Australian Theme | NSW Theme | Themes for RTA | Notes | Examples |
|---|-------------|--|--|--|
| 3 Developing local, regional and national economies | Mining | 1.0 Connecting Settlements in the new colony 2.0 Providing roads and bridges through the Department of Public Works 6.0 Constructing roads and works (DMR) | Activities associated with the identification, extraction, processing and distribution of mineral ores, precious stones and other such inorganic substances. | Mine, quarry, race, mining field or landscape, processing plant, manager's office, mineral specimen, mining equipment, mining licence, ore laden shipwreck, collier, mine shaft, sluice gate, mineral deposit, slag heap, assay office, water race. |
| 3 Developing local, regional and national economies | Pastoralism | 1.0 Connecting Settlements in the new colony 2.0 Providing roads and bridges through the Department of Public Works 6.0 Constructing roads and works (DMR) | Activities associated with the breeding, raising, processing and distribution of livestock for human use | Pastoral station, shearing shed, slaughter yard, homestead, pastoral landscape, common, fencing, grassland, well, water trough, wool store. |
| 3 Developing local, regional and national economies | Science | 8.0 Ameliorating environmental impacts | Activities associated with systematic observations, experiments and processes for the explanation of observable phenomena | Laboratory, experimental equipment, text book, observatory, botanical garden, arboretum, research station, weather station, soil conservation area, fossil site, archaeological research site. Laboratory Photo Album, Newcastle (Item 4305416); Old Marulan Town – archaeological site (Item 4300302) |
| 3 Developing local, regional and national economies | Technology | 3.0 Experimenting with new ways of providing roads and bridges 6.1 Evolving construction techniques | Activities and processes associated with the knowledge or use of mechanical arts and applied sciences | Computer, telegraph equipment, underwater concrete footings, museum collection, office equipment, Aboriginal places evidencing changes in tool types. De Burgh truss bridge - Middle Falbrook Bridge, Glennies Creek (Item 4300131); Dare truss bridge - Cooreei Bridge, Williams River, Dungog (Item 4300177) |

| Australian Theme | NSW Theme | Themes for RTA | Notes | Examples |
|---|-----------------------------|---|--|--|
| 3 Developing local, regional and national economies | Transport | 1.0 Connecting Settlements in the new colony; 2.0 Providing roads and bridges through the Department of Public Works; 3.0 Experimenting with new ways of providing roads and bridges; 5.0 Planning road hierarchies; 6.0 Constructing roads and works (DMR); 11.0 Managing traffic; 12.0 Licensing and regulating drivers; 14.0 Enhancing road safety | Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements | Railway station, highway, lane, wharf, dray, stock route, canal, bridge, footpath, aerodrome, barge, harbour, lighthouse, radar station, tollgate, horse yard, coach stop. Old Windsor Road (Item 4301011); Cable Ferry, Wiseman's Ferry (Item 4300311) Great Western Road; Great Northern Road; State Highways |
| 4 Building settlements, towns and cities | Towns, suburbs and villages | 1.0 Connecting Settlements in the new colony 2.0 Providing roads and bridges through the Department of Public Works 6.0 Constructing roads and works (DMR) | Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages | Town plan, streetscape, village reserve, civic centre, subdivision pattern, abandoned town site, urban square, fire hydrant, market place, relocated civic centre, boundary feature. |
| 4 Building settlements, towns and cities | Land tenure | 9.0 Handling property acquired for works and other functions | Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal | Fence, survey mark, subdivision pattern, boundary hedge, stone wall, shelterbelt, cliff, river, rock engravings, shelters & habitation sites, cairn, survey mark, trig station, colonial/state border markers. Road boundary markers, Old Windsor Road; Alignment pin, Cnr Fremlin St, Botany (Item 4309667) |

| Australian Theme | NSW Theme | Themes for RTA | Notes | Examples |
|--|---------------|--|---|--|
| 4 Building settlements, towns and cities | Utilities | 7.0 Responding to the impact of road construction or works | Activities associated with the provision of services, especially on a communal basis | Water pipeline, sewage tunnel, gas retort, powerhouse, County Council office, garbage dump, windmill, radio tower, bridge, culvert, weir, well, cesspit, reservoir, dam, places demonstrating absence of utilities at Aboriginal fringe camps Drain grate, Rose Bay (Item 4309674); Sandstone culvert, Old Windsor Road, Glenwood (Item 4300339) |
| 4 Building settlements, towns and cities | Accommodation | 9.0 Handling property acquired for works and other functions | Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities. | Terrace, apartment, semi-detached house, holiday house, hostel, bungalow, mansion, shack, migrant hostel, homestead, cottage, house site (archaeological). |
| 5 Working | Labour | 1.0 Connecting Settlements in the new colony 2.0 Providing roads and bridges through the Department of Public Works 6.0 Constructing roads and works (DMR) | Activities associated with work practices and organised and unorganised labour | Trade union office, bundy clock, strike site, staff change rooms, servants quarters, shearing shed, green ban site, brothel, kitchen, nurses station. RTA Motor Registry, Newcastle West (Item 4305640); Bitumen Kettle, Lithgow (Item 4300728); Ganger's Time Book (Item 4300705) |
| 6 Educating | Education | 14.0 Enhancing road safety | Activities associated with teaching and learning by children and adults, formally and informally. | School, kindergarten, university campus, mechanics institute, textbook, field studies centre, library, physical evidence of academic achievement (e.g. a medal or certificate). Surveying Handbook, Parramatta (Item 4300708); DMR Film Library, Auburn (Item 4300710) |
| 7 Governing | Defence | 6.5 Undertaking wartime defence works | Activities associated with defending places from hostile takeover and occupation | Battle ground, fortification, RAAF base, barracks, war memorials, POW camp, bomb practice ground, parade ground, massacre site, air raid shelter, drill hall Aerial Camera Equipment, Rockdale (Item 4309002) |

| Australian Theme | NSW Theme | Themes for RTA | Notes | Examples |
|--|-------------------------------|--|---|--|
| 7 Governing | Government and administration | 4.0 Evolving administrative arrangements for the DMR/RTA | Activities associated with the governance of local areas, regions, the State and the nation, and the administration of public programs – includes both principled and corrupt activities. | Municipal chamber, County Council offices, departmental office, places acquired/disposed of by the state, protest site, physical evidence of corrupt practices. RTA Motor Registry, Newcastle West (Item 4305640) |
| 7 Governing | Law and order | 11.0 Managing traffic 12.0 Licensing and regulating drivers 13.0 Licensing and regulating vehicles 14.0 Enhancing road safety | Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes | Courthouse, police station, lock-up, protest site, law chambers, gaol complex, police vehicle, jail, prison complex (archaeological), detention centre. RTA Motor Registry, Newcastle West (Item 4305640); Radar Speed meter (Item 4309019) |
| 7 Governing | Welfare | 7.0 Responding to the impact of road construction or works | Activities and process associated with the provision of social services by the state or philanthropic organisations | Orphanage, retirement home, public housing, special school, trades training institution, employment agency. |
| 8 Developing Australia's cultural life | Domestic life | 9.0 Handling property acquired for works and other functions | Activities associated with creating, maintaining, living in and working around houses and institutions. | Domestic artefact scatter, kitchen furnishings, arrangement of interior rooms, kitchen garden, road camp, barrack, asylum. Semi-detached house, 37-9 Wattle St, Haberfield (Item 4305625) |
| 8 Developing Australia's cultural life | Creative endeavour | 3.0 Experimenting with new ways of providing roads and bridges 6.1 Evolving construction techniques | Activities associated with the production and performance of literary, artistic, architectural and other imaginative, interpretive or inventive works; and/or associated with the production and expression of cultural phenomena; and/or environments that have inspired such creative activities. | Opera house, cinema, exemplar of an architectural style, work of art, craftwork, and/or public garden, bandstand, concert hall, rock art site, rotunda, library, public hall; and/or a, particular place to which there has been a particular creative, stylistic or design response. Sydney Harbour Bridge (Item 4301067) |

| Australian Theme | NSW Theme | Themes for RTA | Notes | Examples |
|--|---------------------|---|--|---|
| 8 Developing Australia's cultural life | Leisure | 5.0 Planning road hierarchies 6.3 Constructing new roads | Activities associated with recreation and relaxation | Resort, ski lodge, chalet, swimming pool, dance hall, hotel, caravan park, tourist brochures, park, beach, clubhouse, lookout, common, bush walking track, Aboriginal Christmas camp site, picnic place, swimming hole. Souvenir menu, Auburn (Item 4300711) |
| 8 Developing Australia's cultural life | Religion | | Activities associated with particular systems of faith and worship | Church, monastery, convent, rectory, presbytery, manse, parsonage, hall, chapter house, graveyard, monument, synagogue, temple, mosque, madrasa, burial ground |
| 8 Developing Australia's cultural life | Social institutions | | Activities and organisational arrangements for the provision of social activities | CWA Room, Masonic hall, School of Arts, Mechanic's Institute, museum, art gallery, RSL Club, public hall, public library, community centre, Aboriginal mission hall or school room. |
| 8 Developing Australia's cultural life | Sport | 5.0 Planning road hierarchies 6.3 Constructing new roads | Activities associated with organised recreational and health promotional activities | Oval, racecourse, swimming pool, bowling club, bowling green, tennis court, rugby field, speedway, bocce court. Honour Board, Rockdale (Item 4309028); Trophies & Memorabilia, Rockdale (Item 4309014) |
| 9 Marking the phases of life | Birth and Death | 7.0 Responding to the impact of road construction or works | Activities associated with the initial stages of human life and the bearing of children, and with the final stages of human life and disposal of the dead. | Birth control clinic, maternity hospital, nursery, baby clinic, funeral parlour, cremation site, cemetery, burial register, memorial plantings, shipwreck with loss of life, |
| 9 Marking the phases of life | Persons | 4.0 Evolving administrative arrangements for the DMR/RTA | Activities of, and associations with, identifiable individuals, families and communal groups | A monument to an individual, a family home, a dynastic estate, private chapel, statue, commemorative place name, place dedicated to memory of a person (e.g. hospital wing). RTA Honour Board, Centennial Plaza (Item 4302670); Honour Board, Rockdale (Item 4309028) |

E. BIBLIOGRAPHY

MAPS AND PLANS – STATE RECORDS

Department of Lands - Roads Branch, Cancelled Plans 1880-1974, SR Map 29138-29999; 34145-38993

State Records also holds numerous maps and plans of roads, often those created by the Surveyor-General and later the Lands Dept. A full list is available at State Records.

MAPS AND PLANS – DEPARTMENT OF LANDS

The Plan Room located in the former Lands Department building holds thousands of road alignment plans, many dating back to the early nineteenth century. The most extensive range is the Parish Road series at the small number 1603.

MANUSCRIPT SOURCES - STATE RECORDS

The following is a selection of the more useful sources.

Department of Lands - Roads Branch, Correspondence Files, 1867-1945, 10/15032-10/16908 (These mainly deal with issues such as alignment of roads and administrative matters such as dealings with road trusts.)

Department of Lands - Roads Branch, Indexes and Registers to Correspondence, 1867-1926, 9/298-357

Department of Main Roads, Miscellaneous files, 1926-78 (detailed shelf list provides file titles), 10/27262-10/27476

Department of Main Roads, State Highways correspondence files, 1906-84 (arranged by State Highway Number and then by local government area), 13/9775-13/9971

Department of Public Works, Correspondence - Special Bundles, 1846-1963 (full listing available - many deal with roads)

Department of Public Works, Specifications, tenders and contracts for bridges, 1885-98, 3/840-4; 3/887

Department of Public Works, Contracts, specifications and tenders for bridges, 1890-1925, 7/5873-77

Department of Public Works, Contracts and specifications (mainly for bridges), 1892-1913, 2/3, 2/919-30; 8/2241

Department of Public Works, Roads and Bridges Branch, Index to Public Works and Main Roads Board bridges, ferries and punts, 1920-40, 3/886

Department of Public Works, Roads and Bridges Branch, Correspondence re roads, 1871-1906, 20/13407-415

Department of Public Works, Roads and Bridges Branch, Correspondence re roads, 1894 (10/43932.1); 1907-14, 20/13416-74

Department of Public Works, Roads and Bridges Branch, Correspondence re roads and bridges, 1913-21, 20/13614-26

Department of Public Works, Roads and Bridges Branch, Correspondence re roads, 1922-35, 20/13545-613

Department of Public Works, Roads and Bridges Branch, Correspondence re bridges, 1907-35, 20/13475-544

OFFICIAL PUBLICATIONS

NSW - Commissioner for Road Transport and Tramways, *Annual Reports*, 1931-51

NSW - Dept of Main Roads, *Annual Reports*, 1933- 85

NSW - Dept of Motor Transport, *Annual Reports*, 1952- 88

NSW - Main Roads Board, *Annual Reports*, 1926-32

NSW - Public Works Dept, *Annual Reports*, 1912-18

Official Year Book of New South Wales, 1917, Sydney

PRIMARY SOURCES - NSW PARLIAMENTARY PAPERS

'Roads (Report from the Commissioner)', *V & P L A N S W*, 1865-6, I, pp 941-960

'Report of the New South Wales Transport and Highways Commission, 30 June 1951', *NSWPP*, 1950-2, IV pp 501-3

'Report of the Superintendent of Motor Transport, 30 June 1953', *NSWPP*, 1953-4, III pp 505-68

PRIMARY SOURCES - PRINTED BOOKS AND ARTICLES

Collins, David, *An Account of the English Colony in New South Wales*, Vol II, London, 1802

Commissioner for Road Transport, *Motor Traffic Handbook*, Dec 1940

Maclehose, James, *Picture of Sydney and Strangers' Guide in New South Wales for 1839*, Sydney, 1839

Main Roads, Sept 1929-June 1970

Newell, Hugh Hamilton, 'Road Engineering and its Development in Australia 1788-1938', *Transactions of the Institution of Engineers, Australia*, Feb 1938, XIX

SECONDARY SOURCES - PRINTED BOOKS AND ARTICLES

Australia - Dept of Housing and Construction, *Glebe Project*, AGPS, Canberra, 1980

Coltheart, Lenore, *A Guide to the History of the Public Works Department, New South Wales*, PWD, Sydney, 1991

Coltheart, Lenore & Don Fraser, *Landmarks in Public Works: Engineers and their works in New South Wales 1884-1914*, PWD & Hale & Iremonger, Sydney, 1987

Department of Main Roads, *The Roadmakers - A History of Main Roads in New South Wales*, Department of Main Roads, Sydney, 1976

Evans, L H, *A History of Concrete Road Bridges in New South Wales*, RTA, Sydney [draft copy]

Hainsworth, D R, *The Sydney Traders - Simeon Lord and His Contemporaries*, Melbourne University Press, Melbourne, 1981

Hawkins, Ralph, *The Convict Timbergetters of Pennant Hills: A History and Biographical Register*, Hornsby Shire Historical Society, Hornsby, 1994

Historic Houses Trust, *Demolished for the Public Good - Crimes, Follies and Misfortunes - Demolished Houses of New South Wales*, Sydney, 1988

A History of SCATS, RTA, July 1992

Hovenden, Lester, 'The impact of the motor vehicle, 1900-39' in Garry Wotherspoon (ed), *Sydney's Transport: Studies in Urban History*, Hale & Iremonger, Sydney, 1983, pp 139-154

Hulscher, Frank R, *A signal career: desultory reminiscences of the development of traffic light signals in NSW from 1933 to 1993*, Traffic Control Unit, Roads and Traffic Authority, NSW, 1993

Jervis, James, 'The Road to Parramatta - Some Notes on its History', *JRAHS*, 13, 1927

Karskens, Grace, 'As good as any in England: the background to the construction of the Great North Road', *JRAHS*, 68, Dec 1982, pp 193-204

Karskens, Grace, 'The Construction of the Great North Road, NSW, 1826-1836', *Multi-disciplinary Engineering Transactions - Institution of Engineers, Australia*, 1985

Karskens, Grace, 'Defiance, deference, and diligence: three views of convicts in New South Wales road gangs', *Australian Journal of Historical Archaeology*, 4, 1986, pp 17-27

Knott, John William, 'Road traffic accidents in New South Wales 1881-1991', *Australian Economic History Review*, XXXIV, 2, Sept 1994, pp 80-116

Knott, John William, 'Speed, modernity and the motor car: the making of the 1909 *Motor Traffic Act* in New South Wales', *Australian Historical Studies*, 26, No 103, Oct 1994, pp 221-241

Larcombe, F A, *The Origin of Local Government in New South Wales 1831-58*, Sydney University Press, Sydney, 1973

Lowrie, P R, *SCATS - Sydney Co-ordinated Adaptive Traffic System: A Traffic Responsive Method of Controlling Traffic*, RTA, Sept 1992

McBryde, Isabel, *Records of Times Past - Ethno historical essays on the culture and ecology of the New England tribes*, AIAS, Canberra, 1978

O'Connor, Colin, *Spanning Two Centuries: Historic Bridges of Australia*, University of Queensland Press, St Lucia, 1985

UNPUBLISHED REPORTS

Karskens, Grace, George Street North, The Rocks, Sydney: An Historical and Archaeological Study 1788-1980s, For Conybeare, Morrison & Partners and the Sydney Cove Authority, November 1989

Kass, Terry, Parramatta Hospital: An Historical Analysis for an Archaeological Assessment of the Site, For Consultant Archaeological Services, For Public Works Department of NSW, September 1990

RTA REGIONAL AND SUB-REGIONAL HISTORIES

Phase I Heritage Study - Botany RTA Sub-Region for Section 170 Heritage and Conservation Register, Austral Archaeology, 2004

RTA Sydney City Sub-region Heritage Study, Godden Mackay Logan, March 2004

Penrith Sub Region Phase I Study, Clive Lucas Stapleton and Partners, March 2004

Liverpool Sub-Region Phase I Heritage Study, Sue Rosen and Associates, March 2004

RTA Review: Warringah Sub-Region heritage study, City Plan Heritage, March 2004

RTA Regional Heritage Study: Hawkesbury Sub-region, Ian Jack Consulting Pty Ltd, April 2004

RTA S170 Heritage Register Upgrade Project - Southern Region Potential Heritage Items, Godden Mackay Logan, November 2001

RTA Regional Heritage Study. Northern Region, Ian Jack Consulting Pty Ltd, April 2004

RTA s170 Heritage and Conservation Register Upgrade, Hunter Region, Heritas Architecture, August 2003

RTA South West Region Heritage Study, Freeman Randall Associates and Dr Susan Marsden, August 2003

RTA Regional Heritage Study: Western Region, Ian Jack Consulting Pty Ltd, April 2004

E. INFORMATION SOURCES FOR THE HISTORY OF THE RTA AND HOW TO USE THEM

The following section is divided by type of record and by the agency currently caring for those records.

N B

Regional and branch offices retain their own records and it may be more profitable to examine these sources before other records are checked.

The type of records they hold include:

Files

Maps and plans (now mainly on aperture card or digitised)

Surveyor's Field Books

Printed Materials

The main printed sources include:

Annual Reports of the Commissioner for Roads (later half of the nineteenth century and not published for all years)

Annual Reports of the Public Works Department, from 1889 onwards. They are usually divided into sections, with separate sections for roads.

For the Main Roads Board and Department of Main Roads, for the period from 1925 onwards:

Annual Reports. These are very detailed and provide some detail about all major road construction work.

Main Roads. Magazine published by the MRB/DMR from 1929 to 1970. Often provides overviews of work, special articles on particular projects or matters of interest.

Maps and Plans

RTA Document Management Centre, cnr Hall and Percy Street, Auburn

This records repository has aperture card copies of maps and plans prepared by the MRB, DMR and RTA, as well as some created by the Roads and Bridges Branch of the Public Works Department. Many of the plans have also been digitised. For security reasons, access to these plans is now tightly controlled.

Many of the plans are available at regional branch offices, but the office at Auburn has microfilm copies only of almost all plans for the whole state.

The plans and drawings of this section have been incorporated into the CARMS records management system in operation within the RTA.

Plan Records Room, Lands Department, Bridge Street

Since roads had to be officially aligned before they could be taken into the control of government, alignment plans of them were drawn for record purposes. The administration of the gazettal and approval of alignment was controlled by the Roads Branch of the Lands Department. Plans drawn were later filed in the Plan Records Room of the Lands Department in Bridge Street. These plans only show the route of roads, and very rarely provide any construction details, since this was not a concern of the Lands Department. Copies can be obtained from aperture cards held at the Plans Room of the Lands Department, Prince Albert Road, Sydney.

State Records of NSW, Globe Street, The Rocks and O'Connell Street, Kingswood

Some plans have been superseded or are no longer required by the Lands Department. They have been sent to NSW State Records. These are held at the Kingswood repository, though there are aperture card copies of some of them at Globe Street.

Photographs and Films

RTA Document Management Centre, cnr Hall and Percy Street, Auburn

The RTA photographic and film library collection originally held at Rosebery is now located at Auburn.

Mitchell Library, Macquarie Street, Sydney

The Government Printer's photographic collection available through PICMAN at the Mitchell Library contains many older views of roads and roadworks by the DMR and the RTA. Numerous older images of roads and roadworks are also available in other collections of photographs held by the Mitchell Library.

Government Department Records

Usually these are manuscript or typescript files. Occasionally, they are printed reports or bound volumes, such as books of photographs. In general, this section deals with the administrative records created by the government departments in carrying out their functions.

State Records of NSW, Globe Street, The Rocks and O'Connell Street, Kingswood

The records held by State Records consist of the records of permanent value, which are no longer required by government departments in the day to day running of their offices. State Records of NSW also holds large quantities of records in semi-active storage. These consist of records still required by government departments, but which are not needed for their daily activities. The RTA has large quantities of records in semi-active storage at the Government Records Repository at Kingswood. The usefulness of these record series

is enhanced by the fact that many have detailed finding aids listing the nature of every file in them, a rare occurrence in many archives.

The records of government departments most relevant to roads are arranged by the Department that created them:

Colonial Secretary's Department, Correspondence, Special Bundles

This series, which has a variety of shelf numbers contains many useful items, such as Reports from the Surveyor General and Surveyor of Roads and Bridges on the colony's roads from the 1820s to the 1840s.

Additionally, there are other bundles concerning roads. Examples include: Southern roads, including reports and plans, 9/2684, Roads in the Illawarra District 1834-44, including reports, 9/2688

Public Works Department

Some of the more useful series are:

Department of Public Works, Correspondence - Special Bundles, 1846-1963 (full listing available - many deal with roads)

Department of Public Works, Specifications, tenders and contracts for bridges, 1885-98, 3/840-4; 3/887

Department of Public Works, Contracts, specifications and tenders for bridges, 1890-1925, 7/5873-77

Department of Public Works, Contracts and specifications (mainly for bridges), 1892-1913, 2/3, 2/919-30; 8/2241

Department of Public Works, Roads and Bridges Branch, Index to Public Works and Main Roads Board bridges, ferries and punts, 1920-40, 3/886

Department of Public Works, Roads and Bridges Branch, Correspondence re roads, 1871-1906, 20/13407-415

Department of Public Works, Roads and Bridges Branch, Correspondence re roads, 1894 (10/43932.1); 1907-14, 20/13416-74

Department of Public Works, Roads and Bridges Branch, Correspondence re roads and bridges, 1913-21, 20/13614-26

Department of Public Works, Roads and Bridges Branch, Correspondence re roads, 1922-35, 20/13545-613

Department of Public Works, Roads and Bridges Branch, Correspondence re bridges, 1907-35, 20/13475-544

Lands Department - Roads Branch

Department of Lands - Roads Branch, Correspondence Files, 1867-1945, 10/15032-10/16908 (These mainly deal with issues such as the alignment of roads and administrative matters such as dealings with road trusts.)

Department of Lands - Roads Branch, Indexes and Registers to Correspondence, 1867-1926, 9/298-357

MRB/DMR/RTA (Selection only)

Main Roads Board, Board Minutes, 1925-32, 6/17540-1

Photographs of Bridges constructed in NSW 1925-55, 6/17253-258

Main Roads Board, Photographs, c 1876-1932, 6/17526-536

Road Transport and Tramways, Ferry maintenance books, 1913-39, 6/22448-454

Department of Main Roads, Miscellaneous files 1926-78, (A detailed shelf list provides file titles), 10/27262-10/27476

Department of Main Roads, State Highways correspondence files, 1906-84, (arranged by State Highway Number and then by local government area), 13/9775-13/9971

Large quantities of material from the RTA are still being processed by State Records of NSW.

RTA Document Management Centre, Cnr Hall and Percy Streets, Auburn

This centre retains the records, which are still in active use by the RTA. All non-active files are now either stored for the Corporate Head Office and Sydney Region of RTA at the Government Records Repository at Kingswood, or Pickfords Records Management at Campbelltown or have been transferred to State Records as a permanent archive.

The records mainly date from the 1950s onwards, and include the working files of all activities engaged in by the department. If seeking material about particular issues, or roads, be aware that certain classes of records have been judged as possessing no value for permanent retention and, prior to the establishment of a professionally managed records system, may have been destroyed. Records of permanent value are retained.

Access conditions

Any researcher or historian seeking to study any asset of the RTA for heritage purposes, needs the authorisation of the Director, Corporate Services, for records less than thirty years old, whether they are held at the RTA Document Management Centre at Auburn, the Government Records Repository or at State Records of NSW, Kingswood or

Pickfords Records Management, Campbelltown. Records older than thirty years are available to the public at the State Records of NSW. The RTA has closed some records older than 30 years to public access.

Disposal

Records of permanent value are transferred to the Government Records Repository at Kingswood, and ultimately, if classified as a State Archive, they are transferred to State Records of NSW. Until then, they are stored at Auburn, for use by RTA officers. Disposal and retention of the records is based upon the professional recommendations of State Records of NSW.

The procedure for the disposal of RTA non-current records is as follows:

- a. Records sentenced for permanent retention are transferred to Pickfords Records Management, Campbelltown for future transfer to State Records,
- b. Records sentenced for temporary retention for future destruction are stored at Pickfords Records Management, Campbelltown,
- c. Records that are deemed under current disposal retention schedules as temporary but have operational value to the RTA are retained as Permanent RTA Retention and stored at Pickfords Records Management, Campbelltown

All records sentenced prior to June 2000 that fall within the above categories are stored at Government Records Repository, Kingswood or transferred to Government Records Repository, Kingswood as State Archives.

The disposal of records is based upon approved disposal recommendations authorised by the State Records of NSW.

Since not all RTA offices use the storage facilities at Auburn, researchers may need to contact the relevant office for records pertaining to their area of interest.

Locating Records

The records management system, CARMS, used by the RTA, is the principal source for data about RTA records. CARMS incorporates all records created since September 1992, when it first came into operation. Many files and records created before then, under earlier document management systems were transferred to CARMS. The CARMS system controls records in current use, those in storage at Auburn, as well as those transferred to State Records of NSW. In addition, the RTA Document Management Centre at Auburn holds a register of other records not controlled by that records management system. Some fieldbooks are held at Auburn, but the Survey Section at Parramatta holds the bulk of them.

Other sources of information on the assets of the RTA include:

Bridge index maintained by the Bridge Section;

PIMS maintained by the Property and Land Information System;

RoadLoc

All of these provide a brief summary and are linked to major information sources, principally files.

To locate records about any asset, it is best to contact the RTA Document Management Centre at Auburn for records older than twenty years, and the Regional Office for records earlier than twenty years old.

An Outline of the Record Organisation System of the RTA

The following is an outline of how the record keeping system of the RTA evolved, as explained by Charlie Smith, Manager, and Helen Sole, Records Discovery Officer at the RTA Document Management Centre, Hall and Percy Street, Auburn.

Correspondence is generally divided into Council [Local Government]; Freeways; and State Highways

Council, Freeway and State Highway Files

a) LOCAL GOVERNMENT AREAS – MASTER NUMBERS

The numbering of these files is based on the Local Government Areas in which road and bridge works or related activities have been, or are to be undertaken.

In addition to the numbers indicating the Local Government Areas, files dealing with Freeway and State Highways have additional identification to distinguish them from other files.

Freeway files are prefixed by the numbers allocated to the Freeways.

State Highway files are prefixed by the numbers allocated to the Highways.

Examples of the use of the Local Government Area master numbers for the above types of files are:

| | |
|------------------------------------|--------|
| North Sydney Municipal Council No. | 329 |
| Council File | 329 |
| State Highway File | 10/329 |
| Freeway File | F1/329 |

b) RURAL AND URBAN LOCAL ROADS FILES

Files dealing with works on Rural and Urban Local Roads are identified respectively by the letters RL or UL following the Councils' master numbers. These letters are used instead

of the decimal point shown in sub-section C below. However, identification of the type of work to be carried out is still indicated by the first number following as also shown in sub-section C.

c) DECIMAL IDENTIFICATION

Following the number of the Local Government Area, another number is used to identify the type of work. These identification number are:

- .1 Construction and related matters
- .2 Maintenance and related matters
- .3 Application for Proclamations of State Highways, Trunk and Ordinary Main Roads and Declaration of Secondary Roads and Motorways.
- .4 Applications for Proclamations of Developmental Roads and Works.
- .5 General matters. (Uniform terminal numbers are used where the subjects have general application to the majority of Council areas, e.g. signposting .5301. Policy files exist in the Miscellaneous/Management group for these subjects.
- .6 Special Subsidy and Unclassified Roads.
- .7 Applications for Proclamations of Tourist Roads.
- .8 Bridgeworks. Construction and related matters (for Rural and urban Local Roads files only).

OTHER FILE SERIES

Other series of files are identified by capital letters forming part of the file registration numbers. These groups and letters are as follows:

| | |
|---|--|
| Miscellaneous | M |
| Human Resources (was Staff) | S |
| Industrial and Employment | I&E |
| Accounting | A |
| Mechanical – including Fleet Management, Motor Vehicles | General, Large and Small Plan Items, and P |
| Technical | T |
| Traffic | TS |

Since 1997 all of the above series except Human Resources Series Files have been incorporated into Management Series Files

The file numbering method used for the Management Series Files is the last two figures of the year of registration to be followed by a consecutive numbering with each year commencing at '1' with a full descriptive title.

RTA Survey Section, Octagon Centre, 99 Phillip Street, Parramatta, Level 4

Contact – Bill Evans but researchers should direct their enquiries through Maria Whipp, Environment Branch at Head Office.

The Survey Section is responsible for survey work for the RTA but it also has staff from the Site Locations Unit, who maintain heritage data and materials.

The principal sources held by this Section are:

1. Several databases of sites of heritage and historic interest that have been identified in earlier studies and by Survey staff before the RTA undertook roadworks on any road. These databases do not have information about heritage value and history but they include highly accurate information about location. Access to the data is available to those undertaking work for the RTA.
2. A collection of RTA survey fieldbooks dating from 1925 onwards. These were completed by surveyors in the field as the basis for drawing DMR or RTA plans. These often contain information that was not included in the final plan. Fieldbooks are held for the Sydney, Goulburn and Wollongong regions. Fieldbooks for other regions are currently held in regional offices. All of the fieldbooks held at Parramatta have been catalogued.
3. A few original plans are held. This section holds a large quantity of copies of historical plans obtained from the Lands Department, Railways, State Records, Sydney Water and from the RTA. The information from these plans has mostly been scanned to computer to permit the creation of overlays from a variety of sources to assist the identification of historic sites.
4. A Surveying Museum is also located in this section. It contains surveying equipment, instruments and artefacts as well as a limited number of original records.