

TRANSPORT IN THE VICTORIAN ENVIRONMENT*

INTRODUCTION

Transport, the organised movement of people and goods from one place to another, is a necessary function in all but the most simply organised communities. In highly organised industrial communities, daily life with all its variety of commercial, educational, and recreational activities would be impossible without the means of transport. Throughout the history of Victoria, a considerable proportion of both public and private resources has always been spent on providing transport in its various forms. During 1973-74, Australia's expenditure on publicly owned land transport systems, private motor vehicle purchase and operation, and sea and air transportation was estimated to total \$5.4 billion.

Victoria, like the North American States but unlike Europe, is a country of largely low density population centres with long distances between settlements. The development of its primary production, secondary industry, trade and commerce appear to endorse the concept of the "tyranny of distance". Such developments as now exist would have been impossible without the parallel developments in transport. The history of Victoria's transport services begins with shipping, both along the Murray River and around the sea coast. It continues with the development of the Victorian railway system from 1854, with the intensive development of municipal roads from 1874 and of State main roads from 1913, and with the development of intra-state air routes from 1960.

Underlying the historical development in this article is the interaction between transport and the overall development of Victoria. The interaction between transport and the environment will also be considered. The article is not intended to be a definitive record of the development of transport in Victoria, but rather an account of how transport has affected the people in this State.

1834 TO 1851

Victoria's first European settlement occurred in 1834 when the Henty brothers squatted on Crown land at Portland. At this time, Victoria was still the Port Phillip District of the Colony of New South Wales. In the following year, John Batman, and later John Pascoe Fawkner, similarly squatted on the present site of Melbourne's centre. By 1836, the non-Aboriginal population of the District had increased to 177, and pastoral activity was taking place up to 130 kilometres† inland. Fifteen years later, the non-Aboriginal population had increased to 77,345 and development in the District was beginning to cover a band of country from Gippsland and the upper Murray River in the east to the Western District and Wimmera in the west. Such transport as existed was by water (both river and sea) and over land tracks and "roads".

Transport by ship flourished early in Victoria. Seaports developed at settlements such as

* This is the fourth in the series of special articles on Victoria's environment and man. Previous articles have appeared in Chapter 1 of the *Victorian Year Book* since 1976.

† All distances including those pertaining to the early days of transport development have been expressed in metric units.



Melbourne, Geelong, Portland, and Port Albert, while along the Murray River, ports grew at centres such as Echuca and Swan Hill. Prior to the construction of railways in Victoria, settlers within easy carting distance of the Murray or Darling Rivers had easier access to Melbourne than those in the more isolated Victorian inland settlements.

Between 1835 and 1851, a network of private roads came into being to serve those areas of the District settled by agriculturists and squatters. The construction and management of these roads was the responsibility of the Government of the Colony of New South Wales. Little money was allocated for the construction of roads and bridges, and thus such roads as existed were mostly bush tracks passable only in dry weather. Much of the responsibility for providing roads was delegated by the government to local enterprise.

This period was also marked by a lack of overall planning. Many sections of land were surveyed and sold without provision for roads, and many of the tracks made by the original settlers were adopted as roads and proclaimed public highways.

A notable exception to this absence of planning was the City of Melbourne which was laid out by the surveyor, Robert Hoddle, in 1837. The 30.2 metre wide streets and the spacious parks are a tribute to his wisdom and foresight. In securing them he apparently had to use much persuasion with higher authorities. His example was not to be followed outside the inner area even though the shores of Port Phillip Bay, being flat or gently undulating, offered little restriction to transport and thus encouraged the expansion of urban development both to Williamstown and towards Brighton.

With the coming of the mining boom in 1851, Victoria was badly placed from the point of view of its transport. With most roads being little more than dry weather bush tracks, the constraints of distance were much more pronounced over land than water. This constraint, combined with the fact that most of Victoria's major streams flow northward from the Central Highlands and exhibit an irregular seasonal flow pattern, made imperative the establishment of an overland method for exporting the pastoral and other products of Victoria and those of south-west New South Wales. The establishment of a railway system thus came to be regarded as essential for effective integration of the District's basic resources into the Victorian economy. The fear of inter-colonial competition for this traffic influenced the early Victorian attempts to establish commodity flow patterns towards Melbourne.

1851 TO 1890

The four decades from 1851 to 1890 saw extensive growth of the Colony of Victoria. After one and a half decades as the Port Phillip District of the Colony of New South Wales, Victoria in 1851 became a separate colony with its own Legislative Council. The discovery of gold in 1851 gave considerable impetus to Victoria's population growth. The non-Aboriginal population grew to 540,322 in 1861. Of this number, 139,916 were in Melbourne, and about 23,000 in Geelong, 22,000 in Ballarat, 13,000 in Bendigo, 13,000 in Castlemaine-Chewton, 5,000 in Creswick, 3,000 in Maldon, and between 2,000 and 3,000 each in Inglewood, Maryborough, Beechworth, and Amhurst. The remainder, of about 311,000 were dispersed thinly and widely throughout the Colony with slightly greater

concentrations in the western parts than elsewhere. By 1890, the population of Victoria had grown to approximately 1.1 million persons.

This considerable increase in population, and its dispersal throughout the Colony, effected a significant increase in industrial activity and in primary industry — grazing, wheat growing, dairy farming, and wool growing. Together, these activities greatly increased the need for transport services — for the movement of both people and products. The Government of the Colony of Victoria thus began to take an active part in promoting the growth of transport services after 1851, and legislated for the development of both roads and railways.

In November 1851, the Government appointed a Select Committee of the Legislative Council to inquire into and report on the state of roads and bridges in the Colony. The Report of the Committee, published in 1852, described the deplorable conditions of these roads and concluded that it would be extremely difficult and expensive to construct many of them on the lines then reserved for them. The Committee considered that "some system should be adopted by which lines of internal communication may be aligned according to a general plan, commencing with the formation of macadamised roads at towns and extending them into the interior, these roads to be constructed as the resources of the Government will admit, so as, by degrees, to open up the country and develop a perfect network of roads throughout the Colony".

As a result of the Report of the Select Committee, the Government in 1853 passed an Act to establish a Central Roads Board with exclusive powers over main roads. The Act also provided for the establishment of District Roads Boards to construct and maintain local roads. These District Roads Boards served as the earliest phase of rural local government. It was during the two decades of their existence that the expansion of agricultural activity beyond the immediate reaches of the ports and mining towns really began.

Control over the construction and maintenance of roads was altered further by several later Acts. The Land Act of 1862 allowed selection of road alignments before survey. As in the early days of settlement, badly located and poorly maintained roads were the usual result, particularly in Gippsland. Under the Municipal and Land Corporations Act of 1863, roads within a Shire or District were put under the control of the Shire Council or District Roads Board. Roads outside these areas remained the responsibility of the central government. The Shires Act of 1866 gave more definite municipal form to some Roads Boards, while the remaining Boards were abolished with the enactment of the Local Government Act of 1874.

This 1874 Act, though it granted municipalities a regular endowment of money, did this so inequitably that established areas benefited at the expense of new and developing areas. These inequities remained until the 1891 Local Government Act did much to remove them.

The great influx of population and the opening of goldfields around Ballarat and Bendigo had necessitated improved communication. At this stage, the technology of road construction was still relatively undeveloped, and horse or bullock drawn vehicles then in use were slow. Because of this, railway construction gained momentum, whereas roadworks were regarded by the Government to be of secondary importance. River and coastal shipping services provided for the needs of port towns, while elsewhere the railways were to reign supreme until the turn of the century.

Prior to the 1850s, there had been neither inducement nor need for the large scale construction of railways away from the coast. Most of the population in Victoria lived in Melbourne, Geelong, or around the other minor coastal ports, and used the rapidly developing shipping trade as their means of transport. However, following the discovery of gold, it became apparent that railways were the only effective means of providing for the extensive inland movements of people and goods.

In 1855, the Commission appointed by the Government to inquire into the condition of the goldfields after the Eureka incident, noted the need for railways which would ameliorate the problem of isolation in remote districts, assist commerce, and improve the social conditions of the miners.

Transport costs were high. First, rates varying from \$34 to \$200 per tonne were being paid for the carriage of goods to Sandhurst (now Bendigo) along muddy bush tracks, and in many cases the charge to miners for the carriage of goods by slow animal power far

exceeded their capital value. Costs to the commercial interests were extremely high, and in addition, the community was faced with a heavy charge on public revenue for police protection. Excessive wages and the high price of fodder during the period of "gold fever" meant that the cost of carting would have remained high even after the suggested construction of macadamised roads at an estimated \$7,400 per kilometre. Second, road building and maintenance costs were high. Timber plank roads, though useful as a temporary measure, were costly. While their initial capital cost was low, maintenance costs were excessive because of the frequent need to replace planks.

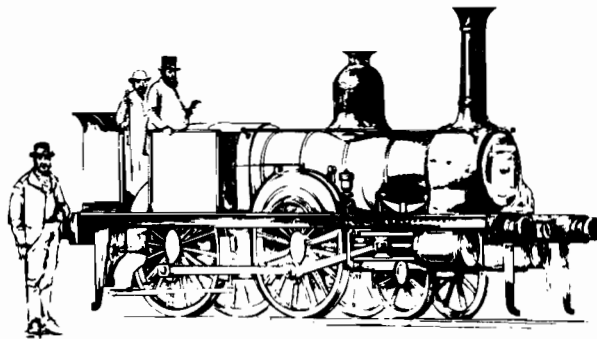
Railways

The huge expenditure required for railway construction was considered justified because of the new settlement it would encourage, and the impetus it would give both to production and to enhancing the value of Crown lands. It was expected to bring about an annual saving of \$8m to \$10m to the populations of the diggings and their neighbourhoods. This would encourage them to build more permanent dwellings and settle in the districts where they worked, or enable them to move at a cheaper rate if they wished to settle and seek employment elsewhere. The importance of railways is reflected in the fact that there was a Minister for Railways. This title existed up to 1935, when a Minister of Transport was named, taking over responsibility for the railways as well as other forms of transport.

During this era it was hoped that railways with their faster travel would have a very great effect on the morality of the society by doing away with the booths on the road and thereby eliminating the night brawls and scenes of bawdiness that were often enacted within them.

The first railway in Victoria was built from Melbourne (Flinders Street Station) to Sandridge (Port Melbourne) by the Hobsons Bay Railway Co and opened to passenger and goods traffic in 1854. Its success ensured continued railway construction. By 1862, there were additional lines from Flinders Street to St Kilda (opened 1857), Brighton Beach (1861), and Hawthorn (1861); from Newport to Geelong (1857); from Spencer Street to Footscray, Newport, and Williamstown (1859), and to Essendon (1860); from Footscray to Sunshine and Bendigo (1862); and from Geelong to Ballarat (1862). The railway from Bendigo to Echuca was the only other main line built and opened during the 1860s. It was during this period that the whole railway system came under the management of the Victorian Government. The Victorian Railways Department was created by an Act under the responsibility of the Minister for Railways, specified as 19 Victoria 1856 No. 15, which was given Royal Assent on 19 March 1856; indeed the Act still exists in much the same form today.

During the 1870s, some significant extensions to this system were made. In south-western Victoria, lines were extended from Geelong to Colac (1876-1877) and Queenscliff (1879). In the west and north-west, lines were extended from Ballarat to Horsham (1874-1879), to Maryborough and St Arnaud (1874-1878), and from Maryborough to Castlemaine (1874) and Avoca (1876). In the north-east, the line towards Wodonga was extended from Essendon to Seymour and Longwood (1872-1873), while in Gippsland, the



main line was built from South Yarra to Oakleigh, Dandenong, and Sale (1877-1879). It was not until the 1880s, however, that the Victorian railways system really "boomed".

Thus, beginning with a connection between the two major ports of Melbourne and Geelong, the main lines were constructed to the major mining fields and thence to the pastoral country beyond. Intensification of the pattern of agricultural land-use went hand in hand with the construction of branch lines, until all settled parts of the Colony were within a day's carting distance (13 to 16 kilometres) of a railway station. There was a strong link between railway expansion and agricultural development; the existence of a railway line near a former mining district meant that miners could settle down to "live off the land" after the ephemeral mining boom had passed. Significantly, from 1868 to 1880, \$400,000 per annum received from the sale of Crown land was placed in a fund earmarked for railway construction.

Railways came to dominate the political scene as well as the rural landscape. During the boom of the 1880s, the only way governments could survive was by introducing Railway Construction Bills providing each electorate with a line. Such "Octopus" Bills were actually passed in 1880 and 1884 and it was only when this process culminated in an extravagant proposal in 1890 that the system of railway construction was reorganised, with a Parliamentary Standing Committee being formed to examine and report on all new proposals. That Committee's activities and the onset of the economic slump of the 1890s, caused almost all further expansion of the system to be deferred for two decades. For nearly twenty years, practically the only new lines to be opened were the experimental narrow gauge railways at the periphery of the mountain districts and the light broad gauge lines through the Mallee where settlement for agricultural purposes had just begun. In that vast region of north-west Victoria, the desire to settle the rich wheatlands, together with pressures extended by the promoters of Mildura and other Murray irrigation settlements, brought about the construction of a series of long parallel lines only 32 kilometres apart.

Metropolitan development

In the Melbourne area, Hoddle's plan for the city was soon found to be inadequate to cope with the rapid growth of population. The sporadic and mainly uncontrolled urban growth of this period gave rise to mixed and poor development in the inner areas, and sprawling unserviced development in the outer areas. While the city was still fairly small, and without an extensive suburban transport system, the majority of the population was concentrated in the inner suburbs — Carlton, Richmond, and the like. The poor walked to work, while the rich drove horse drawn vehicles from the more affluent suburbs slightly further out. For 40 years the population gradually extended to the outer limits for horse drawn vehicles, but improved transport was an essential prelude to the land boom of the 1880s. Had the railways and tramways not already existed, it would have been necessary to invent them, so vital was transport to the growing metropolis. The story of Victorian politics in the 1880s was largely the story of the building of the railways. Road planning and construction at this stage was still the responsibility of the Commissioner of Public Works (later the Minister of Public Works).

The population of Melbourne (approximately 140,000 in 1861) continued to increase rapidly and passed 485,000 by 1891. The pattern of urban expansion tended to follow the main transport links (mostly suburban railway lines). The plains to the west and the south-west of the city proved less attractive for residential development, partly because of their rocky nature and shallow soils, but also because noxious industries had been established there. Consequently, the more attractive undulating country to the east and south-east of the city became increasingly settled.

Significantly, the first on-street tramway known to have operated in Melbourne was a horse tramway which was installed in connection with land sales in the Fairfield area in January 1885 and which operated until the early 1890s. In the previous year, Parliament had passed the Tramways Act, and a number of municipalities, aware of the advantages which would accrue to settlements and commerce in areas under their jurisdiction, availed themselves of its provisions by creating the Melbourne Tramways Trust. The Trust constructed a cable tramway system which was leased to the Melbourne Tramway and Omnibus Co (an offshoot of Melbourne's first successful transport operation — The Melbourne Omnibus Co — which was founded in 1869 and operated until 1916). The first

cable car ran from Spencer Street to Richmond in 1885, and by 1891 the Company had 66 kilometres of cable operations in Melbourne's inner suburbs. During the subsequent three decades, another five Municipal Tramway Trusts and the North Melbourne and Essendon Electric Co were to become involved in the operation of a comprehensive network of cable and electric tramways covering Melbourne's inner suburbs from Essendon and Coburg to Hawthorn and Prahran.

Early environmental problems

The years from 1851 to 1890 determined the general shape of development in Victoria. In the area of transport, the rural, town, and metropolitan developments were served by coastal and river shipping and, on land, by railways supplemented by roads. The pattern of development of metropolitan Melbourne had been set, and had been largely shaped by the development of the suburban railway lines, supplemented by horse trams and buses, and after 1885 by cable trams.

During this era, the environmental effects of the transport system were generally minor. Local problems did exist, but in many cases they were either considered insignificant, or simply accepted as a by-product of a developing society. For instance, the noise associated with trains was regarded as a negligible problem in view of the improved accessibility that the railways provided.

However, some problems were not so easily accepted. Steam locomotives, for instance, emitted sparks from their smoke-stacks, thereby creating a severe bushfire risk. The soot from these locomotives, and more significantly, the dust associated with dry unsealed roads, caused economic loss as well as personal discomfort. Such pollution could reduce the quality of wool and crops and even affect the health of livestock. In urban areas, it also significantly affected the aesthetics of adjoining areas. In addition, there were many other minor problems such as the smoke and refuse associated with river shipping.

In the era before the introduction of the motor car, the horse was perceived to be a major source of pollution. Problems existed because of the large amounts of manure and urine which were left on the main thoroughfares, and because dead horses were sometimes left where they fell. It was perhaps ironic that the later introduction of the "horseless carriage" was generally regarded to be the solution to this pollution problem.

1890 TO 1920

When contrasted with the expansive development of Victoria between 1851 and 1890, activity in the period from 1890 to 1920 appears to have been rather subdued. It was a period dominated by the effects of the economic recession of the 1890s at its beginning and by the First World War at its end. In the field of transport, it was a period which saw some decline in shipping, and a pause in the development of the railway system. It saw also the beginnings of significant growth in rural and metropolitan road traffic for the movement of both people and goods. Historically, this period was significant because of the establishment of the Commonwealth of Australia in 1901.

Roads

By 1910, it was becoming increasingly apparent that there was a definite need for a central roads authority to take over the care and management of main roads. Such an authority was necessary to overcome the problems caused by a lack of co-operation between municipalities in the construction and maintenance of arterial routes, as well as the expenditure of State funds without proper supervision or a thorough investigation into actual needs. The absence of a systematic policy as well as a lack of funds had caused roads in Victoria to be generally in a deplorable condition. Many of them, particularly in hilly country, were little better than primitive tracks and even those which had been well constructed as principal coach routes before the advent of railways, had been allowed to deteriorate to a serious extent.

The major new factor now was the development of the motor vehicle which had been accelerated by rapid improvements of the petrol engine and the introduction of pneumatic tyres. Motor vehicles were first used for pleasure, and later for carting small loads. This traffic accentuated the demands for better roads.

As a result of these needs, the Country Roads Act was proclaimed in 1913, creating

once more a central road authority after 38 years of unco-ordinated development. The Act provided that the Country Roads Board should carry out all such surveys and investigations as were necessary to ascertain what roads should be main roads; the most effective methods of road construction and maintenance for Victoria; the deviations in existing roads, or the new roads which should be made, to facilitate communication and improve conditions for traffic; and the purchase of all land, machinery, tools, and materials that would be necessary for the purposes of the Act.

The Act also provided for the appropriation of \$4m of loan monies for the construction of a system of main roads, as well as the use of the State taxation on motor vehicles for the maintenance of the system. Ministerial responsibility at the time rested with the Commissioner of Public Works.

The three-man Board was appointed in 1913 and immediately set about the task of visiting every municipality in the State, to inspect the roads and to explain the provisions of the Act to councillors. This investigation revealed a wide diversity of construction methods and design standards; many bad alignments; little provision for adequate foundations and drainage; many pavement failures due to the use of poor materials and improper construction; a lack of proper equipment; and little regular maintenance.

As a result of this investigation, the Board, under the provisions of its Act, "declared" some 4,830 kilometres of "main" roads and established construction guidelines for the municipalities. The letting of construction contracts either directly by the Board or by municipal councils proceeded rapidly.

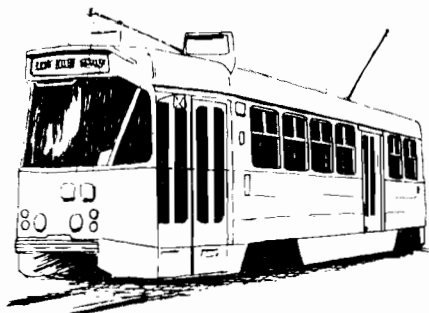
In deciding what roads should be main roads, the following criteria were applied:

- (1) Main arterial roads carrying extensive traffic, or likely to carry extensive traffic, between centres of population or from one district to another;
- (2) roads subject to considerable traffic from rural districts to railway systems; and
- (3) developmental roads, i.e., roads which would assist the development of land by providing access to a railway station.

Tramways

Within the metropolis, it was those railways which connected scattered communities that began the process of welding them into a continuous mass of urban sprawl in a stellate shape. Their effect was complemented by that of the tramways which also had a significant impact on the land boom, as they were particularly suitable for carrying people over shorter distances. The spread of the tramways system had a considerable and lasting influence on city and suburban land values, and until the 1920s, the location of the tramways was a significant determinant in the development of areas in the southern and eastern suburbs which had been overlooked during the land boom era. As distinct from the railways, the tramway companies were (until 1916) all privately owned. The fact that in the outer suburbs almost anyone could start his own tramway system, given the formality of municipal approval, proved a boon to land developers and their clients.

While the operation of the inner suburban cable car services was of major benefit to metropolitan residents, it was the development of electric tram and rail services to the then outer suburbs that most significantly shaped the metropolis. The first electric tramway in Australia commenced operations on 14 October 1889, between Box Hill and Doncaster. Only 3.5 kilometres long, it was mainly a holiday attraction to the heights of Doncaster.



But in May 1906, in conjunction with land developers at Brighton, the Victorian Railways opened the first permanent electric tram route in Melbourne — from St Kilda railway station to Middle Brighton and then to Brighton Beach. With the second Victorian Railways tramway, opened in 1919 between Sandringham and Black Rock, and the extensions to the Melbourne and Metropolitan Tramways Board tramway network which took place during the 1920s, closer settlement was encouraged in the less developed parts of Melbourne's "middle" suburbs in the interstices between the railway lines some 6.4 to 12.8 kilometres from the city centre.

Early this century it became obvious that the state of affairs involving a diversity of independent authorities organising street transport in the metropolis could not continue efficiently. In accordance with the findings of the 1911 Royal Commission, it was finally decided to consolidate the independent trusts and companies in one body — the Melbourne and Metropolitan Tramways Board (MMTB). The Board, by Act No. 2415, commenced operations in 1919, its responsibility then being to the Commissioner of Public Works. The process of consolidation was complete by 1921 and just as the Victorian Railways was completing its programme to electrify the suburban network, the Tramways Board commenced a plan of complete electrification and rationalisation of the system. The last cable tram in the system ran in Bourke Street on October 26 1940.

Social changes

Both the financial depression of the 1890s and the great drought which followed it had a retarding effect upon Victoria's development. However, with the turn of the century, a better period dawned. Building and immigration soon revived and the period up to 1914 was one of expansion. During the war years, many secondary industries were established because of the difficulty in obtaining manufactured goods from overseas. The central city area also became increasingly important as it attracted many established businesses away from the surrounding suburbs.

The era was marked by the beginning of significant changes in the habits and activities — what is now called the life style — of the population. This was not a local phenomenon, but was evident throughout "western" countries. It was brought about predominantly by the motor car and the vastly improved mobility it provided. With the motor car came the paramount need to build and maintain an adequate road system. This is what led to the creation of the Country Roads Board, which, from the point of view of transport was to become recognised as one of the most important events of this era.

1920 TO 1950

Railways and motor cars

This period was to be dominated, first, by the great financial depression of the 1930s, and then by the Second World War. From the point of view of transport this period witnessed a rapid expansion in the use of motor vehicle transport. This, in turn, was to compound the financial problems which were starting to affect the railways severely, as well as to provide the first real signs of traffic congestion on the State's roads. During these years it became necessary to develop and maintain a high standard road network, and the community began to grow aware of the needs and effects of the transport system — a very significant trend in retrospect. Thus came the first attempts at transport planning on a systematic basis.

The years after the First World War were years of reconstruction and resettlement, accompanied by a boom in the volume of traffic carried by the railways. However, by 1924 a decline was beginning to set in; this period was marked by more, in fact, than the end of an unusual degree of economic activity. As was the case throughout the world, the railways system of Victoria with its virtual monopoly on the movement of goods and passengers throughout the State, was facing formidable opposition in the form of a new technology — motor transport. Between 1918 and 1928, the number of registered motor vehicles in Victoria increased from 15,158 to 126,120, an increase of over 800 per cent.

The railway system of the 1920s represented the largest single tangible component of accumulated investment in the development of the State. By 1930, railway deficits which had soared to over \$2m per annum, were coming to have a most significant influence on

State Budgets. Together with the effects of the economic depression, the situation was becoming intolerable. On the assumption that all the services then provided by the railways were essential to the continued development of Victoria, urgent solutions were sought.

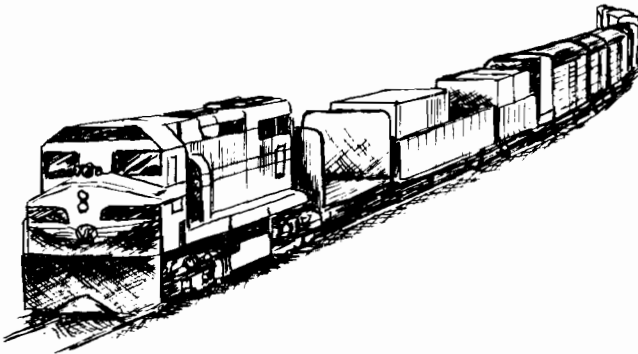
This was not the first time that the railways had faced a competitor. During the nineteenth century a ruthless rates war had been waged with river and coastal shipowners, so as to divert to the railways traffic previously carried on a network of inland and coastal shipping services. During the economic depression of the 1890s, when many primary producers took to carting their own (and others') produce as a means of supplementing their livelihood, the railways had also been forced to reduce their rates so as to compete. However, the circumstances posed by the advent of motor transport were different. This was not a form of competition which could be eliminated by such short term measures as reductions of rates. It was far more fundamental, and the motor vehicle had all the signs of being a permanent phenomenon.

To seek a solution, an inquiry was instituted in 1932 to investigate, among other things, "the Better and More Economic Co-ordination and the Better Regulation and Control of Railway and Road Motor Transport". The report of the Board of Inquiry led to acceptance and implementation of the philosophy that in the community interest, competition with rail was to be controlled by regulation, except where the substantial advantage of roads could be readily demonstrated. While the pleas of primary producers about the importance to them of motor transport led to certain significant exemptions from regulations (in the form of the granting of "as of right" licences for primary production purposes), the Transport Regulation Act of 1934 established the system of restrictive licensing of motor transport for most purposes.

However, operating deficits were not the only financial problem besetting the railways. The boom era of expansion had also left a legacy of unpaid debt, and the annual payment of interest on loan funds contributed to the inability of the Commissioners to balance their books. In addition, no serious attempt had been made to establish a depreciation fund for railway assets. The value of departmental property — lines, buildings, rolling stock, and other equipment — remained at original cost throughout the year. Thus a considerable portion of book value consisted of depreciated or vanished assets.

To cope with these aspects of the Victorian Railways' problems and thereby enhance their chances to carry out their activities in a competitive manner, the Victorian Parliament passed the Railways Finances Adjustment Act. Under the provisions of that Act, \$60m of railways loan liability was transferred to the State's General Account as from 1 July 1937. A Renewals and Replacement Fund was also established to finance all renewals and replacements other than normal maintenance. A minimum of \$400,000 per annum, plus any additional amount authorised by Parliament, was to be credited to the fund from Consolidated Revenue.

The imposition of curbs on competitive road transport limited any reduction on the rail network (other than the cancellation of some passenger services) before the end of the decade, when the onset of the Second World War and associated petrol rationing measures gave a further temporary boost to the use of rail. As a result of these factors, developed in conjunction with the financial relief noted above, the Victorian Railways actually



showed a surplus, rather than a deficit, in their overall accounts from 1941 to 1946. However, after the end of the war the use of rail facilities again declined, and in conjunction with the end of petrol rationing, the use of competitive road transport rapidly rose again. It was becoming clear that the problem of the declining use of rail was becoming more acute, and measures were required to ensure a better division of traffic between rail and road.

Metropolitan planning

During the nineteenth century, Melbourne's development, apart from that in the inner areas which had been carefully planned by Hoddle, was basically a function of a wide variety of unco-ordinated public and private enterprises. During the first part of the twentieth century, increasing industrialisation caused a movement of population from rural areas to large towns and cities. This, in addition to natural growth, was to compound Melbourne's problems. Melbourne's growth from about 1910 to the mid 1920s was extremely rapid, but still no systematic planning existed. The growing concern of various organisations, in particular the Melbourne City Council, was to result in the Government acting to set up a Town Planning Commission in 1922. After some years of investigation, the Commission in 1929 produced a noteworthy report for the future guidance of Melbourne's metropolitan development. A number of its transport recommendations are only now being carried out. With different dates, many of its conclusions would still be relevant almost fifty years later.

The report was produced just as the electrification of the metropolitan fixed rail public transport services had been completed, and the growth in motor car ownership had made it an increasingly dominant factor in transport. The Commission gave weight in its planning deliberations to the proposals about the future development of tramways for servicing the metropolitan area, which had been prepared by the Tramways Board in accordance with the provisions of section 34 of the *Melbourne and Metropolitan Tramways Act 1918*. During the preparation of the general scheme, the Tramways Board had considered the transport facilities it felt were likely to be required for the expansion and consolidation of the metropolitan area during the ensuing twenty years.

The principle underlying the general scheme was that suburban areas which were within 0.8 of a kilometre of a railway or tramway were regarded as being already well served. Many of the proposals were extensions of existing tramways, thus providing for the expansion of the residential suburbs to the north, east, and south-east of the city. To the west of Newport, Yarraville, and Footscray, were lines designed to meet the requirements of the industrial area expected to be established in the western part of the metropolitan area during the following few years. Cross-town lines were proposed to link up the northern suburbs from Essendon through Brunswick and Northcote to Heidelberg and thus avoid the necessity for travellers between those suburbs having to come into the city, or nearly so, to reach their destination. Provision was also made for the building of tramways in the eastern suburbs running in a southerly direction to give ready access to the beaches at Brighton, Hampton, and Sandringham. Such lines had a dual purpose: it was expected that they would serve recreational needs in the summer months and that they would also be the means of opening up suitable areas for residential purposes between Brighton and Moorabbin. New tramways were mapped out in the inner suburbs and in the city itself. It had been the stated hope of the Tramways Board that publication of the scheme would also "cause persons building factories, shops, dwellings etc. to concentrate along certain streets instead of spreading over a wide area, as the concentration . . . (would) economise public expenditure on water and gas mains, sewers, road construction, etc."

The Commission implicitly concurred with this hope, and kept it in mind when pursuing its broader planning function which embraced the projected future development of both public transport and the major metropolitan roads. However, its potential impetus for continued planning was lost during the depression of the 1930s. The subsequent onset of the Second World War meant a further extended interruption to the implementation of orderly planning.

Access to the Central Business District has long been one of the most pressing problems facing Melbourne's transportation planners. Melbourne, like most cities of comparable size, has the transportation problem associated with concentration of travel in the morning

and evening peak periods. This peak demand affects all transport systems, a substantial portion of the load being borne by the suburban electric railway, particularly at the central railway terminal where commuter congestion has proved a significant problem.

The provision of additional rail transport facilities for the Central Business District of Melbourne has been under consideration for many decades. In 1929, the Metropolitan Town Planning Commission recommended the construction of a "northern city railway" to reduce pedestrian congestion in the vicinity of the Flinders Street and Princes Bridge stations at peak hours.

However, the presentation of the Commission's report was followed by the economic depression. The Government then became so preoccupied with this problem that the implementation of town planning proposals was set aside. As a result, no legislation was passed to enable the major recommendations of the Commission to be put into effect.

Roads

Nevertheless, a systematic improvement of the State's road system was attempted during this era. By 1920, the Country Roads Board had made some worthwhile achievements, although the difficulties created by the First World War had hampered its operations. Before 1913, most councils had failed to realise the importance of good roads and, in any case, they had only limited funds to allocate to road construction. Often the funds were so limited that the councils could not even afford to maintain the well built roads which had been constructed many years previously under a different system of road management.

However, the creation of the Board meant regular and adequate provision of funds for maintenance and a much greater provision of funds for new construction work, including bridges. Road construction and maintenance, which had previously been relegated to the background, was now raised to a foremost position in State expenditure. As an example of the achievements in 1920, the Board was in a position to report that of the 955 kilometres of the newly named Princes Highway, 805 kilometres were in good order and trafficable in all seasons. In 1913, the main Gippsland road had been generally described as impassable during the winter months.

In 1924, the Government passed the Highways and Vehicles Act which provided for the declaration of State highways. The Board then fully funded the construction and maintenance on State highways for that portion of the carriageway required for through traffic. The Act had recognised the importance to the economy of the motor vehicle and the longer lines of communication.

In 1926, the Commonwealth Parliament passed the Federal Aid Roads Agreement which provided funds for roads on a systematic basis. This was a major change, because previously permanent works had been funded by loan funds and special grants. The additional finance enabled work on State highways to be increased and by 1928 the total length of these roads totalled nearly 2,400 kilometres. This was in addition to about 10,150 kilometres of main roads. In recent times the Commonwealth has recognised the need for National highways — directly funded by the Commonwealth.

In 1930, with the advent of the financial depression and the resulting restriction on the activities of the community, a considerable decline in the revenue derived from motor registration had occurred. The Country Roads Board was therefore compelled to reduce expenditure on maintenance and curtail the programme of construction works. However, with the provision of funds for unemployment relief, considerable work was undertaken on the construction of subsidiary roads. Later in 1931, the Federal Aid Roads Agreement was amended to enable the Commonwealth to provide the States with revenue derived from a tax on petrol. The principle that the road user should directly contribute to the cost of construction and maintenance of roads had become more firmly established.

By 1932, there was a recognition of the need for better co-ordination. On 29 December 1932, Act No. 4100 was passed. This provided for the appointment of a Transport Regulation Board consisting of five members: an independent chairman and representatives of the Victorian Railways, motorists, primary producers, and commercial interests. This was essentially a Review Board and its powers under section 15 were that "the Board shall make reports as here and after provided containing such recommendations to the Governor in Council as the Board thinks wise and expedient with respect to the better and more economic co-ordination or the better regulation and control

of railways, tramways, motor, sea, and air transport". As a result of this report, the Act No. 4198 of 29 December 1933 provided for the regulation of transport. This was the forerunner of the present Transport Regulation Board consisting of three members. The Act provided for the regulation of motor transport including commercial passenger vehicles and commercial goods vehicles.

At this time the Country Roads Board, Melbourne and Metropolitan Tramways Board, and councils were responsible to the Commissioner of Public Works and the Victorian Railways responsible to the Minister for Railways. In 1935, the title of Minister for Railways ceased to exist and the title Minister of Transport appeared in Parliamentary documents. The forerunner of the Railway Construction Board was still under the control of the three man ministerial team consisting of the Commissioner of Public Works — Vice-President, Board of Land and Works, Minister of Transport — Vice-President, Board of Land and Works, and the Commissioner of Lands — President of Board of Land and Works. The Transport Regulation Board was appointed in 1934.

In 1936, the Tourists' Road Act was passed enabling the Governor in Council on the recommendation of the Country Roads Board to proclaim roads of sufficient interest as tourists' roads. The Board was responsible for the construction and maintenance of these roads. In the following year, various roads totalling 560 kilometres were proclaimed as tourists' roads and some \$104,000 was spent on reconstruction, improvement, and maintenance. Prior to 1936, no definite system had existed to fund works on these roads and, as a result, considerable deterioration had occurred.

During the Second World War, the Country Roads Board assisted defence authorities in many works such as aerodrome construction. This commitment, plus the enlistment of many Board officers, meant that little other than essential maintenance could be carried out on the State's roads during this period.

During the war, in 1943, the Forest Roads and Stock Routes Act was passed to relieve municipalities of all costs of construction and maintenance of certain roads carrying timber from State or privately owned forests. Some 388 kilometres of Forests Roads were proclaimed by 1948. Later, in 1949-50, the Country Roads Board was requested by the Soldier Settlement Commission to investigate road requirements in additional settlements that the Commission proposed to develop. Grants totalling more than \$240,000 were made available during this year for such road works.

1950 TO 1977

Ministry of Transport

By the *Transport Act* 1951, a Ministry of Transport was established "for the purpose of securing the improvement, development and better co-ordination of railway, tramway, road and air transport in Victoria". Previously this had been a function of the Transport Regulation Board. Under the Ministry of Transport, provision was made for a Co-ordinator of Transport with the following functions:

- (1) To make reports and recommendations to the Minister in relation to the improvement, development, and better co-ordination of transport in Victoria;
- (2) to furnish proposals to the Minister for legislation designed to carry into effect such reports and recommendations;
- (3) to report upon any particular matters in relation to transport whenever so required by the Minister;
- (4) to convene and preside at conferences between the bodies or persons administering various forms of transport in Victoria; and
- (5) to exercise any powers and carry out any duties conferred or imposed on the Co-ordinator by the Act or any other Act.

In 1952, the Melbourne and Metropolitan Tramways Board became the responsibility of the Minister of Transport; all public transport was therefore under one Minister.

Road-rail relationships

In spite of representations made by rural interests, fifteen sections of non-paying branch lines were closed during 1953-54. The railways accepted that those lines had no part to play in the further development of the State, given the ease with which farmers could

truck their produce to the nearest main line station. But they still expected that the Government should restrict the use of road transport for other than such short hauls. It was with that expectation in mind that they adopted the recommendation of the 1949 Elliot inquiry that "a very considerable programme of rehabilitation and re-equipment . . . be taken in hand without further delay". Despite the significance of the railways for Victoria there had been (as a result of the depression and the Second World War) practically no significant expenditure on improvements for the system since the electrification of the suburban network was completed in 1928. Now, for the first time in 30 years, a major expenditure programme ("Operation Phoenix") was authorised totalling \$160m over 10 years. Its stated aims were "to make Victorian Railway Services more efficient than they ever have been; to establish them in public confidence and to restore in them the full measure of Railwaymen's own pride". Many sections of line were reconstructed, while the main Gippsland line was partially duplicated and regraded and electrified to Traralgon. New improved passenger trains were introduced on most major country and interstate lines, and the first blue Harris trains were obtained for the metropolitan system. Fast diesel rail motors replaced the remaining slow mixed goods services on secondary lines and centralised traffic control was introduced. Conversion of the main Sydney line to standard gauge was completed in 1961.

While the branch line closures of the early 1950s indicated a reluctant acceptance of the fact that the motor vehicle was better suited for many short haul transport functions, the stringent policies applied by the Transport Regulation Board to limit the mushrooming growth of road transport gave the Victorian Railways Commissioners optimism that they were still to be considered — albeit with some exceptions — the supreme carriers of the State. Objections by road carriers were of no avail.

However, just as it seemed that regulation was becoming the most important factor determining the pattern of Victorian traffic flow, the State's regulatory attempts were to suffer a severe setback. First, the transport strikes between 1948 and 1950 gave rise to relaxations of the restrictions on road transport, both interstate and intrastate. Section 92 of the Commonwealth Constitution provided that "Trade commerce and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free". In November 1954, the Privy Council accepted this provision as the basis of a ruling which declared illegal State Government attempts to use regulation to interfere with, and limit, the scope of interstate road operators. The ruling had a two-fold implication for the State's railway systems. First, it removed the railway monopoly which had been maintained in Victoria by protective legislation. Second, by precluding State authorities from imposing road taxes on interstate hauliers, it removed that element of the carrier's costs, and thereby strengthened the position of the road haulier competing with the railways for goods traffic.

In 1954, this road tax had amounted to \$230 on a 12.2 tonne payload between Melbourne and Sydney. In conjunction with the intense competition for traffic which developed between carriers, the removal of this impost resulted in a decrease from \$56 to \$20 in the per tonne charge for the carriage of bulk goods between the two capitals by heavy road transport. In addition, interstate road operators soon found that the radical reduction in the cost of trans-border movements made it possible for them to undercut the railway charges even if the distance to be covered in a road journey was much greater than that by rail. Thus, they soon discovered that, in many cases, they could carry goods by road from Melbourne over the border into New South Wales and then back to towns in Victoria, and still charge less than the rates fixed by the railways for traffic moved directly between Melbourne and other Victorian towns. The effectiveness of the Transport Regulation Board in controlling such border-hopping activities was weakened by a series of subsequent court cases which gave road carriers greater latitude. As motor transport technology improved at a relatively faster rate than rail, and as the competition by road operators increased, the railways found that they were fighting a losing battle trying to retain intrastate traffic, although the opening of the standard gauge line to Sydney in 1962 led to an increase in the amount of interstate traffic going by rail. Furthermore, the awareness by transport users in those parts of the State not able to make use of section 92, of the advantages accruing to Victorians elsewhere who were able to avoid regulatory constraints, increased pressure on the Government to review the whole regulatory system.

Board of Inquiry 1970

In 1970, the Victorian Government appointed a Board of Inquiry to examine the Victorian land transport system. The one man Board, Sir Henry Bland, was commissioned to determine:

- “(1) Whether the existing land transport system is satisfactory to meet the needs of agriculture, commerce and industry, and the public;
- (2) whether the present division of freight traffic as to area and type of goods between road and rail is desirable;
- (3) whether there is duplication of existing transport services which is wasteful, and if so, how much duplication could be avoided;
- (4) whether the existing system of transport regulation allows a flexible transport system which can adapt reasonably to changing conditions;
- (5) what changes, if any, should be brought about in the system of transport regulation and the provision of rail services to give the most efficient transport service practicable in the public interest; and
- (6) what effect any changes proposed would be likely to have on the transport industry and government finances generally.”

The appointment of the Board of Inquiry was prompted by a number of factors, all pointing to a need to improve total transport efficiency in a climate of mounting rail deficit. Critics overlooked the fact that rail services were provided by one overall authority responsible for track provision as well as the acquisition and operation of rolling stock, whose operations in both pattern and scope were constrained by past expansion in a different era with different financial considerations. Road services were provided by private motor operators interested mainly in the immediate costs of vehicle operation, having no concern with the provision of track and no obligation to act as common carrier, but carting only what they considered profitable. The competitive convenience of motor vehicle use for door-to-door movement of individuals and goods at any time of day left little hope of preference for rail unless restraints were imposed on motor vehicle use, or special incentives were offered for the use of rail. Even if the monetary costs of using the two modes of transport were the same, convenience would swing the pendulum in favour of road. The social costs of increased road traffic accidents, the need for policing environmental degradation as a result of pollution, the use of an ever expanding amount of space for roads, the disruption of communities by road and freeway construction, and the costs of the urban sprawl induced by road transport — all these factors were difficult to quantify and largely ignored by the majority of road users.

In his study of the transport situation in non-metropolitan Victoria, Bland realised that to rationalise the use of road and rail required as a pre-requisite “. . . a pricing system that takes into account all the proper costs that should be borne by both rail and road modes and that therefore places the railways and road operators on as nearly an equal footing as possible . . . effecting a rational distribution of traffic between road and rail modes”.

His recommendations are best summed up in his own words: “. . . major changes must be made in the Railways if they are to take their proper place in the Victorian land transport system. The present railways system is unsuited to the requirements of today and the future, and its preservation can only compound its present problems. Many sections of lines should be closed, others should be operated only to move seasonal freights, passenger services on many lines should be replaced by buses, many stations should be closed and services to others restricted, and traffic that is losing money and could be handled by the road mode at less cost to the consumer and the community should be shed. Then, much antiquated rolling stock, so costly to maintain, could be scrapped and heavy expenditures on locomotives, tracks and facilities would be avoided or deferred.

“. . . The role of the Railways for the future should be to perform that part of the total transport task for which they have inherent advantages over road transport in relation to a system tailored to permit the railways to maximise these advantages and thus to meet, in conjunction with road transport, the transport needs to the State's economy and people. The railways should, therefore, be freed as quickly as possible of tasks whose continued performance cannot but mean continued growth in their annual deficits and which can better be performed by the road mode.”

Accepting the proposition that today's economy "cannot be strapped in the strait-jacket of a transport system devised for an earlier era when the technological development of the time placed the Railways in the exclusive position to undertake the major transport task", Bland proposed that both the network and service provided be pruned so that the Railways were mainly involved in dense point-to-point trunk movements and that all other forms of movement be freed for road transport, if that mode was competitive, when hidden subsidies were removed and all costs were taken into account. The Government accepted the report in principle, and a number of changes came about. A new Railways Board was created, and the Transport Regulation Board's Act was amended. After review, a number of country railway lines were eventually closed. A further review of country rail services was carried out in 1976. The Government set up a Task Force to co-ordinate the orderly introduction of the recommended changes.

Recent developments in the direction of implementing these recommendations include the replacement of many branch line rail motor passenger services, and introduction of the regional freight centre concept. In accordance with that concept, the use of rail is generally restricted to main line and bulk carriage movements where substantial economies of scale can be achieved, and takes place in conjunction with arrangements for further forwarding of general goods to final destination by road from distribution points — regional freight centres — located at main line stations in selected major country towns. The distribution of freight by road complements the rail services for the towns where the centres are located, as well as the smaller towns within a radius of up to 8 kilometres of the centres. The advantage of road flexibility for the delivery of general merchandise to and from rail freight centres is combined with the faster movement in bogie wagons between Melbourne and the freight centres to give an efficient integrated rail-road public transport service. Small stations and sidings on both the main lines and the branch lines have been closed, except for the direct delivery of freight in wagon loads, thereby permitting substantial savings in staff costs and in the cost of providing facilities at such locations. Though the consolidation of freight at fewer and larger centres requires capital investment in pallets, containers, mechanical handling equipment, and other facilities to reduce costs of the previous labour intensive handling methods, the benefit of the new system far outweighs the costs.

Social changes before and after the 1954 Plan

By 1951, Melbourne's population had grown to approximately 1.3 million persons, in a metropolitan area mostly within 15 kilometres from the city centre. Thanks to the lessening dependence on fixed track modes of transport, certain previously undeveloped areas between the rail corridors were now able to be brought into residential or industrial use. Even with this decentralisation of industry, 60 per cent (on the basis of area) of industrial activity remained within 5 kilometres of the city centre. Some changes in travel patterns had occurred. Whereas in 1929 most journeys other than those to schools and local shopping centres were to the city and inner suburbs for work or most other purposes now a small proportion of the total daily journeys were made to the city centre. There were more inter-suburban journeys, and, as use of the motor vehicle had significantly increased, a smaller proportion of daily movements were made by public transport.

These changes were the result of a number of factors, including the relative lack of convenient cross-town or circumferential public transport routes, the greater dispersion of these trips and the ease with which they could be made by car, and the readily available road and especially parking space away from the Central Business District (CBD). The changed circumstances were taken into account by the Melbourne and Metropolitan Board of Works in the preparation of their 1954 plan for future metropolitan development with its emphasis on the proposed distribution of various land-uses throughout the metropolitan district.

The problem of transport was a major part of this master plan which was reflected in the findings and recommendations. A comprehensive road and public transport plan was produced for the metropolitan area. Also, the concept of a co-ordinating authority for public transport was again introduced.

The 1954 proposals were intended to accommodate a metropolitan population of some 2.5 million persons, primarily through additional outward settlement distributed in

accordance with demand. The CBD was looked on as a prime focus of the metropolitan area supplemented by five suburban district centres and it was envisaged that extensive redevelopment would occur in the inner suburbs to maintain population there at the then current levels. Action was proposed to encourage industrial development to the east and south-east where the major population settlement was occurring. A rural (non-urban) zone surrounded the defined urban areas, but it was envisaged that this would absorb further urban development at later stages. There was no thought at that time that Melbourne would not continue to grow; in fact it was anticipated that growth would be rapid.

In the decade after 1954, the population of Melbourne grew to approximately 2.1 million persons, the developed area to approximately 155,400 hectares, and the radius (from the city centre) within which most people lived to 22 kilometres. The thirteen years from 1951 to 1964 were, for Melbourne, a period of considerable growth. While some residential development in outer suburbs continued in the rail corridors (e.g., to Lilydale, Ferntree Gully, Dandenong, Frankston, Werribee, St Albans, and Epping), other development of this type occurred in areas such as Doncaster to fill in areas nearer the city centre between rail corridors. During this period, some industrial development also occurred in several eastern and south-eastern rail corridors, together with the first newer styled regional shopping centre at Chadstone. These developments all served to intensify the increased non-CBD nature of daily travel. Significant increases in the proportion of daily journeys made by motor car, with a consequent decline in public transport patronage, occurred for a variety of reasons: the cessation of petrol rationing, the increasing economy of motor travel, and its convenience for circumferential and non-CBD journeys, particularly in areas where there were no serious space restrictions.

Roads

The programme of improvements to the State's roads gained momentum during the 1950s. In 1955, the Country Roads Board commenced the duplications of pavements of certain sections of State highways. Such duplications significantly improved both the traffic capacity and the safety of these routes. An example was the Princes Highway east between Oakleigh and Dandenong. However, the very rapid growth of traffic during this period was such that a further widening of this road to six lanes was required by 1962.

In 1956, the Board was empowered to construct freeways, described in the Act as "bypass roads". The Board considered that the construction of these roads, with their restricted access, was essential to the development of an efficient State-wide road network. The construction of these routes would bring considerable benefit to the community because of the high traffic capacity, low accident rates, and low vehicle operating costs associated with them.

The first freeway constructed by the Board was the four-lane 8 kilometre Maltby Freeway on the Princes Highway at Werribee. This freeway, which was opened in 1961, removed large volumes of through traffic from the Princes Highway in Werribee, thereby considerably improving the amenity of the area. Significantly, sales among Werribee businesses dropped by no more than 1 per cent after the freeway was opened.

Transport planning

Changed circumstances and trends in the urban environment required a new approach to planning of the necessary transport services. Consequently, in 1963, a Metropolitan Transportation Committee (MTC) was formed by Act No. 7003 to advise the Victorian Government on planning development, co-ordination control, and improvement of transport facilities in Melbourne and its environs. The Committee, with the Minister of Transport as chairman, had representatives of transport and planning authorities.

The first task undertaken by the Committee was the survey of Melbourne's transportation system in 1964-65, as part of which a data bank was established, providing information concerning the daily movements of people and goods throughout the metropolitan area, and the associated population, land-use, and transport system characteristics. Procedures for forecasting future daily metropolitan travel were developed from this information. The first output of this planning activity was the announcement in 1969 of a Metropolitan Transport Plan for the next 15 to 20 years. Significant features of the Plan were the construction of the underground loop, proposed extensions to rail and

tram routes, a considerable increase in bus services, improved capacities and speeds on metropolitan arterial roads, and a proposed additional 400 kilometres of freeways.

While the MTC plan was being prepared, there were also further developments in land-use planning. In 1967, two reports on the long-term development of the metropolitan area were published. These reports were intended as a long-term look into the future; one was prepared by the Town and Country Planning Board, *Organisation for Strategic Planning*, and one by the Melbourne and Metropolitan Board of Works, *The Future Growth of Melbourne*.

The possibility of large scale redevelopment in the inner suburbs was examined with the conclusion reached that even after allowing for redevelopment to occur in this area, provision would still have to be made for major growth in the perimeter areas. The recommended form, subsequently adopted as government policy, was a series of corridors radiating from the existing urban area with green wedges of open country in between. In addition, the Government also favoured the possibility of satellite development, in locations such as Melton, as a means of encouraging development to the north and west. The Board's planning area was extended to cover 503,000 hectares.

In 1971, the Melbourne and Metropolitan Board of Works submitted to the Government its report on Planning Policies for the Melbourne Metropolitan Region. That report represented a development of the 1967 recommendations and the Government's adopted policy, and attempted to define these recommendations in more detail over the extended planning area. The main proposals were:

- (1) Definition of a series of permanent non-urban areas or green wedges worthy of conservation because they contained most of the areas of significant landscape or of historic and scientific interest, the major agricultural resources, the water catchments, and the major areas supporting significant bird, animal, and plant life;
- (2) definition of a series of corridors as the only areas within which future urban development might occur as a result of future development policies;
- (3) delineation of additional urban zoning within the corridors to provide an ample margin for development;
- (4) preparation of outline development plans for urban zones taking account of the social, economic, and physical needs of people, of activities intended to be located in the zones, and of conservation of resources. Such plans were intended to set a framework for development in local areas;
- (5) the provision of a series of major open space reservations within the green wedges strategically placed to serve metropolitan needs. These were intended to be retained in their present open character and be acquired and used for public recreation as appropriate;
- (6) as part of an urban strategy, the Report outlined two alternatives. The first alternative retained and encouraged the Melbourne Central Business District as a main focal point in the area, but envisaged the establishment of lesser growth centres within the various corridors to encourage their growth in accordance with demand. The second alternative entailed a concentration of growth to the south-east, incorporating a major growth centre. This strategy might need to be adopted should public funds be inadequate to service all corridors, or access to the central area be unduly restricted. The first alternative was the recommended policy; and
- (7) the Report recommended the encouragement in the central, north, and west sectors of a greater diversity of population in terms of occupation, income, and ethnic structure. Reference was made to locational characteristics of segments of population including outward movements from these areas, probably to the south and east, and to the adverse social and economic consequences of this trend.

The 1971 proposals represented a change from the earlier concepts of unlimited growth around the perimeter of the city area to one of guiding development into specific corridor locations and giving new and specific emphasis to conservation of natural environments close to the urban area. Their acceptance provided the impetus for transport planning on a corridor basis and foreshadowed the subsequent adoption by the Ministry of Transport of a corridor oriented transport planning technique, for since the release of the original MTC plan, community thinking had moved away from unlimited use of the private car to continued encouragement of public transport.

Melbourne underground railway loop

As stated previously, the MTC produced a Metropolitan Transport Plan in 1969. This plan proposed widespread improvements to both public and private transport modes, including the construction of an underground rail loop. In 1950, the Parliamentary Public Works Committee commenced an inquiry into the provision of an underground city railway. The report, submitted in 1954, accepted the principle of the provision of additional stations linked by underground tracks to the existing surface system. In 1958, the Minister of Transport formed a committee to review the proposed scheme for the provision of an underground railway for Melbourne, in the light of the existing and prospective traffic conditions. The committee confirmed the need for additional points of passenger dispersal connected by underground tracks to the existing suburban railway. Several proposals were considered, the one finally adopted being a loop incorporating the new city stations.

The loop scheme was approved by the Government and incorporated in the *City of Melbourne Underground Railway Construction Act 1960*. Construction was deferred owing to lack of funds but planning and investigations continued over the next ten years. Subsequent to the acceptance by the Victorian Government of the 1969 report of the Metropolitan Transportation Committee, and with the encouragement of the Melbourne City Council and the Melbourne Chamber of Commerce, the Act of 1960 was later repealed and replaced by the *Melbourne Underground Rail Loop Act 1970* which provided for a new authority (The Melbourne Underground Rail Loop Authority) to be responsible for the supervision and co-ordination of the planning, financing, and construction of the loop. The Authority, which consisted of nine members appointed by the Victorian Government, was constituted in February 1971.

The loop has been designed primarily to disperse the peak hour commuter concentration, now centred on Flinders Street and Princes Bridge, on the southern edge of the Central Business District (CBD) and to a lesser extent on Spencer Street on the western edge, by distributing a proportion of the city's work force through a number of additional stations on the eastern and northern edges of the area. The loop is also designed to relieve the peak hour train congestion at Flinders Street by speeding up train movements through platforms.

The loop provides the city with a multi-station terminal having significantly greater capacity for handling people and trains than that operating at the date of the Act. The additional stations are linked by four underground tracks connected to the existing surface tracks thus forming four separate loops servicing the CBD. One of these loops serves the north-eastern lines of the suburban system which pass through Jolimont (the Clifton Hill loop), another serves the eastern lines which pass through Burnley (the Burnley loop), another the south-eastern lines which pass through South Yarra (the Caulfield-Sandringham loop), and the other, northern and western lines which pass through North Melbourne (the northern loop). All suburban lines have a direct connection into the loop with the exception of the St Kilda and Port Melbourne lines. Passengers from these lines have access to the loop by changing trains at Flinders Street.

A city circle is being incorporated in the system by linking up one of the loops, the Clifton Hill loop, to form a closed circuit. The underground portion of the loop follows Spring and La Trobe Streets, with underground stations, one in Spring Street centred on Bourke Street (Parliament), one between Elizabeth and Swanston Streets in La Trobe Street (Museum), and one in the vicinity of William Street in La Trobe Street (Flagstaff). These three new stations, with Spencer Street and Flinders Street, form a five-station city terminal. Thus, train lines will follow the eastern, northern, western, and southern boundaries of the Central Business District. The existing four viaduct tracks along Flinders Street become part of the loop tracks and two additional viaduct tracks have been constructed to provide for passenger and freight traffic on the direct route between Flinders Street and Spencer Street.

The Melbourne underground rail loop is not a separate and independent railway. It is part of a plan to expand the suburban rail system to meet the anticipated increase in commuter demand for rail transportation, and is designed to operate as an integral part of the existing system. Although expansion of route capacity is being progressively undertaken (by provision of additional tracks, improved signalling, additional trains, etc.),

the resulting increase could not be fully utilised without provision of matching terminal facilities. The five station loop terminal provides this extended terminal capacity, and thus complements those new rail developments as well as other projects such as modal interchange facilities aimed at integrating the use of rail with other sections of the transport system.

It is significant to note that prior to the establishment of the underground, practically all major centralised commercial development took place in the more accessible portion of the CBD served by Flinders and Spencer Street stations and the Bourke, Collins, and Flinders Street trams. During the 1960s, there was an intensification of the trend for activity, not accommodated in that area, to move outwards, particularly along St Kilda Road. However, increased accessibility at the northern end of the CBD subsequent to the opening of Flagstaff and Museum stations is expected to lead to an intensification of commercial activity throughout the CBD area and to facilitate implementation of the Melbourne City Council Strategy Plan by encouraging an alternative to the expansion of CBD activities south of the Yarra. As a direct result of the loop, a major redevelopment project involving the Government, the Melbourne City Council, and private enterprise is under way at Museum station.

While the underground loop has made provision for improvements to services at the CBD centre of the rail network, a series of related improvements are taking place elsewhere. In accordance with the findings of the Metropolitan Transportation Committee, the Government has concentrated on improving the basic framework of the fixed track system, for it is here that capacity can be doubled on a non-pollutant electric mode of transport substantially within existing rights of way. As part of a comprehensive plan to ensure that the greatest advantage is gained from the increased capacity of the rail network subsequent to construction of the underground loop, priority has been given to the elimination of bottlenecks by the provision of additional tracks for a faster, more frequent service between South Kensington and Footscray, from Ringwood to Croydon and Bayswater, Macleod to Greensborough, Sunshine to Deer Park West, and from Caulfield to Cheltenham. Substantial upgrading and modification of stations, etc., has taken place along the Glen Waverley line, and further sections to be upgraded include the lines from Box Hill to Ringwood, from Greensborough to Eltham, and from Cheltenham to Mordialloc.

In addition, work is under way to re-equip the entire metropolitan rail system with modern signalling equipment, of which the introduction of electro-pneumatic signalling at Jolimont is an example. The electric train network is soon to be extended to Langwarrin and Werribee to serve new and growing areas. Further possible extensions to Melton, Sunbury, and Craigieburn are being studied. Transport corridors have been proposed in the areas between Huntingdale and Ferntree Gully and between Frankston and Lyndhurst to provide a basis for the establishment of a fast connection between the long established radial spokes of the Melbourne transport network, when it becomes necessary.

Transport interchanges

The Government's aim to see an integrated public transport network utilising rail for trunk peak movements has prompted it to embark on a programme which will assist passengers to transfer from one form of transport to another in the best conditions. Potential users of the suburban railway system reach the stations by tram, bus, taxi, private car, motor cycle, bicycle, and on foot. To accommodate them, provision for free car parking spaces at suburban stations throughout the system has been substantially increased. Improvements are being made to bus terminals at suburban stations to provide better protection for passengers changing from one form of transport to another and improved facilities are being provided for "kiss and ride" set down and pick up of passengers at suburban railway stations.

Significant efforts in the direction of implementing these aims are represented by the comprehensive modern transport interchanges such as those under construction at Box Hill and Frankston. A basic function of the modal interchange, or transportation centre, is to provide the opportunity for interaction of the various modes of travel, and to facilitate interchange between them. A properly planned modal interchange provides the physical facilities and amenities needed to encourage additional transfers from private to public

transport modes. It is, therefore, an important means of achieving a flexible and balanced transportation system and can be expected to improve accessibility to a wider area.

These large transportation centres are to include non-transportation uses either directly, or in close proximity, which can range from small shops offering convenience goods to major commercial activities and residential accommodation. Thus the modal interchange, because of the activity it generates, can become a major focal point in a community. Its development can provide the impetus for development or redevelopment of adjacent land.

West Gate Bridge

The congestion of transport facilities, especially at peak periods, is evidently a road problem as much as one affecting railways. Within the CBD the problem has long been compounded by the fact that its location relative to the Yarra River docks, in conjunction with the radial nature of the road network, has meant that cross-town traffic, as well as that with a specific CBD orientation, has been channelled through a limited number of Yarra River crossings. Prior to 1961, the only access to the CBD from the south of the Yarra was via Princes, Queens, and Spencer Street bridges. The opening of the King Street Bridge took some of the pressure of cross-town flow away from Spencer Street, but it did not remove from the CBD the heavy flow of traffic between the southern and western suburbs. In 1964, a special government committee recommended that a proposed crossing over the lower Yarra River should be built as a high level bridge. This recommendation was agreed to by the Government in 1965 and legislation was passed in December of the same year giving the West Gate Bridge Authority, or Lower Yarra Crossing Authority, as it was then known, the power to construct and operate a toll bridge over the lower Yarra River. The bridge was opened in 1978.

The overall length of the main structure of the West Gate Bridge is about 2.6 kilometres and includes five central spans of cable stayed steel girder bridge. The main span over the Yarra River is 335 metres in length, and at the minimum navigation clearance is 54 metres above the low water mark. Each of the bridge's two carriageways has four traffic lanes and one breakdown lane. At opening, traffic flow was expected to be of the order of 40,000 vehicles per day.

Roads and freeways

Outside the CBD the congestion of arterial roads and the use of residential roads for through traffic to the detriment of the urban environment became critical problems as the use of the car for work trips became increasingly popular in the post-war decade. The introduction of the clearway system, which imposed severe penalties on parking along arterial roadways during peak periods, led to some significant improvement in arterial traffic flow. In 1975, replacement of the Give-Way to the Right rule, with the introduction of the METCON system of classifying priority and secondary roads, improved the traffic flow along main roads and discouraged the use of residential streets for through trips. The injection of additional funds into the "Special Projects Fund" allowed the speeding up of a programme of improvement of key intersections. Also, the introduction of modern traffic signalling alleviated certain dangerous bottlenecks scattered throughout the metropolitan area. However, the most significant programme of adjusting the metropolitan road system to the needs of the modern car orientated society arose out of the investigation by the Metropolitan Transportation Committee (MTC).

The MTC Report in 1969 included a prediction that by 1985, 1,300,000 private cars would be garaged in the metropolitan area—a three-fold increase on the number recorded in 1964 for the 1964 survey area. The distance travelled by private cars in the metropolitan area was predicted to reach 60.2 million vehicle kilometres a day in 1985 compared to the 11.6 million kilometres in 1964. Also, the number of commercial goods vehicles predicted to be using the metropolitan area roads was expected to be about 194,000 in 1985, as against 91,500 in 1964.

It was expected that street public transport would cater for an extra 205,000 passenger trips per day and that the number of passenger kilometres travelled daily on buses and trams would rise from 3.9 million to 5.6 million. Thus the predicted increase in demand for road travel was to be very substantial indeed. It was clear that the existing network was not capable of handling such increased volumes of traffic at a desirable standard of

service. Consequently, the MTC concluded that a large-scale, long-term programme was required to prevent chronic traffic congestion and greatly increased transport costs.

The MTC plan provided for the development of metropolitan roads as a single integrated system comprising: a network of new freeways, a network of improved and extended arterial roads, some having access control, and a network of local roads.

The freeways were to cater for relatively long-distance high volume traffic and would provide free movement, safe travel, and significant reductions in travel time for all vehicles using them.

The arterial road network was to include a number of new major divided arterial roads which would provide additional road capacity to supplement the adjacent freeways in areas of high demand, and allow for public transport. The divided arterial roads would be designed mainly for through traffic and would carry volumes approaching those of the smaller freeways. The balance of the arterial road network would also carry relatively high volumes of traffic, although not as high as the freeways or the divided arterial roads. The arterial roads would have the function of catering for mid-distance trips and, in many cases, would act as feeders to the freeway system.

The local roads, the third element in the highway system, would serve the needs of local residential traffic and would also act as feeders to the arterial system.

While the freeway and arterial networks are mainly the concern of the highway authorities — the Country Roads Board and, until 1974, the Melbourne and Metropolitan Board of Works — the local roads and sections of the arterial road system are the responsibility of local government bodies, and their construction involves close collaboration between the municipalities and the road authorities.

The proposed freeway system basically formed a grid pattern laid out in such a way that all parts of the design area where there is urban development existing or proposed, would have quick and easy access to the network. The system was designed to enable a better distribution of traffic flow and to make possible a more selective expansion of the area as a whole. This latter aspect is particularly important and reflects the basic approach of planning the transportation system in conjunction with, and complementary to, the expected pattern of land development.

Practically all the freeways were to be located on new alignments, and would not follow existing road reserves, although half the network was to follow reservations already in the metropolitan planning scheme. To minimise disturbance to existing and proposed development, existing planning proposals were given major emphasis in locating the freeway routes. An important design feature, seen in those freeways already constructed, is the absence of intersections, traffic lights, and pedestrians. Access to, and exit from, the freeways is provided at well spaced interchanges, designed to allow traffic to enter and leave with a minimum of interruption to traffic flow.

As the design standards used in planning freeways place emphasis on unimpeded movement, vehicles operating on them are usually able to maintain constant speeds over the entire length of their freeway journey, significantly reducing travel times and yet maintaining a high level of safety. Consequently, as well as bringing about considerable saving in cost and time for both personal and business travel, the freeway system would have achieved significant economies in the cost of goods movement by reducing the travel times of commercial road transport. It would enable through goods traffic to move at higher speeds for relatively long distances and to by-pass areas where traffic movement was much slower.

The MTC road proposals were based primarily on traffic considerations and, had they been implemented, would undoubtedly have provided a good system of freeways to be added to the existing metropolitan road pattern. However, subsequent to the publication of the Report, a greater public awareness of environmental and sociological factors which affect urban life styles led to a modification of those proposals (especially in the inner suburbs) in favour of a greater reliance on public transport. Consequently, in 1972, the Victorian Government declared its determination to modify the extent of the proposed freeway network. Particularly affected by that declaration were those freeways which would have passed through established suburban communities. The Victorian Government stated that the following policy would be implemented:

“... Freeways under construction will be completed. No new freeways will be

commenced in inner areas where their construction would involve substantial loss of housing and community disruption. Concentrated passenger movements to the central district and to other areas are to be attracted towards public transport by deliberate policies of inducement. The programme of upgrading arterial streets to improve traffic flows will be accelerated and integrated with the planning of freeways to obtain a maximum benefit from both. Freeways are essential in outer suburban and country areas to provide greater safety and convenience for the increasing road traffic. New freeways will therefore be located in areas where proper planning can ensure minimum community disruption, and substantial overall benefits to the community as a whole. Funds will be channelled to the building of modal interchange facilities, where people may change from bus to fixed rail transport, or park their cars and travel on public transport. Attention is to be paid to forms of traffic management to speed the flow of trams and buses”.

These proposals were the result of a new realisation that there is a place for the motor car, but that the government should ensure that the motor car adds to the amenity of life, without it assuming such influence that the city becomes a place for the movement of motor cars rather than for the habitation of people. The decision that freeways are not to be built in the inner areas of Melbourne, implies that the community must accept restrictions on complete freedom of movement of motor cars in these areas. This policy was further clarified in 1973 when the Victorian Government substantially reduced Melbourne's proposed freeway network. It was stated that the construction of a total of eleven freeways would “not now proceed”.

Freeways which have been constructed in the metropolitan area include the South-Eastern, Tullamarine, Mulgrave, South Gippsland, Mornington Peninsula, Lower Yarra, and the Eastern. The basic functions of these freeways vary considerably. At present a major function of the South-Eastern and Tullamarine Freeways is to cater for traffic destined for, or originating from, the Central Business District. These freeways are thus heavily used in the morning and evening peak periods primarily for “home-work” trips.

A prime use of the existing Mulgrave and South Gippsland Freeways is to serve as a by-pass of Dandenong and particularly, the large volumes of traffic originating in the metropolitan area and destined for the La Trobe valley and Gippsland. On the other hand, the Mornington Peninsula Freeway was constructed mainly to cater for recreation trips. Large numbers of car trips are generated by the attractions of the beach resorts on the Peninsula, particularly during the summer periods.

The construction of these freeways has had a significant effect on the development of the metropolitan area because of the high level of access made available to certain areas. For instance, the Tullamarine Freeway enabled suburbs such as Keilor, Niddrie, and Airport West to be much more readily accessible by road. This, in turn, resulted in a more rapid development of new housing and industrial estates in these areas. In the east, the Mulgrave and South Gippsland Freeways have helped establish new suburbs in Endeavour Hills and Hampton Park, as well as aiding industrial and commercial development. In general, property values in areas served by such major road facilities have tended to increase at a more rapid rate than other areas in the metropolitan area.

The importance of a good road system for residential, commercial, and industrial development is a direct result of the increasing dependence on roads for the movement of both goods and people. It is estimated that above 82 per cent of the passenger vehicle journeys in the Melbourne metropolitan area are made by private car. Another 12 per cent are made by road public transport such as buses and trams. In addition, about 99 per cent of the internal goods movement in the metropolitan area takes place on the roads.

Freeways have also been constructed outside the metropolitan area along many sections of the State's highways. Most of these works have been along the Hume, Princes, and Western Highways. These freeways are generally constructed because of the need for a high level of traffic service and/or a by-pass of a developed area. The progressive construction of these facilities is continuing. For example, two freeways commenced in 1977 were the by-passes of Keilor and Berwick.

The programme of upgrading arterial roads became particularly urgent after the modification of the urban freeway proposals. It has been accelerated by widening roads, where possible, by the provision of grade separation facilities at railway crossings, and by the creation of separate easements for trams wherever suitable. An example of such a

series of improvements is the St Kilda Junction-High Street project which was begun prior to the 1973 announcement and completed in 1975. This eliminated a major bottleneck between St Kilda Road and the Nepean Highway by allowing the widening of High Street, the separation of tram and motor vehicle traffic, and the provision of a sophisticated multi-level interchange between St Kilda Road and Dandenong Road. Its benefits are being progressively extended to the whole of the southern suburbs by the widening of the section of the Nepean Highway between Gardenvale and Moorabbin to provide a divided multiple lane arterial road from Princes Bridge to Mordialloc.

ENVIRONMENTAL CHANGES CAUSED BY MOTOR CARS

The ever increasing use of the motor car has had a significant effect on Victoria's life style and environment. From 1950 to 1975, the total number of registrations of cars and motor cycles in Victoria increased by over 400 per cent to about 1.8 million. During the same period, the population of the State rose by only 65 per cent to approximately 3.7 million persons.

The most significant advantages of the motor car are the mobility, comfort, and convenience which it provides. The proliferation of the motor car has resulted in widespread changes in trip making characteristics and a lessening of the dependence upon public transport. During the last 20 years, many suburbs have been developed without an adequate public transport system. In effect, public transport is no longer the prerequisite for development that it once was. Significantly, the accessibility provided by the motor car has come to be accepted as a necessity, rather than a luxury.

As a result, people without access to a car can be severely disadvantaged compared to the rest of the community, because of the more restricted business and social opportunities which are available to them. To these people, public transport is of paramount importance. While public transport cannot offer the same convenience and level of service as the car for most trips, it is essential for providing a service to those groups who lack cars to give them an adequate level of mobility.

The motor car has provided a high level of mobility, but at some detriment to the environment, particularly in regard to pollution levels, noise levels, land-use, and aesthetics. The most serious pollution problem caused by the motor car is that of engine emissions. These include nitrogen oxide and hydrocarbons which when exposed to sunlight, combine in photo-chemical reactions to form smog. Traffic noise, produced by vehicle engines, transmissions, exhausts, wheels, and brakes, is another undesirable by-product of the motor age. These effects are felt particularly in residential streets, many of which are subject to unduly high traffic flows because of the congestion on the main arterial roads.

Studies are being carried out in several areas to assess the characteristics of these drawbacks and recommend corrective measures. The Local Government Act already confers powers on municipal councils to prohibit heavy traffic from using residential streets. The Government has also adopted a policy of protecting residential amenity, particularly in areas subject to planned freeway intrusion. Large projects are now subject to Environmental Impact Assessments, which allow for public participation and input.

Road traffic causes problems because of the space that it requires, not only for roadways but also for car parks, service stations, and other related uses, particularly in inner areas where space is limited and traffic volumes high. When traffic growth necessitates the provision of additional road space in inner areas, it is usually at the expense of open space, houses, or shops which are part of an established community.

Another major impact of the motor car upon the environment has been in the area of aesthetics, with vehicles, roads, car yards, car parks, traffic signals, and road signs generally detracting from the surroundings in any situation, whether urban or rural.

One of the most serious by-products of the general use of the motor car is the road accident problem. At present in Victoria, about 1,000 people are killed each year, slightly less than 20,000 are injured, and extensive damage is caused to property, both public and private, as a result of road accidents. About 25 per cent of fatalities are pedestrians. Ancillary effects, although less obvious, are also important. Families suffer emotional and financial distress. In addition, considerable amounts of time, effort, and resources are

expended in providing care for those injured, and in compensating for lost employee man-hours. The problem is a serious one and its effects are widespread.

In recent years, particularly since it has come to be realised that non-renewable fuel and other resources are in limited supply, greater account has been taken of the amounts of energy consumed in moving people and goods. Australia's geographical characteristics, its sprawling cities and long distances, together with its climate, which is not only conducive to recreational travel, but which also minimises the amount of energy required for domestic purposes, has meant that the transport sector has far more impact on the energy industry than it has in other "western" countries such as in the United States of America or in Europe. In 1975, transport fuels accounted for 56 per cent or about 310,000 barrels per day of the oil taken into the Australian refining system; this percentage will increase in the future. With the expected decline of Australia's oil fields, the import bill for transport fuel could rise dramatically. Australia's current dependence on petroleum driven vehicles foreshadows grave financial, social, and political problems in the years ahead.

Land subdividers are now being increasingly concerned that the residential areas originally planned around the motor car may become "transport poor" in the future if energy is limited. Access to and from such areas is becoming of paramount importance in planning considerations.

Expectations of personal mobility are dependent upon life experiences, particularly family background, geographical location, and perceived daily needs. Actual mobility is not only determined by varying degrees of access to alternative forms of public and private transport, but also by what people consider suits their needs. From the sociological aspect, community concerns and patterns of behaviour are thus a result of perceptions and attitudes; these differ between groups and individuals in the community and cover a wide range of issues. Such issues include general community identity, the local social and physical environment, provision and accessibility of local facilities (such as passive open space, recreational complexes, hospitals, local shopping centres, and schools), and restraints on behaviour (e.g., major roads with heavy traffic, or railway lines, may divide a community by restricting interaction).

Many important decisions will thus have to be made in relation to individual mobility — a weighing of actual needs and personal choice against a wider background of alternative transport modes, and in the final analysis, the configuration of Victoria's environment in the future.

CONCLUSION

An account, such as this, of the development of transport services for the movement of people and goods in Victoria, suggests that it is only since the 1960s that Victorians have begun to realise the full impact their transport activities have had, and are having, upon their environment.

The stages of this learning process began with the early settlers' ignorance of Victoria's ecology. Much of what they did was done under the pressures, first, of basic economic necessity, and second, of the spur to gain wealth. Also, they did not understand that damage to the environment could have virtually irreversible consequences. Now, after more than 100 years of development, much of it haphazard and unplanned, the consequences of these attitudes are more clearly understood. There now are a series of conscious choices to be made, all of which have to weigh present-day benefits against those of the future.

In earlier years, the effects tended not to be significant or even obvious, as the changes were minor and concerned areas of relatively small population. The chief effects have now been felt in the larger metropolitan areas where such effects are no longer small scale.

Transport planning has thus become very important in a modern society. Its history (or lack of it) has shown that the effects of changing trends and community attitudes, coupled with financial constraints, have made the continuing review of such planning necessary. In a little more than 100 years, Victoria has moved from a climate of unlimited and uncontrolled development to one in which the Government seeks to promote a balanced growth, reasonably served by an adequately planned public transport system. Improvements to both public and private modes of transport are now being planned together to ensure that a fully integrated and balanced transport system is developed.

Good planning is designed to ensure that pressing transport problems are suitably catered for in the short-term, while the options for long-term development are retained. It also takes due account of people, their choices, and the environment in which they live.

In order to reconcile these factors to some degree, recent planning has been in terms of corridor development, which allows for a measure of cohesion, and permits a readier provision of essential services, including transport. Only time will show the efficacy of these planning concepts in fulfilling Victoria's future transport requirements.

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